

Geology 1:50,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WGR	Worked Ground (Undivided)	Void	Not Supplied - Holocene
	MGR	Made Ground (Undivided)	Artificial Deposit	Not Supplied - Holocene
	WMGR	Infilled Ground	Artificial Deposit	Not Supplied - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	LASI	Langley Silt Member	Clay and Silt	Not Supplied - Devensian
	KPGR	KEMPTON PARK GRAVEL MEMBER	Sand and Gravel	Not Supplied - Devensian
	LHGR	Lynch Hill Gravel Member	Sand and Gravel	Not Supplied - Wolstonian
	TPGR	TAPLOW GRAVEL MEMBER	Sand and Gravel	Not Supplied - Wolstonian
	BHT	Boyn Hill Gravel Member	Sand and Gravel	Not Supplied - Hoxnian
	BPGR	Black Park Gravel Member	Sand and Gravel	Not Supplied - Anglian
	WIHG	Winter Hill Gravel	Sand and Gravel	Not Supplied - Anglian
	HEAD	Head	Clay, Silt, Sand and Gravel	Not Supplied - Quaternary
	HEAD	Head	Gravel, Sand, Silt and Clay	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	LC	London Clay Formation	Clay, Silt and Sand	Not Supplied - Ypresian
	LMBE	Lambeth Group	Clay, Silt and Sand	Not Supplied - Thanetian
	SNCK	Seaford Chalk Formation and Newhaven Chalk Formation (Undifferentiated)	Chalk	Not Supplied - Coniacian
		Faults		

Geology 1:50,000 Maps

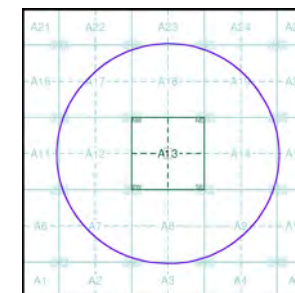
This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.

The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	1
Map Sheet No:	268
Map Name:	Reading
Map Date:	2000
Bedrock Geology:	Available
Superficial Geology:	Available
Artificial Geology:	Available
Faults:	Not Supplied
Landslip:	Not Available
Rock Segments:	Not Supplied

Geology 1:50,000 Maps - Slice A

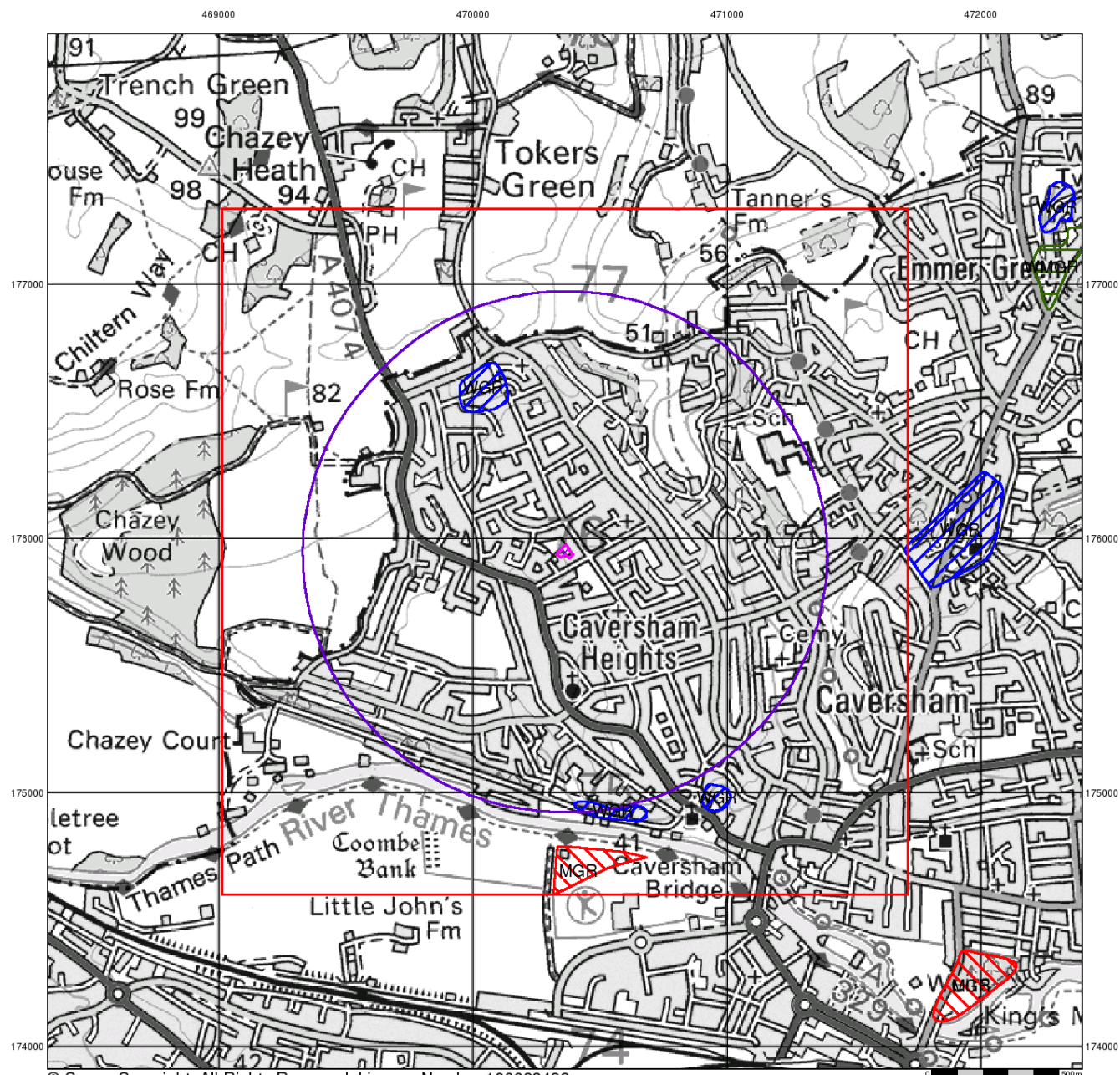


Order Details:

Order Number:	201739248_1_1
Customer Reference:	3170
National Grid Reference:	470360, 175940
Slice:	A
Site Area (Ha):	0.17
Search Buffer (m):	1000

Site Details:

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Artificial Ground and Landslip

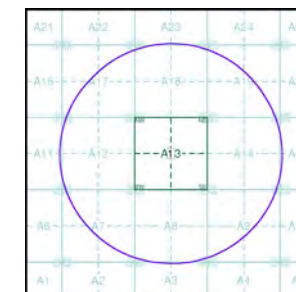
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



Order Details:

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 National Grid Reference: 470360, 175940
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Site Details:

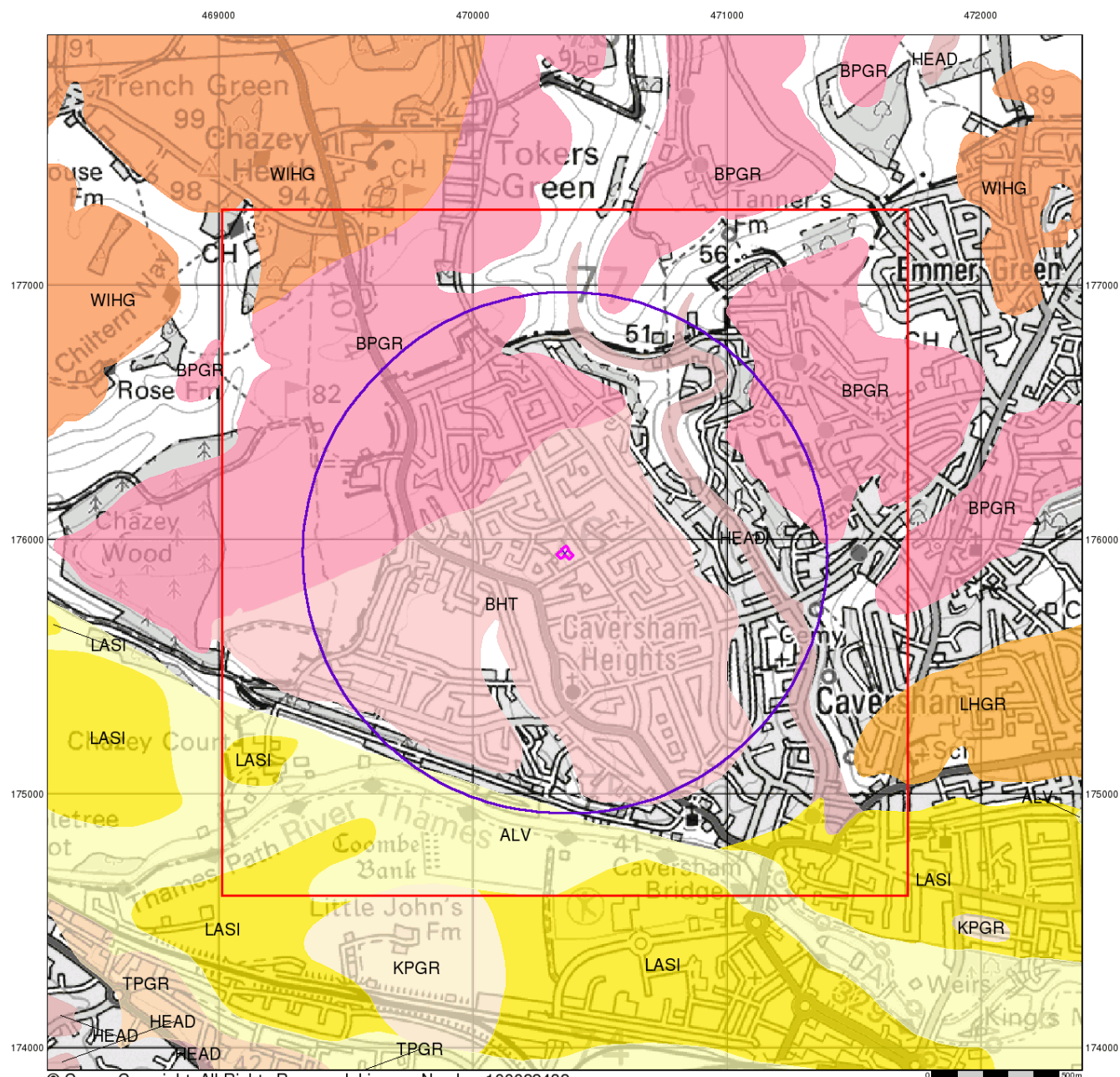
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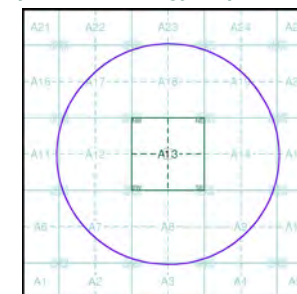
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



