



Land east of Penistone Road, Fenay Bridge

Phase 1 Geo-environmental Assessment

Radcliffe Developments (Farnley) Ltd

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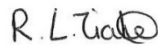
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Phase 1 Geo-environmental Assessment**

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Executive Summary

Site Location	The Site is approximately 3.34 ha in area, is situated on land east of Penistone Road, Fenay Bridge and centres on NGR 418740, 414470.
Current Site Use	The Site currently comprises an undeveloped parcel of land.
Proposed Site Use	It is understood that the Site is to be redeveloped with residential properties with private gardens.
Previous Site Uses	The Site is shown to have remained undeveloped since the earliest available map dated 1854. A gravel pit is shown along the western boundary of the Site on mapping dated 1854 but appears to have been infilled by 1893.
Geological Setting	Alluvium is shown underlying the north-western corner of the Site. The solid strata shown underlying the Site are the Pennine Lower Coal Measures of Upper Carboniferous age. No Made Ground deposits are shown to underlie the Site.
Environmental Considerations	No pollution incidents have been highlighted in proximity to the Site. The Site is not located within a groundwater Source Protection Zone. No historical landfill sites are recorded within 250 m of the Site. No radon protection measures are required for any new buildings.
Preliminary Contamination Assessment	The risk of future site workers being exposed to potentially contaminated soils is considered to be moderate / low. The risk from hazardous ground gases (incl. radon) is considered to be moderate / low. The risk of pollution of controlled waters is considered to be low.
Geotechnical Considerations	The Site is not deemed to be at risk from unrecorded shallow mine workings or quarrying. It is assumed that conventional shallow strip footings will probably be achievable at the Site, founded either within the residual soils or within the underlying bedrock. An intrusive ground investigation should be undertaken to assess the potential for any ground that would be unsuitable for founding in. At this stage full construction thickness should be assumed for a stratum with 2.5% California Bearing Ratio (CBR) for any highway or pavement areas.
Recommendations	Intrusive ground investigation is recommended to allow quantitative risk assessment for human health, to inform the geotechnical design process and to provide confirmation of the ground conditions for engineering purposes.

1. Introduction

1.1 Terms of Reference

- 1.1.1 Ecus Limited (hereafter 'Ecus') was commissioned by Radcliffe Developments (Farnley) Ltd (the 'Client') to undertake a Phase 1 Geo-environmental Assessment on land to the east off Penistone Road, Fenay Bridge (hereafter referred to as 'the Site').
- 1.1.2 This report was produced on behalf of the Client and their advisors and financiers. It should not be transferred to or relied upon by any unauthorised third parties without the express permission of Ecus and our Client. If any unauthorised third party comes into possession of this report they rely on it entirely at their own risk.

1.2 Objectives

- 1.2.1 The assessment has been carried out in general accordance with the requirements of British Standards BS5930 (2015) – *Code of Practice for Ground Investigations* and BS10175 (2011+A1:2013) – *Investigation of Potentially Contaminated Sites. Code of Practice*.
- 1.2.2 The general objectives of the assessment are as follows:
- Provide information on past and current uses of the Site and surrounding area, and the nature of potential resulting hazards and physical constraints.
 - Provide information on the likely geological, hydrogeological and hydrological conditions under the Site.
 - Identify potential linkages between potential sources of contamination and receptors through likely pathways.
 - Formulate an initial conceptual model highlighting the potential risks to future receptors for different geo-environmental aspects.
 - Identify potential geotechnical constraints or hazards from the anticipated ground conditions and site walkover survey that may warrant further investigation or assessment.
 - Establish whether there is potential for any past mining or quarrying activities to have affected the Site, and whether intrusive investigation is required to better define the potential risk to the proposed development.
 - Provide recommendations – if necessary – for a Phase 2 (intrusive) ground investigation prior to redevelopment to further refine the risks to future receptors and provide necessary information for geotechnical design purposes.

1.3 Future Site Use

- 1.3.1 It is understood that the Site is under consideration to be redeveloped with residential properties with private gardens as shown on drawings supplied by the Client (reference Carve Architecture 2-001A).
- 1.3.2 This report has been written in relation to this end-use; should the proposed land use change then the conclusions and recommendations of the report will require reassessment.

1.4 Sources of Information

- 1.4.1 Table 1 presents sources of information that have been consulted during this assessment.

Table 1: Sources of Information

Source	Details
Client	The Client provided information in relation to the proposed use of the Site.
Site Walkover	Information about the Site was gained from visual inspection during a site walkover survey.
Landmark Envirocheck Report	Presented in Appendices 2 and 3 containing historical mapping and records of environmental and geological information for the surrounding area.
British Geological Survey (BGS)	BGS 1:50,000 scale Geological Map No. 77, Huddersfield (Bedrock & Drift editions) and the BGS Geoindex website were consulted for geological information relating to the Site and surrounding area.
The Coal Authority	Consultants Coal Mining Report, Ref. 51002275888001 (May 2020)
WSP	Land At Fenay Bridge, Combined Phase I and Phase II Ground Risk Appraisal, produced for Farnley Estates Ltd & John Radcliffe and Sons (Holdings) Ltd (October 2017)

1.5 Limitations

- 1.5.1 The recommendations presented in this report are based on the findings of the available information reviewed when compiling the Phase I Geo-environmental Assessment.
- 1.5.2 Ecus cannot be held responsible for any recommendations or conclusions based on the published information if it is later proven to be inaccurate.
- 1.5.3 It should also be noted that there may be other conditions prevailing on the Site which are not disclosed by the available information and therefore could not be taken into account when writing this report. Ecus cannot be responsible for unrecorded information.
- 1.5.4 The conclusions and recommendations of this report cannot be guaranteed to gain regulatory approval. This report should be passed to the relevant regulatory authorities for their comment and approval prior to undertaking any works on the Site if it is required as part of a Planning Application.

2. The Site

2.1 Location and Current Condition

- 2.1.1 The Site is approximately 3.3 hectares in area and comprises a parcel of disused former agricultural land off Penistone Road, Fenay Bridge. Figure 1 shows the location of the Site which centres on National Grid Reference E: 418740, N: 414470
- 2.1.2 A site walkover survey was carried out on 1st May 2020. Figure 2 shows the current layout of the Site and photographs of the Site are presented in Appendix 1.

2.2 Site Description

- 2.2.1 At the time of the walkover survey the Site comprised an unoccupied field. (Photos 4, 5, 7, 8, 11, 12, 13)
- 2.2.2 The Site was bound to the north and west by stone walls and to the south and east by wooden fencing.
- 2.2.3 Two borehole covers were observed on Site to the north east and south east of the Site. (Photo 6 and 10)
- 2.2.4 A large, mature tree was observed in the south east of the Site. (Photo 9)
- 2.2.5 A gas governor with related infrastructure was located at the north west boundary of the Site. Pipeline markers indicate that underground services do not enter the Site. (Photo 1 and 2)
- 2.2.6 No obvious visual or olfactory signs of potential contamination were identified during the walkover survey.

2.3 Topography

- 2.3.1 The Site sloped steeply up from approximately 86 m Above Ordnance Datum (AOD) at the western boundary to approximately 94 m AOD in the north east of the Site and 99 m AOD in the south east of the Site.

2.4 Access

- 2.4.1 Vehicular and pedestrian access onto the Site are possible from north west off Rowley Lane (Photo 1).

2.5 Underground Structures and Services

- 2.5.1 A gas governor, pipeline marker and service valve marker were observed at the north west boundary of the Site. Underground services were also observed along the western boundary of the Site, Penistone Road. (Photos 1 to 3).
- 2.5.2 No evidence of other underground services was observed during the site walkover survey and there was no evidence of underground services on Site.

2.6 Surrounding Land Use

- 2.6.1 The Site is situated on the southern edge of the village of Fenay Bridge with residential properties located to the north and east, a works to the south and sporadic residual properties to the west.

3. Historical Setting

3.1 Historical Land Use

- 3.1.1 Historical Ordnance Survey mapping was obtained by commissioning a Landmark Envirocheck report for the Site.
- 3.1.2 The historical maps are presented in Appendix 2. A description of the historical use of the Site is presented in Table 2, along with a summary of surrounding land uses considered to have the potential to influence the contamination potential of the Site.

Table 2: Summary of Historical Land Use (all distances are approximate)

Map Date	Land Use within the Site Boundary	Potentially Significant Surrounding Land Use
1854 - 1855	The Site is shown as undeveloped. A gravel pit is shown along the western boundary of the Site.	Rowley Mill is located 50 m south of the Site. The Fenay Beck is located 100 m south west of the Site and Dogley Lane Mill is located 300 m south west of the Site. Rowley Quarry (sandstone) is located 300 m north east of the Site and several further sandstone quarries are located between 500 m and 800 m north and north east of the Site.
1893 - 1894	The gravel pit is no longer shown.	A railway line has been constructed along the eastern boundary of the Site and Rowley Mill is located 50 m south of the Site. An air shaft is shown 150 m north east of the Site and a Fireworks Manufactory 350 m north east of the Site.
1906 - 1908	No changes shown.	No significant change shown.
1916 - 1932	No changes shown.	Victoria Colliery, including a tank and railway sidings, is located 50 m north east of the Site.
1933 - 1938	No changes shown.	Woodsome Colliery and Woodsome Brick Works are shown 100 m to 250 m east and south east of the Site.
1948	No changes shown.	No significant changes shown.
1955 - 1956	No changes shown.	No significant changes shown.
1960 - 1968	No changes shown.	Victoria Colliery and Woodsome Colliery are no longer shown. Residential properties have been constructed immediately north of the Site.
1971 - 1992	No changes shown.	Residential properties have been constructed within 100 m north east of the Site and the railway line, located along the eastern boundary of the Site, is shown as dismantled.
1992 - 1993	No changes shown.	Residential properties have constructed within 100 m east of the Site.

Map Date	Land Use within the Site Boundary	Potentially Significant Surrounding Land Use
2003 - 2020	No changes shown.	No significant changes shown.

3.2 Summary of Historical Land Use

- 3.2.1 The Site is shown to have remained undeveloped since the earliest available map dated 1854. A gravel pit is shown along the western boundary of the Site on mapping dated 1854 but appears to have been infilled by 1893.
- 3.2.2 The historical maps indicate that past industrial land uses within proximity to the Site include a railway line, mills and collieries.

4. Environmental Searches

4.1 Pollution Incidents

- 4.1.1 The Landmark Envirocheck report records seven pollution incidents to controlled waters within 250 m of the Site. The nearest incident is recorded 48 m south of the Site and was a Category 2 (Significant) Incident to a tributary of the Fenay Beck involving raw sewage.
- 4.1.2 No prosecutions relating to authorised processes or substantiated pollution incidents are recorded within 500 m of the Site.
- 4.1.3 No sites deemed as Contaminated Land under Part 2A of the Environmental Protection Act 1990 are recorded within 500 m of the Site.

4.2 Discharge Consents

- 4.2.1 The Envirocheck report lists one record for a licensed discharge consent to surface water within 250 m of the Site. The discharge consent is located 200 m south-east of the Site and is for trade discharges (cooling waters) into the Beldon Brook.
- 4.2.2 Within 250 m of the Site, no records for any Water Industry Referrals (potential harmful discharges to the public sewer) have been highlighted.

4.3 Landfill Sites and Waste Management Licences

- 4.3.1 The Envirocheck report does not identify any recorded active or historical landfill sites located within 250 m of the Site.
- 4.3.2 No entries for waste management facilities are recorded within 250 m of the Site within the Envirocheck report.

4.4 Potentially Infilled Land

- 4.4.1 The Envirocheck report identifies an area of potentially infilled land located along the western boundary of the Site. A second large area of potentially infilled ground is shown between 50 m and 250 m east of the Site.

4.5 Authorised Activities

- 4.5.1 The Envirocheck report does not list any records for authorised activities within 500 m of the Site.

4.6 Hazardous Substances

- 4.6.1 The Envirocheck report does not record any Control of Major Accident Hazards (COMAH) sites, Planning Hazardous Substances Consents or Enforcements, Explosive Sites, Notification of Installations Handling Hazardous Substance (NIHHS) sites within 1 km of the Site.

4.7 Industrial Land Uses

- 4.7.1 Six entries for Contemporary Trade Entries (potentially contaminative current and historical land uses) are recorded within 250 m of the Site. The closest record is located 55 m south-west of the Site and relates to Paxman Coolers Ltd, a medical equipment manufacturer.
- 4.7.2 There are no fuel sites recorded within the Envirocheck report within 500 m of the Site and the Envirocheck report does not identify any gas pipelines or high voltage underground electrical cables within 500 m of the Site.

4.8 Environmentally Sensitive Land Uses

- 4.8.1 The Envirocheck report indicates that the Site is located within an area of adopted

Green Belt.

4.9 Radon

4.9.1 The Envirocheck report identifies the Site as being in an intermediate probability radon area where between 1 % and 3 % of homes are estimated to be at or above the designated Action Level.

4.9.2 Radon protection measures are not required within any new buildings.

4.10 Flood Risk

4.10.1 The Site is shown to be within Flood Zone 1 and has a less than 1 in 1,000 annual probability of river or sea flooding.

4.10.2 According to the Envirocheck report the British Geological Survey (BGS) indicates that the Site is located within an area where there is potential for groundwater flooding to occur in properties situated below ground level and an area of limited potential of groundwater flooding occurring at the surface.

5. Geology and Hydrogeology

5.1 General

- 5.1.1 The geological map for the area, BGS Sheet 77 (Huddersfield) at 1:50,000 scale, has been studied to infer the likely geology of the Site and surrounding area. The Envirocheck report also provides information on the anticipated geology and hydrogeology of the Site (Appendix 3).

5.2 Superficial and Artificial Deposits

- 5.2.1 Superficial deposits comprising alluvium are shown to underlie the north-western corner of the Site.
- 5.2.2 No artificial Made Ground deposits are recorded to underlie the Site, however an area of infilled ground is shown 5 m east of the Site.

5.3 Solid Geology

- 5.3.1 The solid strata shown underlying the Site are the Pennine Lower Coal Measures, described as sandstone, mudstone and siltstone of Upper Carboniferous age. Locally the strata is shown to dip 5° to the east.
- 5.3.2 The Better Bed coal seam is shown to outcrop 30 m east of the Site.

5.4 Hydrogeology

- 5.4.1 The superficial deposits and the bedrock underlying the Site are both classified by the Environment Agency as a Secondary A aquifer. The EA describes these as permeable rocks or soils 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.
- 5.4.2 The Site is not within a groundwater Source Protection Zone.
- 5.4.3 There are seven active licensed groundwater abstractions within 1 km of the Site. The nearest is located 74 m south of the Site at Springwood Engineering Co Ltd and is for the abstraction of 286 m³ of water daily for general use.

5.5 Hydrology

- 5.5.1 The Envirocheck report records a surface water feature 103 m west of the Site. This has been identified as Fenay Beck.
- 5.5.2 There are no active licensed surface water abstractions within 1 km of the Site.

5.6 Archive Investigation Information

- 5.6.1 Twenty archived BGS boreholes are located within 100 m south and east of the Site.
- 5.6.2 The boreholes generally recorded Made Ground between depths of 1.6 m and 2.4 m bgl overlying clay to a maximum depth of 3.3 m bgl. Sandstone was encountered between depths of 2.5 m and 4.7 m bgl overlying mudstone and shale to a maximum depth of 9.6 m bgl. Coal was encountered between depths of 8.9 m and 10.1 m bgl and a second seam between 10.1 m and 11.3 m bgl.
- 5.6.3 Several of the boreholes recorded groundwater between depths of 8.0 m and 10.0 m bgl.
- 5.6.4 No other archive investigation information is available that may provide further indication of the likely ground conditions beneath the Site.

6. Mining Risk & Ground Stability

6.1 Coal Mining Risk Assessment

Coal Authority Data Review

- 6.1.1 A Coal Authority Consultants Mining Report (Appendix 4) has been obtained for the Site and has been reviewed alongside the Coal Authority's online Interactive Map Viewer¹
- 6.1.2 The report shows that the eastern edge of the Site is located within a Coal Mining Development High Risk Area, with a conjectured coal outcrop (the Better Bed coal) overlapping the eastern part of the Site by up to 35 m.
- 6.1.3 In summary the information indicates that:
- There are no records of past shallow (<30 m below ground level) coal mining beneath the Site, and considers that there are no probable unrecorded shallow workings beneath the Site;
 - Deep mining has occurred within the Halifax Hard and Halifax Soft coal seams beneath the Site at depths between 201 m and 224 m bgl;
 - No mine shafts are recorded on the Site but the report shows two mine adits and five mine shafts located between c. 50 m to 100 m east and north-east of the Site;
 - The Better Bed coal seam outcrops on the Site and is considered to be of workable thickness;
 - The Site is not within the boundary of, or within influence of, any past, present or planned future opencast coal mining; and
 - The Coal Authority does not have any records of any subsidence damage or mine gas emissions on the site since 31st October 1994.
- 6.1.4 Based on the above information, the deep mining is at sufficient depth where it is not considered to pose a risk to surface development due to collapse or subsidence. The nearest mine entries do not lie immediately adjacent to the Site boundary and are also unlikely to pose a risk to development on the Site.
- 6.1.5 The Better Bed coal is shown to outcrop on Site, is considered to be of workable thickness and dips to the east. However, this is in contrast to the published BGS data that shows the outcrop to lie 30 m east of the Site. A comparison of the BGS mapping with the Coal Authority's Interactive Map Viewer provides further insight. The Coal Authority record a band approximately 40 m wide for the outcrop position, whereas the BGS show the outcrop position located at the 'down dip' side of the Coal Authority's band.
- 6.1.6 The discrepancy between the BGS and Coal Authority data is likely down to the map scales used (1:50,000) and a more conservative (risk based) approach taken by the Coal Authority. Intrusive ground investigation is therefore the only method of resolving the discrepancy and such an investigation was undertaken by WSP in 2017 (Appendix 5).

Coal Mining Investigation

- 6.1.7 The WSP 2017 ground investigation included 3no. dynamically sampled boreholes with rotary core follow-on. The boreholes, referenced BHE1, BHE2 and BHE3, reached depths of 21 to 21.5m below ground level (bgl) and recorded sandstone with

¹<http://mapapps2.bgs.ac.uk/coalauthority/home.html>. Accessed 14th May 2020.

subordinate siltstone bands to between 8.10 and 9.60 m bgl, overlying mudstone to the base of the boreholes. The borehole logs and location plan are contained within the WSP report (Appendix 5)

- 6.1.8 None of the boreholes recorded any coal, loss of flush or voiding that could otherwise indicate the presence of shallow abandoned mine workings. The depth of the boreholes is considered more than sufficient to identify the presence of any shallow coal seams in the eastern portion of the Site if they were present.
- 6.1.9 On the basis of the ground investigation data available, there does not appear to be any shallow coal present beneath the Site.

Conclusion

- 6.1.10 The available data indicates that there is no coal present on site. While there is a possibility that it has been historically mined out, no evidence for this is apparent from the site-specific boreholes undertaken. The most likely explanation is that the BGS mapping is correct in its positioning of the coal outcrop to the east of the Site and that there is no shallow coal or shallow abandoned mine workings present beneath the Site.
- 6.1.11 Based on the available information, the risk posed by shallow abandoned mine workings is considered to be 'low'.

6.2 Other Mineral Extraction

- 6.2.1 The Envirocheck report records a single historical surface working feature on the Site. This relates to the Rowley Bottom Gravel Pit, located along the western edge of the Site. No historical underground working are recorded on the Site.
- 6.2.2 The risk of unrecorded mining affecting the Site is, therefore, considered to be moderate/low.

6.3 Natural Ground Hazards

- 6.3.1 The Envirocheck Mining and Ground Stability report includes information regarding natural ground stability hazards.
- 6.3.2 The risk of shrink-swell clays, landslides, dissolution of soluble rocks, compressible deposits, collapsible deposits and running sands affecting the Site are listed as negligible to low within the Envirocheck report.
- 6.3.3 The risk of compressible deposits is shown as moderate within the north-western corner of the Site. This is associated with the alluvial superficial deposits shown to underlie this part of the Site.

7. Geotechnical Considerations

7.1 General

- 7.1.1 The recommendations given below are for outline purposes only, based on the available geological information and the anticipated ground conditions at the Site.
- 7.1.2 Intrusive ground investigation would be recommended to confirm the actual ground conditions at any proposed development locations prior to geotechnical design.

7.2 Mining and Quarrying

- 7.2.1 No further investigation or mitigation measures are deemed necessary regarding the potential for any shallow mine workings to affect the surface stability of the Site.
- 7.2.2 A historical gravel pit is shown along the western boundary of the Site therefore the risk of any unrecorded quarrying affecting the Site is considered to be moderate/low.

7.3 Foundations

- 7.3.1 The most suitable foundation type for any proposed structures will be dependent on the type and loading of the structure and ground conditions present.
- 7.3.2 It is assumed that conventional shallow strip footings will probably be achievable at the Site, founded either within the superficial deposits or within the underlying bedrock.
- 7.3.3 An intrusive ground investigation should be undertaken to assess the potential for any weak ground, depth of any Made Ground which would be unsuitable for founding in, and settlement characteristics of any superficial soils.

7.4 Floor Slabs

- 7.4.1 Without knowledge of the ground conditions fully suspended floors would be recommended at this stage.
- 7.4.2 This could be reassessed on completion of an intrusive ground investigation and associated geotechnical assessment of existing soils.

7.5 Highways and Hard Standing

- 7.5.1 Due to the unknown ground conditions across the Site, full construction thickness for a subgrade with a maximum 2.5 % California Bearing Ratio (CBR) should be assumed at this stage for any highways or pavement areas. This may be improved upon or refined through intrusive ground investigation and testing.

7.6 Excavations

- 7.6.1 Temporary support may be required for any excavations in any Made Ground or superficial deposits encountered but this is likely to depend upon the nature and quality of engineering of the underlying earthworks.
- 7.6.2 Excavations in residual soils or weathered bedrock would be expected to remain stable in the short term. This should be reassessed following an intrusive ground investigation.

7.7 Soakaway Drainage

- 7.7.1 The underlying soils and bedrock may provide some potential for soakaway drainage at the Site. However, the particular soil composition can impact on the effectiveness of a soakaway and on-site testing to BRE 365 (2016) is recommended to obtain

design soil infiltration values.

7.8 Ground Stability

- 7.8.1 No significant ground stability issues with regards to shallow mining have been identified.

7.9 Potentially Aggressive Soils

- 7.9.1 Aggressive soil conditions in relation to concrete protection are not anticipated based upon the known geology.

