Shoreham Cement Works Area Action Plan - Evidence Base Studies

Preliminary Geotechnical and Geo-Environmental Assessment

Final Report

November 2018

www.jbaconsulting.com

Client South Downs National Park Authority
South Downs Centre
North Street
Midhurst
GU29 9DH

JBA Project Director

Alastair Dale
35 Perrymount Road
Haywards Heath
West Sussex
RH16 3BW

JBA Project Manager (Geotechnics)

Ian Johnson
2nd Floor
Worldwide House
Thorpe Wood
Peterborough
PE3 6SB

JBA Project Manager (Hydrogeology and Contaminated Land)

Alice Davis
Salts Mill
Victoria Road
Saltaire
West Yorkshire
BD18 3LF

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This report describes work commissioned Hayley Stevenson, on behalf of South Downs National Park Authority, by a letter dated 11 April 2018. Alice Davis and Ian Johnson of JBA Consulting carried out this work.

Prepared by ..... Alice Davis BSc Msc

Hydrogeologist

..... Ian Johnson BSc (Hon's) MSc MCSM MIAEG C.Geol. FGS

Technical Director (Geotechnics)

Reviewed by ..... Michael McDonald PhD, MSc, BSc

Technical Director (Hydrogeology)

Purpose

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Abbreviations

AAP	Area Action Plan
BFI	Baseflow Index
BGS	British Geological Survey
DTM	Digital Terrain Model
FEH	Flood Estimation Handbook
mAOD	metres Above Ordnance Datum
OS	Ordnance Survey
SAAR	Standard Annual Average Rainfall
SDNPA	South Downs National Park Authority
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Project background

JBA Consulting were commissioned by South Downs National Park Authority (SDNPA) to undertake a number of baseline studies to feed in to the Area Action Plan (AAP) for Shoreham Cement Works site. This report constitutes the preliminary ground contamination and water quality and geotechnical studies which will form part of the evidence base to support the production of the AAP being prepared by the SDNPA's Planning Service. The scope of these two studies were set out in Lot 4 and Lot 6 of the SDNPA tender document issued in January 2018. JBA is also preparing evidence base studies for Lot 3 (Flood risk and Sustainable urban Drainage systems [SuDS]) and for Lot 5 (Building Condition, Safety and Demolition).

1.2 Aims and objectives

The aim of this study is to determine the presence and likely extent of any potential environmental (contamination related) and geotechnical constraints associated with the site. This will be achieved through:

- Assessment of potential contamination sources through a review of historical land use and analysis of environmental regulatory data;
- Understanding the current environmental setting, establishing any potential migration pathways and identifying receptors;
- A qualitative risk assessment for any potential contamination sources that are identified following the production of a conceptual site model using the source-pathway-receptor methodology;
- A preliminary geotechnical assessment based on available published information and a visual site inspection of the quarry.

Any conclusions and recommendations will then be given based on the results of this assessment.

1.3 Data sources

The data used in this desk study were obtained from the following sources:

- Topography and general mapping:
  - OS Open Data
  - 1m LIDAR Digital terrain Model (DTM)
  - Online aerial photography (Google Earth and Bing Maps)
- Climate:
  - Flood Estimation Handbook (FEH) and CD-ROM (CEH, 2009)
- Geology and soils:
  - BGS 1:10,000 scale geological maps TQ10NE and TQ20NW (both published 2005)
  - BGS 1:50,000 Geology Map, Solid and Drift Edition, Sheet 318 & 333, Brighton and Worthing (1984)
  - BGS Geological Memoir: Geology of the country around Brighton and Worthing; HMSO, 1988
  - BGS digital geology mapping
  - BGS online borehole database (BGS website)

- BGS online Lexicon (BGS website)
- 1:250,000 soils mapping (Soil Survey of England and Wales, 1983)

- Hydrogeology:
  - Aquifer classification (Environment Agency website)
  - Groundwater vulnerability (Environment Agency website)
  - Source Protection Zones (Environment Agency website)
  - Major (Principal) Aquifer properties manual (Allen et al., 1997)
- Other information relating to the site:
  - Landmark Envirocheck Report for the site
  - Environmental Statement, dated May 2002, prepared as part of a Planning Application for the then proposed Adur Valley Park at the site

The site walkover survey was undertaken by JBA geotechnical and geo-environmental staff on 11 and 12 July. This included:

- Site walkover survey; and
- Geotechnical inspection of the quarry faces.

2 Site Description

2.1 Introduction

This chapter describes the geology, hydrogeology and site history of the Shoreham Cement Works site. It is based on a desk-based review (aided by the purchase of a Landmark Envirocheck Report, Appendix B) and observations made during a site walkover survey.

Throughout this report reference is made to four areas of the site, defined as A, B, C, and D. These areas are labelled on Drawing 1 (Appendix B) and can be broadly described as follows:

- Area A: West of the A283,
- Area B: Lower part of the former quarry,
- Area C: Middle part of the former quarry,
- Area D: Upper part of the former quarry.

2.2 Topography, climate and land use

The site is located in West Sussex, adjacent to the A283, Steyning Road, approximately 2.1km to the north of Shoreham by the Sea and 1.2km to the south of Upper Beeding (Map 1 - Appendix A). The majority of the site comprises a chalk quarry and a disused cement works. The site comprises two compartments which lie either side of Steyning Road which passes through the site north-south. The approximate central grid reference for the site is NGR 520286 108800, with the site covering an area of ~44.36ha.

The River Adur flows broadly north-south to the west of the site, with the western most portion of the site lying between Steyning Road and the river.

2.2.1 Topography

At the time of writing, so far as we are aware no formal topographic survey of the site has been carried out. However, the broad topography of the site and the adjacent areas has been derived from Environment Agency 1m DTM and DSM lidar tiles, Open Data licensed, sourced from environment.data.gov.uk. This data, with contouring, is reproduced as Drawing No. 1 in Appendix B.

As with many aspects of the site, there is a clear east - west split in the topography with much of the area west of the A283, henceforth referred to as Area A, being, with a few minor exceptions, largely flat lying at around 4 - 7m AOD, locally higher along the eastern margin. In contrast, the area to the east of the A283 shows a significant range of elevations from the entrance area around the main kiln building, being at around 6 – 9 m AOD to the uppermost rim of the quarry at its east-north-eastern corner is at around 113m AOD. Furthermore, the area to the east of the A283 can be divided into three sub-areas comprising: Area B - the lower area of the quarry comprising around the main production building at some 6 - 9m AOD and rising up toward the central area of the quarry at around 18m AOD; Area C - the middle quarry area at between 14 – 30m AOD; and Area D - the upper quarry area between 44 – 57m AOD. There are ramps and benches between these areas and then, to the north, south, and east the quarry walls rise to the perimeter levels following the profile of the valley side within which the quarry is cut.

The natural topography of the area defined by the red line boundary would have seen the ground surface sloping down from the east towards the River Adur in the west. At its lowest in the west of the site the ground elevation is at around 3.7mAOD, in the far east the ground surface reaches an elevation of 121.4mAOD at the top of the quarry walls.

Much of the site lying to the east of Steyning Road now forms a hollow within the surrounding topography surrounded by steep quarry cliff faces. The ground surface of the base of the excavation is typically 20-55m below what would have been the natural ground surface. Figure 2-1 and Figure 2-2 display the existing surface topography alongside an

indication of the natural surface topography. The line of the cross-sections are illustrated in Map 2 in appendix A.

Figure 2-1 Long-profile of the site surface topography west-east

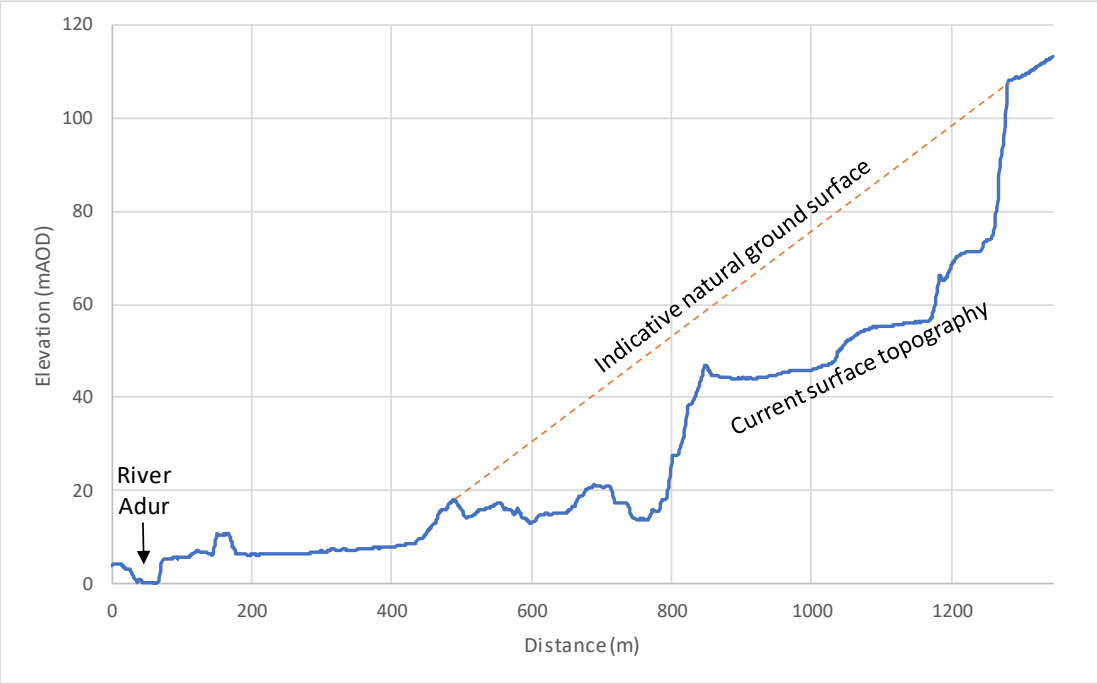
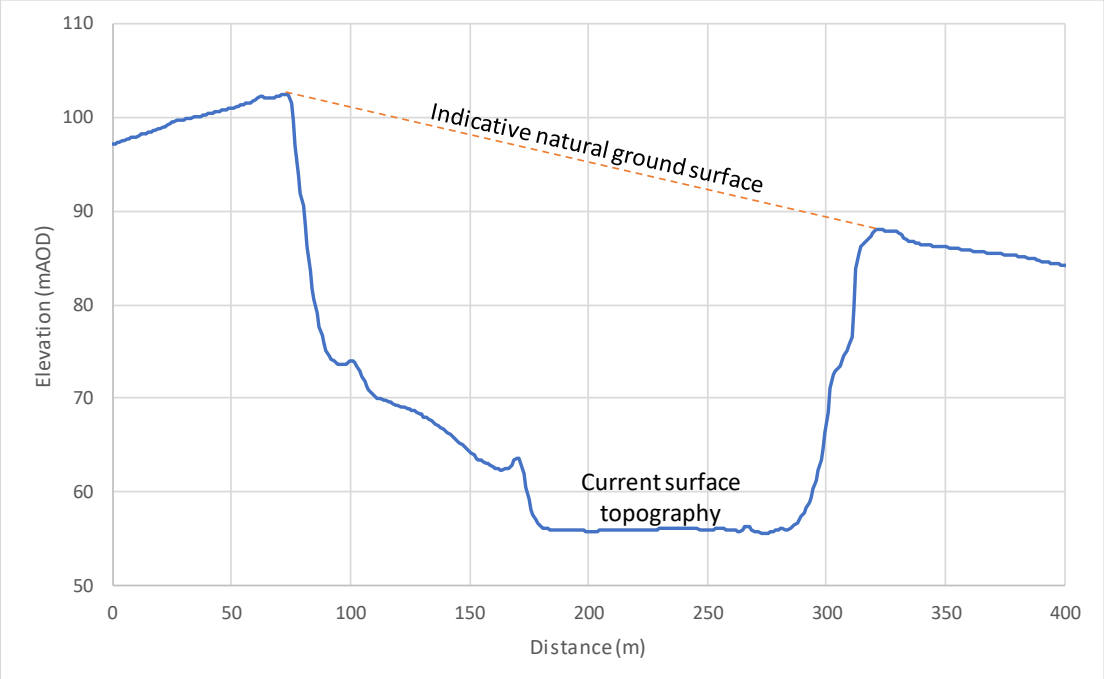


Figure 2-2 Cross-section of site surface topography in the upper portion of the quarry (east of the site) north-south



2.2.2 Climate

The Flood Estimation Handbook (FEH) CD-ROM includes long-term average rainfall data for catchments in the UK. For the catchment containing the site the Standard Annual Average

Rainfall (SAAR) is 852 mm/yr for the period 1961 - 1990 and 879 mm/yr for the period 1941-1970 (CEH, 2009).

2.2.3 Land use

It is understood that the parcel of land to the west of Steyning Road is owned by a private individual (Steve Dudman) and is occupied by a number of tenants.

The land east of the road comprises the bulk of the large remaining infrastructure associated with the use of the site as a cement works and is currently occupied by Dudman Aggregates. The site is used for the processing and production of secondary aggregate.

Existing land uses immediately adjacent to the site comprises:

- North
  - To the north of the site parallel to Steyning Road are some residential properties associated with Dacre Gardens.
  - To the north of the site is open grassland which is anticipated to be used for rough grazing. This area is also designated SSSI.
- East
  - The minor road named Mill Hill lies approximately 20m to the east of the site running parallel to the eastern site boundary.
  - Beyond Mill Hill Road lies more open grassland used for rough grazing.
- South
  - Arable farmland lies to the south of the vast majority of the site.
  - An area of woodland lies to the south of the old cement works building.
- West
  - To the west of the site lies the River Adur.
  - An area of arable farmland lies between the western parcel of land and the River Adur.
  - Arable farmland and grassland for rough grazing lie beyond the River Adur.

2.3 Geology and soils

Information on the soils and geology of the site and surrounding area has been derived from the following sources:

- Soil Survey of England and Wales (1983);
- 1:50,000 scale BGS geology mapping;
- BGS 1:10,000 scale geological maps TQ10NE and TQ20NW (both published 2005);
- BGS Geological Memoir: Geology of the country around Brighton and Worthing; HMSO, 1988;
- BGS online borehole archive.

The geology beneath the study area is summarised in Table 2-1 and shown in Map 3 and Map 4 in Appendix A.

Table 2-1 Summary of local area geology

Age	Group	Formation/Member	Description	Thickness
Quaternary		Head	Clay, silt, sand and gravel	
		River Terrace Deposits	Sand and gravel	
		Alluvium	Clay, silt, sand and peat	
Upper Cretaceous (Chalk Group)	White Chalk Subgroup	Seaford Chalk Formation	Chalk	60-80m*
		Lewes Nodular Chalk Formation		45-60m*
		New Pit Chalk Formation		40-50m*
		Hollywell Nodular Chalk Formation		25-35m*
	Grey Chalk subgroup	Zig Zag Chalk Formation		45-75m*
		West Melbury Marly Chalk Formation		30-35m*
Sources *paper map				

2.3.1 Superficial (drift) geology

Within the site area itself natural superficial deposits are limited to Area A to the west of the A283 which is shown to be largely underlain by deposits of Alluvium (stated to comprise Clay, Silt, Sand and Peat), possibly underlain by Tidal River Deposits (stated to comprise interbedded Gravel and Sand), both associated with the River Adur but with a thin strip of Head deposits (stated to comprise Clay, Silt, Sand and Gravel) shown at the eastern margin of the alluvial plan, at the toe of the valley side slope.

In addition to the natural strata deposits of 'Made Ground' are shown on the 1:10,000 scale geological maps to overlie the natural strata in Area A to the west of the A283, whilst to the east of the A283 extensive areas of 'Infilled Ground' are shown in the lower (Area B) and middle (Area C) parts of the quarry.

Beyond the quarry, to the north and south, deposits of Head are shown in the incised dry valleys that cut down through Chalk sequence forming the east side of the River Adur valley in the area.

2.3.2 Bedrock geology

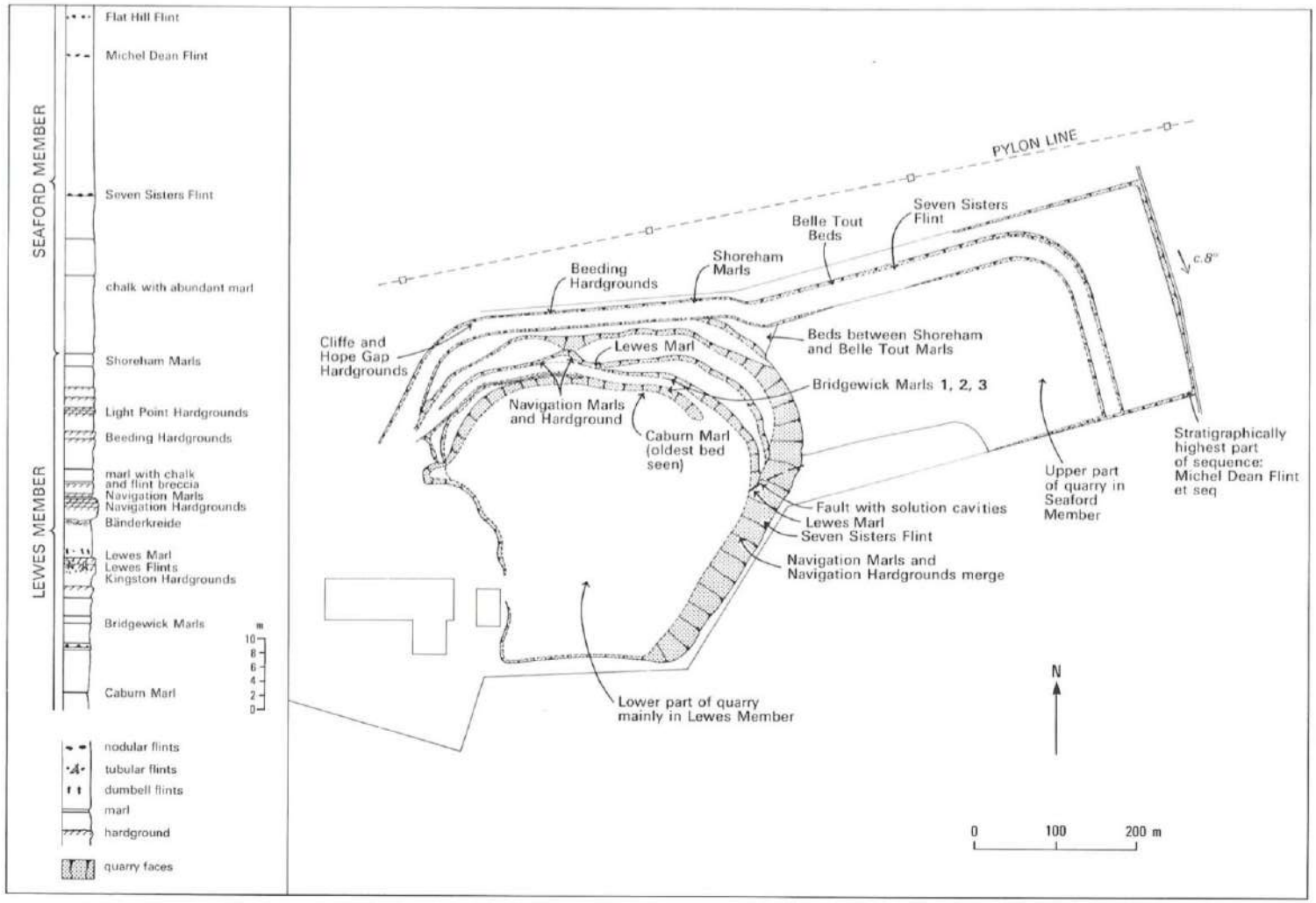
Underlying the superficial deposits to the west of the A283 (Area A) and from surface beneath all of the area to the east of the A283 (Area's B, C & D) the whole site is shown to be underlain by bedrock comprising Cretaceous Chalk. Beneath the natural superficial deposits to the west of the A283 (Area A) and beneath the lower (Area B) and middle (Area C) parts of the quarry to the east of the A283 the bedrock is shown to comprise the Lewes Nodular Chalk Formation. The upper part of the quarry (Area D) is shown to be cut into the Seaford Chalk Formation. The memoir describes the Lewes member as comprising a rhythmic sequence of soft chalks, nodular chalks and hardground chalks with thin marls', whilst the Seaford member is described as representing 'a marked change in the depositional environment and is characterised by soft white chalks with abundant courses of nodular flint (some very large), and numerous iron-stained spongiferous horizons representing minor sedimentary breaks'.

Additionally, on the 1:10,000 scale geological map TQ20NW, the Seaford Chalk Formation is shown to have a southerly 80 bedding dip, and in the geological memoir a small fault, with

associated solution cavities is shown in the southern part of the bench between the middle (Area C) and upper (Area D) parts of the quarry.

A summary diagram of the Chalk geology of the quarry, east of the A283, is reproduced from the geological memoir as Figure 2-3.

Figure 2-3 The distribution of lithologies at Shoreham Cement Works, Upper Beeding (British Geological Survey© NERC 2018)



2.3.3 Soils

The soils to the east of the A283 are mapped as belonging to the Andover 1 Soil Association described as shallow well drained calcareous silty soils over chalk on slopes and crests and deep calcareous and non-calcareous fine silty soils in valley bottoms (Soil Survey of England and Wales, 1983). In practice, the majority of soils will have been stripped from this area of the site to allow for quarrying.

The soils to the west of the A283 are mapped as belonging to Newchurch 1 Soil Association described as deep stoneless calcareous clayey and fine silty soils (Soil Survey of England and Wales, 1983). In practice, given the historical quarrying and industrial use on this section of the site, there is likely to be limited soil cover remaining.

2.3.4 Previous ground investigation and historic borehole records

Whilst no direct ground investigation records have been reviewed as part of this study, the Client has provided us with a copy of an Environmental Statement, dated May 2002, prepared as part of a Planning Application for the then proposed Adur Valley Park at the site. Chapter 8 of that report contains a summary of a previous Ground investigation. According to that summary:

- In Area A the Made Ground is up to 3.5m thick over the natural deposits of Head over Alluvium over Chalk. The nature of the Made Ground is not presented but it can be reasonably assumed to be associated with the historic development and usages of the site, as summarised in the site history (See Section 3.3).
- In Area C there is a substantial amount of Made Ground, comprising mainly cement kiln dust (CKD) which previous investigations have shown to be up to 20m thick. The CKD is reported to be hard and cemented with very high sulphate contents and high pH. An area of very soft ground, possibly a former settling lagoon was also, apparently, identified in this area.
- In Areas B and D the Chalk was encountered close to the surface with Made Ground limited to hard cover and [in Area B] foundations associated with the cement works.

Historic groundwater abstraction boreholes are considered in Section 2.9.

2.4 Mining and mineral extraction

The site has been extensively quarried over time, with the majority of the quarrying, particularly east of the A283, being associated with cement production.

In addition to describing the geology of the area, the memoir also contains some details of the working of the quarry as follows:

'*The Shoreham chalk quarry is [was] worked in benches by means of a face shovel, with the assistance of explosives in the deeper parts.*'

2.5 Radon

The entirety of the site is located within an Intermediate probability radon area where between 1 and 3% of homes are estimated to be at or above the action level. No radon protective measures would be necessary for the construction of new dwellings on site (BGS, National Geoscience Information Service).

2.6 Site visit observations

The Geotechnical and Geo-environmental site inspection visit was carried out by experienced members of JBA Consulting's Geotechnical and Geo-environmental teams on 11th & 12th July 2018 in hot sunny weather. The inspection commenced with a site induction by the current owners, the Dudman Group. The various site areas were inspected over the two-day

period, with the exception of the tenanted 'Cliff House' on the north side of the quarry close to the A283.

2.6.1 Area A (West of the A283)

This area is largely flat and is mostly covered by predominantly concrete hardstanding and the existing buildings, with lesser areas of granular surfacing and soft landscaping present locally. The steel rails from an extensive network of former railway sidings are present within the concrete slabs. This area can be accessed directly from the A283, but we were advised that this entrance is only actually used occasionally with the usual access being by an underpass below the A283 from Area B.

There is a riverside path immediately to the west of Area A but this and the river bank itself does not form part of the site.

The buildings and land within this area is occupied by a number of tenants. Some infrastructure remains from the historical operation of the cement works on this parcel of land, including a historical site office building and silos. Current occupiers of the site include:

- Veoila, who use the site for commercial bin ang skip storage;
- Southern Transit, who use the site for large scale storage of buses and other motor vehicles (some very old);
- A number of building and decorating contractors who store building materials on site.

There are also a number of occupied workshops that are used for stone working, vehicle repairs and potential other uses.

Apart from varying degrees of dilapidation, the various buildings showed little evidence of foundation distress, although the nature of the building foundations are unknown at this time.

