



PHASE I GEO-ENVIRONMENTAL SITE ASSESSMENT

**Betty Barn
Slaidburn Road
Waddington
Clitheroe
Lancashire
BB7 3JQ**

Prepared for:



R.G. PARKINS & PARTNERS LTD
CONSULTING CIVIL & STRUCTURAL ENGINEERS

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EXECUTIVE SUMMARY

Site Address	Betty Barn, Slaidburn Road, Waddington, Lancashire BB7 3JQ	
Grid Reference	E 372370, N 444380	
Site Area	0.03 Hectares	
Current Site Use	The site is located to the north of Waddington and currently comprises a large derelict barn.	
Proposed Development	The client intend to redevelop the site for residential use; comprising the conversion of the existing barn.	
Environmental Setting	<i>Drift Geology</i>	Glacial Till - <i>Clay, Silt, Sand & Gravel.</i>
	<i>Bedrock Geology</i>	Clitheroe Formation - <i>Limestone; and</i> Hodder Formation - <i>Mudstone.</i>
	<i>Hydrogeology</i>	Superficial- <i>Secondary Undifferentiated Aquifer;</i> Bedrock Geology- <i>Secondary A Aquifer.</i>
	<i>Groundwater Source Protection</i>	The site is not located within a Groundwater Source Protection Zone.
	<i>Hydrology</i>	No surface watercourses have been identified within influencing distance of the site.
	<i>Flood Risk</i>	The site is classified as being unaffected by flooding from rivers (Flood Zone 1).
	<i>Ecology</i>	No risk to ecology or aquatic ecosystems identified.
	<i>Industrial Land Uses</i>	There are no hazardous installations or industrial land uses on-site or the immediate locality that may potentially prejudice the future development of the site for residential end use.
	<i>Subsidence Hazards</i>	No hazard identified in data searches.
Site History	A review of the pertinent Ordnance Survey mapping dating from 1850s indicates the site was developed with the existing barn by the 1880s and has remained in this configuration to present day.	
Utility Locations	No evidence of utility infrastructure was noted at the barn.	
Landfill Sites & Ground Gases	There are no landfill sites located within a 2000m radius of the site. Furthermore, there are no potentially significant sources of hazardous ground gases identified within a 100m radius of the site.	
Invasive Plant Species	No invasive plant species were observed during the site walkover.	
Radon	Lower Probability Area (<1% affected) – No protection measures required.	
Coal Mining / Land Stability	The site is not located within an area deemed to be at risk from ground instability arising from historic coal mining activities.	
Brine Pumping / Subsidence	The site is not located within an area deemed to be at risk from ground instability arising from historic brine pumping activities and/or salt extraction.	

EXECUTIVE SUMMARY

Geotechnical Risk

The following potential geotechnical constraints have been identified at the site:

-  The site is likely underlain by a shallow horizon of Made Ground associated with historic construction of the barn;
-  Relict foundations / below ground structures may be present underlying the existing structure;
-  No areas of in-filling have been identified and the site is not underlain by any historic mine workings or compressible ground / instability issues which may pose a future subsidence risk;
-  The underlying superficial geology is likely to comprise a predominantly cohesive soil matrix and as such is unlikely to offer the required degree of permeability to make soak-away drainage viable in this instance; and
-  The existing foundations may require repairs as part of the proposed conversion works and should be assessed by a suitably qualified structural engineer.

Contaminated Land Risk Assessment

Human Health

No significant sources of contamination have been identified at the subject site or within the immediate locality that would pose a significant risk to human health or prejudice the future residential development at the site.

Controlled Waters

The Initial Conceptual Site Model has not identified any potential on-site sources of mobile contamination, viable exposure pathway or sensitive receptor, as such the site is deemed to pose a very low risk to controlled waters.

Ground Gas

No potentially significant sources of hazardous ground gas have been identified.

Recommendations

No recommendations based on the proposed barn renovation.

A detailed Phase II intrusive Geo-Environmental Ground Investigation should be undertaken, if any groundworks or extensions are undertaken, in order to confirm the findings of the initial conceptual site model and value engineer a development solution.

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- Appendix II** Glossary
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Drawing No. 13-319-001 – Site Location Plan

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1. INTRODUCTION

1.1 Background

E3P Ltd has been commissioned by R. G. Parkins & Partners (RGP) on behalf of their client to undertake a detailed Phase I Geo-Environmental Site Assessment for a derelict barn known as Betty Barn located off Slaidburn Road, Waddington; herein referred to as **the site**.





This report is required to determine potential contaminated land and geotechnical liabilities associated with a proposed barn conversion for residential end use.

1.2 Proposed Development

E3P understands the client are involved with respect to the conversion of the existing barn into a residential property.








1.3 Objectives

The objectives of the Geo-Environmental Investigation are to:

-  Review historical plans, geology, hydrogeology, site sensitivity, flood-plain issues, mining records and any local authority information available in order to complete a Desk Study in line with Environment Agency (EA) document Model Procedures for the Management of Contaminated Land (Contaminated Land Report 11 (CLR11));
-  Assess the implications of any potential environmental risks, liabilities and development constraints associated with the site in relation to the future use of the site and in relation to off-site receptors;
-  Assess the desk study information and where possible, provide preliminary recommendations in relation to foundations, pavement construction and floor slabs; and,
-  Provide recommendations regarding future works required and undertake a preliminary pre-construction cost appraisal.

1.4 Sources of Information

Background information was sought from the following sources:

-  Envirocheck Search;
-  Historical mapping dated 1850 to 2019. A selection of historical maps are reproduced in Appendix V;
-  On-line planning records held by Ribble Valley Borough Council;
-  Consultations with representatives of Ribble Valley Borough Council;
-  Magic Map Groundwater Vulnerability Map;
-  Radon: Guidance on protective measures for new buildings (BRE Document BR 211, 2007); and,
-  British Geological Survey Map.

1.5 Limitations

The limitations of this report are presented in Appendix I.

1.6 Confidentiality

E3P has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from E3P; a charge may be levied against such approval.

1.7 Previous Reports

No previous reports have been provided for the site.



2. SITE SETTING

2.1 Site Details

Site Address	Betty Barn, Slaidburn Road, Waddington, Lancashire BB7 3JQ
National Grid Reference	E 372370, N 444380
Site Area	0.03 Hectares

All acronyms used within this report are defined in the Glossary presented in Appendix II.

A site location map is presented in Appendix III as Drawing 13-319-001.

2.2 Current Site Use

E3P has undertaken a site walkover on the 25th March 2019 and a description of the key findings is summarised in Table 2.1.

Table 2.1 Site Description

SITE DESCRIPTION	
Occupancy / Use	The site is located to the north of Waddington and currently comprises a large derelict barn.
Structures	The existing barn is a stone-built structure with slate roof dating from the 1880s [Plate 2].
Access	The site can be accessed via a track leading from Slaidburn Road [Plate 1 & 4].
Slope	The agricultural field around the barn slopes gently to the south [Plate 3].
Retaining Structures	None identified.
Surface Cover (%)	Buildings: 80%
	Hardstand: Nil
	Soft Cover: 20%
Vegetation / Ecology	None identified.
Invasive Plant Species	No invasive plant species were observed at the site.
Hazardous Material Storage	No Above Ground Storage Tanks (ASTs) or Underground Storage Tank (USTs) were observed at the site.
Asbestos Containing Material (ACM)	No ACM was noted within the building fabric. However, roof panels potentially containing asbestos were being stored in the barn [Plate 5].
Polychlorinated Biphenyl (PCB)	No equipment that may potentially contain PCB was observed at the site.
Waste Storage	No potentially hazardous waste streams are generated at the site.
Drainage	A formal drainage survey has not been completed for the purpose of this report.
	However, the barn is not likely to be connected to main drainage infrastructure or service infrastructure.

2.3 Surrounding Area

The surrounding area land uses are summarised in Table 2.2.

Table 2.2 *Surrounding Land Uses*

DIRECTION	LAND USE
North	Track & Agricultural Fields.
East	Slaidburn Road, Farm & Agricultural Fields.
South	Agricultural Fields.
West	Agricultural Fields.