8. Preliminary Conceptual Site Model

8.1 General

- 8.1.1 The preliminary Conceptual Site Model (CSM) uses the desk study findings and an understanding of the way that potential contaminants are likely to behave in the soil, rock and groundwater environment to identify possible pollutant linkages between potential contaminants sources and the likely critical receptor.
- 8.1.2 Definitions of the three elements of the source-pathway-receptor model are defined in Table 3.

Table 3: Source-Pathway-Receptor Definitions

Source	A substance that is above, on or under land and could pose potential harm or adversely affect an identified receptor, or cause pollution to controlled waters.
Pathway	The physical means by which the potential contaminants may reach the receptor.
Receptor	The identified element (either animate or inanimate) that could be adversely affected by the contaminant.

- 8.1.3 It should be noted that all three of the elements in Table 3 are required for there to be a perceivable risk. Where all three elements are deemed to be present, the risk is a function of the probability of the event occurring and the potential consequence, should the event occur.
- 8.1.4 The risk classifications assigned to the conceptual model are based on the terminology for consequence and probability outlined in CIRIA C552, with a summary of the resultant risk classifications summarised in Table 4.

Table 4: Summary of risk classification

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High likelihood	Very High risk	High risk	Moderate risk	Moderate/low risk
	Likely	High risk	Moderate risk	Moderate/low risk	Low risk
	Low likelihood	Moderate risk	Moderate/low risk	Low risk	Very low risk
	Unlikely	Moderate/low risk	Low risk	Very low risk	Very low risk

- 8.1.5 For the purpose of the CSM, groups of contaminants that (in most circumstances) behave in a similar way in the environment have been chosen and linked to potential pathways and receptors.
- 8.1.6 It should be noted that not all the potential contaminants have been included in the CSM, only those that are considered potentially significant at this stage.

- 8.1.7 As further up-to-date site specific information becomes available the CSM should be updated accordingly.

8.2 Potential Migration Pathways

- 8.2.1 A summary of potential pathways and receptors is given in Table 5.
- 8.2.2 Some source-pathway-receptor linkages mentioned in the table are not considered likely to be active at the site for the reasons specified in the Comments column.

Table 5: Potential Pathways and Possible Receptors

Potential Pathway	Potential Receptor	Comments
Exposure via dermal contact with soil	Future residents and construction workers.	The Site is proposed to be developed with residential properties with private gardens. Exposure to contaminated soils, if present, could occur in soft landscaped and garden areas via these pathways
Exposure via direct ingestion of soil indoors and outdoors	Future residents and construction workers.	
Exposure via inhalation of contaminated dusts indoors and outdoors	Future residents and construction workers.	
Exposure via consumption of fruit and vegetables grown on the site.	Future residents.	
Intake via inhalation of ground gases and vapours (indoors and outdoors). Explosion of methane	Future residents and construction workers.	No historical landfill sites are recorded within 250 m of the Site. Areas of potentially infilled land have been identified on the Site and within 250 m of the Site.
Migration through soil / groundwater	Controlled waters; groundwater.	Soluble contaminants may impact on groundwater underlying the Site. However, it is unlikely that significant quantities of contaminants are present on the Site.
	Controlled waters; surface water.	The Fenay Beck is located 103 m west of the Site.
	Off-site residents.	Significant contamination that could migrate off-site to affect adjoining residents is considered unlikely to be present on the Site.

8.3 Critical Receptors

- 8.3.1 Using the information contained in Table 5, the CSM has identified the most sensitive receptor for each potential contaminant source and the critical pathway between the source and receptor.

8.3.2 The Site is proposed to be developed with residential properties with private gardens.

8.4 Conceptual Site Model

8.4.1 At this stage the CSM has determined whether a potentially significant risk exists that would warrant further investigation to refine the risks to the critical receptor. See Table 6. Further discussion of the potential risks highlighted is given in Section 9.

8.4.2 Where further investigation is deemed to be required, recommendations are given at the end of this report to better define the potential risks.

8.4.3 In accordance with best practise guidance the CSM should be updated throughout the investigatory and development process to refine the risks to the critical receptors as further information becomes available.

Table 6: Preliminary Conceptual Site Model

Potential Source	Potential Hazard	Critical Pathway	Most Sensitive Receptor	Comments	Current Anticipated Risk
Made Ground	Asbestos	Inhalation of fibres	Future Residents	The Site is proposed to be developed with residential properties with private gardens. Potentially contaminated soils may be present in the area of the former gravel pit. Exposure to contaminated soils, if present, could occur in soft landscaped and garden areas.	Moderate / Low
	Metals, PAH and TPH	Ingestion of soil and indoor dust	Future Residents		Moderate / Low
	Leachable metals, PAH and TPH	Leaching / migration to groundwater	Groundwater		Low
	Ground gases	Through the ground	Future Residents		Low
Off-site Made Ground / landfills	Ground gases	Through the ground	Future Residents	No historical landfill sites are recorded within 250 m of the Site. Areas of potentially infilled land have been identified on the Site and within 250 m of the Site.	Moderate / Low
Bedrock	Radon emissions	Through the ground	Future Occupiers	No radon protection measures are required.	Very Low
N/A	Flooding	Over land flow	Future Occupiers	The Site is not shown to be within an area	Low

Potential Source	Potential Hazard	Critical Pathway	Most Sensitive Receptor	Comments	Current Anticipated Risk
				at risk of flooding.	
Invasive plants	Infestation of site	Direct contact	Future Occupiers	None identified during walkover survey. Maintain vigilance during construction.	Low

9. Environmental Assessment

9.1 Introduction

- 9.1.1 The following sections provide an indication of the potentially contaminative activities that have been carried out throughout the historical use of the Site and the surrounding land. Likely associated contaminants are also identified. It should be noted that the activities identified may not necessarily have resulted in contamination of the ground.

9.2 On-Site Contamination

- 9.2.1 The Site is shown to have remained undeveloped since the earliest available map dated 1854. A gravel pit is shown along the western boundary of the Site on mapping dated 1854 but appears to have been infilled by 1893.
- 9.2.2 The Site is proposed to be developed with residential properties with private gardens. As private garden / soft-landscaped areas are proposed the risk to future site users is considered to be moderate / low.
- 9.2.3 As part of the walkover survey no visual signs of potential invasive plants were recorded. However, not seeing potential signs of invasive plants during the site walkover cannot be a guarantee that there are none present.

9.3 Off-Site Contaminants

- 9.3.1 No potentially significant off-site sources of contamination have been identified by the Phase 1 Geo-environmental Desk Study information.

9.4 Ground Gases

- 9.4.1 No historical landfill sites are recorded within 250 m of the Site. However, several areas of potentially infilled ground have been identified within 250 m of the Site and the risk posed by ground gases is considered to be moderate/low.

9.5 Controlled Waters

- 9.5.1 The Fenay Beck is located 103 m west of the Site.
- 9.5.2 The bedrock underlying the Site is classified as a Secondary A aquifer and the Site is not located within a Source Protection Zone. Therefore, groundwater resources at the Site are considered to be a moderate sensitivity environmental receptor.
- 9.5.3 There is a low probability of significant leachable or mobile contamination being present at the Site; therefore, the risk to groundwater is considered to be low.

10. Recommendations

10.1 Summary

- 10.1.1 An intrusive ground investigation is recommended in order to characterise the ground conditions across the Site and provide data for a geo-environmental and geotechnical assessment.
- 10.1.2 Statutory utilities undertakers' plans / buried utilities surveys should be obtained prior to carrying out any intrusive ground investigation.
- 10.1.3 Based on the anticipated ground conditions the most suitable means of investigation is considered to be a series of trial pits and windowless sample boreholes, to confirm the ground conditions and enable samples to be obtained for subsequent geotechnical and environmental laboratory testing.
- 10.1.4 Based on the available data ground gas monitoring is considered necessary. Selected boreholes should have ground gas monitoring wells installed upon completion, to be monitored a minimum of six times to allow the ground gas regime to be characterised.

10.2 Environmental Assessment

- 10.2.1 Any Made Ground would be considered to be the most likely source of potential contamination, therefore the environmental assessment should focus on these soils and the topsoil layer which may be stockpiled for re-use in proposed gardens.
- 10.2.2 Samples of the existing soils should be analysed for a suite of commonly occurring contaminants that may affect human-health receptors, including heavy metals, speciated PAH, Total Petroleum Hydrocarbons, pH and asbestos screening (quantitative asbestos analysis should be undertaken if any asbestos fibres or asbestos containing materials (ACMs) are identified in the soils). The analysis should be undertaken at a UKAS accredited testing laboratory, with MCERTS accredited analysis suites used where available.
- 10.2.3 If visual or olfactory evidence of other types of contamination are noted during the ground investigation, samples should be taken and analysed for these contaminants as necessary.
- 10.2.4 If any groundwater is encountered during intrusive ground investigation works the leachability of any contaminants from on-site soils may need to be assessed by means of soil leachate testing.
- 10.2.5 If off-site disposal of soils to a landfill site is likely to be required then it may be prudent to undertake Waste Acceptance Criteria (WAC) testing alongside the basic soils suites, to allow a preliminary assessment of the likely disposal route of the soils.

10.3 Geotechnical Analysis

- 10.3.1 Intrusive investigation is recommended to confirm the ground conditions and a suitable founding stratum in the locality of the proposed properties for geotechnical design purposes.
- 10.3.2 The nature of the soils encountered would determine the required scope of geotechnical testing. This would likely consist of natural moisture content testing and Atterberg Limits testing for cohesive soils, or particle size distribution testing for granular soils.
- 10.3.3 A review of Coal Authority and site-specific ground investigation data has confirmed that the risk posed by shallow abandoned mine workings is low and there is no foreseeable hazard to development on this basis.

Figures

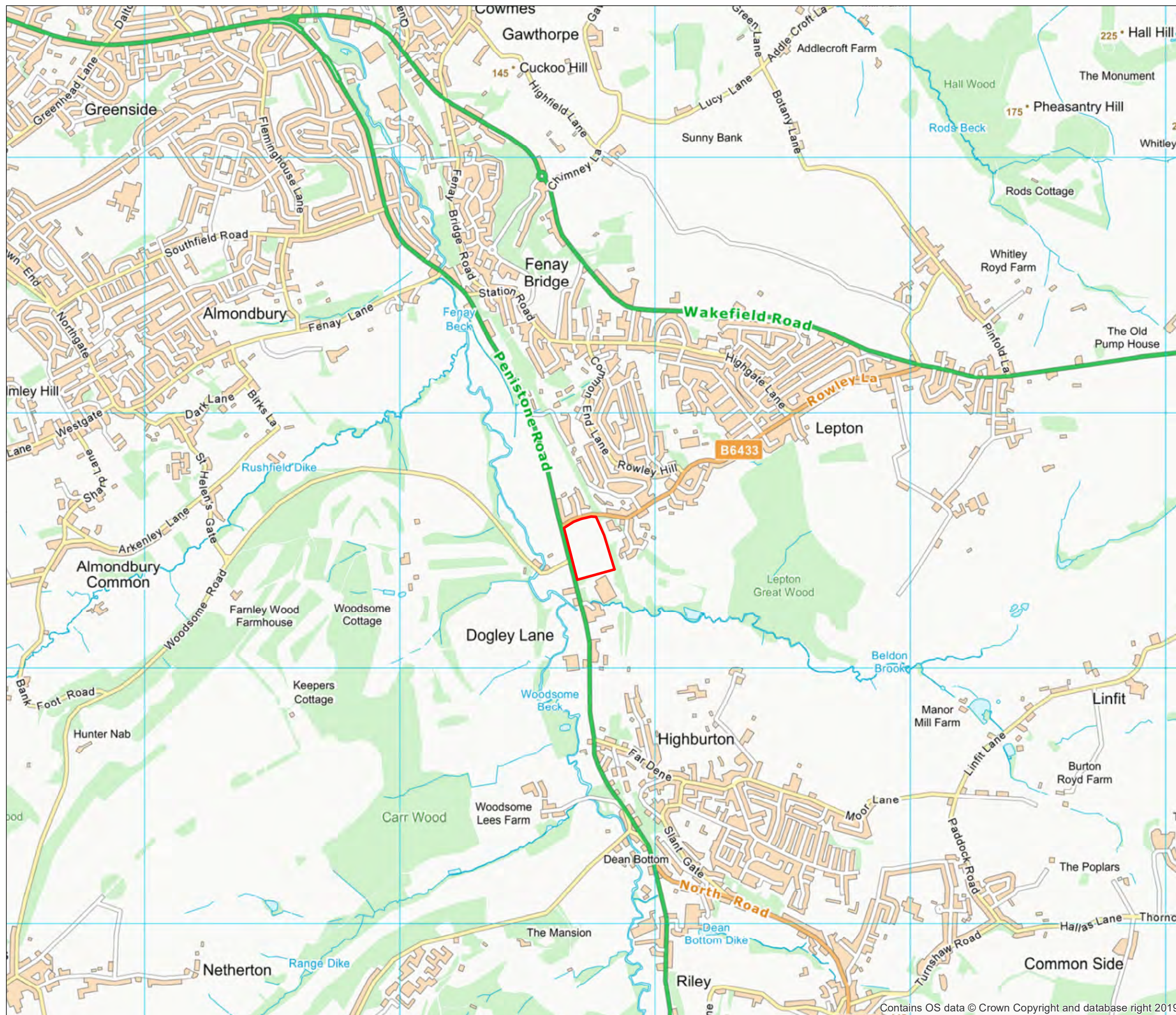
Legend

 Site Boundary

0 375 750
Metres

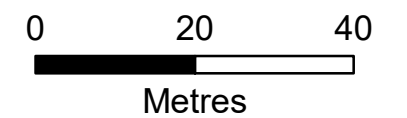
**Radcliffe Developments
(Farnley) Ltd**
Land east of Penistone Road,
Fenay Bridge
Figure: 1.0
Site Location Plan

Brook Holt 3 Blackburn Road Sheffield S61 2DW
T: 0114 2669292 www.ecusltd.co.uk



Legend

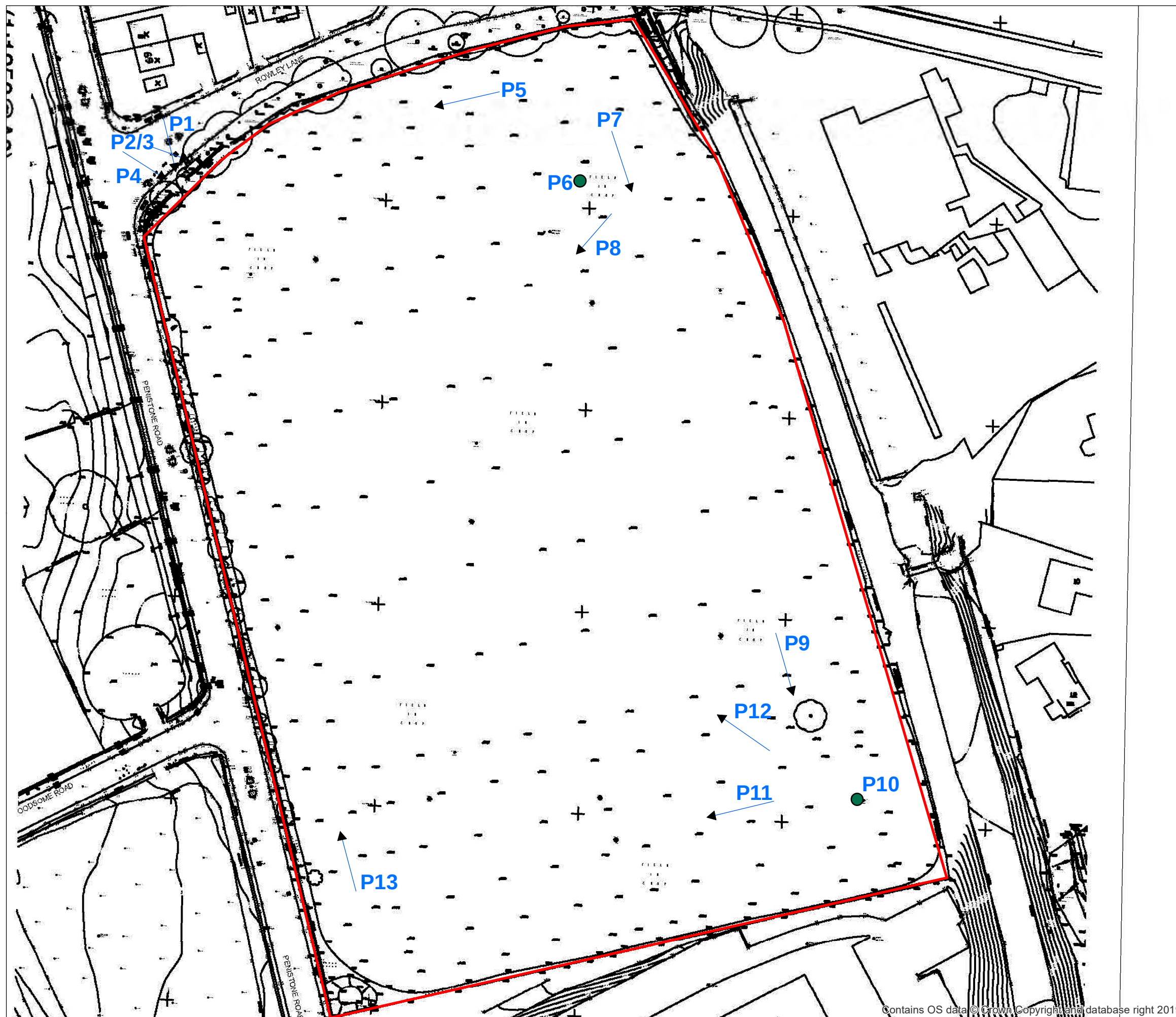
- Site Boundary
- Photo Location
- Existing Borehole



**Radcliffe Developments
(Farnley) Ltd**
Land east of Penistone Road,
Fenay Bridge

**Figure: 2.0
Site Layout Plan**

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Appendix 1: Site Walkover Photographs



Job: Phase 1 Site Investigation
Site: Penistone Road, Fenay Bridge
Ref: 14699

P1: Gas governor adjacent to the site entrance at north west corner of the Site.



Job: Phase 1 Site Investigation
Site: Penistone Road, Fenay Bridge
Ref: 14699

P2: Gas pipeline marker adjacent to the Site entrance.

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Job: Phase 1 Site Investigation
Site: Penistone Road, Fenay Bridge
Ref: 14699

P3: Service Valve marker adjacent to the Site entrance.



Job: Phase 1 Site Investigation
Site: Penistone Road, Fenay Bridge
Ref: 14699

P4: View of the Site entrance looking south east onto the Site.

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Job: Phase 1 Site Investigation
Site: Penistone Road, Fenay Bridge
Ref: 14699

P5: View looking west at northern boundary of the Site.



Job: Phase 1 Site Investigation
Site: Penistone Road, Fenay Bridge
Ref: 14699

P6: Borehole at north east of the Site.

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Job: Phase 1 Site Investigation
Site: Penistone Road, Fenay Bridge
Ref: 14699

P7: View looking south close to the eastern boundary of the Site.



Job: Phase 1 Site Investigation
Site: Penistone Road, Fenay Bridge
Ref: 14699

P8: View looking south west from the north east of the Site.

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Job: Phase 1 Site Investigation
Site: Penistone Road, Fenay Bridge
Ref: 14699

P9: Mature tree on the south east of the Site



Job: Phase 1 Site Investigation
Site: Penistone Road, Fenay Bridge
Ref: 14699

P10: Borehole on the south east of the Site.

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Job: Phase 1 Site Investigation
Site: Penistone Road, Fenay Bridge
Ref: 14699

P11: View looking west close to the southern boundary of the Site.



Job: Phase 1 Site Investigation
Site: Penistone Road, Fenay Bridge
Ref: 14699

P12: View looking north west from the south east of the Site.

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Job: Phase 1 Site Investigation
Site: Penistone Road, Fenay Bridge
Ref: 14699

P13: View looking north along the western boundary of the Site.