A fire broke out on this area in September 2017 destroying 19 buses. On the day of the site visit there was some oil staining on the ground and residual hydrocarbon odour. A pile of partially burnt waste material was observed containing rubble, metal and concrete, see Photograph 2-1.

During the site visit one of the tennants on site confirmed the presence of a buried fuel tank to the north of the workshops.

Photograph 2-1 Area of bus fire

2.6.2 Area B (lower part of the former quarry)

This area primarily comprises the principal former cement production buildings and associated infrastructure and is accessed directly from the A283. Concrete surfaced access roads surround the main former kiln building and on the north side of that building the steel rails of former railway sidings (extending from Area A beneath the underpass) are present within the concrete. Elsewhere this area comprised granular surfacings and limited areas of soft landscaping.

As in Area A with a few minor exceptions, the buildings in Area B showed little evidence of foundation distress, although the nature of the buildings foundations are unknown to us at this time.

To the south of the former main kiln building, the quarry face was seen to rise almost sub-vertically, with local overhangs, to heights of some 20 – 33m. With the exception of bedding planes, the chalk in this face appeared to be generally massive with only limited evidence of other discontinuities (see Photograph 2-2). The toe of this face was often obscured by dense vegetation and trees so conditions at the toe could not generally be viewed directly.

Photograph 2-2 Rock face south of the former main kiln building

To the north of the former main kiln building, the quarry face was seen to rise steeply at approximately 1.8v:1h, but with some variation on this in places and was frequently vegetated (see Photograph 2-3).

Photograph 2-3 Rock face north of the former main kiln building

As might be suspected from the slacker slope of this face, the rock mass on the north side appeared less massive than in the south face.

Toward the eastern end of Area B, narrow promontories of chalk project from the southern and norther faces, however due to the geometry of these promontories both were seen to be in a state of progressive degradation, with gaping joints clearly visible within the chalk forming these promontories (See Photograph 2-4 and Photograph 2-5).

Photograph 2-4 South side promontory

Photograph 2-5 North side promontory

2.6.3 Area C (middle part of the former quarry)

The ground in this area was characterised by extensive deposits of Made Ground, including demolition and construction wastes, sonically fragmented glass (all believed to be associated with the current waste recycling operations) and cement kiln dusts (CKD) and quarry wastes associated with the former cement works operations. The area has a scattered cover of scrub vegetation. There are also some derelict buildings at the top of the quarry at the western end of this area,

The rock faces are typically cut at a minimum batter of 1v:1h, often 1.2v:1h, and much steeper in the southern and south-eastern faces (See Photograph 2-6).

Photograph 2-6 Area C southern rock face

Whilst the solution feature associated with the fault noted in the geological memoir (see Figure 2-3) was not seen at the time of the site visit, a rubble filled solution feature was observed in the upper bench of the north-western face of Area C (see Photograph 2-7).

Photograph 2-7 Area C rubble filled solution feature

2.6.4 Area D (upper part of the former quarry)

This area comprised bare relict chalk quarry with apparently little or no Made Ground and a generally patchy cover of sparse vegetation. The rock faces have similar profiles to those in Area C. A general view of Area D is presented in Photograph 2-8.

Photograph 2-8 Area D general view

2.7 Surface water hydrology

There are no surface water courses on the site itself. The site lies to the west of the River Adur, which flows alongside a section of the sites north-western boundary. Adjacent to the site the River Adur is relatively wide (~30m) as it is in its lower reaches, discharging to the English Channel approximately 5km to the southeast.

The Adur is a typical lowland river with a catchment area of about 500 km^2. The river begins as two separate branches, both fed by chalk springs. Where the two branches meet the river becomes tidal, a distance of approximately 14 km upstream of the estuary at Shoreham-by-Sea. This means the river is tidal in the vicinity of the site.

Details of the existing site drainage system are outside the scope of this report, however there are understood to be outfalls from the site drainage system to the River Adur.

2.7.1 Water quality

As the River Adur is tidal in the vicinity of the site it is not assessed for water quality.

2.7.2 Surface water abstractions

There is one licensed surface water abstraction located within 2km of the site. The abstraction is located 1,489m to the southeast of the site, and is operated by Southern Water Services Plc. Water is abstracted from a pond and used for spray irrigation.

2.8 Catchment descriptors

The FEH gives the Standard Percentage Runoff (SPR) for the catchment containing the site as being 4.4%. The SPR is the percentage of rainfall responsible for the short-term increase in river flow during and/or following a rainfall event (Boorman et al., 1995). This is very low SPR and is likely a function of the fact that the exposed chalk is a very permeable media that readily allows infiltration. The fact that the excavated quarry forms a topographic hollow will also increase infiltration.

The Baseflow Index (BFI) for the site is 0.97 (CEH, 2009). This is the proportion of total streamflow made up of baseflow (mostly groundwater input). This suggests that most of the flow of the local watercourses is made up of baseflow in this area, this is typical of chalk catchments.

2.9 Hydrogeology

The Chalk bedrock beneath the site is designated a Principal Aquifer by the Environment Agency. A Principal Aquifer is described as layers of rock that have high intergranular and/or fracture permeability, meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.

The alluvium and head deposits are designated Secondary (undifferentiated) Aquifer, a description which has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both Minor and Non-Aquifer in different locations due to the variable characteristics of the rock type.

2.9.1 Groundwater abstractions

There are 8 licensed groundwater abstractions located within 2km of the site, details are given in Table 2-2.

Table 2-2 Licensed groundwater abstractions located within 2km of the site

Operator	Site	Distance and direction from site	Use
Dudman Aggregates Ltd	Shoreham Cement Works	On site - Well 1	Effluent dilution
Dudman Aggregates Ltd	Shoreham Cement Works	On site - Well 2	Effluent dilution
Passmore Coombes		708m west	Farming and domestic
Southern Water Services Ltd	Steyning Pumping Station	1,123m north	Public water supply
Southern Water Services Ltd	Mossey Bottom Pumping Station	1,489m south	Public water supply
W D Passmore & Sons		1,538m south	Farming and domestic
West Sussex County Council		1,634m northeast	Farming and domestic
Southern Water Services Ltd	Shoreham Pumping Station	1,784m southeast	Public water supply

2.9.2 Groundwater Source Protection Zones (SPZ)

There are no current groundwater Source Protection Zones (SPZs) underlying the site itself, but there are a lot of defined SPZs located in the wider area, associated with public water supply abstractions at Upper Beeding and Southwick as detailed in Table 2-2.

2.9.3 Aquifer vulnerability and water quality

The aquifer beneath the site is regarded as being highly vulnerable to contamination originating at the surface.

The groundwater body beneath the site is named the Brighton Chalk Block which is currently regarded as having poor quantitative and chemical status, and therefore having poor overall status. The poor quantitative status is attributed to groundwater flow being impacted by groundwater abstraction for the water industry. The poor chemical status is attributed to unknown sources of diffuse pollution associated with agriculture and rural land management.

2.9.4 Aquifer properties

The Chalk has a "dual porosity" system, with a combination of (i) a microporous matrix that stores water but does not drain easily and (ii) fractures (commonly enhanced by dissolution) that transmit water easily. Most groundwater flow within the Chalk takes place within the fracture system, and this is best developed within the upper part of the aquifer, especially within the zone of water table fluctuation (Allen *et al*., 1997).

The White Chalk Subgroup, which includes the Chalk exposed at the site, is a highly productive aquifer, and large diameter boreholes can potentially yield 50-100l/s due to enhanced permeabilities caused by a well developed system of fractures in the aquifer. The BGS holds records of four historical boreholes located on the site. Borehole logs available from the BGS GeoIndex suggest that yields from the boreholes on site were in the range of 9-13 l/s. The information held is limited but suggests that rest groundwater levels on site may be in the range of -1 to +2 mAOD. Groundwater levels within the Chalk are likely to fluctuate, potentially significantly, with the seasons.

2.9.5 Groundwater flow

Groundwater flow is likely to reflect the surface topography, flowing from the higher ground in the east and discharging locally to the River Adur in the west. There may also be groundwater flow towards the south, discharging to the coast.

The alluvium in the west of the site may be in hydraulic continuity with the River Adur. It is possible that groundwater levels within the superficial deposits will be influenced by variations in water level within the river.

2.10 Designated sites

There are two designated sites located within 2km of the site (Map 5), both are designated Sites of Special Scientific Interest (SSSI):

- Beeding Hill to Newtimber Hill SSSI (Unit 1) located adjacent to the northern site boundary; and
- Adur Estuary SSSI located 1,175m to the south.

Beeding Hill to Newtimber Hill SSSI is a site of both geological and biological importance. It is designated for three nationally uncommon habitats: south-east chalk grassland, juniper scrub and calcareous pedunculate oak-ash -beech woodland, as well as for the geological interest of its dry chalk valleys. Given the location of this SSSI to the north of the site beyond the top of the quarry faces, it is unlikely that this site would be impacted by any development plans on site, provided these remain within the site boundary. Exceptions to this would include any industrial land use of the site which may result in the emission of fugitive gases, for example if an incinerator were to be located on site.

The Adur Estuary is designated SSSI for its saltmarsh habitat, and the large area of intertidal mudflats within the estuary are important for wading birds.

2.11 Summary of site sensitivity

The sensitivity of each of the identified receptors in the vicinity of the site to contamination is summarised in Table 2-3.

Table 2-3 Sensitivity of environmental receptors in the vicinity of the site

Receptor	Type	Sensitivity	Reasoning
Alluvium (Secondary undifferentiated aquifer)	Groundwater	Medium	The alluvium may store and transmit reasonable volumes of groundwater.
Chalk (Principal aquifer)	Groundwater	High	The Chalk is of high importance for public water supply.
River Adur	Surface water	Medium	The River Adur is tidal in the vicinity of the site though discharges to the Adur Estuary SSSI.
Adur Estuary SSSI	SSSI	High	The Adur Estuary is of national importance for its saltmarsh habitat and intertidal mudflats.

3 Potential Contamination Sources

3.1 Introduction

An analysis of potential contamination sources has been completed through review of various data sources. This includes regulatory data (such as waste management licences, trade directories and pollution incident records), historical mapping and review of historical reports.

3.2 Site regulatory and environmental data

Information regarding the potential hazards associated with environmental regulatory controls is summarised in Table 3-1. This information was obtained from a Landmark Envirocheck report which is included as Appendix C.

Table 3-1 Regulatory data

Data Source	Details	Potential for impact on site?
Explosive Sites	None within 1km	No
Contaminated land register entries	None within 1km	No
Landfill sites	Historical Landfill sites: Blue Circle Industries Plc, located on site, deposited waste included waste produced on site; gas cleaning/precipitator dust, general factory waste, partly burned clinker, refractory linings/bricks, stone Coombes Road 567m to the west, active 1955-1960, deposited waste included inert, commercial and household	Yes – potentially contaminative material of an unknown nature buried on site
Other Waste Management Sites	Dudman Waste and Environmental Ltd, operating on site since 2013, physical treatment facility	Yes – operations could involve potentially contaminative land uses
IPC authorisations and IPPC permits	None within 1km	No
Hazardous substances	None within 1km	No
Fuel Station Entries	The Envirocheck report identifies none within 1km, however a refuelling area and diesel storage is known to be located on site within Area B.	Yes - fuel storage is a contamination hazard
Contemporary trade directory entries	None within 1km	No
LAPPC	Two on site: Dudman Waste and Environmental Ltd, PG3/16 Mobile screening and crushing processes permitted Blue Circle Cement, Air Pollution Control, PG3/1 Blending, packing, loading and use of bulk cement, authorisation revoked	Unlikely - Material used for the production of secondary aggregate should be clean
Discharge consents	One 192m to the north, sewage discharge- final treated effluent (not water company), discharged to stream One 273m to the north, sewage discharge- final treated effluent	Unlikely – discharges will most likely migrate

Data Source	Details	Potential for impact on site?
	(not water company), discharged to stream, revoked 2009 One 725m to the southwest, sewage discharge- final treated effluent (not water company), discharged to land One 769m to the north, sewage discharge- final treated effluent (not water company), revoked 1996, discharged to land	to the River Adur as the local discharge point
Recorded pollution incidents to controlled waters	One 330m to the west, Category 3 – Minor incident, Oils – Mini bus crashed in ditch, occurred 1998 One 742m to the south, Category 3 – Minor incident, miscellaneous – inert suspended solids, occurred 1995 One 934m to the west, Category 3 Minor incident, no pollution found, occurred 1998	No – most recent event occurred 20 years ago, all Category 3
Radon	The site is located in an intermediate probability radon area (1 to 3% of homes are estimated to be above the action level. No radon protective measures are necessary in the construction of new dwellings or extensions.	No
Notes: IPC = Integrated Pollution Control; IPPC = Integrated Pollution Prevention & Control; LAPPC = Local Authority Pollution Prevention & Controls		

3.3 Site history

The site history has been determined from a review of OS historical maps (Appendix C), local knowledge, the website 'Engineering Timelines' (http://www.engineering-timelines.com/scripts/engineeringItem.asp?id=1268) and the Journal of the Sussex Industrial Archaeological Society Issue 34 (Appendix E). A detailed description of the site history is given in these two documents, with a summary presented here.

3.3.1 On-site history

1732

A chalk pit was first in use in the site.

1850s

The Steel Bank and Lime and Cement Co. owned the site, but there is no evidence of cement production at this time.

1851

Quarrying began.

1872

Two limekilns are shown on historic OS maps, one to the west of the road, and one labelled 'old limekiln' to the east of the road.

1878

The Beeding Cement Co. began operating using six Johnson chamber kilns which were located to the west of Steyning road. A tramway was also present, taking chalk from the pit to the works. Producing up to 144 tonnes of cement per week.

1898-1902

Ground level of the chalk pit to the east of the road is lowered, and a tramway tunnel built under Steyning Road.

1884

The Sussex Portland Cement Company was set up.

1897

The Sussex Portland Cement Company acquire the Beeding Cement Company.

1902

The Sussex Portland Cement Company rebuilt much of the works increasing site output. Infrastructure including the building of 12 kilns, rail access across the site, including a rail tunnel under Steyning Road near the tramway.

1912

Sussex Portland Cement Company taken over by British Portland Cement manufacturers, which later became the Associated Portland Cement Manufacturers (APCM) Ltd.

1939-1945

Cement works were largely shut down during WWII.

1946

Site reopened post WWII and APCM built an entirely new plant using the 'wet process'. Production part of the works was now all located within the chalk pit east of the road, chalk crushing plant, wash mills, mixing plant, rotary kilns, coal, gypsum, and clinker store, crushing mills and cement storage silos, large workshop and store building. West of the road was an office block, packing plant, railway sidings, and motor workshop. These buildings may have been covered in sheet asbestos cladding.

There was also a 3kV South Eastern Electricity Board sub-station which was the main electrical intake for the site with additional transformers across the site. TQ 1944 0868.

1955-1956

Three filter presses were installed to reduce slurry moisture content.

1957 -1994

Three tanks are shown on historical maps to the north of the workshops in Area A. Discussions with a tenant on site during the site visit suggest at least one of these is a fuel tank and remains buried on site.

c. 1964

All the production plant on the west of the site was demolished.

Late 1978 -1991

APCM was renamed Blue Circle Industries Limited in late in 1978.

Some changes to infrastructure.

Production ceased in 1991.

1991

West of road used for storage and repair of motor vehicles.

1995

The gantry crossing Steyning Road was demolished.

2001

Blue Circle Industries was bought by Lafarge.

December 2003 the wash mills and mixing silos were demolished.

2011

Dudman Aggregates bought site which is now used for the production of secondary aggregate. They retain the licence to extract from the Chalk quarry though the site is no longer actively quarried.

September 2017

Fire broke out in the abandoned cement works, destroying two empty buildings and 19 vehicles parked on site.

3.3.2 Off-site history

1861

The railway between Horsham and Shoreham opened.

1875 - 1876

Made ground is present to the east of the Area A.

1902

A clay pit opened three miles to the north in Horton to supply the cement works.

1903

Dacre Gardens: two-storey workers' houses built.

Dacre Villas; two semi-detached houses built.

Cliff House- the manager's house built.

1966

Main railway line north of the cement works closed.

1957 - 1972

Embankment appears to the south of the site, east of the A283.

1984 - 1985

A section is added to Steyning Road (A283), moving it to the east of Area A.

Table 3-2 Potentially contaminative land uses identified from the historical map review

Industry / Source	Location	Date	Potential for impact on site
Chalk Pit	In vicinity of Steyning Road	1732	Yes - potential for fill of unknown material across site, though of a historic nature.
Quarrying	Across much of site	1851- 1991	Yes - potential for fill of unknown material across site.
Horsham-Shoreham Railway	To the west of the site	1861 - 1966	Yes - potential for contaminants to migrate to ground/groundwater. Potential for fill of unknown material across site.
Original Beeding Cement Co. began production at site Inc. 6x kilns	West of A283	1878 - 1902	Yes - it is unknown whether any infrastructure was properly decommissioned or whether waste products remain on site.
Tramway	Originally west of the A283	1878 - unknown	Yes - potential for fill of unknown material across site. Contamination potential can be considered alongside other infrastructure on site.
Much of site rebuilt increasing	West of A283	1902 - 1946	Yes - it is unknown whether any infrastructure was properly

Industry / Source	Location	Date	Potential for impact on site
output Inc. 12x kilns			decommissioned of whether waste products remain on site.
Railway across site and through tunnel	Largely to the west of A283	1902 -1966	Yes - potential for contaminants to migrate to ground/groundwater from machinery or unknown fill.
Site re-opened by APCM Inc. Chalk crushing plant			
Wash mills	East of A283	1946	Yes - potential for contaminants to migrate to ground/groundwater. Potential for buried material/infrastructure across site.
Mixing plant	East of A283	1946	
Rotary kilns	East of A283	1946	
Coal store	East of A283	1946	
Gypsum store	East of A283	1946	
Clinker store	East of A283	1946	
Crushing mills	East of A283	1946	
Cement storage silos	East of A283	1946	
Workshop	East of A283	1946	Yes - potential for contaminants to migrate to ground/groundwater. Potential for fill of unknown material across site.
Store building	East of A283	1946	Yes - potential for contaminants to migrate to ground/groundwater. Potential for fill of unknown material across site.
Substation	East of A283	1946	Yes - potential for contaminants to migrate to ground/groundwater.
Offices (toilets, canteen, laboratories)	West of A283	1946	Unlikely - not regarded as a contaminative land use.
Packing plant	West of A283	1946	Yes - potential for contaminants to migrate to ground/groundwater. Potential for fill of unknown material across site.
Motor workshop and vehicle washing plant	West of A283	1946	Yes - potential for contaminants to migrate to ground/groundwater.
Three filter presses installed	East of A283	1955-1956	Yes - potential for contaminants to migrate to ground/groundwater.
Storage and repair of motor vehicles	West of A283	1991	Yes - potential for contaminants to migrate to groundwater.
Production of secondary aggregate	East of A283	2011 onwards	Yes - contamination risk arises from the use of machinery on site and the presences of oils and fuels. Material used for the production of secondary

Industry / Source	Location	Date	Potential for impact on site
			aggregates should be clean.
Fire	West of A283	2017	Yes - potential for ground and groundwater contamination.
Made Ground	Off site, adjacent to the A283	1875 western 1957 eastern	Yes- Fill material unknown, potential for ground and groundwater contamination.

3.4 Summary of potential contamination sources

The site has an industrial history spanning several centuries. Detailed plans of the site throughout its history are not available, but there is evidence of infrastructure associated with cement manufacture located across much of the site. From the plans/maps available it is possible that underground process pipework and storage tanks could be present across much of the site, especially in Areas A & B. It is unknown whether any of the historical infrastructure across the site was formally decommissioned and reused or removed from site, or whether much of these remain buried on site. There is potential for historical waste liquids to be contained within any buried pipework or storage tanks remaining on site.

One of the main contamination hazards across this site arises from buried waste material and infrastructure. Given the array of different components which make up the cement production process and the potential, given the changing site layout over the year, for contamination from these different elements to have impacts across the site, many of the contamination hazards for the works have been considered in combination. A summary of the potential contamination sources across the site is given as follows (Map 6 - Appendix A):

- Quarrying across the site;
- Historical landfill on site;
- Horsham to Shoreham railway line to the west of the site;
- Railway line, sidings, and locomotive shed on site;
- Electrical substation on site;
- Cement production infrastructure (inc. tramway) to the west of the A283 (pre-1946);
- Cement production infrastructure to the east of the A283 (post-1946);
- Associated infrastructure to the west of the A283 (post-1946);
- Current operations by Dudman Aggregates producing secondary aggregate east of the A283;
- Current industrial land uses to the west of the A283;
- Buried fuel tank in Area A;
- Fuel storage and refuelling area in Area B;
- Fire;
- Made ground embankments off site adjacent to the A283.

4 Preliminary Environmental Assessment

4.1 Introduction

The methodology for the preliminary environmental assessment is given in Appendix D. This section summarises the findings for each component of the analysis which culminates in the production of a conceptual site model. This model is then used to develop a risk rating for any given potential contamination source that has been identified.

4.2 Sources

The following potential sources of contamination have been identified from regulatory data and historic and current land uses of the site and surrounding area (Map 6):

- Quarrying across the site;
- Historical landfill on site;
- Horsham to Shoreham railway line to the west of the site;
- Railway line, sidings, and locomotive shed on site;
- Electrical substation on site;
- Cement production infrastructure (inc. tramway) to the west of the A283 (pre-1946);
- Cement production infrastructure to the east of the A283 (post-1946);
- Associated infrastructure to the west of the A283 (post-1946);
- Current operations by Dudman Aggregates producing secondary aggregate east of the A283;
- Current industrial land uses to the west of the A283;
- Buried fuel tank in Area A;
- Fuel storage and refuelling area in Area B;
- Fire;
- Made ground embankments off site adjacent to the A283

4.3 Pathways and receptors

Potential receptors and possible pathways for contaminants to reach these receptors are summarised below:

- Current and future site users, construction workers [direct contact, inhalation, accidental ingestion, migration of fugitive gases on site];
- Groundwater (Principal Chalk aquifer and Secondary alluvial aquifer) [migration via permeable strata];
- Surface water (River Adur) [overland flow, migration via drainage, groundwater baseflow]; and,
- Ecologically sensitive sites (Adur Estuary SSSI) [overland flow, migration via drainage, groundwater baseflow].

4.4 Conceptual understanding

The Environment Agency defines a conceptual model as "a description of how a hydrogeological system is believed to behave" and its development as "an iterative or cyclical process of development and testing in which new observations are used to evaluate and improve the model" (Environment Agency, 2002, p.4.1-2).

A preliminary conceptualisation of the site and surrounding environment has been developed based on the information available.

The main features of the conceptual model are as follows:

- The site comprises a historical Chalk quarry and contains historical buildings used for cement manufacture, processing and associated infrastructure.
- The site is presently used for the manufacture of secondary aggregate (east of the A283) and industrial use and vehicle storage (west of the A283).
- The excavated quarry forms a void in the surrounding topography.
- The River Adur flows broadly north to south to the west of the site. Full details of the site drainage system are outside the scope of this study, however there are understood to be drainage outfalls from the site to the River Adur.
- A historical landfill is present in Area C where there is a substantial amount of made ground comprising largely cement kiln dust, quarry waste, and factory waste which may be up to 20m thick.
- Made ground deposits are present across the site and surrounding area, particularly within Areas A and C. The nature of the made ground is likely to vary across the site but it is likely to be associated with the historic development and usage of the site. There is the potential for made ground across the site to cause ground and groundwater contamination and to produce ground gases.
- Superficial deposits are present only in the west of the site (Area A), where alluvial deposits bound the River Adur, possibly underlain by River Terrace deposits. A thin strip of head deposits is present along the eastern edge of the alluvial plain.
- Alluvial deposits may be in hydraulic connection with the River Adur.
- The bedrock underlying the site belongs to the White Chalk subgroup which is a Principal Aquifer. The Chalk has a dual porosity system, both storing water within its matrix and having a dissolution enhanced fracture system which stores and transmits water easily.
- Given the high permeability of the Chalk, water at the surface will readily infiltrate to the Chalk where it is exposed at the surface. Groundwater flow within the Chalk is likely to be towards the River Adur in the west or south towards the coast.
- Water infiltrating through the Made ground will likely be collected within the site drainage system and discharged to the River Adur, particularly in Area A.
- Potential environmental receptors include workers involved in future investigative/construction work, future site visitors, the underlying Chalk aquifer, the River Adur, and the downstream Adur Estuary SSSI.
- The various potential contamination sources are displayed on Map 6. The site has been extensively used for industrial activity and historic landfilling.