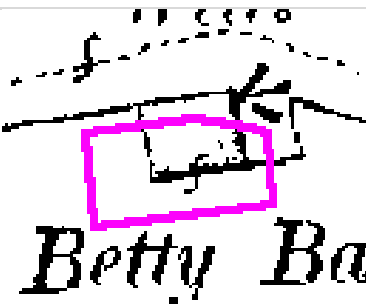
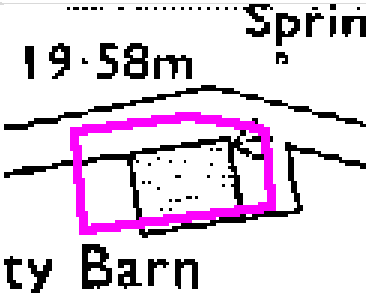

3. SITE HISTORY

3.1 On-Site Historical Development

A review of historical mapping pertinent to the site is summarised in Table 3.1 below.

The Historic Maps are presented in Appendix V.

Table 3.1 Site Historical Development

MAP EDITION	HISTORICAL LAND USE	HISTORICAL MAP EXCERPT
1886 1:2,500	The barn is constructed, and a tree is recorded adjacent to the west.	
1908 1:2,500	The tree is no longer recorded but is still present.	
1971 1:2,500	No significant changes recorded.	
1999 1:2,500	No significant changes recorded, and the site remains in this configuration.	

3.2 Off-Site Historical Development

A review of potentially contaminative uses identified on historical Ordnance Survey maps within a 100m radius of the site is summarised below in Table 3.2.

Table 3.2 *Surrounding Potentially Contaminative Land Uses.*

SURROUNDING FEATURE	DISTANCE	DATES	DIRECTION
Well <i>...Then No Longer Recorded / Infilled</i>	<10m	Pre 1886-Pre 1999 Pre 1999-Present	North
Chancery Farm	95m	Pre 1886-Present	East

3.3 Planning History

E3P has undertaken a review of on-line planning records held by Ribble Valley Borough Council and no environmentally pertinent information has been obtained for the subject site.

3.4 Anecdotal Information

No anecdotal geotechnical or environmentally pertinent information was identified following a web-based search of the area.

4. ENVIRONMENTAL SETTING

4.1 Geology and Hydrogeology

The British Geological Survey (BGS) map for the site, (1:50,000, Solid & Drift edition) and online records indicates the site is underlain by the geological sequence presented in Table 4.1.

Table 4.1 Summary of Underlying Geology

GEOLOGICAL UNIT	CLASSIFICATION	DESCRIPTION	AQUIFER CLASSIFICATION
Drift	Glacial Till	Diamicton	Secondary Undifferentiated Aquifer
Solid	Clitheroe Formation Hodder Formation	Limestone Mudstone	Secondary A Aquifer

E3P has reviewed the historic BGS boreholes records and there are no available records from within a 500m radius of the subject site.

The BGS online records indicate there are no recorded faults within a 250m radius of site.

The Environmental Agency (EA) indicates the study site not is located within a Groundwater Source Protection Zone or a Drinking Water Safeguard Zone.

There are no groundwater abstraction boreholes located within a 1000m radius of the site. The closest relates to an abstraction borehole located c. 1337m north of the barn for agricultural use and private water supply.

Based on the local topography and location of surface watercourses it is considered likely that shallow groundwater, if present, will flow in a southerly direction, following the topographical gradient towards River Ribble.

4.2 Geotechnical Data

Geotechnical Data presented within a commercially available environmental database is summarised within Table 4.2 (below).

Table 4.2 Summary of Geotechnical Data

HAZARD	DESIGNATION
Shrink-Swell Clay	Very Low Risk
Landslides	Very Low Risk
Ground Dissolution	Very Low Risk
Compressible Ground	No Hazard
Collapsible Deposits	Very Low Risk
Running Sand	Very Low Risk
Natural Cavities	None recorded within 2000m
Man-made Cavities	None recorded within 2000m

4.3 Coal Mining

The Envirocheck Report states the site is in an area which might not be affected by coal mining activity.

The Coal Authority operates a risk based approach to the assessment of potential instability issues associated with future development of land located within the pre-defined Coal Authority Consultation Areas. This risk based approach sub-divides the potential risk into 'Low & High' Risk Categories.

To determine the initial risk classification of the proposed development site, a search of the Coal Authority Gazetteer (<http://mapapps2.bgs.ac.uk/coalauthority/home.html>) has been undertaken to assess the locality of the proposed development in relation to known or potential areas of mining risk.

The results of this search confirmed that the proposed development site is located within an area deemed to at a **Low Risk** from historic mine workings therefore no further assessment is required.

4.4 Brine Workings

The site is not situated in an area affected by brine pumping / extraction or rock salt mining.

4.5 Hydrology

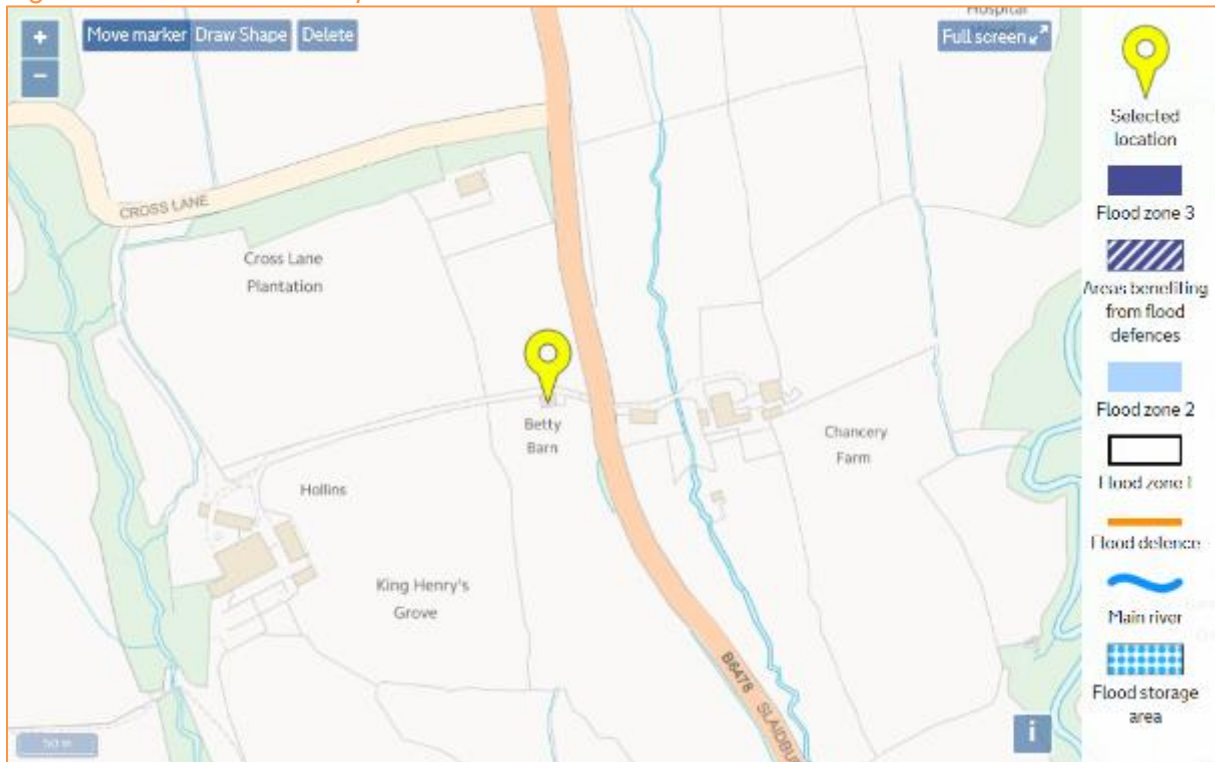
There are no surface watercourses located within 250m of the site.

The site is located within a currently defined Flood Risk Zone 1; defined as land having a less than 1 in 1,000 annual probability of river or sea flooding.

In addition, the Envirocheck Report states there is a potential for groundwater flooding to occur at the surface.

The Flood Risk Map is presented in Figure 4.1 (overleaf).