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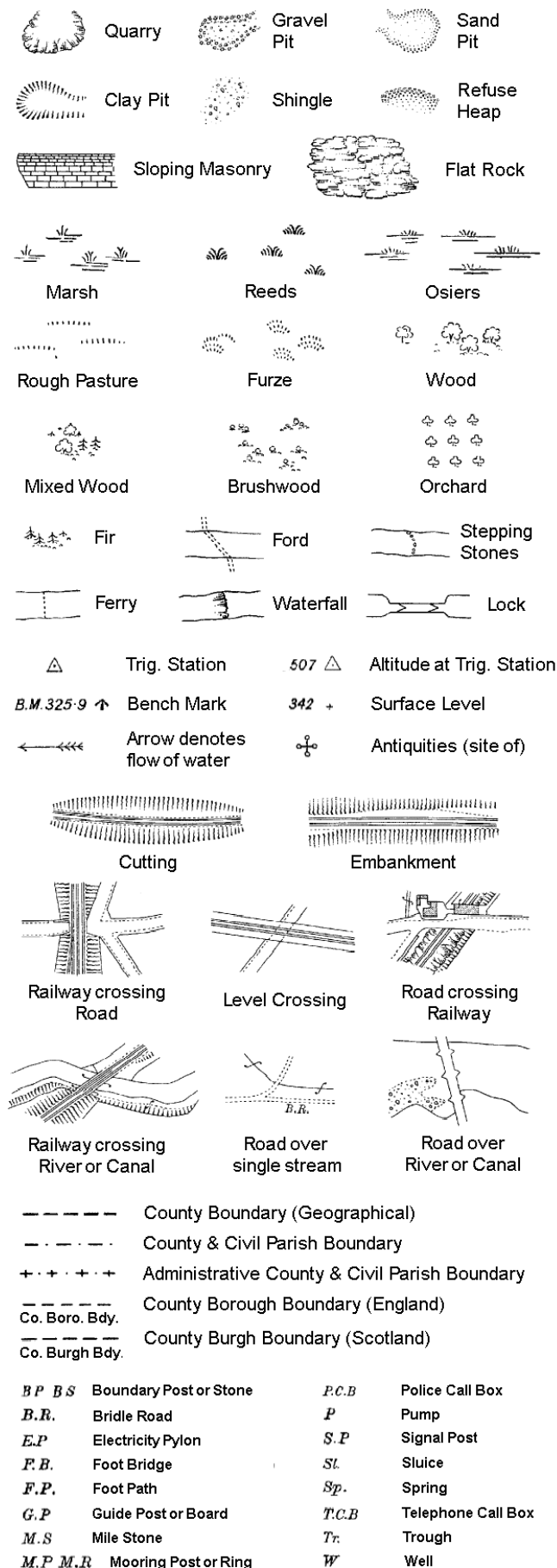


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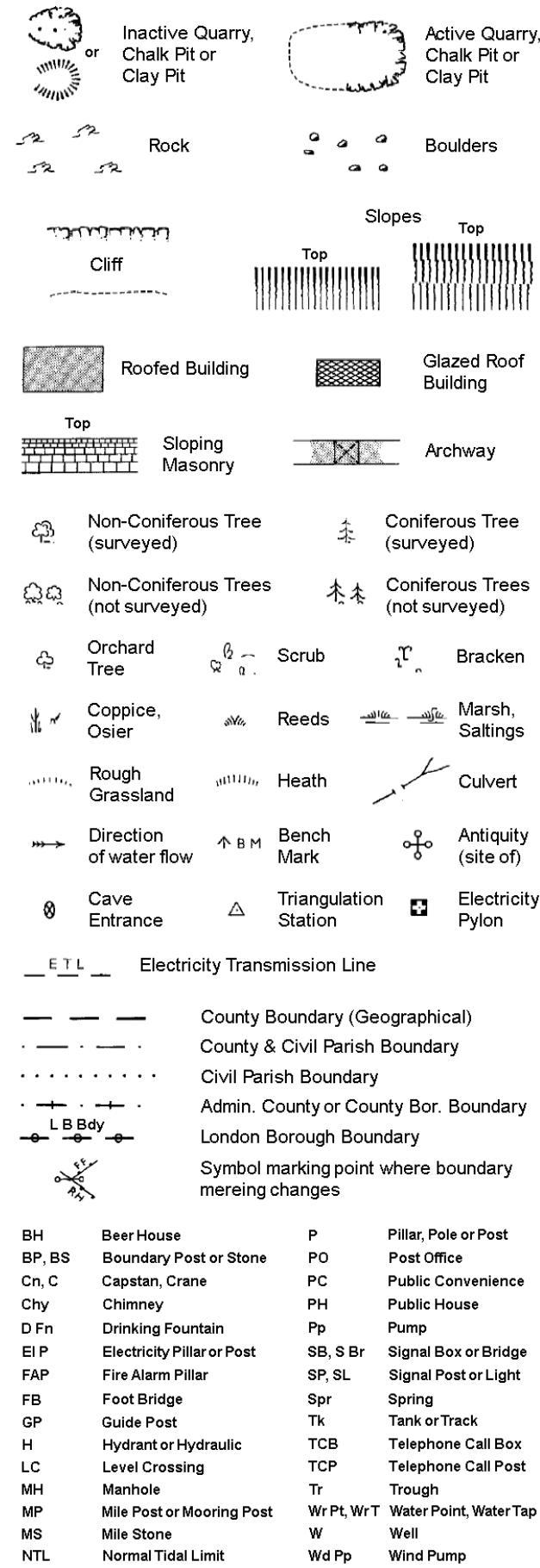
Appendix 2: Historical Maps

Historical Mapping Legends

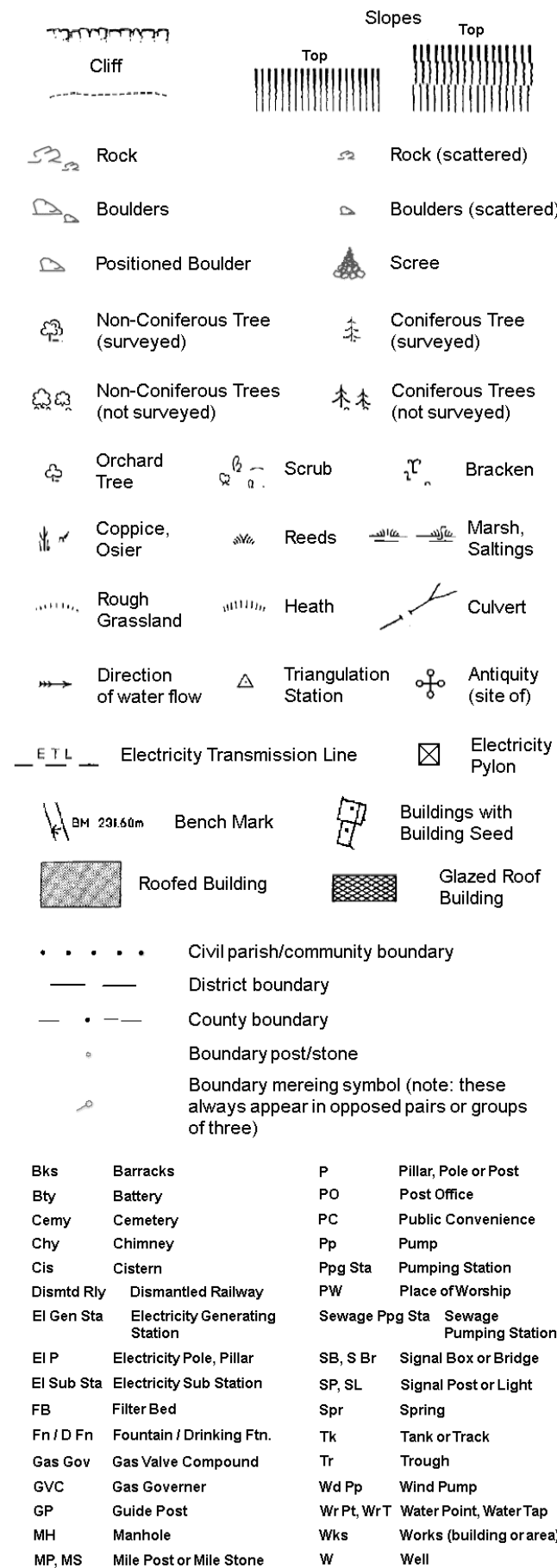
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



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



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



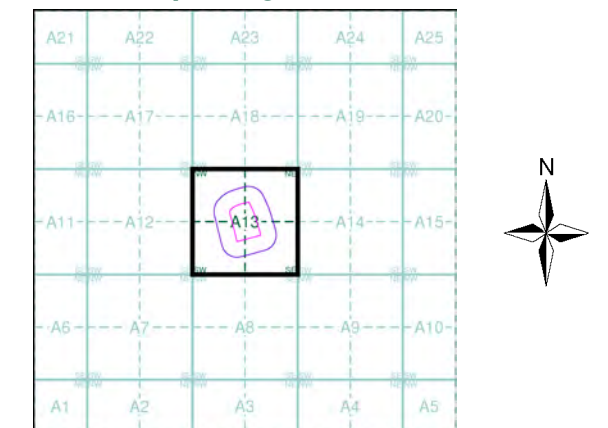
Envirocheck®

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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Yorkshire	1:2,500	1893	2
Yorkshire	1:2,500	1906	3
Yorkshire	1:2,500	1916	4
Ordnance Survey Plan	1:2,500	1961	5
Ordnance Survey Plan	1:2,500	1973	6
Ordnance Survey Plan	1:1,250	1985	7
Additional SIMs	1:1,250	1985	8
Large-Scale National Grid Data	1:1,250	1992	9
Historical Aerial Photography	1:2,500	1999	10

Historical Map - Segment A13



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National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 100

Site Details

Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD

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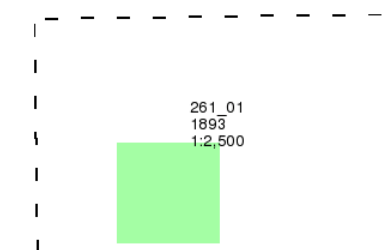
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Published 1893

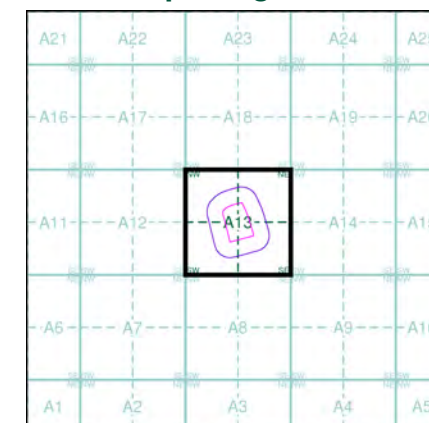
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13

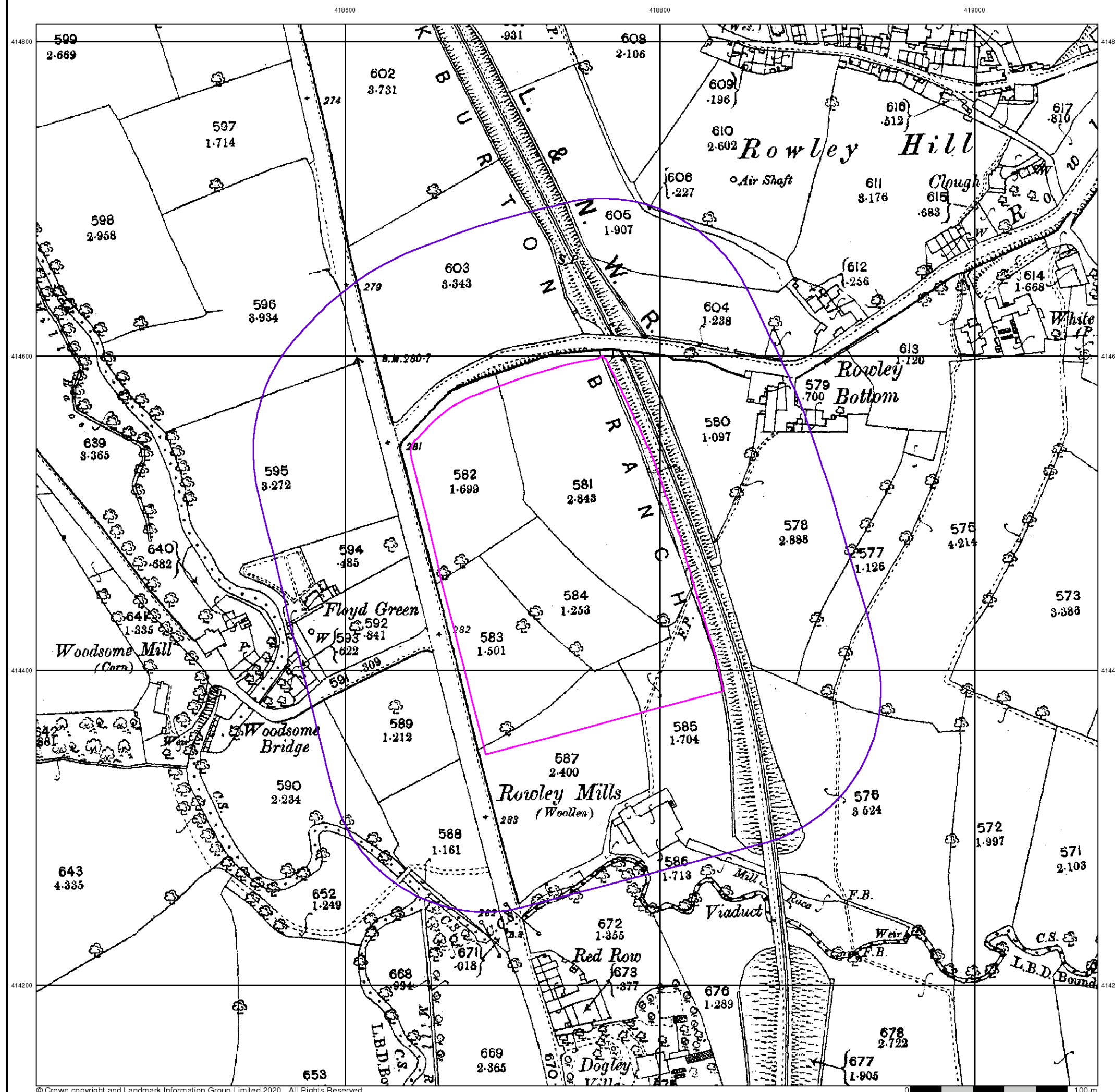


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Site Details

Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD



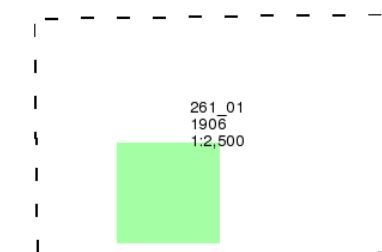
Yorkshire

Published 1906

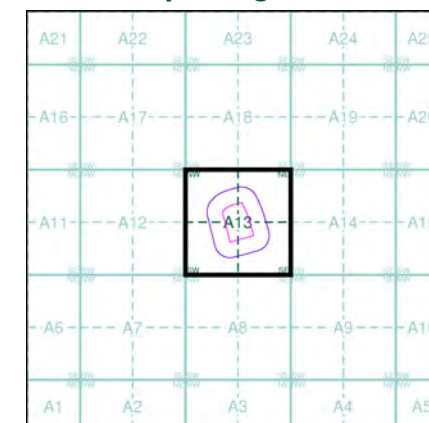
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Map Name(s) and Date(s)



Historical Map - Segment A13

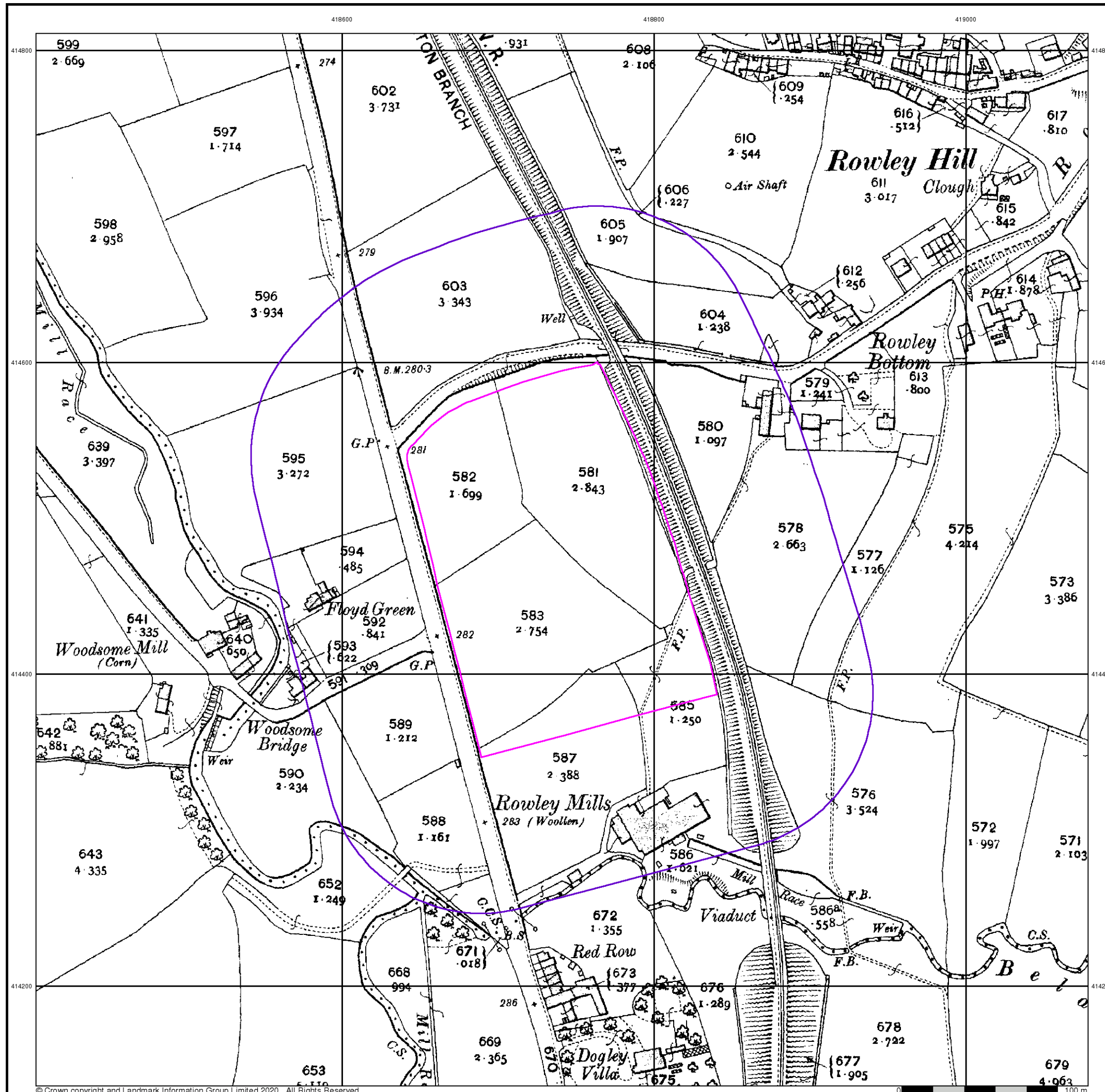


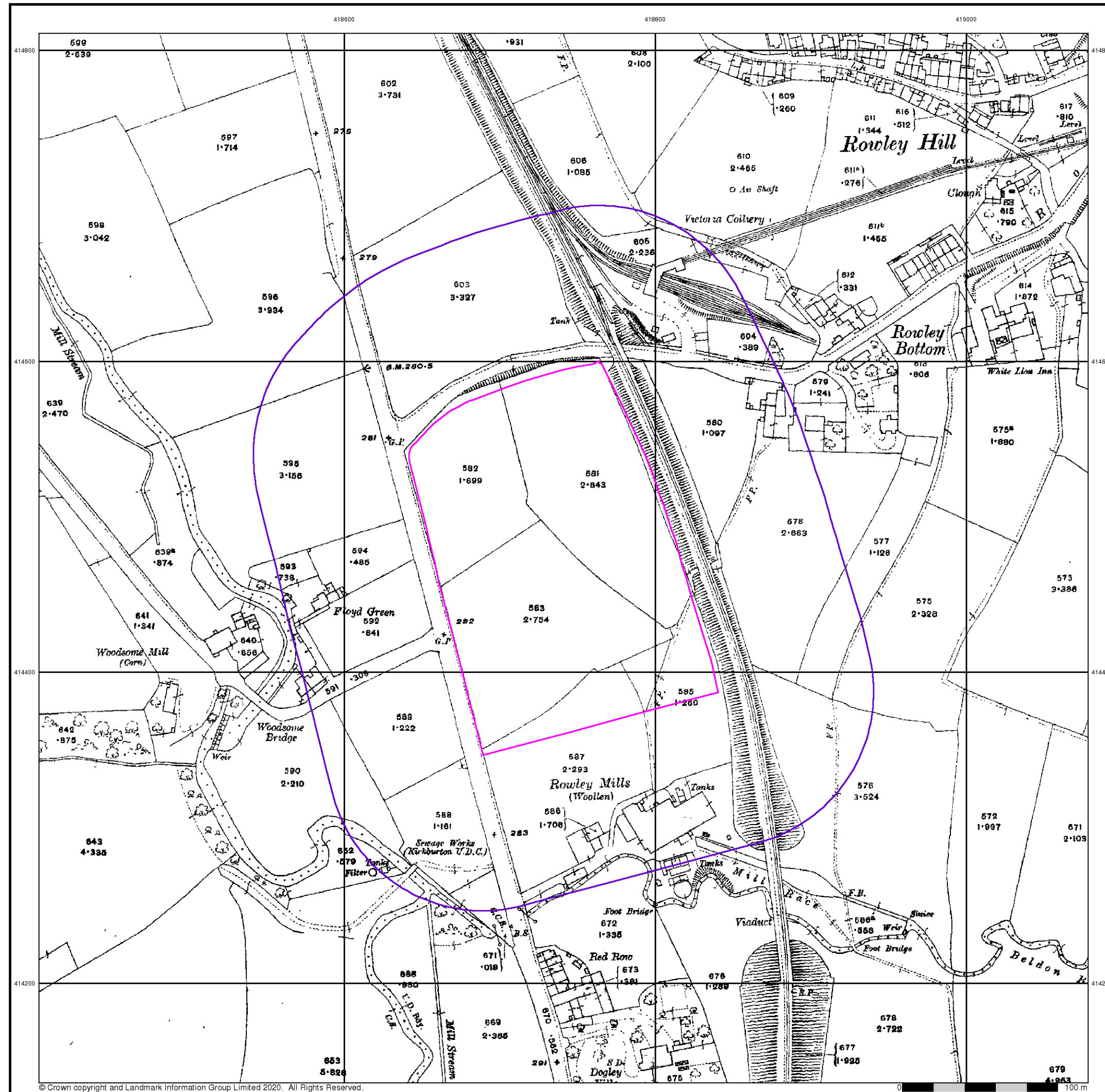
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Site Details

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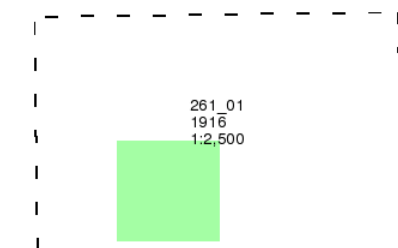
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Published 1916

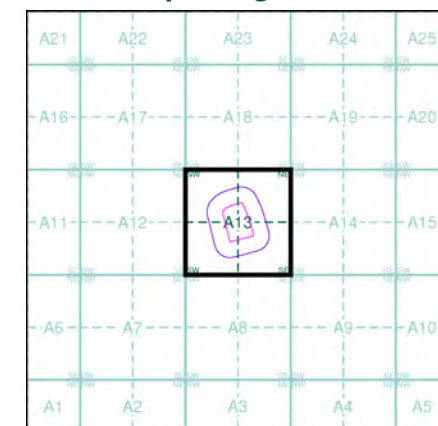
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Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

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Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
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Search Buffer (m): 100

Site Details

Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD

Ordnance Survey Plan

Published 1961

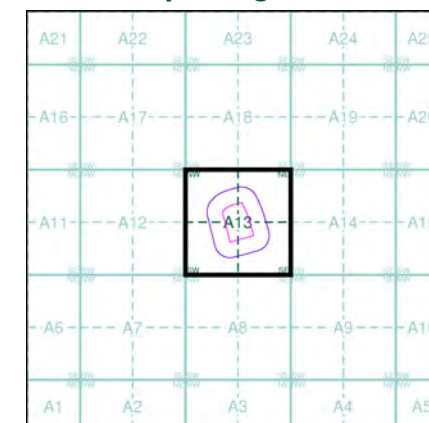
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Map Name(s) and Date(s)

SE1814 1961 1:2,500	SE1914 1961 1:2,500
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Historical Map - Segment A13