4.5 Qualitative risk assessment

A tabulated summary of the risk assessment process can be seen in Table 4-1. This firstly describes the sources, pathways and receptors derived from the baseline study and conceptual model. The assessment methodology described in Appendix D is then utilised to derive the potential severity of the given potential contamination source on any identified potential receptors. Finally, the likelihood of said contamination source reaching the receptor is given, which in conjunction with the potential severity is used to state a final risk value for each receptor.

Table 4-1 Qualitative risk assessment summary

Source	Pollutant	Receptor	Pathway to receptor	Associated hazard (potential severity)	Likelihood of occurrence	Risk
Quarrying across the site (potential for areas of fill with material of a variable nature)	Potential for fill material across site. Leachates may be generated through infiltration of rainwater through fill materials. Potential for mobilisation of inorganic, organic and metallic compounds in leachate. Potential for generation of fugitive gases such as methane and carbon dioxide.	Site users (current and future use)	Direct contact, inhalation, accidental ingestion	Health risk (Medium)	Low It is possible that unmapped areas of fill will be encountered during ground investigation and any construction/excavation works. Consideration will need to be given to proposed construction methodologies to limit the potential for generation of odours, fugitive gases, dusts etc. from exposed areas of Made Ground. The risk arising from combustion of made Ground materials through exposure of areas of historic landfilling should also be considered. Hazards associated with the accumulation of landfill gases in confined spaces include asphyxiation and explosiveness.	Moderate / Low Risk
		Groundwater (Principal Chalk Aquifer & Secondary superficial aquifer)	Migration via permeable strata	Pollution of groundwater (Medium)	Likely There is potential for any leachable contaminants to migrate to groundwater. Pathways from fill material to the Chalk could be created through ground investigation and any future construction /excavation works.	Moderate Risk
		Surface water (River Adur)	Overland flow, migration via drainage,	Pollution of surface water (Medium)	Likely Leachable contaminants could migrate	Moderate Risk

			baseflow		to groundwater or the site drainage network and be discharged to the river directly of via baseflow. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	
		SSSI (Adur Estuary)	Overland flow, migration via drainage, baseflow	Pollution of SSSI (Medium)	Unlikely Leachable contaminants could migrate to groundwater and be discharged to the river as baseflow ultimately flowing into the Adur Estuary. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	Low Risk
Historical landfill on site	Landfill material included waste produced on site, gas cleaning/precipitator dust, general factory waste, partly burned clinker, refractory linings. Potential leachates generated through infiltration of rainwater through the landfilled materials. Potential for mobilisation of inorganic, organic and metallic compounds in leachate. Potential for generation of fugitive gases such as methane and carbon dioxide.	Site users (current and future use)	Direct contact, inhalation, accidental ingestion	Health risk (Medium)	Likely There is evidence that waste deposits are in places >20m thick. These deposits would need to be assessed and, in all likelihood, treated/removed from Area C to allow development in this area. This would bring site workers into contact with the made ground. The waste material could be producing fugitive gases which may migrate across the site via permeable strata. The need for gas monitoring and gas protection measures in buildings developed across the site must therefore be considered. Hazards associated with the accumulation of landfill gases in confined spaces include asphyxiation and explosiveness.	Moderate Risk

		Groundwater (Principal Chalk Aquifer & Secondary superficial aquifer)	Migration via permeable strata	Pollution of groundwater (Medium)	Likely There is potential for any leachable contaminants to migrate to groundwater. Pathways from fill material to the Chalk could be created through ground investigation and any future construction /excavation works.	Moderate Risk
		Surface water (River Adur)	Overland flow, migration via drainage, baseflow	Pollution of surface water (Medium)	Likely Leachable contaminants could migrate to groundwater and be discharged to the river as baseflow. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	Moderate Risk
		SSSI (Adur Estuary)	Overland flow, migration via drainage, baseflow	Pollution of SSSI (Medium)	Unlikely Leachable contaminants could migrate to groundwater and be discharged to the river as baseflow ultimately flowing into the Adur Estuary. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	Low Risk
Horsham to Shoreham railway line to the west of the site	Fuel oils Lubricating oils Paraffin PCBs PAHs Solvents Ethylene glycol Creosote	Site users (current and future use)	Direct contact, inhalation, accidental ingestion	Health risk (Medium)	Unlikely Given the fact that the railway is no longer present, many of the potential contaminants are unlikely to be present. The main remaining source of contamination is fill material (potentially ash rich) of the embankment. Given its presence off-site, site users are unlikely to come	Low Risk

	Herbicides Ferrous residues Metal fines Asbestos Ash Sulphate				into contact with any residual contamination.	
		Groundwater (Principal Chalk quifer & Secondary superficial aquifer)	Migration via permeable strata	Pollution of groundwater (Medium)	Unlikely Given the fact that the railway is no longer present, many of the potential contaminants are unlikely to be present. The main remaining source of contamination is fill material (potentially ash) of the embankment. There is potential for any leachable contaminants to migrate to groundwater, though this pathway is unlikely to be altered by works on site.	Low Risk
		Surface water (River Adur)	Overland flow, migration via drainage, baseflow	Pollution of surface water (Medium)	Unlikely Given the fact that the railway is no longer present, many of the potential contaminants are unlikely to be present in significant quantities. The main remaining source of contamination is fill material (potentially ash) of the embankment. Leachable contaminants could migrate to groundwater or the site drainage network and be discharged to the river directly or via baseflow. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	Low Risk
		SSSI (Adur Estuary)	Overland flow, migration via drainage, baseflow	Pollution of SSSI (Medium)	Unlikely Leachable contaminants could migrate to groundwater or the site drainage network and be discharged to the	Low Risk

					river directly or via baseflow ultimately flowing into the Adur Estuary. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	
Railway line, sidings, and locomotive shed on site	Fuel oils Lubricating oils Paraffin PCBs PAHs Solvents Ethylene glycol Creosote Herbicides Ferrous residues Metal fines Asbestos Ash Sulphate	Site users (current and future use)	Direct contact, inhalation, accidental ingestion	Health risk (Medium)	Low Given the fact that the railway is no longer active, many of the potential contaminants are unlikely to be present. The main remaining source of contamination is fill material. Fill of an unknown nature may be encountered during ground investigation and any construction/excavation works. Consideration will need to be given to proposed construction methodologies to limit the potential for generation of odours, fugitive gases, dusts etc. from exposed areas of made ground.	Moderate / Low Risk
		Groundwater (Principal Chalk Aquifer & Secondary superficial aquifer)	Migration via permeable strata	Pollution of groundwater (Medium)	Low Given the fact that the railway is no longer present, many of the potential contaminants are unlikely to remain. There is potential for any leachable contaminants from associated made ground to migrate to groundwater.	Moderate / Low Risk
		Surface water (River Adur)	Overland flow, migration via drainage, baseflow	Pollution of surface water (Medium)	Low Given the fact that the railway is no longer present, many of the potential contaminants are unlikely to remain. Leachable contaminants from the associated made ground could	Moderate / Low Risk

					migrate to groundwater or the site drainage network and be discharged to the river directly or via baseflow. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	
		SSSI (Adur Estuary)	Overland flow, migration via drainage, baseflow	Pollution of SSSI (Medium)	Unlikely Leachable contaminants could migrate to groundwater or the site drainage network and be discharged to the river directly or via baseflow, ultimately flowing into the Adur Estuary. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	Low Risk
Electrical substation	Inorganic compounds Acids PCBs Mineral oils	Site users (current and future use)	Direct contact, inhalation, accidental ingestion	Health risk (Medium)	Low Residual contaminants may be present and may be encountered by site workers during ground investigation and any construction/excavation works. Appropriate safety measures must be adopted.	Moderate / Low Risk
		Groundwater (Principal Chalk Aquifer & Secondary superficial aquifer)	Migration via permeable strata	Pollution of groundwater (Medium)	Low There is potential for any leachable contaminants to migrate to groundwater. Pathways to the Chalk could be created through ground investigation and any future construction /excavation works.	Moderate / Low Risk
		Surface water (River Adur)	Overland flow, migration via drainage,	Pollution of surface water	Low	Moderate / Low Risk

			baseflow	(Medium)	Leachable contaminants could migrate to groundwater or the site drainage network and be discharged to the river directly or via baseflow. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	
		SSSI (Adur Estuary)	Overland flow, migration via drainage, baseflow	Pollution of SSSI (Medium)	Unlikely Leachable contaminants could migrate to groundwater or the site drainage network and be discharged to the river directly or via baseflow ultimately flowing into the Adur Estuary. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	Low Risk
Cement production infrastructure to the west of the A283 (pre-1946)	It is possible that underground process pipeworks and storage tanks could be present across much of Area A. These may contain residual contaminants including waste liquids. Historical infrastructure may remain buried on site. Made Ground is present. Additional contaminants associated with the various stages of cement manufacture include: metals, inorganic compounds, acids, asbestos, solvents, PAHs,	Site users (current and future use)	Direct contact, inhalation, accidental ingestion	Health risk (Medium)	Likely Made ground, contaminated soils and most likely some buried infrastructure is present across Area A. These deposits would need to be assessed and treated/removed to allow development in this area. This would bring site workers into contact with the made ground. The waste material could be producing gases which may migrate across the site via permeable strata. The need for gas monitoring and gas protection measures in buildings developed across the site must be considered. Hazards associated with the accumulation of landfill gases in confined spaces include asphyxiation	Moderate Risk

	PCBs and hydrocarbons.				and explosiveness.	
		Groundwater (Principal Chalk Aquifer & Secondary superficial aquifer)	Migration via permeable strata	Pollution of groundwater (Medium)	Likely There is potential for any leachable contaminants to migrate to groundwater. Pathways from fill material to the Chalk and superficial aquifers could be created through ground investigation and any future construction /excavation works.	Moderate Risk
		Surface water (River Adur)	Overland flow, migration via drainage, baseflow	Pollution of surface water (Medium)	Likely Leachable contaminants could migrate to groundwater and be discharged to the river as baseflow. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	Moderate Risk
		SSSI (Adur Estuary)	Overland flow, migration via drainage, baseflow	Pollution of SSSI (Medium)	Unlikely Leachable contaminants could migrate to groundwater and be discharged to the river as baseflow ultimately flowing into the Adur Estuary. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	Low Risk
Cement production infrastructure to the east of the A283 (post-1946)	It is possible that underground process pipeworks and storage tanks could be present across much of Area B. These may contain waste liquids. Historical infrastructure may remain buried on site.	Site users (current and future use)	Direct contact, inhalation, accidental ingestion	Health risk (Medium)	Likely Made ground, contaminated soils and most likely some buried infrastructure is present across Area B. These deposits would need to be assessed and treated/removed to allow development in this area. This would bring site workers into contact with	Moderate Risk

	Made Ground is present. Additional contaminants associated with the various stages of cement manufacture include: metals, inorganic compounds, acids, asbestos, solvents, PAHs, PCBs and hydrocarbons.				the made ground. The waste material could be producing gases which may migrate across the site via permeable strata. The need for gas monitoring and gas protection measures in buildings developed across the site must be considered. Hazards associated with the accumulation of landfill gases in confined spaces include asphyxiation and explosiveness.	
		Groundwater (Principal Chalk Aquifer & Secondary superficial aquifer)	Migration via permeable strata	Pollution of groundwater (Medium)	Likely There is potential for any leachable contaminants to migrate to groundwater. Pathways from fill material to the Chalk aquifer could be created through ground investigation and any future construction /excavation works.	Moderate Risk
		Surface water (River Adur)	Overland flow, migration via drainage, baseflow	Pollution of surface water (Medium)	Likely Leachable contaminants could migrate to groundwater and be discharged to the river as baseflow. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	Moderate Risk
		SSSI (Adur Estuary)	Overland flow, migration via drainage, baseflow	Pollution of SSSI (Medium)	Unlikely Leachable contaminants could migrate to groundwater and be discharged to the river as baseflow ultimately flowing into the Adur Estuary. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	Low Risk

Associated infrastructure to the west of the A283 (post-1946)	Infrastructure included potentially contaminative land uses including a packing plant and motor workshop. Made Ground is present. Contaminants may include: metals, inorganic compounds, acids, asbestos, solvents, PAHs, PCBs and hydrocarbons.	Site users (current and future use)	Direct contact, inhalation, accidental ingestion	Health risk (Medium)	Likely Made ground, contaminated soils and most likely some buried infrastructure is present across Area A. These deposits would need to be assessed and treated/removed to allow development in this area. This would bring site workers into contact with the made ground. The waste material could be producing gases which may migrate across the site via permeable strata. The need for gas monitoring and gas protection measures in buildings developed across the site must be considered. Hazards associated with the accumulation of landfill gases in confined spaces include asphyxiation and explosiveness.	Moderate Risk
		Groundwater (Principal Chalk Aquifer & Secondary superficial aquifer)	Migration via permeable strata	Pollution of groundwater (Medium)	Likely There is potential for any leachable contaminants to migrate to groundwater. Pathways from fill material to the Chalk and superficial aquifers could be created through ground investigation and any future construction /excavation works.	Moderate Risk
		Surface water (River Adur)	Overland flow, migration via drainage, baseflow	Pollution of surface water (Medium)	Likely Leachable contaminants could migrate to groundwater and be discharged to the river as baseflow. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	Moderate Risk

		SSSI (Adur Estuary)	Overland flow, migration via drainage, baseflow	Pollution of SSSI (Medium)	Unlikely Leachable contaminants could migrate to groundwater and be discharged to the river as baseflow ultimately flowing into the Adur Estuary. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	Low Risk
Current operations by Dudman Aggregates producing secondary aggregate east of the A283	Metals Hydrocarbons (oils and fuels) Dust	Site users (current and future use)	Direct contact, inhalation, accidental ingestion	Health risk (Medium)	Low Any fuel/oil spillages are most likely to be minor, and if cleaned up correctly should not pose a threat to human health.	Moderate / Low Risk
		Groundwater (Principal Chalk Aquifer & Secondary superficial aquifer)	Migration via permeable strata	Pollution of groundwater (Medium)	Low Any fuel/oil spillages are likely to be minor, and when cleaned up correctly are unlikely to enter the principal Chalk aquifer at significant levels.	Moderate / Low Risk
		Surface water (River Adur)	Overland flow, migration via drainage, baseflow	Pollution of surface water (Medium)	Unlikely Any fuel/oil spillages are likely to be minor, and when cleaned up correctly it is unlikely that contaminants will be mobilised to groundwater and migrate to the river.	Low
		SSSI (Adur Estuary)	Overland flow, migration via drainage, baseflow	Pollution of SSSI (Medium)	Unlikely Any fuel/oil spillages are likely to be minor, and when cleaned up correctly it is unlikely that contaminants will be mobilised in groundwater and migrate	Low

					to the river and Adur Estuary.	
Current industrial land uses to the west of the A283	Potential contamination of made ground materials. Pollutants will vary widely due to the numerous industries that have existed within this area, but may contain metals, asbestos, inorganic compounds and hydrocarbons (mainly from fuels and oils).	Site users (current and future use)	Direct contact, inhalation, accidental ingestion	Health risk (Medium)	Low Contaminants may be present and may be encountered by site workers during ground investigation and any construction/excavation works. Appropriate safety measures must be adopted.	Moderate / Low Risk
		Groundwater (Principal Chalk Aquifer & Secondary superficial aquifer)	Migration via permeable strata	Pollution of groundwater (Medium)	Low There is potential for any leachable contaminants to migrate to groundwater. Pathways to the Chalk could be created through ground investigation and any future construction /excavation works.	Moderate / Low Risk
		Surface water (River Adur)	Overland flow, migration via drainage, baseflow	Pollution of surface water (Medium)	Low Leachable contaminants could migrate to groundwater or the site drainage network and be discharged to the river directly or via baseflow. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	Moderate / Low Risk
		SSSI (Adur Estuary)	Overland flow, migration via drainage, baseflow	Pollution of SSSI (Medium)	Unlikely Leachable contaminants could migrate to groundwater or the site drainage network and be discharged to the river directly or via baseflow ultimately flowing into the Adur Estuary. Contaminants would be subjected to attenuation in the aquifer	Low Risk

					and dilution in the river.	
Buried fuel tank(s) in Area A	Hydrocarbons PAHs Metals Fuels/oils	Site users (current and future use)	Direct contact, inhalation, accidental ingestion	Health risk (Medium)	Low Contaminants may be present and may be encountered by site workers during ground investigation and any construction/excavation/remediation works. Appropriate safety measures must be adopted.	Moderate / Low Risk
		Groundwater (Principal Chalk Aquifer & Secondary superficial aquifer)	Migration via permeable strata	Pollution of groundwater (Medium)	Low There is potential for any leaking contaminants to migrate to groundwater. Pathways to the Chalk could be created through ground investigation and any future construction /excavation works.	Moderate / Low Risk
		Surface water (River Adur)	Overland flow, migration via drainage, baseflow	Pollution of surface water (Medium)	Low Leaking contaminants could migrate to groundwater or the site drainage network and be discharged to the river directly or via baseflow. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	Moderate / Low Risk
		SSSI (Adur Estuary)	Overland flow, migration via drainage, baseflow	Pollution of SSSI (Medium)	Unlikely If tank(s) are leaking contaminants could migrate to groundwater or the site drainage network and be discharged to the river directly or via baseflow ultimately flowing into the Adur Estuary. Contaminants would be subjected to attenuation in the aquifer	Low Risk

					and dilution in the river.	
Fuel storage and refuelling area in Area B	Hydrocarbons PAHs Metals Fuels/oils	Site users (current and future use)	Direct contact, inhalation, accidental ingestion	Health risk (Medium)	Low Contaminants may be present and may be encountered by site workers during ground investigation and any construction/excavation/remediation works. Appropriate safety measures must be adopted.	Moderate / Low Risk
		Groundwater (Principal Chalk Aquifer & Secondary superficial aquifer)	Migration via permeable strata	Pollution of groundwater (Medium)	Low There is potential for any leaking contaminants or spillages to migrate to groundwater. Pathways to the Chalk could be created through ground investigation and any future construction /excavation works.	Moderate / Low Risk
		Surface water (River Adur)	Overland flow, migration via drainage, baseflow	Pollution of surface water (Medium)	Low Leaking contaminants or spillages could migrate to groundwater or the site drainage network and be discharged to the river directly or via baseflow. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	Moderate / Low Risk
		SSSI (Adur Estuary)	Overland flow, migration via drainage, baseflow	Pollution of SSSI (Medium)	Unlikely Leaking contaminants or spillages could migrate to groundwater or the site drainage network and be discharged to the river directly or via baseflow ultimately flowing into the Adur Estuary. Contaminants would be subjected to attenuation in the aquifer	Low Risk

					and dilution in the river.	
Fire	Hydrocarbons PAHs Metals Fuels/oils	Site users (current and future use)	Direct contact, inhalation, accidental ingestion	Health risk (Medium)	Unlikely A 'clean up' strategy for the site has been adopted, it is unlikely that contaminants remain in concentrations the would be detrimental to human health.	Low Risk
		Groundwater (Principal Chalk Aquifer & Secondary superficial aquifer)	Migration via permeable strata	Pollution of groundwater (Medium)	Low There is potential for any leachable contaminants to migrate to groundwater. Pathways to the Chalk could be created through ground investigation and any future construction /excavation works.	Moderate / Low Risk
		Surface water (River Adur)	Overland flow, migration via drainage, baseflow	Pollution of surface water (Medium)	Low Leachable contaminants could migrate to groundwater or the site drainage network and be discharged to the river directly or via baseflow. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	Moderate / Low Risk
		SSSI (Adur Estuary)	Overland flow, migration via drainage, baseflow	Pollution of SSSI (Medium)	Unlikely Leachable contaminants could migrate to groundwater or the site drainage network and be discharged to the river directly or via baseflow ultimately flowing into the Adur Estuary. Contaminants would be subjected to attenuation in the aquifer and dilution in the river.	Low Risk

Made Ground to the south of the site	Made ground may include waste produced on site, gas cleaning/precipitator dust, general factory waste, partly burned clinker, refractory linings. Potential leachates generated through infiltration of rainwater through the landfilled materials. Potential for mobilisation of inorganic, organic and metallic compounds in leachate. Potential for generation of fugitive gases such as methane and carbon dioxide.	Site users (current and future use)	Direct contact, inhalation, accidental ingestion	Health risk (Medium)	Low As this material lies outside the site boundary site users are unlikely to come into direct contact with the material The waste material could be producing gases which may migrate across the site via permeable strata. The need for gas monitoring and gas protection measures in buildings developed across the site must be considered. Hazards associated with the accumulation of landfill gases in confined spaces include asphyxiation and explosiveness.	Moderate / Low Risk
		Groundwater (Principal Chalk Aquifer & Secondary superficial aquifer)	Migration via permeable strata	Pollution of groundwater (Medium)	Low There is potential for any leachable contaminants to migrate to groundwater. Development on site is unlikely to alter this pathway. Pathways from fill material to the Chalk could be created through ground investigation and any future construction /excavation works if they encroach onto this area.	Moderate / Low Risk
		Surface water (River Adur)	Overland flow, migration via drainage, baseflow	Pollution of surface water (Medium)	Low Leachable contaminants could migrate to groundwater and be discharged to the river as baseflow. Contaminants would be subjected to attenuation in the aquifer and dilution in the river. Development on site is unlikely to alter this pathway.	Moderate / Low Risk

		SSSI (Adur Estuary)	Overland flow, migration via drainage, baseflow	Pollution of SSSI (Medium)	Unlikely Leachable contaminants could migrate to groundwater and be discharged to the river as baseflow ultimately flowing into the Adur Estuary. Contaminants would be subjected to attenuation in the aquifer and dilution in the river. Development on site is unlikely to alter this pathway.	Low Risk

1

5 Preliminary Geotechnical Assessment

5.1 Introduction

As no detailed ground investigation information for the site is currently available, the following assessment of the geotechnical aspects of any proposed future development are preliminary only and are thus subject to review / revision once detailed ground investigation(s) have been carried out and intended development proposals defined.

5.2 Area A (west of the A283)

As previously described, this area is largely flat and is mostly covered by predominantly concrete hardstanding and the existing buildings, with lesser areas of granular surfacing and soft landscaping present locally. The steel rails from an extensive network of railway sidings are present within the concrete slabs of this area.

For any future built re-development in this area the site, it is assumed that the existing buildings and concrete hardstandings will be appropriately demolished / broken up and crushed as a recycled aggregate for either re-use on-site or sale to off-site. Any 'hardspots' associated with existing foundations or building sub-structure should also be dug out and the resultant void backfilled with well compacted well graded granular fill.

Given the advised thickness of the Made Ground and the likely poor ground conditions in the natural Head and Alluvium deposits, it is currently considered likely that building development in Area A will require piled foundations. Furthermore, as the depth of Made Ground may give rise to potential ground gasses (See Section 4) building development may require appropriate gas protection measures including suspended floor slaps and ventilated sub-floor voids. Details of actual foundation requirements and the need for any ground gas protection measures should be reviewed in the light of future ground investigation, once the form of any potential redevelopment is known.

As regards drainage of surface waters from any proposed redevelopment, given the advised depth of Made Ground, drainage to soakaways is currently not considered appropriate and consideration should be given to utilising the existing surface water drainage system. The potential for draining to soakaways could be reviewed further in the light of future ground investigation.

5.3 Area B

For any future built re-development of this area, it is assumed that the existing buildings and concrete hardstandings will be appropriately demolished / broken up and crushed as a recycled aggregate for either re-use on-site or sale to off-site. Any 'hardspots' associated with existing foundations or building sub-structure should also be dug out and the resultant void backfilled with well compacted high quality chalk fill or granular fill, as appropriate.

If, as advised in the previous Environmental Statement, the chalk bedrock is at relatively shallow depth in this area, then conventional shallow spread foundations may be appropriate in this area, dependant on the form of development proposed. The actual ground conditions present should be confirmed by appropriate ground investigation.

With the proximity of the areas of Made Ground in Areas A and C, it is possible that ground gasses from those areas might impact Area B, so there is a potential, subject to confirmation as part of future ground investigation, that building development may require appropriate gas protection measures including suspended floor slaps and ventilated sub-floor voids.

Providing there is sufficient freeboard above the local groundwater table (to be confirmed as part of future ground investigation) drainage of surface waters to soakaways may be viable in this area. However, given the potential for dissolution of the chalk it is advised that such soakaways be located away from any proposed buildings.

5.4 Area C

For any future built re-development of this area, it is assumed that the existing buildings and concrete hardstandings at the western end of this area will be appropriately demolished / broken up and crushed as a recycled aggregate for either re-use on-site or sale to off-site. Any 'hardspots' associated with existing foundations or building sub-structures should also be dug out and the resultant void backfilled with well compacted high-quality chalk fill or granular fill, as appropriate.