Figure 4.1 – Flood Risk Map



Source - <https://flood-map-for-planning.service.gov.uk/>

4.6 Radon Risk Potential

The Envirocheck Report indicates the site is situated in an area where less than 1% of properties are above the Action Level.

The BGS reports that radon protective measures are not necessary in the construction of new structures or extensions.

4.7 Industrial Land Uses

The site is located within a rural area to the north of Waddington and there are no Trade Directory entries listed within a 250m radius of the site.

There are no Fuel Station entries within a 2000m radius of the site.

4.8 Hazardous Substance Consents

The Envirocheck Report confirms the absence of the following Hazardous Installations within 2.0km of the site:

- 🏠 Control of Major Accident Hazard (COMAH) Sites
- 🏠 Explosive Sites;
- 🏠 Notification of Installation Handling Hazardous Substances (NIHHS);
- 🏠 Planning Hazardous Substance Consents; and,
- 🏠 Planning Hazardous Substance Enforcements.

4.9 Sensitive Land Uses

No sensitive land uses have been identified within a 50m radius of the site.

4.10 Site Sensitivity Assessment

The site is assessed to be located within a **Low** sensitivity setting as discussed in Table 4.3.

Table 4.3 Site Sensitivity Assessment

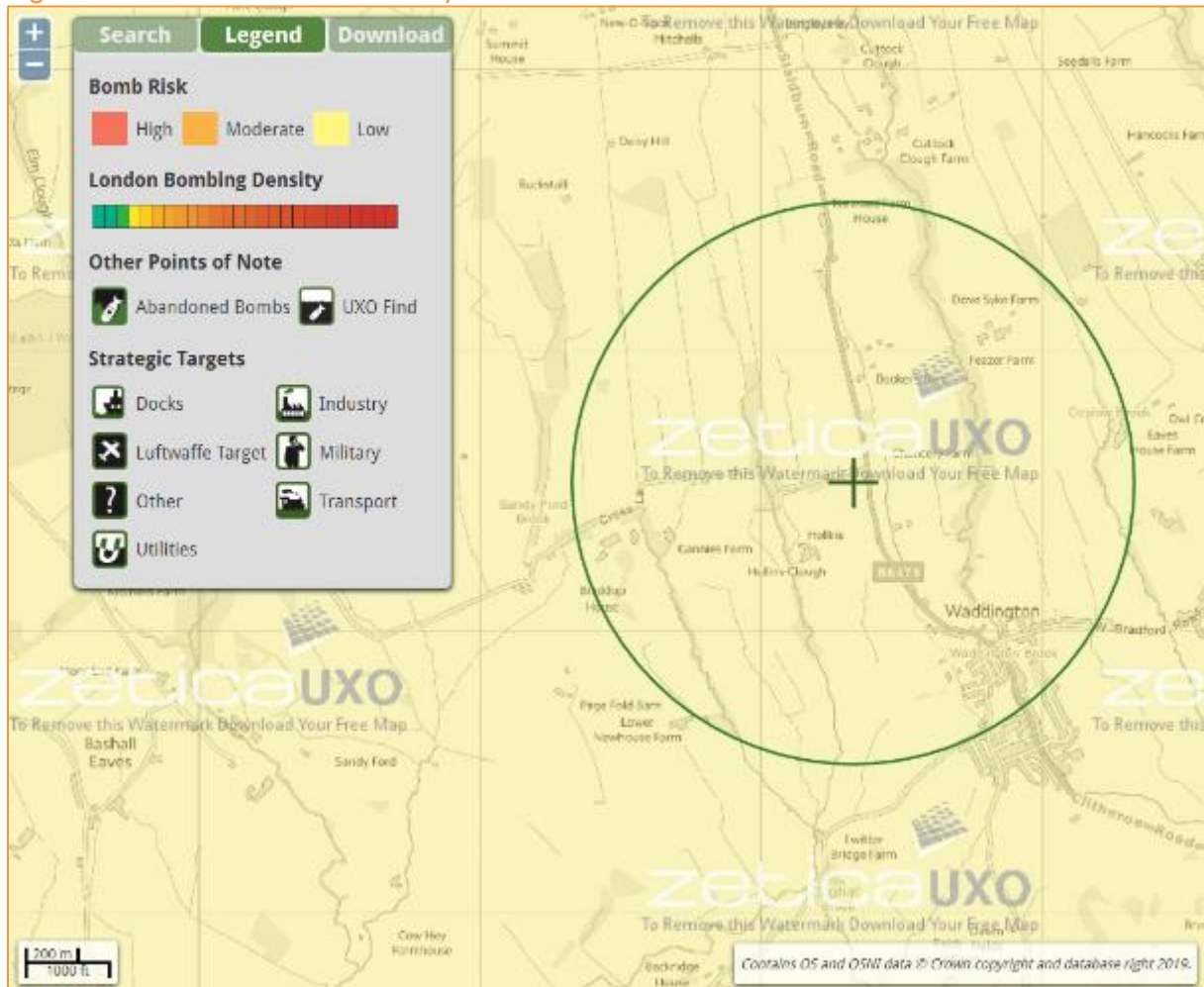
SENSITIVITY PROFILE	DISCUSSION	RATING
Sensitive land uses within close proximity (e.g. residential, school, nursery, local nature reserves etc.)	The closest sensitive land uses are residential properties located within 50m to the southeast of the site.	Low
Groundwater Source Protection Zone or Drinking Water Safeguard Zone	The site is not located within a Groundwater Source Protection Zone or Drinking Water Safeguard Area.	Low
Distance to the closest groundwater abstraction point.	No potable groundwater abstraction boreholes recorded within a 1.0km radius of the site.	Low
Aquifer Classification in Superficial Drift Deposits.	The Secondary Undifferentiated Aquifer within the superficial deposits is not considered a sensitive receptor in this instance.	Low
Aquifer classification in Bedrock.	The Secondary A Aquifer in the bedrock is considered a sensitive receptor, however, the overall sensitivity is reduced given the absence of any potable supply boreholes within a 1.00km radius of the site. .	Low
Is the site underlain by low permeability Drift to depths in excess of 10.0m?	There are no BGS borehole records in the immediate locality, however, boreholes in the wider area indicate cohesive deposits up depth of ~14.60m bgl. However, the exact drift conditions for the subject site cannot be known without an intrusive site investigation.	Low
Is the site located within 50m of a surface watercourse?	No surface watercourses have been identified within 50m of the site.	Low
Overall Site Environmental Sensitivity		Low

4.11 Unexploded Ordnance

The regional unexploded bomb risk map from Zetica indicates that the site is an area of Lancashire considered to be at *Low Risk* from possible Unexploded Ordnance (UXO) resulting from Second World War air-delivered ordnance.

No further assessment is required, and the Zetica UXO Risks Map is presented in 4.2 (overleaf).

Figure 4.2 – Zetica UXO Risks Map



Source - <https://zeticauxo.com/downloads-and-resources/risk-maps/>

4.12 Preliminary Geotechnical Assessment

The following potential geotechnical constraints have been identified at the site:

- 📍 The site is likely underlain by a shallow horizon of Made Ground associated with historic construction of the barn;
- 📍 Relict foundations / below ground structures may be present underlying the existing structure;
- 📍 No areas of in-filling have been identified and the site is not underlain by any historic mine workings or compressible ground / instability issues which may pose a future subsidence risk;
- 📍 The underlying superficial geology is likely to comprise a predominantly cohesive soil matrix and as such is unlikely to offer the required degree of permeability to make soak-away drainage viable in this instance; and
- 📍 The existing foundations may require repairs as part of the proposed conversion works and should be assessed by a suitably qualified structural engineer.

5. CONSULTATIONS

5.1 Contaminated Land Officer

E3P has submitted an enquiry on with the Contaminated Land Officer at Ribble Valley Borough Council regarding potential contaminated land issues and/or development constraints and a response is awaited.

Any pertinent information received will be issued as an addendum to this report.

5.2 Landfill Sites and Waste Treatment Sites

The Envirocheck report states there are no landfill (current or historic) or waste management facilities within a 2000m radius of the site.

5.3 Regulatory Database

The information summarised in Table 5.1 has been obtained from a commercially available environmental database. The summary table only includes records from within 250m of the subject site and not otherwise detailed in the report.