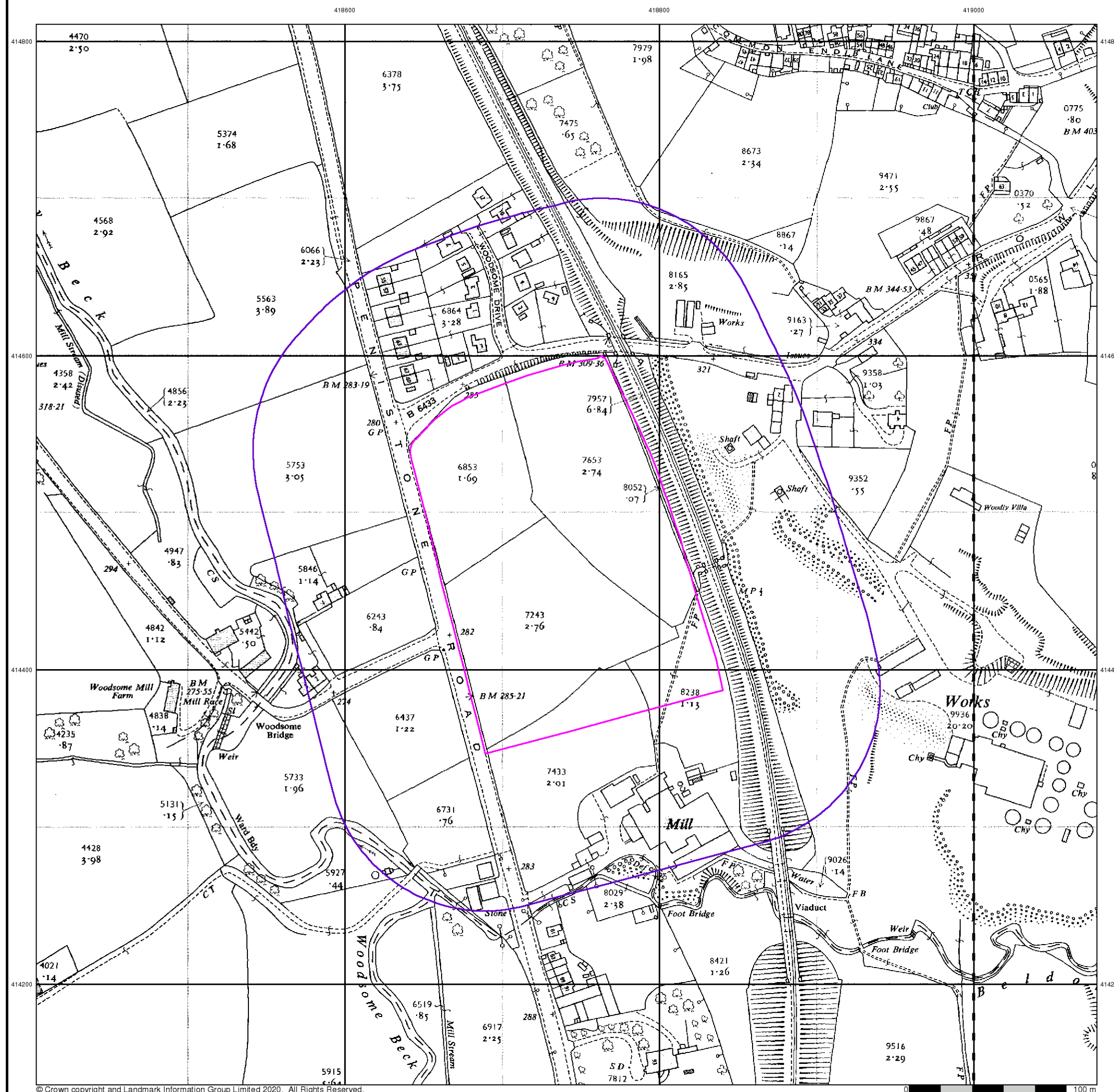


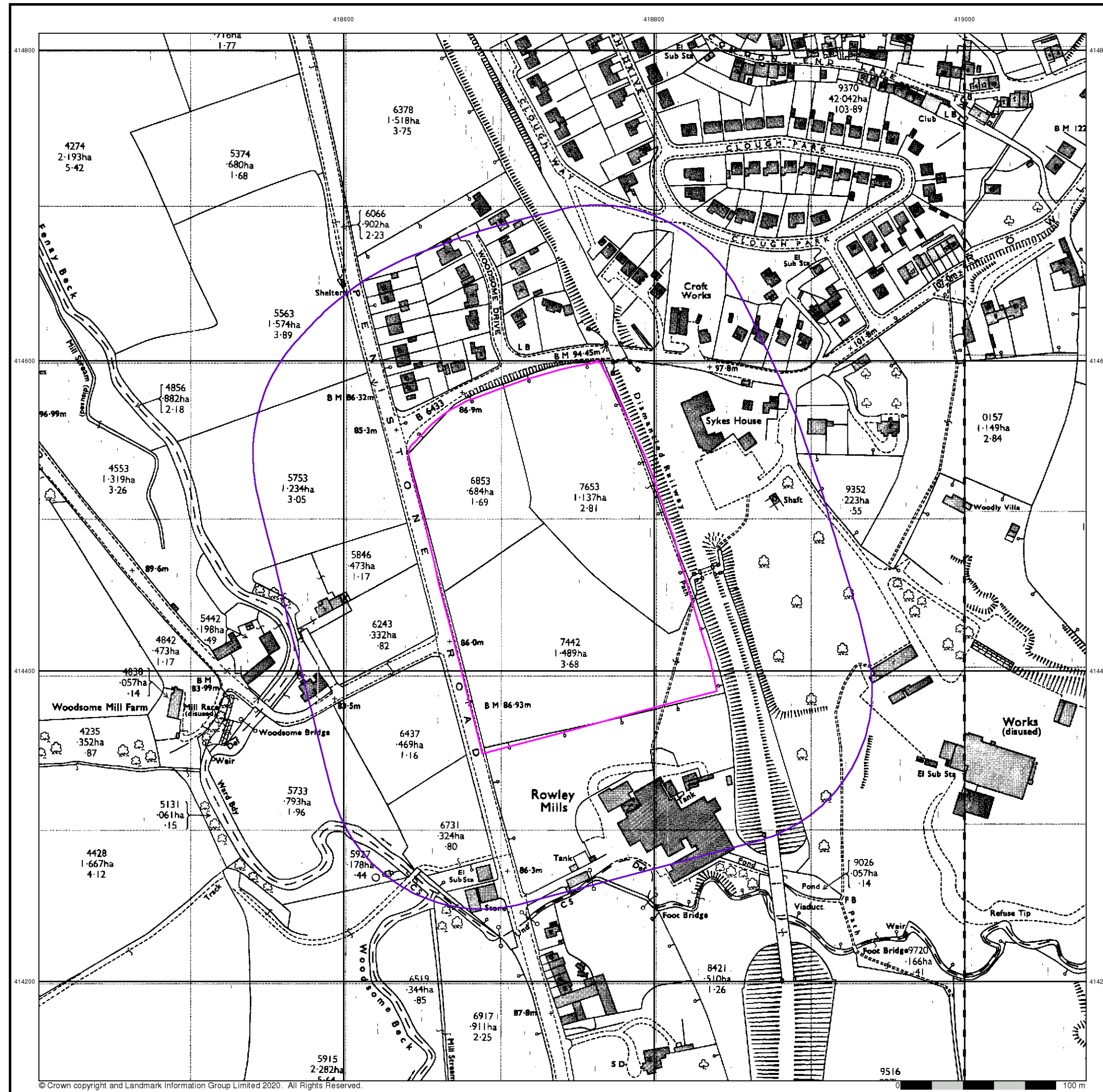
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Site Details

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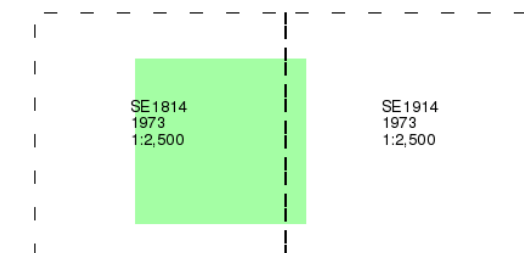
Ordnance Survey Plan

Published 1973

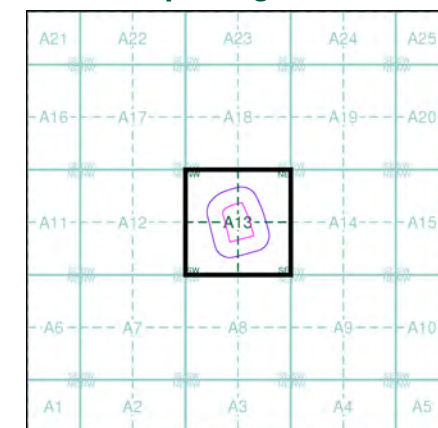
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Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 241853234_1_1
Customer Ref: 14699
National Grid Reference: 418740, 414470
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Site Area (Ha): 3.34
Search Buffer (m): 100

Site Details

Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD





Additional SIMs

Published 1985

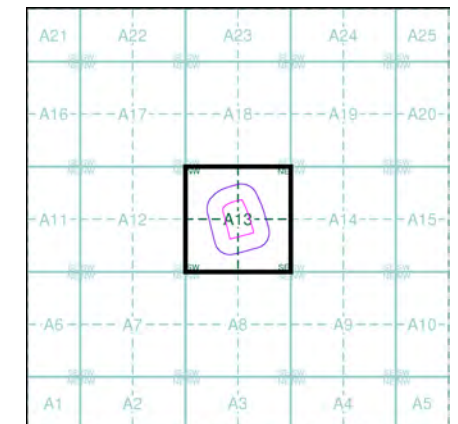
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

SE1814NE
1985
1:1,250

Historical Map - Segment A13

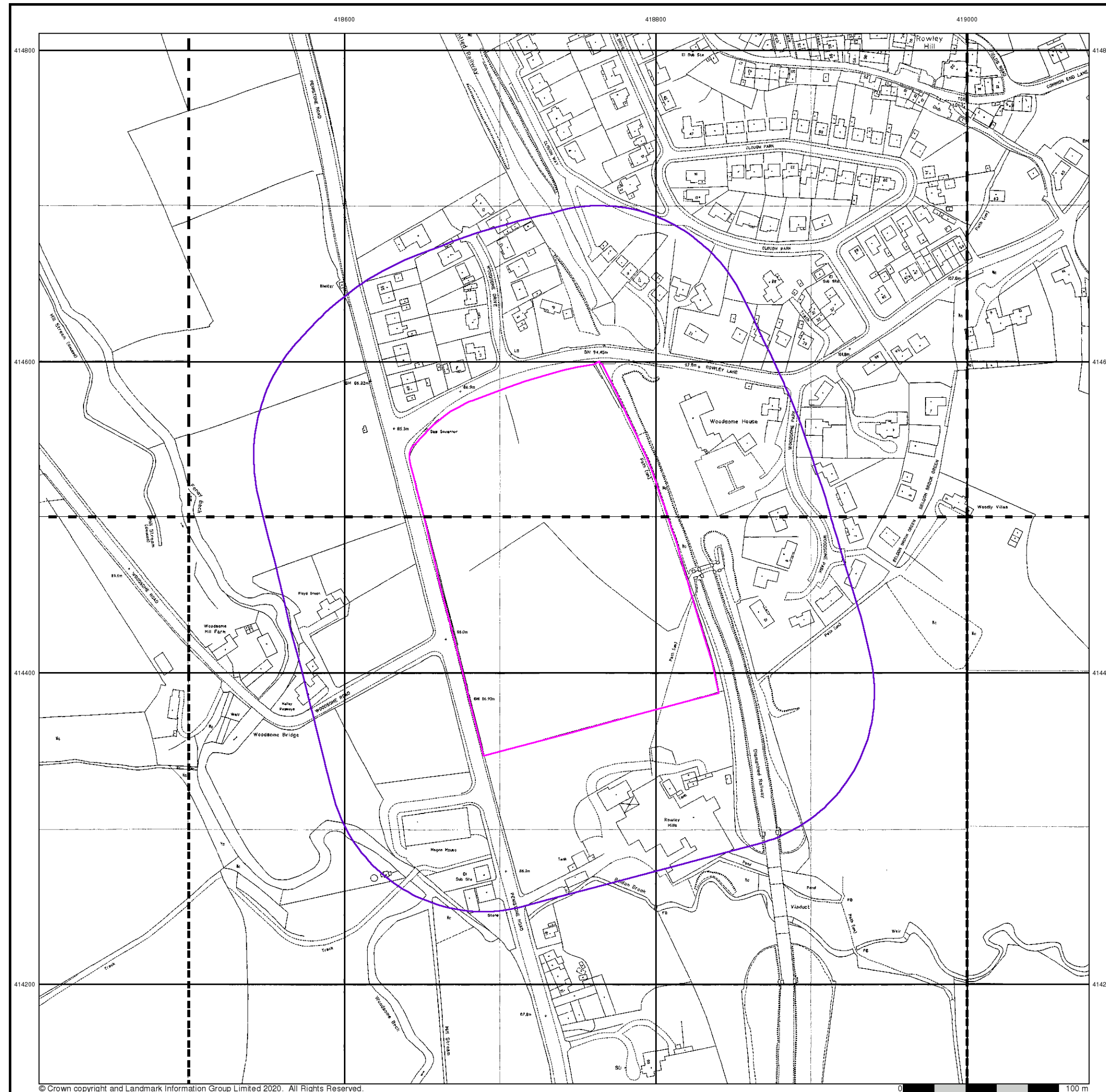


Order Details

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Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 100

Site Details

Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD



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Large-Scale National Grid Data

Published 1992

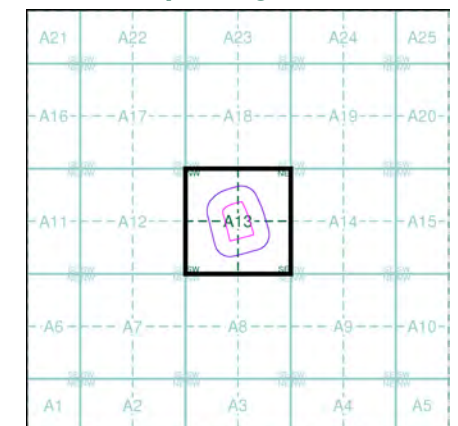
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

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1992	1992	1992
1:1,250	1:1,250	1:1,250
SE1814SW	SE1814SE	SE1914SW
1992	1992	1992
1:1,250	1:1,250	1:1,250

Historical Map - Segment A13



Order Details

Order Number: 241853234_1_1
Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 100

Site Details

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418200

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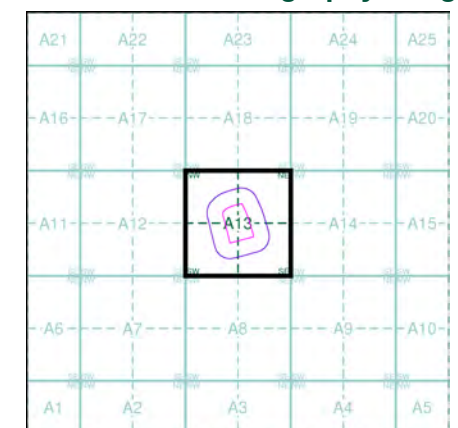
0 100 m

Historical Aerial Photography

Published 1999

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

Historical Aerial Photography - Segment A13



Order Details

Order Number: 241853234_1_1
Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 100

Site Details

Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

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

Ordnance Survey Plan 1:10,000

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

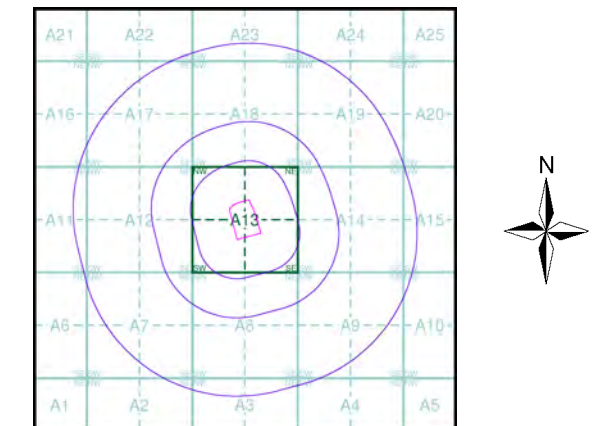
1:10,000 Raster Mapping

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

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Yorkshire	1:10,560	1854 - 1855	3
Yorkshire	1:10,560	1894	4
Yorkshire	1:10,560	1908	5
Yorkshire	1:10,560	1930	6
Yorkshire	1:10,560	1933	7
Yorkshire	1:10,560	1938	8
Yorkshire	1:10,560	1948	9
Ordnance Survey Plan	1:10,000	1955 - 1956	10
Ordnance Survey Plan	1:10,000	1965 - 1968	11
Ordnance Survey Plan	1:10,000	1976 - 1979	12
Ordnance Survey Plan	1:10,000	1980 - 1989	13
Batley	1:10,000	1983	14
Huddersfield	1:10,000	1984	15
Ordnance Survey Plan	1:10,000	1992 - 1993	16
10K Raster Mapping	1:10,000	2000	17
10K Raster Mapping	1:10,000	2006	18
VectorMap Local	1:10,000	2020	19

Historical Map - Slice A



Order Details

Order Number: 241853234_1_1
Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 1000

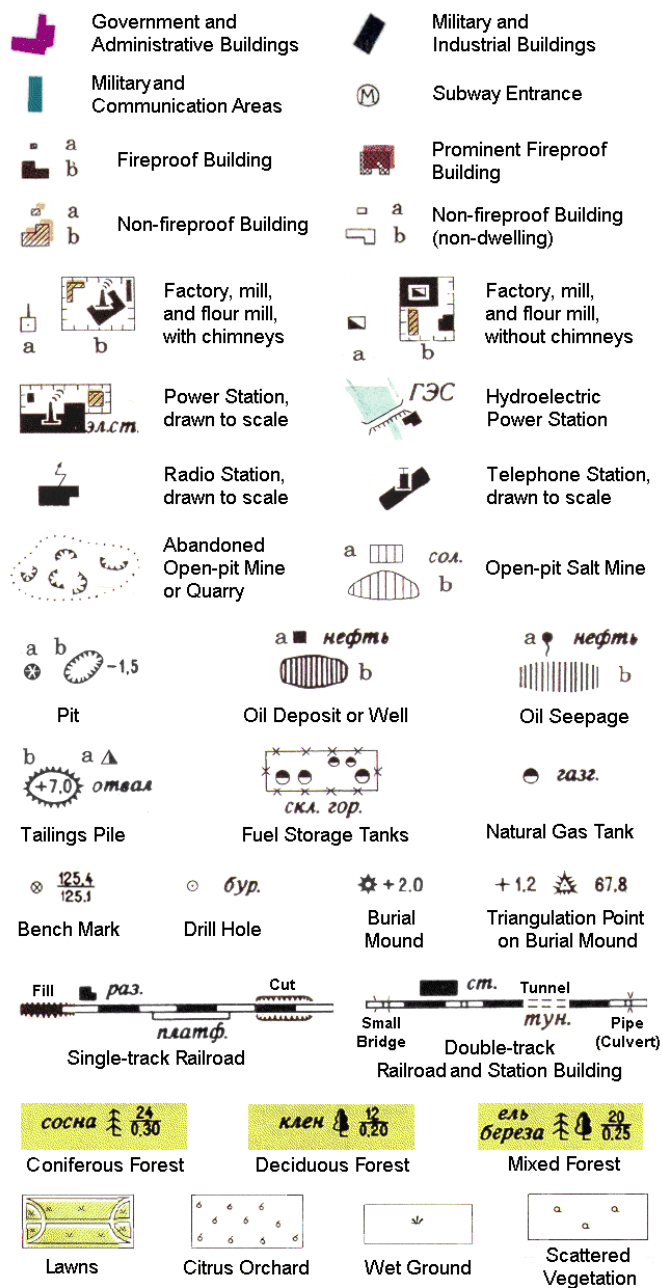
Site Details

Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD

Russian Military Mapping Legends

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

a. Not drawn to scale b. Drawn to scale



243.8 Values for prominent elevations

186.0 Numbers for spot elevations, depth soundings, contour lines, etc.

0.2 Velocity of the current, width of river bed, depth of river

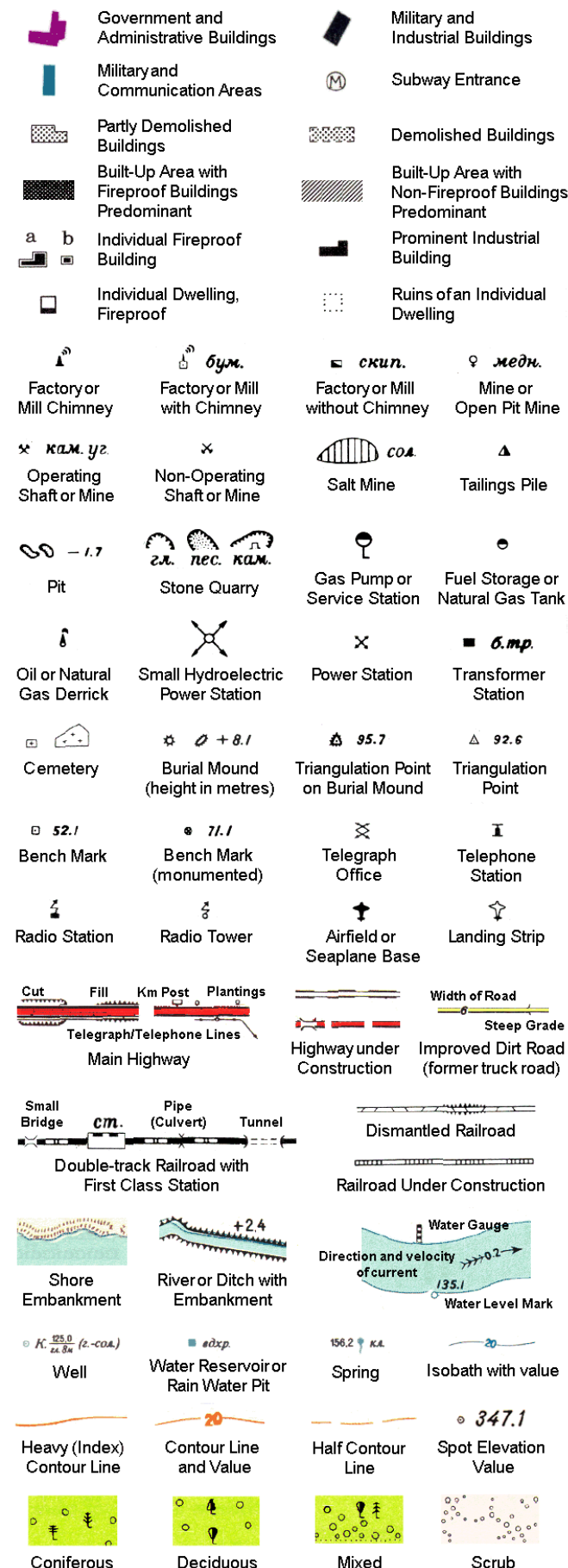
180/12 Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

