

COAL MINING INVESTIGATION REPORT



3 CARR HEAD ROAD, HOWBROOK, BARNSELY, SOUTH YORKSHIRE, S35 7HG
PREPARED FOR MR. S. O'KEEFE



QUALITY CONTROL

Project No.	GEOL21-8875	Client	Mr. S. O'Keefe
Report Type	Coal Mining Investigation Report		
Project Type	Proposed Residential Dwelling		
Site Address	3 Carr Head Road, Howbrook, Barnsley, South Yorkshire, S35 7HG		
NGR	432600, 398190		
Date	11/11/2022		
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Position	Director		

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REPORT REVISION HISTORY				
Issue	Description	Date	Author	Approval
1	Final Issue	11/11/2022	TMc	RS



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Coal Mining Investigation Report
3 Carr Head Road, Howbrook, Barnsley, South Yorkshire, S35 7HG
Project No.: GEOL21-8875

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TABLE OF CONTENTS

1.0 INTRODUCTION	PAGE 3
2.0 GEOLOGICAL & COAL MINING SETTING	PAGE 3
3.0 HISTORICAL MAP REVIEW	PAGE 6
4.0 GEOL SITE INVESTIGATION WORKS (NOVEMBER 2021 & JANUARY 2022)	PAGE 6
5.0 GROUND GAS RISK ASSESSMENT	PAGE 8

APPENDIX I	SITE LOCATION PLAN & PROPOSED DEVELOPMENT LAYOUT PLAN
APPENDIX II	THE COAL AUTHORITY, CONSULTANTS COAL MINING REPORT
APPENDIX III	BOREHOLE LOCATION PLAN, BOREHOLE RECORD SHEETS & THE COAL AUTHORITY PERMIT (24223)
APPENDIX IV	ORDNANCE SURVEY MAPS
APPENDIX V	GEOL GROUND GAS MONITORING CERTIFICATE

1.0 Introduction

Geol Consultants Limited (GEOL) were instructed by Mr. Shane O’Keefe to undertake a Coal Mining Investigation Report (CMIR) to facilitate a proposed residential dwelling on land adjacent to no. 3 Carr Head Road in Howbrook, near Barnsley in South Yorkshire. The National Grid Reference (NGR) for the centre of the development area is 432600, 398190. A copy of the proposed development layout plan produced by White Angus Partnership, drawing no. 03, dated June 2022 can be seen attached in Appendix I. The purpose of this CMIR is to provide the Local Planning Authority & the Coal Authority with information on coal mining and an assessment of its potential impact on land stability in relation to the proposed development. This CMIR has been prepared in accordance with the requirements of the Coal Authority Guidance Document, reference; Risk Based Approach to Development Management, Guidance for Developers (Version 4 – 2017). The geological and coal mining assessments for this site have been based on records produced by the British Geological Survey (BGS) and The Coal Authority. The following documents have been reviewed as part of this CMIR Report.

- ▼ BGS, Sheet SK39NW, 1:10,000 scale – extract shown in Figure 1 on page 4
- ▼ The Coal Authority, Consultants Coal Mining Report, reference 51002715579001 – copy attached in Appendix II
- ▼ GEOL Borehole Record Sheets (BH01 to BH03 & RBHA to RBHC), dated November 2021 & January 2022 – copies attached in Appendix III
- ▼ Ordnance Survey (OS) maps dating from 1855 to 2021 – copies attached in Appendix IV
- ▼ GEOL Ground Gas Monitoring Certificate – copy attached in Appendix V

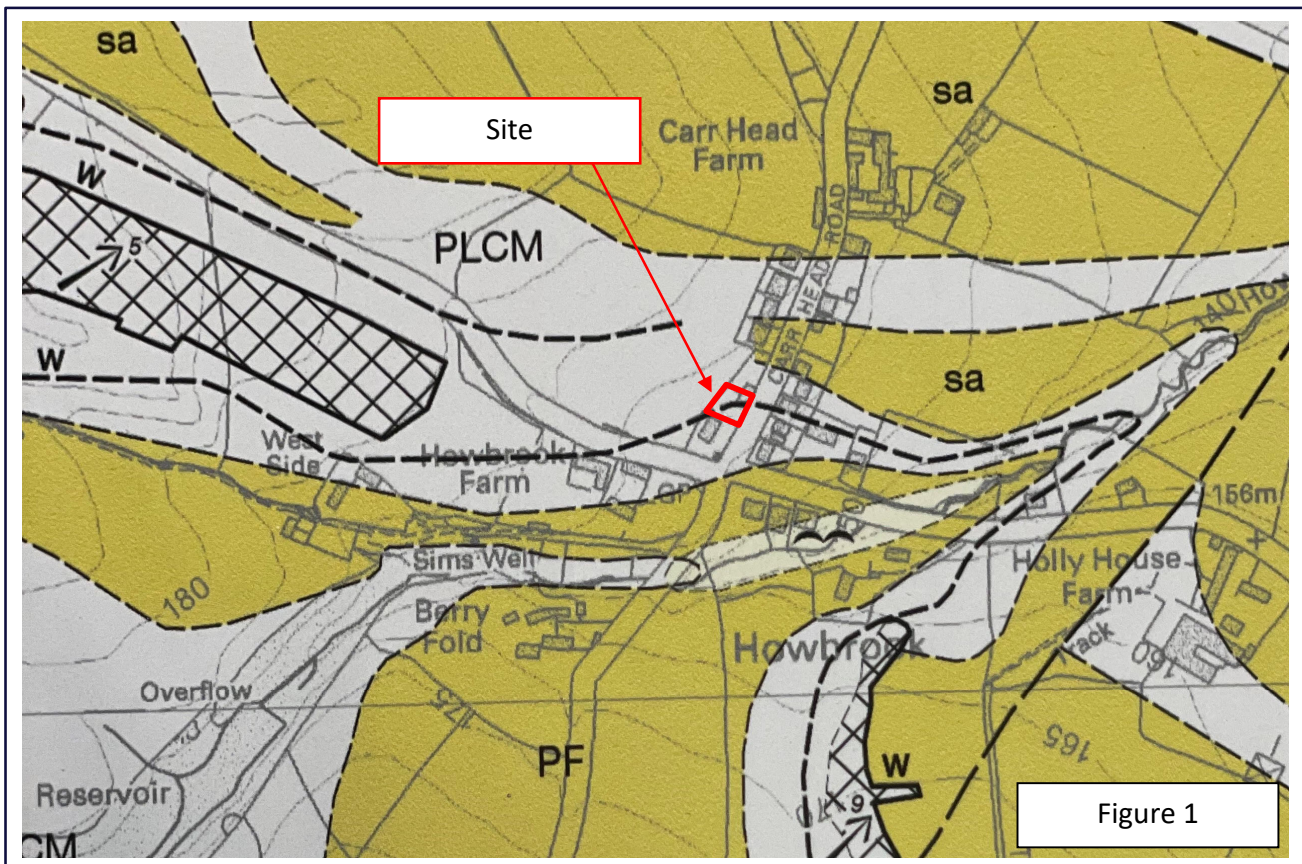
2.0 Geological & Coal Mining Setting

Based on maps produced by the BGS, the site is shown to be situated in an area where bedrock deposits are present at, or close to the surface (area of solid outcrop). The bedrock deposits are shown to comprise the Pennine Lower Coal Measures Formation deposited between 318 and 319 million years ago during the Carboniferous Period, where mudrocks (mudstone, siltstone, or shale) deposits are present at rockhead level. The conjectured outcrop position of the Whinmoor Coal crosses the central part of the site, generally trending from east to west and dipping to the north. This is the shallowest coal seam present below the site in accordance with the geological sequence and the coal seam locally ranges in thickness from 0.70m up to 1.80m.

COAL MINING INVESTIGATION REPORT

2.0 Geological & Coal Mining Setting (Cont'd)

The Whinmoor Coal is therefore expected to be present at shallow depth below the site, close to rockhead level and has been exploited by way of surface (opencast) extraction on nearby land.



The Coal Authority has divided the coalfield into two areas, referred to as development high risk areas (DHRA's), and development low risk areas (DLRA's). The DHRA forms 15% of the coalfield area, where coal mining risks are present at shallow depth which are likely to affect new development. The DLRA's form 85% of the coalfield where past coal mining activity has taken place at such depth that it poses a low risk to new development. The Coal Authority places the site within a DHRA, and also lies within an area of probable shallow mine workings.

2.0 Geological & Coal Mining Setting (Cont'd)

For completeness, a Consultants Coal Mining Report, reference 51002715579001 was procured from the Coal Authority, the findings of which can be seen attached in Appendix II. The report has been summarised in the Table below.

Data type	Details
Past underground mining	No past mining recorded
Probable unrecorded shallow workings	Yes, within the Whinmoor Coal
Spine roadways at shallow depth	No spine roadways recorded at shallow depth
Mine entries	One recorded to the north of the site (432398-021) at NGR 432629, 398249. This is located at sufficient distance away from the site and does not represent a potential future surface instability risk
Outcrops	The conjectured outcrop position for the Whinmoor Coal is recorded over the central part of the site
Geological faults, fissures and breaklines	No faults, fissures or breaklines recorded
Mine gas	None recorded within 500m from the site boundary
Opencast mines	None recorded within 500m from the site boundary
Coal mining subsidence	The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50m from the site, since 31 st October 1994

It is considered unlikely that anyone would have taken the trouble to have exploited the Whinmoor Coal below the site, by way of underground mining methods, prior to 1872 when coal mining records were first documented, given its conjectured outcrop position (close to the surface). It is more likely that if this coal seam has been historically robbed, it would have been by surface extraction in the form of bell pits. When considering the geological and coal mining data reviewed, it is felt that the mechanisms for future ground subsidence and crown hole failures occurring at the surface of the site in the future as a direct result of unrecorded shallow coal mining activities within the Whinmoor Coal is deemed to be low. However, since the positioning of the Whinmoor Coal, as recorded on BGS mapping is only conjectural and may be inaccurate, it is deemed prudent to undertake a series of shallow boreholes to confirm the presence, thickness, and conditions of this coal seam below the site in relation to the location of the proposed residential dwelling footprint.

COAL MINING INVESTIGATION REPORT

2.0 Geological & Coal Mining Setting (Cont'd)

This investigation work should be completed prior to commencing with the construction works.

3.0 Historical Map Review

Copies of OS maps covering the site and adjacent land have been obtained for the site and are attached in Appendix IV. The site has effectively remained undeveloped from as early as 1855 until present times. There is no visible evidence of any historical surface coal or mineral extraction at or within proximity to the site. The adjacent residential dwelling to the north-east (3 Carr Head Road) appears to have been constructed pre-1855.

4.0 GEOL Site Investigation Works (November 2021 & January 2022)

To physically identify the ground conditions below the site area, intrusive ground investigation works were completed by GEOL and comprised the sinking of 3 no. windowless sampling boreholes (labelled BH01 to BH03), accompanied by 3 no. rotary open hole boreholes (labelled RBHA to RBHC) using a water flush medium. Ground gas monitoring wells were installed at the windowless sampling borehole locations to determine the ground gas regime at the site. The borehole positions can be seen on the borehole location plan attached in Appendix II and the rationale behind the location of each investigation location can be seen in the Table below.

Purpose of investigation	Borehole location
These boreholes were generally sunk to visually confirm the nature of the upper initial bedrock deposits and to confirm their geotechnical properties (strength), to allow for accurate foundation designs to be made for the proposed new residential dwelling. The borehole locations were also utilised for the installation of ground gas monitoring wells to determine the ground gas regime at the site	BH01 to BH03
The rotary open hole boreholes were sunk to confirm the ground conditions below the site with depth to further investigate the possible presence, depth, and condition of the Whinmoor Coal. A permit (reference 24223) was obtained directly from the Coal Authority to enter or disturb their coal mining related interests prior to undertaking the borehole investigation works	RBHA to RBHC

4.0 GEOL Site Investigation Works (November 2021 & January 2022) (Cont'd)

4.1 Coal Mining Investigation (RBHA to RBHC)

The rotary open hole boreholes were sunk on Thursday 13th January 2022 to a maximum depth of 20.00m below existing site levels and purposely targeted the Whinmoor Coal. Mudstone deposits were initially recorded to depths ranging between 5.20m (RBHA) to 6.70m (RBHB) before poor quality (shaley) coal was encountered. The coal seam recorded was noted to range in thickness from 0.90m up to 1.00m, and is thought to be representative of the Whinmoor Coal. Siltstone deposits were generally recorded below the coal seam, although a secondary thin coal seam, thought to be an unnamed seam, was recorded at depth within the borehole locations.

There was no evidence of old workings in the form of broken ground or voiding at the borehole locations and full (100%) water flush with steady drilling rates were maintained during the investigation period. Furthermore, there were no significant gas readings detected during and upon completion of the boreholes. The boreholes were backfilled with bentonite and made safe upon completion. Based on the borehole investigation works completed on site by GEOL, the site can be considered safe, stable, and suitable for development. Therefore, it is felt that no further assessment or intrusive investigation works are required with regards to historical shallow unrecorded coal mining activities within the Whinmoor Coal.

4.2 New Building Foundation Recommendations

Based on the ground conditions encountered at the windowless sampling borehole locations, where firm and stiff mudstone deposits were recorded at depths ranging between 0.30m (BH03) to 0.80m (BH01) shallow conventional strip foundations will be suitable for the proposed new residential dwelling, based wholly within the natural mudstone deposits.

In consideration of the insitu geotechnical testing completed at each borehole location, new foundations can be designed to a maximum allowable bearing pressure of 100kN/m².

COAL MINING INVESTIGATION REPORT

5.0 Ground Gas Risk Assessment

Combined ground gas & water monitoring standpipes were installed within the windowless sampling boreholes (BH01 to BH03) sunk on site, to confirm the ground gas regime below the site primarily associated with possible mine gas rise, as well as to monitor water levels within the underlying deposits, where present. The monitoring installations have been constructed using 50mm diameter HDPE standpipe, comprising 1.00m of solid pipe within a bentonite seal and a response zone using slotted pipe to the terminal depths of the boreholes. The ground gas and water levels were allowed to reach equilibrium prior to the first monitoring visit. The design of the ground gas risk assessment for this site has been undertaken in general accordance with the CIRIA Report C665 (November 2007), BS8576:2013 – Guidance on investigations for ground gas and BS8485:2015 + A1:2019 – Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings and is based on the following criteria.

- ▼ The proposed residential development has been classified as a high sensitivity
- ▼ The risk associated with the generation potential of a source has been assessed as very low based on the actual ground conditions recorded below the site by GEOL
- ▼ Therefore, in accordance with Tables 5.5a and 5.5b in CIRIA C665, the typical / idealised period of monitoring for this site has been determined as 6 no. recorded readings undertaken over a minimum period of 3 months
- ▼ Monitoring visits are undertaken to target and correlate with the worst-case conditions for ground gas emissions to occur, comprising falling atmospheric pressure trends and low atmospheric pressures. Monitoring of the weather conditions and predicted atmospheric pressures were carried out up to 72 hours in advance of the monitoring visits, in order that a reasonable period of data is obtained to determine atmospheric trends, and to target the worst-case scenario

Monitoring was undertaken using a Gas Data GFM436 soil gas analyser with integral flow meter, and a Geotechnical Instruments electronic dip-meter. A summary of the programme of gas monitoring results obtained can be seen in the Table on the following page. A copy of the ground gas monitoring record sheet can be seen attached in Appendix V. The atmospheric pressure trend shown in brackets have been taken from www.weatheronline.co.uk for Emley Moor Transmitting Station.

COAL MINING INVESTIGATION REPORT

5.0 Ground Gas Risk Assessment (Cont'd)

Borehole Position	Date of visit	Atmospheric Pressure (mbar)	Water level (m)	Max CH ₄ (%v/v)	Max CO ₂ (%v/v)	Min O ₂ (%v/v)	Flow Rate (l/hr)
BH01	26/11/2021	971 (Falling trend)	Damp	0.0	1.6	17.8	<0.1
BH02			1.00	0.0	1.4	17.7	<0.1
BH03			2.40	0.0	1.1	18.9	<0.1
BH01	09/12/2021	982 (Rising trend)	0.45	0.0	2.3	17.5	<0.1
BH02			0.50	0.0	4.5	16.1	<0.1
BH03			1.30	0.0	2.3	16.1	<0.1
BH01	10/01/2022	999 (Rising trend)	0.40	0.0	2.1	16.7	<0.1
BH02			0.60	0.0	3.9	17.9	<0.1
BH03			1.30	0.0	2.1	17.4	<0.1
BH01	27/01/2022	1007 (Falling trend)	1.85	0.0	2.4	18.3	<0.1
BH02			1.30	0.0	4.2	12.6	<0.1
BH03			1.75	0.0	1.4	18.7	<0.1
BH01	25/02/2022	1008 (Rising trend)	0.40	0.0	2.1	17.1	<0.1
BH02			1.10	0.0	4.6	12.8	<0.1
BH03			1.39	0.0	1.7	17.6	<0.1
BH01	10/03/2022	997 (Steady trend)	0.94	0.0	1.4	19.3	<0.1
BH02			1.25	0.0	4.2	15.3	<0.1
BH03			1.30	0.0	2.7	15.5	<0.1

No detectable concentrations of Methane have been recorded. However, concentrations of Carbon Dioxide have been recorded ranging between 1.1% v/v up to 4.6% v/v at the monitoring wells, with depleted Oxygen concentrations also being recorded (min 12.6% v/v). Negligible / low flow rates have been consistently recorded (<0.1l/hr). For the purposes of assessing the proposed development in accordance with Tables 8.5 & 8.7 in CIRIA C665 and Table 2 in BS8485:2015 + A1:2019, the site is characterised based on the limiting borehole hazardous gas flow rate (Q_{hg}) for Methane and Carbon Dioxide, known as the Gas Screening Value (GSV), and the calculation can be seen on the following page.

5.0 Ground Gas Risk Assessment (Cont'd)

The GSV equates to a Characteristic Situation classification which in turn determines the level of gas protection required in accordance with Table 4 in BS8485:2015 + A1:2019.

- ▼ Due to the lack of Methane recorded, a GSV cannot be calculated
- ▼ Multiply the maximum Carbon Dioxide concentration (taken as 4.6% (0.046)) by the maximum flow rate (0.1l/hr), which gives a GSV value of 0.0046l/hr

Based on the results obtained from the monitoring completed, the GSV calculated for Carbon Dioxide does not exceed the minimum GSV assessment value of 0.07l/hr for Characteristic Situation 1, and falls below the GSV of 0.78l/hr in accordance with the NHBC Traffic Light System (Green Classification for Situation B – Low rise housing with a ventilated underfloor void).

Therefore, no ground gas protection measures are required for new building structures constructed at the site.

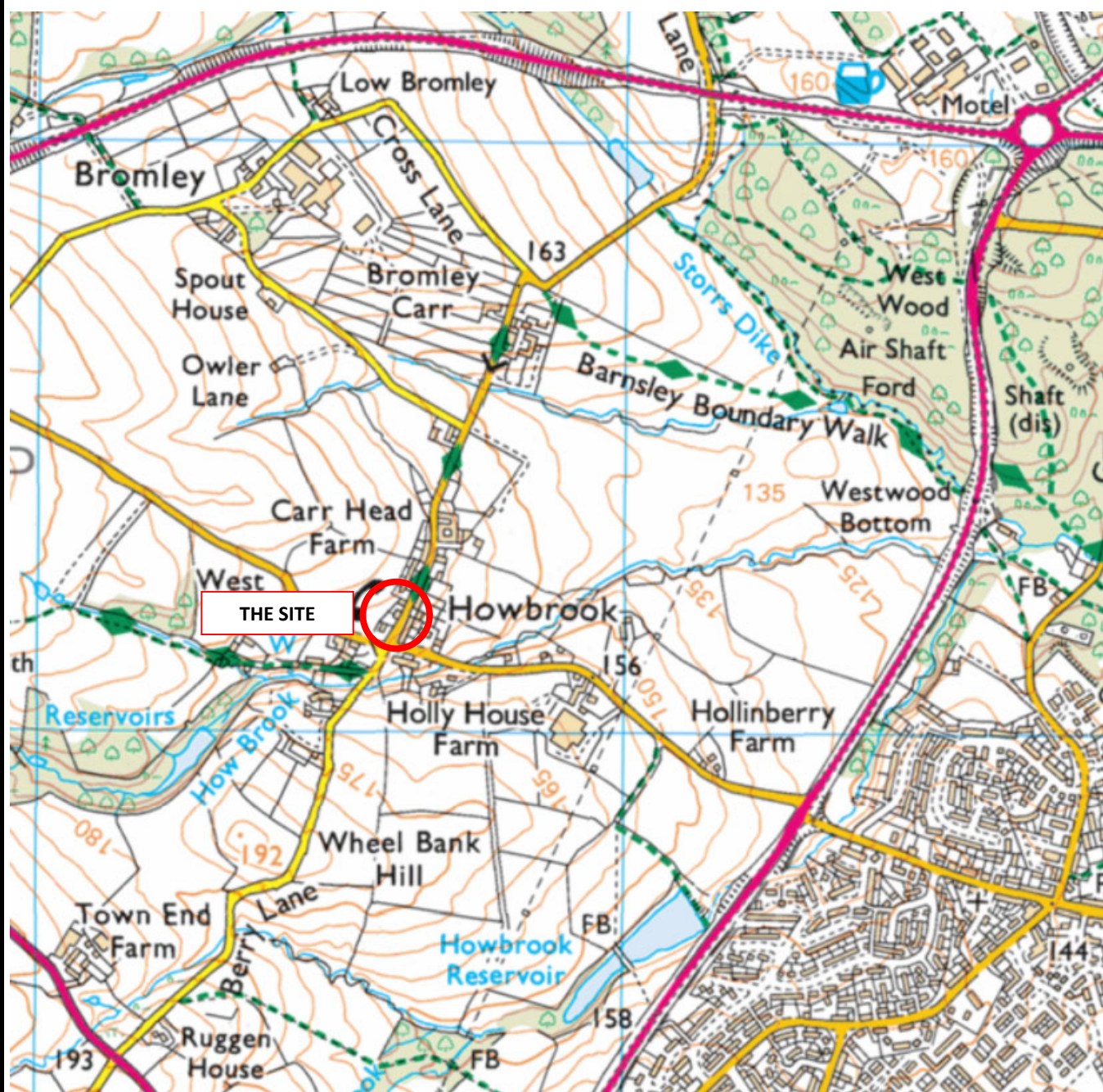
End of Report

APPENDIX I

Site Location Plan & Proposed Development Layout Plan



Tectonic House
Unit 11, Queens Court North
Third Avenue, Team Valley Trading Estate
Gateshead, Tyne and Wear
NE11 0BU
Tel: 0191 477 2020
Email: enquiries@geolconsultants.co.uk