Table 5.1 Summary of Environmental Data

RECORD	ENTRIES WITHIN 250m	DETAILS
Contaminated Land Register Entries and Notices	0	None Identified (N/A).
Authorised industrial processes (IPC/IPPC/LAPPC)	0	N/A
Fuel Stations Entries	0	N/A
Licensed radioactive substances	0	N/A
Enforcements, prohibitions or prosecutions	0	N/A
Discharge Consents	1	Chancery Farm (106m E) – Treated Effluent
Pollution Incidents	1	The incident was of minor severity and involved the release of sewage c. 106m east of the site. The incident is not believed to have a residual impact on the application site.
Consents issued under the Planning (Hazardous Substances) Act 1990	0	N/A
Control of Major Accident Hazard (COMAH) sites	0	N/A

6. INITIAL CONCEPTUAL SITE MODEL

6.1 Initial CSM

In accordance with Environment Agency, CLR 11 (2004) and BSI 10175 (Code of Practice for Investigation of Potentially Contaminated Land), E3P Ltd has developed an initial CSM to identify potential contamination sources, migration pathways and receptors within the study area. This is summarised within Table 6.1.

Table 6.1 Initial Conceptual Site Model

SOURCE	EXPOSURE	POTENTIAL PATHWAY
Human Health		
Heavy Metals & non-volatile PAH in and Made Ground	Dermal Contact and Ingestion	Construction Workers Residential End Users
<p>Discussion: No significant sources of heavy metals, non-volatile PAH and TPH compounds have been identified at the site; and as such there is considered to be a low risk to human health.</p> <p>However, due to the age and nature of the structure the presence of low-level impact to soils associated with historic farming activities cannot be entirely discounted.</p> <p>If impacted soils are present, a suitable cover system designed in accordance with BRE465 (<i>Cover Systems for Land Regeneration</i>) may be required.</p>		
Asbestos Containing Materials (ACM) in Made Ground	Fibre / Dust Inhalation	Construction Workers Commercial End Users Third Party Property
<p>Discussion: No signs of ACM were noted within the building fabric. However, corrugated sheet roof panels which may contain asbestos are being stored in the barn, these will need to be removed in a controlled manner prior to the renovation in accordance with Control of Asbestos Regulations (2012).</p> <p>ACM poses a risk through fibre and dust inhalation and if present may pose a risk to construction workers during any future renovation and to adjacent third-party property should dust be generated during those works.</p>		
Hazardous Ground Gases	Vapour Inhalation Volatilisation to Indoor Air	Construction Workers Residential End Users
<p>Discussion: No potentially significant sources of hazardous ground gases have been identified at the site or within the immediate locality.</p> <p>A well / spring was located to the north of the site, however, even if this was infilled with gassing materials it's unlikely to generate the volumetric capacity to present a ground gas risk to the barn.</p>		
Controlled Waters		
Hydrocarbons / PAH in Made Ground	Lateral / Vertical Migration	N/A
<p>Discussion: The presence of soluble phase contaminants within the sub-surface is not anticipated.</p> <p>Furthermore, in the absence of a viable exposure pathway or receptor, the site is not considered to pose an unacceptable level of risk to controlled waters.</p>		

SOURCE	EXPOSURE	POTENTIAL PATHWAY
Buildings and Infrastructure		
pH & Sulphate	Corrosion of Concrete	Foundation / Concrete
<p>Discussion: In the absence of any groundworks no assessment for concrete classification is required.</p>		
Ecology		
Groundworks	Protected Species	N/A
<p>Discussion: With respect to contaminated land, in the likely absence of any potential sources of mobile contaminants, no risk to ecology or aquatic ecosystems has been identified.</p> <p>However, the barn, could support species of protected wildlife such as bats and birds which may be affected by the renovation works. A Phase 1 Habitat Survey may be required.</p>		






7. CONCLUSIONS AND RECOMMENDATIONS

Contamination Issues

Human Health	No significant sources of contamination have been identified at the subject site or within the immediate locality that would pose a significant risk to human health or prejudice the future residential development at the site.
Controlled Waters	The Initial Conceptual Site Model has not identified any potential on-site sources of mobile contamination, a viable exposure pathway or sensitive receptor, as such the site is deemed to pose a very low risk to controlled waters.
Ground Gas	No potentially significant sources of hazardous ground gas have been identified.
Radon	Lower Probability Area (<1% affected) – No radon protection measures required.
Potable Waters	Based on existing information, that the use of Poly-Ethylene Pipe (PE) for water supply infrastructure will likely be suitable for proposed residential development.

Geotechnical Issues

The following potential geotechnical constraints have been identified at the site:

-  The site is likely underlain by a shallow horizon of Made Ground associated with historic construction of the barn;
-  Relict foundations / below ground structures may be present underlying the existing structure;
-  No areas of in-filling have been identified and the site is not underlain by any historic mine workings or compressible ground / instability issues which may pose a future subsidence risk;
-  The underlying superficial geology is likely to comprise a predominantly cohesive soil matrix and as such is unlikely to offer the required degree of permeability to make soak-away drainage viable in this instance; and
-  The existing foundations may require repairs as part of the proposed conversion works and should be assessed by a suitably qualified structural engineer.