А а (A)	З з (Z)	П п (P)	Ч ч (CH)
Б б (B)	И и (I)	Р р (R)	Ш ш (SH)
В в (V)	Й й (Y)	С с (S)	Щ щ (SHCH)
Г г (G)	К к (K)	Т т (T)	Ъ (-)
Д д (D)	Л л (L)	У у (U)	Ы (Y)
Е е (E)	М м (M)	Ф ф (F)	Ь (')
Ё ё (YO)	Н н (N)	Х х (KH)	Э э (E)
Ж ж (ZH)	О о (O)	Ц ц (TS)	Ю ю (YU or IU)
			Я я (YA or IA)

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale



Key to Numbers on Mapping

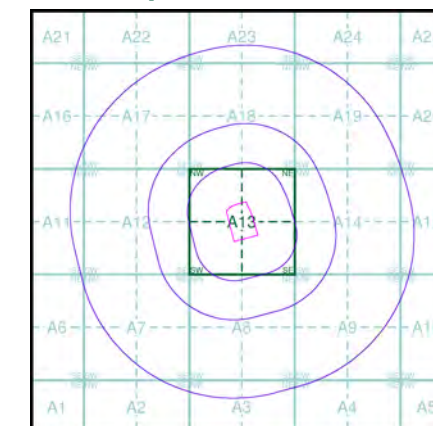
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Yorkshire	1:10,560	1854 - 1855	3
Yorkshire	1:10,560	1894	4
Yorkshire	1:10,560	1908	5
Yorkshire	1:10,560	1930	6
Yorkshire	1:10,560	1933	7
Yorkshire	1:10,560	1938	8
Yorkshire	1:10,560	1948	9
Ordnance Survey Plan	1:10,000	1955 - 1956	10
Ordnance Survey Plan	1:10,000	1965 - 1968	11
Ordnance Survey Plan	1:10,000	1976 - 1979	12
Ordnance Survey Plan	1:10,000	1980 - 1989	13
Batley	1:10,000	1983	14
Huddersfield	1:10,000	1984	15
Ordnance Survey Plan	1:10,000	1992 - 1993	16
10K Raster Mapping	1:10,000	2000	17
10K Raster Mapping	1:10,000	2006	18
VectorMap Local	1:10,000	2020	19

Russian Map - Slice A



Order Details

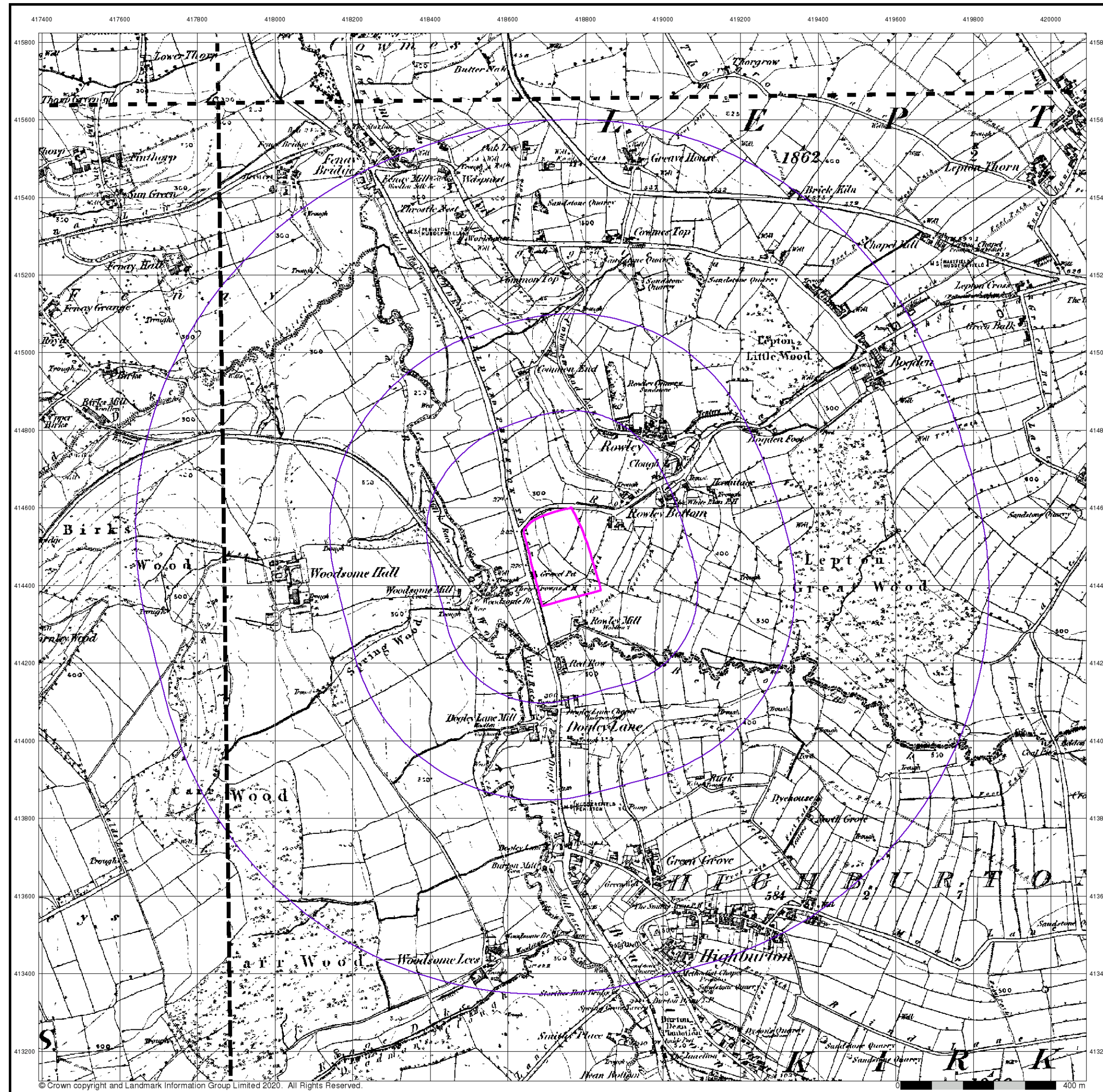
Order Number: 241853234_1_1
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 National Grid Reference: 418740, 414470
 Slice: A
 Site Area (Ha): 3.34
 Search Buffer (m): 1000

Site Details

Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD

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Yorkshire

Published 1854 - 1855

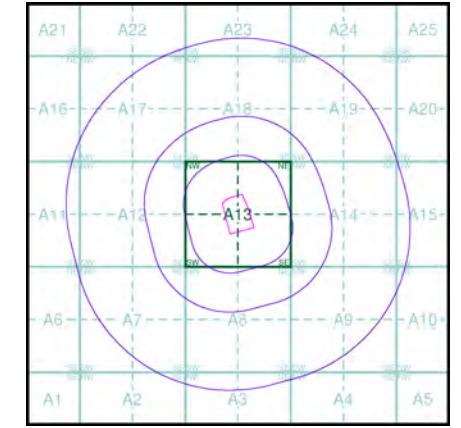
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

24600 1854 1:10,560	24700 1855 1:10,560
26000 1854 1:10,560	26100 1854 1:10,560

Historical Map - Slice A



Order Details

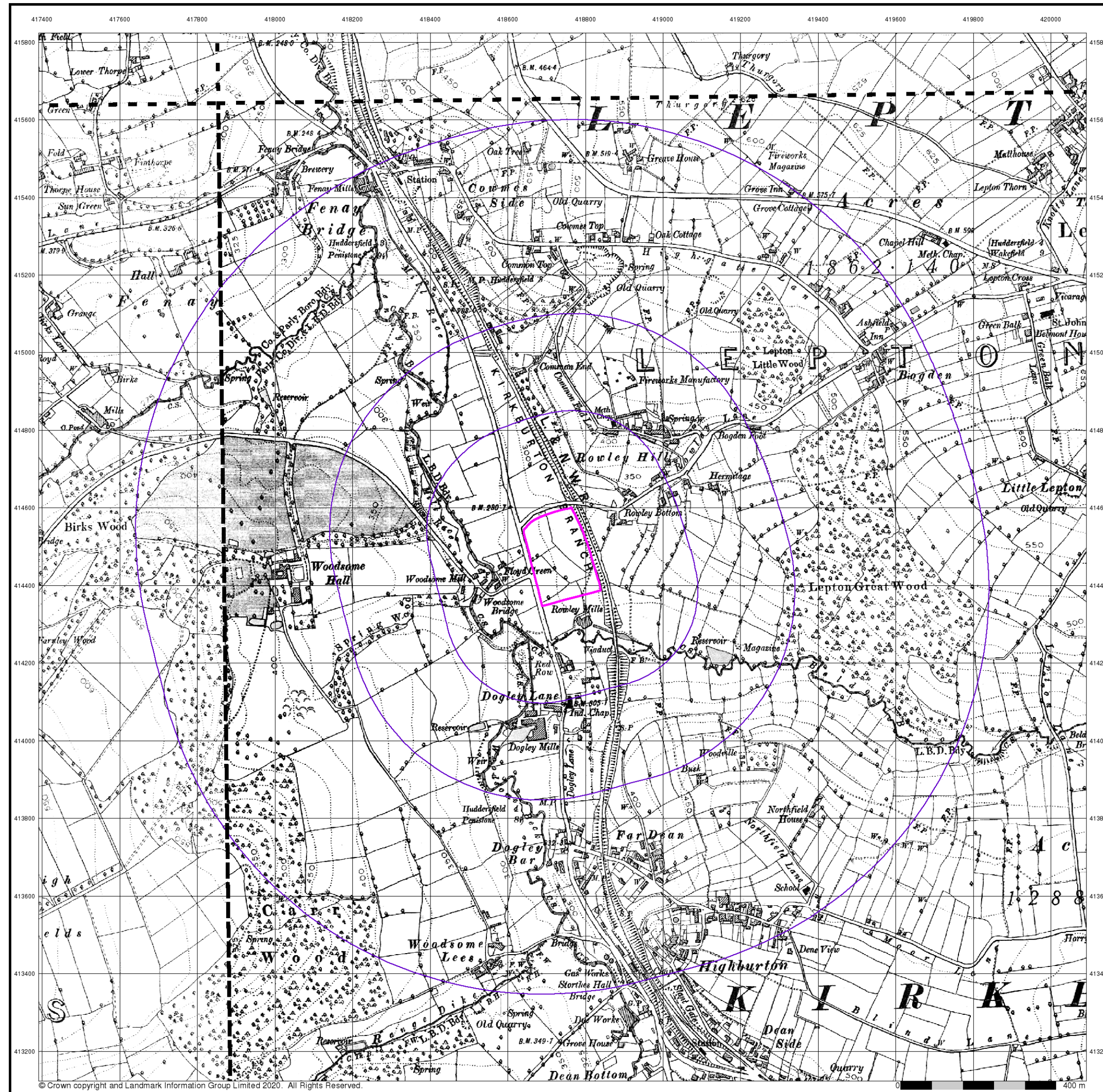
Order Number: 241853234_1_1
Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 1000

Site Details

Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD

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Yorkshire

Published 1894

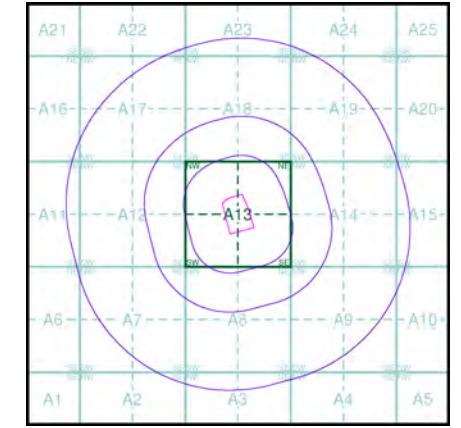
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

246SE 1894 1:10,560	247SW 1894 1:10,560
260NE 1894 1:10,560	261NW 1894 1:10,560

Historical Map - Slice A



Order Details

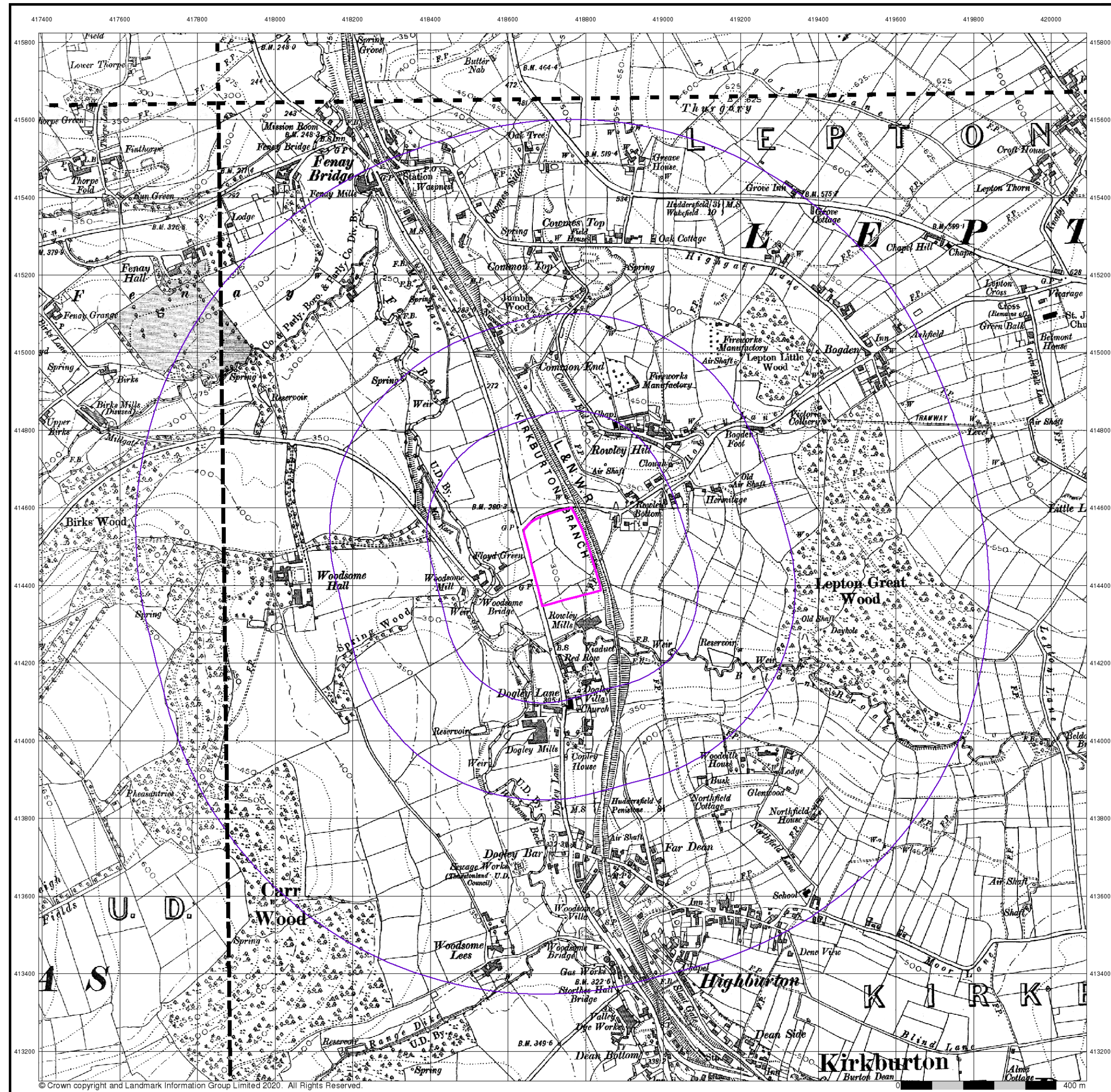
Order Number: 241853234_1_1
Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 1000

Site Details

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Yorkshire

Published 1908

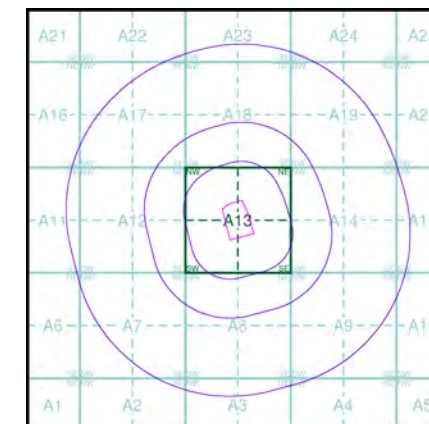
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

246SE 1908 1:10,560	247SW 1908 1:10,560
260NE 1908 1:10,560	261NW 1908 1:10,560

Historical Map - Slice A

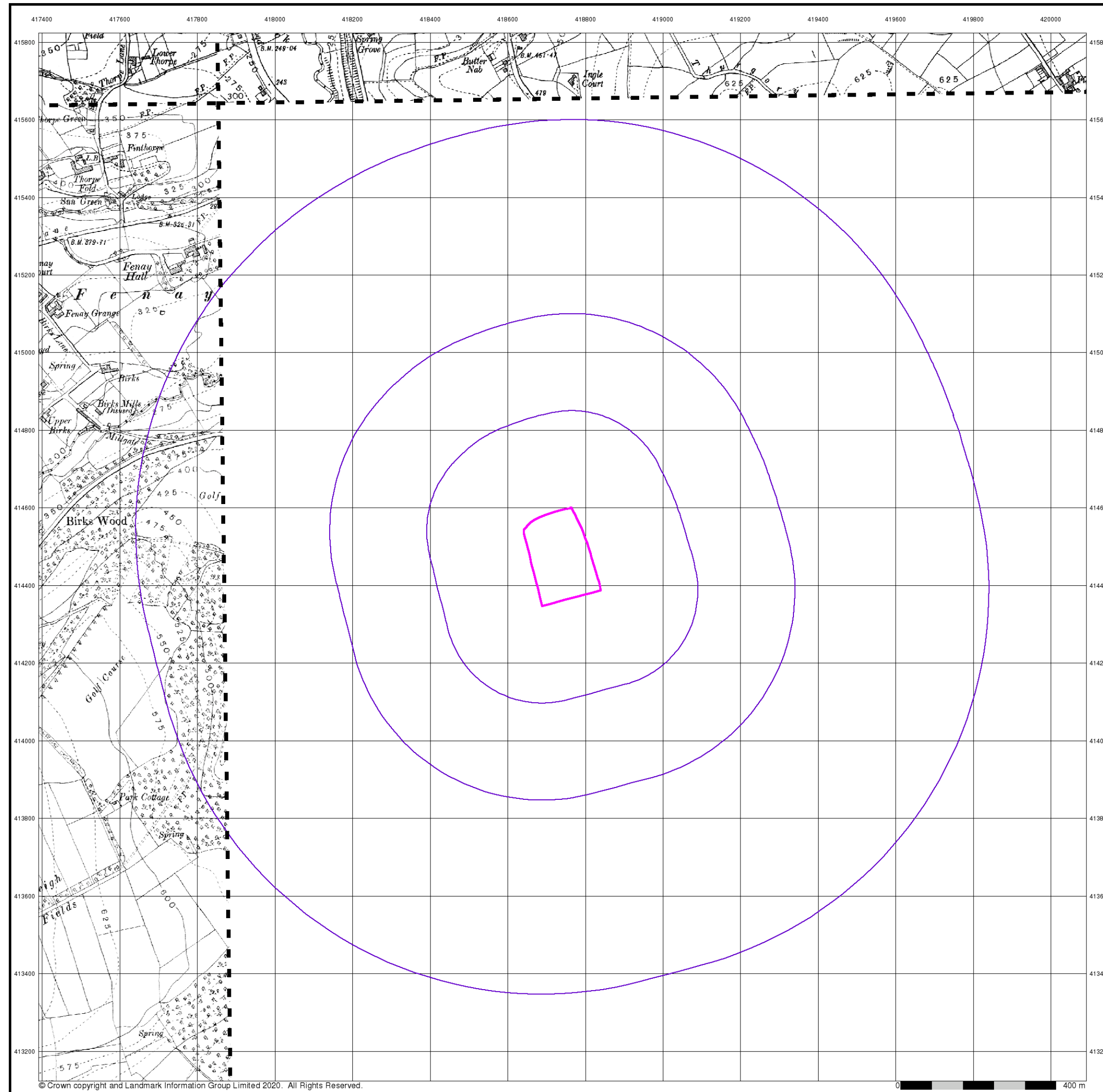


Order Details

Order Number: 241853234_1_1
Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 1000