Order Details:

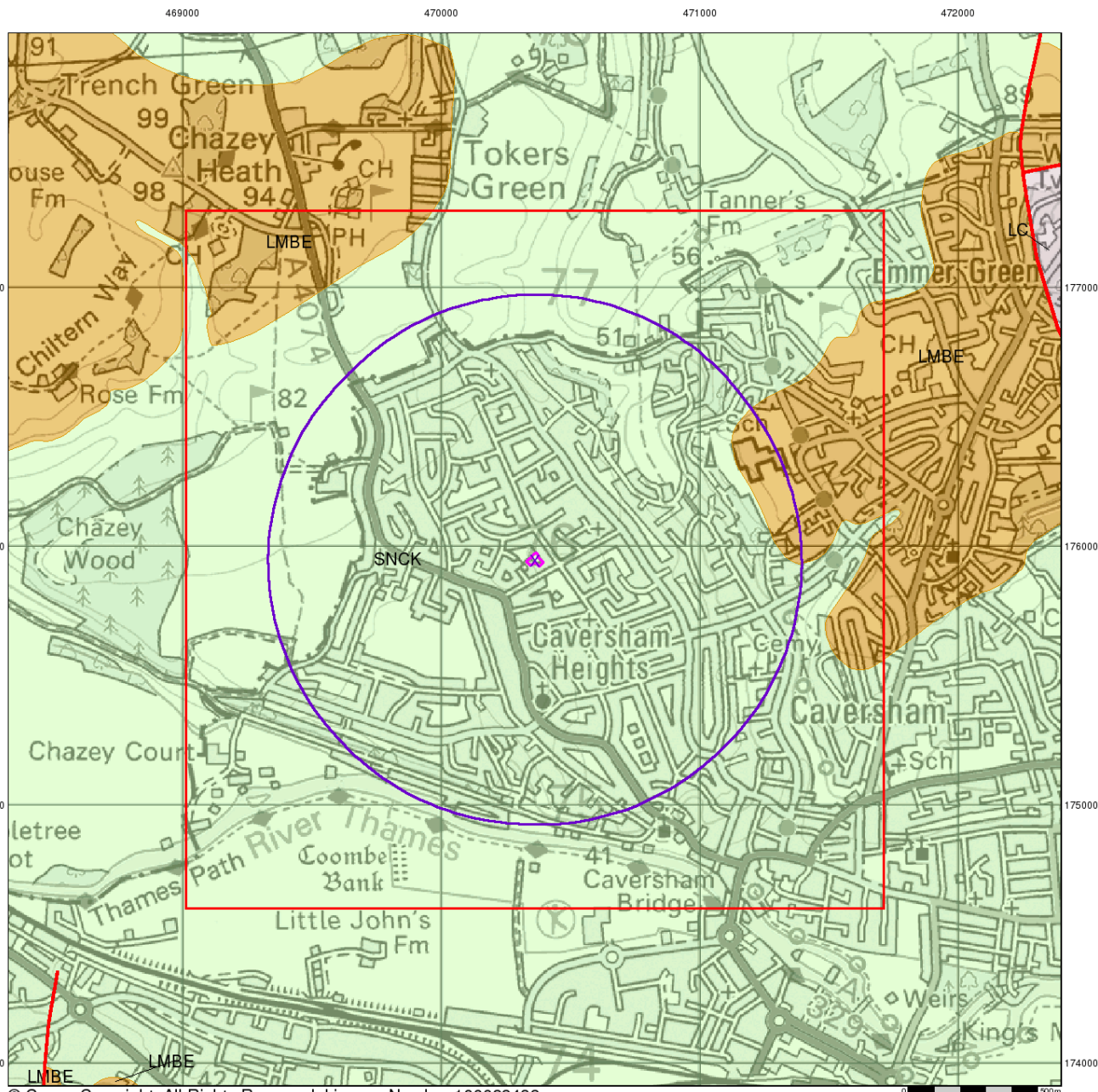
Order Number: 201739248_1_1
 Customer Reference: 3170
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Bedrock and Faults

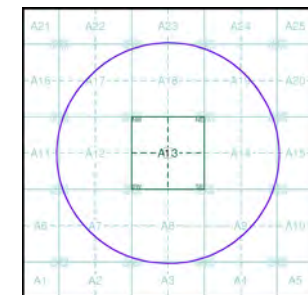
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



Order Details:

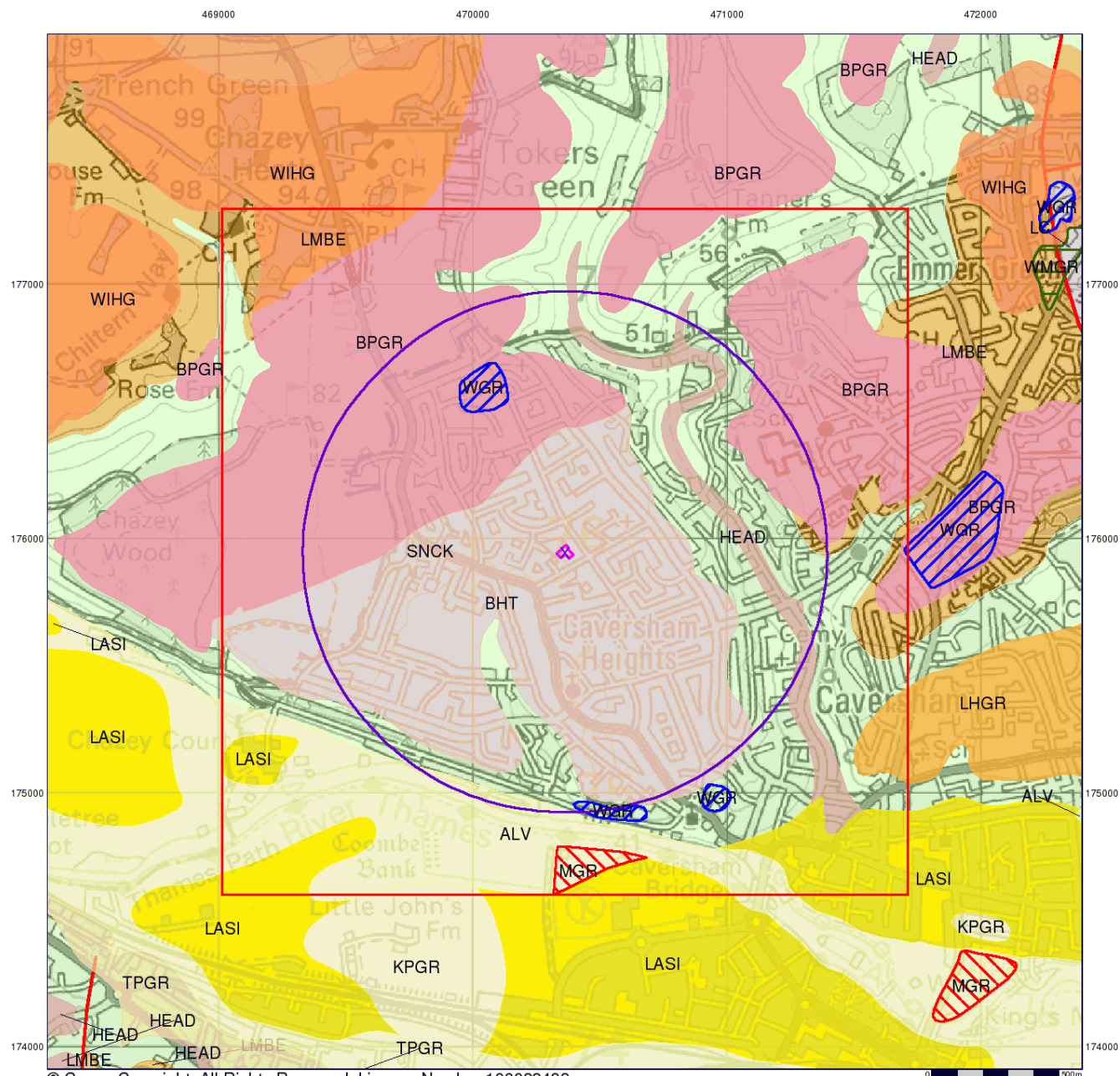
Order Number: 201739248_1_1
 Customer Reference: 3170
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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

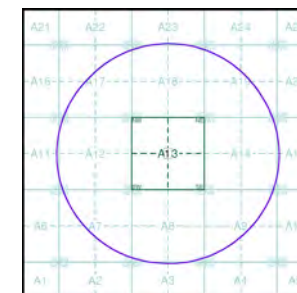
Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
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Nottingham
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: www.bgs.ac.uk