END OF REPORT

1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between E3P and the Client as indicated in Section 1.2.
2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information it has been assumed it is correct. No attempt has been made to verify the information.
3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination which are enforced by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.
4. During the site walkover reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not been made known or accessible.
5. Access considerations, the presence of services and the activities being carried out on the site limited the locations where sampling locations could be installed and the techniques that could be used.
6. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.
7. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials this is for indicative purposes only and do not constitute or replace full and proper surveys.
8. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.
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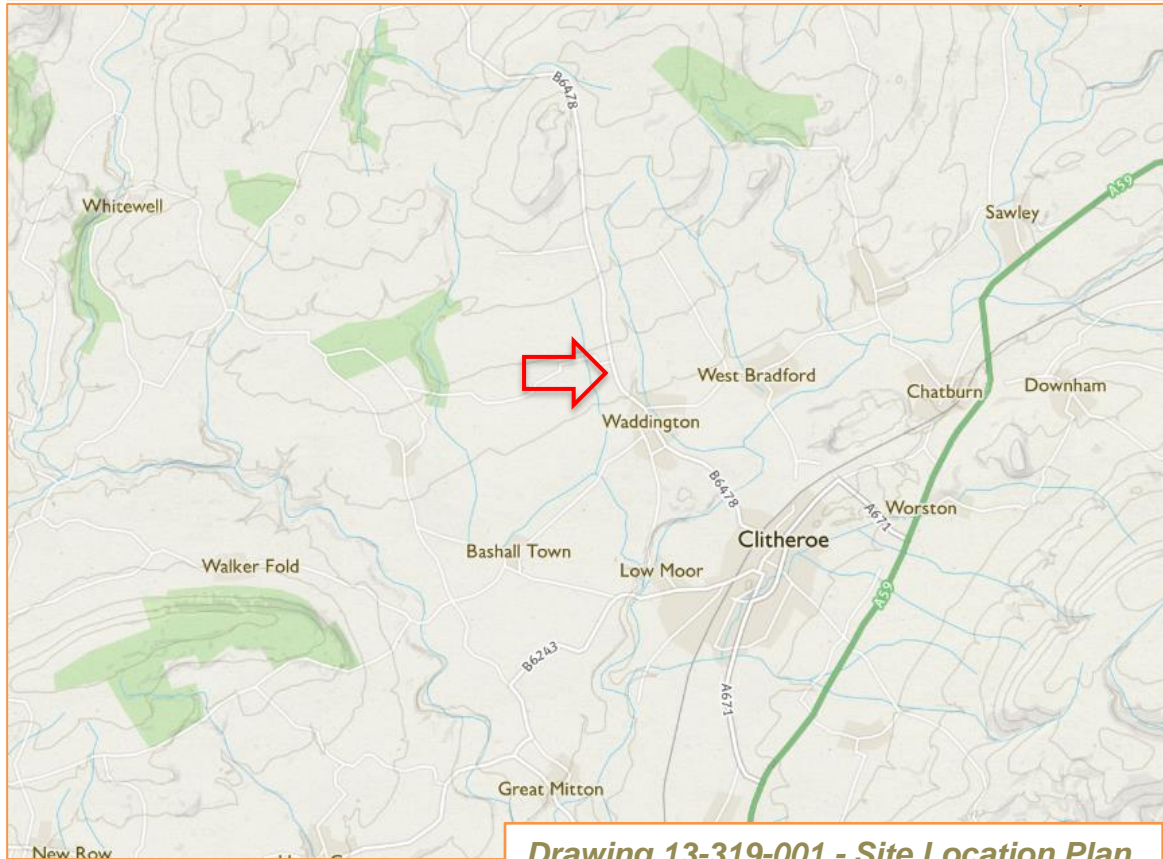
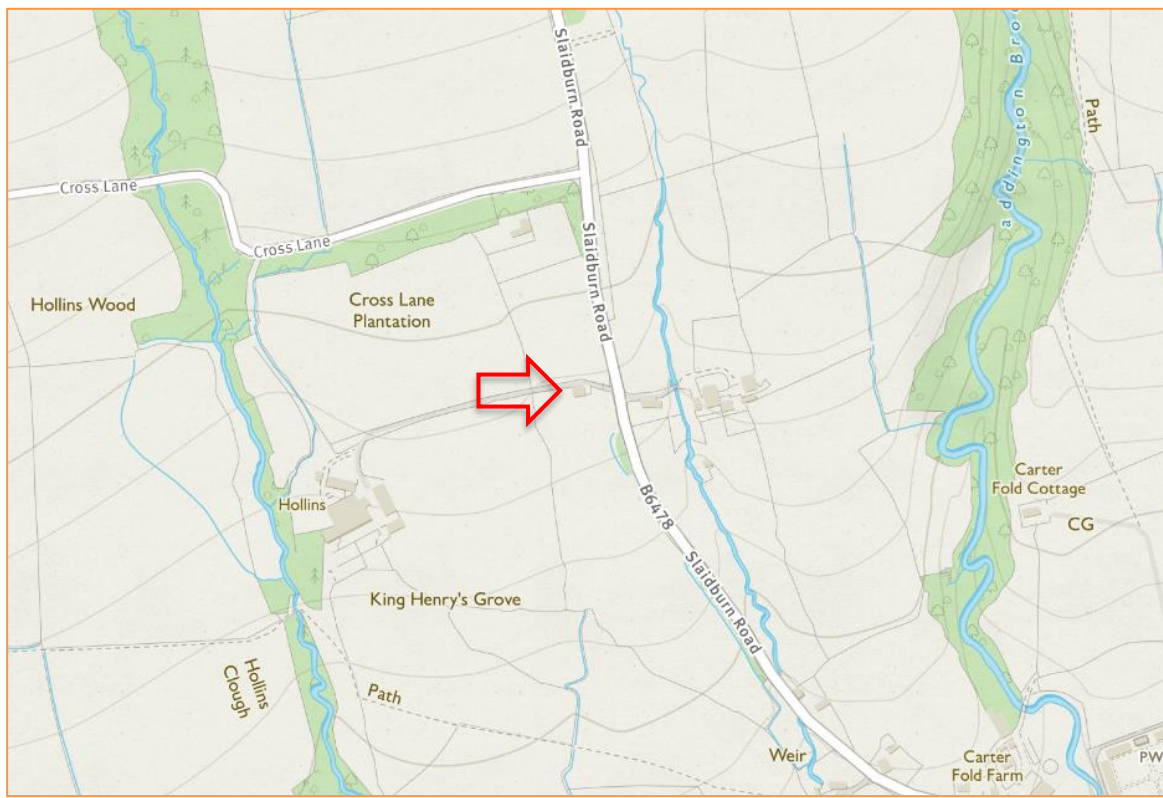


APPENDIX II GLOSSARY



TERMS

AST	Above Ground Storage Tank	SGV	Soil Guideline Value
BGS	British Geological Survey	SPH	Separate Phase Hydrocarbon
BSI	British Standards Institute	TPH CWG	Total Petroleum Hydrocarbon (Criteria Working Group)
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes	SPT	Standard Penetration Test
CIEH	Chartered Institute of Environmental Health	SVOC	Semi Volatile Organic Compound
CIRIA	Construction Industry Research Association	UST	Underground Storage Tank
CLEA	Contaminated Land Exposure Assessment	VCCs	Vibro Concrete Columns
CSM	Conceptual Site Model	VOC	Volatile Organic Compound
DNAPL	Dense Non-Aqueous Phase Liquid (chlorinated solvents, PCB)	WTE	Water Table Elevation
DWS	Drinking Water Standard	m	Metres
EA	Environment Agency	km	Kilometres
EQS	Environmental Quality Standard	%	Percent
GAC	General Assessment Criteria	%v/v	Percent volume in air
GL	Ground Level	mb	Milli Bars (atmospheric pressure)
GSV	Gas Screening Value	l/hr	Litres per hour
HCV	Health Criteria Value	µg/l	Micrograms per Litre (parts per billion)
ICSM	Initial Conceptual Site Model	ppb	Parts Per Billion
LNAPL	Light Non-Aqueous Phase Liquid (petrol, diesel, kerosene)	mg/kg	Milligrams per kilogram (parts per million)
ND	Not Detected	ppm	Parts Per Million
LMRL	Lower Method Reporting Limit	mg/m³	Milligram per metre cubed
NR	Not Recorded	m bgl	Metres Below Ground Level
PAH	Polycyclic Aromatic Hydrocarbon	m bcl	Metre Below Cover Level
PCB	Poly-Chlorinated Biphenyl	mAOD	Metres Above Ordnance Datum (sea level)
PID	Photo Ionisation Detector	kN/m²	Kilo Newtons per metre squared
QA	Quality Assurance	µm	Micro metre
SGV	Soil Guideline Value		