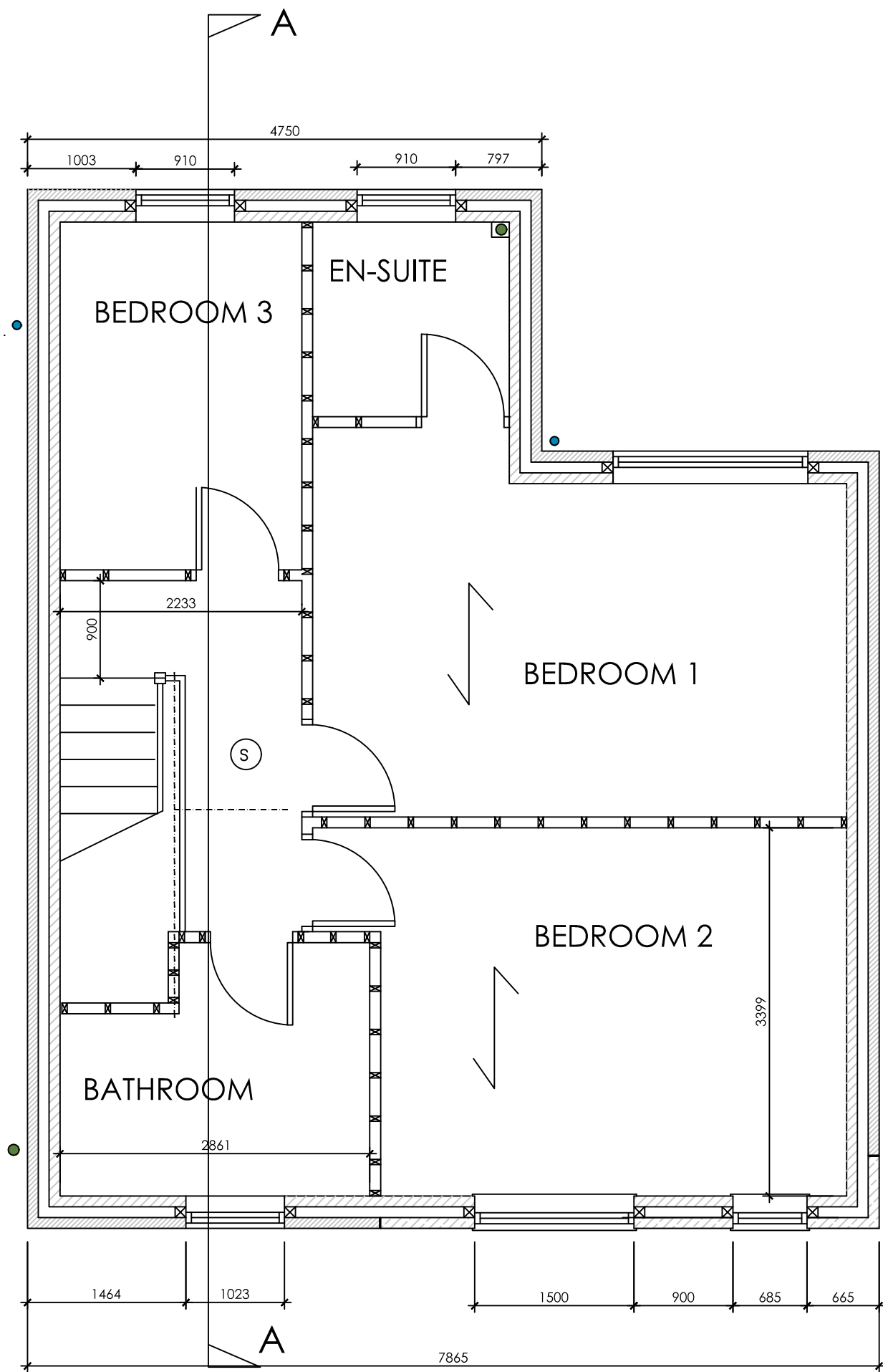
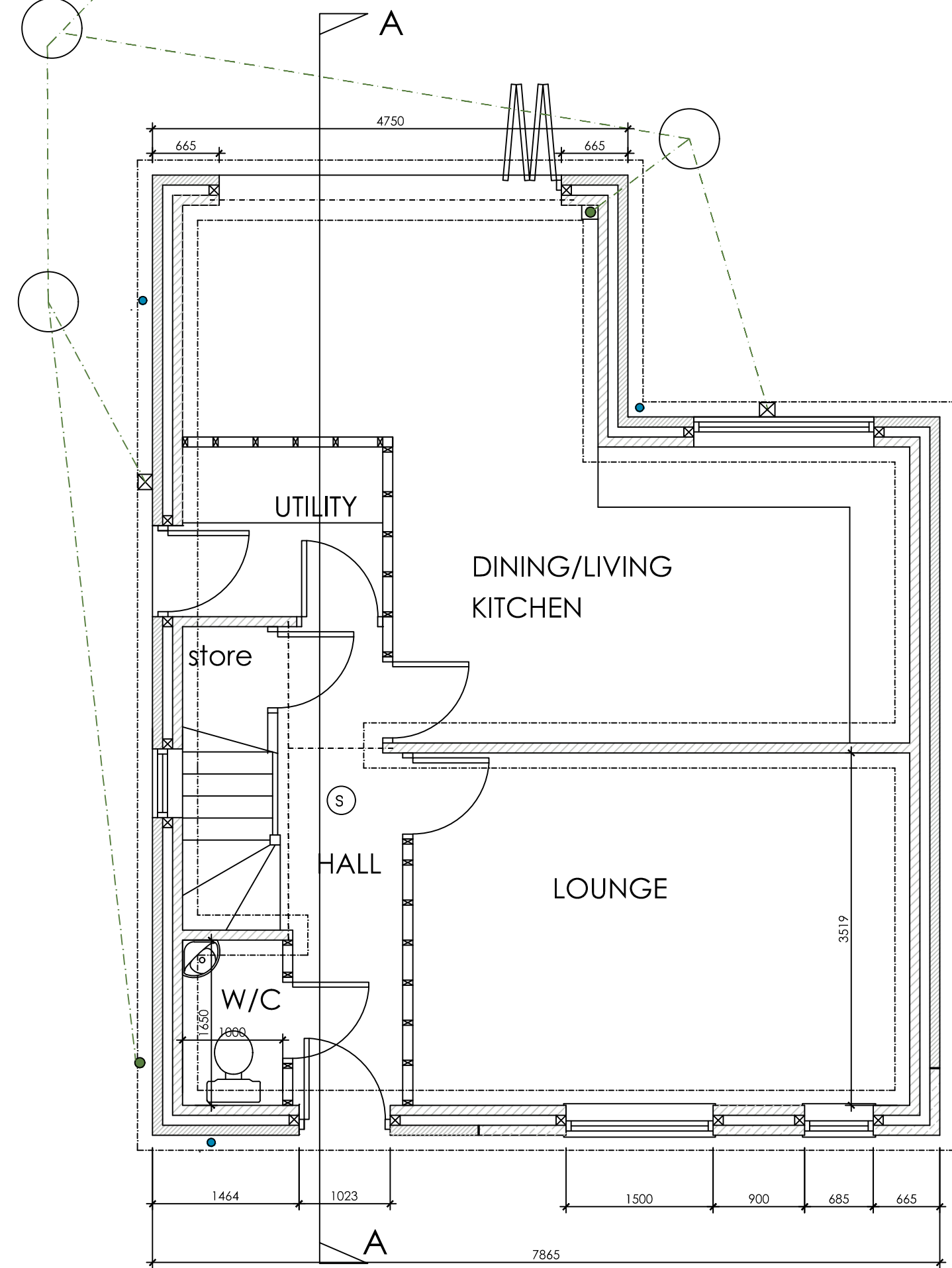
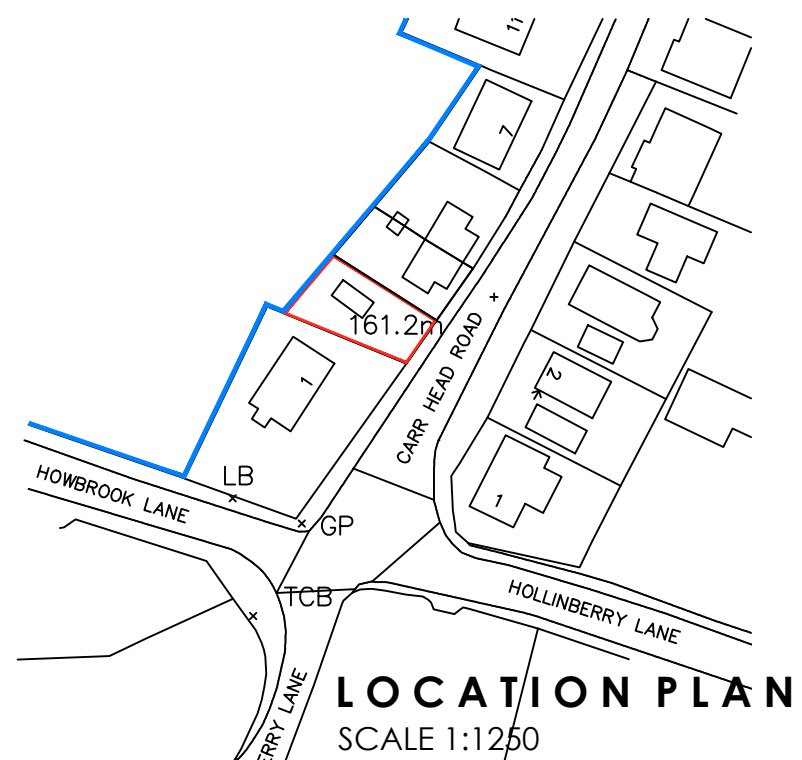
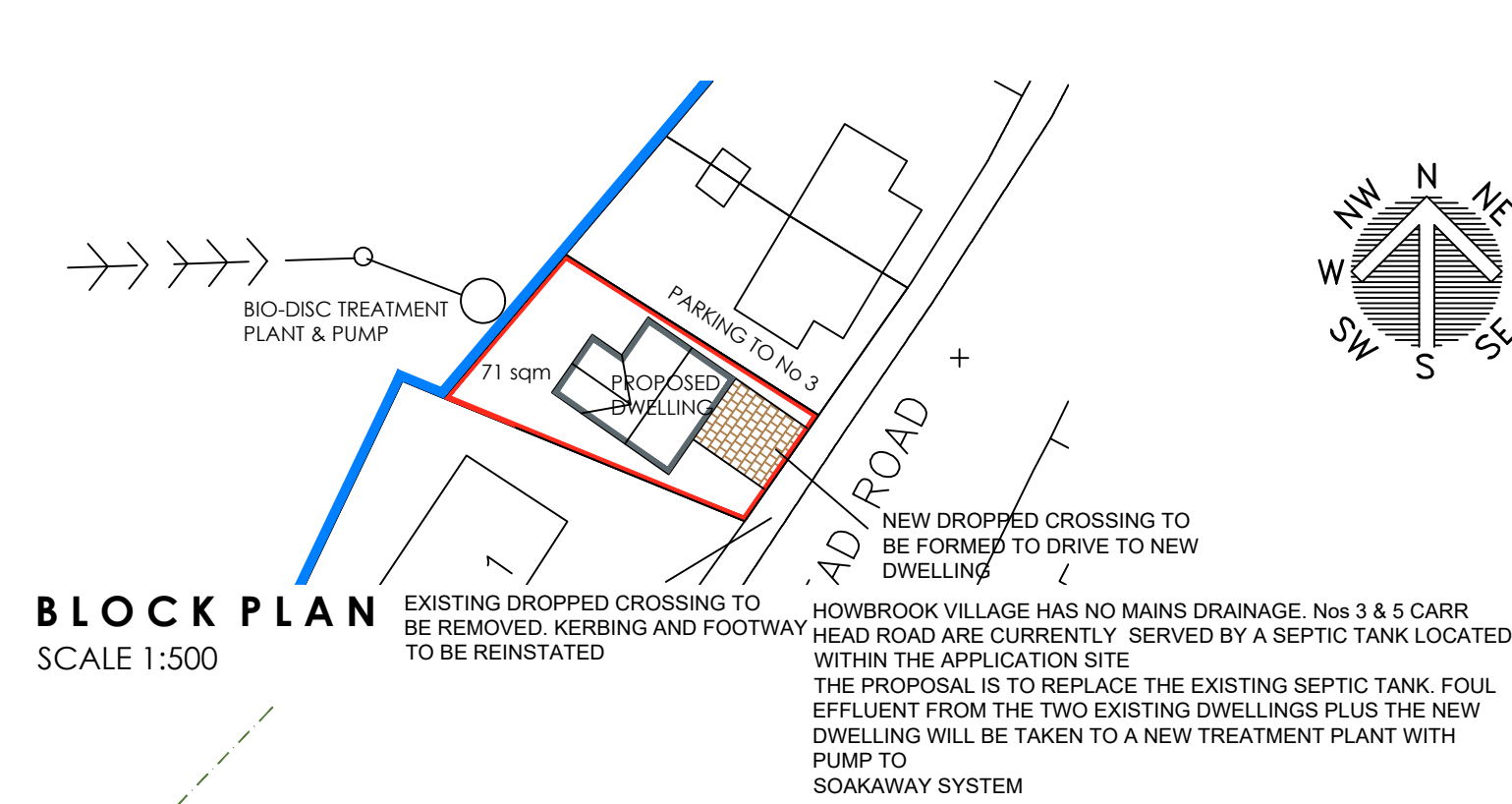
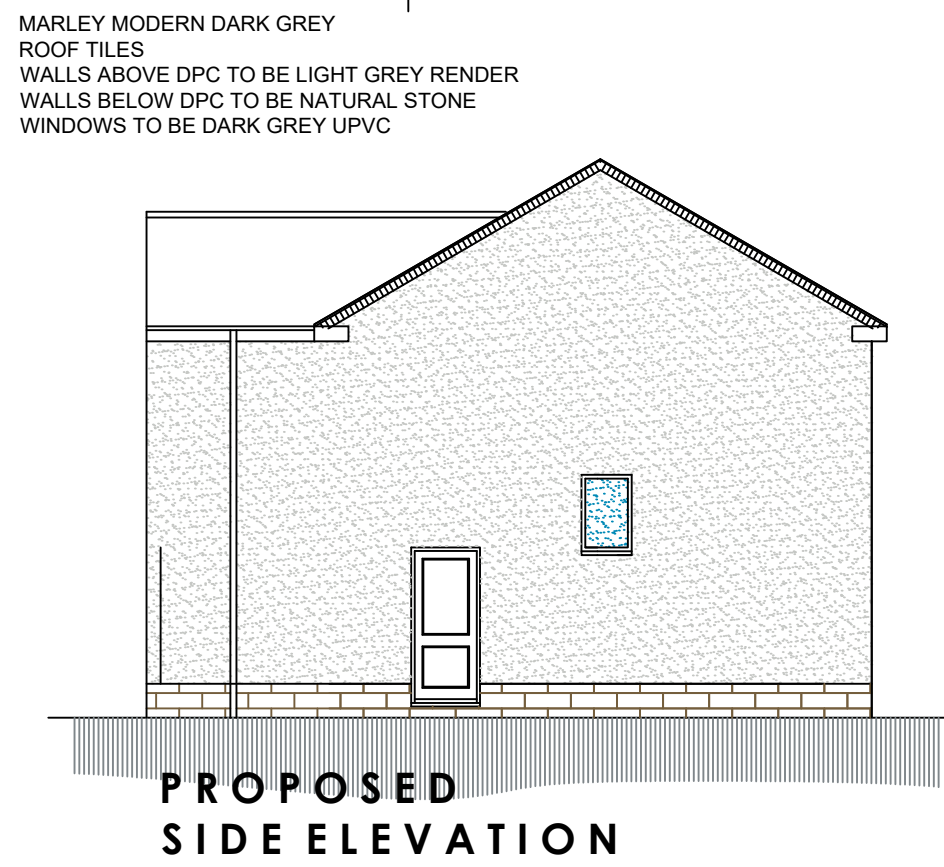
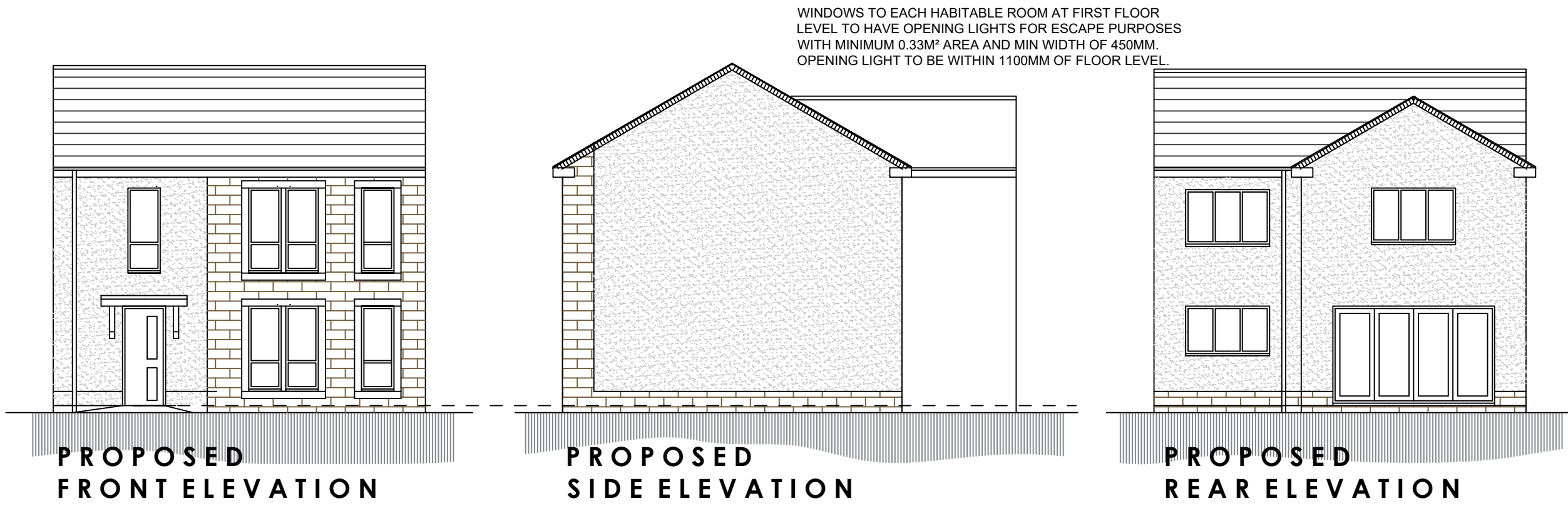


SITE LOCATION PLAN

Report Type: Coal Mining Investigation Report

Site Address: 3 Carr Head Road, Howbrook, Barnsley, South Yorkshire, S35 7HG

Project No.: GEOL21-8875



EXTERNAL WALL CONSTRUCTION
103MM OUTER LEAF OF STONE BELOW DPC AND AS SHOWN OR RENDER ON 7N SOLID BLOCKWORK, 100MM DRITHERM CAVITY WALL BATTS
100MM PLASPOR AGLITE ULTIMA® BLOCKWORK INNER LEAF
ALL EXTERNAL CAVITY WALLS TO BE DOT AND DABBED WITH PLASTERBOARD & SKIM
STAINLESS STEEL WALL TIES TO BE PROVIDED AT 450MM C/C VERTICALLY & 700MM C/C HORIZONTALLY AND EVERY BLOCK AT REVEALS
NOTE - FISH TAIL TIES MUST NOT BE USED.

STAIRS
DIMENSIONS TO BE CHECKED AND MEASURED ON SITE PRIOR TO FABRICATION OF STAIRS. TIMBER STAIRS TO COMPLY WITH BS585 AND WITH PART K OF THE BUILDING REGULATIONS. MAX RISE 220MM, MIN GOING 245MM.
THE WIDTH AND LENGTH OF EVERY LANDING SHOULD BE AT LEAST AS GREAT AS THE SMALLEST WIDTH OF THE FLIGHT. MIN 2.0M HEADROOM MEASURED VERTICALLY ABOVE PITCH LINE OF STAIRS AND LANDINGS. HANDRAIL ON STAIRCASE TO BE 900MM ABOVE THE PITCHLINE. HANDRAIL TO BE AT LEAST ONE SIDE IF STAIRS ARE LESS THAN 1M WIDE AND ON BOTH SIDES IF THEY ARE WIDER.
BALUSTRADES DESIGNED TO BE UNCLIMBABLE AND SHOULD CONTAIN NO SPACE THROUGH WHICH A 100MM SPHERE COULD PASS.
HANDRAIL AND BALUSTRADE TO BE A MINIMUM OF 900MM HIGH TO STAIR AND LANDINGS MEASURED VERT. ABOVE PITCH LINE.

SUB-STRUCTURE

MINIMUM 200 X 600MM CONCRETE STRIP FOOTINGS. MINIMUM 900MM FROM LOWER GROUND LEVEL TO UNDER SIDE OF CONCRETE (ALL SUBJECT TO BUILDING CONTROL OFFICERS APPROVAL)
D.P.C. IN WALLS MINIMUM 150MM ABOVE EXTERNAL GROUND LEVEL
7N SOLID BLOCKS BELOW D.P.C. LEVEL

GENERAL NOTES

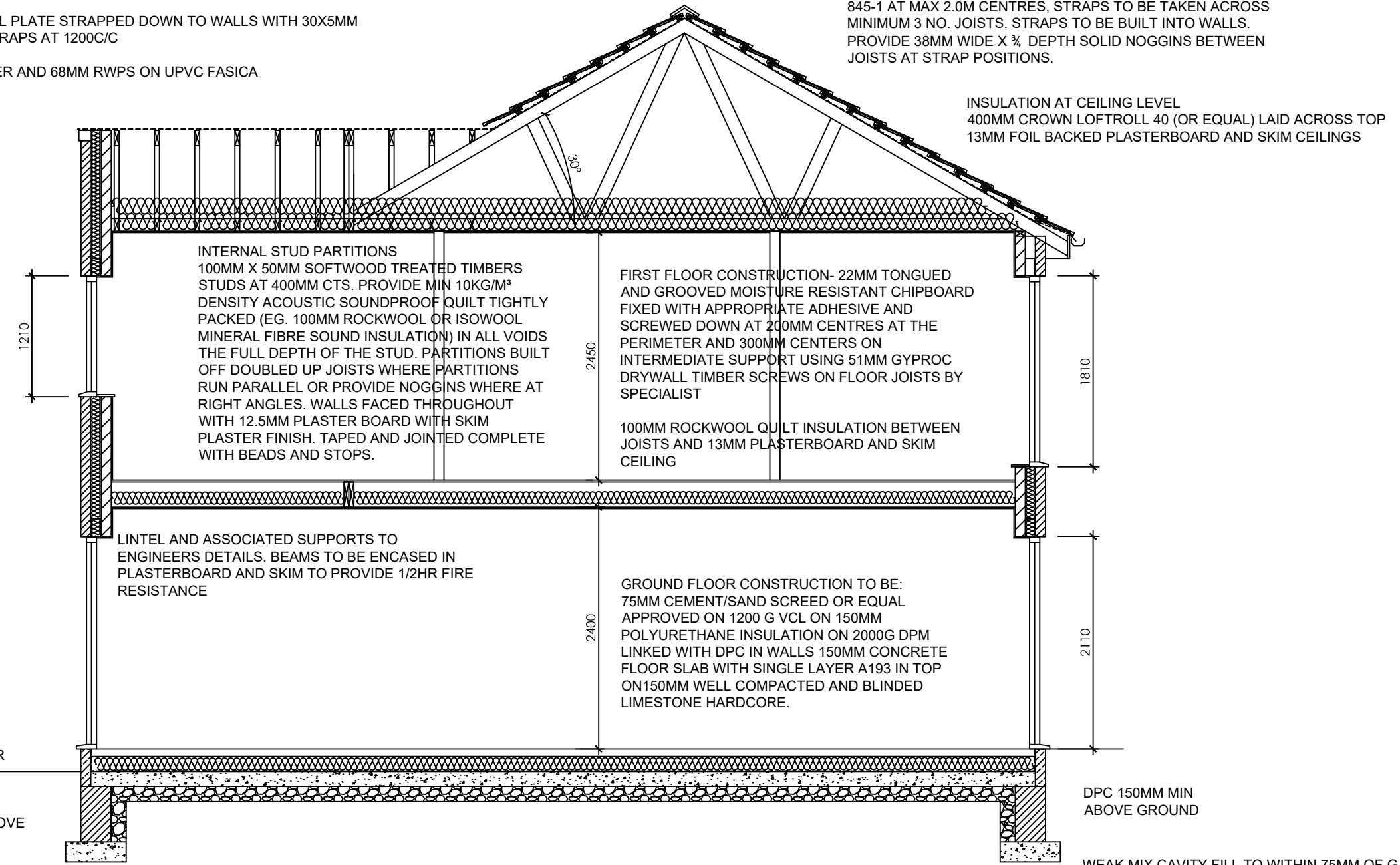
- ALL ROOF TILES TO BE NAILED.
- ALL RAFTERS/TRUSSES TO BE SPIKED OR CLIPPED TO WALL PLATE.
- 100 X 50MM SOFT WOOD WALL PLATE STRAPPED DOWN AT MAX 2M C/C WITH 30 X 5MM GALVANISED MILD STEEL STRAPS TAKEN DOWN WALL MIN 900MM AND PLUGGED AND SCREWED INTO WALL.
- 30 X 5MM GALVANISED MILD STEEL STRAPS TO BE PROVIDED AT 2M C/C IN THE FOLLOWING LOCATIONS:-
 - WHERE RAFTERS MEMBERS OF TRUSSES SPAN PARALLEL TO THE EXTERNAL WALL.
 - WHERE CEILING TIES/FLOOR MEMBERS OF TRUSSES SPAN PARALLEL TO THE EXTERNAL WALL.
 - STRAPS TO BE TAKEN OVER AND SCREWED TO MIN 3NO RAFTERS/JOISTS AND BUILT IN WALL. 100 X 50MM NOGGINs BETWEEN MEMBERS WHERE STRAPS OCCUR.
- STRUCTURAL DETAILS AND CALCULATIONS TO BE SUBMITTED TO LOCAL AUTHORITY MINIMUM 28 DAYS BEFORE WORK BEGINS ON SITE.
- FLUE BLOCKS (IF REQUIRED) TO BE IN ACCORDANCE WITH BS 1289:1986 AND TO RISE IN ROOF IN TWIN WALL.
- PIPE TO RIDGE TERMINAL.
- INFILTRATION OF COLD AIR TO BE LIMITED BY:
 - ALL GAPS BETWEEN DRY LININGS & MASONRY WALLS TO BE SEALED
 - ALL VAPOUR CONTROL LAYERS TO BE SEALED
 - DRAUGHT STRIPS TO BE FITTED TO ALL EXTERNAL DOORS, WINDOWS AND ROOF LIGHTS
 - BOXING TO CONCEALED SERVICES TO BE SEALED AT FLOOR AND CEILING LEVEL.
- THERMATE PREFORMED REVEAL PANELS OR EQUALLY APPROVED INSULATED CAVITY CLOSERS TO BE BUILT IN TO ALL REVEALS.
- D.P.C. TO BE BUILT INTO ALL WALLS MINIMUM 150MM ABOVE GROUND LEVEL.
- D.P.C. TO BE BUILT INTO HEADS & REVEALS OF ALL OPENINGS IN CAVITY WALLS.
- I/G LINTELS TO BE BUILT IN ABOVE ALL OPENINGS IN CAVITY WALLS. MINIMUM 150MM END BEARING AND TRAY. D.P.C. OVER.
- LINTEL TO INCORPORATE WEEP HOLE DUCTS AT 1M C/C MIN. 2NO PER OPENING.
- NAVLOK R6 LINTELS OVER OPENINGS IN 100MM INTERNAL BLOCKWORK WALLS.
- ALL CAVITIES TO BE CLOSED AT EAVES & VERGES.
- 7N SOLID BLOCKWORK BELOW D.P.C. LEVEL.
- NEW WINDOWS TO HAVE PVC FRAMES WITH A MAX 'U' VALUE OF 1.4W/M SQ DEG C WITH DOUBLE GLAZED UNITS IN LOW E GLASS, ARGON FILLED AND WITH MINIMUM 16MM AIR GAP.
- GLAZING TO BE IN ACCORDANCE WITH PART K OF THE BUILDING REGULATIONS. AREAS TO HAVE SAFETY GLAZING (CRITICAL LOCATIONS) ARE BETWEEN FLOOR LEVEL AND 800MM ABOVE THAT LEVEL IN INTERNAL AND EXTERNAL WALLS AND BETWEEN FLOOR LEVEL AND 1500MM ABOVE THAT LEVEL IN DOORS, SIDE SCREENS OR PANEL CLOSE TO THE EDGE OF THE DOOR.
- WINDOWS TO EACH NEW ROOM AT FIRST FLOOR LEVEL TO HAVE OPENING LIGHTS FOR ESCAPE PURPOSES WITH MINIMUM 0.33M² AREA AND MIN WIDTH OF 450MM. OPENING LIGHT TO BE WITHIN 1100MM OF FLOOR LEVEL.
- WASTE TO DISCHARGE INTO GULLIES ABOVE WATER LEVEL AND BELOW GRATE LEVEL.
- NO WASTE TO DISCHARGE INTO S.V.P. WITHIN 200MM OF W.C. CONNECTION.
- PART G WATER EFFICIENCY CALCULATIONS TO BE SUBMITTED 28 DAYS PRIOR TO PLUMBING WORK COMMENCING ON SITE.
- WHOLE SOME WATER SUPPLY TO BE PROVIDED BY THE LOCAL WATER SUPPLY UNDERTAKER.
- ALL BATHS ARE TO BE FITTED WITH A SUITABLE DEVICE TO LIMIT THE HOT WATER TEMPERATURE TO A MAXIMUM OF 48 DEG C.
- HOT WATER TAPS TO BE INSTALLED ON THE LEFT.
- A NOTICE CONFIRMING THAT THE HOT WATER SYSTEM HAS BEEN PROPERLY COMMISSIONED, AND ISSUED BY A PERSON COMPETENT TO DO SO, IS TO BE PROVIDED ON COMPLETION.