Combined Geology Map - Slice A



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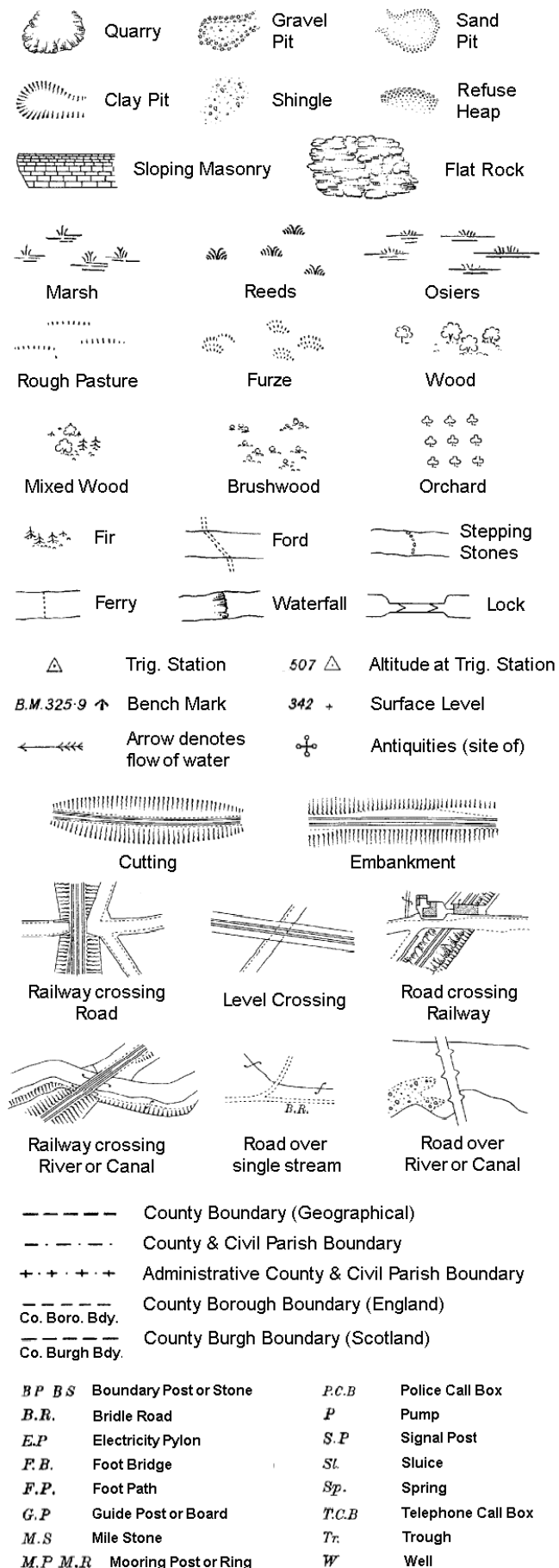
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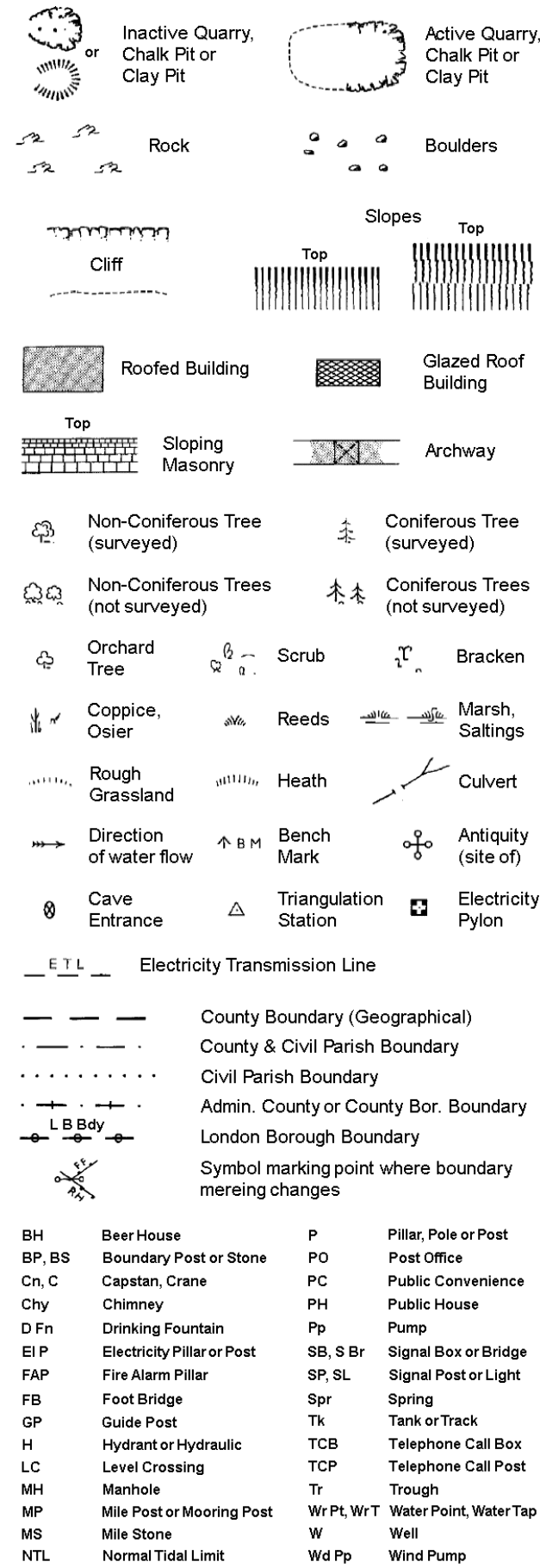
APPENDIX B: HISTORICAL MAPS

Historical Mapping Legends

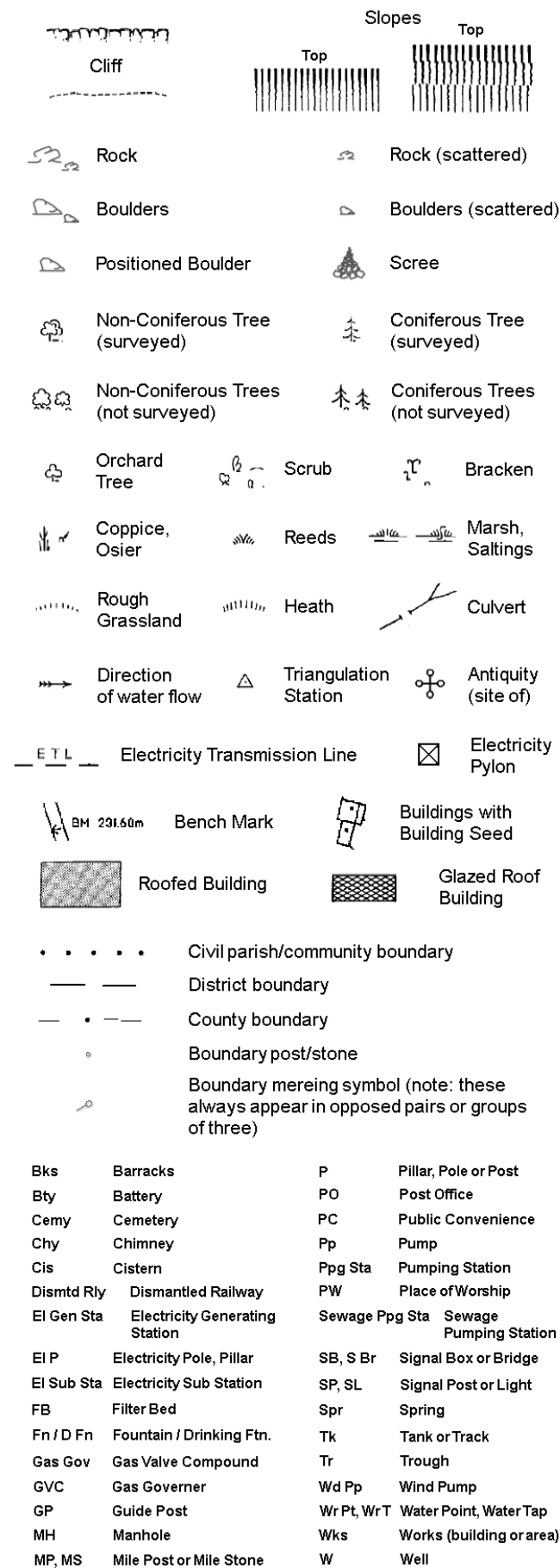
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



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



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



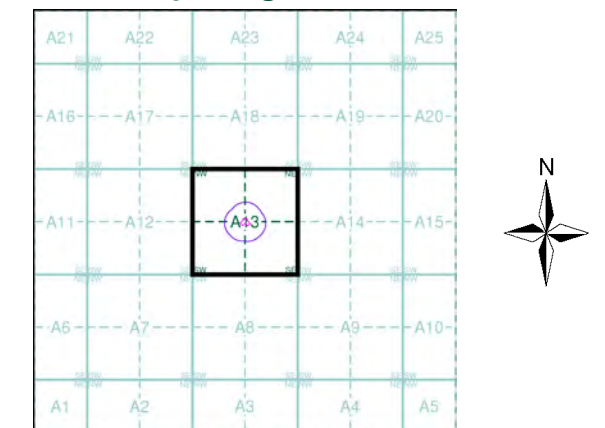
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Berkshire	1:2,500	1878 - 1879	2
Oxfordshire	1:2,500	1878 - 1881	3
Oxfordshire	1:2,500	1898 - 1899	4
Berkshire	1:2,500	1899	5
Berkshire	1:2,500	1913	6
Berkshire	1:2,500	1932 - 1936	7
Ordnance Survey Plan	1:1,250	1957 - 1959	8
Ordnance Survey Plan	1:2,500	1958 - 1961	9
Ordnance Survey Plan	1:1,250	1967 - 1974	10
Ordnance Survey Plan	1:1,250	1976	11
Additional SIMs	1:1,250	1985 - 1992	12
Large-Scale National Grid Data	1:1,250	1993	13
Large-Scale National Grid Data	1:1,250	1995	14
Large-Scale National Grid Data	1:1,250	1995	15
Historical Aerial Photography	1:2,500	1999	16