Drawing 13-319-001 - Site Location Plan

APPENDIX IV PHOTOGRAPHS





PLATE 1 – VIEW OF THE WESTERN ELEVATION



PLATE 2 – VIEW OF THE SOUTHERN ELEVATION





PLATE 3 – VIEW OF THE BARN LOOKING NORTHEAST



PLATE 4 – VIEW OF THE EASTERN ELEVATION



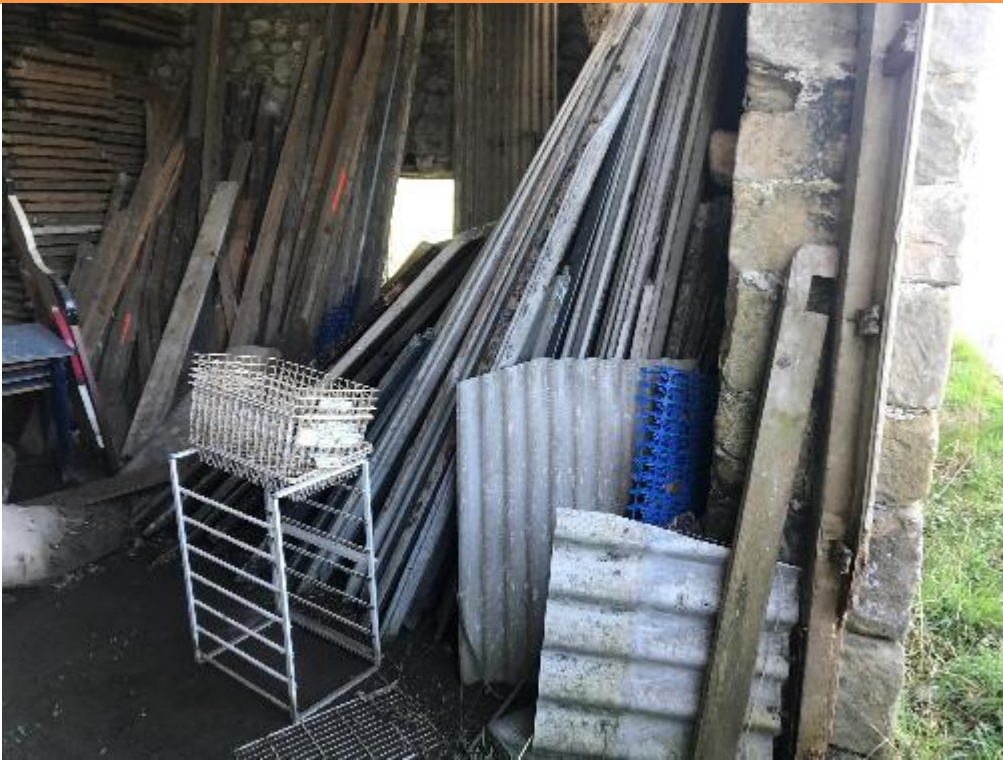


PLATE 5 – VIEW OF CORRUGATED PANELS WHICH MAY CONTAIN ASBESTOS



APPENDIX V HISTORICAL MAP



Historical Mapping Legends

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

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

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

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

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

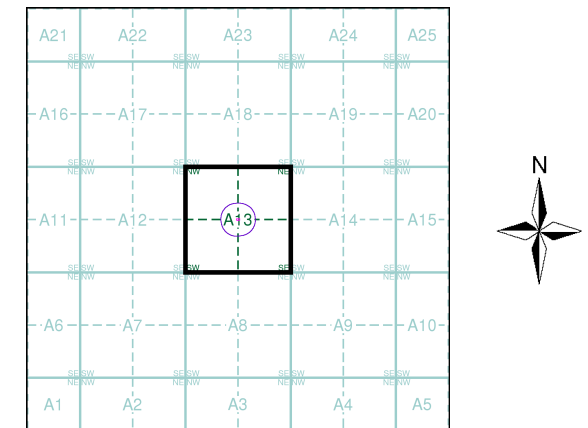
Cliff **Slopes** **Top**
Rock **Rock (scattered)**
Boulders **Boulders (scattered)**
Positioned Boulder **Scree**
Non-Coniferous Tree (surveyed) **Coniferous Tree (surveyed)**
Non-Coniferous Trees (not surveyed) **Coniferous Trees (not surveyed)**
Orchard Tree **Scrub** **Bracken**
Coppice, Osier **Reeds** **Marsh, Saltings**
Rough Grassland **Heath** **Culvert**
Direction of water flow **Triangulation Station** **Antiquity (site of)**
Electricity Transmission Line **Electricity Pylon**
B.M. 231.60m Bench Mark **Buildings with Building Seed**
Roofed Building **Glazed Roof Building**
Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)
Bks Barracks **P** Pillar, Pole or Post
Bty Battery **PO** Post Office
Cemy Cemetery **PC** Public Convenience
Chy Chimney **Pp** Pump
Cis Cistern **Ppg Sta** Pumping Station
Dismtd Rly Dismantled Railway **PW** Place of Worship
EI Gen Sta Electricity Generating Station **Sewage Ppg Sta** Sewage Pumping Station
EI P Electricity Pole, Pillar **SB, S Br** Signal Box or Bridge
EI Sub Sta Electricity Sub Station **SP, SL** Signal Post or Light
FB Filter Bed **Spr** Spring
Fn / D Fn Fountain / Drinking Ftn. **Tk** Tank or Track
Gas Gov Gas Valve Compound **Tr** Trough
GVC Gas Governor **Wd Pp** Wind Pump
GP Guide Post **Wr Pt, Wr T** Water Point, Water Tap
MH Manhole **Wks** Works (building or area)
MP, MS Mile Post or Mile Stone **W** Well



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Yorkshire	1:2,500	1886	2
Yorkshire	1:2,500	1908	3
Ordnance Survey Plan	1:2,500	1971	4
Large-Scale National Grid Data	1:2,500	1993	5
Historical Aerial Photography	1:2,500	1999	6

Historical Map - Segment A13



Order Details

Order Number: 198324623_1_1
 Customer Ref: 13-319
 National Grid Reference: 372370, 444380
 Slice: A
 Site Area (Ha): 0.03
 Search Buffer (m): 100

Site Details

Betty Barn, Slaidburn Road, WADDINGTON, BB7 3JQ



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



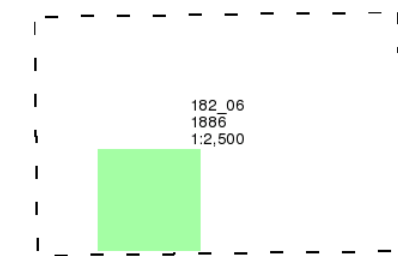
Yorkshire

Published 1886

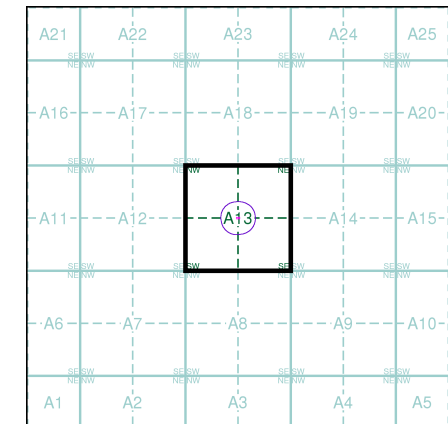
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

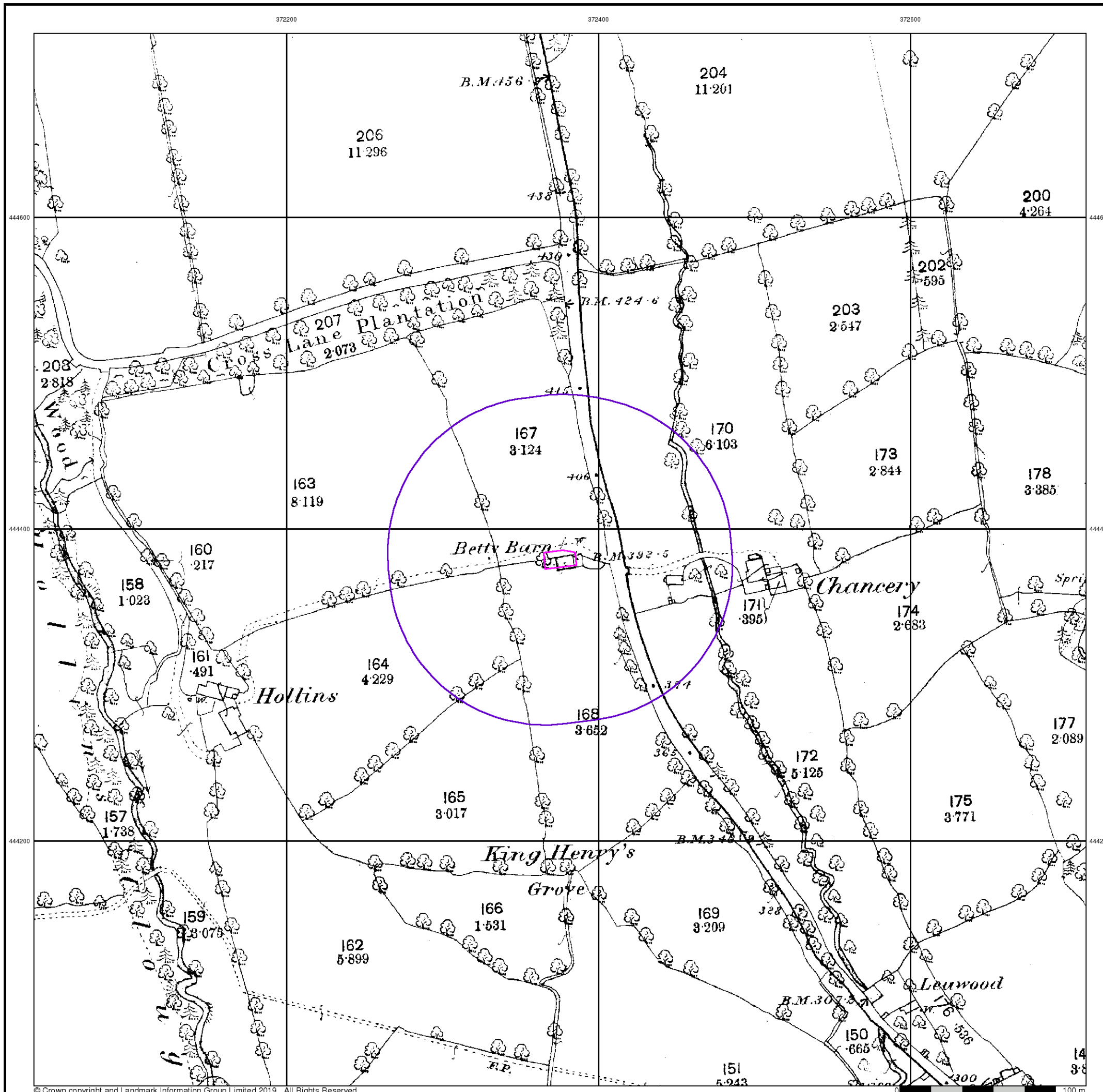
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Search Buffer (m): 100