Site Details

Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD



Yorkshire

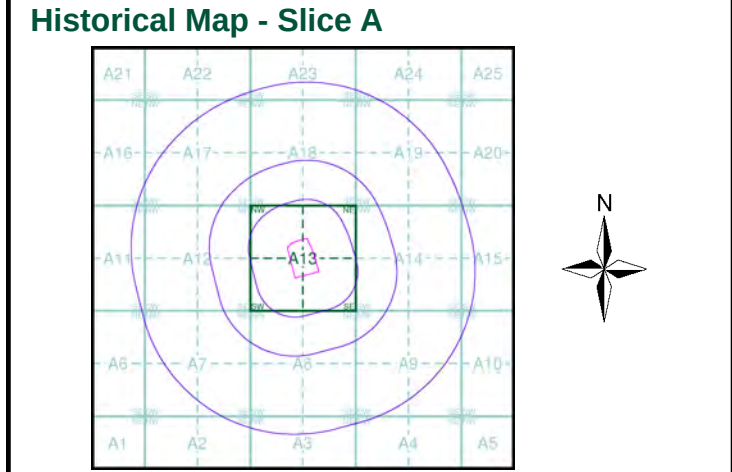
Published 1930

Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

246SE 1930 1:10,560	247SW 1930 1:10,560
260NE 1930 1:10,560	

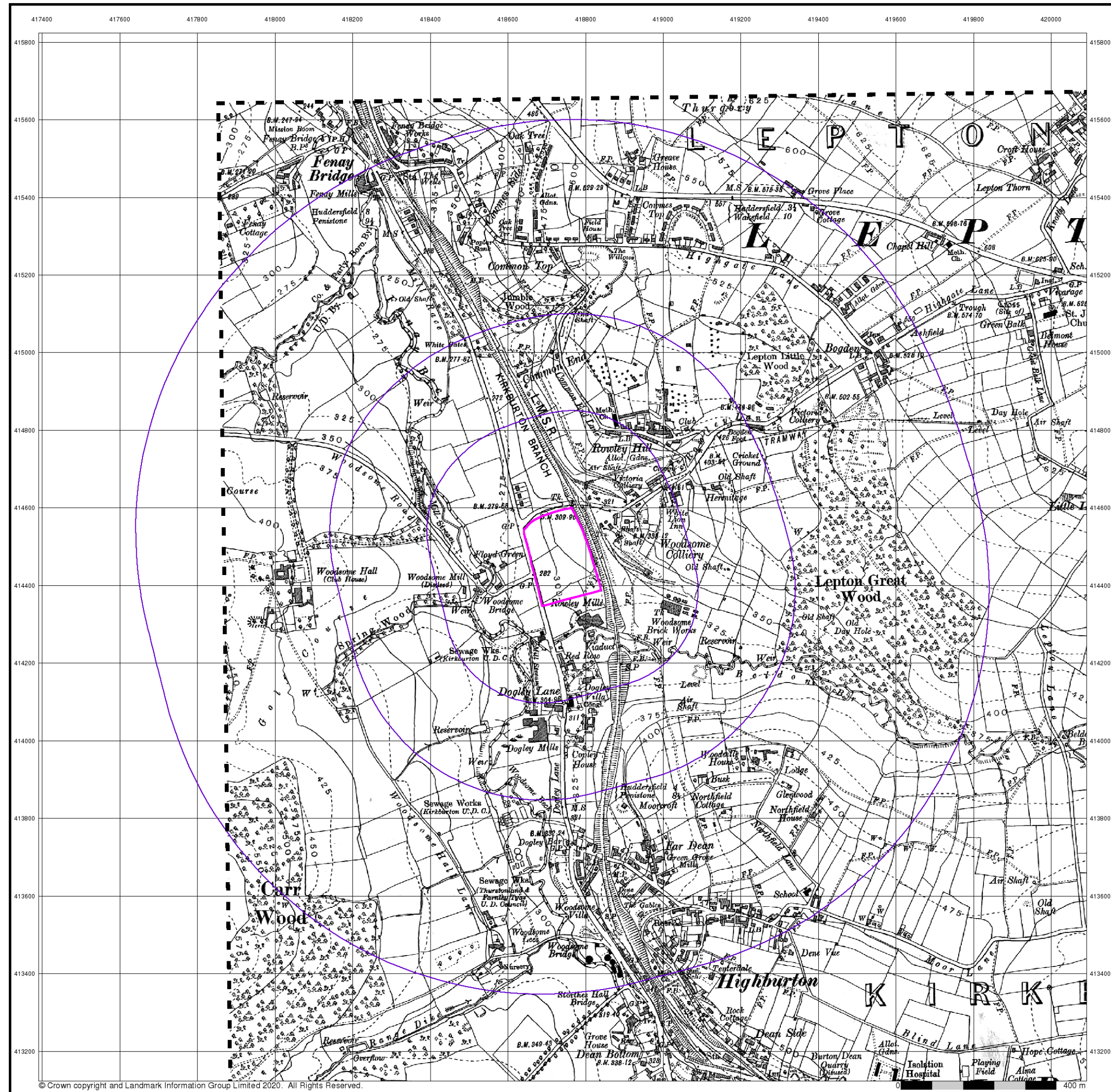


Order Details

Order Number:	241853234_1_1
Customer Ref:	14699
National Grid Reference:	418740, 414470
Slice:	A
Site Area (Ha):	3.34
Search Buffer (m):	1000

Site Details

Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD



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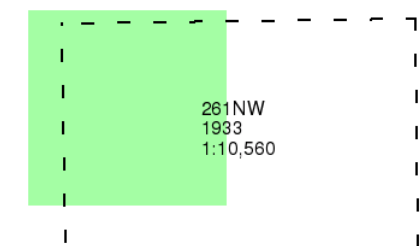
Yorkshire

Published 1933

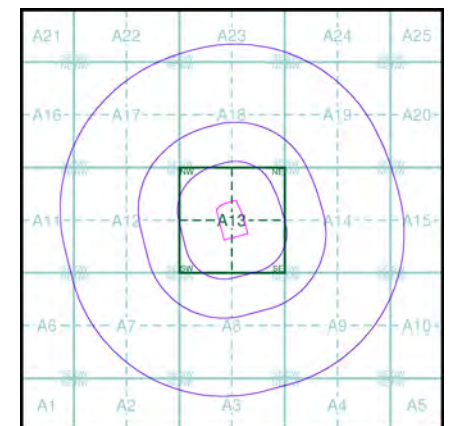
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

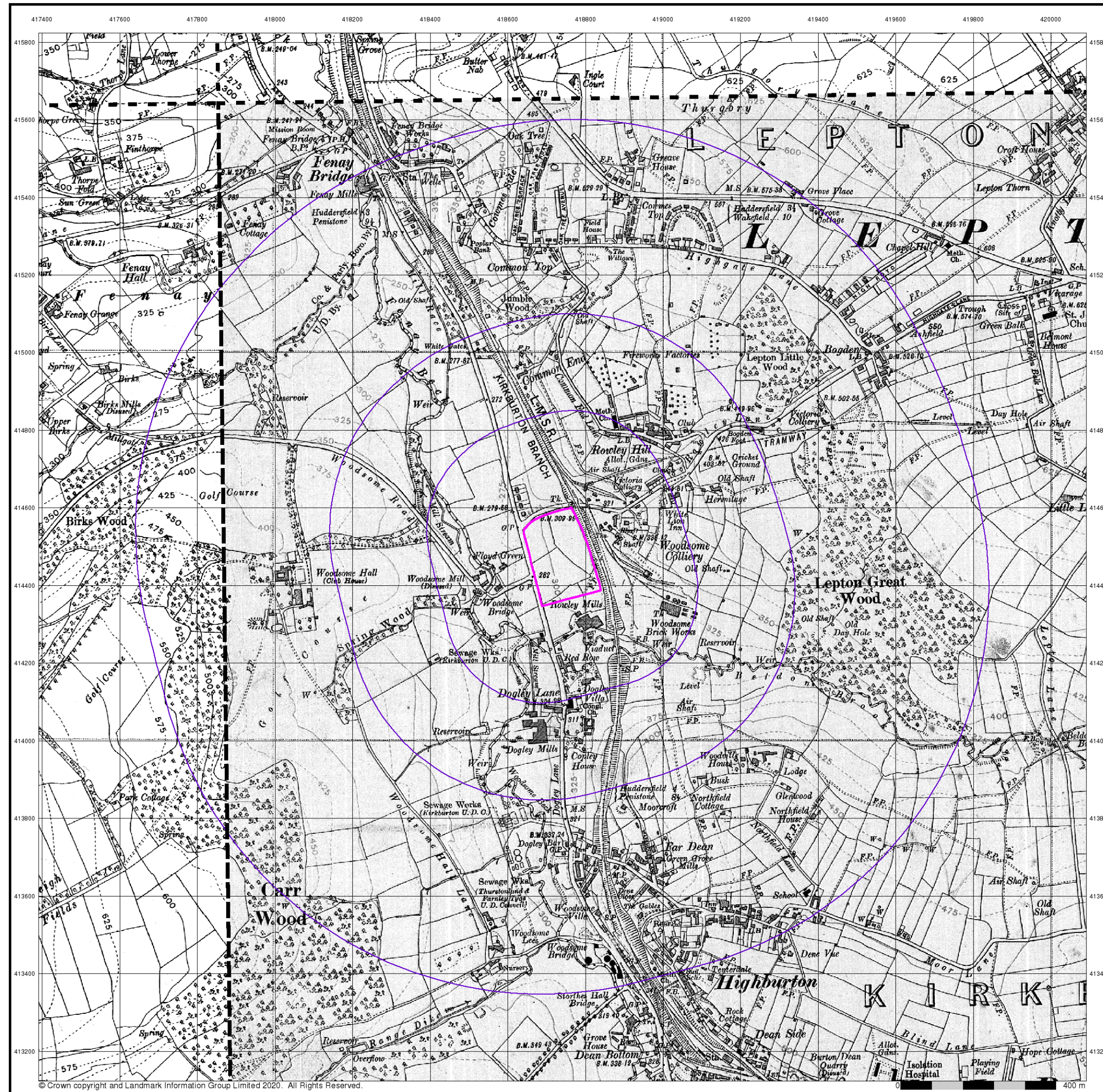
Order Number: 241853234_1_1
Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 1000

Site Details

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Yorkshire

Published 1938

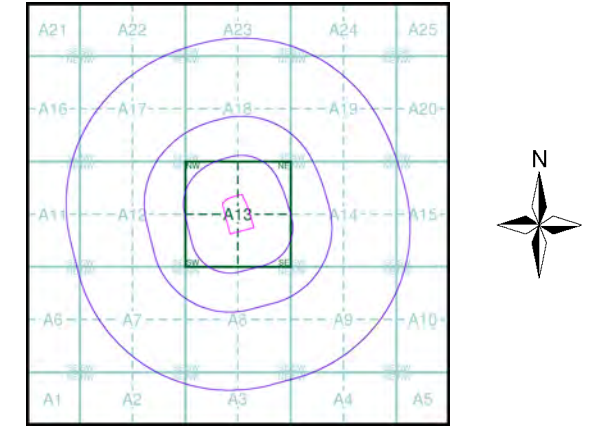
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

246SE 1938 1:10,560	247SW 1938 1:10,560
260NE 1938 1:10,560	261NW 1938 1:10,560

Historical Map - Slice A

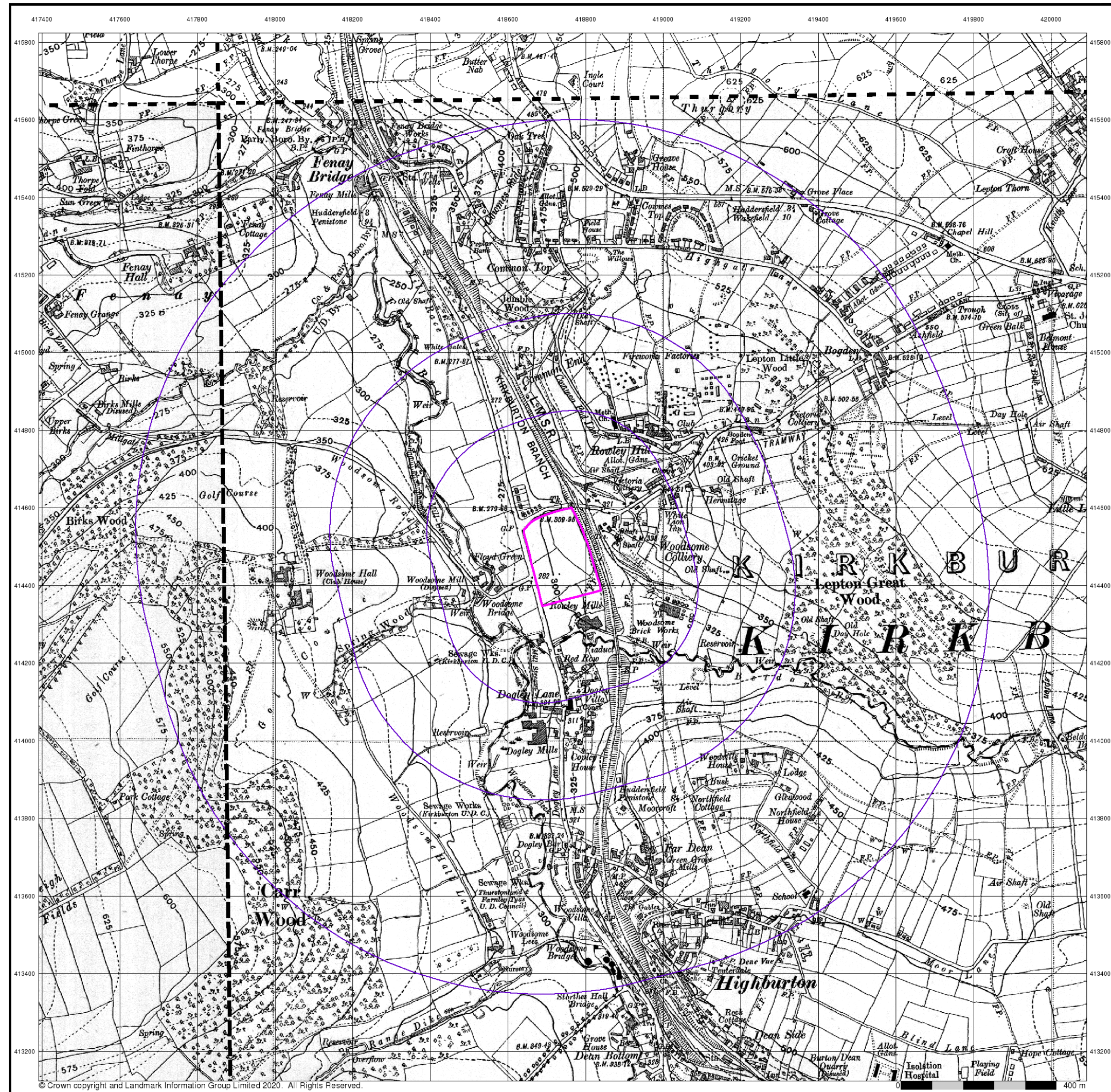


Order Details

Order Number: 241853234_1_1
Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 1000

Site Details

Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD



Yorkshire

Published 1948

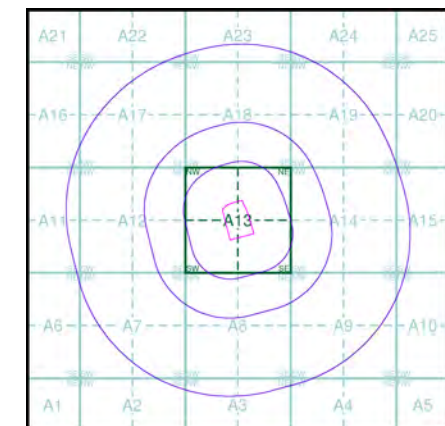
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

246SE 1948 1:10,560	247SW 1948 1:10,560
260NE 1948 1:10,560	261NW 1948 1:10,560

Historical Map - Slice A



Order Details

Order Number: 241853234_1_1
Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 1000

Site Details

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Ordnance Survey Plan

Published 1955 - 1956

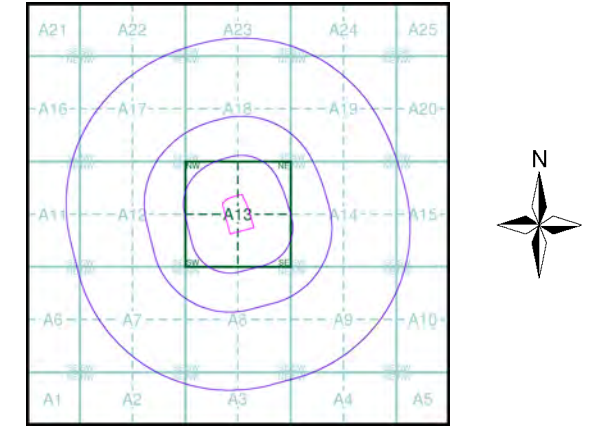
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SE11NE	SE21NW
1956	1955
1:10,560	1:10,560
SE11SE	SE21SW
1955	1955
1:10,560	1:10,560

Historical Map - Slice A

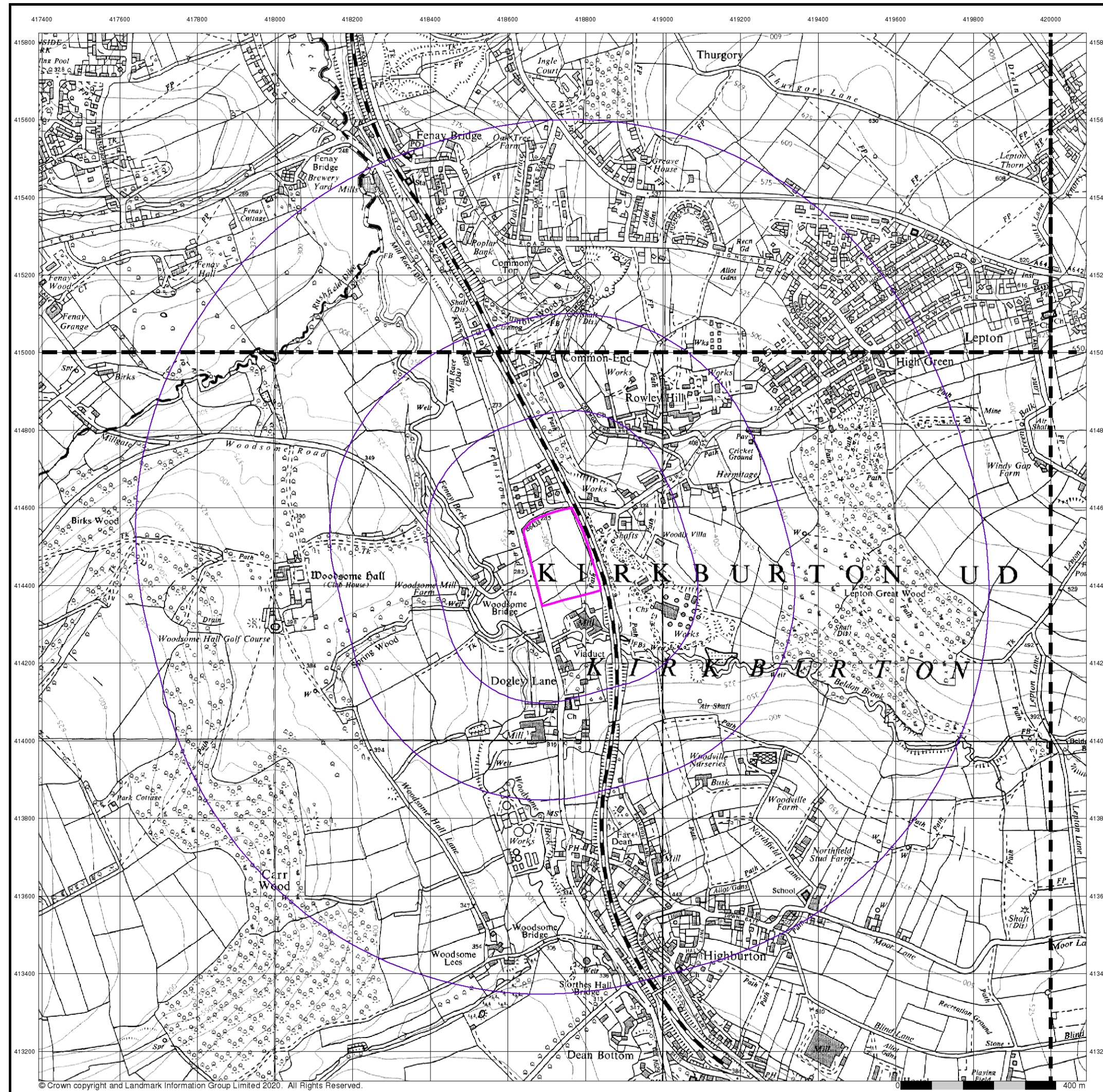


Order Details

Order Number: 241853234_1_1
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National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 1000

Site Details

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Ordnance Survey Plan

Published 1965 - 1968

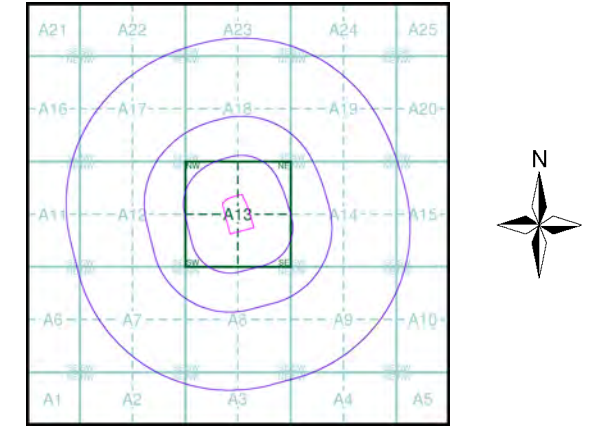
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SE11NE	SE21NW
1965	1966
1:10,560	1:10,560
SE11SE	SE21SW
1968	1967
1:10,560	1:10,560

Historical Map - Slice A

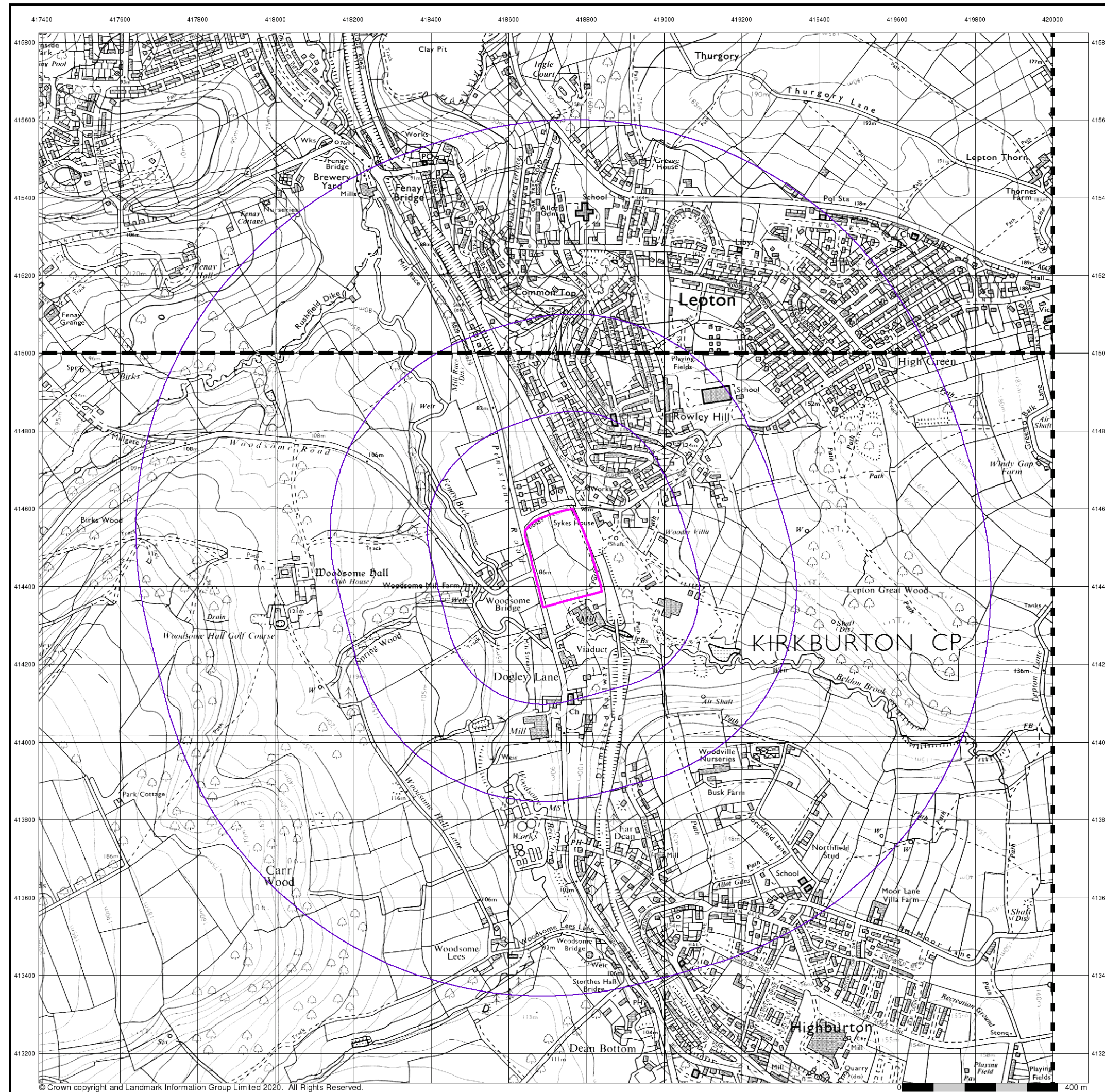


Order Details

Order Number: 241853234_1_1
Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 1000