Historical Map - Segment A13



Order Details

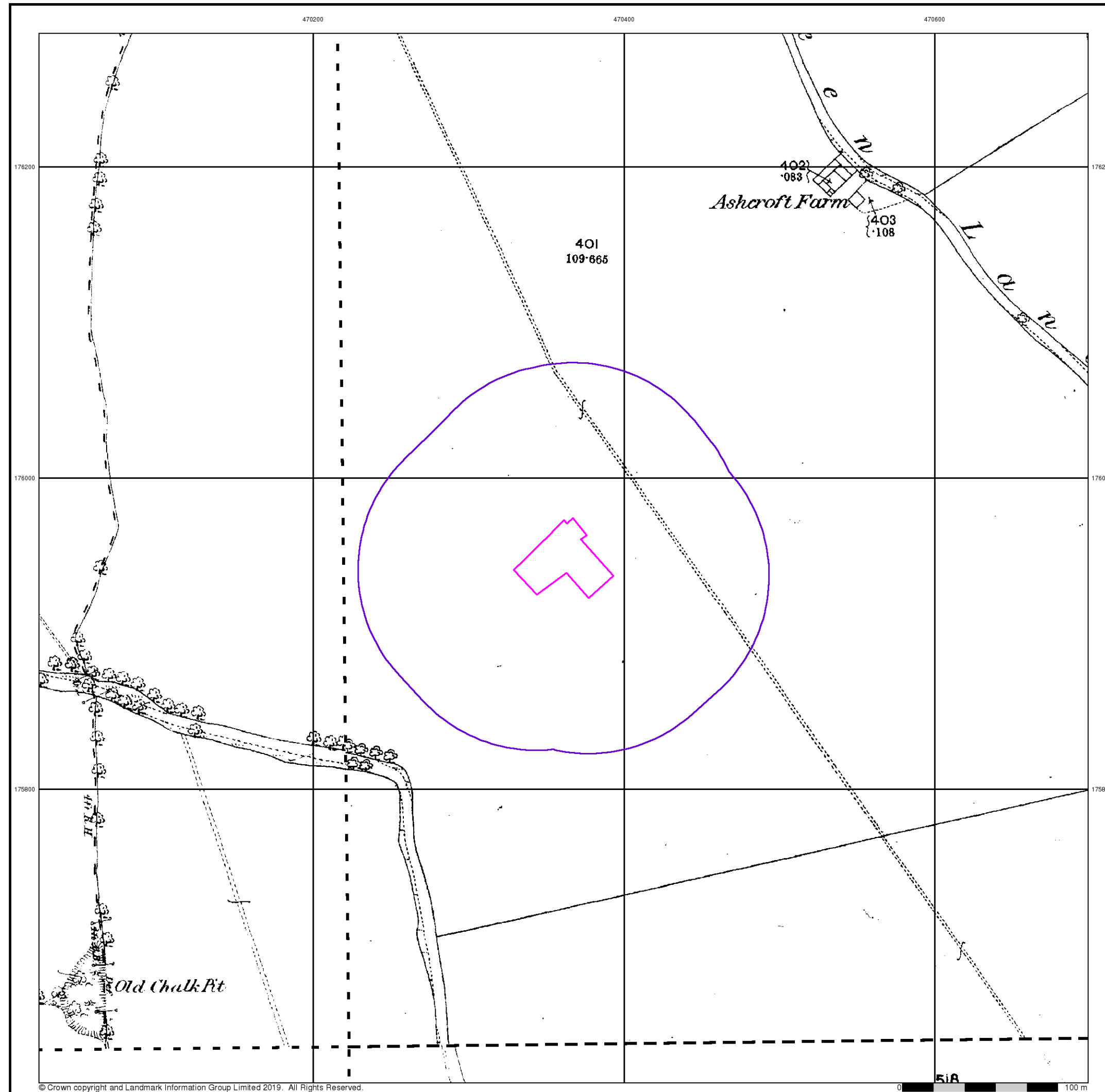
Order Number: 201739248_1_1
Customer Ref: 3170
National Grid Reference: 470360, 175940
Slice: A
Site Area (Ha): 0.17
Search Buffer (m): 100

Site Details

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Oxfordshire

Published 1878 - 1881

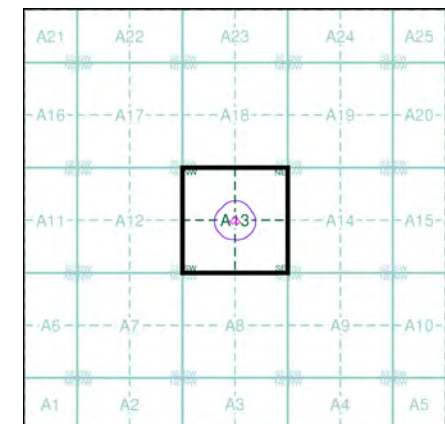
Source map scale - 1:2,500

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)

056_10 1878 1:2,500	056_11 1878 1:2,500
	056_15 1881 1:2,500

Historical Map - Segment A13

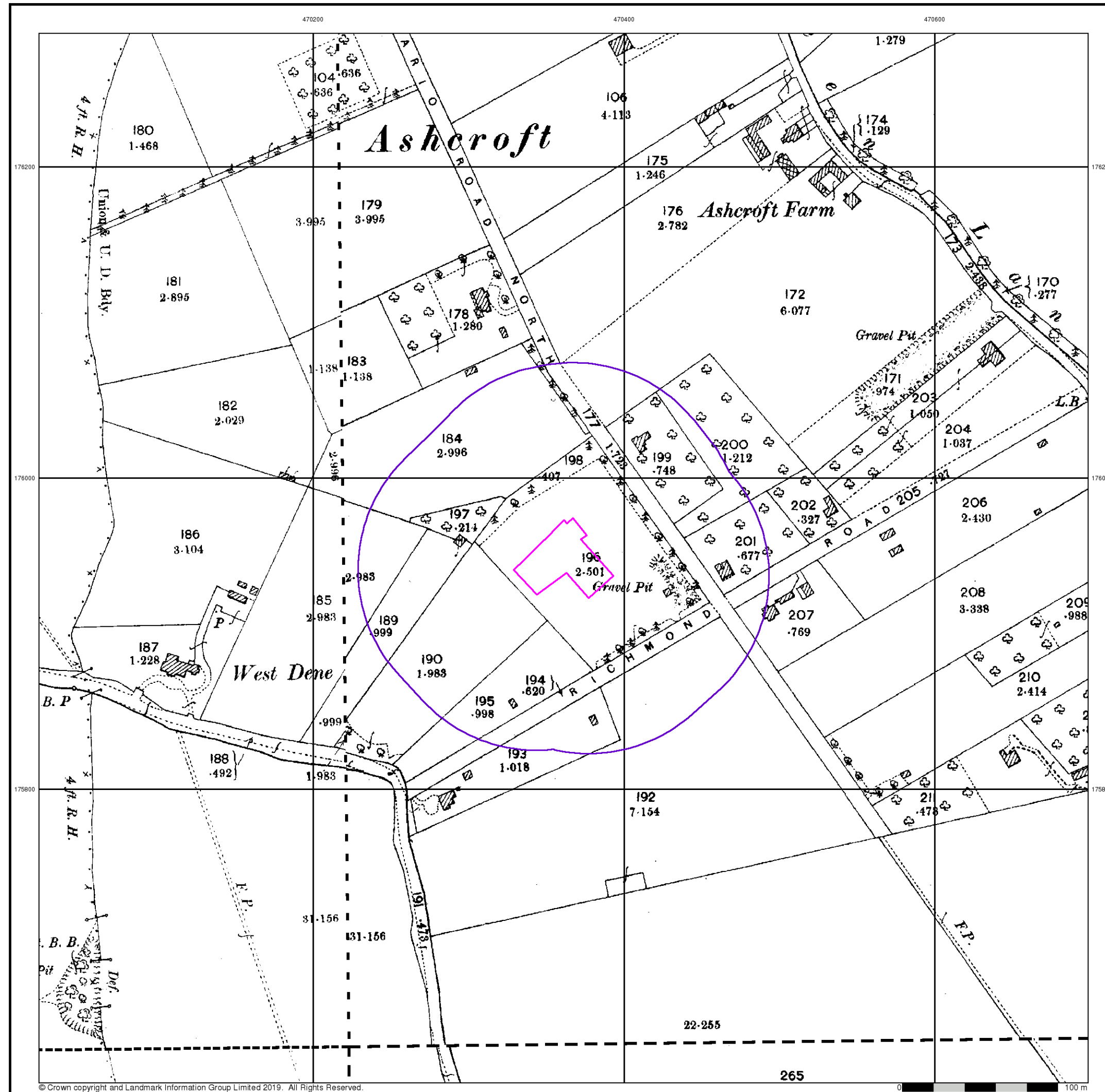


Order Details

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Oxfordshire

Published 1898 - 1899

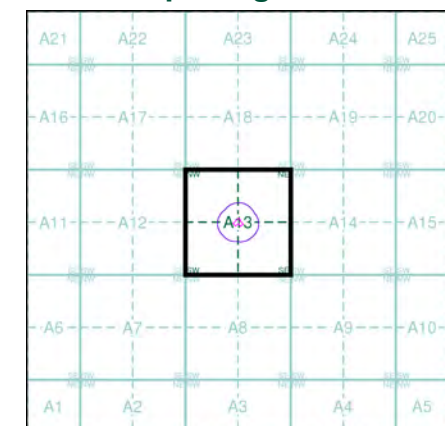
Source map scale - 1:2,500

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)