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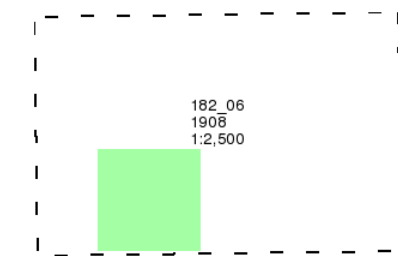
Yorkshire

Published 1908

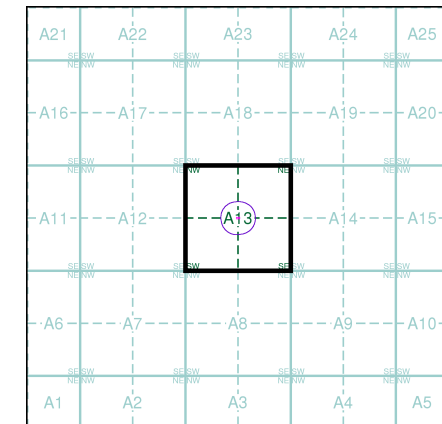
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered 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



Order Details

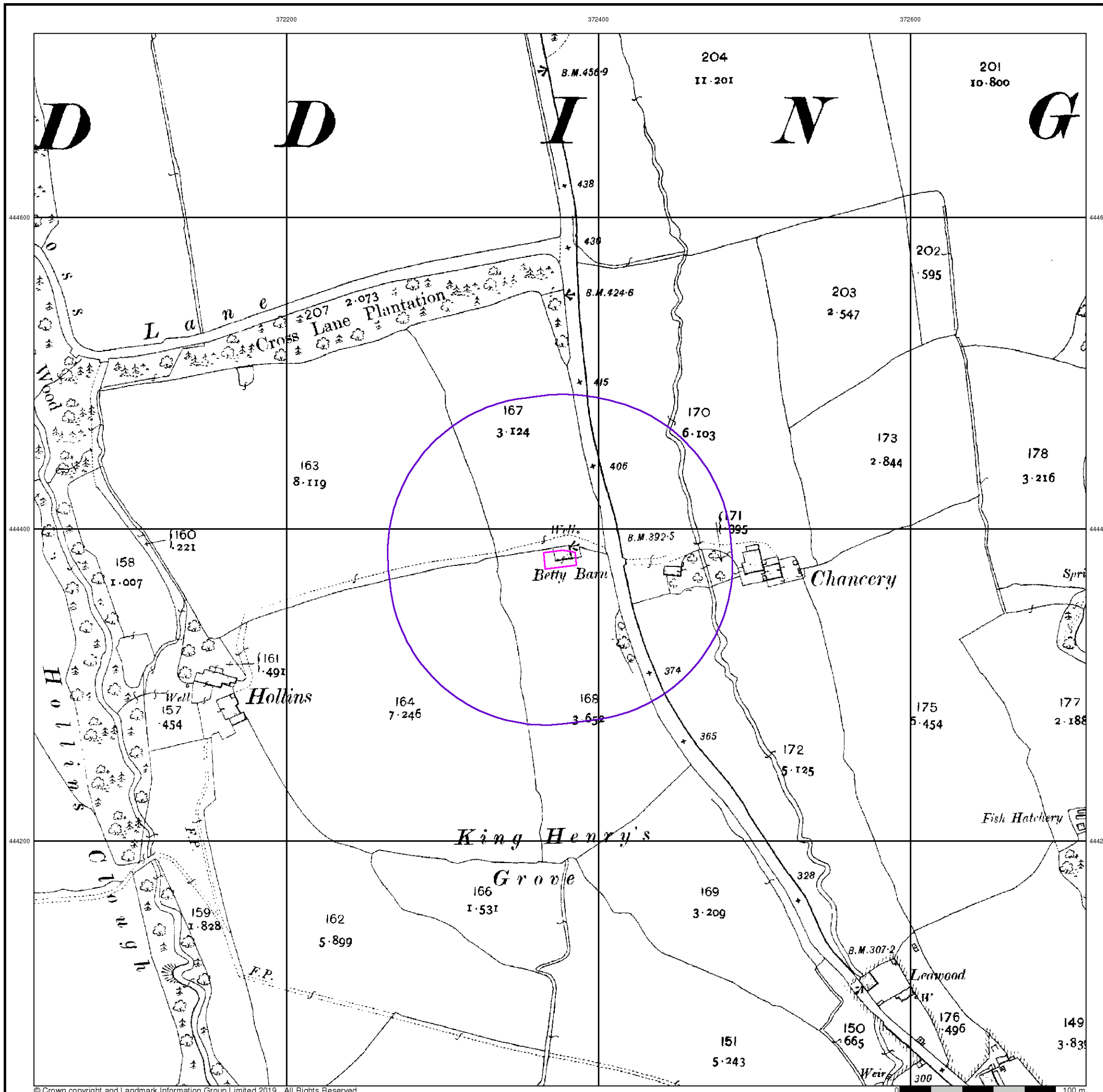
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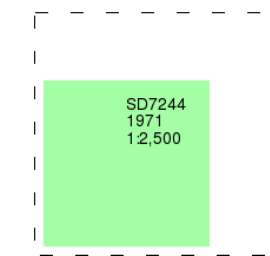
Ordnance Survey Plan

Published 1971

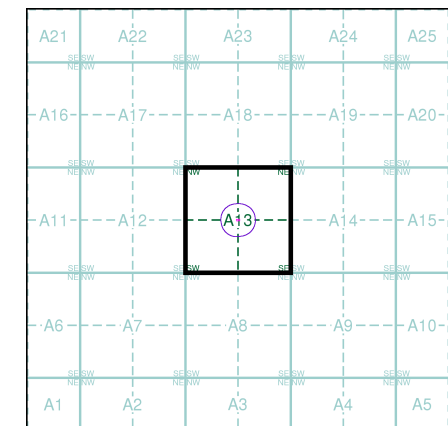
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