Site Details

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Ordnance Survey Plan

Published 1976 - 1979

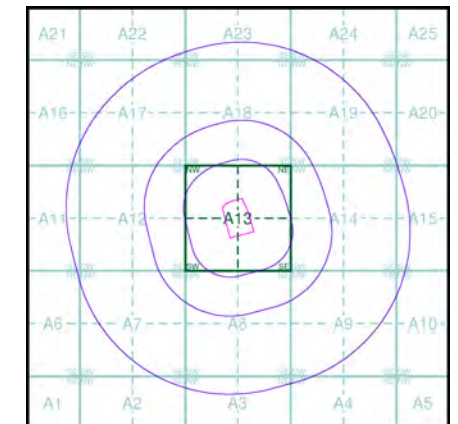
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SE11NE
1976
1:10,000
SE11SE
1979
1:10,000

Historical Map - Slice A

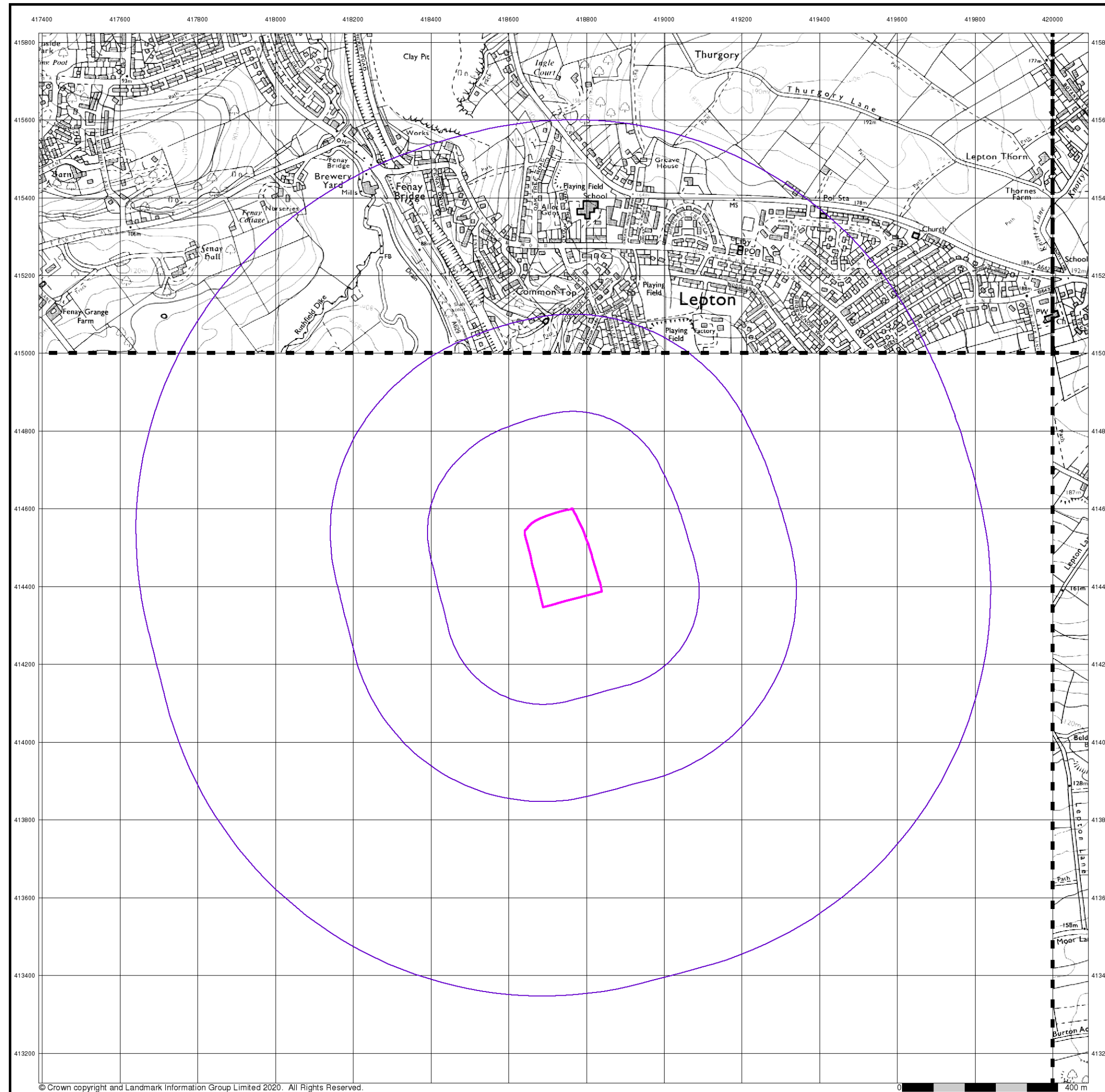


Order Details

Order Number: 241853234_1_1
Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 1000

Site Details

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Ordnance Survey Plan

Published 1980 - 1989

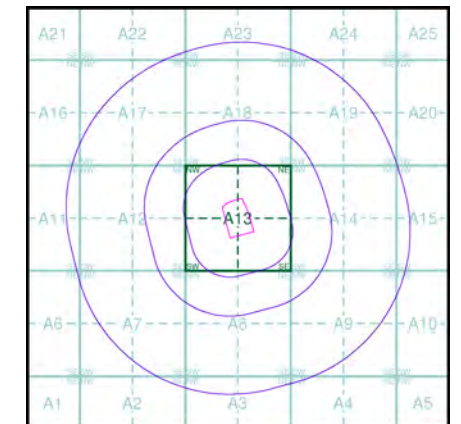
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SE11NE 1989 1:10,000	SE21NW 1983 1:10,000
	SE21SW 1980 1:10,000

Historical Map - Slice A

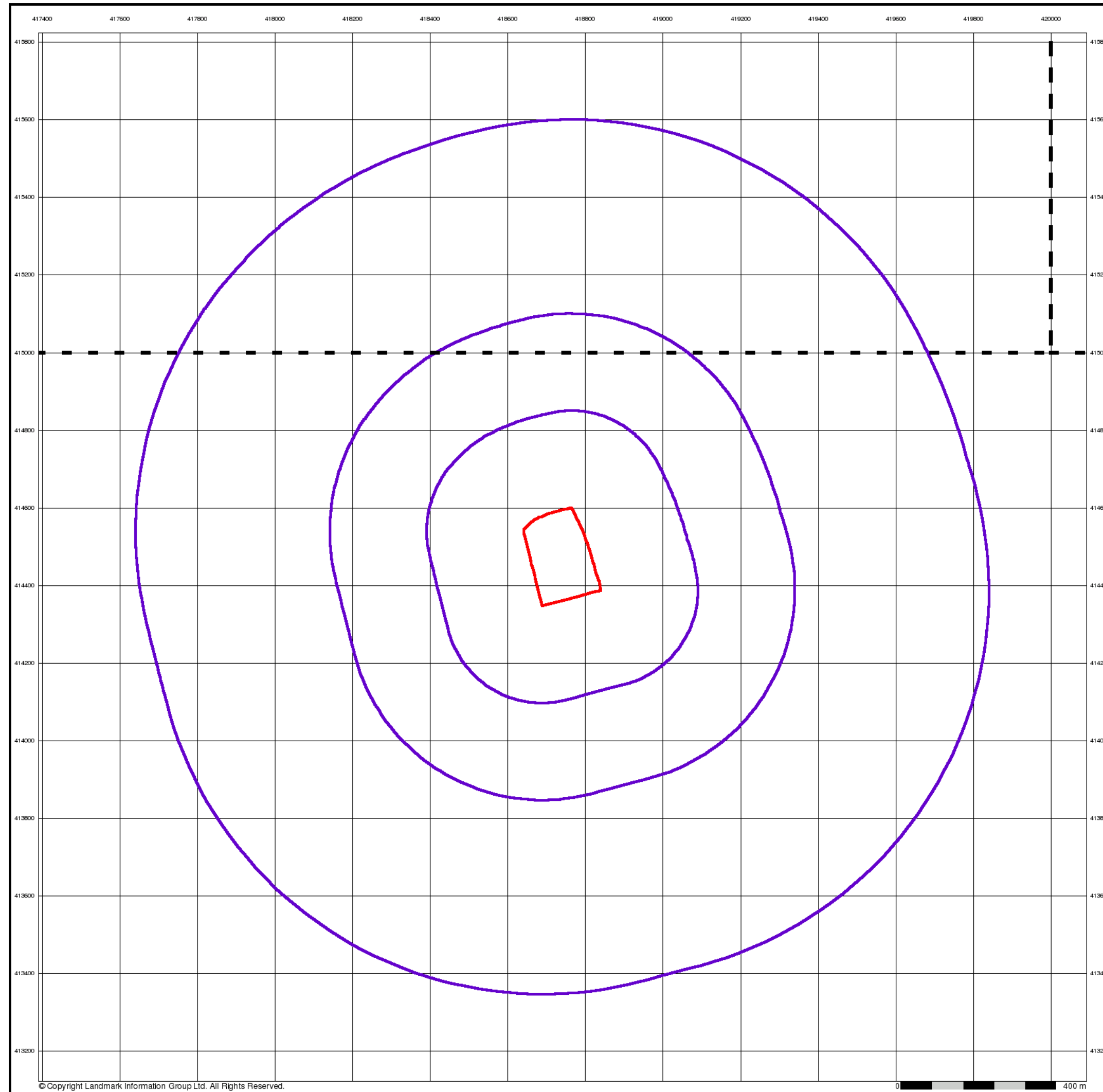


Order Details

Order Number: 241853234_1_1
Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 1000

Site Details

Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD



Batley

Published 1983

Source map scale - 1:10,000

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

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

Map Name(s) and Date(s)

SE11NE

1983

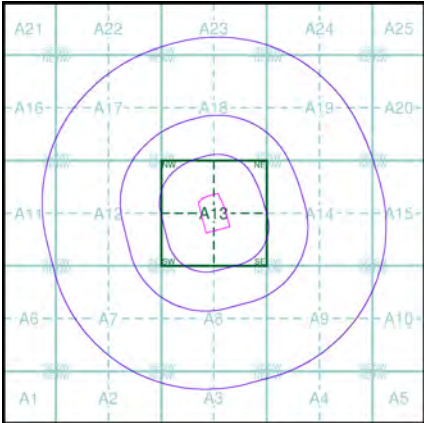
1:10,000

SE21NW

1983

1:10,000

Russian Map - Slice A



Order Details

Order Number:

241853234_1_1

Customer Ref:

14699

National Grid Reference:

418740, 414470

Slice:

A

Site Area (Ha):

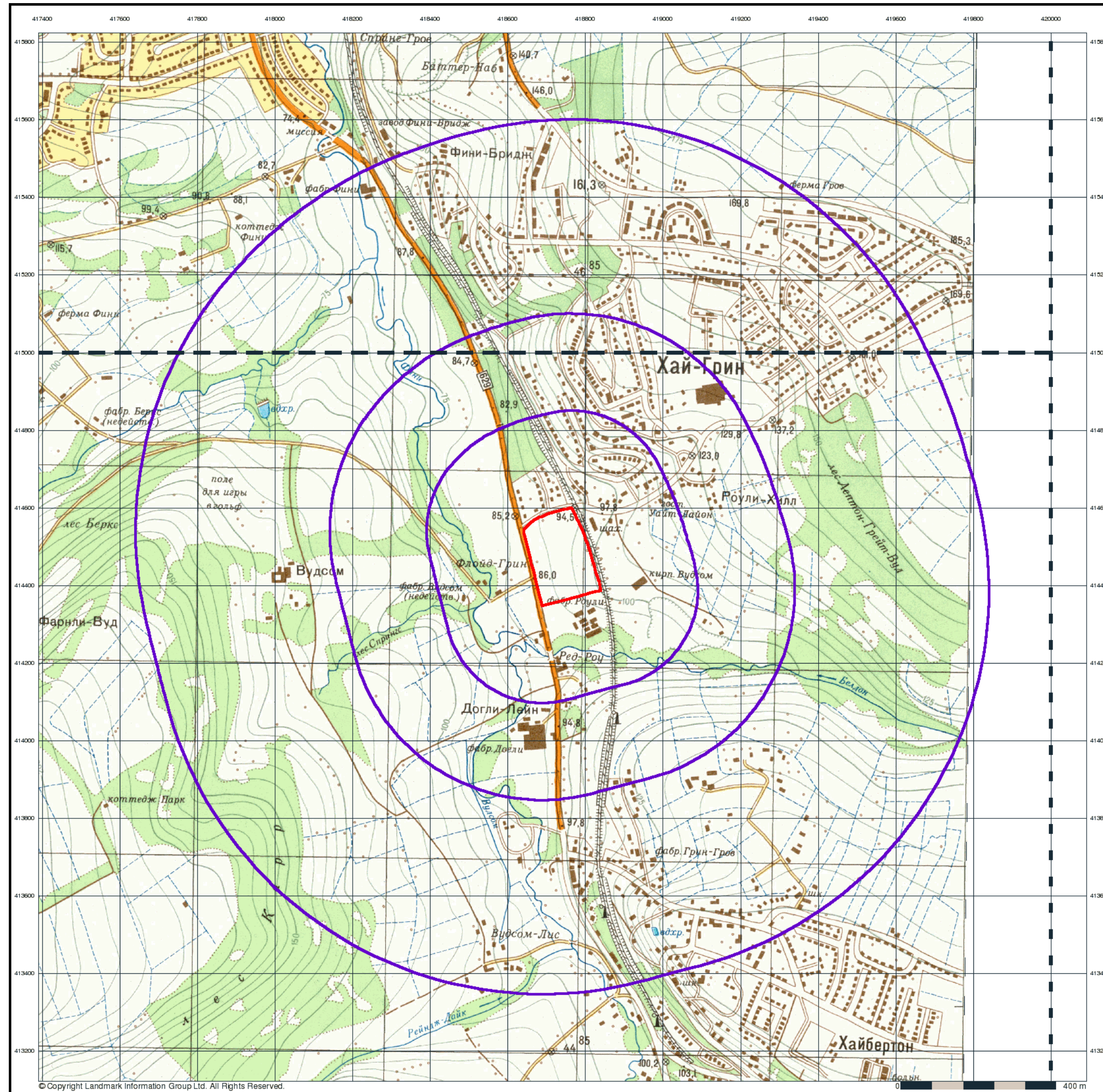
3.34

Search Buffer (m):

1000

Site Details

Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD



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Huddersfield

Published 1984

Source map scale - 1:10,000

These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use. They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)

SE11 NE
1984
1:10,000

SE11 SE
1984
1:10,000

Russian Map - Slice A

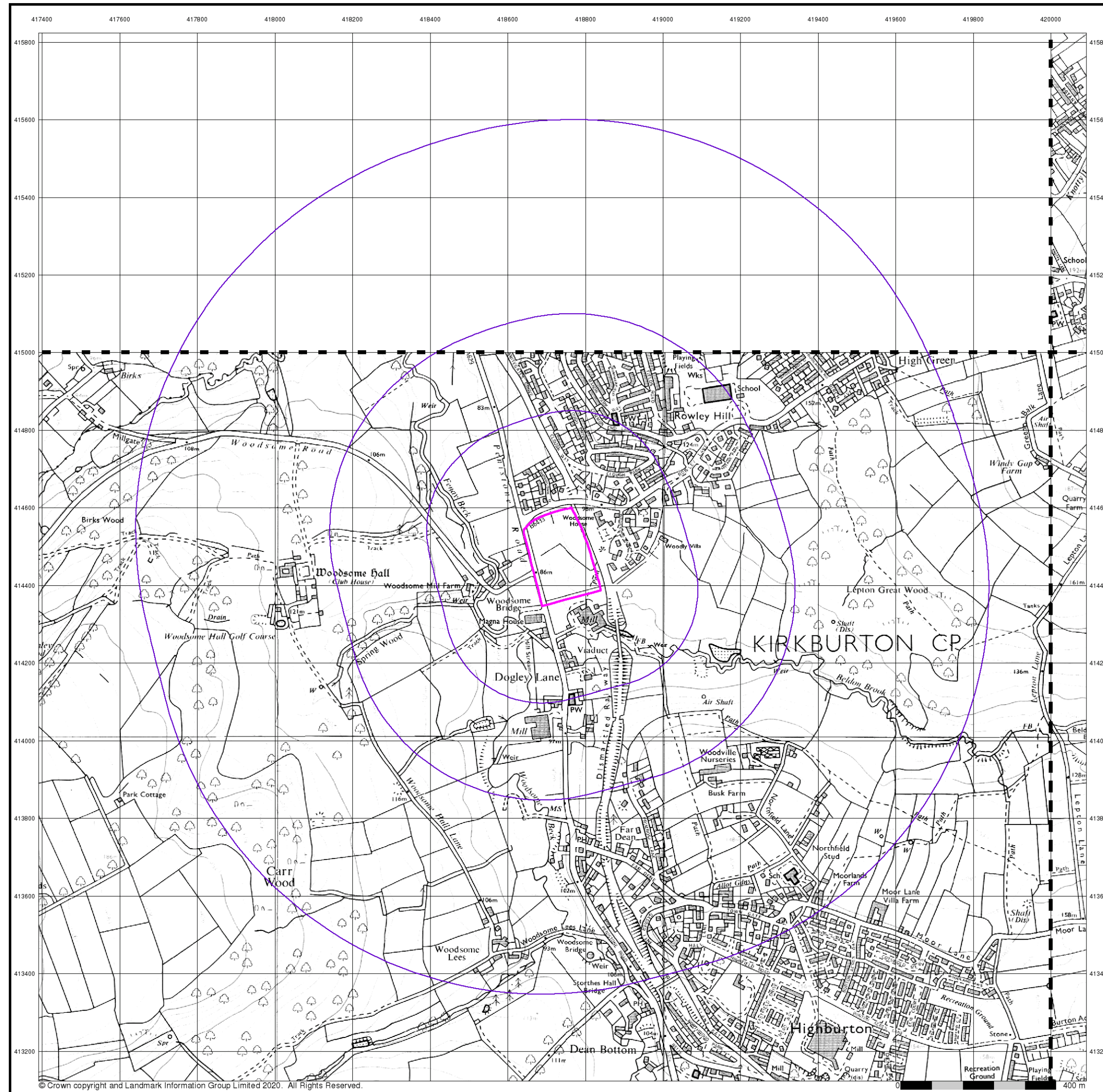
A diagram showing a grid of map slices (A1 to A25) with a red polygon highlighting a specific area (A13). A north arrow is located to the right of the grid.