Given the advised substantial thickness of the Made Ground over the floor of this area and the apparently variable poor ground conditions (from cemented CKD to suspected former settling lagoon deposits), it is currently considered likely that building development in Area C may require piled foundations. Furthermore, as the depth of Made Ground may give rise to potential ground gasses (See Section 4) building development may require appropriate gas protection measures including suspended floor slaps and ventilated sub-floor voids. Details of actual foundation requirements and the need for any ground gas protection measures should be reviewed in the light of future ground investigation, once the form of any potential redevelopment is known.

As regards drainage of surface waters from any proposed redevelopment, given the advised depth of Made Ground, drainage to soakaways is not considered appropriate.

5.5 Area D

It is currently envisaged that this area will not be subject to any significant development but will be retained as a nature reserve.

5.6 Slope stability

Whilst the profile of the rock faces was seen to vary markedly from approximately 1v:1h to sub-vertical, with the possible exception of two localised plane failures in the south-eastern rock face above Area C, no evidence of large scale instability of the rock faces was observed. However, where it was possible to view the toe of the various rock faces, extensive accumulations of 'talus / falls debris' spalled / weathered from the slopes above were noted. Without significant reprofiling or meshing of the slopes, such degradation of the slopes will invariably continue. To address this hazard in any proposed re-development of the site it is advised a combination of stand-off areas, rock catch ditches and fencing / bunding is adopted, to segregate the slopes from the areas of development, all sized to the scale and profile of the respective slopes. (ie. higher, steeper slopes will require more substantial protective measures than lower slacker angled slopes). Where it proves necessary for development to occur close to the various rock faces, then more rigorous assessment and appropriate stabilisation of the rock slopes will be required.

6 Land Suitability Assessment

6.1 Introduction

Following the preliminary environmental and geotechnical assessments, a land suitability assessment has been undertaken, identifying the suitability of the site for development to various land uses. The assessment considers the potential implications of different development options solely in respect of the geo-environmental and geotechnical issues so that these factors can be included in the wider decision process used in the formulation of an Area Action Plan. Accordingly, it is not the intention that the suitability summary in Table 6-1 provides evidence that a particular development type is appropriate or feasible in the context of wider issues that must be considered to make such a determination (e.g. transport access considerations).

6.2 Assessment

The assessment has been undertaken considering the four areas of the site as defined within this report as Areas A, B, C and D. (Appendix B). The assessment considers the suitability of different land uses using the planning land use classification (defined in Appendix F) within each of the site areas. The land suitability assessment is included as Table 6-1.

Table 6-1 Land suitability summary

Use Class	Area A	Area B	Area C	Area D
A & B Commercial and Industrial	***Development feasible*** Made Ground is present in this area, potentially ~3.5m thick, this needs to be confirmed through Ground Investigation. There is potential for contamination and potential for landfill gas generation in this area, though overall the risk is low, except for local hotspots of contamination including buried fuel tanks. Building foundations are likely to require ground improvements or piling. Gas protection measures for buildings may be necessary depending on landfill gas regime. Ground Investigation is required to confirm details. Suitability of this area for the use of soakaways would need to be confirmed through Ground Investigation given the presence of Made Ground. Should the Ground Investigation evidence that soakaways could be adopted in this area, water discharged to soakaways would need to be of a suitable quality for discharge to	***Development feasible*** Relatively thin Made Ground is likely to be present in this area, though this needs to be confirmed through Ground Investigation. There is potential for contamination and potential for landfill gas generation in this area, though overall the risk is lower than in Area A, with the exception of local contamination hotspots such as the vehicle refuelling area (diesel) and the electrical substation. There is a moderate landfill gas risk in this area due to thick deposits of Made Ground in the adjacent areas A & C. Ground Investigation is required to confirm ground conditions and landfill gas regime. Foundations are likely to be of the shallow/spread foundation type unless buildings are to have significant structural loads. Development needs to consider slope stability around the quarry	***Development feasible but more challenging*** Deep and variable Made Ground is understood to be present up to 20m thick, though this is subject to confirmation through Ground Investigation. Higher potential contamination and landfill gas risk with associated higher remediation requirements Foundations likely to require ground treatment or piling, unless buildings can tolerate variable ground conditions Development needs to consider slope stability around quarry walls. Safe standoff distances required from toes of slopes. Slope stability issues more easily managed by overarching management company. Soakaways are unlikely to be suitable in much of this area given the presence of extensive landfilling/Made Ground. This will be confirmed through Ground Investigation. Should the Ground Investigation suggest that soakaways could be adopted in this	***Development feasible but would require significant works to provide appropriate vehicular access*** Limited, if any, Made Ground. Needs to be confirmed through Ground Investigation. There is moderate landfill gas risk in this area due to thick deposits of Made Ground in the adjacent area C. Foundations are likely to be of the shallow/spread foundation type unless buildings are to have significant structural loads. Development needs to consider slope stability around quarry walls. Safe standoff distances required from toes of slopes. Slope stability issues more easily managed by overarching management company. Ground Investigation will be required to confirm the suitability (competence) of the Chalk for use of soakaways. Provided the results are favourable, use of soakaways could be adopted in this area. Water discharged to soakaways would need to be of a suitable quality for discharge to the Principal Chalk

	the Principal Chalk aquifer e.g clean runoff.	walls. Safe standoff distances from toes of slopes will need to be adopted. Slope stability issues could be more easily managed by an overarching management company managing the site. Ground Investigation will be required to confirm the suitability (competence) of the Chalk for use of soakaways. Provided the results are favourable, use of soakaways could be adopted in this area. Water discharged to soakaways would need to be of a suitable quality for discharge to the Principal Chalk aquifer e.g clean runoff. Soakaways will likely be located remote from the built development to address the potential dissolution risk.	area, water discharged to soakaways would need to be of a suitable quality for discharge to the Principal Chalk aquifer e.g clean runoff. Any soakaways will likely be located remote from the built development to address the potential dissolution risk.	aquifer e.g clean runoff. Soakaways will likely be located remote from the built development to address the potential dissolution risk.
C Assorted residential	***Development feasible*** Issues are largely as for A&B land use classes, though as this is a more sensitive end use more appropriate remedial measures may be required, subject to the findings of the Ground Investigation.	***Development feasible but more challenging*** Issues are largely as for A&B land use classes, though as this is a more sensitive end use more appropriate remedial measures may be required, particularly considering slope stability and subject to the findings of the Ground Investigation. The risk concerning slope stability is more difficult to manage for residential land use. Potentially significant slope remediation works	***Development feasible but significant challenges*** Issues are largely as for A&B land use classes, though as this is a more sensitive end use more appropriate remedial measures may be required, particularly considering slope stability and subject to the findings of the Ground Investigation. There is a higher risk regarding end user sensitivity associated with the generation of landfill gas. Appropriate mitigation measures	***Development feasible but would require significant works to provide appropriate vehicular access*** Issues are largely as for A&B land use classes, though as this is a more sensitive end use more appropriate remedial measures may be required, particularly considering slope stability and subject to the findings of the Ground Investigation. The risk concerning slope stability is more difficult to manage for residential land use. Potentially significant slope remediation works

		would be required to address end user risk for residential development.	would need to be adopted following Ground Investigation. Dwellings located on a historic landfill site may be regarded as undesirable by prospective residents. The risk concerning slope stability is more difficult to manage for residential land use. Potentially significant slope remediation works would be required to address end user risk for residential development.	would be required to address end user risk for residential development.
D1 Non-residential institutions	***Development feasible*** Issues are largely as for A&B land use classes.	***Development feasible*** Issues are largely as for A&B land use classes.	***Development feasible but more challenging*** Issues are largely as for A&B land use classes.	***Development feasible but would require significant works to provide appropriate vehicular access*** Issues are largely as for A&B land use classes.
D2 Assembly and leisure	***Development feasible*** Issues are somewhere between those for A, B & D1 and the more sensitive land use classification of land use C. More sensitive land uses would include uses such as allotments or public open space which may require more appropriate remedial measures following the findings of the Ground Investigation.	***Development feasible*** Issues are somewhere between those for A, B & D1 and the more sensitive land use classification of land use C. More sensitive land uses would include uses such as allotments or public open space which may require more appropriate remedial measures following the findings of the Ground Investigation. Depending upon the ultimate end land use and the management strategy for the site, thought	***Development feasible but more challenging*** Issues are somewhere between those for A, B & D1 and the more sensitive land use classification of land use C. More sensitive land uses would include uses such as allotments or public open space which may require more appropriate remedial measures following the findings of the Ground Investigation. Depending upon the ultimate end land use and the management	***Development feasible but would require significant works to provide appropriate vehicular access*** Issues are somewhere between those for A, B & D1 and the more sensitive land use classification of land use C. More sensitive land uses would include uses such as allotments or public open space which may require more appropriate remedial measures following the findings of the Ground Investigation. Depending upon the ultimate end land use and the management

		would need to be given to managing the slope stability risk.	strategy for the site, thought would need to be given to managing the slope stability risk.	strategy for the site, thought would need to be given to managing the slope stability risk.

1

7 Conclusions and Recommendations

7.1 Site history and potential sources of contamination

Land uses on the site currently include light industrial use, vehicle storage and the manufacture of secondary aggregates. Historically the site has had a protracted period of use as a Chalk quarry and for the manufacture of cement.

Much of the potential contamination hazard across the site arises from the presence of historic landfill material and made ground. It is possible that underground process pipework and storage tanks could be present across much of the site, especially in Areas A & B, where cement manufacturing was focussed. It is unknown whether any of the historical infrastructure across the site was formally decommissioned and reused or removed from site, or whether much of these remain buried on site. There is potential for historical waste liquids to be contained within any buried pipework or storage tanks remaining on site.

7.2 Environmental risk assessment summary

The following conclusions can be drawn from the preliminary environmental risk assessment undertaken for the site under present conditions:

- The risk to workers and site users from both current and historic land use on and around the site is assessed as being low to moderate. Due to the extent of made ground of unknown composition, historic landfill, and the potential for buried infrastructure or pipework, there is potential for contaminated materials to be encountered during ground investigation or construction works. The exposure is likely to be short-term, however potential exposure should be considered during the design of any ground investigation and construction works. It is assumed that construction activities will not increase the potential for long term exposure to contaminated materials. Risks to potential future users of the site would need to be assessed once a development masterplan for the site has been formulated.
- The risk to groundwater from both current and historic land use on and around the site is assessed as being low to moderate. As a Principal Aquifer the risk of contamination to the Chalk is most significant. The fracture network within the Chalk allows contaminants to be readily transported throughout the unit. Any groundworks related to ground investigation or construction could create additional pathways from near surface contamination directly to the underlying Chalk.
- The risk to surface water (River Adur) from both current and historic land use on and around the site is assessed as being low to moderate risk. Any leachable near surface contaminants are likely to be mobilised either to the site drainage system or groundwater. The site drainage system discharges, at least in part, directly to the river and groundwater may also be discharged to the river. There is potential for dilution of contaminants within the river.
- The risk to the Adur Estuary SSSI from both current and historic land use on and around the site is assessed as being low risk. Any leachable near surface contaminants are likely to be mobilised either to the site drainage system or groundwater. The site drainage system discharges, at least in part, directly to the river and groundwater may also be discharged to the river. There is potential for dilution of contaminants within the river and

contaminants are unlikely to reach the Adur Estuary SSSI at significant concentrations.

7.3 Conclusions

The following conclusions are made based upon our desk study review:

- Likely to encounter significant thicknesses of Made Ground over Areas A and C and some made ground in Area B.
- Development is not anticipated in Area D.
- Development on site would need to incorporate stand-off areas from the quarry walls and/or other mitigation measures to manage the degradation of slopes.
- Reprofiling or meshing of the quarry slopes could be adopted but will likely to be too costly to implement across the site.
- Given the vast quantity of made ground that is likely to be present across the site, it is unlikely to be feasible to remove it from site.
- It may be necessary to remove identified point sources and local 'hotspots' of contamination from site, for example the buried fuel tank in Area A.
- Some areas of waste may be left in situ and appropriately capped.
- Buildings constructed on site may require gas protection measures such as suspended floor slabs and/or ventilated sub-floor voids.

7.4 Recommendations

In order to better understand the contamination related and geotechnical hazards across the site, the following recommendations are made:

- Locate PBA geo-environmental report and associated site investigation.
- Identify development plans for the site, this will allow a targeted Ground Investigation to be undertaken, reflecting the needs of the proposed development.
- Undertake a ground investigation to include:
    - The sinking of boreholes and trial pits across the site to investigate the ground and groundwater conditions;
    - Groundwater monitoring to establish the behaviour of the water table beneath the site;
    - Confirm presence and extent of made ground and infilling across the site
    - Sampling of sediments and groundwater samples to establish any contamination;
    - Monitoring of ground gases across the site.