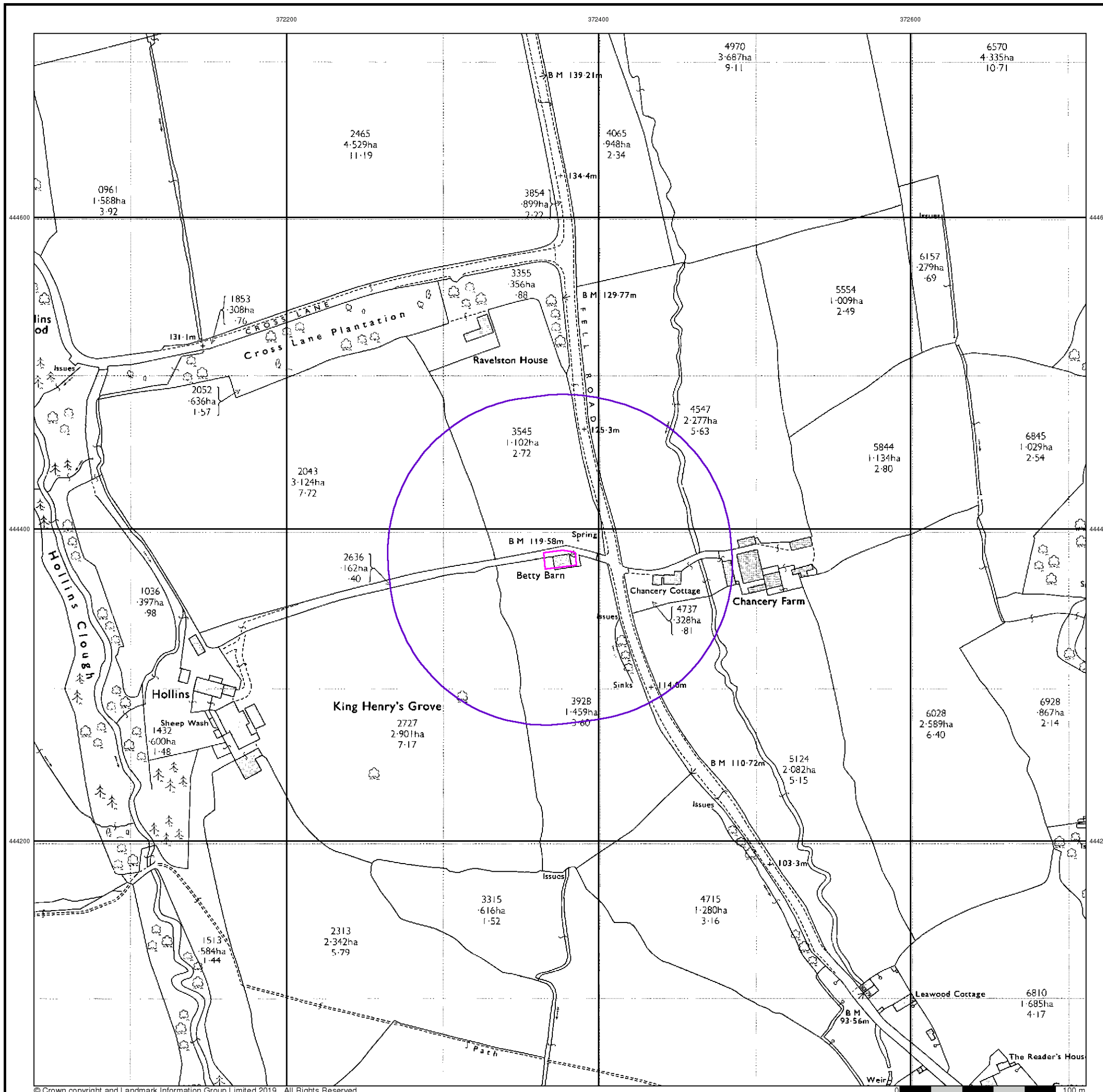
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Slice: A
Site Area (Ha): 0.03
Search Buffer (m): 100

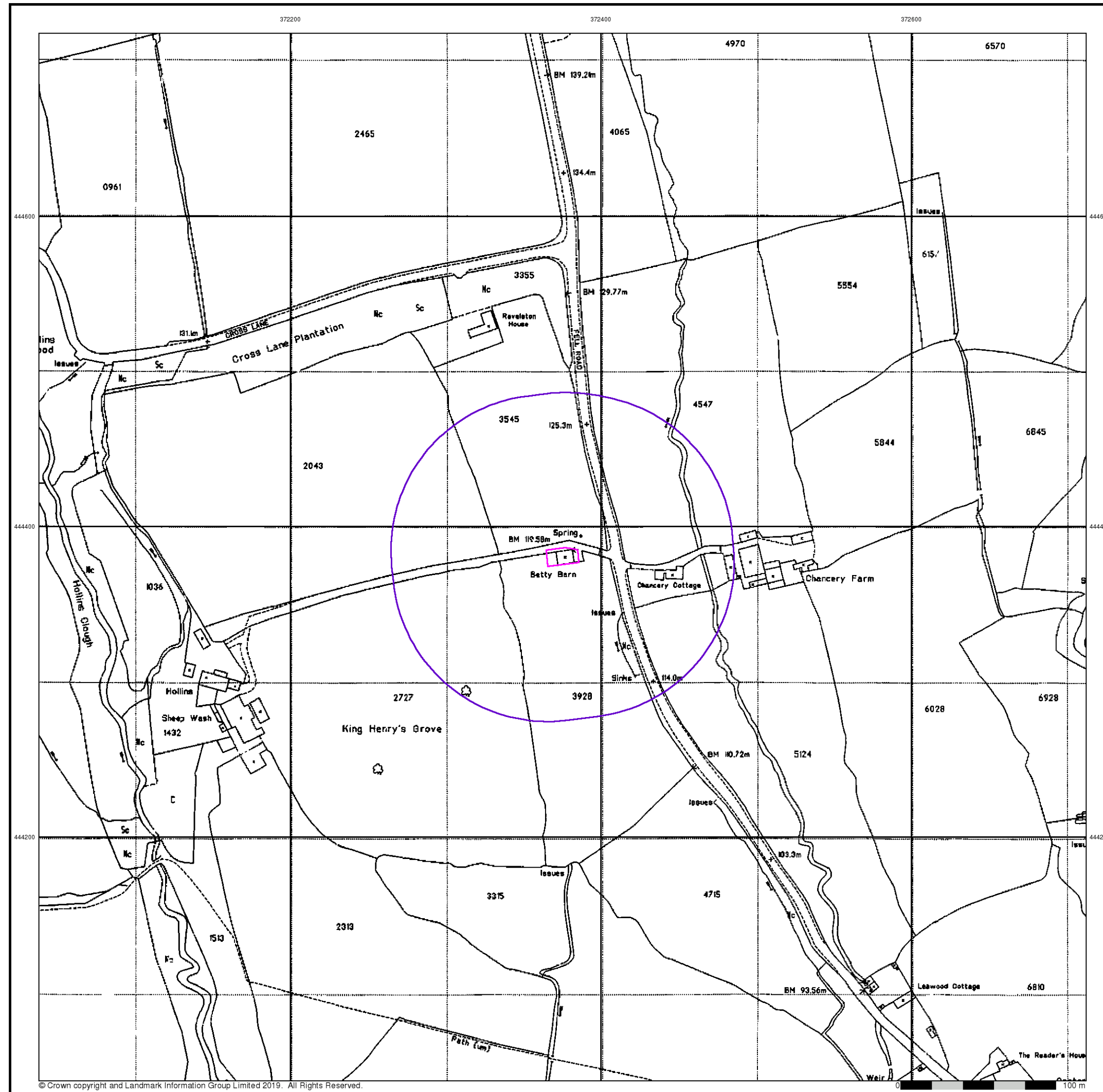
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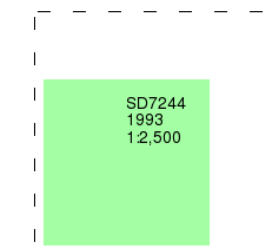
Large-Scale National Grid Data

Published 1993

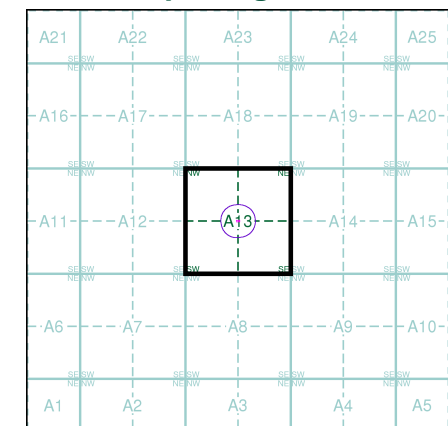
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 198324623_1_1
 Customer Ref: 13-319
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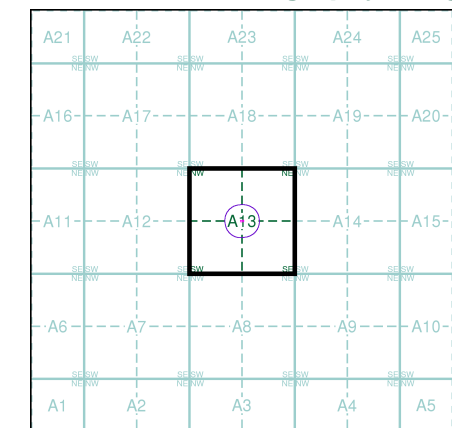


Historical Aerial Photography

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: 198324623_1_1
 Customer Ref: 13-319
 National Grid Reference: 372370, 444380
 Slice: A
 Site Area (Ha): 0.03
 Search Buffer (m): 100

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