DWELLING TO BE EQUIPPED WITH HIGH-SPEED-READY IN BUILDING INFRASTRUCTURE UP TO A NETWORK TERMINATION POINT FOR HIGH-SPEED ELECTRONIC COMMUNICATION NETWORKS. INSTALLATION TO BE SUITABLE FOR THE PROVISION OF COPEER OR FIBRE-OPTIC CABLES OR WIRELESS DEVICES CAPABLE OF DELIVERING BROADBAND SPEEDS GREATER THAN 30Mbps.
A SUITABLE POSITION FOR AT LEAST ONE NETWORK TERMINATION POINT TO BE PROVIDED FOR EACH DWELLING AS WELL AS A SUITABLE ACCESS POINT

PITCHED ROOF

INTERLOCKING CONCRETE TILES ON 25X50MM TAN SW BATTENS ON BREATHER FELT ON TRUSSES BY SPECIALIST.
MAINTAIN A 50MM AIR GAP ABOVE INSULATION TO VENTILATE ROOF. PROVIDE OPENING AT EAVES LEVEL AT LEAST EQUAL TO CONTINUOUS STRIP 25MM WIDE AND 5MM WIDE AT RIDE
100MM X 50MM WALL PLATE STRAPPED DOWN TO WALLS WITH 30X5MM GALVANISED MS STRAPS AT 1200C/C
100MM UPVC GUTTER AND 68MM RWP'S ON UPVC FASICA

PROVIDE LATERAL RESTRAINT WHERE FLOOR/CEILING JOISTS RUN PARALLEL TO WALLS. FLOORS ARE TO BE STRAPPED TO WALLS WITH 1000MM X 30MM X 5MM GALVANISED MILD STEEL STRAPS OR OTHER APPROVED IN COMPLIANCE WITH BS EN 845-1 AT MAX 2.0M CENTRES. STRAPS TO BE TAKEN ACROSS MINIMUM 3 NO. JOISTS. STRAPS TO BE BUILT INTO WALLS. PROVIDE 38MM WIDE X ¼ DEPTH SOLID NOGGINs BETWEEN JOISTS AT STRAP POSITIONS.



SECTION A-A

WINDOWS

- WINDOWS TO BE GLAZED WITH DOUBLE LOW E (SOFT), ARGON FILLED WITH MINIMUM 16MM GAP.
- ALL WINDOWS TO HAVE 8000MM² TRICKLE VENTS.
- WINDOWS IN HABITABLE ROOMS TO HAVE 1/20TH FLOOR AREA OPENING LIGHTS AT HIGH LEVEL (TYPICALLY 1750MM ABOVE FIRST FLOOR LEVEL)
- WINDOWS TO SANITARY ACCOMMODATION TO HAVE WINDOWS WITH MINIMUM 1/20TH FLOOR AREA OPENING LIGHT
- OR MECHANICAL VENT (AS DESCRIBED) MECHANICAL VENT
- MECHANICAL EXTRACT TO EXTERNAL AIR TO BE PROVIDED AS FOLLOWS:

- KITCHEN = 30 LITRES/SECOND IF PROVIDED ADJACENT HOB OR 60 LITRES/SECOND ELSEWHERE

- UTILITY ROOM = 30 LITRES/SECOND
- BATHROOM = 15 LITRES/SECOND
- SANITARY ACCOMMODATION = 6 LITRES/SECOND WITH FAN LINKED TO LIGHT SWITCH. WITH 20 MINUTE OVER-RUN

ELECTRICAL

- INTERNAL LIGHTING SHALL HAVE FITTINGS (INCLUDING LAMP GEAR AND APPROPRIATE HOUSING, REFLECTOR, SHADE) THAT ONLY TAKE LAMPS HAVING A LUMINOUS EFFICACY GREATER THAN 40 LUMENS PER CIRCUIT WATT. THE NUMBER OF SUCH FITTINGS SHALL BE IN ACCORDANCE WITH SAP REQUIREMENTS.
- EXTERNAL LIGHTING SHALL EITHER HAVE:
 - LAMP CAPACITY THAT DOES NOT EXCEED 150W PER FITTING AND THE LIGHTING AUTOMATICALLY SWITCHES OFF WHEN THERE IS ENOUGH DAYLIGHT OR WHEN LIGHTING IS NOT REQUIRED
 - THE LIGHT FITTINGS HAVE SOCKETS THAT CAN ONLY BE USED WITH LAMPS HAVING AN EFFICACY GREATER THAN 40 LUMENS PER CIRCUIT WATT.

- ELECTRICAL WORK TO BE CERTIFIED UNDER THE 'COMPETENT PERSONS SCHEME' AND FULL CERTIFICATION OF THE DESIGN/INSPECTION AND TESTING IS TO BE PROVIDED TO THE LOCAL AUTHORITY FOR APPROVAL ON COMPLETION.

- ELECTRICAL SWITCHES AND SOCKETS TO BE LOCATED MINIMUM 450MM AND MAX 1200MM ABOVE FINISHED FLOOR LEVEL.

- SMOKE ALARMS
MANS OPERATED SMOKE ALARMS TO BS 5446. ALL ALARMS TO BE LINKED AND ARE TO BE WIRED FROM THE MAIN DISTRIBUTION BOARD ON A SEPARATE CIRCUIT. ALARMS TO BE INSTALLED IN ACCORDANCE WITH PART B1 OF THE BUILDING REGULATIONS.
ALL ALARMS TO HAVE BATTERY BACK-UP

HEATING

- ALL DETAILS TO BE SUBMITTED FOR APPROVAL.
- ALL WORKS TO BE CARRIED OUT BY A GAS SAFE PERSON

	Span of Beam & Block/Joists
	Smoke Alarms
	To suit door & frame to provide 775mm clear opening.

DWELLING TO BE PROVIDED WITH EQUIPMENT, FITTINGS ETC TO MEET THE REQUIREMENTS OF PART Q OF THE BUILDING REGULATIONS WITH REGARD TO SECURITY AND UNAUTHORISED ACCESS

		OFFICE ONE, 34 VICTORIA ROAD, BARNSELY, S70 2BU		Phone: 01226 208482	
ARCHITECTURAL SERVICES					
Project: PROPOSED DWELLING ON LAND AT 3 CARR HEAD ROAD, HOWBROOK WORTLEY, S35 7HG			Client: MR SHANE O'KEEFE		
Drawing Title: PLANS, SECTION AND ELEVATIONS			Date: JUNE 2022	Scale: 1:50 & 1:100 @ A1	Ref: 20-112
			Dwg. No. 03	Rev.	
Date	Suffix	Description	Date	Suffix	Description

APPENDIX II

The Coal Authority, Consultants Coal Mining Report



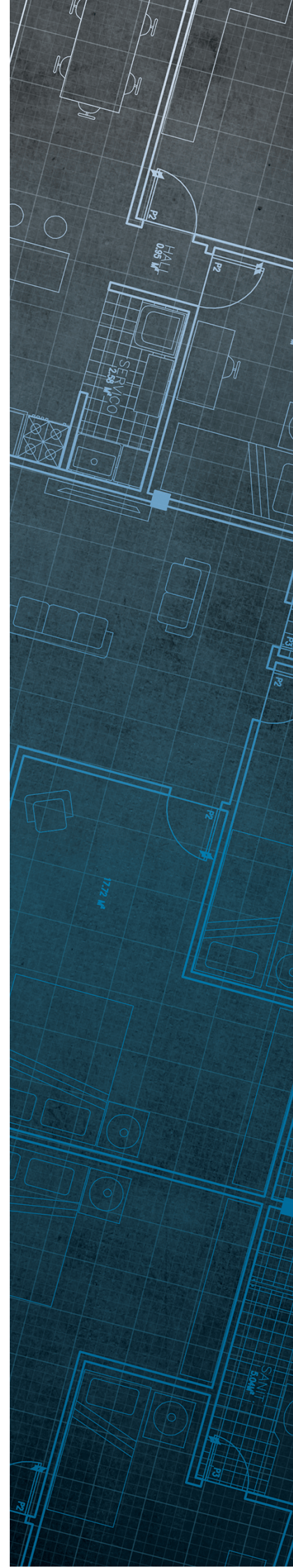
The Coal
Authority

Consultants Coal Mining Report

3 Carr Head Road
Howbrook
Barnsley
S35 7HG

Date of enquiry:	15 November 2021
Date enquiry received:	15 November 2021
Issue date:	15 November 2021

Our reference:	51002715579001
Your reference:	GEOL21-8875



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

GEOL CONSULTANTS LIMITED

Enquiry address

3 Carr Head Road
Howbrook
Barnsley
S35 7HG

How to contact us

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

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

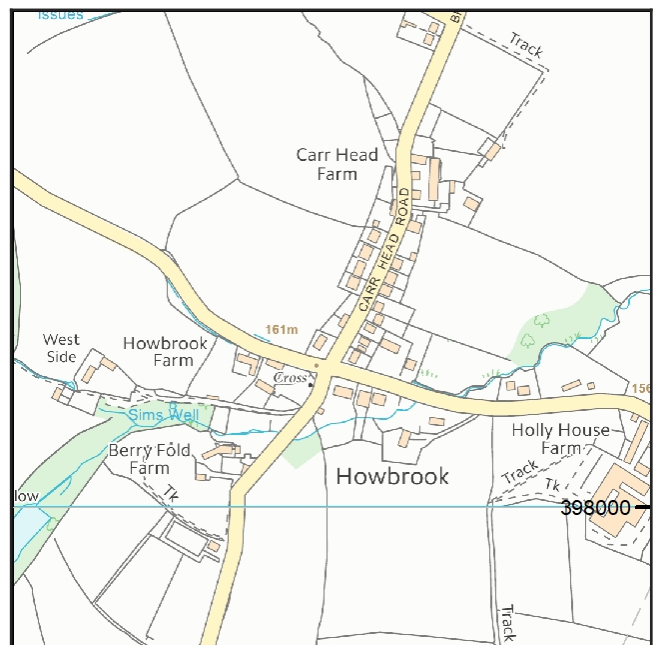
www.groundstability.com

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

No past mining recorded.

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	432398-021	432629 398249		Coal	

Abandoned mine plan catalogue numbers

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

SY133	NE612	
-------	-------	--

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
WHINMOOR	Coal	Yes	Within	N/A	248

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

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

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

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

Site investigations

None recorded within 50 metres of the enquiry boundary.

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

Based on the responses in this report, no further information has been highlighted.

Section 5 – Data definitions

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

Past underground coal mining

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

Probable unrecorded shallow workings

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

Spine roadways at shallow depth

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

Mine entries

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

Abandoned mine plan catalogue numbers

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

Outcrops

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

Geological faults, fissures and breaklines

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

Opencast mines

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

Coal Authority managed tips

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

Site investigations

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

Remediated sites

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

Coal mining subsidence

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

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

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

Mine gas

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

Mine water treatment schemes

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

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

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

Future underground mining

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

Coal mining licensing

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

Court orders

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

Section 46 notices

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

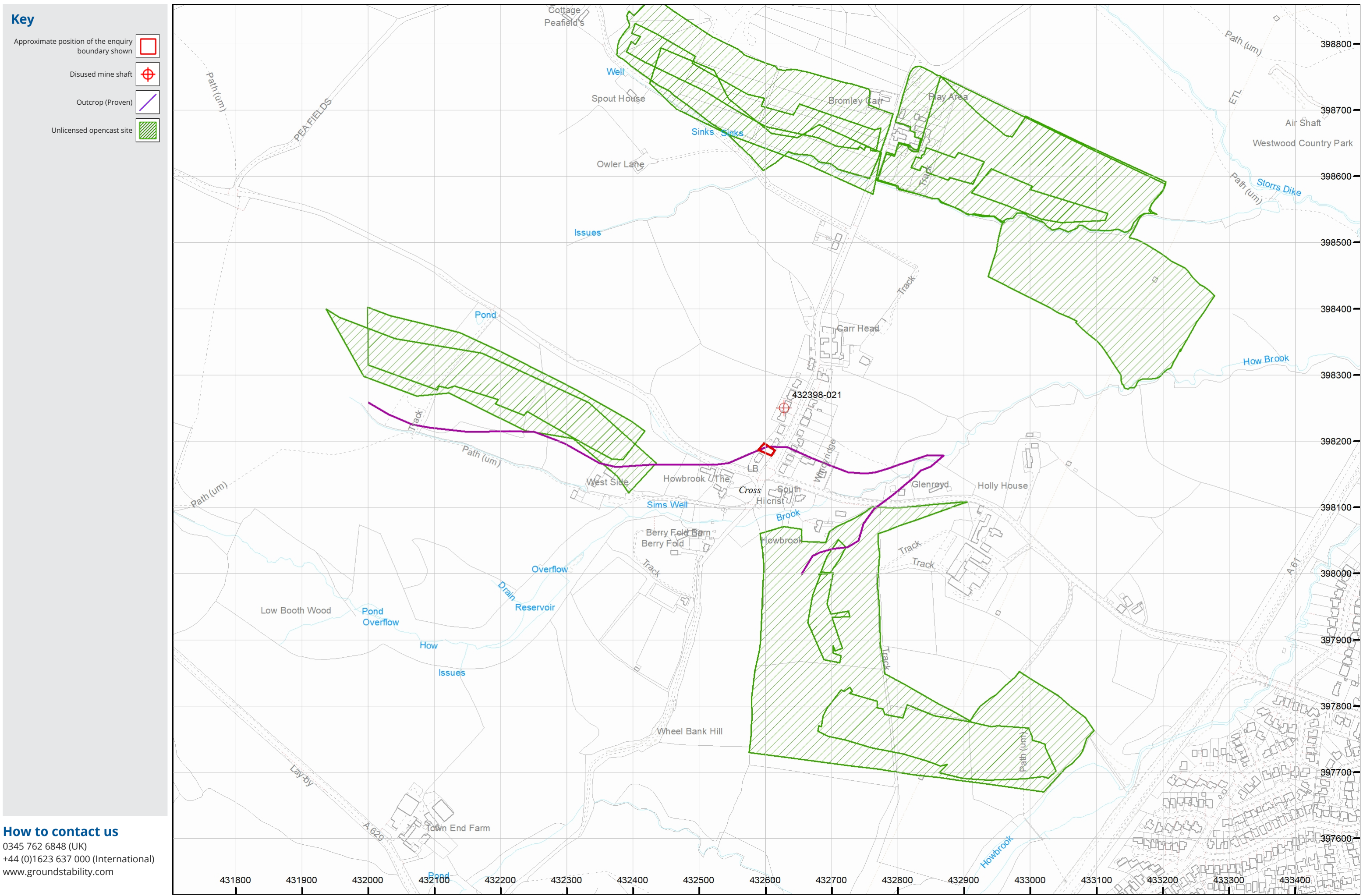
Withdrawal of support notices

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

Payment to owners of former copyhold land

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

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



APPENDIX III

Borehole Location Plan Borehole Record Sheets & The Coal Authority Permit (24223)



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Unit 11, Queens Court North
Third Avenue, Team Valley Trading Estate
Gateshead, Tyne and Wear
NE11 0BU
Tel: 0191 477 2020
Email: enquiries@geolconsultants.co.uk



 BOREHOLE LOCATION PLAN

Report Type: Coal Mining Investigation Report

Site Address: 3 Carr Head Road, Howbrook, Barnsley, South Yorkshire, S35 7HG

Project No.: GEOL21-8875

BOREHOLE LOG

Project 3 Carr Head Road, Howbrook, Barnsley, South Yorkshire, S35 7HG				BOREHOLE No BH01
Job No GEOL21-8875	Date 19-11-21	Ground Level (m)	Co-Ordinates ()	
Contractor Geol Consultants Limited				Sheet 1 of 1

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.20-0.40	B	N=21				(0.40) 0.40	Grass overlying black sandy soil (MADE GROUND).		
0.60-0.80	B					(0.40) 0.80	Soft and firm dark brown sandy gravelly clay with occasional fragments of brick and concrete (MADE GROUND).		
1.00-1.45	SPT					(0.85)	Stiff light brown orange and grey mottled completely weathered MUDSTONE (PENNINE LOWER COAL MEASURES).		
1.40-1.60	B	50 blows				1.65	Very stiff / hard light grey friable weathered MUDSTONE (PENNINE LOWER COAL MEASURES).		
2.00-2.10	SPT					(0.45) 2.10			

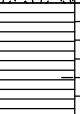
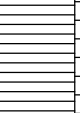
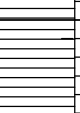
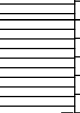
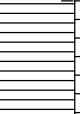
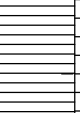
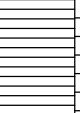
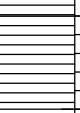
Windowless Sampling Drilling Progress						GENERAL REMARKS
Depth	Casing	Diameter	Recovery	Remarks		
						WATER: Borehole remained dry.



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BOREHOLE LOG

Project 3 Carr Head Road, Howbrook, Barnsley, South Yorkshire, S35 7HG				BOREHOLE No BH02
Job No GEOL21-8875	Date 19-11-21	Ground Level (m)	Co-Ordinates ()	
Contractor Geol Consultants Limited				Sheet 1 of 1

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
0.40-0.60	B					(0.60) 0.60	Grass overlying black sandy soil (TOPSOIL).		
1.00-1.45	SPT	N=12				(1.30) 1.90	Firm light brown and grey mottled completely weathered MUDSTONE (PENNINE LOWER COAL MEASURES).		
1.70-1.90	B					1.90			
2.00-2.45	SPT	N=36				(0.60) 2.50	Very stiff light grey friable weathered MUDSTONE (PENNINE LOWER COAL MEASURES).		
2.30-2.50	B					2.50			
3.00-3.45	SPT	N=14				(3.00) 5.50	Firm and stiff medium brown and grey completely weathered shaley MUDSTONE (PENNINE LOWER COAL MEASURES).		
4.00-4.45	SPT	N=15				5.50			
5.00-5.45	SPT	N=25	↓			(0.50) 6.00	Very stiff / hard light grey friable weathered MUDSTONE (PENNINE LOWER COAL MEASURES).		
5.80-6.00	B					6.00			
5.80-6.00	SPT	50 blows					Borehole terminated at 6.00m due to refusal of the sampling and testing equipment.		

Windowless Sampling Drilling Progress					GENERAL REMARKS
Depth	Casing	Diameter	Recovery	Remarks	
					WATER: Ingress of water recorded at a depth of 5.00m.
All dimensions in metres Scale 1:40.625			Client	Mr. Shane O'Keefe	Method/ Plant Used
			Competitor Dart Rig		Logged By TMc

GEOL WS LOG TMC LOGS.GPJ GINT STD AGS 3.1 GDT 8/11/22



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BOREHOLE LOG

Project 3 Carr Head Road, Howbrook, Barnsley, South Yorkshire, S35 7HG				BOREHOLE No BH03	
Job No GEOL21-8875	Date 19-11-21	Ground Level (m)	Co-Ordinates ()		
Contractor Geol Consultants Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
0.10-0.30	B					0.30	Grass overlying black sandy soil (TOPSOIL).		
1.00-1.45	SPT	N=21				(1.30)	Stiff light brown and grey mottled completely weathered MUDSTONE (PENNINE LOWER COAL MEASURES).		
1.20-1.40	B					1.60			
1.80-2.00	B					(1.60)	Very stiff / hard light grey friable weathered MUDSTONE (PENNINE LOWER COAL MEASURES).		
2.00-2.45	SPT	N=41							
3.00-3.20	SPT	50 blows				3.20			
							Borehole terminated at 3.20m due to refusal of the sampling and testing equipment.		

Windowless Sampling Drilling Progress						GENERAL REMARKS
Depth	Casing	Diameter	Recovery	Remarks		
						WATER: Borehole remained dry.
All dimensions in metres Scale 1:40.625			Client Mr. Shane O'Keefe		Method/ Plant Used Competitor Dart Rig	Logged By TMc

GEOL WS LOG TMC LOGS.GPJ GINT STD AGS 3.1 GDT 8/11/22



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ROTARY BOREHOLE LOG

Project 3 Carr Head Road, Howbrook, Barnsley, South Yorkshire, S35 7HG				DRILLHOLE No RBHA
Job No GEOL21-8875	Date 13-01-22	Ground Level (m)	Co-Ordinates ()	
Contractor Geol Consultants Limited				Sheet 1 of 4

RUN DETAILS					STRATA		Geology	Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth	DESCRIPTION		
Date					(Thick- ness)			
					(0.50) 0.50	Dark brown gravelly soil (drillers description).		
					(4.70) 5.20	Dark brown MUDSTONE (drillers description).		
					(0.90) 6.10	Black and dark grey shaley COAL (drillers description).		
						Dark brown SILTSTONE (drillers description).		

Gas Monitoring During Drilling							Rotary Flush				GENERAL REMARKS
Date	Time	Oxygen	Carbon Dioxide	Methane	Carbon Monoxide	Hydrogen Sulphide	From	To	Type	Returns	
							0	20.00	Water	100%	The descriptions are based purely on the drillers interpretation of the cuttings brought to the surface and the drilling rates maintained during the drilling process. The rotary drilling work was completed under CA Permit 24223.
All dimensions in metres Scale 1:40.625			Client Mr. Shane O'Keefe			Method/ Plant Used Rotary Open Hole			Logged By SP		

GEOL ROTARY WITH GAS TWC LOGS.GPJ GINT STD AGS 3_1.GDT 8/11/22

ROTARY BOREHOLE LOG

Project 3 Carr Head Road, Howbrook, Barnsley, South Yorkshire, S35 7HG				DRILLHOLE No RBHA
Job No GEOL21-8875	Date 13-01-22	Ground Level (m)	Co-Ordinates ()	
Contractor Geol Consultants Limited				Sheet 2 of 4

[illegible]

Gas Monitoring During Drilling							Rotary Flush				GENERAL REMARKS
Date	Time	Oxygen	Carbon Dioxide	Methane	Carbon Monoxide	Hydrogen Sulphide	From	To	Type	Returns	
All dimensions in metres Scale 1:40.625		Client Mr. Shane O'Keefe				Method/ Plant Used	Rotary Open Hole				Logged By SP

ROTARY BOREHOLE LOG

Project 3 Carr Head Road, Howbrook, Barnsley, South Yorkshire, S35 7HG				DRILLHOLE No RBHA
Job No GEOL21-8875	Date 13-01-22	Ground Level (m)	Co-Ordinates ()	
Contractor Geol Consultants Limited				Sheet 3 of 4

[illegible]

Gas Monitoring During Drilling							Rotary Flush				GENERAL REMARKS
Date	Time	Oxygen	Carbon Dioxide	Methane	Carbon Monoxide	Hydrogen Sulphide	From	To	Type	Returns	
											The descriptions are based purely on the drillers interpretation of the cuttings brought to the surface and the drilling rates maintained during the drilling process. The rotary drilling work was completed under CA Permit 24223.
All dimensions in metres Scale 1:40.625		Client Mr. Shane O'Keefe				Method/ Plant Used		Rotary Open Hole		Logged By SP	



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ROTARY BOREHOLE LOG

Project 3 Carr Head Road, Howbrook, Barnsley, South Yorkshire, S35 7HG				DRILLHOLE No RBHA
Job No GEOL21-8875	Date 13-01-22	Ground Level (m)	Co-Ordinates ()	
Contractor Geol Consultants Limited				Sheet 4 of 4

RUN DETAILS						STRATA		Geology	Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
Date						Main			
				x x x x x x x x x x x x x x x	20.00	Dark brown SILTSTONE (drillers description). <i>(continued)</i>			
						Borehole terminated at 20.00m.			