056_10 1898 1:2,500	056_11 1898 1:2,500
056_14 1899 1:2,500	056_15 1899 1:2,500

Historical Map - Segment A13



Order Details

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Berkshire

Published 1913

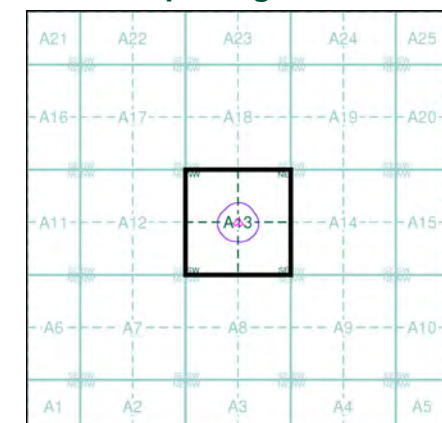
Source map scale - 1:2,500

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)

029_10 1913 1:2,500	029_11 1913 1:2,500
029_14 1913 1:2,500	029_15 1913 1:2,500

Historical Map - Segment A13

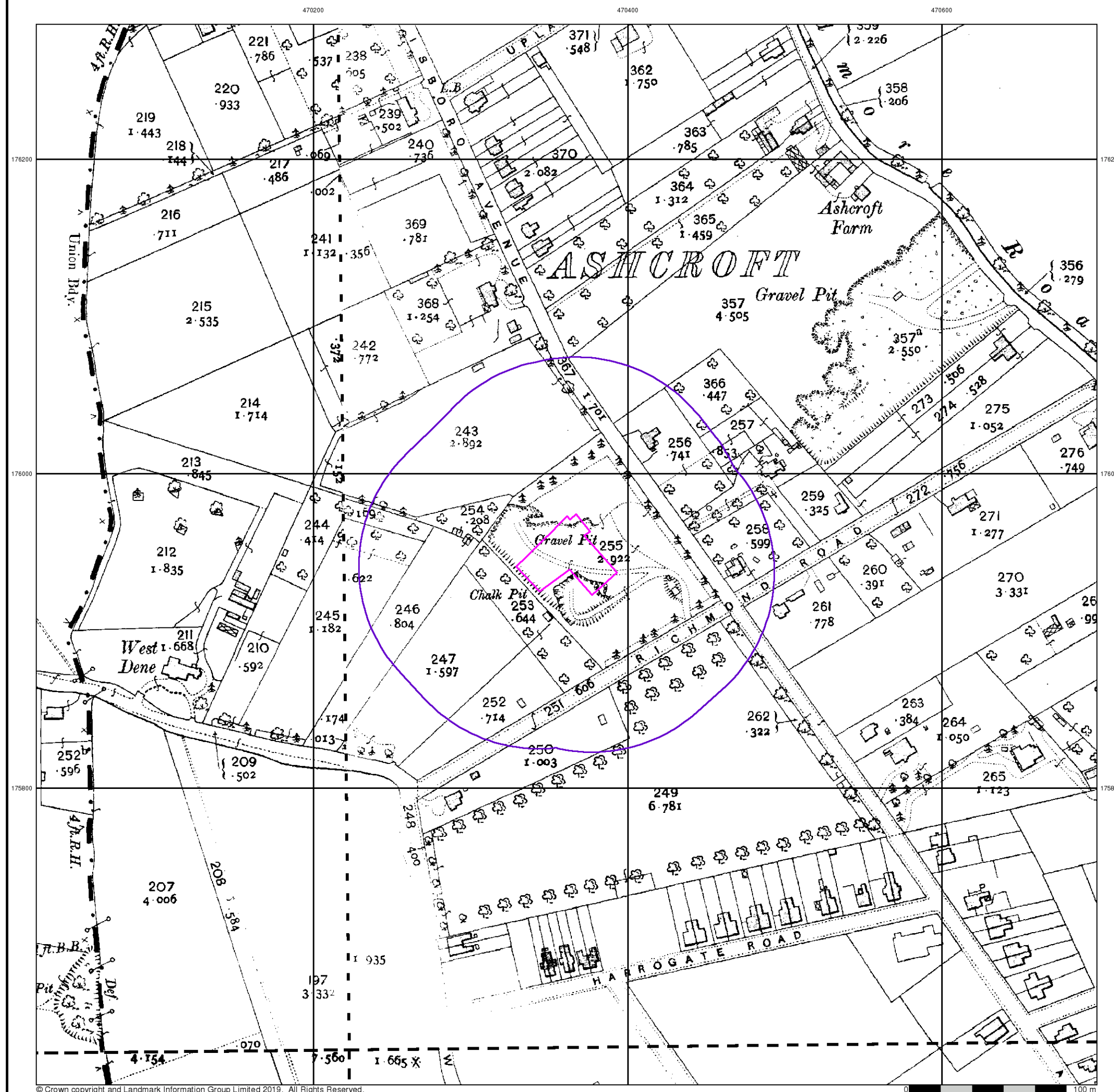


Order Details

Order Number: 201739248_1_1
 Customer Ref: 3170
 National Grid Reference: 470360, 175940
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Site Details

23, Richmond Road, Caversham, READING, RG4 7PR



Berkshire

Published 1932 - 1936

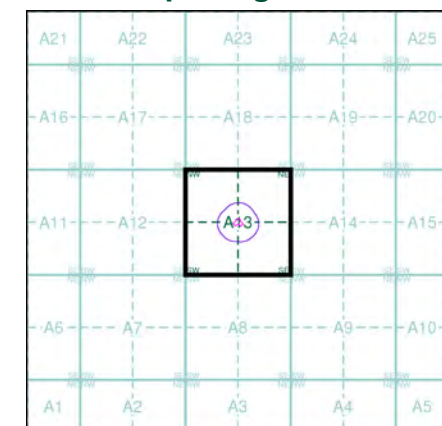
Source map scale - 1:2,500

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)