Appendices

A Maps

Map 1 Site Location

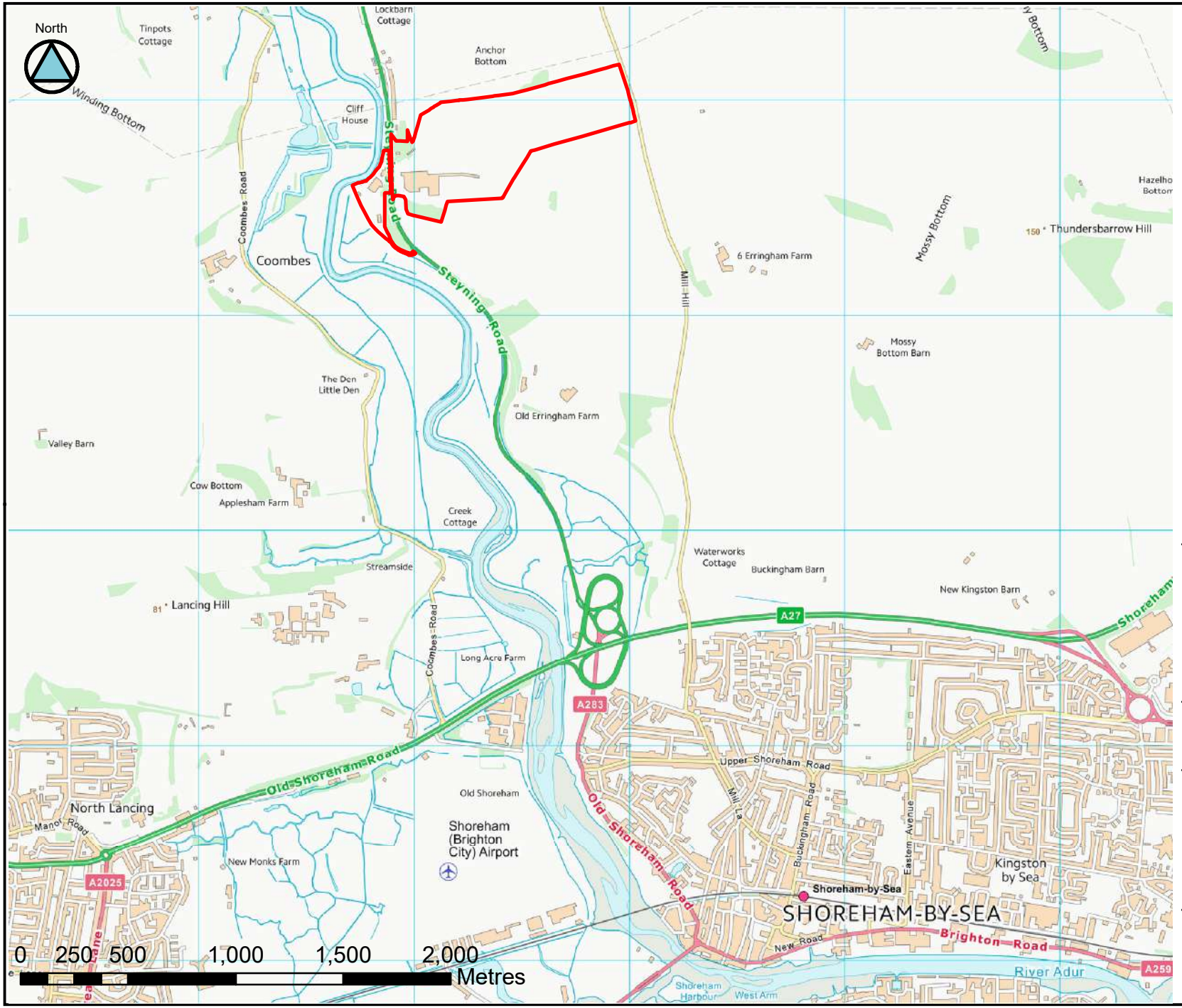
Map 2 Topographical Cross-sections

Map 3 Bedrock Geology

Map 4 Superficial (Drift) Geology

Map 5 Designated Sites

Map 6 Potentially Contaminative Land Uses

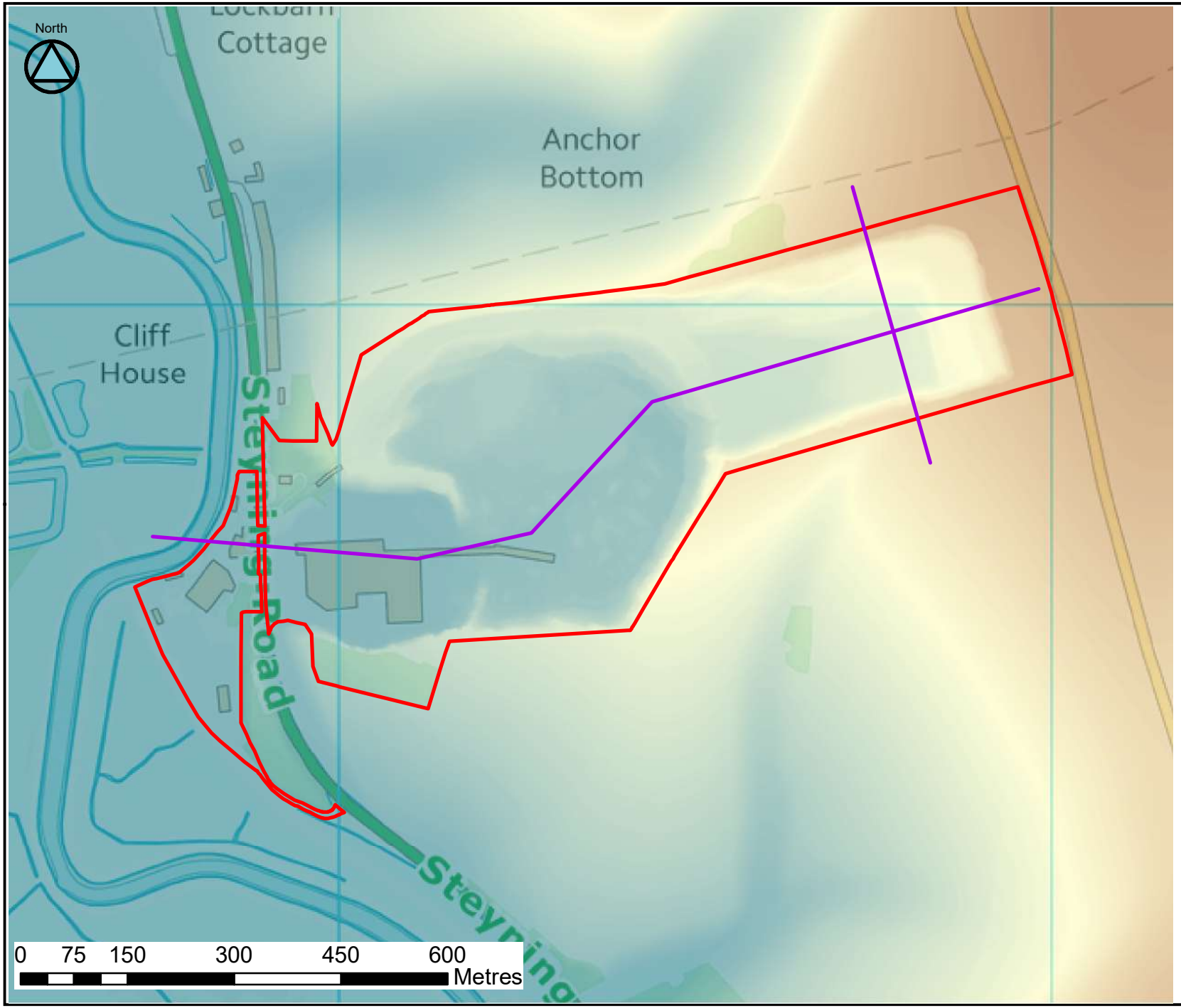


LEGEND

Site boundary

JBA consulting

Map 1
Site Location



LEGEND

Line of sections

Site boundary

LIDAR 1m DTM

mAOD

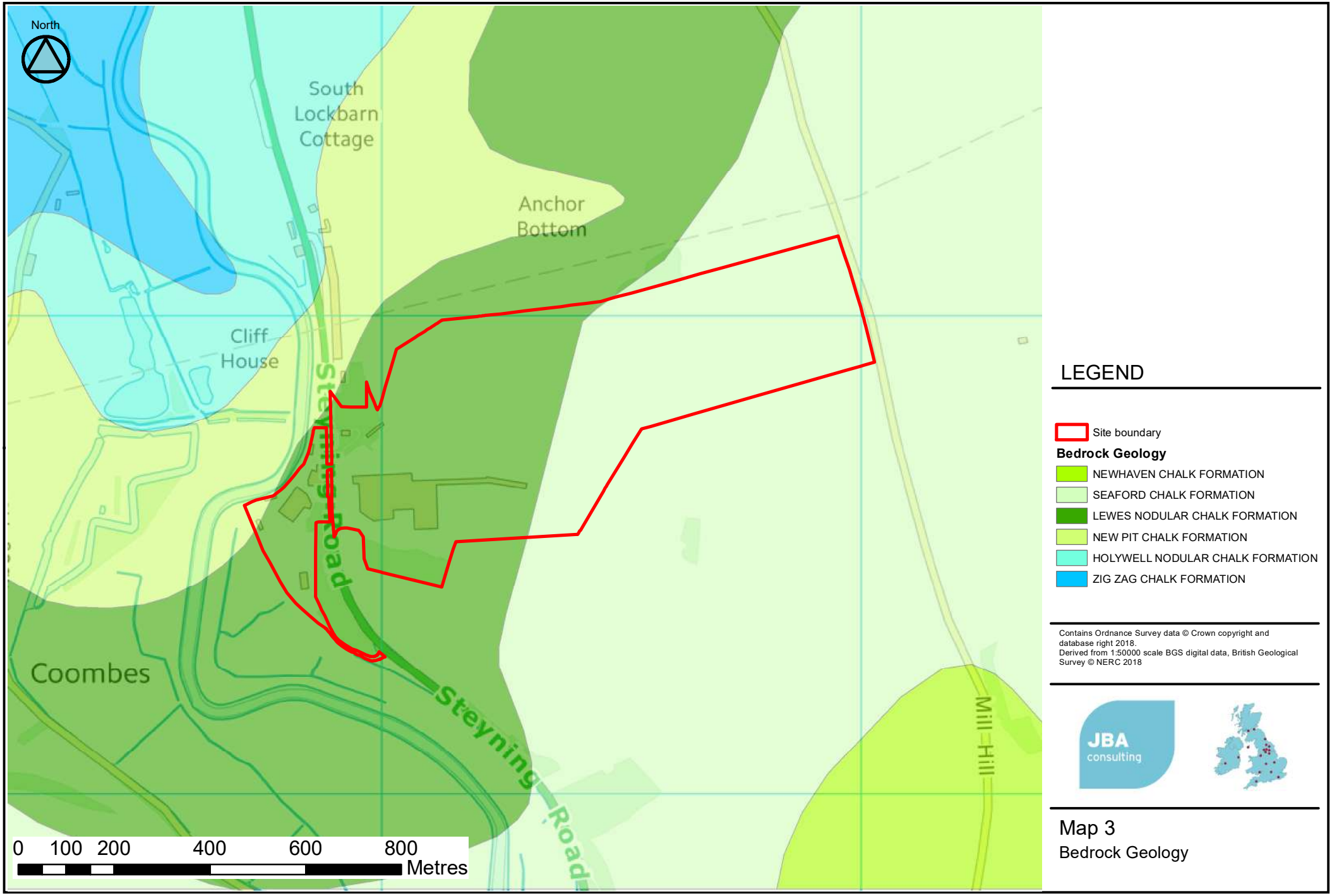
High : 145.67

Low : -0.45

JBA consulting

Map 2

Topographical Cross-sections



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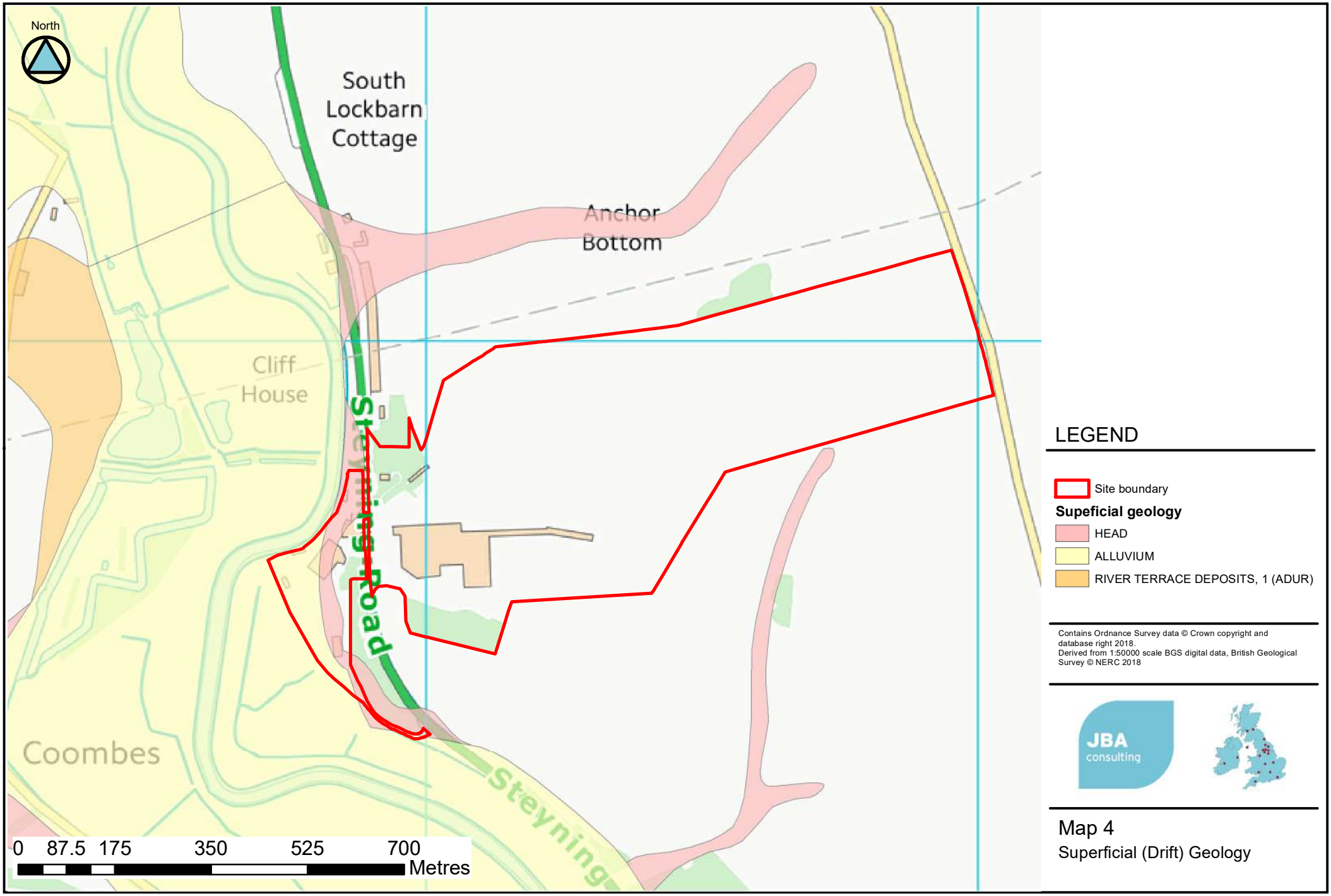
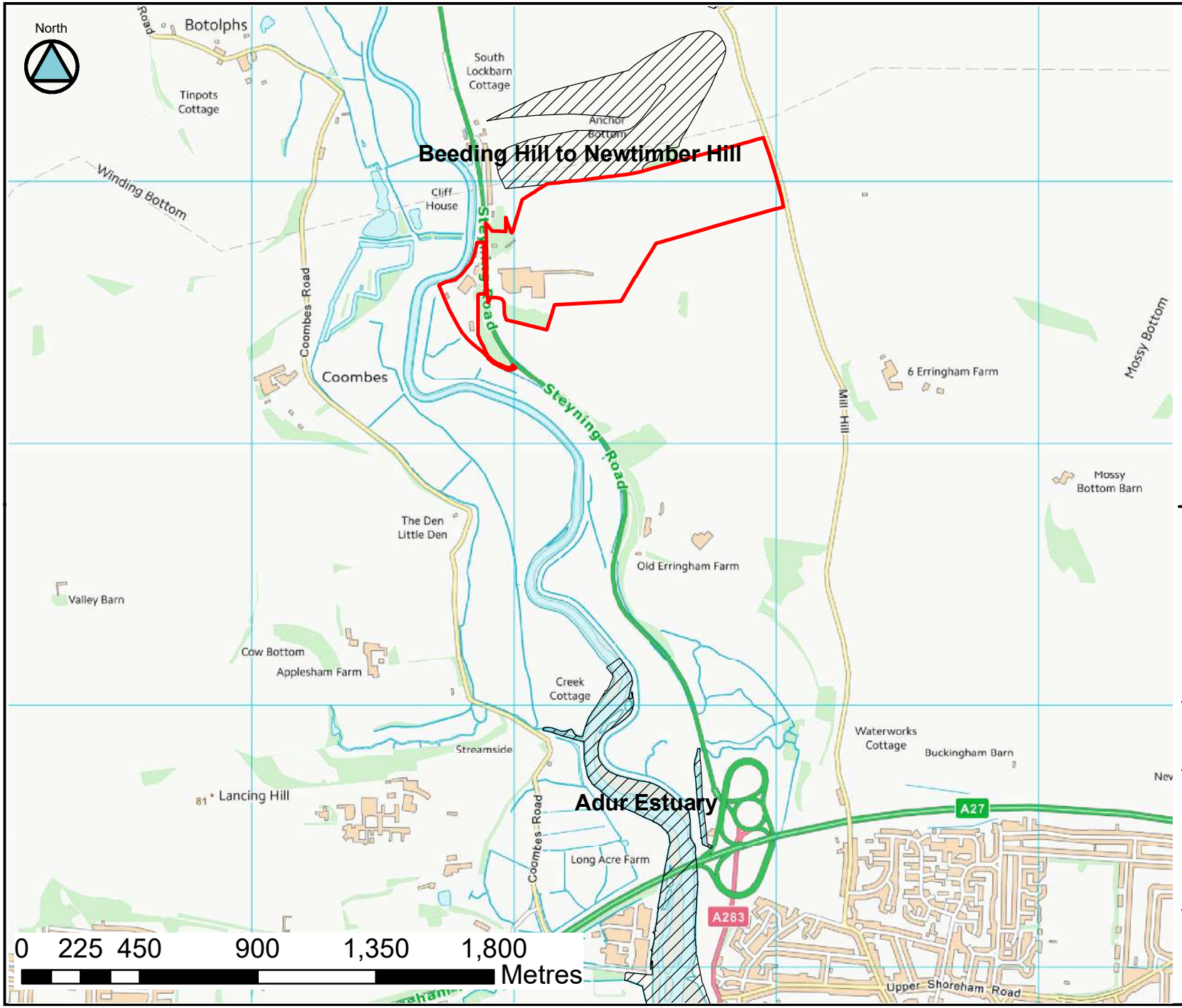
Map 3
Bedrock Geology


North
South Lockbarn Cottage
Anchor Bottom
Cliff House
Steyning Road
Coombes
Steyning
0 87.5 175 350 525 700
Metres
LEGEND
Site boundary
Supeficial geology
HEAD
ALLUVIUM
RIVER TERRACE DEPOSITS, 1 (ADUR)
Contains Ordnance Survey data © Crown copyright and database right 2018.
Derived from 1:50000 scale BGS digital data, British Geological Survey © NERC 2018
JBA consulting
Map 4
Superficial (Drift) Geology



LEGEND

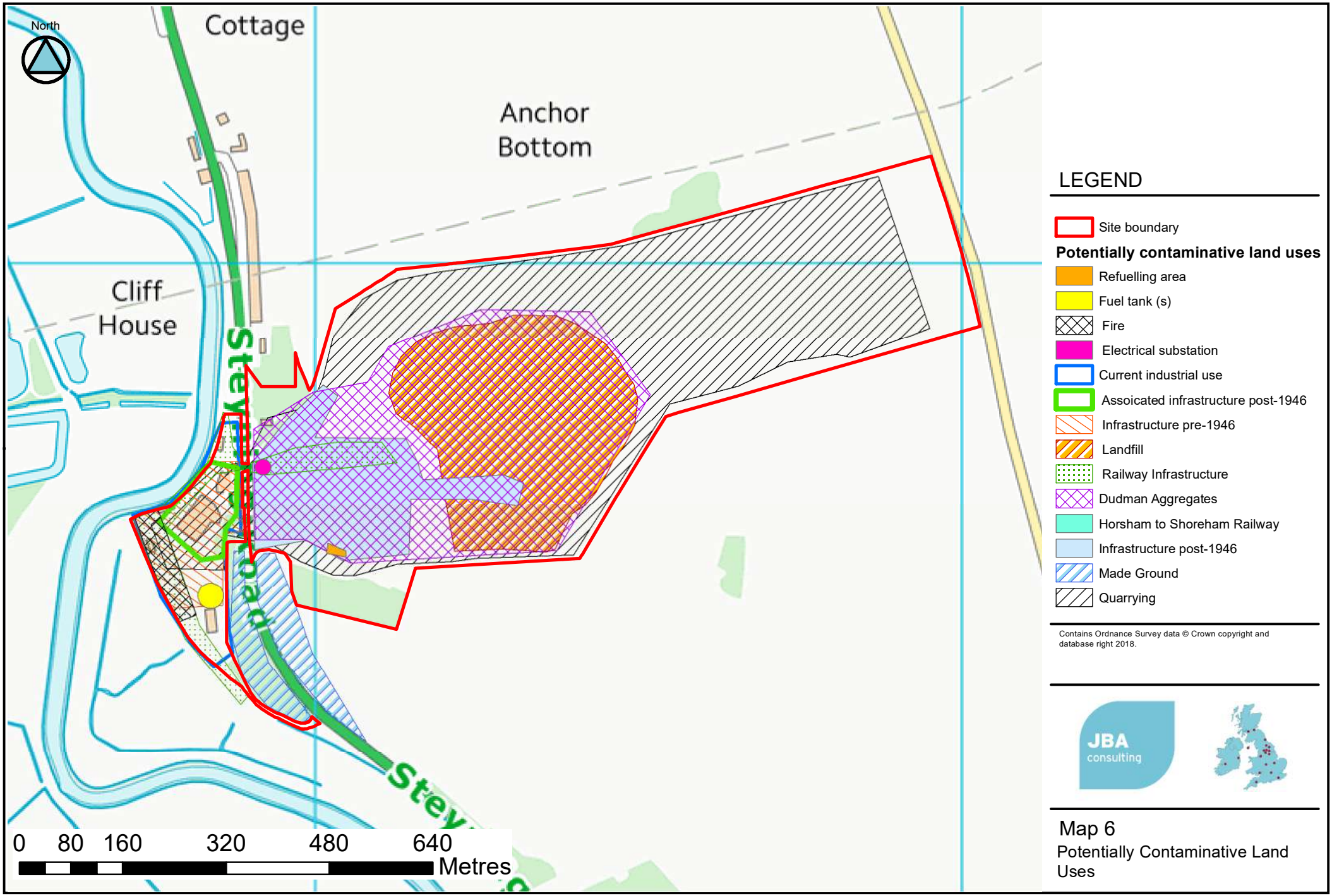
Site boundary

SSI

JBA consulting

Map 5

Designated Sites



LEGEND

- Site boundary

Potentially contaminative land uses

- Refuelling area
- Fuel tank (s)
- Fire
- Electrical substation
- Current industrial use
- Assoicated infrastructure post-1946
- Infrastructure pre-1946
- Landfill
- Railway Infrastructure
- Dudman Aggregates
- Horsham to Shoreham Railway
- Infrastructure post-1946
- Made Ground
- Quarrying

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Map 6

Potentially Contaminative Land Uses

B Drawings

North

South Lockbarn Cottage

DACRE GARDENS

A283

Anchor Bottom

Cliff House

Area A

Area B

Area C

Area D

STEYNING ROAD

MILL HILL

A283

JBA consulting

35 Perrymount Road
Haywards Heath
West Sussex
RH16 3BW
United Kingdom

www.jbaconsulting.com

t +44 (0)1444 473 652
f +44 (0)8458 627 772
e info@jbaconsulting.com

Offices at Coleshill, Doncaster, Dublin, Edinburgh, Exeter, Glasgow, Haywards Heath, Isle of Man, Limerick, Newcastle, Newport, Peterborough, Saltaire, Skipton, Tadcaster, Thirsk, Wallingford and Warrington

TOPOGRAPHY OF SOUTH DOWNS SITE - INFORMED FROM ENVIRONMENT AGENCY 1m LIDAR

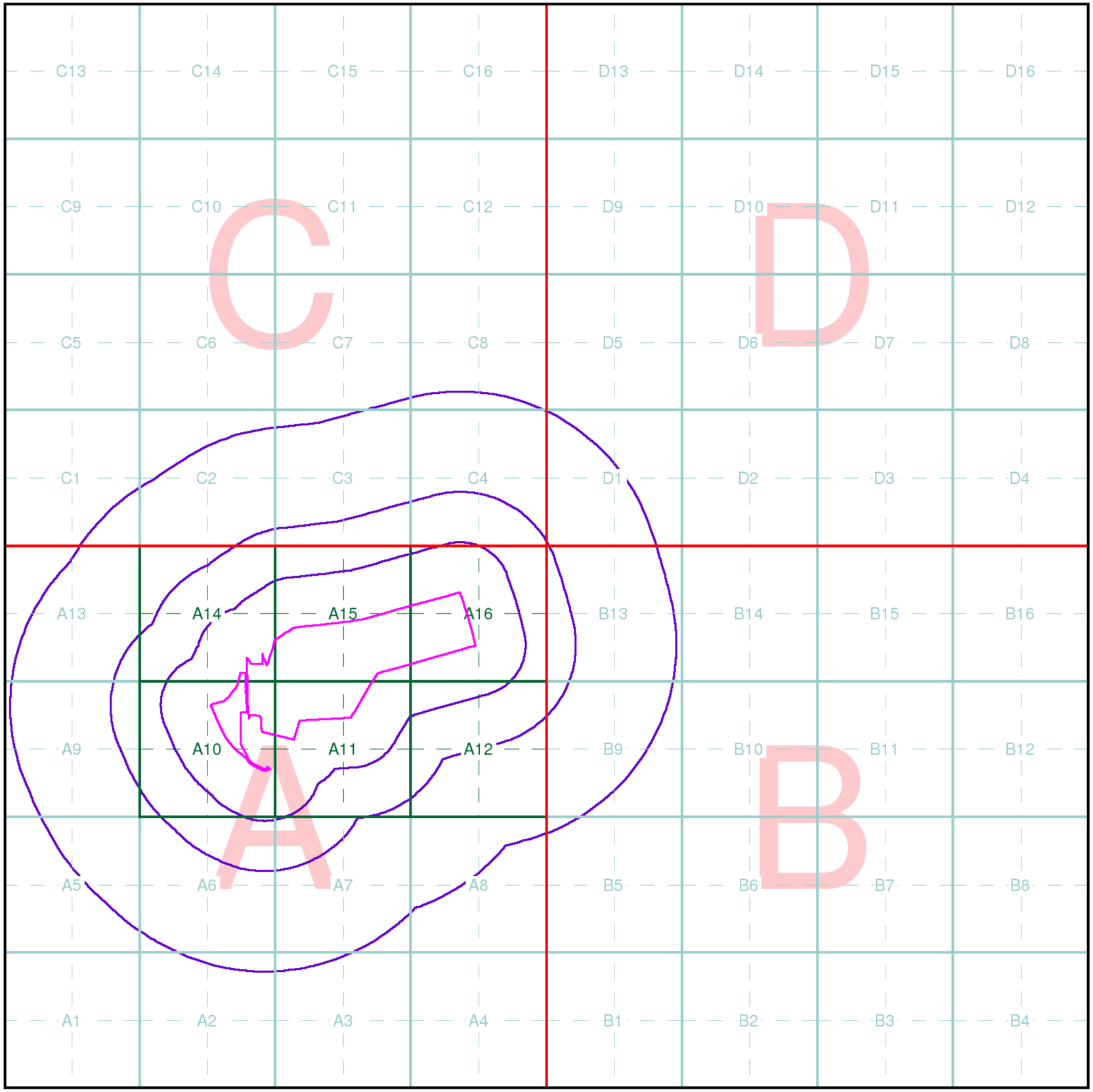
Scale: 1:2,500	Drawn	AB 21/08/2018
	Checked	IJ 21/08/2018
	Approved	IJ 21/08/2019

Digital File Name: Site_topo_A1.MXD

Drawing Number:	Sheet No.:	Status:	Rev.:
001	1 of 1	Final	A

Original @ A1

C Envirocheck Report



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Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice
Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment
A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant
A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:

Map data

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Environment Agency

NATURAL ENGLAND

Envirocheck reports are compiled from 136 different sources of data.

Client Details

Miss A Davis, JBA Consulting, Salt Mill, Saltaire, West Yorkshire, BD18 3LF

Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520350, 108800
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

Full Terms and Conditions can be found on the following link:
http://www.landmarkinfo.co.uk/Terms/Show/515

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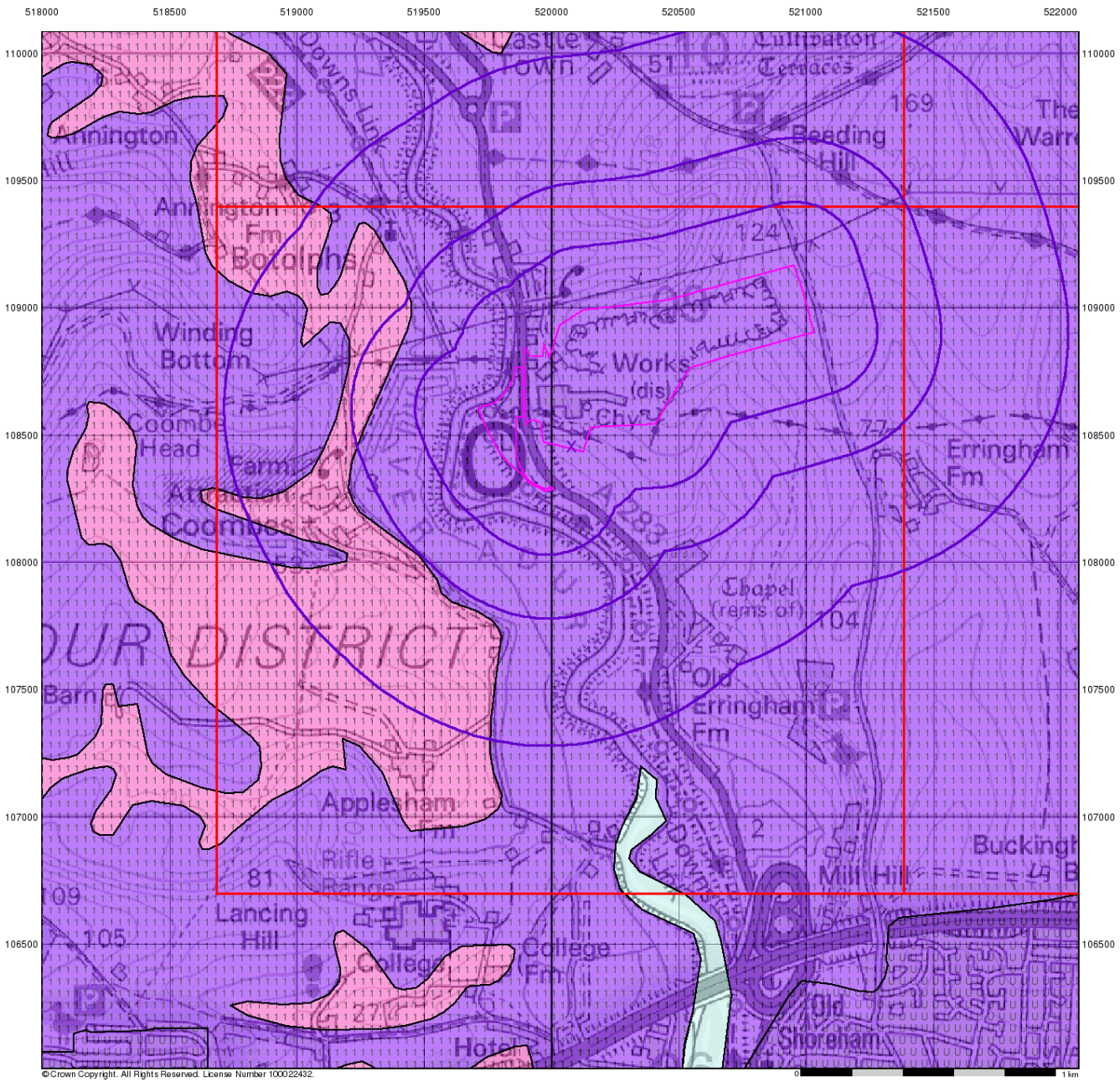

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Groundwater Vulnerability

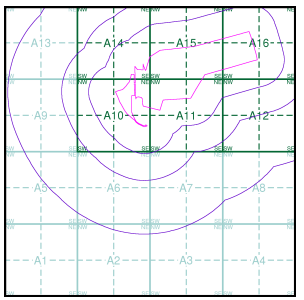
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes	Soil Classes
Major Aquifer (Highly Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Minor Aquifer (Variably Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Non Aquifer (Negligibly Permeable)	
Water or Sea	
Drift Deposit	

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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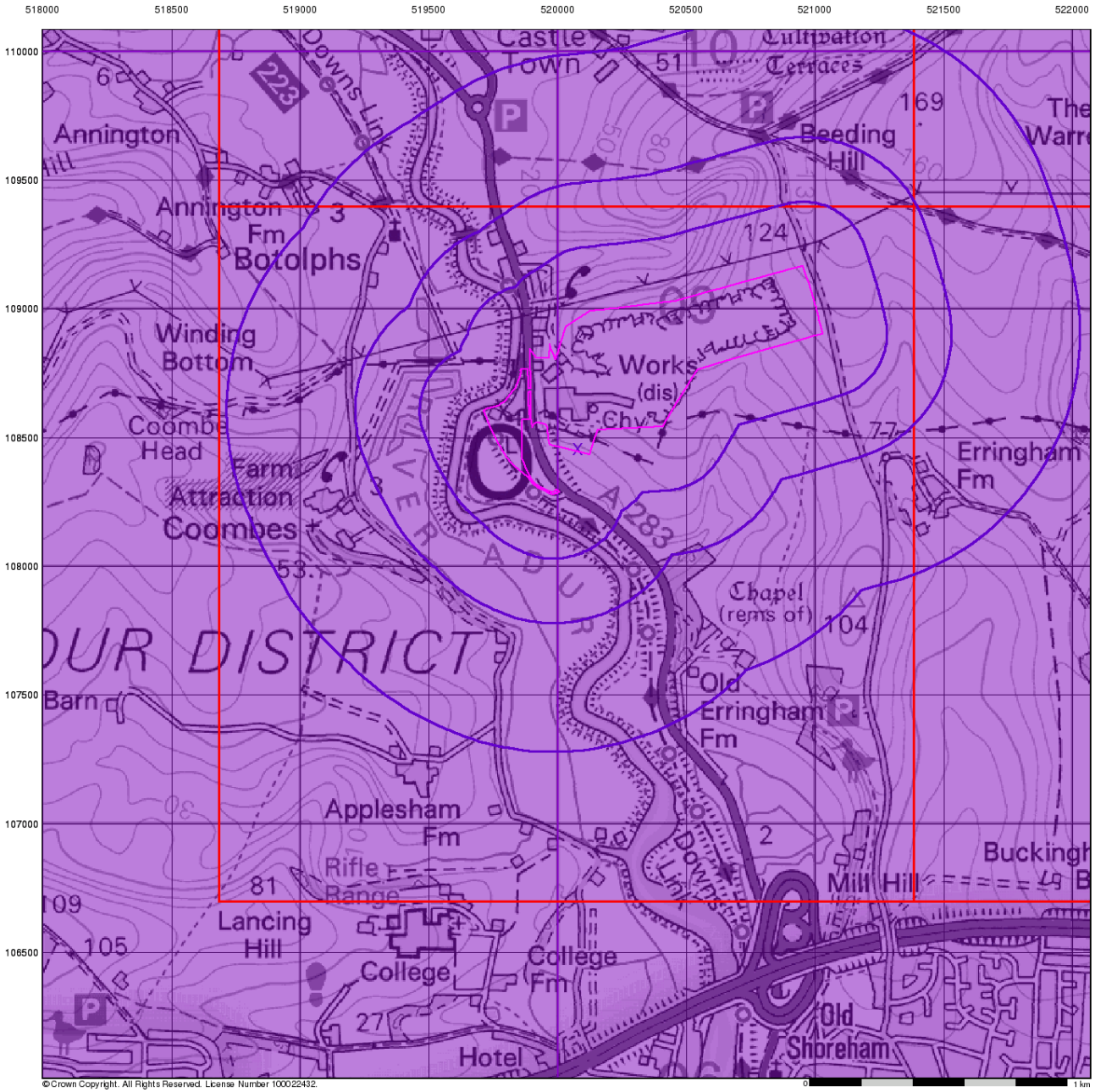