Gas Monitoring During Drilling							Rotary Flush				GENERAL REMARKS
Date	Time	Oxygen	Carbon Dioxide	Methane	Carbon Monoxide	Hydrogen Sulphide	From	To	Type	Returns	
											The descriptions are based purely on the drillers interpretation of the cuttings brought to the surface and the drilling rates maintained during the drilling process. The rotary drilling work was completed under CA Permit 24223.
All dimensions in metres Scale 1:40.625			Client Mr. Shane O'Keefe			Method/ Plant Used Rotary Open Hole			Logged By SP		

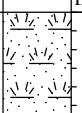
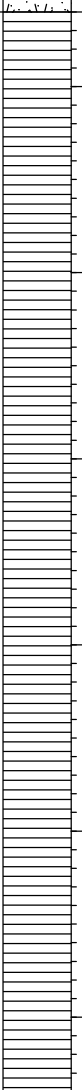
GEOL ROTARY WITH GAS TMC LOGS.GPJ GINT STD AGS 3_1.GDT 8/11/22



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ROTARY BOREHOLE LOG

Project 3 Carr Head Road, Howbrook, Barnsley, South Yorkshire, S35 7HG				DRILLHOLE No RBHB
Job No GEOL21-8875	Date 13-01-22	Ground Level (m)	Co-Ordinates ()	
Contractor Geol Consultants Limited				Sheet 1 of 4

RUN DETAILS						STRATA		Geology	Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
Date						Main			
					(0.60) 0.60	Dark brown gravelly soil (drillers description).			
					(6.10)	Dark brown MUDSTONE (drillers description).			

Gas Monitoring During Drilling							Rotary Flush				GENERAL REMARKS
Date	Time	Oxygen	Carbon Dioxide	Methane	Carbon Monoxide	Hydrogen Sulphide	From	To	Type	Returns	
							0	20.00	Water	100%	
											The descriptions are based purely on the drillers interpretation of the cuttings brought to the surface and the drilling rates maintained during the drilling process. The rotary drilling work was completed under CA Permit 24223.
All dimensions in metres Scale 1:40.625		Client Mr. Shane O'Keefe				Method/ Plant Used		Rotary Open Hole		Logged By SP	

GEOL ROTARY WITH GAS TWC LOGS.GPJ GINT STD AGS 3_1.GDT 8/11/22

The descriptions are based purely on the drillers interpretation of the cuttings brought to the surface and the drilling rates maintained during the drilling process. The rotary drilling work was completed under CA Permit 24223.



ROTARY BOREHOLE LOG

Project 3 Carr Head Road, Howbrook, Barnsley, South Yorkshire, S35 7HG				DRILLHOLE No RBHB
Job No GEOL21-8875	Date 13-01-22	Ground Level (m)	Co-Ordinates ()	
Contractor Geol Consultants Limited				Sheet 2 of 4

RUN DETAILS					STRATA		Geology	Instrument/ Backfill	
Depth	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth	DESCRIPTION			
Date					(Thick- ness)				
					6.70	Dark brown MUDSTONE (drillers description). <i>(continued)</i>			
					(1.00)	Black and dark grey shaley COAL (drillers description).			
					7.70				
						Dark brown SILTSTONE (drillers description).			
					(4.40)				
					12.10				
					12.20	Black and dark grey shaley COAL (drillers description).			
						Dark brown SILTSTONE (drillers description).			

Gas Monitoring During Drilling							Rotary Flush				GENERAL REMARKS
Date	Time	Oxygen	Carbon Dioxide	Methane	Carbon Monoxide	Hydrogen Sulphide	From	To	Type	Returns	
All dimensions in metres Scale 1:40.625		Client Mr. Shane O'Keefe				Method/ Plant Used Rotary Open Hole					Logged By SP

GEOLOGICAL ROTARY WITH GAS TMC LOGS.GPJ GINT STD AGS 3 1.GDT 8/11/22

ROTARY BOREHOLE LOG

Project 3 Carr Head Road, Howbrook, Barnsley, South Yorkshire, S35 7HG				DRILLHOLE No RBHB
Job No GEOL21-8875	Date 13-01-22	Ground Level (m)	Co-Ordinates ()	
Contractor Geol Consultants Limited				Sheet 3 of 4

[illegible]

Gas Monitoring During Drilling							Rotary Flush				GENERAL REMARKS
Date	Time	Oxygen	Carbon Dioxide	Methane	Carbon Monoxide	Hydrogen Sulphide	From	To	Type	Returns	
											The descriptions are based purely on the drillers interpretation of the cuttings brought to the surface and the drilling rates maintained during the drilling process. The rotary drilling work was completed under CA Permit 24223.
All dimensions in metres Scale 1:40.625		Client Mr. Shane O'Keefe				Method/ Plant Used		Rotary Open Hole		Logged By SP	



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Tectonic House, Unit 11
Queens Court North, Third Avenue
Team Valley Trading Estate
Gateshead
Tyne and Wear, NE11 0BU
0191 477 2020
enquiries@geolconsultants.co.uk

ROTARY BOREHOLE LOG

Project 3 Carr Head Road, Howbrook, Barnsley, South Yorkshire, S35 7HG				DRILLHOLE No RBHB
Job No GEOL21-8875	Date 13-01-22	Ground Level (m)	Co-Ordinates ()	
Contractor Geol Consultants Limited				Sheet 4 of 4

RUN DETAILS						STRATA		Geology	Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
Date						Main			
				x x x x x x x x x x x x x x x	20.00	Dark brown SILTSTONE (drillers description). <i>(continued)</i>			
						Borehole terminated at 20.00m.			

Gas Monitoring During Drilling							Rotary Flush				GENERAL REMARKS
Date	Time	Oxygen	Carbon Dioxide	Methane	Carbon Monoxide	Hydrogen Sulphide	From	To	Type	Returns	
											The descriptions are based purely on the drillers interpretation of the cuttings brought to the surface and the drilling rates maintained during the drilling process. The rotary drilling work was completed under CA Permit 24223.
All dimensions in metres Scale 1:40.625			Client Mr. Shane O'Keefe			Method/ Plant Used Rotary Open Hole			Logged By SP		

GEOL ROTARY WITH GAS TMC LOGS.GPJ GINT STD AGS 3_1.GDT 8/11/22



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ROTARY BOREHOLE LOG

Project 3 Carr Head Road, Howbrook, Barnsley, South Yorkshire, S35 7HG				DRILLHOLE No RBHC
Job No GEOL21-8875	Date 13-01-22	Ground Level (m)	Co-Ordinates ()	
Contractor Geol Consultants Limited				Sheet 1 of 2

RUN DETAILS					STRATA		Geology	Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
Date								
					(0.50) 0.50	Dark brown gravelly soil (drillers description).		
					(5.30)	Dark brown MUDSTONE (drillers description).		
					(0.90)	Black and dark grey shaley COAL (drillers description).		

Gas Monitoring During Drilling							Rotary Flush				GENERAL REMARKS
Date	Time	Oxygen	Carbon Dioxide	Methane	Carbon Monoxide	Hydrogen Sulphide	From	To	Type	Returns	
							0	10.00	Water	100%	The descriptions are based purely on the drillers interpretation of the cuttings brought to the surface and the drilling rates maintained during the drilling process. The rotary drilling work was completed under CA Permit 24223.
All dimensions in metres Scale 1:40.625			Client Mr. Shane O'Keefe			Method/ Plant Used Rotary Open Hole			Logged By SP		

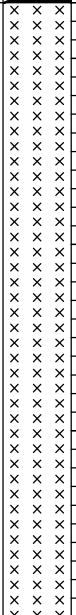
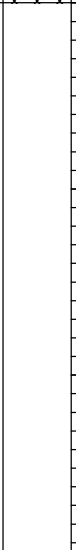
GEOL ROTARY WITH GAS TWC LOGS.GPJ GINT STD AGS 3_1.GDT 8/11/22



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enquiries@geolconsultants.co.uk

ROTARY BOREHOLE LOG

Project 3 Carr Head Road, Howbrook, Barnsley, South Yorkshire, S35 7HG				DRILLHOLE No RBHC
Job No GEOL21-8875	Date 13-01-22	Ground Level (m)	Co-Ordinates ()	
Contractor Geol Consultants Limited				Sheet 2 of 2

RUN DETAILS					STRATA		Geology	Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth	DESCRIPTION		
Date					(Thick- ness)			
						Main		
					6.70	Black and dark grey shaley COAL (drillers description). <i>(continued)</i>		
					(3.30)	Dark brown SILTSTONE (drillers description).		
					10.00	Borehole terminated at 10.00m.		

Gas Monitoring During Drilling							Rotary Flush				GENERAL REMARKS
Date	Time	Oxygen	Carbon Dioxide	Methane	Carbon Monoxide	Hydrogen Sulphide	From	To	Type	Returns	
											The descriptions are based purely on the drillers interpretation of the cuttings brought to the surface and the drilling rates maintained during the drilling process. The rotary drilling work was completed under CA Permit 24223.
All dimensions in metres Scale 1:40.625			Client Mr. Shane O'Keefe			Method/ Plant Used Rotary Open Hole			Logged By SP		

GEOL ROTARY WITH GAS TMC LOGS.GPJ GINT STD AGS 3_1.GDT 8/11/22



The Coal
Authority

Permit to Enter or Disturb Coal Authority Interests

Permit 24223

Name and Address of Permit Holder:

*Darley Construction
44 High Street
Silkstone
Barnsley
S75 4JW*

Site Location:

*3 Carr Head Road
Howbrook
Barnsley
S35 7HG*

This certificate hereby grants the above named Permit Holder a Permit to carry out:-

Ground investigation by two boreholes to 30m to determine depth and condition of shallow coal seams

within the Authority's interests at the identified site location above as shown on the Grant Permit Boundary (overleaf) for the period of 12 months from the granted date shown below. *The granting of this Permit does not constitute advice given by the Authority in relation to the proposed operations. It is the Permit Holder's responsibility to obtain appropriate health, safety, environmental, technical and legal advice.*

Conditions:

- *Manned entry (i.e. into mine entries/workings) is strictly prohibited.*
- *Water flush*
- *Gas Monitoring CO, CH₄, CO₂, O₂, H₂S at borehole and rig*
- *Operators undertaking the work must be in possession of this certificate and the Permit boundary plan at the time of works*
- *Appropriate borehole sealing without delay and to withstand site level changes*

Signed: Paul Hobson Granted Date: 04 January 2022

For and on behalf of The Coal Authority

Nominated Representative: Paul Hobson, Permitting Manager;

The Coal Authority, Permitting Office, 200 Lichfield Lane, Mansfield, Notts, NG18 4RG

Tel: 01623 637450; E-Mail: permissions@coal.gov.uk



The Coal
Authority

Granted Permit Boundary

Permit Ref: 24223

Permit Boundary:



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APPENDIX IV

Ordnance Survey Maps

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		
	BP, BS 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

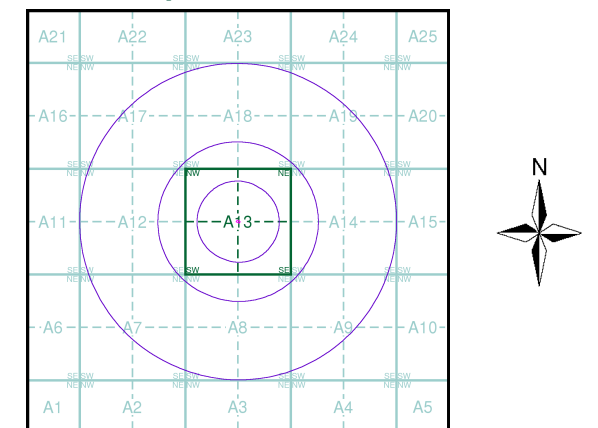
	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, 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	1855	3
Yorkshire	1:10,560	1894	4
Yorkshire	1:10,560	1906	5
Yorkshire	1:10,560	1932	6
Yorkshire	1:10,560	1938	7
Yorkshire	1:10,560	1948	8
Ordnance Survey Plan	1:10,000	1956	9
Ordnance Survey Plan	1:10,000	1966	10
Sheffield	1:25,000	1977	11
Ordnance Survey Plan	1:10,000	1982	12
Ordnance Survey Plan	1:10,000	1992	13
10K Raster Mapping	1:10,000	2000	14
10K Raster Mapping	1:10,000	2006	15
VectorMap Local	1:10,000	2021	16

Historical Map - Slice A



Order Details

Order Number: 287808059_1_1
Customer Ref: GEOL21-8875
National Grid Reference: 432600, 398190
Slice: A
Site Area (Ha): 0.03
Search Buffer (m): 1000

Site Details

3 Carr Head Road, Howbrook, Wortley, SHEFFIELD, S35 7HG

Landmark
INFORMATION GROUP

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Russian Military Mapping Legends

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

a. Not drawn to scale b. Drawn to scale

Government and Administrative Buildings Military and Industrial Buildings

Military and Communication Areas Subway Entrance

Fireproof Building Prominent Fireproof Building

Non-fireproof Building Non-fireproof Building (non-dwelling)

Factory, mill, and flour mill, with chimneys Factory, mill, and flour mill, without chimneys

Power Station, drawn to scale Hydroelectric Power Station

Radio Station, drawn to scale Telephone Station, drawn to scale

Abandoned Open-pit Mine or Quarry Open-pit Salt Mine

Pit Oil Deposit or Well Oil Seepage

Tailings Pile Fuel Storage Tanks Natural Gas Tank

Bench Mark Drill Hole Burial Mound Triangulation Point on Burial Mound

Single-track Railroad Small Bridge Double-track Railroad and Station Building

Coniferous Forest Deciduous Forest Mixed Forest

Lawns Citrus Orchard Wet Ground Scattered Vegetation

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

Government and Administrative Buildings Military and Industrial Buildings

Military and Communication Areas Subway Entrance

Partly Demolished Buildings Demolished Buildings

Built-Up Area with Fireproof Buildings Predominant Built-Up Area with Non-Fireproof Buildings Predominant

Individual Fireproof Building Prominent Industrial Building

Individual Dwelling, Fireproof Ruins of an Individual Dwelling

Factory or Mill Chimney Factory or Mill with Chimney Factory or Mill without Chimney Mine or Open Pit Mine

Operating Shaft or Mine Non-Operating Shaft or Mine Salt Mine Tailings Pile

Pit Stone Quarry Gas Pump or Service Station Fuel Storage or Natural Gas Tank

Oil or Natural Gas Derrick Small Hydroelectric Power Station Power Station Transformer Station

Cemetery Burial Mound (height in metres) Triangulation Point on Burial Mound Triangulation Point

Bench Mark Bench Mark (monumented) Telegraph Office Telephone Station

Radio Station Radio Tower Airfield or Seaplane Base Landing Strip

Telegraph/Telephone Lines Main Highway Highway under Construction Improved Dirt Road (former truck road)

Double-track Railroad with First Class Station Dismantled Railroad Railroad Under Construction

Shore Embankment River or Ditch with Embankment Direction and velocity of current Water Gauge Water Level Mark

Well Water Reservoir or Rain Water Pit Spring Isobath with value

Heavy (Index) Contour Line Contour Line and Value Half Contour Line Spot Elevation Value

Coniferous Deciduous Mixed Scrub

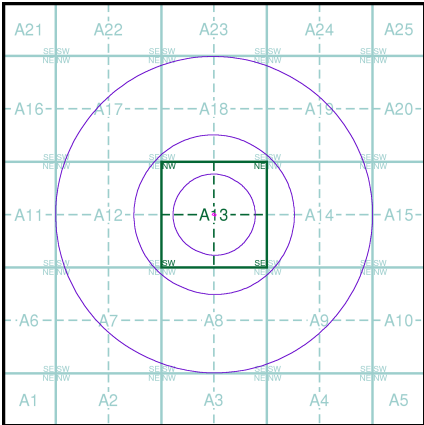
Key to Numbers on Mapping



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Yorkshire	1:10,560	1855	3
Yorkshire	1:10,560	1894	4
Yorkshire	1:10,560	1906	5
Yorkshire	1:10,560	1932	6
Yorkshire	1:10,560	1938	7
Yorkshire	1:10,560	1948	8
Ordnance Survey Plan	1:10,000	1956	9
Ordnance Survey Plan	1:10,000	1966	10
Sheffield	1:25,000	1977	11
Ordnance Survey Plan	1:10,000	1982	12
Ordnance Survey Plan	1:10,000	1992	13
10K Raster Mapping	1:10,000	2000	14
10K Raster Mapping	1:10,000	2006	15
VectorMap Local	1:10,000	2021	16

Russian Map - Slice A



Order Details

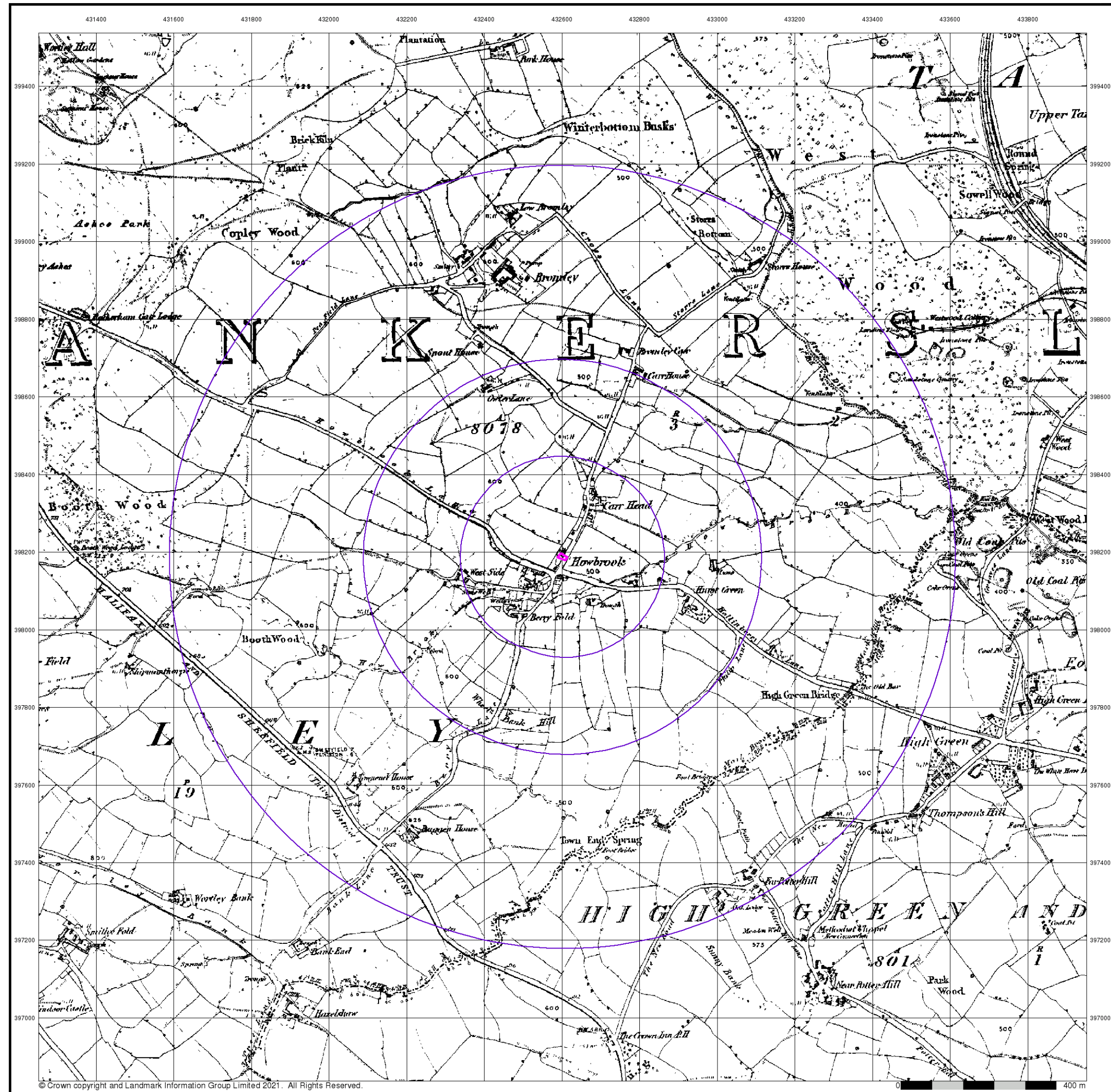
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Search Buffer (m): 1000

Site Details

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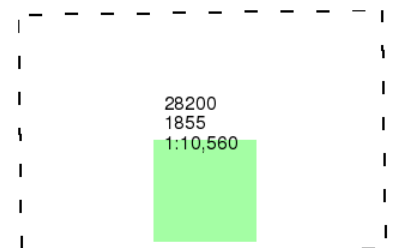
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Published 1855

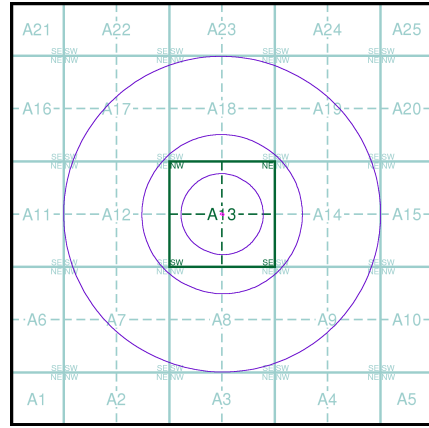
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. 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

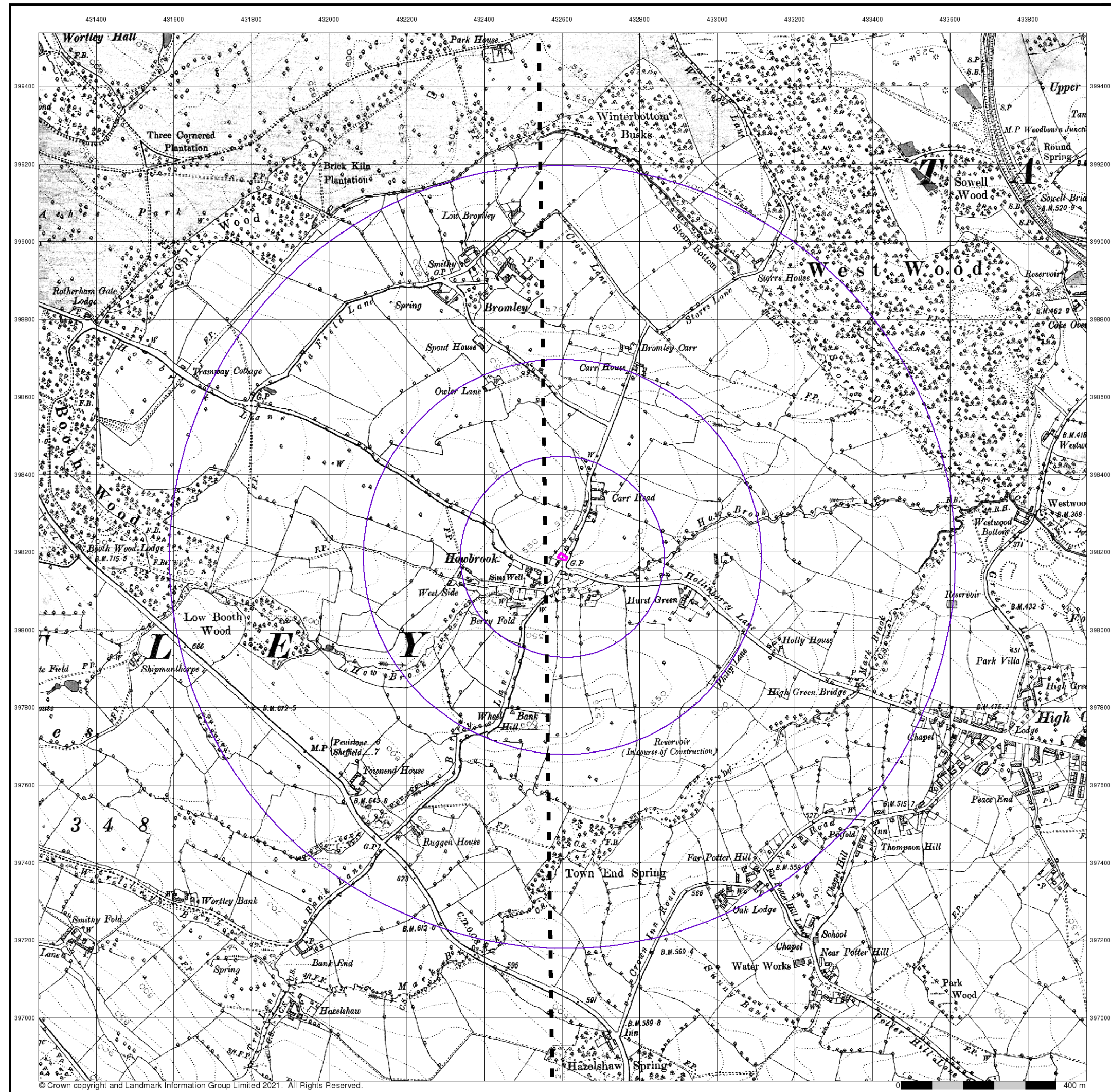
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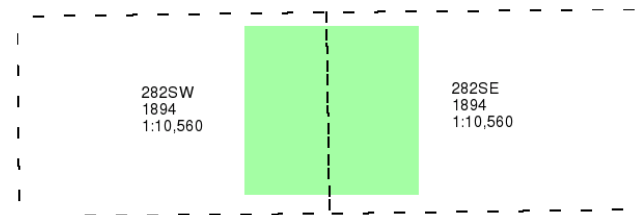
Yorkshire