029_10 1934 1:2,500	029_11 1936 1:2,500
029_14 1936 1:2,500	029_15 1932 1:2,500

Historical Map - Segment A13

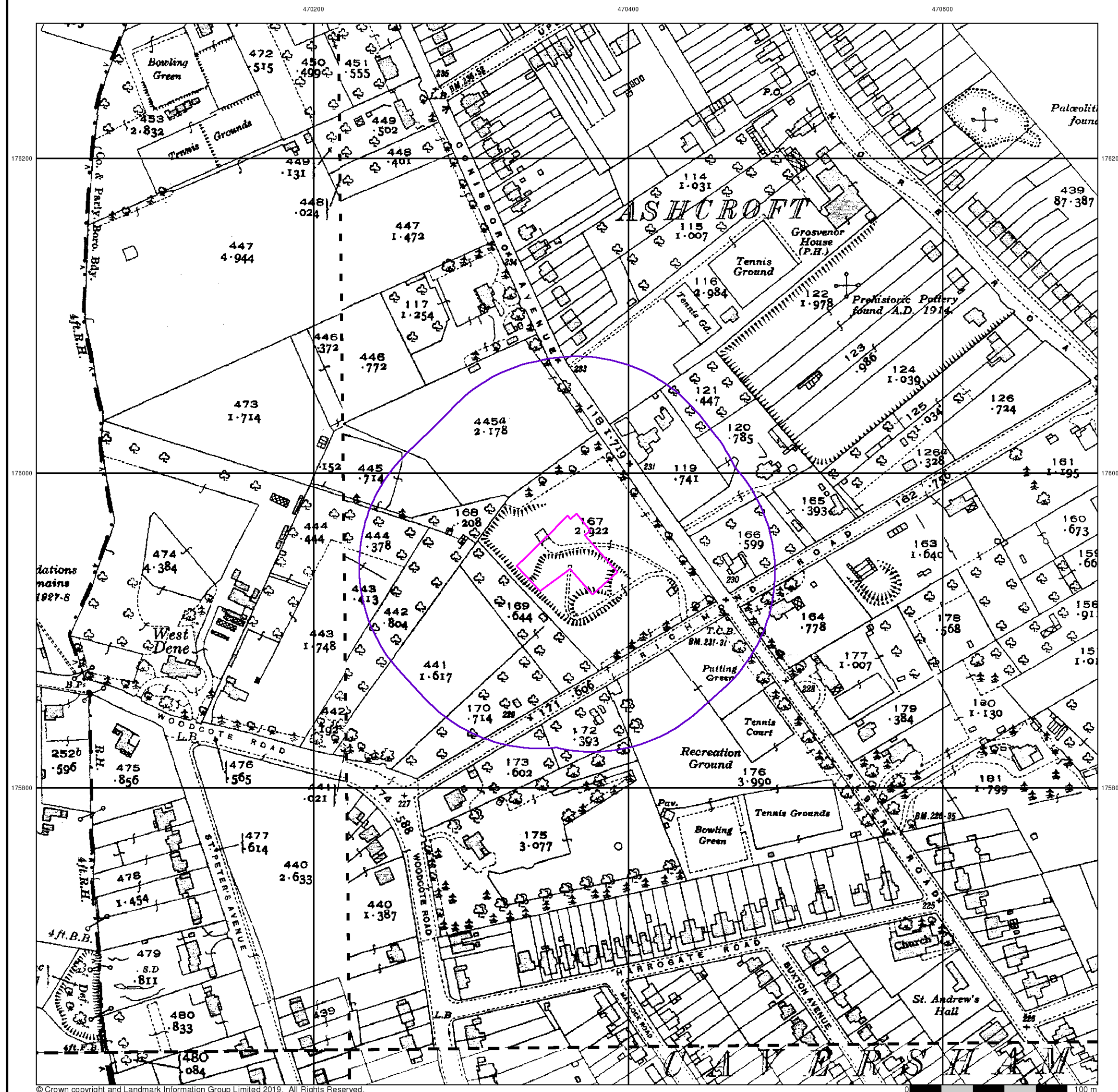


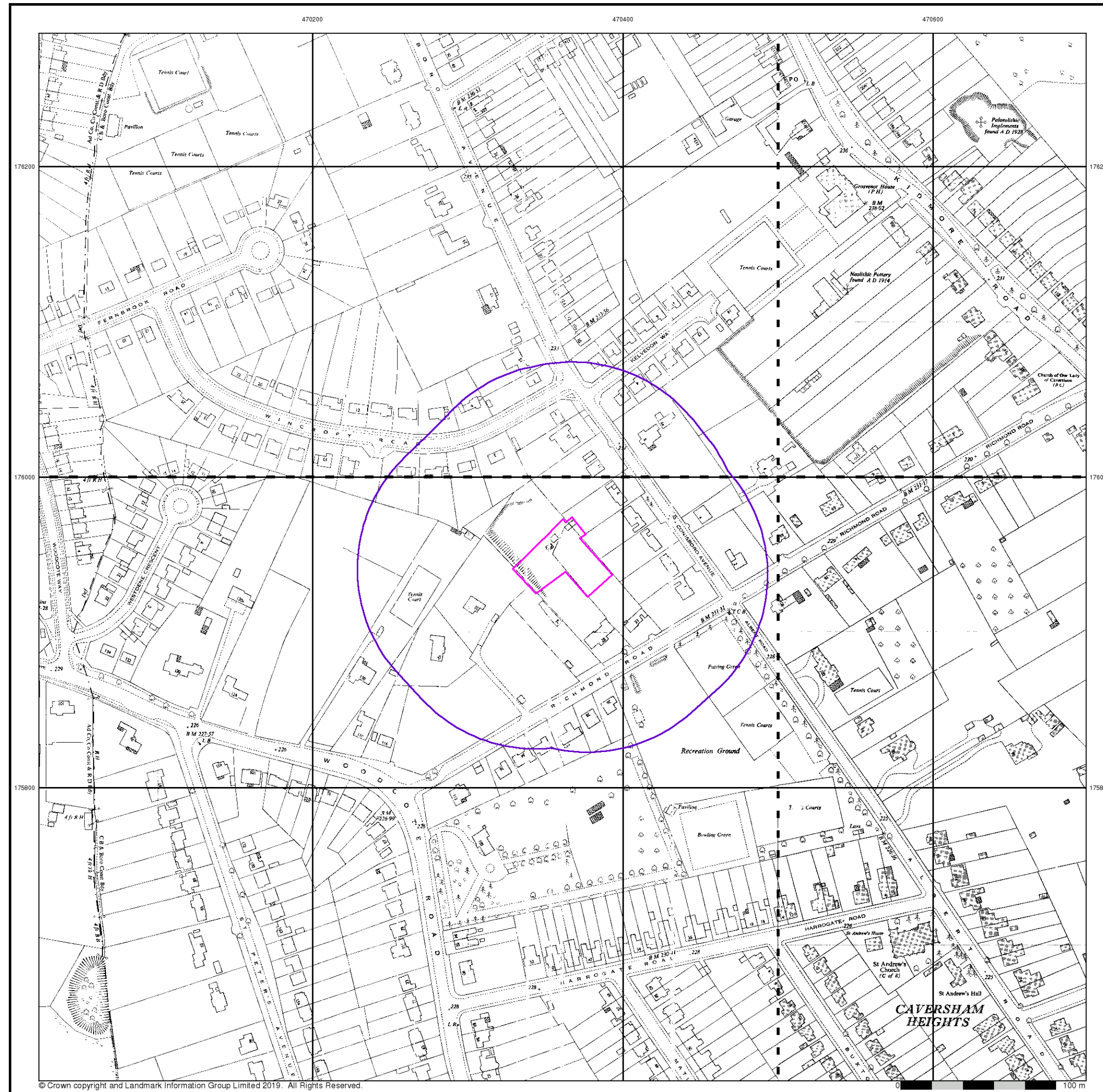
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Ordnance Survey Plan

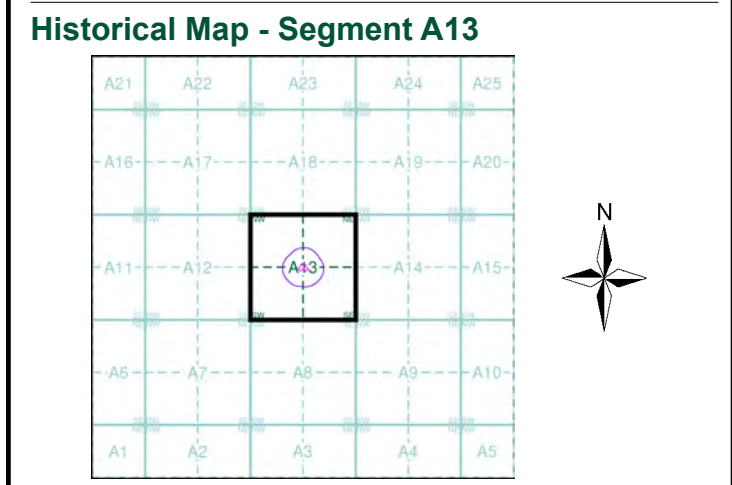
Published 1957 - 1959

Source map scale - 1:1,250

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)

SU7076SW	SU7076SE
1957	1957
1:1,250	1:1,250
SU7075NW	SU7075NE
1959	1959
1:1,250	1:1,250

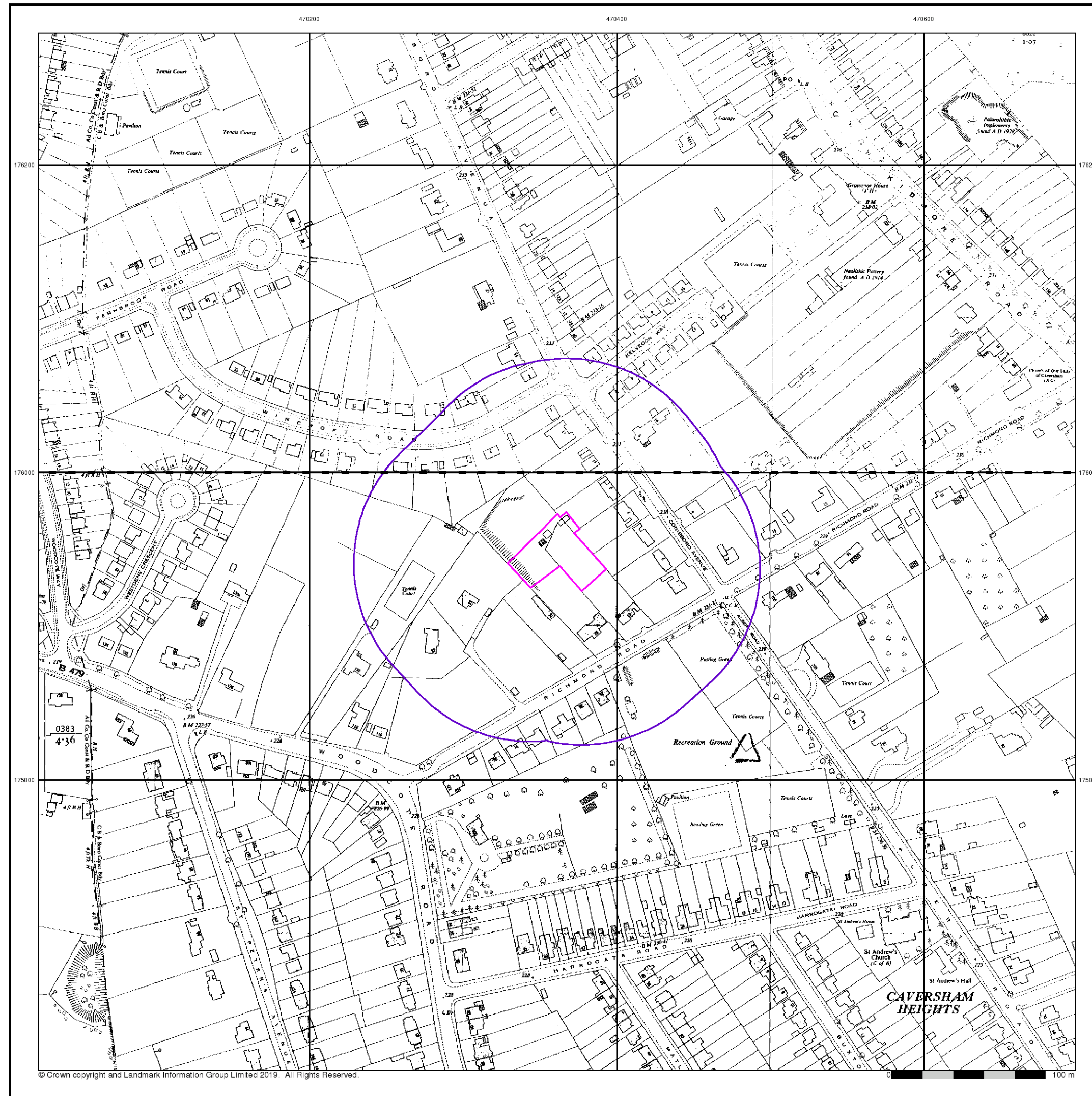


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Ordnance Survey Plan

Published 1958 - 1961

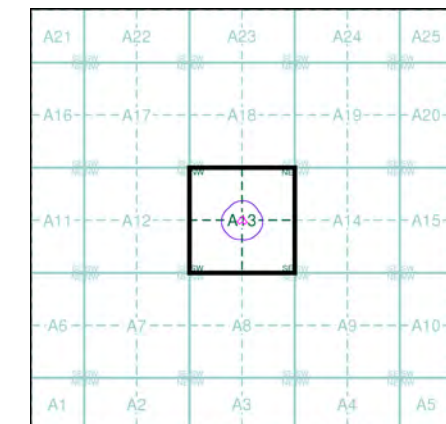
Source map scale - 1:2,500

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Map Name(s) and Date(s)