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Bedrock Aquifer Designation

General

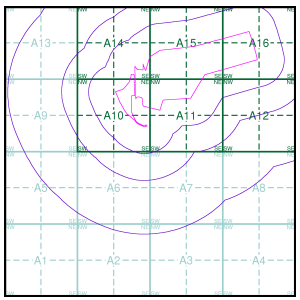
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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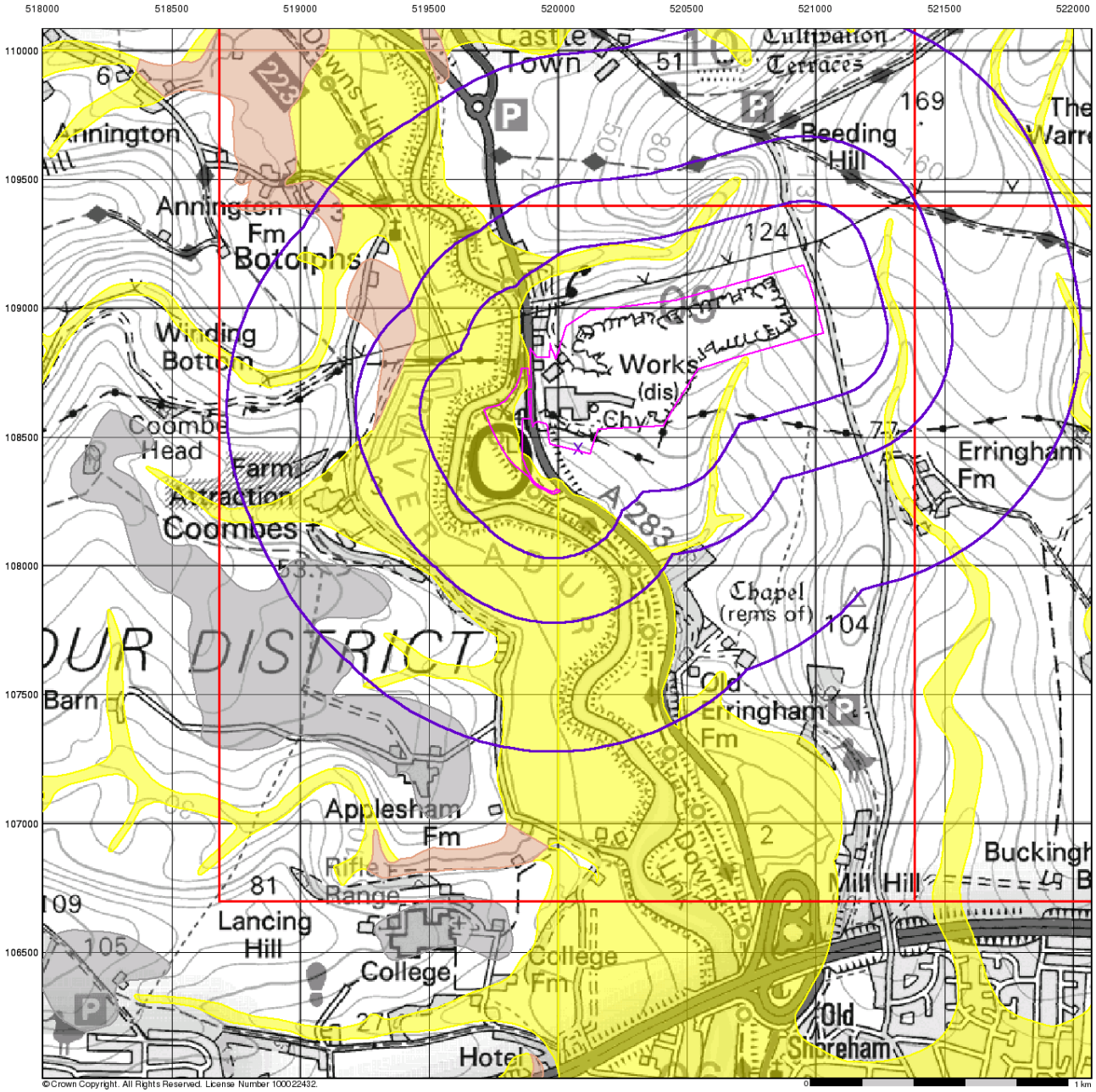

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Superficial Aquifer Designation

General

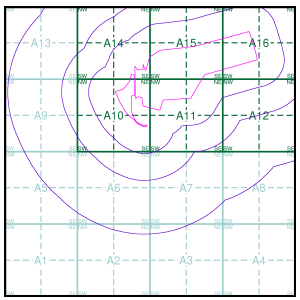
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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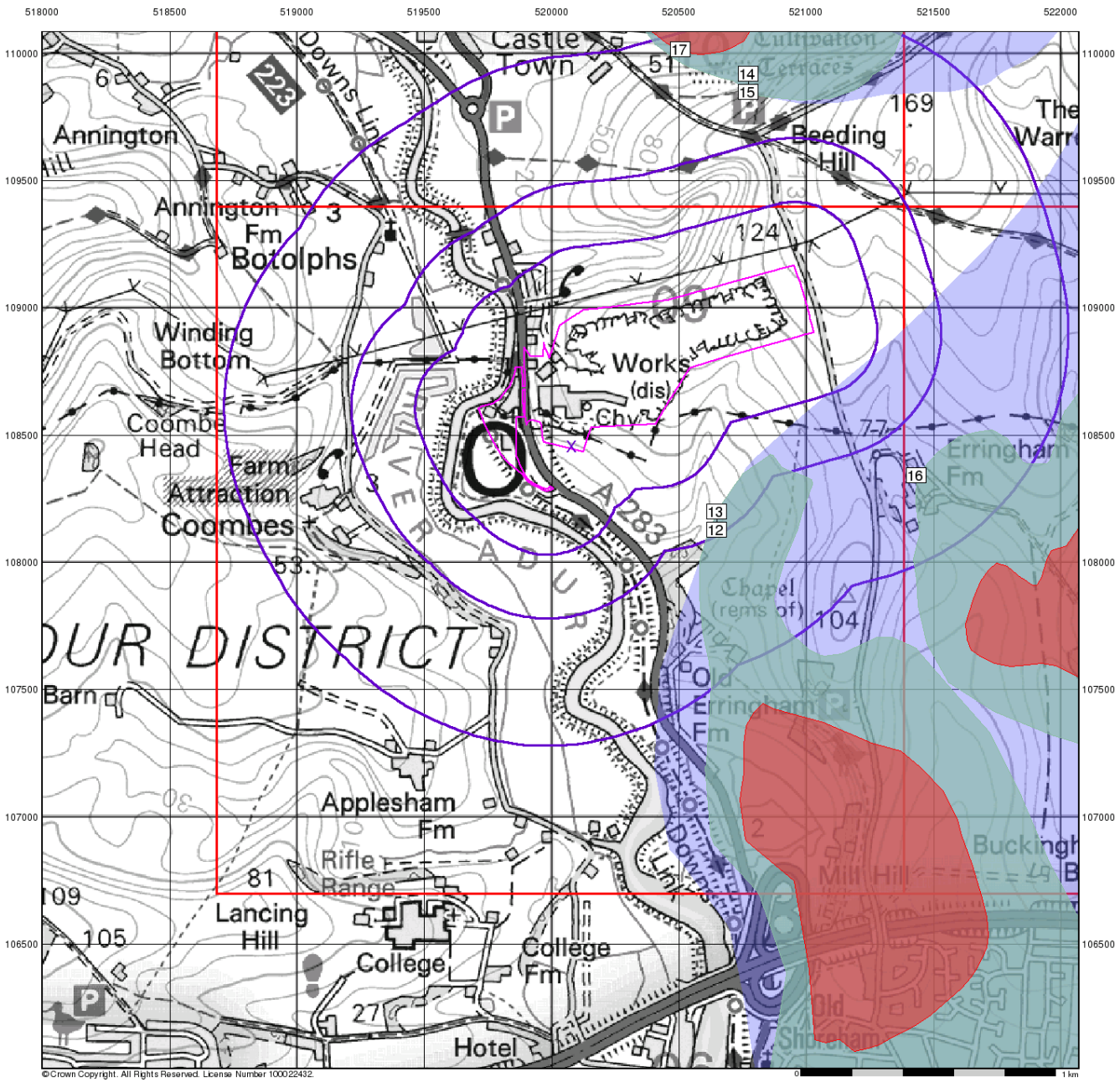
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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Source Protection Zones

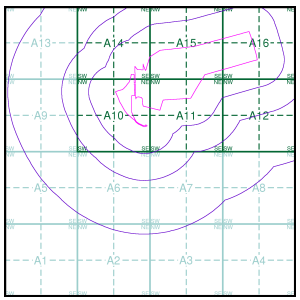
General

Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)

Site Sensitivity Context Map - Slice A



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Site Area (Ha):	44.36
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Site at 520371,108723

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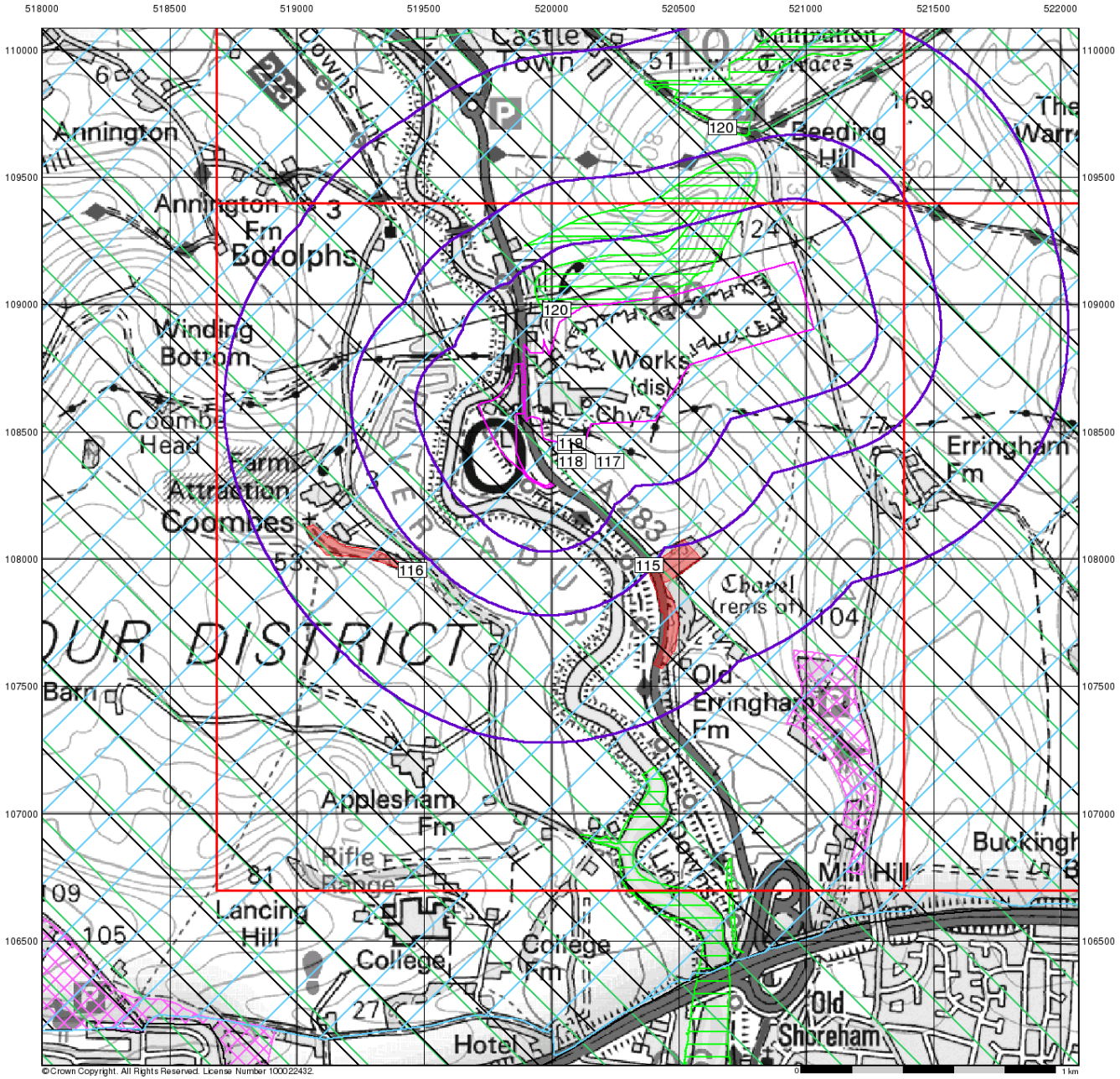

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Sensitive Land Uses

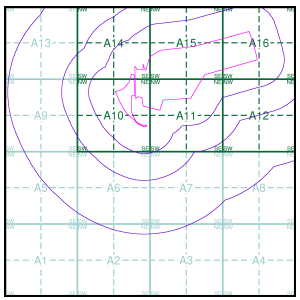
General

Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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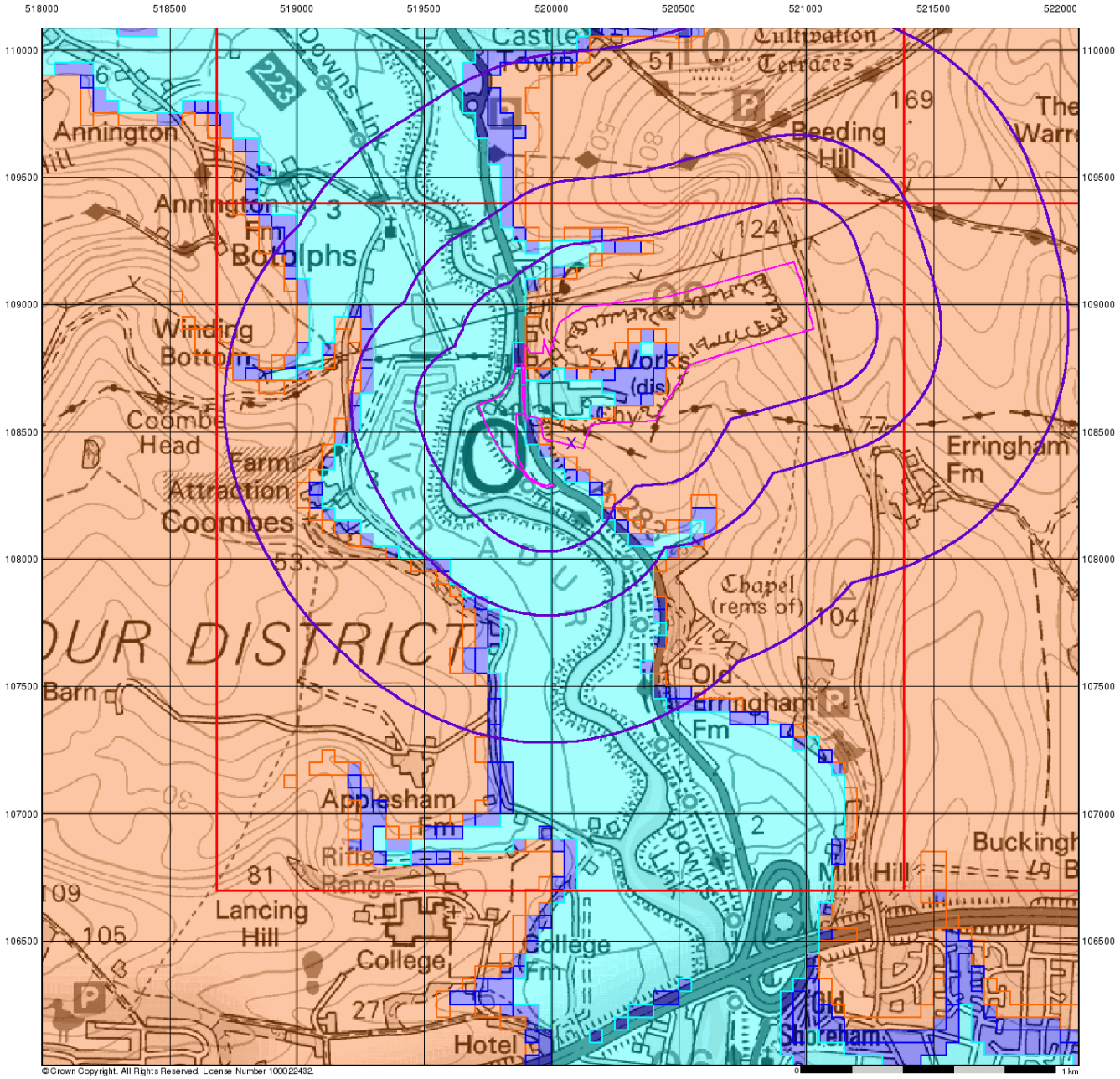

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BGS Flood GFS Data

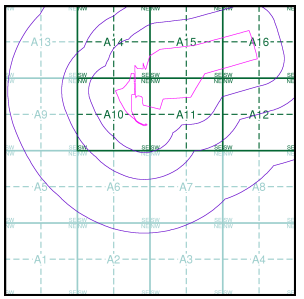
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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Envirocheck® Report:

Datasheet

Order Details:

Order Number:
170375371_1_1

Customer Reference:
2018s0642

National Grid Reference:
520080, 108450

Slice:
A

Site Area (Ha):
44.36

Search Buffer (m):
1000

Site Details:

Site at 520371,108723

Client Details:

Miss A Davis
JBA Consulting
Salt Mill
Saltaire
West Yorkshire
BD18 3LF

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Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.
In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

Report Version v53.0

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 4		1	1	3
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 5	2			
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 5		Yes		
Pollution Incidents to Controlled Waters	pg 6			1	2
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality	pg 6	1	1		
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 6	8			3 (*8)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 11	Yes	n/a	n/a	n/a
Drift Deposits			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 11	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 11	Yes	n/a	n/a	n/a
Source Protection Zones	pg 11		1	1	4
Extreme Flooding from Rivers or Sea without Defences	pg 12	Yes	Yes	n/a	n/a
Flooding from Rivers or Sea without Defences	pg 17	Yes	Yes	n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences	pg 18	Yes	Yes	n/a	n/a
OS Water Network Lines	pg 18		24	24	35

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 28	1			1
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 28	1			
Local Authority Landfill Coverage	pg 28	3	n/a	n/a	n/a
Local Authority Recorded Landfill Sites	pg 28	1			2
Registered Landfill Sites	pg 29	2			
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS 1:625,000 Solid Geology	pg 31	Yes	n/a	n/a	n/a
BGS Recorded Mineral Sites	pg 31	4		1	2
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities	pg 32	2			
Non Coal Mining Areas of Great Britain	pg 32	Yes		n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 32	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 32	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 33	Yes	Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 33	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 34	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 35	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas	pg 35	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Industrial Land Use					
Contemporary Trade Directory Entries					
Fuel Station Entries					
Gas Pipelines					
Underground Electrical Cables					
Sensitive Land Use					
Ancient Woodland	pg 36			1	1
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas	pg 36	1			
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks	pg 36	1			
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 36	1			
Ramsar Sites					
Sites of Special Scientific Interest	pg 36	1			
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14SE (N)	0	1	520000 108750
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A10NE (W)	0	1	520000 108455
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A11NW (N)	0	1	520079 108550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A11SW (S)	0	1	520050 108350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A10NE (SW)	0	1	520000 108400
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11NW (S)	0	1	520079 108455
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A15SW (NE)	0	1	520350 108800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A15SE (NE)	0	1	520450 108800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11NE (NE)	0	1	520400 108650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11NW (NW)	0	1	520050 108500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A15SW (NE)	0	1	520300 108850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A15SW (NE)	0	1	520350 108850
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A15SE (NE)	0	1	520400 108850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11NW (NE)	0	1	520250 108600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11NW (NE)	0	1	520350 108600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A10NE (W)	0	1	519950 108455
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SE (NW)	0	1	519900 108750
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A15SW (N)	0	1	520150 108750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A15SW (NE)	0	1	520300 108750
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A15SE (NE)	0	1	520450 108750
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A10NE (NW)	0	1	519950 108700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A10NE (N)	0	1	520000 108700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11NW (N)	0	1	520079 108700
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11NW (N)	0	1	520100 108700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11NW (N)	0	1	520150 108700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11NW (NE)	0	1	520150 108550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11NW (NE)	0	1	520200 108550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A10NE (W)	14	1	520000 108450
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11NW (S)	39	1	520079 108400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11SW (S)	45	1	520079 108350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11NW (SW)	51	1	520050 108400
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14SE (N)	83	1	519950 108950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11SW (S)	84	1	520100 108350
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A15NW (N)	113	1	520079 109100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A15NW (N)	133	1	520050 109100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11SW (SE)	136	1	520150 108300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SE (N)	145	1	519950 109050
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A15NW (N)	151	1	520150 109150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A15NW (N)	156	1	520079 109150
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A15NW (N)	177	1	520350 109200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A15NW (N)	183	1	520250 109200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A15NW (N)	195	1	520200 109200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11SW (SE)	197	1	520200 108250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11SW (SE)	212	1	520200 108200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A15NW (N)	239	1	520200 109250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A15NW (N)	250	1	520150 109250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A15NW (N)	256	1	520079 109250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11SW (SE)	259	1	520250 108200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NE (N)	272	1	519950 109200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11SW (SE)	280	1	520250 108150
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NE (N)	288	1	520000 109250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NE (N)	313	1	519950 109250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11SW (SE)	324	1	520300 108150
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11SE (SE)	326	1	520550 108250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NE (N)	341	1	519900 109250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11SW (SE)	348	1	520300 108100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11SE (SE)	372	1	520550 108200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NE (N)	383	1	519900 109300
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A11SE (SE)	396	1	520450 108150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11SE (SE)	404	1	520500 108150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NE (N)	410	1	519850 109300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A9NE (W)	416	1	519300 108650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A11SE (SE)	418	1	520550 108150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (W)	438	1	519300 108750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A6NW (SW)	443	1	519600 108000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A9NE (W)	463	1	519250 108500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A9NE (W)	463	1	519250 108600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A9NE (W)	466	1	519250 108650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11SE (SE)	466	1	520550 108100
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A6NW (SW)	473	1	519550 107950
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A6NW (SW)	480	1	519600 107950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A6NE (SW)	486	1	519750 107850
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A7NE (SE)	488	1	520400 108000
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A6NW (SW)	490	1	519650 107900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11SE (SE)	496	1	520450 108050
1	**Discharge Consents** Operator: Dacre Gardens Residents Co Ltd Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Stw Serving 13-18 Dacre Gardens, Upper Beeding, West Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Supplied Reference: P010012 Permit Version: 1 Effective Date: 13th September 2001 Issued Date: 13th September 2001 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Freshwater River **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 10m	A14SE (N)	192	2	519890 109060
2	**Discharge Consents** Operator: Packwood Property Ltd Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Location: Dacre Gardens, Upper Beeding Dacre Gardens, Upper Beeding, Steyning, West Sussex, Bn44 3td Authority: Environment Agency, Southern Region Catchment Area: Adur Estuary & Freshwater Tributaries Reference: A02018 Permit Version: 1 Effective Date: 19th January 1987 Issued Date: 19th January 1987 Revocation Date: 29th November 2009 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Freshwater Stream Or River **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A14NE (N)	273	2	519870 109150