Published 1894

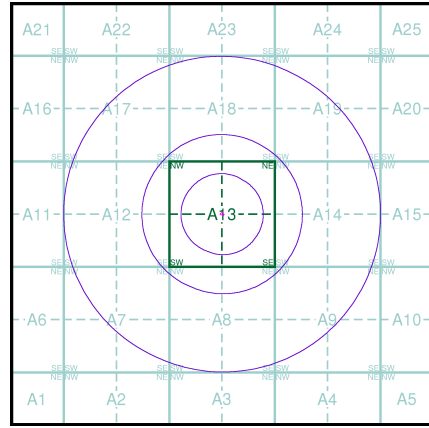
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

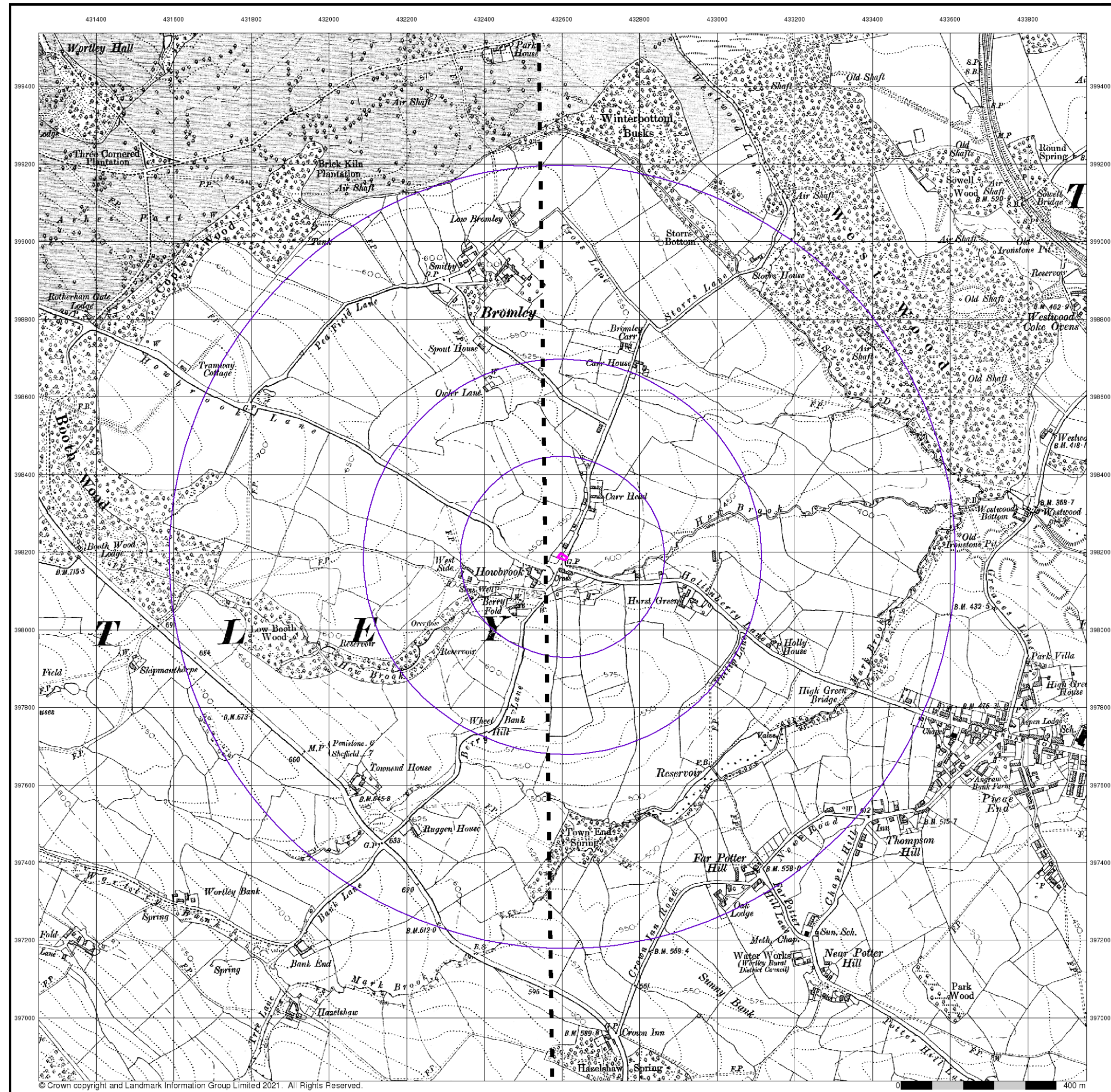
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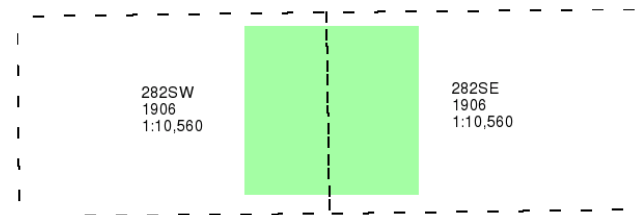
Yorkshire

Published 1906

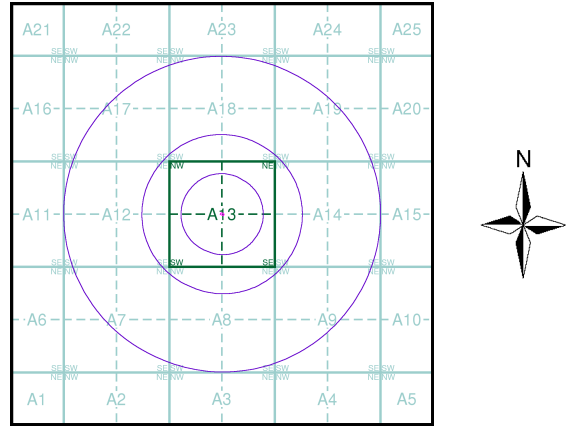
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

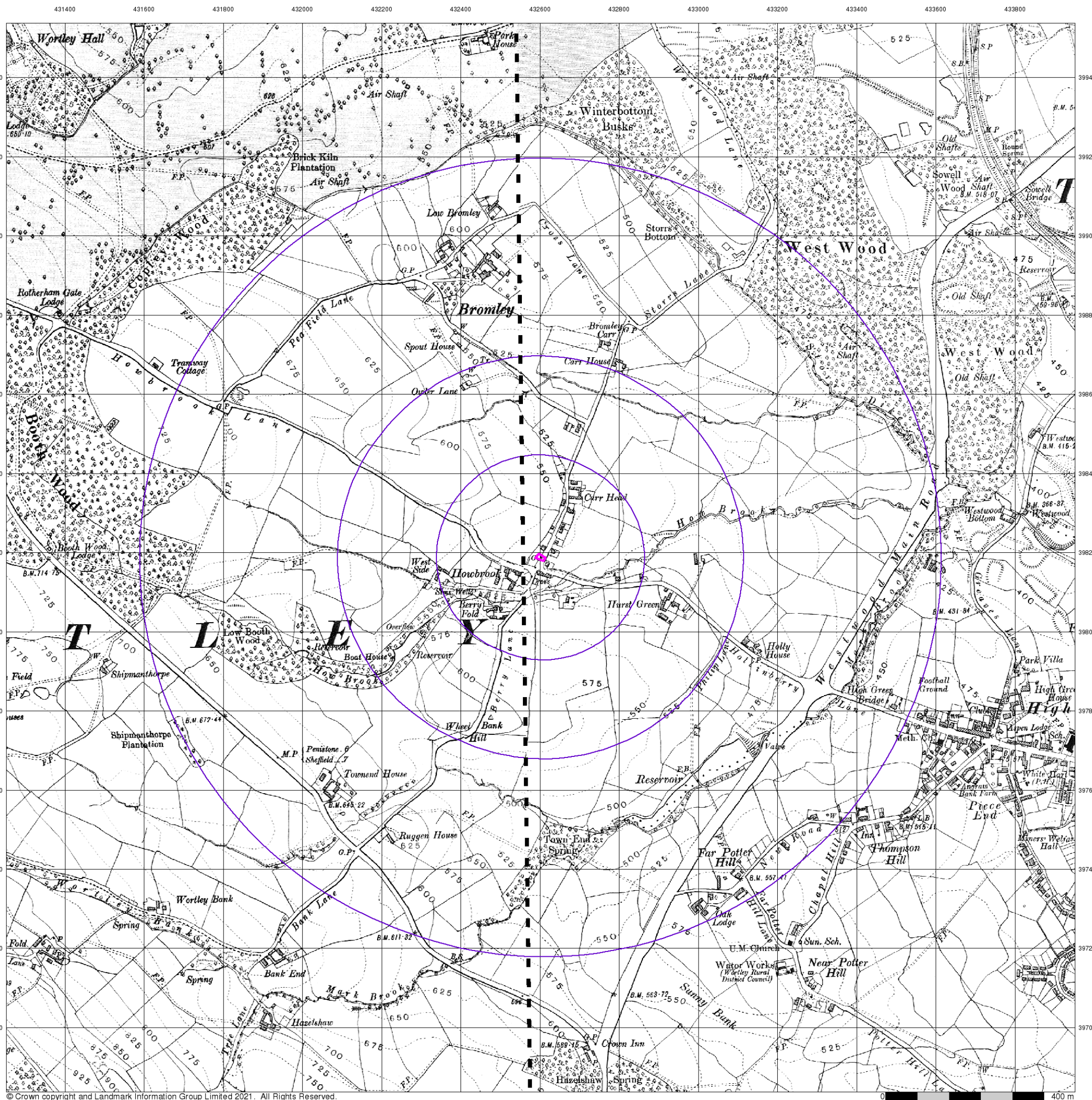
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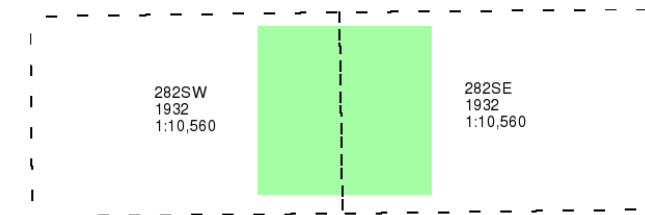
Yorkshire

Published 1932

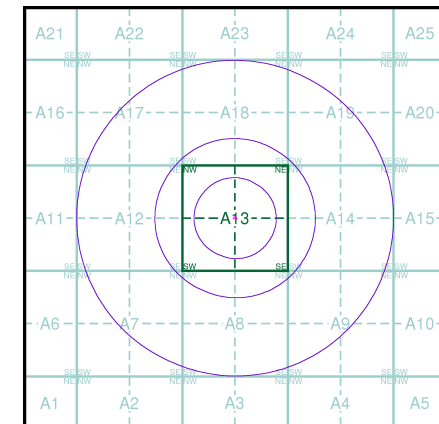
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Historical Map - Slice A



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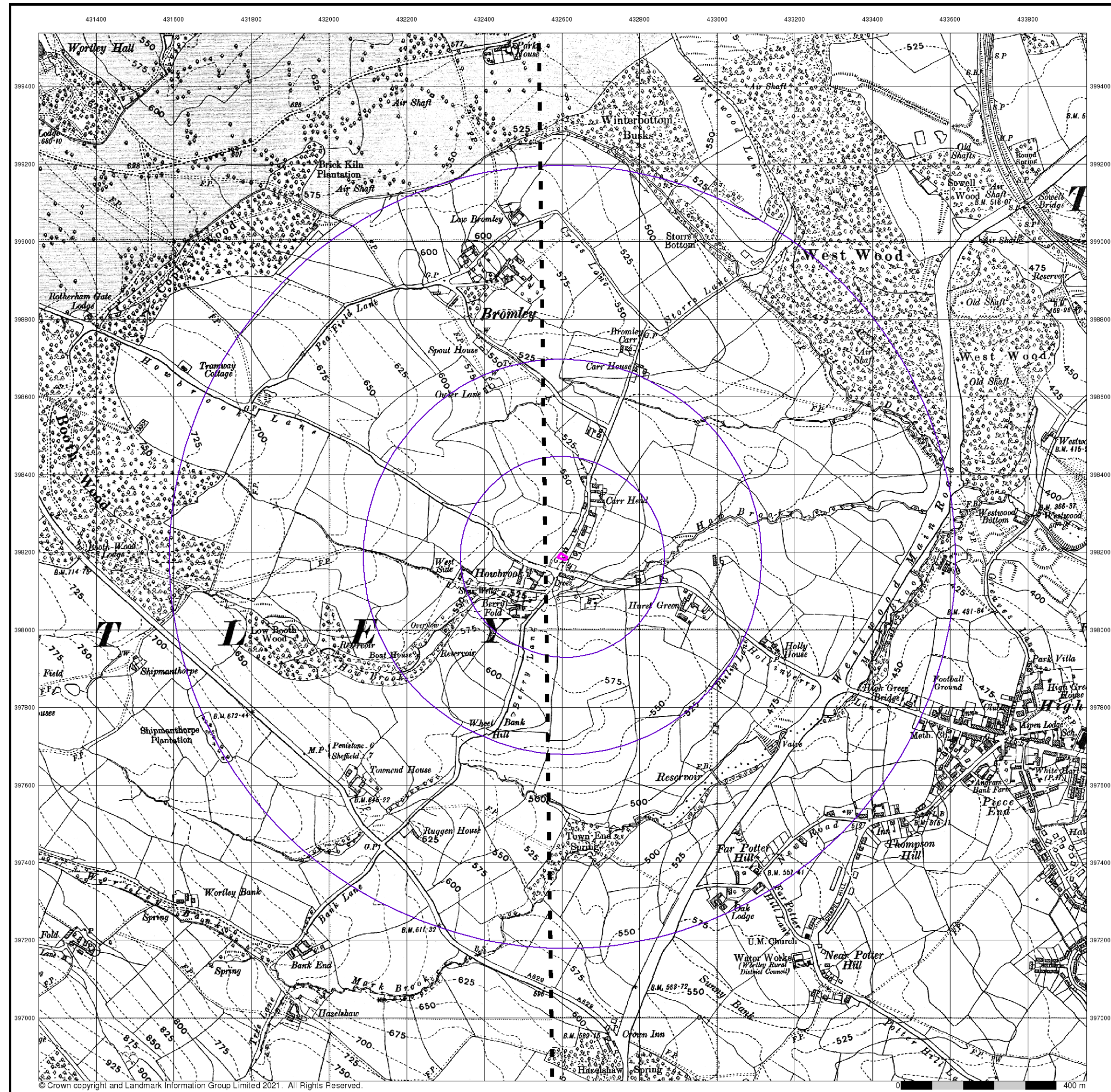
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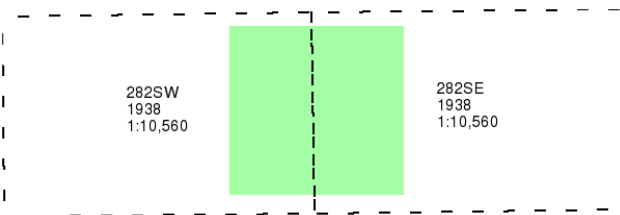
Yorkshire

Published 1938

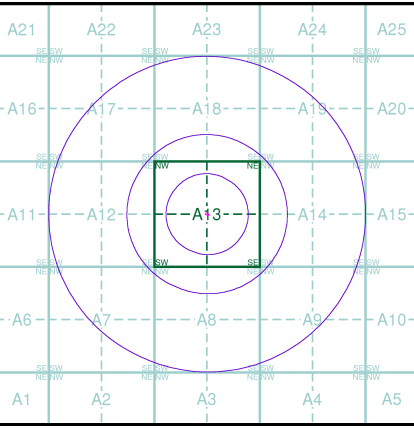
Source map scale - 1:10,560

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)



Historical Map - Slice A



Order Details

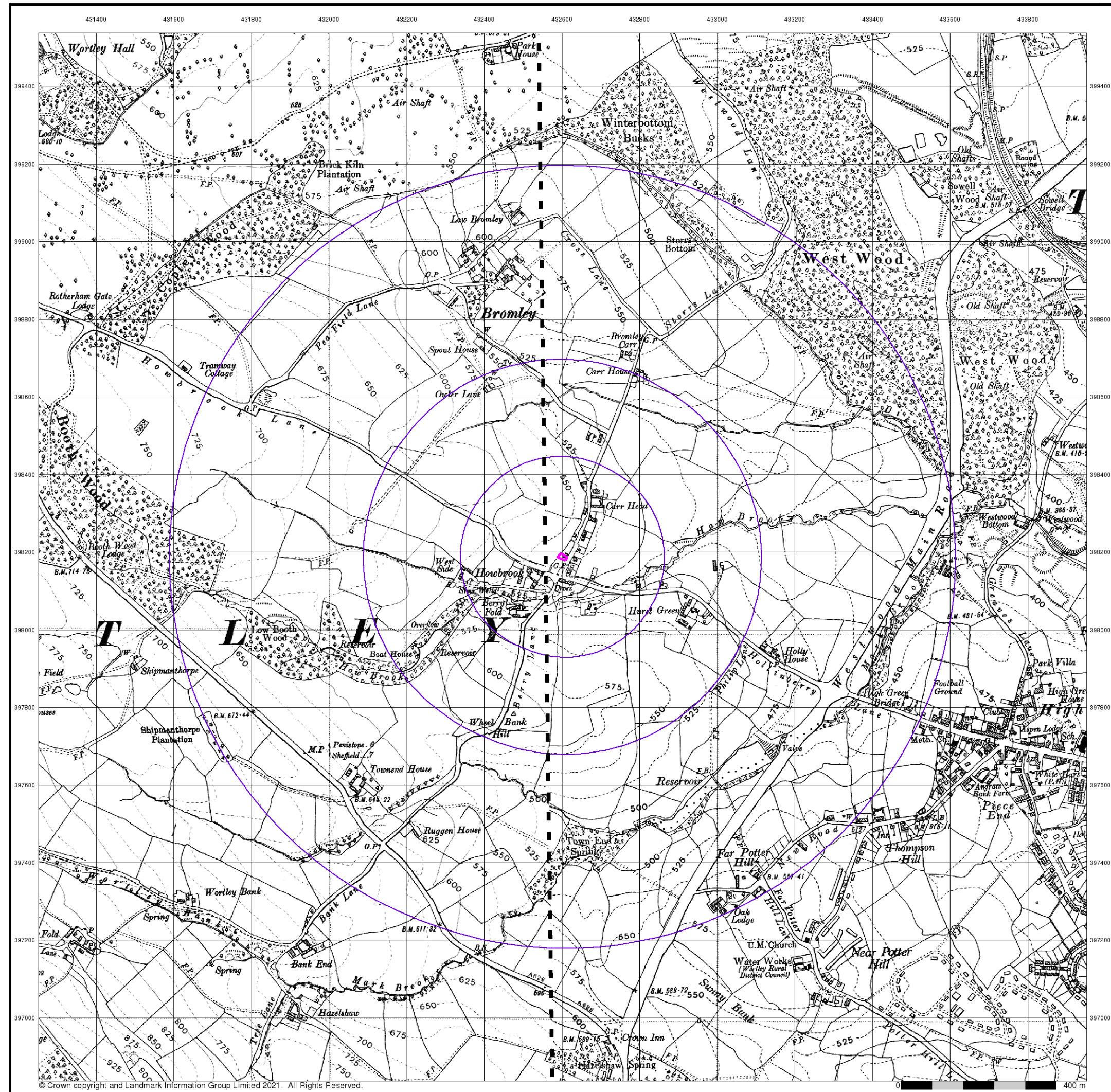
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National Grid Reference: 432600, 398190
Slice: A
Site Area (Ha): 0.03
Search Buffer (m): 1000

Site Details

3 Carr Head Road, Howbrook, Wortley, SHEFFIELD, S35 7HG



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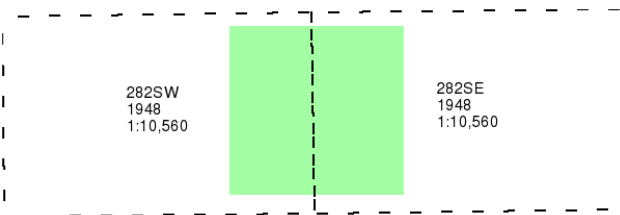
Yorkshire

Published 1948

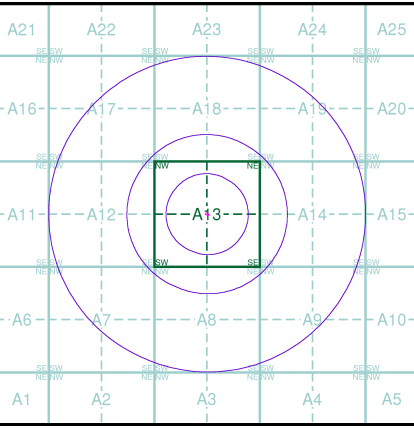
Source map scale - 1:10,560

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)



Historical Map - Slice A



Order Details

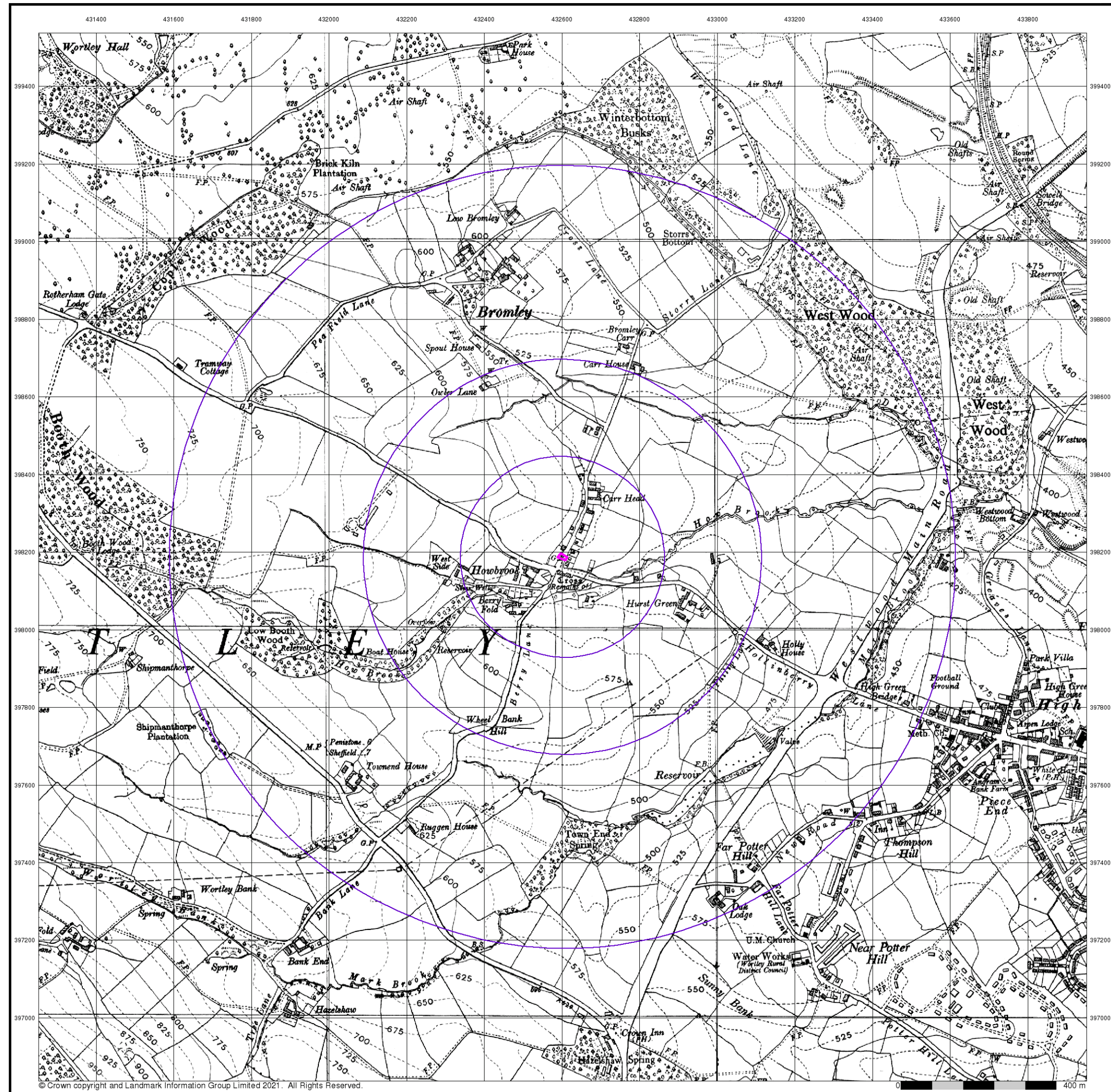
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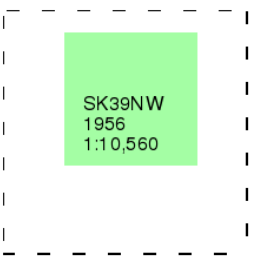
Ordnance Survey Plan

Published 1956

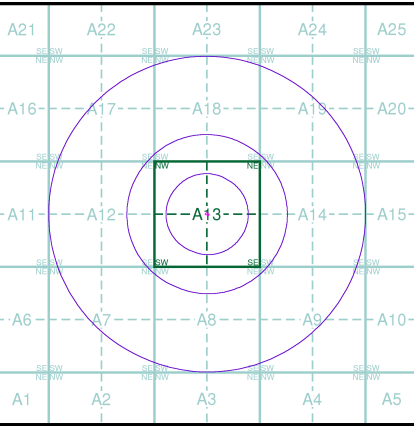
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. 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