SU7076
1958
1:2,500
SU7075
1961
1:2,500

Historical Map - Segment A13



Order Details

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Slice: A
Site Area (Ha): 0.17
Search Buffer (m): 100

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Ordnance Survey Plan

Published 1967 - 1974

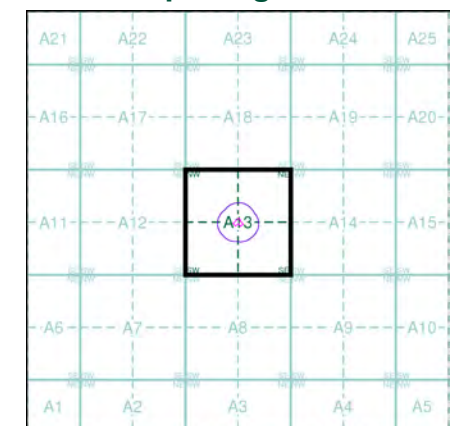
Source map scale - 1:1,250

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Map Name(s) and Date(s)

SU7076SW	SU7076SE
1967	1974
1:1,250	1:1,250
SU7075NW	SU7075NE
1970	1974
1:1,250	1:1,250

Historical Map - Segment A13

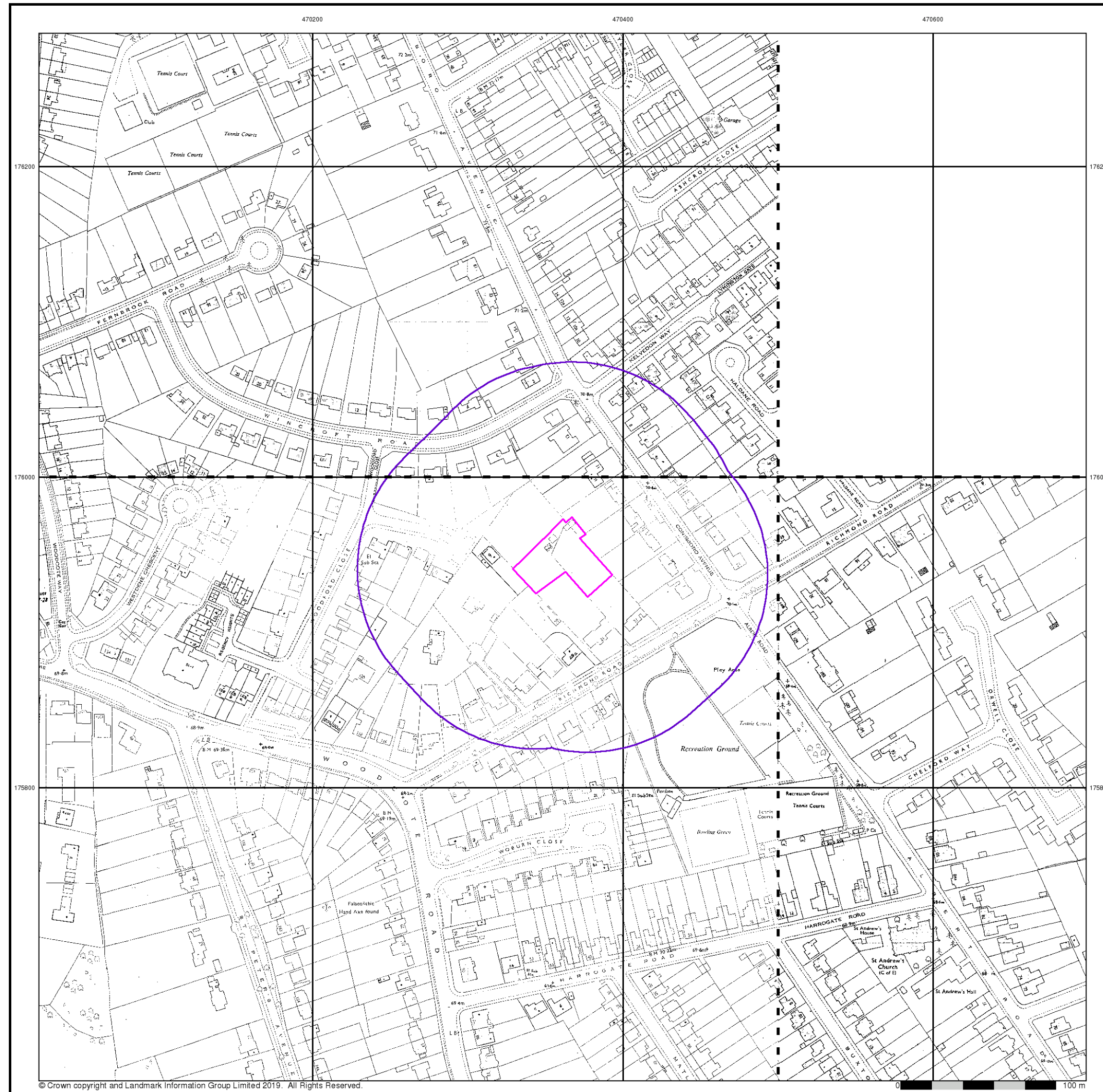


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Additional SIMs
Published 1985 - 1992
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

SU7076SW	1992	1:1,250
SU7075NW	1992	1:1,250
SU7075NE	1985	1:1,250

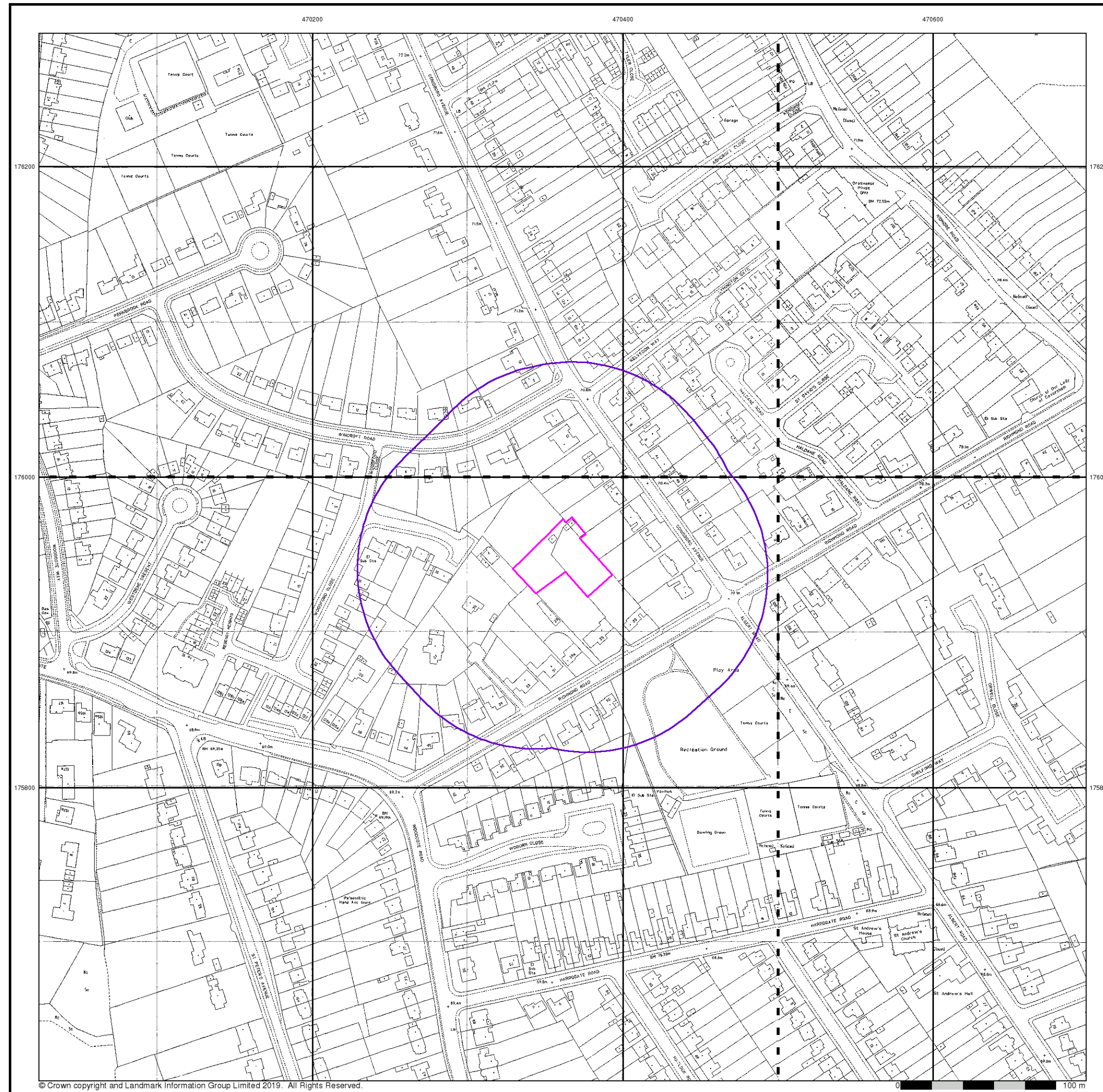
Historical Map - Segment A13

N

Order Details

Order Number: 201739248_1_1
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Large-Scale National Grid Data