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	**Discharge Consents** Operator: Mrs Dragana Standing Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Location: New Cottages, Applesham Farm, Coombes, Lancing West Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Supplied Reference: P07352 Permit Version: 1 Effective Date: 30th October 1998 Issued Date: 30th October 1998 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Freshwater River **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A6SE (S)	689	2	519750 107630
4	**Discharge Consents** Operator: Mr D & Mrs J Maclead Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Old Rectory Cottage, Lancing Old Rectory Cottage, Coombes Road, Coombes, Lancing, West Sussex, Bn15 0rs Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: P04285 Permit Version: 1 Effective Date: 15th June 1992 Issued Date: 15th June 1992 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Into Land Receiving Water: Into Land **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 100m	A9SE (SW)	725	2	519180 108050
4	**Discharge Consents** Operator: Mr & Mrs N X Bell Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Old Rectory Cottage, Lancing Old Rectory Cottage, Coombes Road, Coombes, Lancing, West Sussex, Bn15 0rs Authority: Environment Agency, Southern Region Catchment Area: Not Supplied Reference: P04285 Permit Version: 1 Effective Date: 15th June 1992 Issued Date: 15th June 1992 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Into Land Receiving Water: Into Land **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 10m	A9SE (SW)	725	2	519180 108050
5	**Local Authority Pollution Prevention and Controls** Name: Dudman Waste And Environmental Ltd Location: Upper Beeding Cement Works Authority: Adur District Council, Environmental Health Department Permit Reference: PPC 44/13 Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG3/16 Mobile screening and crushing processes **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A10NE (N)	0	3	520023 108621
5	**Local Authority Pollution Prevention and Controls** Name: Blue Circle Cement Location: Shoreham Depot, STAYNING, West Sussex, RH Authority: Horsham District Council, Environmental Health Department Permit Reference: Epa/App/14 Dated: Not Supplied Process Type: Local Authority Air Pollution Control Description: PG3/1Blending, packing, loading and use of bulk cement **Status: Authorisation revokedRevoked** Positional Accuracy: Manually positioned to the address or location	A10NE (NW)	0	4	520001 108601
	Nearest Surface Water Feature	A10SE (SW)	2	-	519973 108277

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	**Pollution Incidents to Controlled Waters** Property Type: Private Sewage (Non-PLC): Sewage Treatment Works Location: Coombes Road, COOMBES Authority: Environment Agency, Southern Region Pollutant: Oils - Diesel (Including Agricultural) Note: Mini Bus Crashed In Ditch Incident Date: 14th July 1998 Incident Reference: 2695 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Poor Operational Practice Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A10NW (W)	330	2	519400 108500
7	**Pollution Incidents to Controlled Waters** Property Type: Other General Premises Location: West Bank River Adur Authority: Environment Agency, Southern Region Pollutant: Miscellaneous - Inert Suspended Solids Note: Black Discharge From Pipe Into River Adur; Miscellaneous Premises: Other Incident Date: 16th August 1995 Incident Reference: 1406 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Miscellaneous/Other Pollution Type Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7SW (S)	742	2	520120 107550
8	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: HATFIELD Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Natural Note: No Pollution Found Incident Date: 9th September 1998 Incident Reference: THNE1998040541 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13SW (W)	934	2	518800 108800
	River Quality Name: Not Supplied GQA Grade: Unclassified Tidal River Reach: Not Supplied Estimated Distance (km): Not Supplied Flow Rate: Not Supplied Flow Type: Not Supplied Year: 1995	A10NE (NW)	0	2	519825 108619
	River Quality Name: Not Supplied GQA Grade: Unclassified Tidal River Reach: Not Supplied Estimated Distance (km): Not Supplied Flow Rate: Not Supplied Flow Type: Not Supplied Year: 1995	A11SW (S)	209	2	520034 108077
9	**Water Abstractions** Operator: Dudman Aggregates Limited Licence Number: 10/41/311002 Permit Version: 103 Location: Shoreham Cement Works Point 2 Authority: Environment Agency, Southern Region Abstraction: Construction: Effluent/Slurry Dilution Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 7th August 2017 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A11NW (N)	0	2	520109 108681

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
9	**Water Abstractions** Operator: Dudman Group Limited Licence Number: 10/41/311002 Permit Version: 102 Location: Shoreham Cement Works Point 2 Authority: Environment Agency, Southern Region Abstraction: Construction: Effluent/Slurry Dilution Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2016 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A11NW (N)	0	2	520110 108680
9	**Water Abstractions** Operator: Dudman Group Limited Licence Number: 10/41/311002 Permit Version: 101 Location: Shoreham Cement Works Point 2 Authority: Environment Agency, Southern Region Abstraction: Construction: Effluent/Slurry Dilution Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 26th July 2007 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A11NW (N)	0	2	520110 108680
9	**Water Abstractions** Operator: Callstone Ltd Licence Number: 10/41/311002 Permit Version: 100 Location: Shoreham Cement Works Point 2 Authority: Environment Agency, Southern Region Abstraction: Construction: Effluent/Slurry Dilution Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 19th February 1998 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A11NW (N)	0	2	520110 108680
10	**Water Abstractions** Operator: Dudman Aggregates Limited Licence Number: 10/41/311002 Permit Version: 103 Location: Shoreham Cement Works Point 1 Authority: Environment Agency, Southern Region Abstraction: Construction: Effluent/Slurry Dilution Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 7th August 2017 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10NE (NW)	0	2	519903 108579

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	**Water Abstractions** Operator: Dudman Group Limited Licence Number: 10/41/311002 Permit Version: 102 Location: Shoreham Cement Works Point 1 Authority: Environment Agency, Southern Region Abstraction: Construction: Effluent/Slurry Dilution Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2016 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10NE (NW)	0	2	519880 108570
10	**Water Abstractions** Operator: Dudman Group Limited Licence Number: 10/41/311002 Permit Version: 101 Location: Shoreham Cement Works Point 1 Authority: Environment Agency, Southern Region Abstraction: Construction: Effluent/Slurry Dilution Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 26th July 2007 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10NE (NW)	0	2	519880 108570
10	**Water Abstractions** Operator: Callstone Ltd Licence Number: 10/41/311002 Permit Version: 100 Location: Shoreham Cement Works Point 1 Authority: Environment Agency, Southern Region Abstraction: Construction: Effluent/Slurry Dilution Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 2578 Yearly Rate (m3): 763728 Details: See Licence Map Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 19th February 1998 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A10NE (NW)	0	2	519880 108570
11	**Water Abstractions** Operator: Passmore Coombes Licence Number: 10/41/311006 Permit Version: 102 Location: Church Farm Coombes Authority: Environment Agency, Southern Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 10th July 2017 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9SE (W)	708	2	519090 108260

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	**Water Abstractions** Operator: M A T D & J M Passmore Licence Number: 10/41/311006 Permit Version: 101 Location: Church Farm Coombes Authority: Environment Agency, Southern Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9SE (W)	708	2	519090 108260
11	**Water Abstractions** Operator: D W Passmore Esq Licence Number: 10/41/311006 Permit Version: 100 Location: Church Farm Coombes Authority: Environment Agency, Southern Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 18th March 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A9SE (W)	708	2	519090 108260
	Water Abstractions Operator: Messrs W D Passmore & Sons Licence Number: 10/41/311004 Permit Version: 102 Location: Applesham Farm Authority: Environment Agency, Southern Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A1SE (SW)	1538	2	519340 106880
	Water Abstractions Operator: Messrs W D Passmore & Sons Licence Number: 10/41/311004 Permit Version: 100 Location: Applesham Farm Authority: Environment Agency, Southern Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 2nd March 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A1SE (SW)	1538	2	519340 106880

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 10/41/260103 Permit Version: 101 Location: Shoreham Ps Springs Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Shoreham Ps Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A4SE (SE)	1784	2	521090 106870
	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 10/41/260103 Permit Version: 101 Location: Shoreham Ps Bh 1 Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Shoreham Ps Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A4SE (SE)	1784	2	521090 106870
	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 10/41/260103 Permit Version: 101 Location: Shoreham Ps Bh 2 Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Shoreham Ps Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A4SE (SE)	1784	2	521090 106870
	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 10/41/260103 Permit Version: 100 Location: Shoreham Ps Bh 1 Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Shoreham Ps Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 8th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A4SE (SE)	1784	2	521090 106870

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 10/41/260103 Permit Version: 100 Location: Shoreham Ps Bh 2 Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Shoreham Ps Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 8th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A4SE (SE)	1784	2	521090 106870
	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 10/41/260103 Permit Version: 100 Location: Shoreham Ps Springs Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Shoreham Ps Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 8th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A4SE (SE)	1784	2	521090 106870
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (H1) - Soils which readily transmit liquid discharges because they are either shallow, or susceptible to rapid by-pass flow directly to rock, gravel or groundwater Map Sheet: Sheet 45 West Sussex and Surrey Scale: 1:100,000	A10NE (W)	0	2	520000 108455
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (H1) - Soils which readily transmit liquid discharges because they are either shallow, or susceptible to rapid by-pass flow directly to rock, gravel or groundwater Map Sheet: Sheet 46 East Sussex Scale: 1:100,000	A11NW (S)	0	2	520079 108455
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	A10NE (W)	0	1	520000 108455
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	A11NW (S)	0	1	520079 108455
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A10SE (SW)	0	1	520000 108333
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A10SE (SW)	0	1	520013 108327
12	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	A11SE (SE)	222	2	520649 108199
13	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone II (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.	A11SE (SE)	392	2	520649 108199

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
14	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	(NE)	637	2	520771 109848
15	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone II (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.	(NE)	651	2	520771 109847
16	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone II (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.	(E)	678	2	521433 108340
17	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone I (Inner Protection Zone): Travel time of 50 days or less to the groundwater source.	(N)	888	2	520505 110013
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial/Tidal Models Boundary Accuracy: As Supplied	A10SE (SW)	0	2	519942 108264
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (SW)	0	2	520005 108322
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (NW)	0	2	519815 108660
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10NE (NW)	0	2	519730 108605
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10NE (NW)	0	2	519740 108615
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10NE (NW)	0	2	519825 108675
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (NW)	1	2	519735 108615
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (NW)	1	2	519820 108671
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (NW)	1	2	519825 108678
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10NE (W)	6	2	519805 108410
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10NE (W)	8	2	519780 108445

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10NE (W)	8	2	519795 108420
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10NE (W)	9	2	519790 108425
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10NE (W)	9	2	519730 108535
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	10	2	519814 108390
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	10	2	519795 108415
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	10	2	519793 108420
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	10	2	519789 108425
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10NE (W)	10	2	519755 108478
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	11	2	519743 108500
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10NE (W)	11	2	519785 108430
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (W)	11	2	519820 108385
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10NE (W)	11	2	519815 108390
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (W)	12	2	519823 108380
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (W)	12	2	519819 108385
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	12	2	519784 108430
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	12	2	519760 108470

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	12	2	519748 108490
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (W)	12	2	519835 108370
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (W)	12	2	519825 108380
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10NE (W)	12	2	519735 108515
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (SW)	13	2	519899 108308
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (W)	13	2	519828 108375
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	13	2	519771 108450
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	13	2	519766 108460
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	13	2	519763 108465
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	13	2	519730 108525
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	13	2	519708 108580
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10NE (W)	13	2	519760 108466
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (W)	14	2	519832 108370
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	14	2	519750 108485
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	14	2	519715 108560
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (SW)	14	2	519855 108350

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	15	2	519732 108520
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	15	2	519719 108550
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (SW)	15	2	519905 108300
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10NE (W)	15	2	519715 108554
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (W)	16	2	519840 108360
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	16	2	519723 108540
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (SW)	17	2	519846 108355
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (W)	17	2	519840 108360
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (SW)	18	2	519915 108290
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (SW)	19	2	519876 108326
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (SW)	19	2	519911 108292
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (SW)	19	2	519887 108312
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (SW)	19	2	519862 108340
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (SW)	19	2	519885 108315
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (SW)	20	2	519860 108340
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (NW)	20	2	519740 108635

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (SW)	21	2	519882 108315
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (SW)	21	2	519928 108280
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (SW)	21	2	519917 108285
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (SW)	21	2	519865 108335
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (SW)	22	2	519870 108330
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (SW)	23	2	519867 108330
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (SW)	23	2	519935 108275
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (SW)	26	2	519944 108266
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (SW)	27	2	519945 108265
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (SW)	28	2	519945 108264
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (SW)	29	2	519950 108260
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (SW)	32	2	519955 108255
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (SW)	33	2	519965 108250
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (SW)	36	2	519970 108245
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A14SE (NW)	43	2	519865 108875
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (NW)	52	2	519700 108655

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A14SE (NW)	62	2	519865 108897
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A14SE (NW)	79	2	519865 108916
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A14SE (NW)	127	2	519862 108965
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A14SE (NW)	145	2	519860 108983
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A14SE (N)	147	2	519859 108985
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NW (NW)	160	2	519585 108700
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A14SE (N)	163	2	519855 109001
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A14SE (N)	168	2	519854 109005
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A14SW (NW)	213	2	519665 108852
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A14NE (N)	246	2	519845 109091
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10NE (NW)	0	2	519730 108605
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10SE (SW)	0	2	520005 108322
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (NW)	1	2	519806 108653
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial/Tidal Models Boundary Accuracy: As Supplied	A10SE (SW)	2	2	519940 108260
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	10	2	519810 108395
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10NE (W)	11	2	519785 108430

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A10NE (W)	11	2	519784 108430
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences Type: Flood Defences Reference: Not Supplied	A10SE (S)	0	2	519988 108188
	Flood Defences Type: Flood Defences Reference: Not Supplied	A10SE (SW)	40	2	519951 108149
	Flood Defences Type: Flood Defences Reference: Not Supplied	A14SE (NW)	92	2	519864 108929
18	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 538.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SE (SW)	3	5	519997 108268
19	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 222.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SE (SW)	3	5	519955 108381
20	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 19.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SE (SW)	4	5	519983 108315
21	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 1610.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Adur Catchment Name: Adur and Teville Primacy: 1	A10SE (S)	16	5	519979 108160
22	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 160.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10NE (W)	18	5	519796 108401
23	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 115.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SE (SW)	19	5	519993 108328

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
24	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 18.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SE (SW)	25	5	519883 108309
25	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 219.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10NW (W)	32	5	519691 108519
26	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 251.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Adur Catchment Name: Adur and Teville Primacy: 1	A14SE (NW)	39	5	519833 108795
27	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 202.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14SE (NW)	39	5	519833 108795
28	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SE (SW)	42	5	519876 108291
29	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 45.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SE (SW)	46	5	519874 108287
30	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 177.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14SE (NW)	61	5	519800 108780
31	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 162.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SE (S)	72	5	519979 108204
32	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 276.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SE (SW)	88	5	519857 108246

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
33	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 811.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10NW (NW)	137	5	519604 108688
34	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 289.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14SW (NW)	206	5	519633 108793
35	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 200.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14SW (NW)	213	5	519610 108789
36	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 13.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A14SE (NW)	214	5	519812 109040
37	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 1164.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Adur Catchment Name: Adur and Teville Primacy: 1	A14SE (NW)	214	5	519812 109040
38	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 8.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A14SE (NW)	223	5	519819 109052
39	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 70.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14NE (N)	226	5	519840 109062
40	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14SE (NW)	226	5	519825 109058
41	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 91.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14SE (NW)	227	5	519827 109059

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
42	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1244.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SE (SW)	256	5	519731 108056
43	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 33.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14NE (N)	263	5	519838 109116
44	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 51.6 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14NE (N)	269	5	519838 109116
45	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 39.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14NE (N)	314	5	519824 109166
46	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 174.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SW (SW)	324	5	519579 108184
47	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 392.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14SW (NW)	328	5	519417 108745
48	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 156.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Passies Pond Catchment Name: Adur and Teville Primacy: 1	A14SW (NW)	350	5	519504 108884
49	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 129.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14NW (NW)	359	5	519643 109099
50	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 168.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A6NE (SW)	373	5	519836 107935

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
51	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 343.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14SW (NW)	428	5	519521 109055
52	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 8.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14SW (NW)	428	5	519521 109055
53	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 19.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14SW (NW)	433	5	519514 109052
54	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 44.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14SW (NW)	447	5	519495 109046
55	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 18.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14SW (NW)	457	5	519480 109039
56	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 26.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A7NW (S)	462	5	520286 107920
57	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 331.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14SW (NW)	473	5	519470 109055
58	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 394.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 2	A7NW (SE)	478	5	520356 107961
59	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 57.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A7NW (SE)	478	5	520356 107961

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
60	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 20.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A7NW (SE)	482	5	520316 107919
61	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 16.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A7NW (S)	484	5	520302 107905
62	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 123.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A7NW (S)	485	5	520289 107894
63	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 220.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A6NW (SW)	495	5	519569 107957
64	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SW (SW)	498	5	519451 108066
65	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SW (SW)	498	5	519451 108066
66	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SW (SW)	502	5	519448 108063
67	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 419.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SW (SW)	504	5	519434 108062
68	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A6NW (SW)	505	5	519606 107913

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
69	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 156.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A6NW (SW)	506	5	519605 107912
70	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SW (SW)	507	5	519444 108060
71	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SW (SW)	511	5	519441 108058
72	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A10SW (SW)	512	5	519438 108059
73	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 364.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A6NE (S)	532	5	519844 107763
74	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 394.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Adur Catchment Name: Adur and Teville Primacy: 1	A7NW (S)	555	5	520245 107787
75	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 34.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A7NW (S)	555	5	520245 107787
76	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 18.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A7NW (S)	578	5	520267 107772
77	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 259.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A7NW (S)	584	5	520285 107775

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
78	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 428.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A7SW (S)	649	5	520280 107699
79	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 98.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14NW (NW)	712	5	519432 109385
80	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14NW (NW)	712	5	519432 109385
81	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14NW (NW)	718	5	519431 109392
82	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 82.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A14NW (NW)	722	5	519430 109397
83	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A13NE (NW)	732	5	519352 109335
84	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 93.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A13NE (NW)	732	5	519352 109335
85	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A6SE (S)	747	5	519826 107549
86	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 600.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A6SE (S)	749	5	519831 107546

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
87	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 410.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A13NE (NW)	765	5	519128 109095
88	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A13NE (NW)	784	5	519335 109394
89	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 25.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A13NE (NW)	788	5	519330 109394
90	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 171.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A13NE (NW)	788	5	519330 109394
91	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.5 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A13NE (NW)	807	5	519305 109396
92	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A13NE (NW)	809	5	519301 109394
93	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 17.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A13NE (NW)	809	5	519301 109394
94	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 20.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 2	A6SE (S)	818	5	520029 107463
95	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 33.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 2	A7SW (S)	818	5	520062 107464

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
96	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 440.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Adur Catchment Name: Adur and Teville Primacy: 1	A7SW (S)	820	5	520062 107464
97	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 556.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A6SE (S)	821	5	520009 107459
98	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A13NE (NW)	823	5	519284 109397
99	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 436.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A7SE (S)	835	5	520395 107548
100	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 248.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	A7SW (S)	895	5	520208 107413

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
101	**Historical Landfill Sites** Licence Holder: Blue Circle Industries Plc Location: Church Lane, Chalvington, Sussex Name: Shoreham, Sussex Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD20114 First Input Date: 31st December 1960 Last Input Date: 31st December 1993 Specified Waste Type: Deposited Waste included Unknown Material EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 3800/8090 BGS Ref: Not Supplied Other Ref: WD13/28, WD27/185, 1-224	A11NW (NE)	0	2	520215 108555
102	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Steyning, Sussex Name: Coombes Road Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD20006 First Input Date: 31st December 1955 Last Input Date: 31st December 1960 Specified Waste Type: Deposited Waste included Inert, Commercial and Household Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 3800/8052 BGS Ref: Not Supplied Other Ref: WD27/208	A13SE (W)	567	2	519185 108809
103	**Licensed Waste Management Facilities (Locations)** Licence Number: 400523 Location: Beeding Cement Works, A283 Beeding Road, Shoreham, West Sussex, BN44 3TX Operator Name: Dudman Waste And Environmental Limited Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Physical Treatment Facilities **Licence Status:** **Issued** Issued: 23rd September 2013 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A10NE (NW)	0	2	519906 108560
	Local Authority Landfill Coverage Name: Adur District Council - Has no landfill data to supply		0	6	520079 108455
	Local Authority Landfill Coverage Name: Horsham District Council - Has supplied landfill data		0	4	520106 108504
	Local Authority Landfill Coverage Name: West Sussex County Council - Has supplied landfill data		0	7	520079 108455
104	**Local Authority Recorded Landfill Sites** Location: Shoreham Cement Works, Steyning Road, Upper Beeding Reference: UB/50/91 Authority: West Sussex County Council, Environment & Development **Last Reported Status:** **Unknown** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Moderate	A11NW (NE)	0	7	520161 108535

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
105	**Local Authority Recorded Landfill Sites** Location: Coombes Road, Botolphs Reference: Not Supplied Authority: West Sussex County Council, Environment & Development **Last Reported Status:** **Unknown** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Moderate	A13SE (W)	571	7	519182 108812
106	**Local Authority Recorded Landfill Sites** Location: Botolphs, Coombes Road, Steyning Reference: 27/208 Authority: Horsham District Council, Environmental Health Department **Last Reported Status:** **Not Supplied** Types of Waste: Inert, Household, Commercial Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Moderate	A13SE (W)	571	4	519182 108812
107	**Registered Landfill Sites** Licence Holder: Blue Circle Industries Plc Licence Reference: 3/AN/77 Site Location: The Chalk Quarry, Shoreham Cement Works, Upper Beeding, Steyning, West Sussex Licence Easting: 520300 Licence Northing: 108800 Operator Location: Portland House, Stag Place, WESTMINSTER, London, SW1E 5BJ Authority: Environment Agency - Southern Region, Sussex Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: Waste produced/controlled by licence holder Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st August 1988 Preceded By Licence: 3/AN/77 Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Accuracy: Not Applicable Authorised Waste: General Works Rubbish Ex Shoreham Ceme; Kiln Bricks; Other Similar Inert Material; Partly Burned Clinker; Precipitator Dust Ex Shoreham Cement; Solids From Aggregate Washing; Stone; Top/Subsoils; Yard Sweepings Prohibited Waste: Grass Cuttings; Paper; Vegetable Matter; Waste Ex Prem. Using Chem/Haz Mat'Ls; Waste From Gasworks; Waste From Old Tips; Waste Might Be Contam. Haz./Poll. Mat'; Waste Not Listed Above; Waste With Poll.Pot'L Morethan Topsoil; Wood	A15SW (NE)	0	2	520300 108800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
107	**Registered Landfill Sites** Licence Holder: Blue Circle Industries Plc Licence Reference: 3/AN/77 Site Location: The Chalk Quarry, Shoreham Cement Works, Upper Beeding, Steyning, West Sussex Licence Easting: 520300 Licence Northing: 108800 Operator Location: Portland House, Stag Place, WESTMINSTER, London, SW1E 5BJ Authority: Environment Agency - Southern Region, Sussex Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: Only waste produced on site Status: Record supersededSuperseded Dated: 1st May 1978 Preceded By Licence: Not Given Superseded By Licence: 3/AN/77 Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Gas Cleaning/Precipitator Dust General Factory Waste(Inc. Sweepings) Partly Burned Clinker Refractory Linings/Bricks Stone Prohibited Waste: Paper/Cardboard Waste Polymeric Material, Products/Scrap Semi-Inert Waste Wood Waste/Timber	A15SW (NE)	0	2	520300 108800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: White Chalk Subgroup	A11NW (S)	0	1	520079 108455
108	**BGS Recorded Mineral Sites** Site Name: Beeding Cement Works Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 157339 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Lewes Nodular Chalk Formation Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A11NW (N)	0	1	520105 108645
109	**BGS Recorded Mineral Sites** Site Name: Beeding Cement Works Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 157338 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Lewes Nodular Chalk Formation Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A10NE (NW)	0	1	519941 108672
110	**BGS Recorded Mineral Sites** Site Name: Beeding Cement Works Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 4599 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Lewes Nodular Chalk Formation Commodity: Chalk Positional Accuracy: Located by supplier to within 100m	A15SW (NE)	0	1	520300 108800
111	**BGS Recorded Mineral Sites** Site Name: Upper Beeding Chalk Pit Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 18747 Type: Opencast **Status: Dormant** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Seaford Chalk Formation Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A16SW (NE)	0	1	520750 108980
112	**BGS Recorded Mineral Sites** Site Name: Erringham Shaw Chalk Pit Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 157926 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Lewes Nodular Chalk Formation Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A11SW (SE)	359	1	520299 108080

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
113	**BGS Recorded Mineral Sites** Site Name: Botolphs Chalk Pit Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 157297 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: New Pit Chalk Formation Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A13SE (NW)	608	1	519185 108905
114	**BGS Recorded Mineral Sites** Site Name: Old Erringham Farm Chalk Pit Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 157927 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Seaford Chalk Formation Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A7SE (S)	831	1	520403 107558
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Natural Cavities Easting: 520300 Northing: 108800 Distance: 0 Quadrant Reference: A15 Quadrant Reference: SW Bearing Ref: NE Cavity Type: Solution Pipe x 20 Solid Geology Detail: Chalk Group Superficial Geology Detail: River Terrace Deposits	A15SW (NE)	0	8	520300 108800
	Natural Cavities Easting: 520300 Northing: 108700 Distance: 0 Quadrant Reference: A11 Quadrant Reference: NW Bearing Ref: NE Cavity Type: Solution Pipe x 4 Solid Geology Detail: Chalk Group Superficial Geology Detail: No Details	A11NW (NE)	0	8	520300 108700
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	A11NW (S)	0	1	520079 108455
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	A10NE (W)	0	1	520000 108455
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	0	1	520000 108283
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10NE (W)	0	1	520000 108455
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NW (S)	0	1	520079 108455
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SW (S)	1	1	520044 108276
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10NE (W)	0	1	520000 108455