Order Details

Order Number:	241853234_1_1
Customer Ref:	14699
National Grid Reference:	418740, 414470
Slice:	A
Site Area (Ha):	3.34
Search Buffer (m):	1000

Site Details

Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD



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Ordnance Survey Plan

Published 1992 - 1993

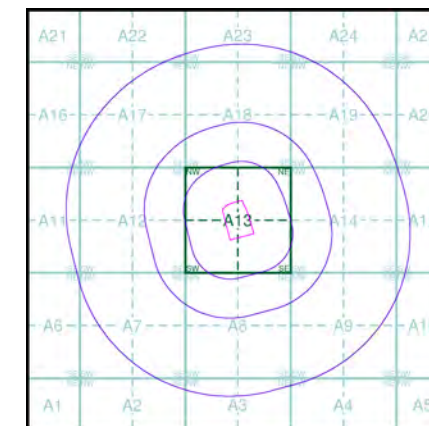
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SE21NW	1993	1:10,000
SE11SE	1992	1:10,000
SE21SW	1993	1:10,000

Historical Map - Slice A

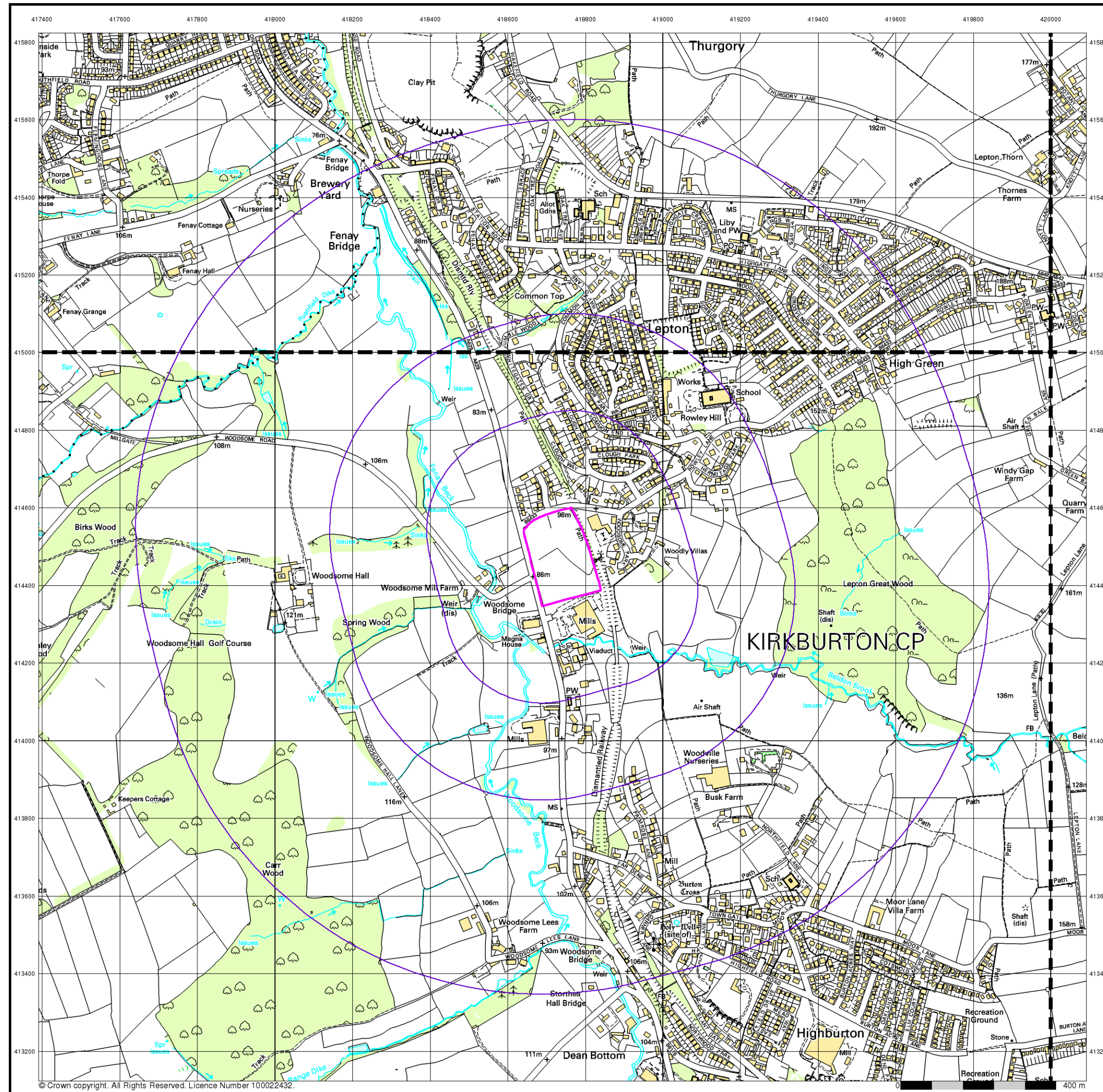


Order Details

Order Number: 241853234_1_1
Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 1000

Site Details

Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD



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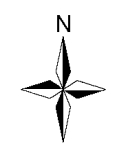
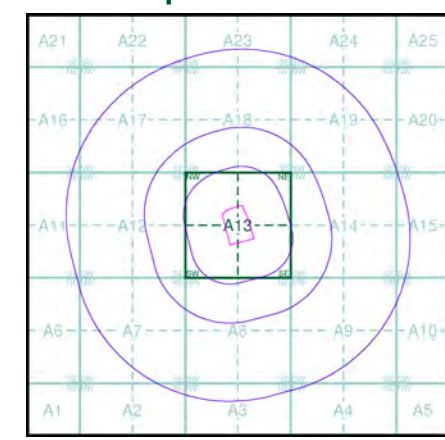
10k Raster Mapping
Published 2000
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SE11NE	SE21NW
2000	2000
1:10,000	1:10,000
SE11SE	SE21SW
2000	2000
1:10,000	1:10,000

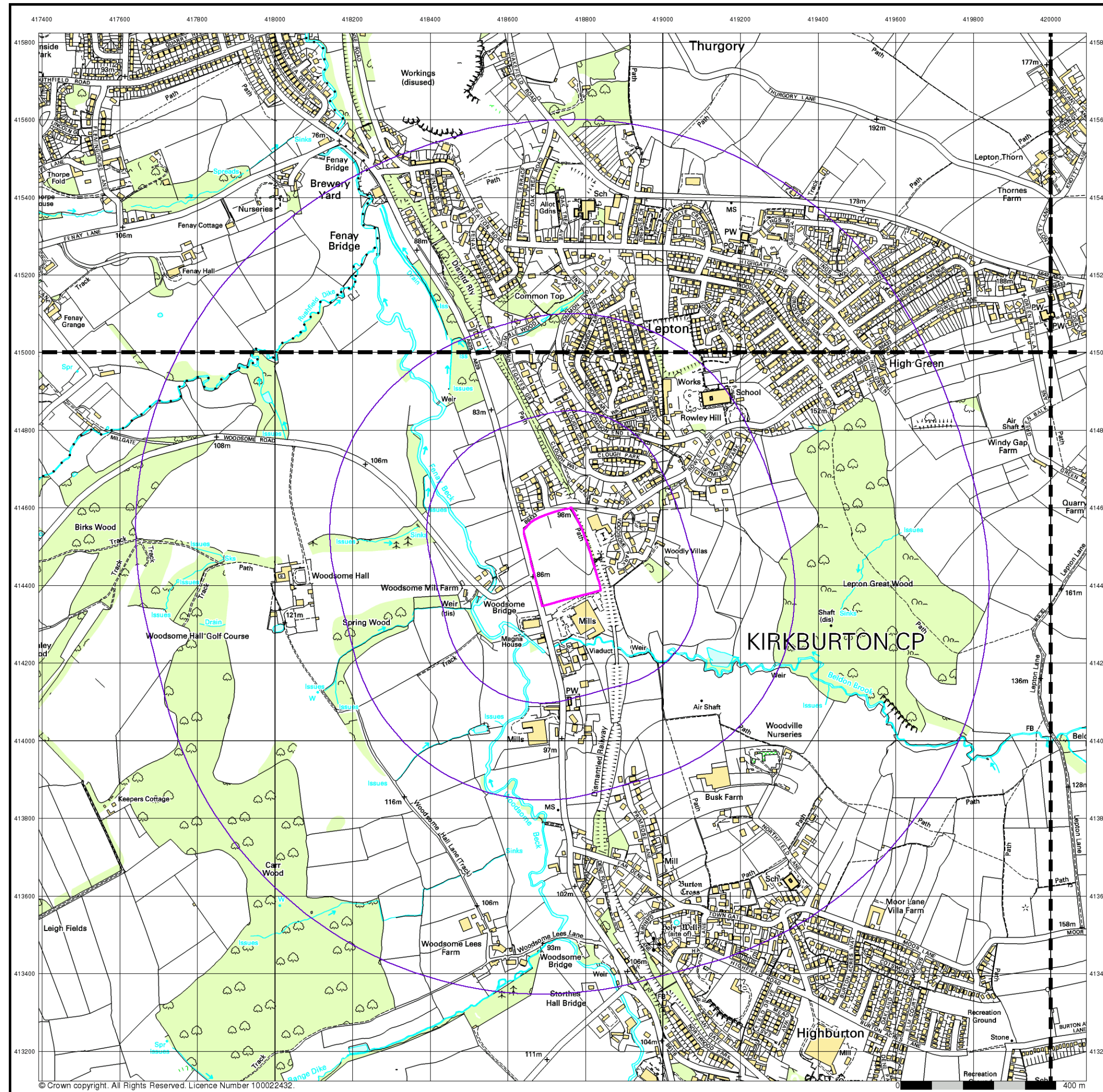
Historical Map - Slice A



Order Details
Order Number: 241853234_1_1
Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 1000

Site Details
Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD

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



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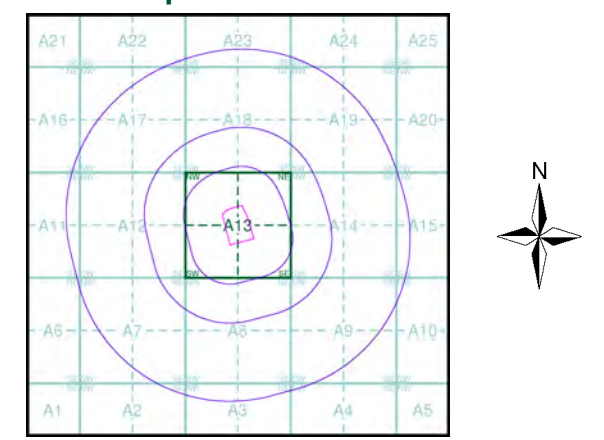
10k Raster Mapping
Published 2006
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SE11NE	SE21NW
2006	2006
1:10,000	1:10,000
SE11SE	SE21SW
2006	2006
1:10,000	1:10,000

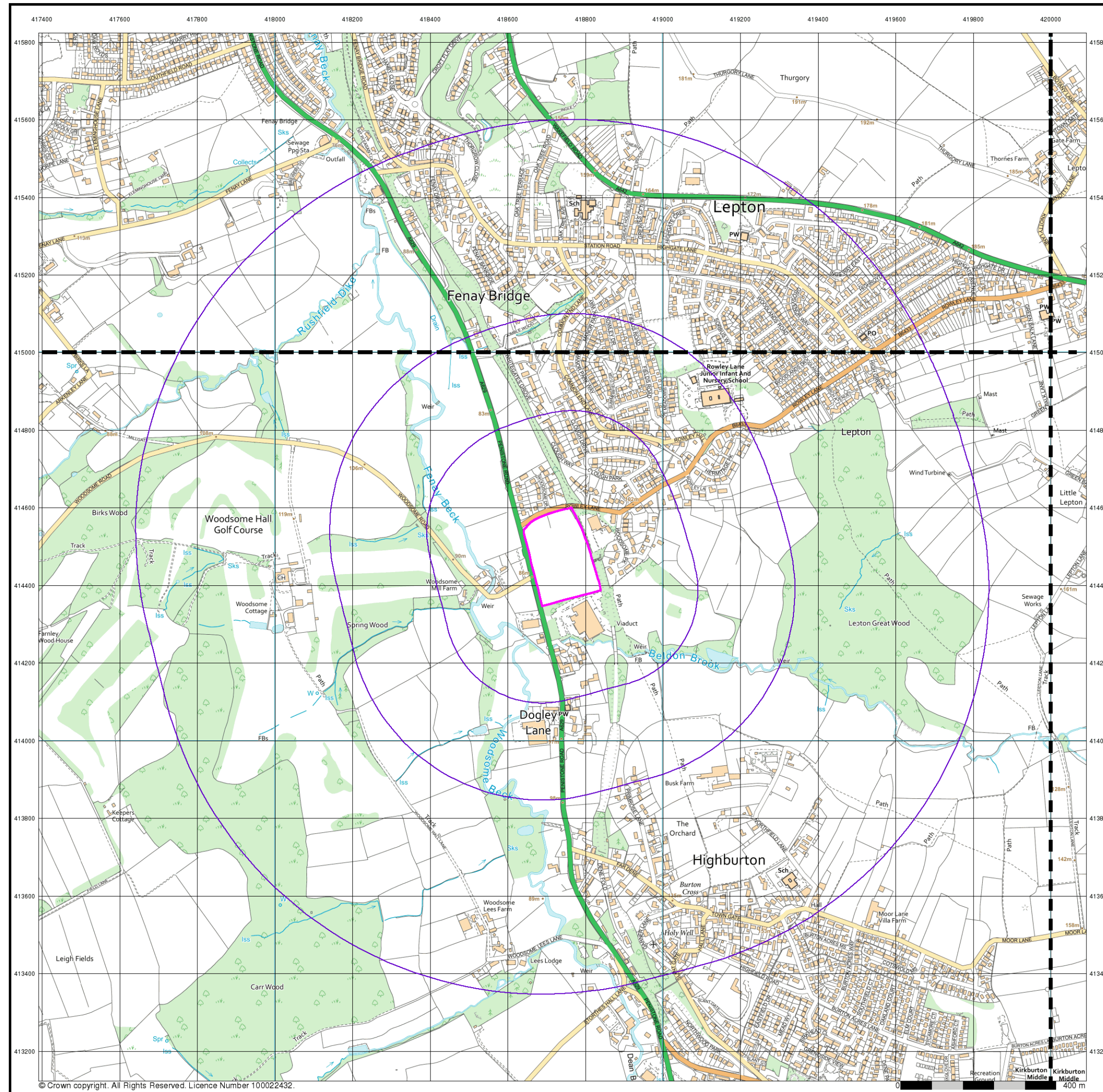
Historical Map - Slice A



Order Details
Order Number: 241853234_1_1
Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 1000

Site Details
Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD

Landmark
INFORMATION GROUP
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Fax: 0844 844 9951
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VectorMap Local

Published 2020

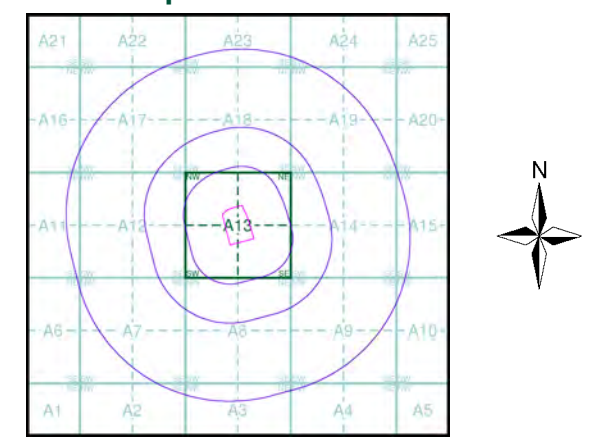
Source map scale - 1:10,000

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

Map Name(s) and Date(s)

SE11NE	SE21NW
2020	2020
Variable	Variable
SE11SE	SE21SW
2020	2020
Variable	Variable

Historical Map - Slice A



Order Details

Order Number: 241853234_1_1
Customer Ref: 14699
National Grid Reference: 418740, 414470
Slice: A
Site Area (Ha): 3.34
Search Buffer (m): 1000

Site Details

Penistone Rd/Rowley Lane, Fenay Bridge, HUDDERSFIELD

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Appendix 3: Landmark Envirocheck Report

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Appendix 4: Coal Authority Consultants Report



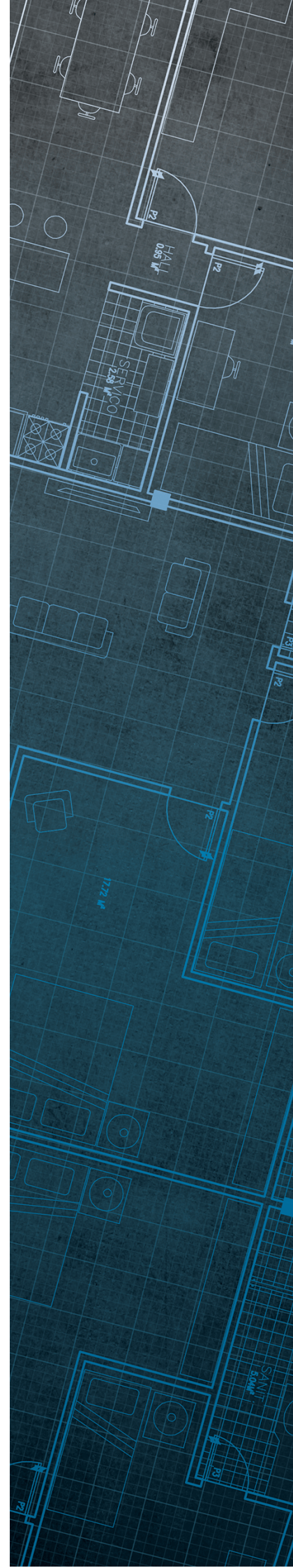
The Coal
Authority

Consultants Coal Mining Report

1 Rowley Lane
Fenay Bridge
Huddersfield
Kirklees
HD8 0JN

Date of enquiry:	6 May 2020
Date enquiry received:	6 May 2020
Issue date:	7 May 2020

Our reference:	51002275888001
Your reference:	14699



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

Michael Kelly

Enquiry address

1 Rowley Lane
Fenay Bridge
Huddersfield
Kirklees
HD8 0JN

How to contact us

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

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

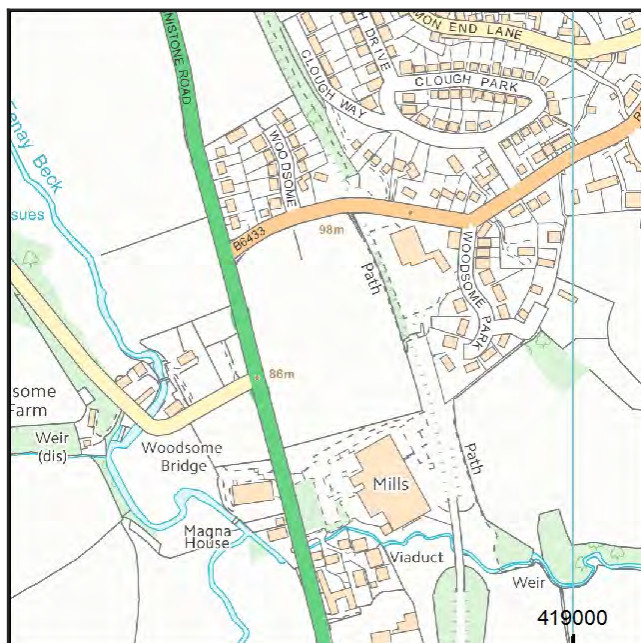
www.groundstability.com

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



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	HALIFAX HARD	Coal	6ZH8	201	Beneath Property	1.0	South-West	191	1925
unnamed	HALIFAX HARD	Coal	6ZH9	202	Beneath Property	1.0	South-West	191	1929
unnamed	HALIFAX HARD	Coal	6ZHA	206	North	1.0	South-West	191	1929
unnamed	HALIFAX SOFT	Coal	6ZHE	224	Beneath Property	1.3	South-West	109	1931

Probable unrecorded shallow workings

None.

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	418414-002	418844 414541		Coal	
Shaft	418414-003	418876 414513		Coal	
Adit	418414-004	418762 414687		Coal	
Shaft	418414-005	418775 414676		Coal	
Adit	418414-006	418747 414631		Coal	
Shaft	418414-011	418892 414424		Coal	
Shaft	418414-014	418830 414550		Coal	

Abandoned mine plan catalogue numbers

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

OM11127	12328	13104
FGB191	FGB849	13399
OM11932	8338	11127

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
BETTER BED	Coal	Yes	Within	N/A	203

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

None recorded 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
38.5	East
Within	N/A

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

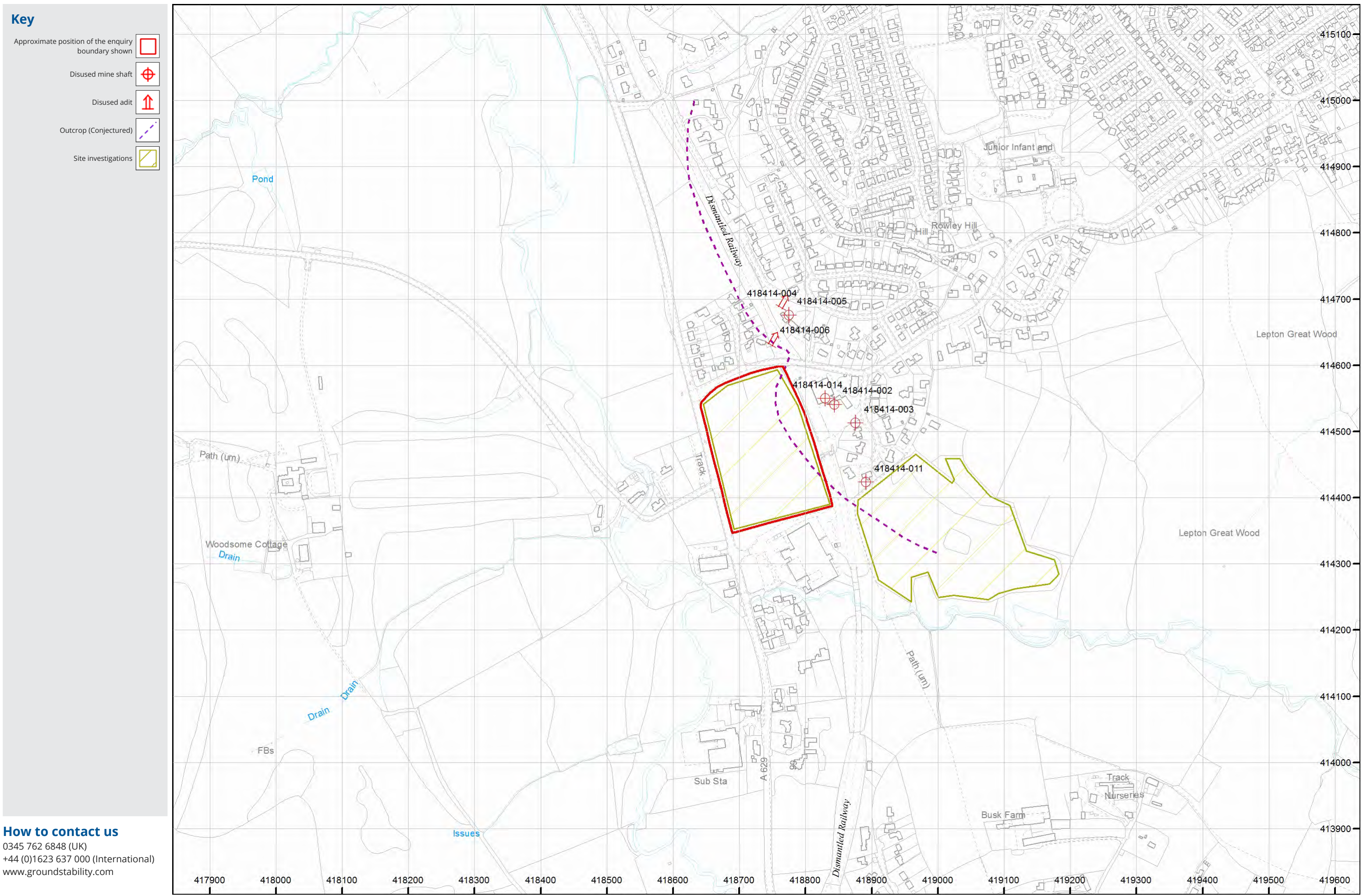
Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

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VAT receipt

Issued by	The Coal Authority 200 Lichfield Lane Mansfield Nottinghamshire NG18 4RG
Tax point date	06 May 2020
Issued to	MICHAEL KELLY BROOK HOLT 3 BLACKBURN ROAD SHEFFIELD S61 2DW
Property search for	1 ROWLEY LANE FENAY BRIDGE HUDDERSFIELD KIRKLEES HD8 0JN
Reference number	51002275888001
Date of issue	07 May 2020
Cost	£112.13
VAT @ 20%	£22.43
Total received	£134.56
VAT registration	598 5850 68

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



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Appendix 5: WSP Report

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