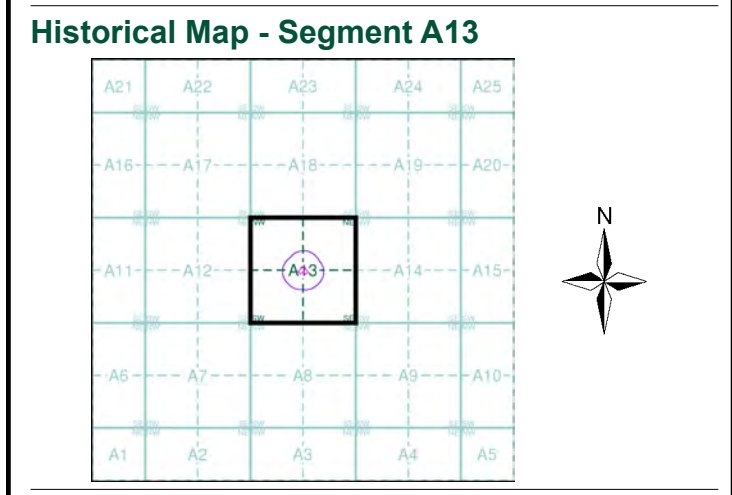
Published 1993

Source map scale - 1:1,250

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

Map Name(s) and Date(s)

SU7076SW 1993 1:1,250	SU7076SE 1993 1:1,250
SU7075NW 1993 1:1,250	SU7075NE 1993 1:1,250



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Site Details

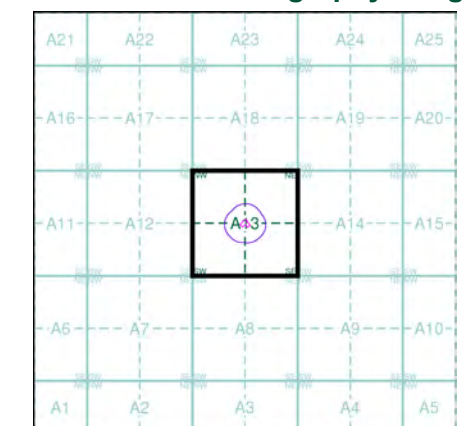
23, Richmond Road, Caversham, READING, RG4 7PR

Historical Aerial Photography

Published 1999

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

Historical Aerial Photography - Segment A13



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Site Details

23, Richmond Road, Caversham, READING, RG4 7PR

APPENDIX C: HISTORIC BOREHOLE LOGS

[illegible]

TERRAMECH INVESTIGATIONS LIMITED
183 LONG LANE TILEHURST READING

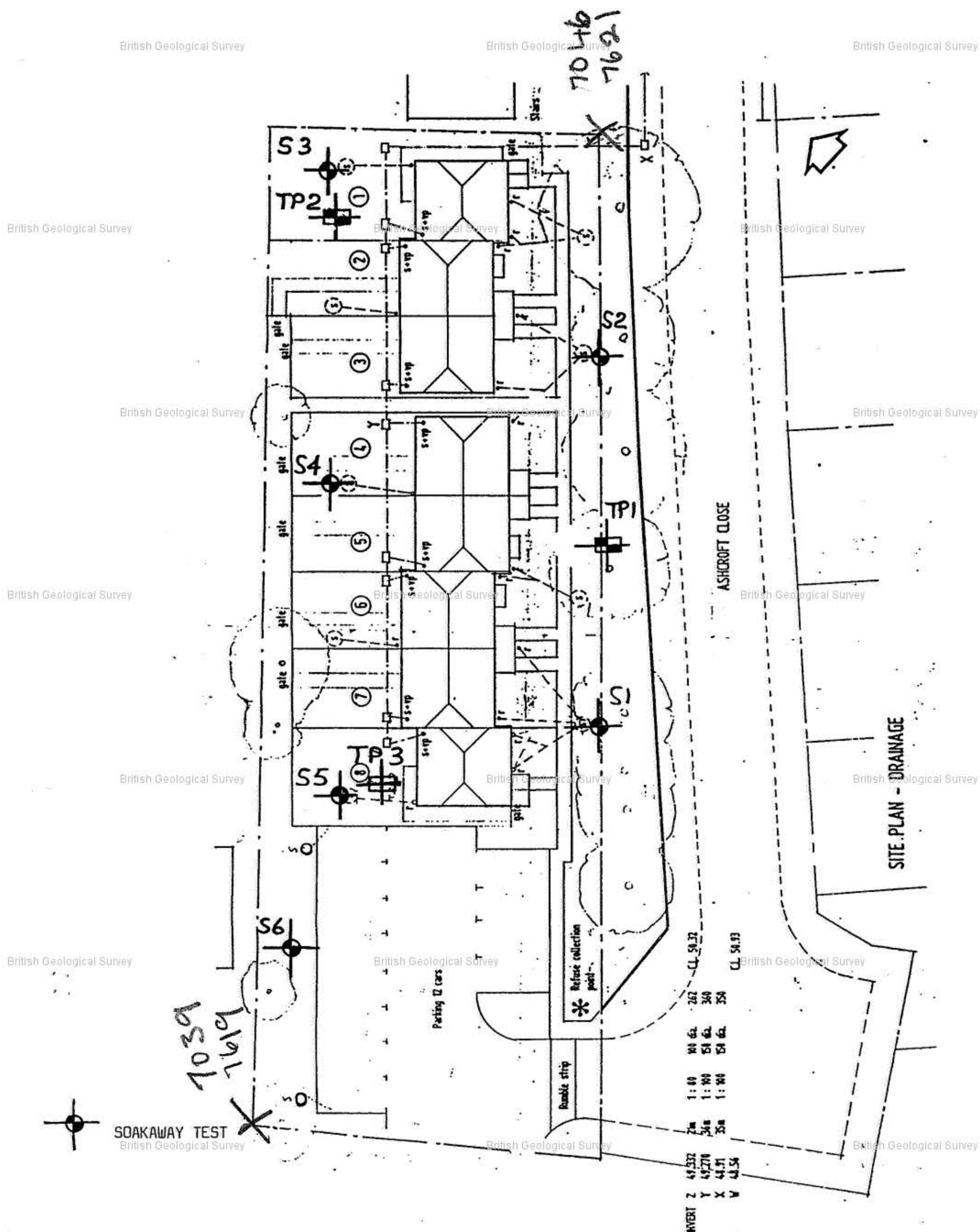
REMARKS:

U100=100mm dia. UNDISTURBED SAMPLE
B=BULK SAMPLE W=WATER SAMPLE

U38=38mm dia. UNDISTURBED SAMPLE
SPT=STANDARD PENETRATION TEST

D=SMALL DISTURBED SAMPLE
CPT=CONC PENETRATION TEST

TRIALPIT LAYOUT



**APPENDIX D:
NOTES ON
LIMITATIONS**

LUSTRE CONSULTING, ENVIRONMENTAL AND GEOTECHNICAL CONSULTANCY SERVICES NOTES ON LIMITATIONS

General

Lustre Consulting have completed the attached report for the use of the Client detailed on the front cover and those parties to whom Lustre Consulting has agreed to provide and has provided an executed warranty agreement, or to whom an assignment of the benefit of this report has been agreed.

Third parties are not entitled to use or rely upon the contents of the report unless written approval has been given by Lustre Consulting; (due to legal requirements, a charge may be levied as a condition of such approval, in which case approval shall not be effective unless and until such a charge has been paid in full).

Lustre Consulting accepts no responsibility or liability for:

- a) any use of this report for any purpose or project other than that for which it was commissioned, and
- b) any use of this report by any third party to whom approval for use has not been given and any conditions applicable to such use have been met.

Phase I Environmental Risk Assessments, Desk Studies and Site Audits

The work completed and utilised to provide this report comprises a study of available documentation. The opinions and results presented in this report have been arrived at by utilising the finite amount of data available at the time of writing and are relevant only to the purpose for which the report was commissioned. The data which has been reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative information pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, Lustre Consulting reserves the right to review this information and, if warranted, to modify the opinions presented in the report accordingly.

It should be noted that the risks which are identified in this report are perceived risks based on the available information at the time of writing and that the actual risks associated can only be assessed following a physical investigation of the site.

Phase II Site Investigations

The intrusive investigation has been completed to provide information concerning the type and degree of contamination present along with ground and groundwater conditions which facilitates a reasonable risk assessment to be completed. The stated objectives of the ground investigation have been limited to assessing the proven risks which are associated with potential human targets, building materials, the environment (including adjacent land), and to surface water and groundwater.

The amount of exploratory work, chemical testing and monitoring completed as part of this project has potentially been restricted by the short timescale available, and the locations of exploratory holes undertaken have potentially been restricted to areas unoccupied by buildings(s) and buried services. A more comprehensive post demolition / decommission investigation may be required if the site is to be redeveloped. For these reasons any costs included in relation to site remediation must be considered as tentative only at this time.

The exploratory holes investigate only a small volume of the ground in relation to the size of the site and therefore, can only provide a "snap shot" or general indication of ground conditions located on the site. The fact that the site has been investigated does not preclude the existence of localised "hotspots" of contamination where concentrations may be significantly higher than those actually encountered.

The risk assessment and opinions provided in this report take into account currently available guidance values relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.



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