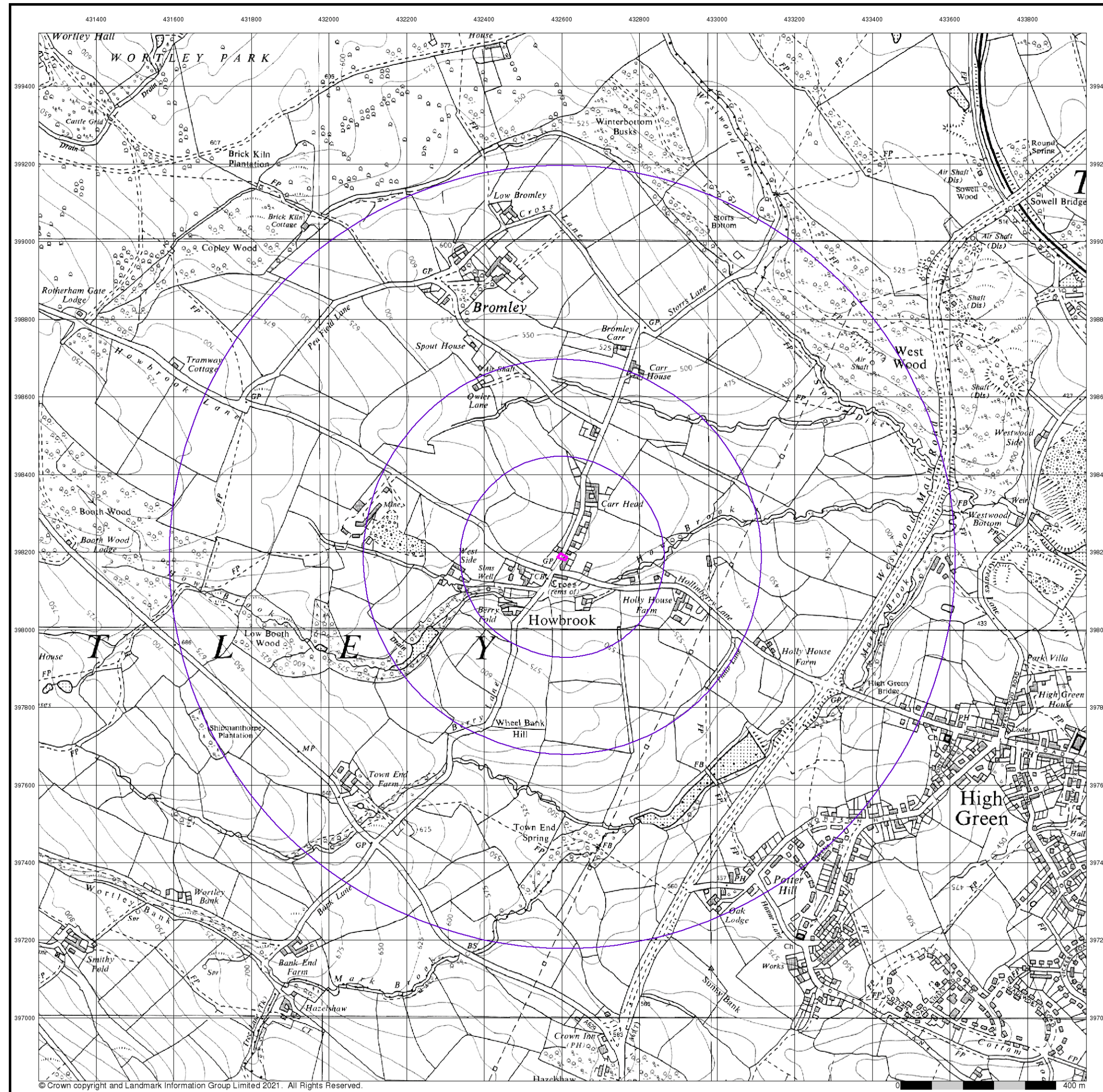
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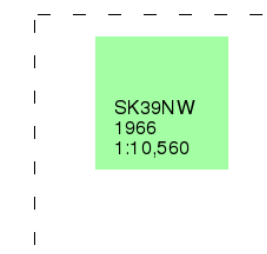
Ordnance Survey Plan

Published 1966

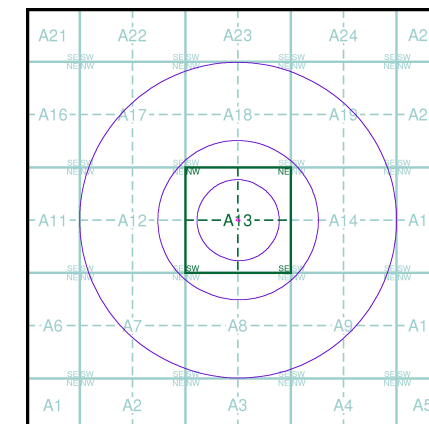
Source map scale - 1:10,000

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)



Historical Map - Slice A



Order Details

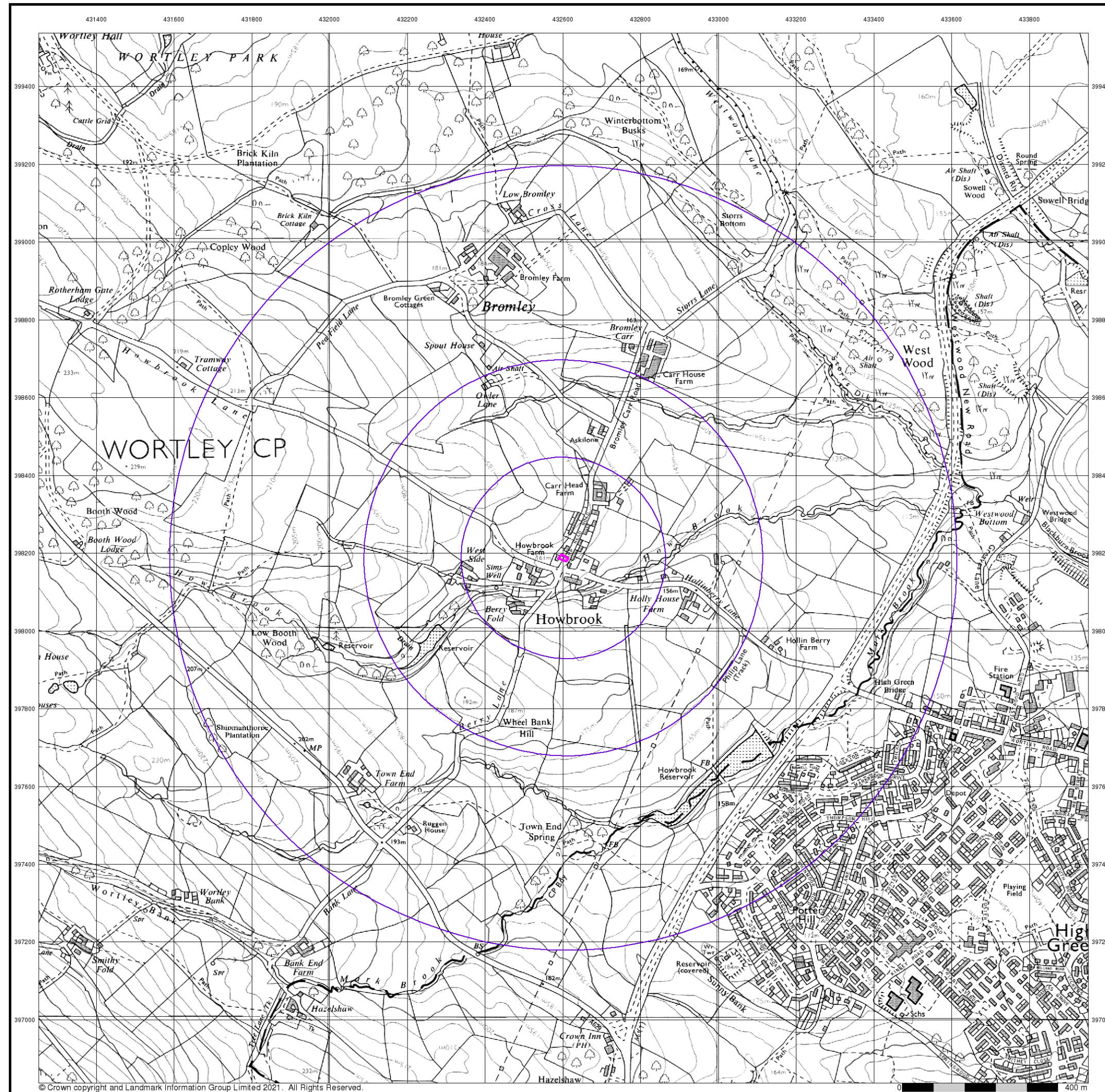
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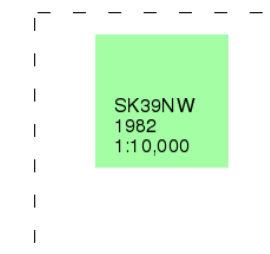
Ordnance Survey Plan

Published 1982

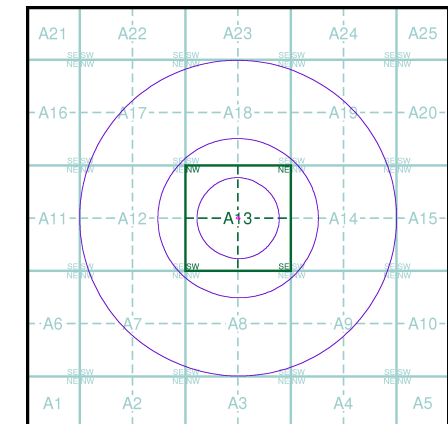
Source map scale - 1:10,000

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)



Historical Map - Slice A



Order Details

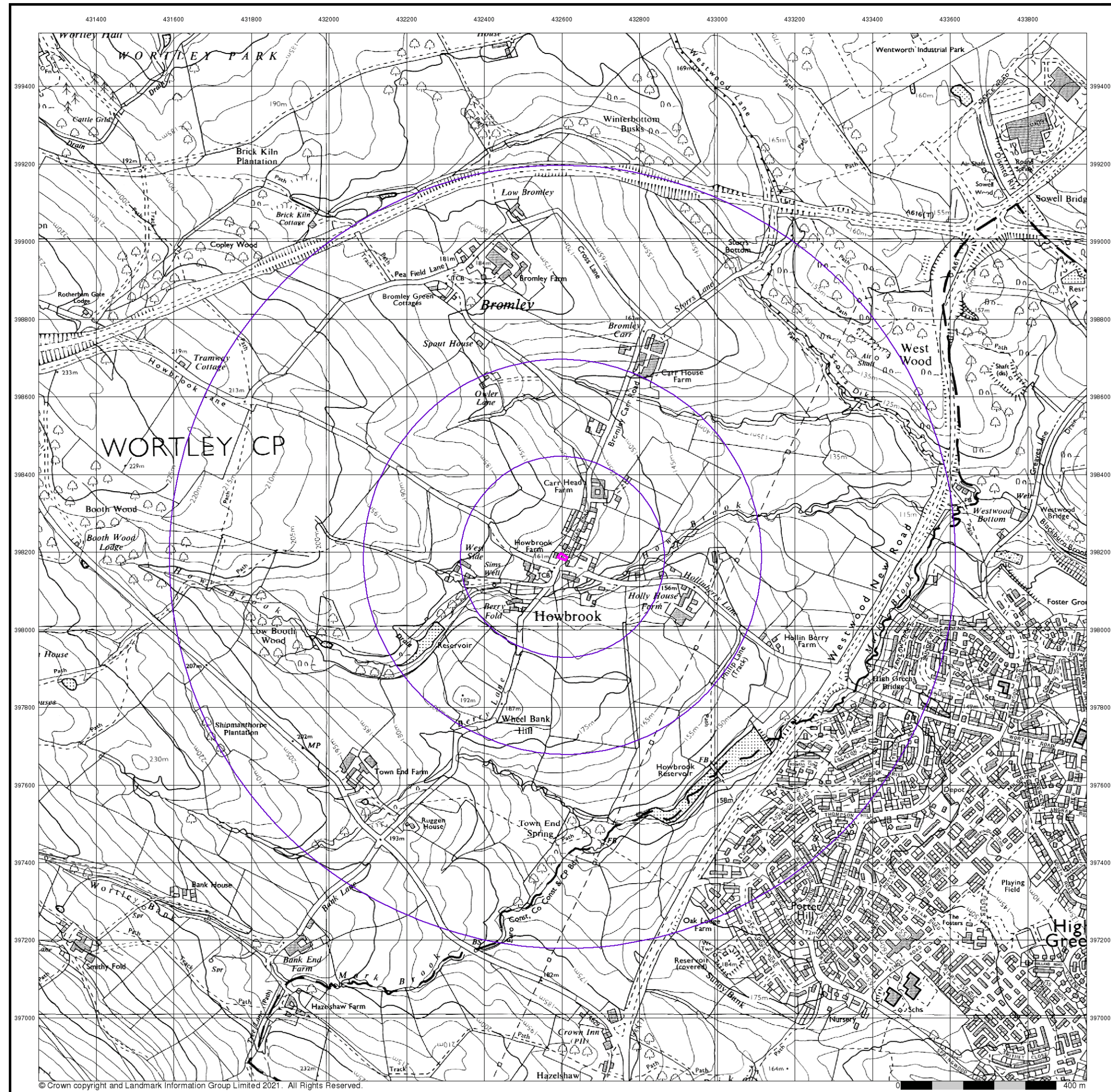
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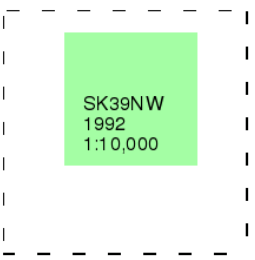
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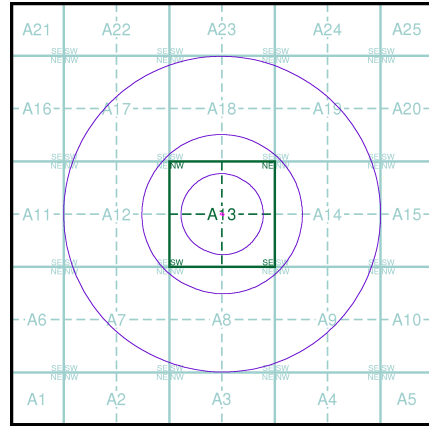
Ordnance Survey Plan
Published 1992
Source map scale - 1:10,000

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)



Historical Map - Slice A



Order Details

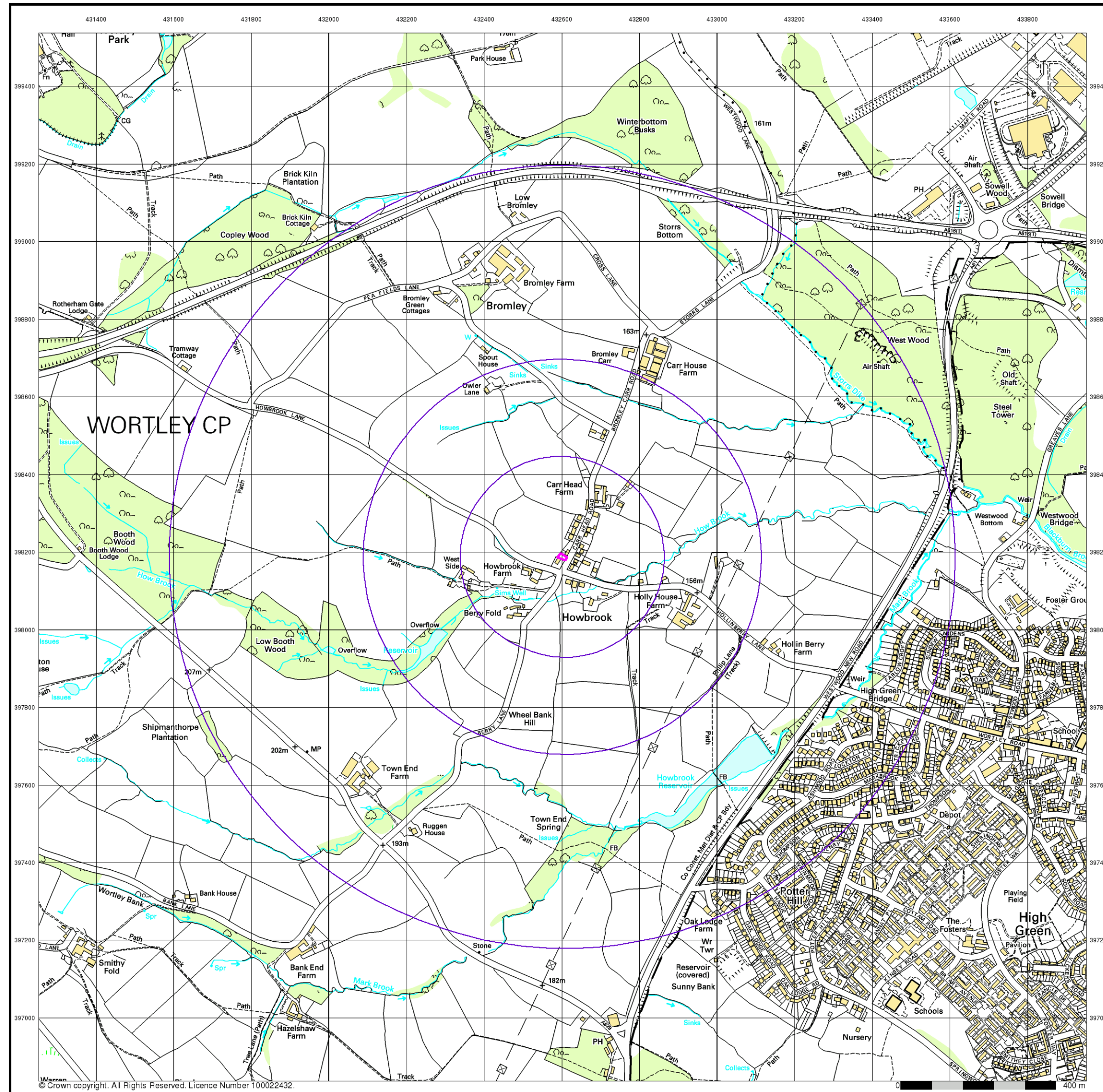
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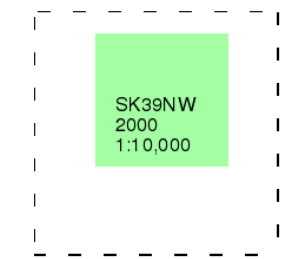
10k Raster Mapping

Published 2000

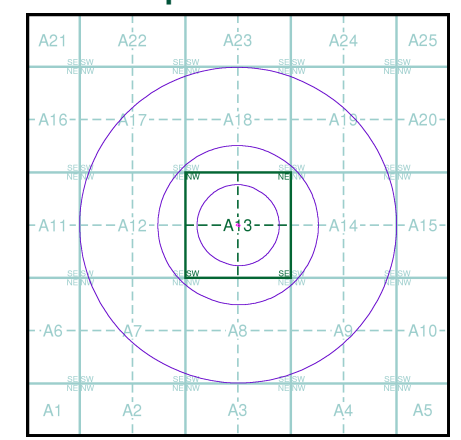
Source map scale - 1:10,000

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)



Historical Map - Slice A



Order Details

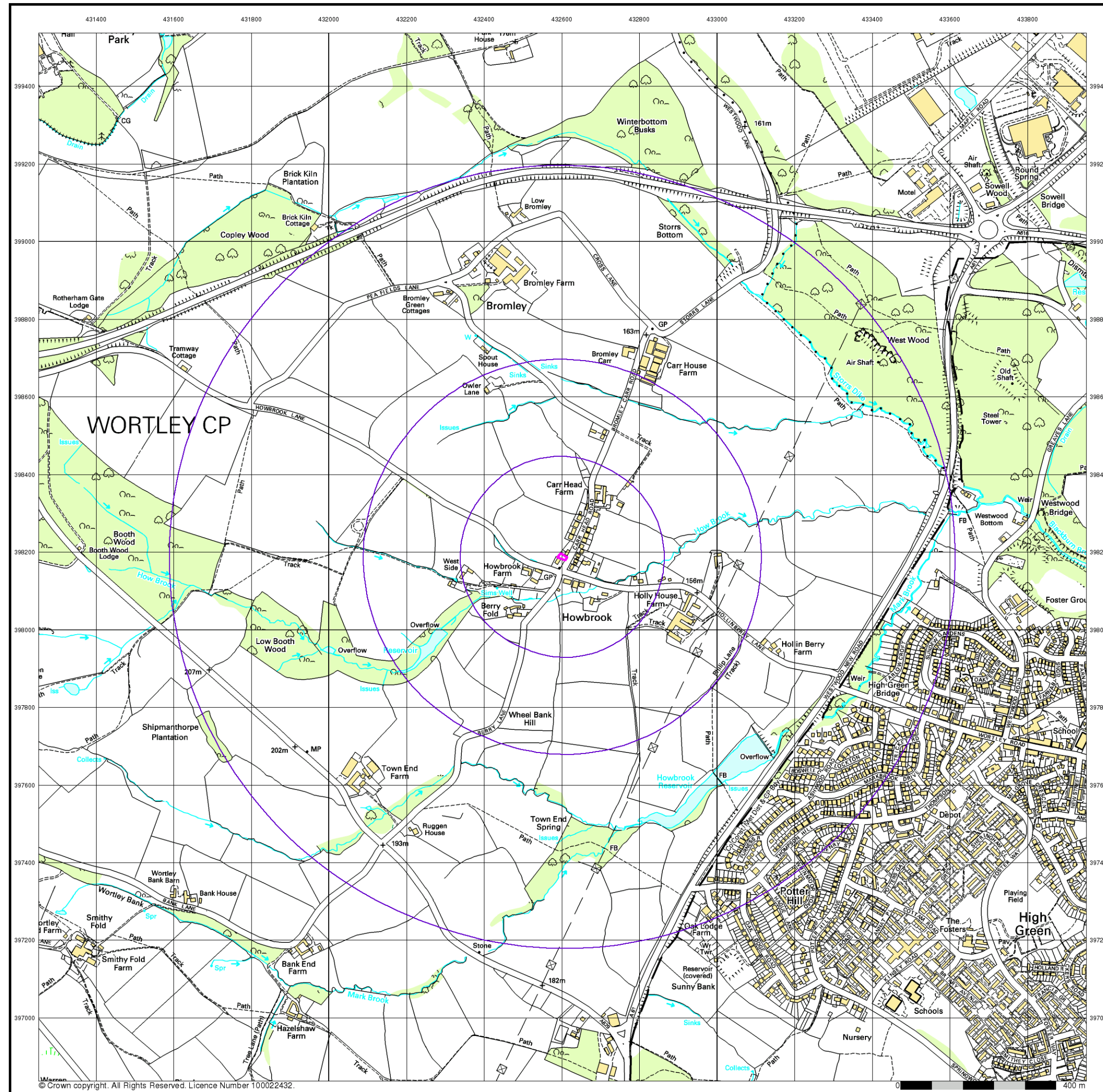
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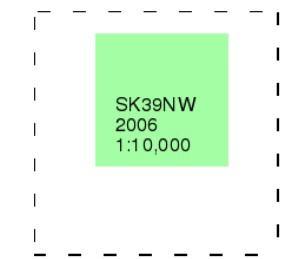
10k Raster Mapping

Published 2006

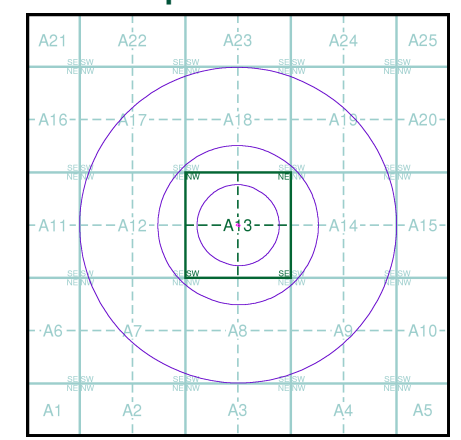
Source map scale - 1:10,000

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)



Historical Map - Slice A



Order Details

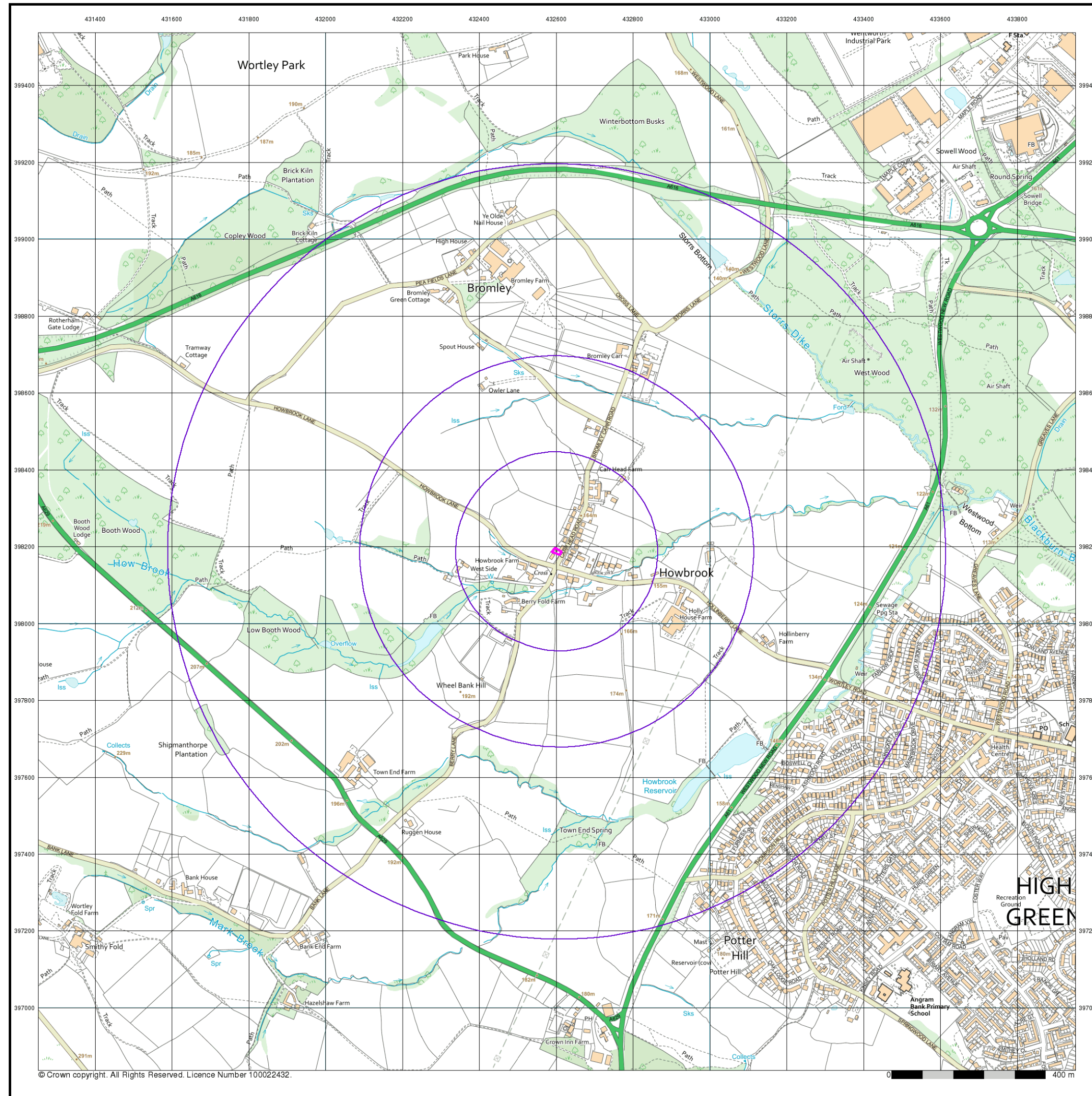
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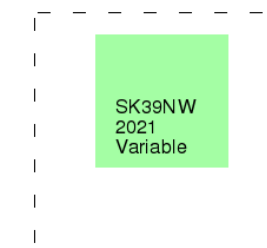
VectorMap Local

Published 2021

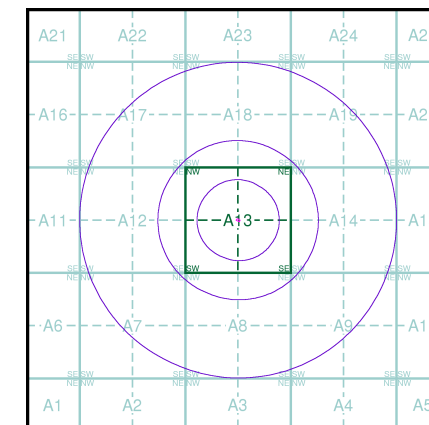
Source map scale - 1:10,000

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)



Historical Map - Slice A



Order Details

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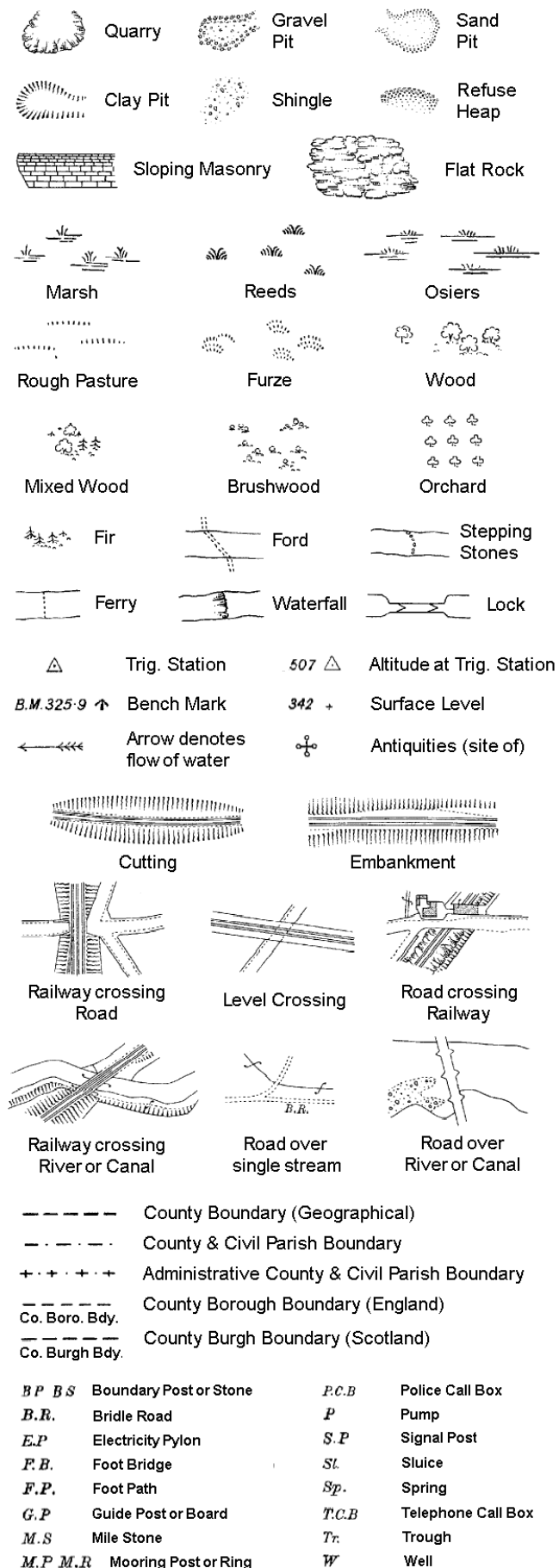
3 Carr Head Road, Howbrook, Wortley, SHEFFIELD, S35 7HG



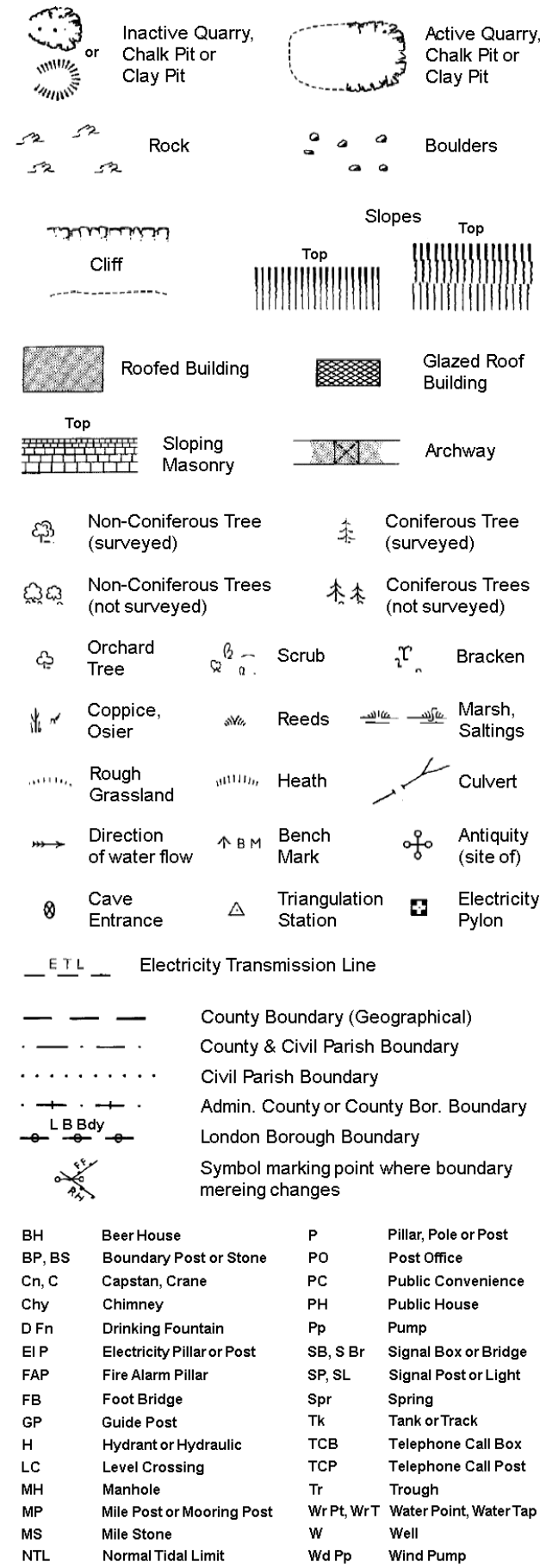
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Historical Mapping Legends

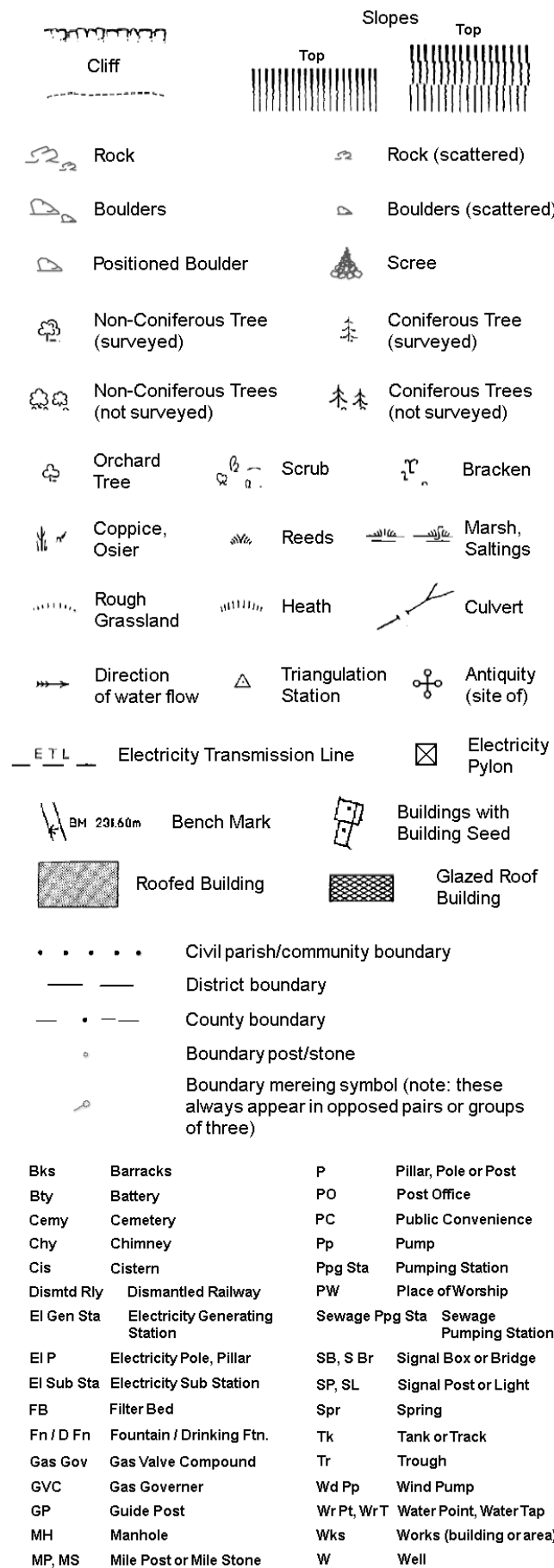
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



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



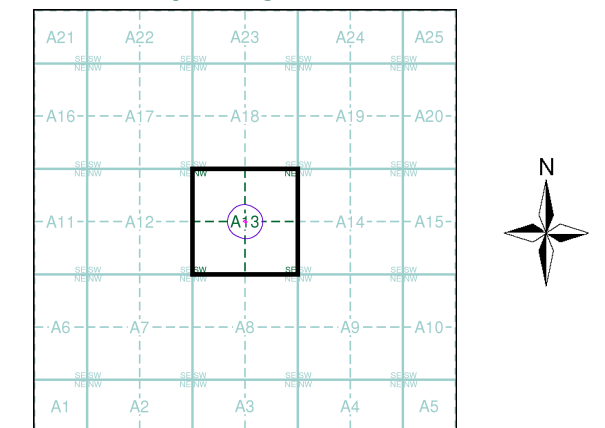
Large-Scale National Grid Data 1:2,500 and 1:1,250



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Yorkshire	1:2,500	1892 - 1893	2
Yorkshire	1:2,500	1905	3
Yorkshire	1:2,500	1931	4
Ordnance Survey Plan	1:2,500	1956	5
Additional SIMs	1:2,500	1956	6
Ordnance Survey Plan	1:2,500	1967	7
Ordnance Survey Plan	1:2,500	1971	8
Additional SIMs	1:2,500	1978	9
Additional SIMs	1:2,500	1991	10
Large-Scale National Grid Data	1:2,500	1993	11
Historical Aerial Photography	1:2,500	1999	12

Historical Map - Segment A13



Order Details

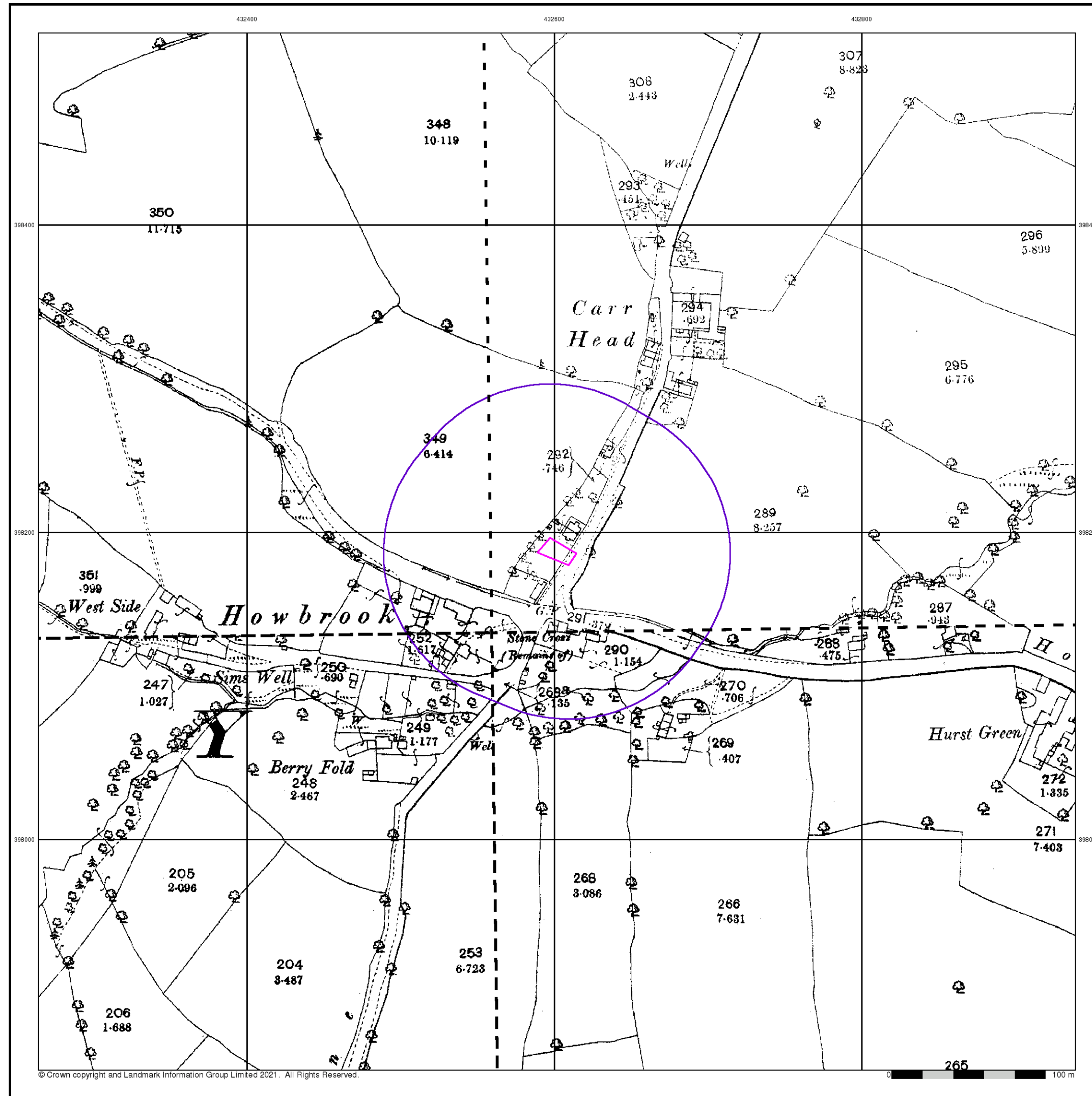
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Yorkshire

Published 1892 - 1893

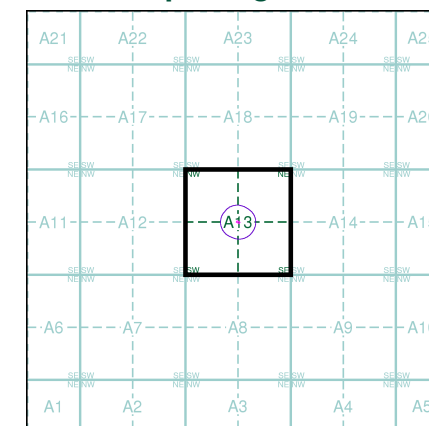
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered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

282_10 1892 1:2,500	282_11 1893 1:2,500
282_14 1893 1:2,500	282_15 1893 1:2,500

Historical Map - Segment A13



Order Details

Order Number: 287808059_1_1
Customer Ref: GEOL21-8875
National Grid Reference: 432600, 398190
Slice: A
Site Area (Ha): 0.03
Search Buffer (m): 100

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Yorkshire

Published 1905

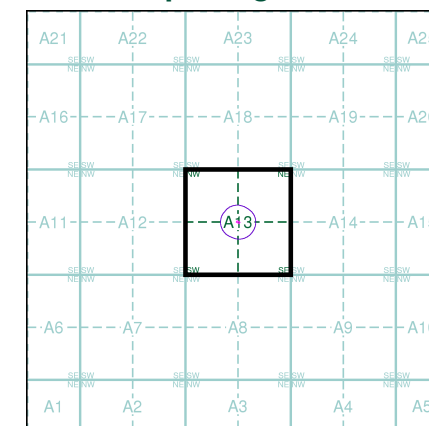
Source map scale - 1:2,500

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)

282_10 1905 1:2,500	282_11 1905 1:2,500
282_14 1905 1:2,500	282_15 1905 1:2,500

Historical Map - Segment A13



Order Details

Order Number: 287808059_1_1
Customer Ref: GEOL21-8875
National Grid Reference: 432600, 398190
Slice: A
Site Area (Ha): 0.03
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Yorkshire

Published 1931

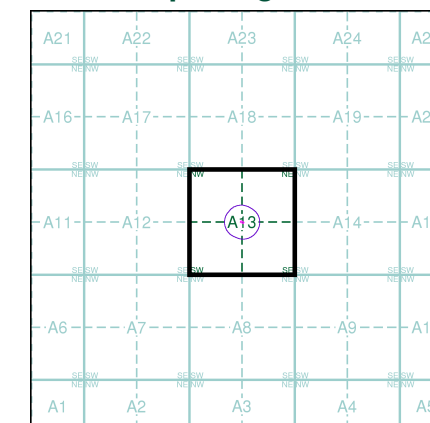
Source map scale - 1:2,500

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Map Name(s) and Date(s)

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282_14 1931 1:2,500	282_15 1931 1:2,500

Historical Map - Segment A13



Order Details

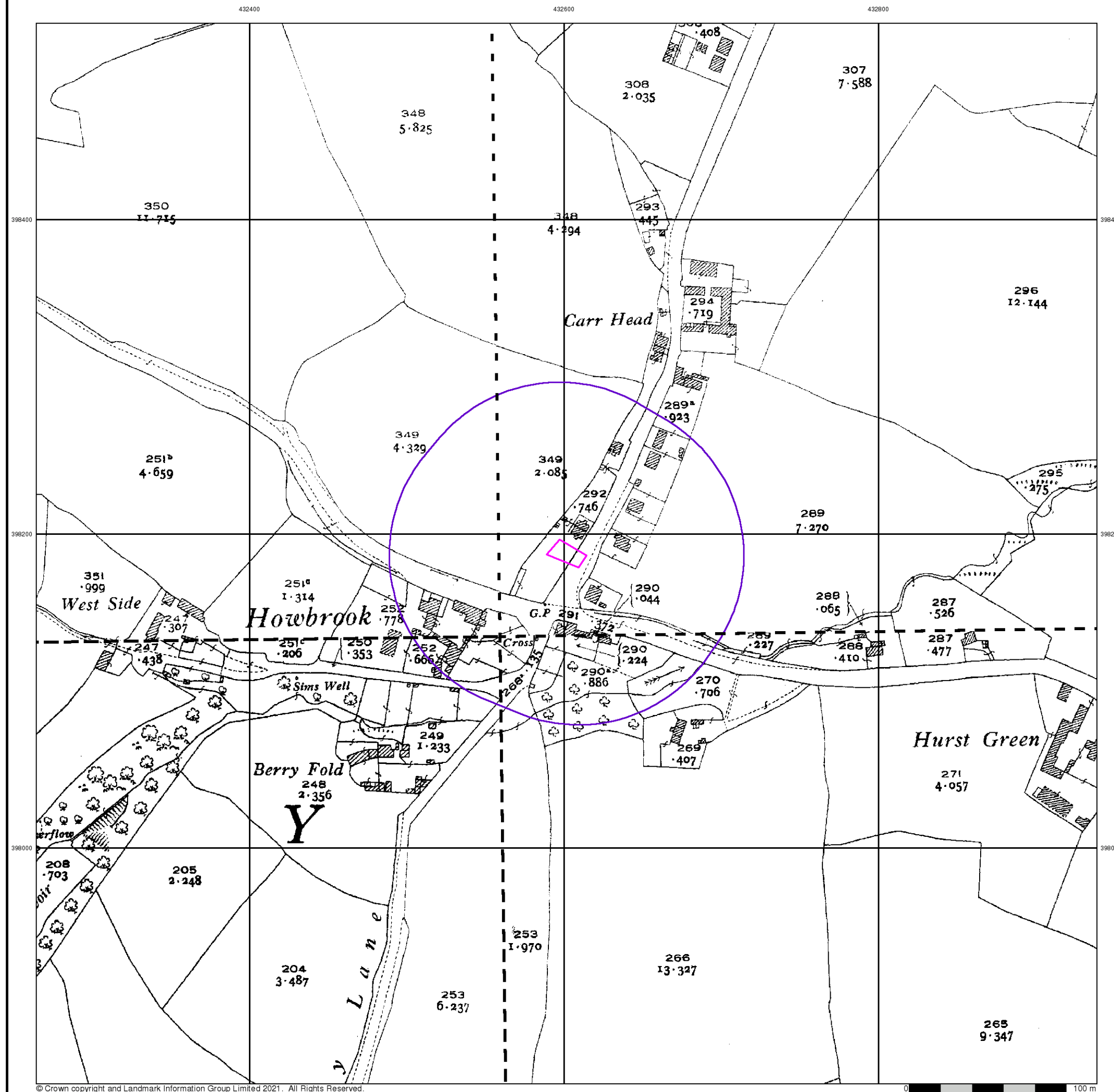
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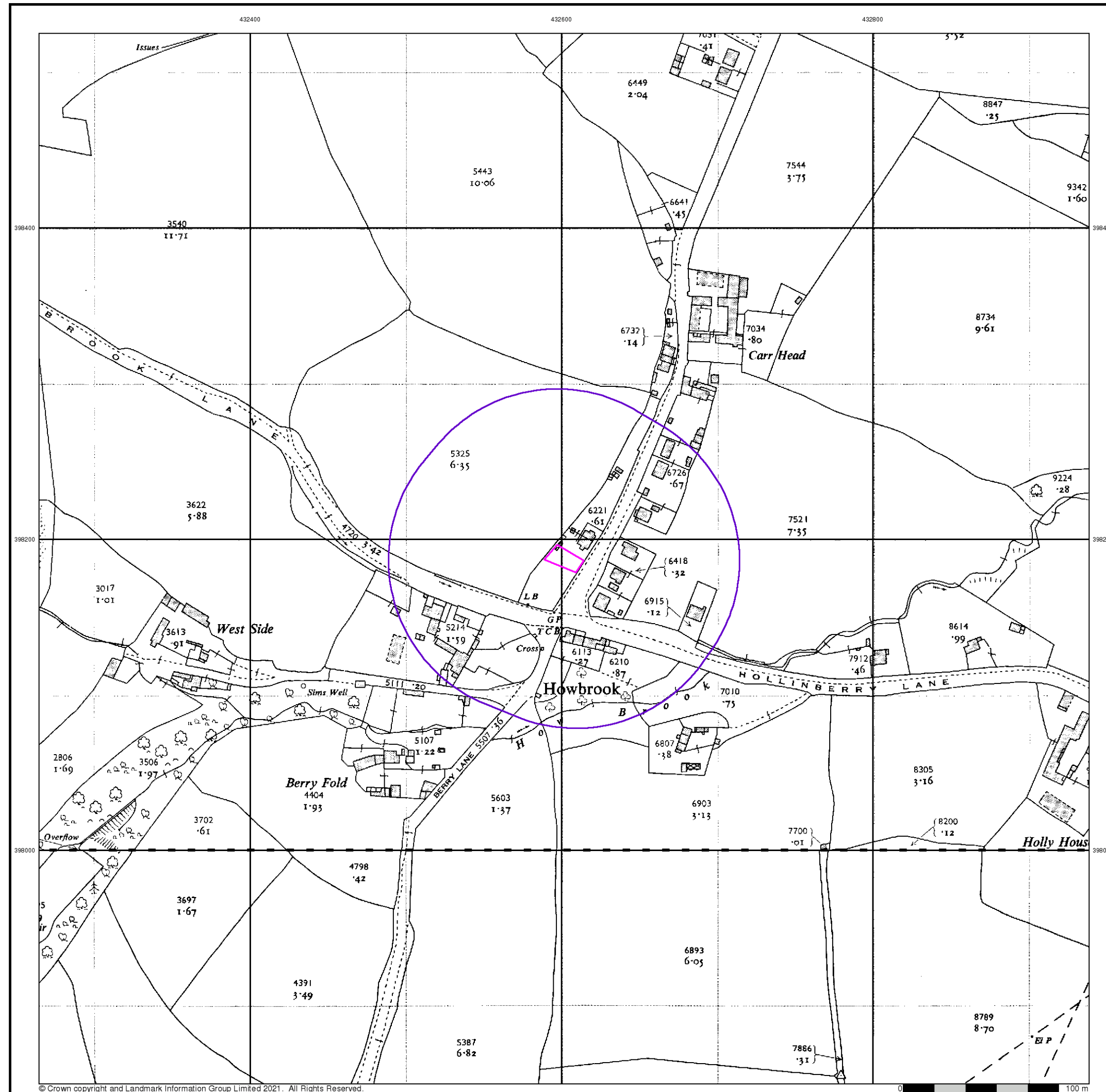
Site Details

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Landmark
INFORMATION GROUP

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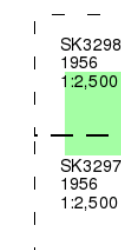
Ordnance Survey Plan

Published 1956

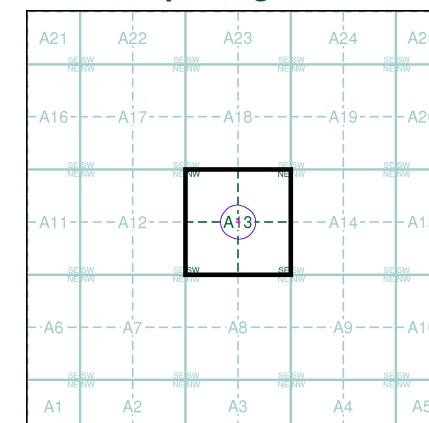
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

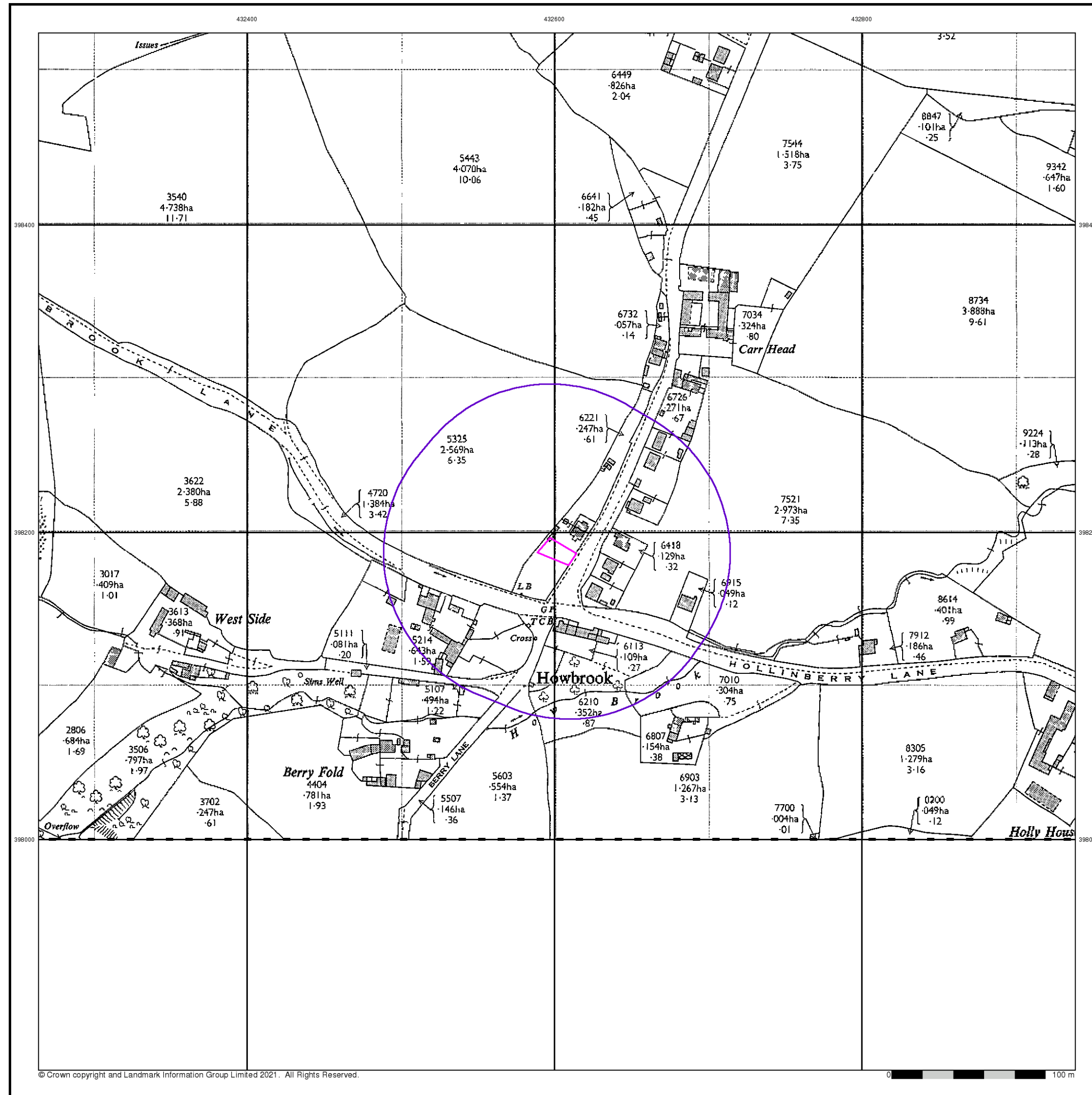
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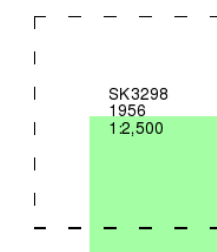
Additional SIMs

Published 1956

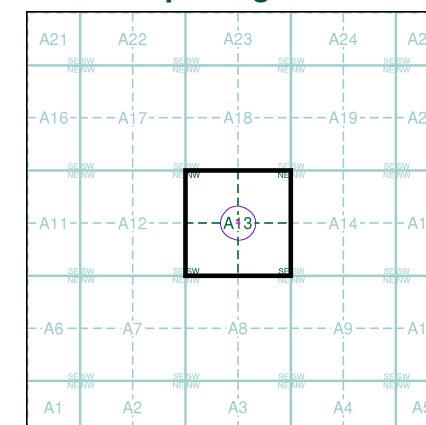
Source map scale - 1:2,500

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)



Historical Map - Segment A13



Order Details

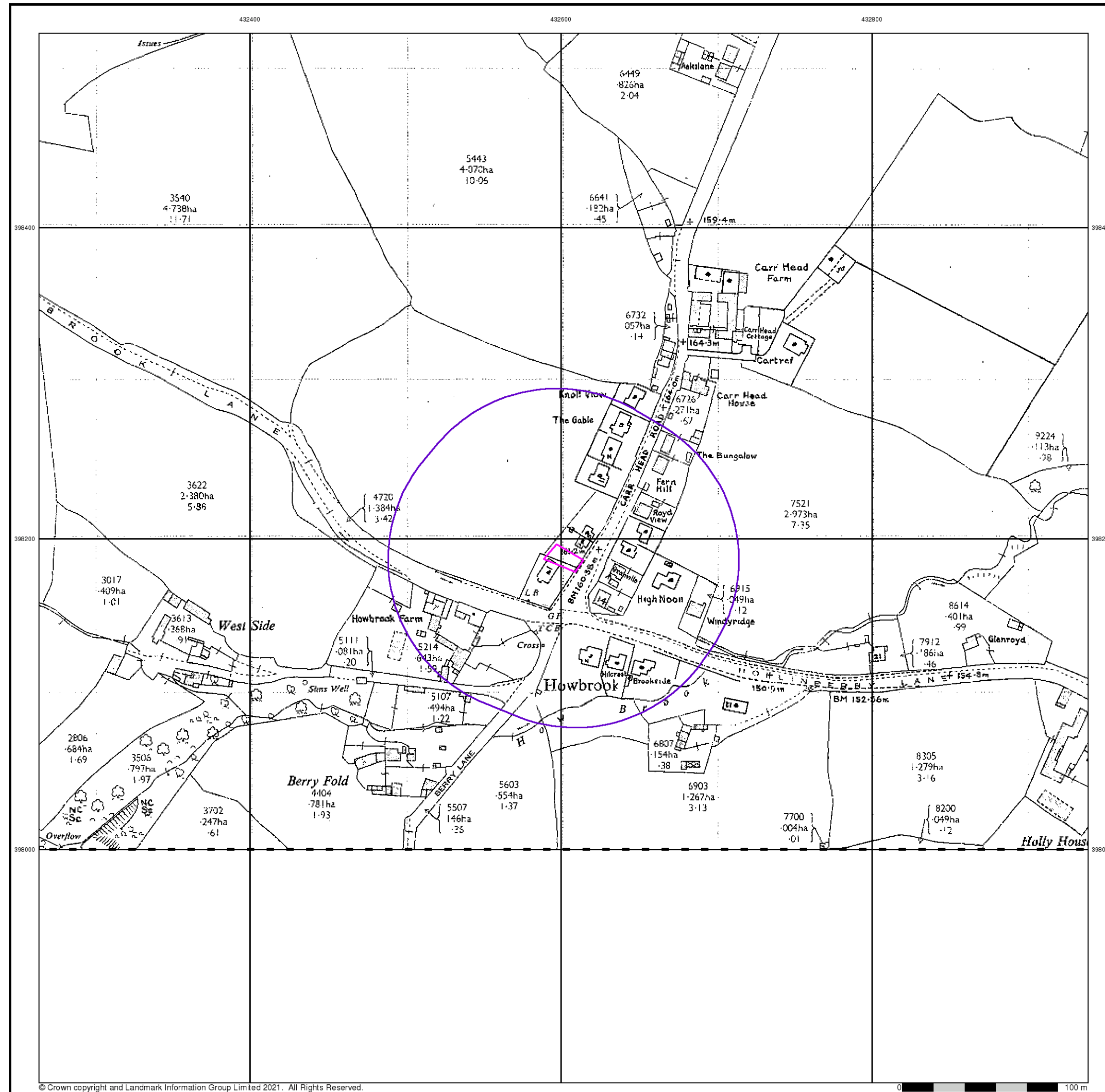
Order Number: 287808059_1_1
Customer Ref: GEOL21-8875
National Grid Reference: 432600, 398190
Slice: A
Site Area (Ha): 0.03
Search Buffer (m): 100

Site Details

3 Carr Head Road, Howbrook, Wortley, SHEFFIELD, S35 7HG



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



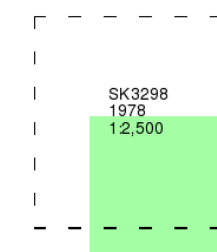
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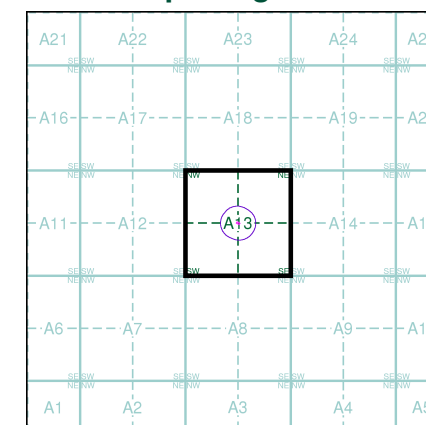
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The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information 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)



Historical Map - Segment A13



Order Details

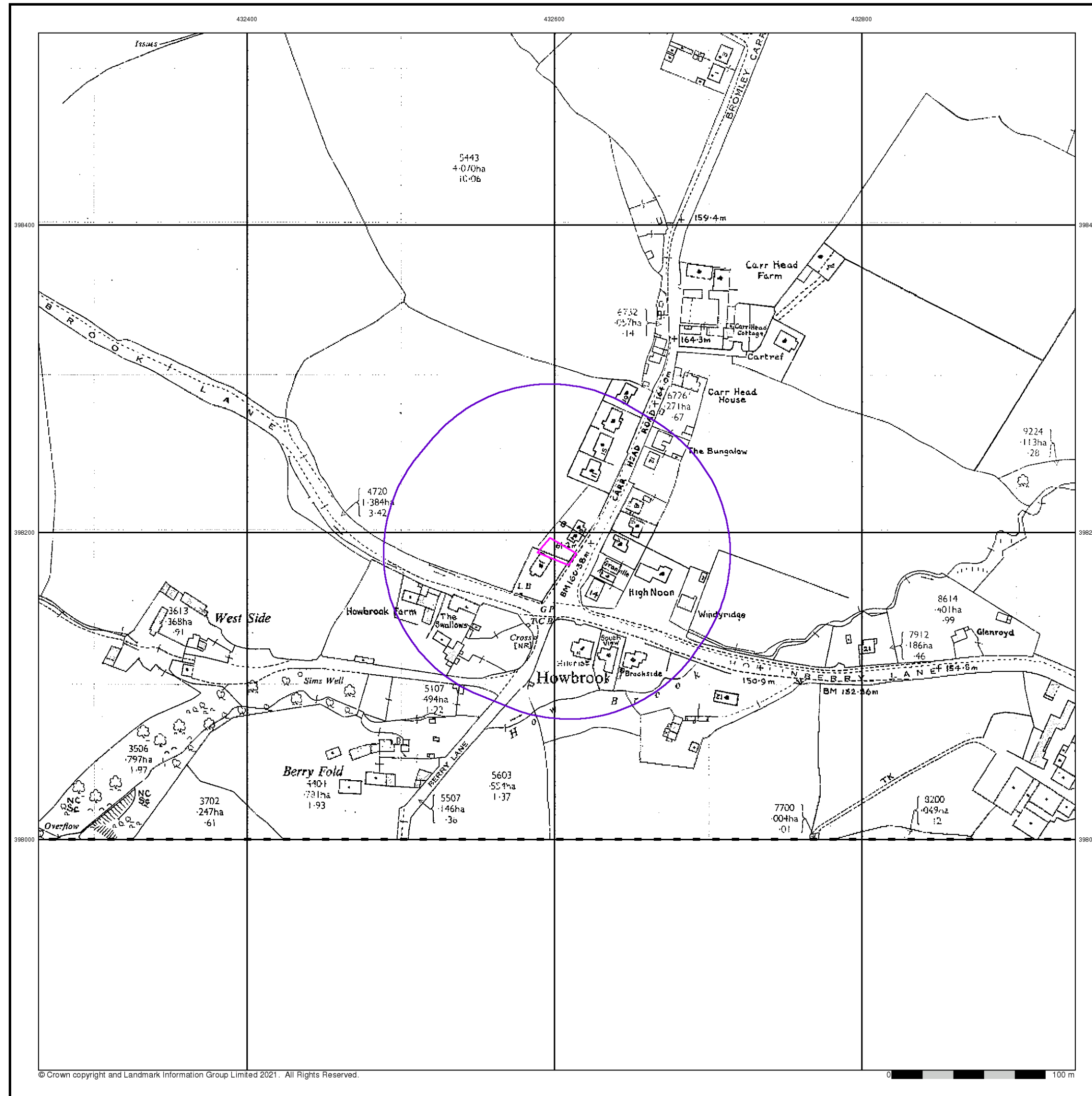
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National Grid Reference: 432600, 398190
Slice: A
Site Area (Ha): 0.03
Search Buffer (m): 100

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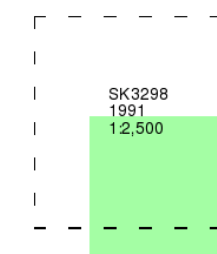
Additional SIMs

Published 1991

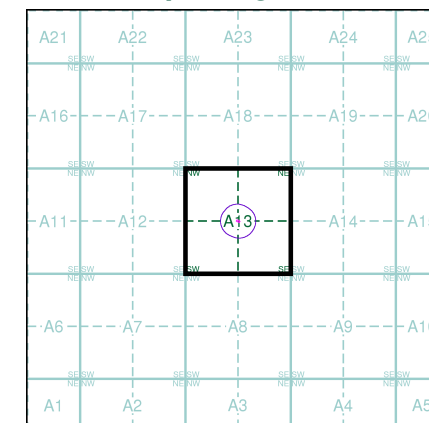
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The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information 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)



Historical Map - Segment A13



Order Details

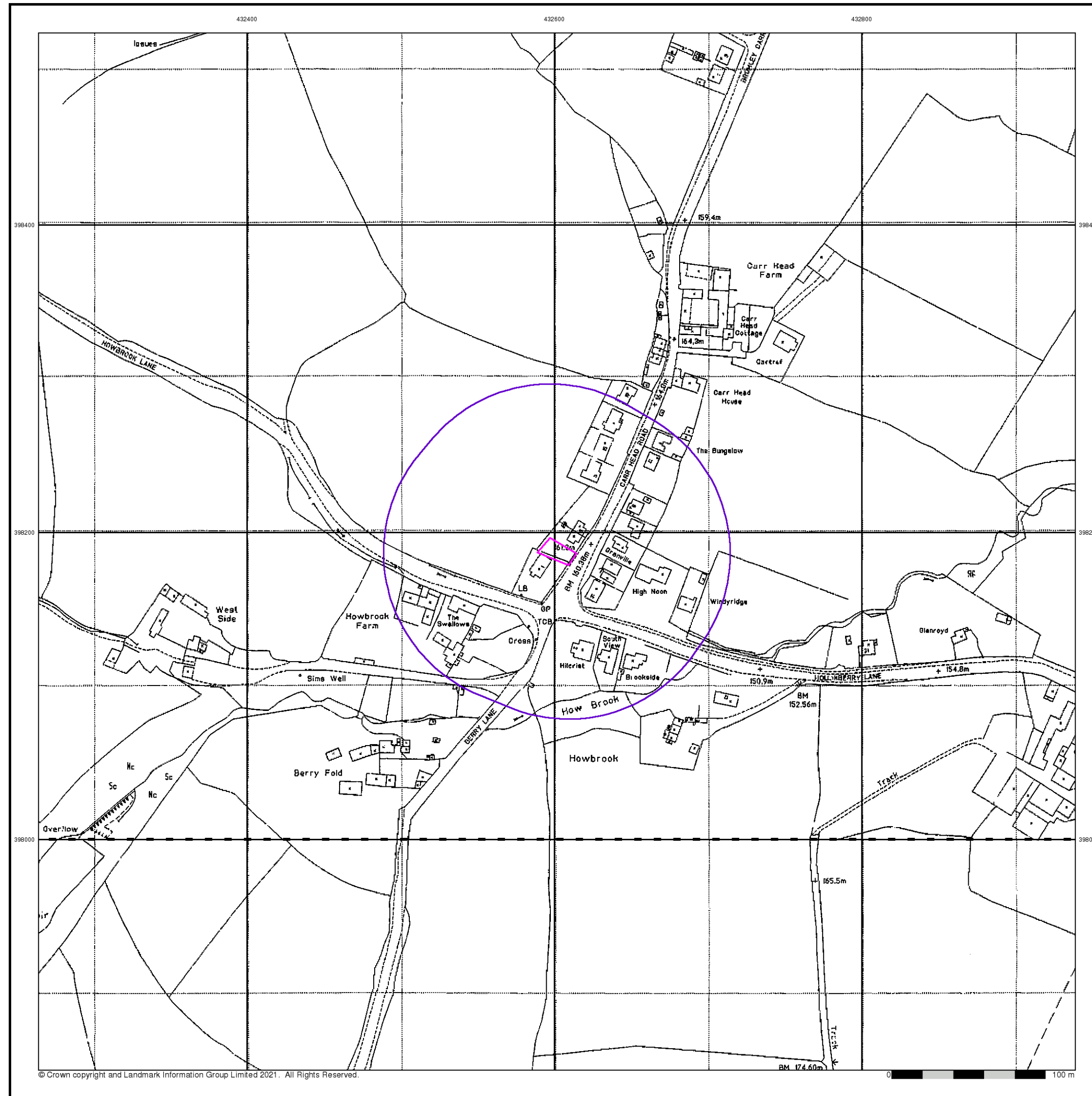
Order Number: 287808059_1_1
Customer Ref: GEOL21-8875
National Grid Reference: 432600, 398190
Slice: A
Site Area (Ha): 0.03
Search Buffer (m): 100

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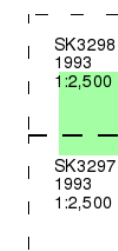
Large-Scale National Grid Data

Published 1993

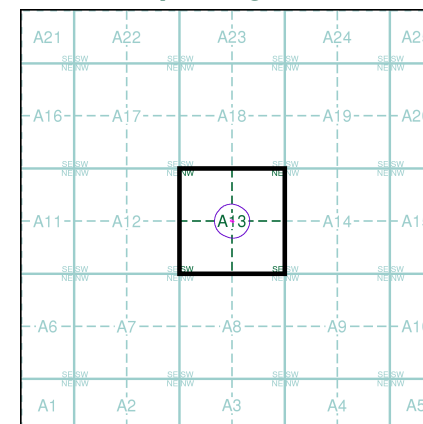
Source map scale - 1:2,500

'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: 287808059_1_1
Customer Ref: GEOL21-8875
National Grid Reference: 432600, 398190
Slice: A
Site Area (Ha): 0.03
Search Buffer (m): 100

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APPENDIX V

GEOL Ground Gas Monitoring Certificate

Ground Gas Monitoring Record Sheet



Visit	Date	Time	Equipment	Weather	Site Engineer	Comments	Borehole Position	Gas Flow (l/hr)	Atmospheric Pressure (mbar)	Atmospheric Pressure Trend	Methane (% v/v)		Methane (% LEL)		Carbon Dioxide (% v/v)		Oxygen (% v/v)		Hydrocarbons (GFM 435 only)		Other Gases (PPM)			Depth to Water (m bgl)	Depth to Base (m bgl)
											Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady	Hex %	PID Cf	PID (Isobutylene)	H ₂ S	CO		
1	26/11/2021	11:15	GFM436	Sunny spells, wet & windy	IH	BH2 bailed out after monitoring	1	<0.1	971	Falling 1033 - 991		0.0		0.0		1.6		17.8	0.007	1.0		0	0	DAMP	2.00
							2	<0.1	971			0.0		0.0		1.4		17.7	0.008	1.0		0	0	1.00	5.00
							3	<0.1	971			0.0		0.0		1.1		18.9	0.010	1.0		0	0	2.40	3.00
2	09/12/2021	09:20	GFM436	Overcast, wet	IH	All BH's bailed out after monitoring	1	<0.1	982	Rising 980 - 996		0.0		0.0		2.3		17.5	0.006	1.0		0	0	0.45	2.00
							2	<0.1	982			0.0		0.0		4.5		16.1	0.006	1.0		0	0	0.50	5.00
							3	<0.1	982			0.0		0.0		2.3		16.1	0.022	1.0		0	0	1.30	3.00
3	10/01/2022	12:45	GFM436	Overcast, wet	IH	All BH's bailed out after monitoring	1	<0.1	999	Rising 997 - 1017		0.0		0.0		2.1		16.7	0.000	1.0		0	0	0.40	2.00
							2	<0.1	999			0.0		0.0		3.9		17.9	0.002	1.0		0	0	0.60	5.00
							3	<0.1	999			0.0		0.0		2.1		17.4	0.001	1.0		0	0	1.30	3.00
4	27/01/2022	10:30:00	GFM436	Overcast, wet, windy	IH	BH2 bailed out after monitoring	1	<0.1	1007	Falling 1038 - 1026		0.0		0.0		2.4		18.3	0.007	1.0		0	0	1.85	2.00
							2	<0.1	1007			0.0		0.0		4.2		12.6	0.004	1.0		0	0	1.30	5.00
							3	<0.1	1007			0.0		0.0		1.4		18.7	0.008	1.0		0	0	1.75	3.00
5	25/02/2022	11:35	GFM436	Sunny spells, wet & windy	IH	All BH's bailed out after monitoring	1	<0.1	1008	Rising 1007 - 1025		0.0		0.0		2.1		17.1	0.009	1.0		0	0	0.40	2.00
							2	<0.1	1008			0.0		0.0		4.6		12.8	0.006	1.0		0	0	1.10	5.00
							3	<0.1	1008			0.0		0.0		1.7		17.6	0.010	1.0		0	0	1.39	3.00
6	10/03/2022	09:30	GFM436	Overcast, slight breeze	IH	Last monitoring visit	1	<0.1	997	Steady 1014		0.0		0.0		1.4		19.3	0.006	1.0		0	0	0.94	2.00
							2	<0.1	998			0.0		0.0		4.2		15.3	0.004	1.0		0	0	1.25	5.00
							3	<0.1	998			0.0		0.0		2.7		15.5	0.005	1.0		0	0	1.30	3.00