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NW (S)	0	1	520079 108455
	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (W)	0	1	519863 108383
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	0	1	520000 108283
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11SW (S)	1	1	520044 108276
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10NE (W)	0	1	520000 108455
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NW (S)	0	1	520079 108455
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10NE (NW)	0	1	519903 108684
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10NE (N)	0	1	520000 108698
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NW (N)	0	1	520125 108677
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A14SE (NW)	0	1	519885 108809
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	9	1	520590 108441
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	31	1	520008 108339
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10NE (SW)	36	1	519967 108408
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A14SE (N)	98	1	520000 109026
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A14NE (N)	203	1	520000 109197
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A14SW (NW)	242	1	519683 109054
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10NE (W)	0	1	520000 108455
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NW (S)	0	1	520079 108455
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A14SE (N)	0	1	520000 108739
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A15SW (N)	0	1	520049 108735
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A15SW (NE)	0	1	520329 108914

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NW (NE)	0	1	520203 108548
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	0	1	520000 108322
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	0	1	520000 108322
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10NE (NW)	6	1	519829 108690
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	9	1	520590 108441
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	23	1	520013 108327
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	25	1	520000 108333
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A14SE (NW)	33	1	519848 108797
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11SW (S)	72	1	520077 108271
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A15NE (NE)	157	1	520430 109188
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A14NE (N)	160	1	520000 109140
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A14NE (N)	162	1	520000 109129
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A14NE (N)	174	1	520000 109164
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A14NE (N)	185	1	519978 109121
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A14NE (N)	190	1	519900 109081
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A14NE (N)	242	1	519989 109196
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11SW (SE)	244	1	520226 108182
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A15NE (NE)	246	1	520684 109354
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10NE (W)	0	1	520000 108455
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NW (S)	0	1	520079 108455
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	0	1	520000 108333

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	0	1	520013 108327
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A14NE (N)	157	1	520000 109129
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A14NE (N)	242	1	519989 109196
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10NE (W)	0	1	520000 108455
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NW (S)	0	1	520079 108455
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	0	1	520013 108327
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	0	1	520000 108283
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (SW)	0	1	520000 108333
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11SW (S)	1	1	520044 108276
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SW (SE)	9	1	520362 108056
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A14SE (NW)	130	1	519848 108964
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A14NE (N)	157	1	520000 109129
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A14NE (N)	242	1	519989 109196
	Radon Potential - Radon Affected Areas Affected Area: The property is in an Intermediate probability radon area (1 to 3% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A11NW (S)	0	1	520079 108455
	Radon Potential - Radon Affected Areas Affected Area: The property is in an Intermediate probability radon area (1 to 3% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A10NE (W)	0	1	520002 108455
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A11NW (S)	0	1	520079 108455
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A10NE (W)	0	1	520002 108455

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
115	**Ancient Woodland** Name: Not Supplied Reference: 1475899 Area(m²): 35451.88 Type: Ancient and Semi-Natural Woodland	A7NE (SE)	480	9	520383 107976
116	**Ancient Woodland** Name: Not Supplied Reference: 1475900 Area(m²): 16939.22 Type: Ancient and Semi-Natural Woodland	A6NW (SW)	575	9	519451 107957
117	**Environmentally Sensitive Areas** Name: South Downs (decommissioned) Multiple Areas: N Total Area (m2): 690432994.81 Source: Natural England	A11NW (S)	0	9	520079 108455
118	**National Parks** Name: South Downs Multiple Area: N Area (m2): 1652679314.3 Source: Natural England **Status: Fully Designated - designated as a National Park** Designation Date: 2nd November 2009	A11NW (S)	0	9	520079 108455
119	**Nitrate Vulnerable Zones** Name: Sussex Chalk Description: Groundwater Source: Environment Agency, Head Office	A11NW (S)	0	10	520079 108455
120	**Sites of Special Scientific Interest** Name: Beeding Hill To Newtimber Hill Multiple Areas: Y Total Area (m2): 3209597.86 Source: Natural England Reference: 1000374 Designation Details: Geological Conservation Review Designation Date: 10th November 1986 Date Type: Notified Designation Details: Local Wildlife Site Designation Date: 10th November 1986 Date Type: Notified Designation Details: Nature Conservation Review Designation Date: 10th November 1986 Date Type: Notified Designation Details: Site Of Special Scientific Interest Designation Date: 10th November 1986 Date Type: Notified	A14SE (N)	0	9	520021 108978

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Horsham District Council - Environmental Health Department	February 2015	Annual Rolling Update
Adur District Council - Environmental Health Department	March 2014	Annual Rolling Update
Discharge Consents		
Environment Agency - Southern Region	April 2018	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Southern Region	March 2013	As notified
Integrated Pollution Controls		
Environment Agency - Southern Region	October 2008	Variable
Integrated Pollution Prevention And Control		
Environment Agency - South East Region - Solent & South Downs Area	April 2018	Quarterly
Environment Agency - Southern Region	April 2018	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Horsham District Council - Environmental Health Department	June 2015	Variable
Adur District Council - Environmental Health Department	November 2014	Variable
Local Authority Pollution Prevention and Controls		
Horsham District Council - Environmental Health Department	June 2015	Annual Rolling Update
Adur District Council - Environmental Health Department	November 2014	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Horsham District Council - Environmental Health Department	June 2015	Variable
Adur District Council - Environmental Health Department	November 2014	Variable
Nearest Surface Water Feature		
Ordnance Survey	September 2017	
Pollution Incidents to Controlled Waters		
Environment Agency - Southern Region	December 1999	Not Applicable
Environment Agency - Thames Region	September 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Southern Region	March 2013	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - Southern Region	March 2013	As notified
Registered Radioactive Substances		
Environment Agency - Southern Region	January 2015	
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency - South East Region - Solent & South Downs Area	April 2018	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2018	Quarterly
Environment Agency - Southern Region - Sussex Area	April 2018	Quarterly
Water Abstractions		
Environment Agency - Southern Region	April 2018	Quarterly
Water Industry Act Referrals		
Environment Agency - Southern Region	October 2017	Quarterly
Groundwater Vulnerability		
Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits		
Environment Agency - Head Office	January 1999	Not Applicable

Data Currency

Agency & Hydrological	Version	Update Cycle
Bedrock Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Superficial Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Source Protection Zones Environment Agency - Head Office	January 2018	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	May 2018	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	May 2018	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	May 2018	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	May 2018	Quarterly
Flood Defences Environment Agency - Head Office	May 2018	Quarterly
OS Water Network Lines Ordnance Survey	May 2018	Quarterly
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	As notified

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	April 2018	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Southern Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - South East Region - Solent & South Downs Area	April 2018	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2018	Quarterly
Environment Agency - Southern Region - Sussex Area	April 2018	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - South East Region - Solent & South Downs Area	April 2018	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2018	Quarterly
Environment Agency - Southern Region - Sussex Area	April 2018	Quarterly
Local Authority Landfill Coverage		
Adur District Council	May 2000	Not Applicable
Horsham District Council - Environmental Health Department	May 2000	Not Applicable
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Adur District Council	May 2000	Not Applicable
Horsham District Council - Environmental Health Department	May 2000	Not Applicable
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Registered Landfill Sites		
Environment Agency - Southern Region - Solent and South Downs	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Southern Region - Solent and South Downs	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Southern Region - Solent and South Downs	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Hazardous Substances	**Version**	**Update Cycle**
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	September 2017	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	Variable
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Horsham District Council - Planning Department	August 2015	Variable
Adur District Council	February 2016	Variable
West Sussex County Council - Environment & Development	October 2006	Annual Rolling Update
Planning Hazardous Substance Consents		
Horsham District Council - Planning Department	August 2015	Variable
Adur District Council	February 2016	Variable
West Sussex County Council - Environment & Development	October 2006	Annual Rolling Update

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	May 2018	Bi-Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	As notified
Industrial Land Use	**Version**	**Update Cycle**
Contemporary Trade Directory Entries Thomson Directories	May 2018	Quarterly
Fuel Station Entries Catalist Ltd - Experian	April 2018	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Underground Electrical Cables National Grid	December 2015	Bi-Annually

Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural England	October 2017	Bi-Annually
Areas of Outstanding Natural Beauty Natural England	February 2018	Bi-Annually
Environmentally Sensitive Areas Natural England	January 2017	
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	February 2018	Bi-Annually
Marine Nature Reserves Natural England	January 2018	Bi-Annually
National Nature Reserves Natural England	February 2018	Bi-Annually
National Parks Natural England	April 2017	Bi-Annually
Nitrate Vulnerable Zones Environment Agency - Head Office Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	December 2017 October 2015	Bi-Annually
Ramsar Sites Natural England	February 2018	Bi-Annually
Sites of Special Scientific Interest Natural England	February 2018	Bi-Annually
Special Areas of Conservation Natural England	January 2018	Bi-Annually
Special Protection Areas Natural England	February 2018	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Useful Contacts

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	**Adur District Council - Environmental Health Department** Room 115, Civic Centre, Ham Road, Shoreham By Sea, West Sussex, BN43 6PR	Telephone: 01273 263000 Fax: 01273 454847 Email: Info@adurdc.gov.uk Website: www.adur.gov.uk
4	**Horsham District Council - Environmental Health Department** Park House, North Street, Horsham, Sussex, RH12 1RL	Telephone: 01403 215100 Fax: 01403 732790 Website: www.horsham.gov.uk
5	**Ordnance Survey** Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
6	**Adur District Council** Civic Centre, Ham Road, Shoreham By Sea, West Sussex, BN43 6PR	Telephone: 01273 263000 Fax: 01273 454847 Email: info@adur.gov.uk Website: www.adur.gov.uk
7	**West Sussex County Council - Environment & Development** County Hall, Tower hall, Chichester, West Sussex, PO19 1RH	Telephone: 01243 777100 Website: www.westsussex.gov.uk
8	**Peter Brett Associates** Caversham Bridge House, Waterman Place, Reading, Berkshire, RG1 8DN	Telephone: 0118 950 0761 Fax: 0118 959 7498 Email: reading@pba.co.uk Website: www.pba.co.uk
9	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
10	**Environment Agency - Head Office** Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.

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
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
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
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
R.D. Bdy. 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
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Electricity Transmission Line
Pole
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
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
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	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
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m 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

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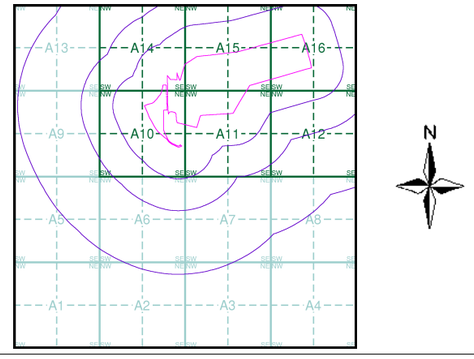
Historical Mapping & Photography included:

Historical Map - Slice A



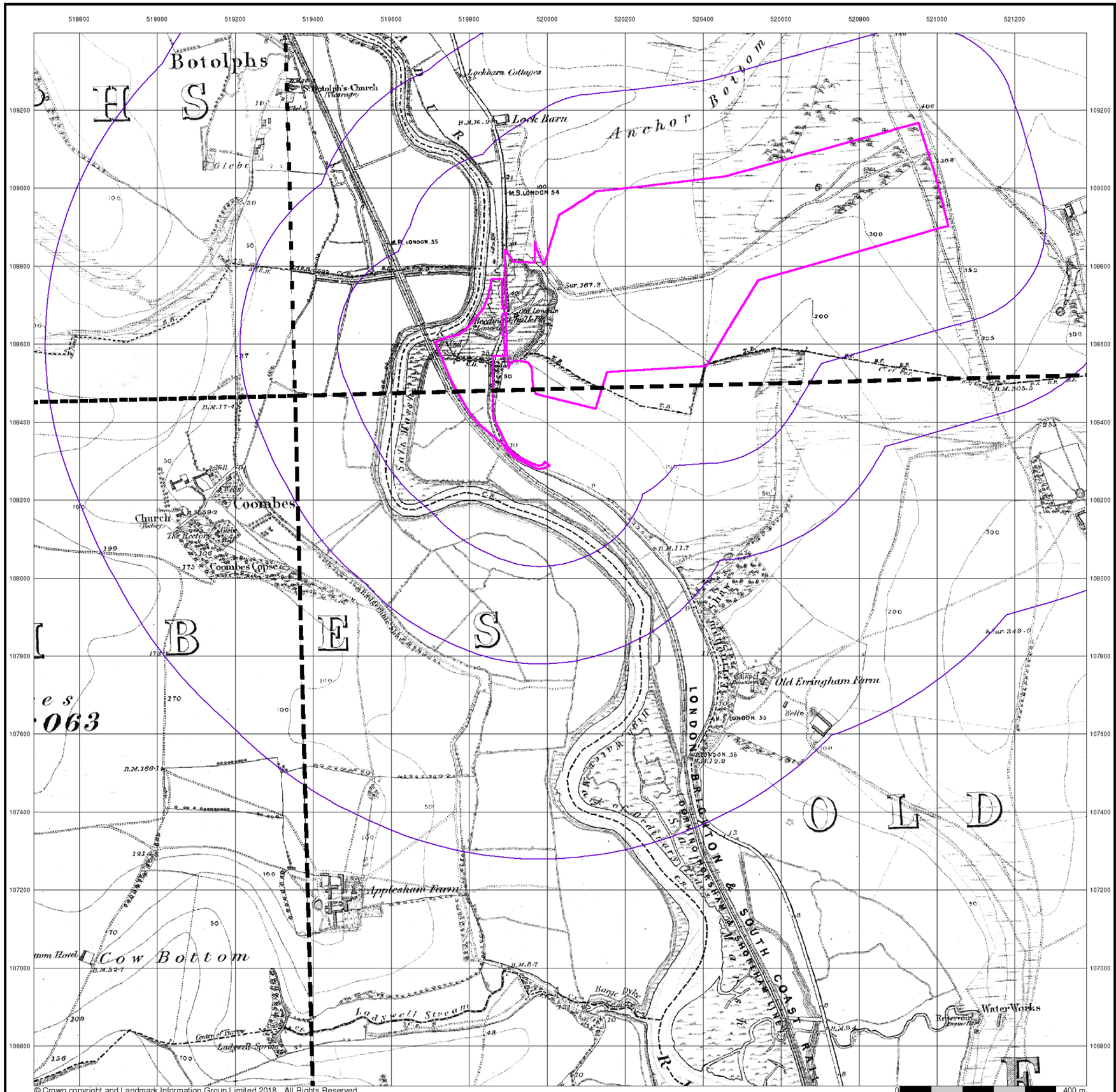
Order Details

Order Number: 170375371_1_1
Customer Ref: 2018s0642
National Grid Reference: 520080, 108450
Slice: A
Site Area (Ha): 44.36
Search Buffer (m): 1000

Site Details

Site at 520371,108723

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



0 400 m

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LANDMARK INFORMATION GROUP®

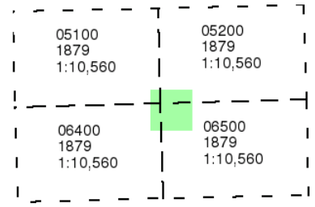
Sussex

Published 1879

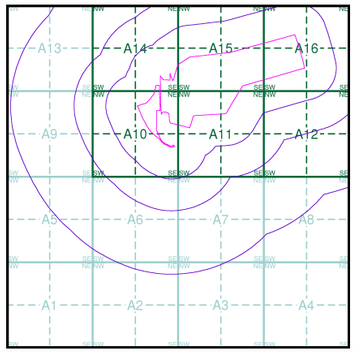
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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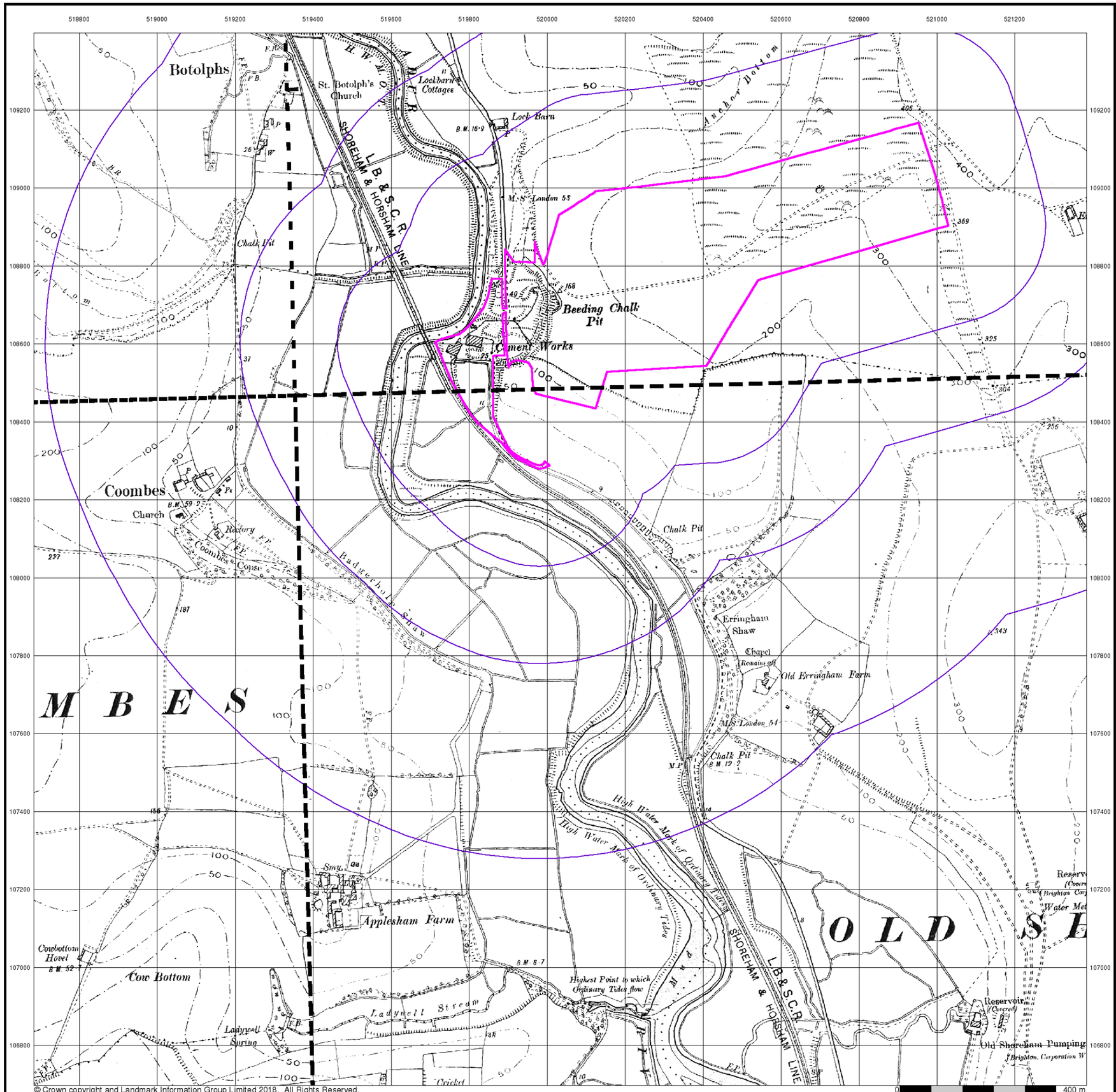

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Sussex

Published 1899

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.

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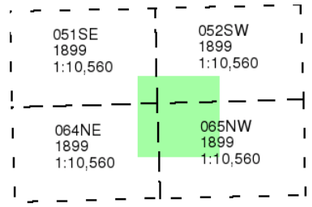
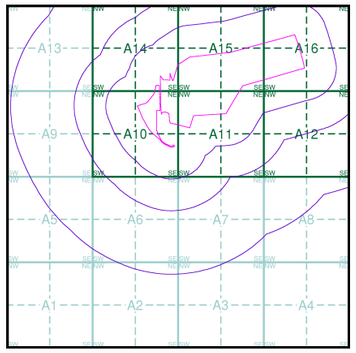


Historical Map - Slice A



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Order Number:	170375371_1_1
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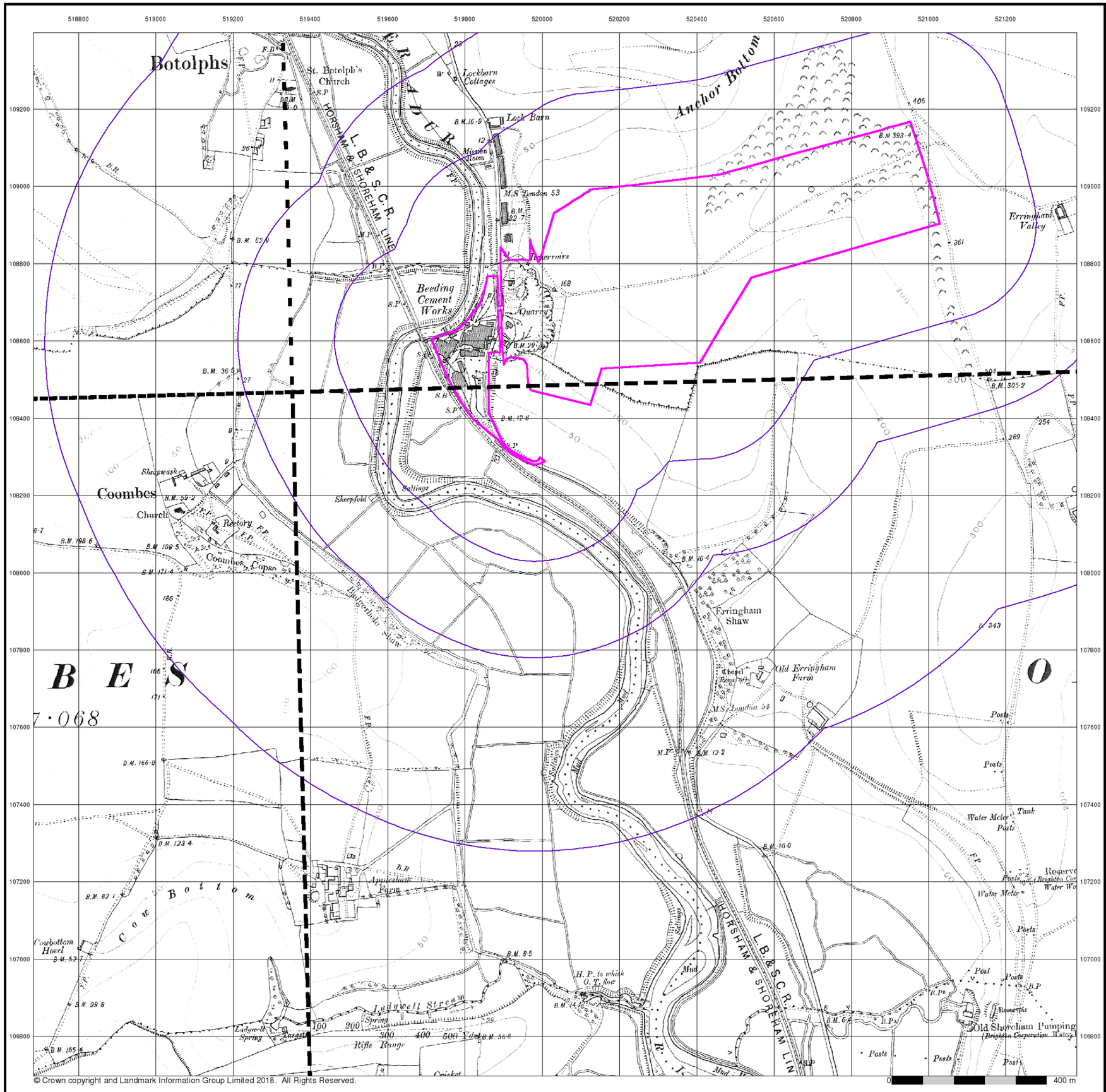

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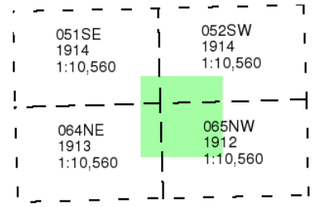
Published 1912 - 1914

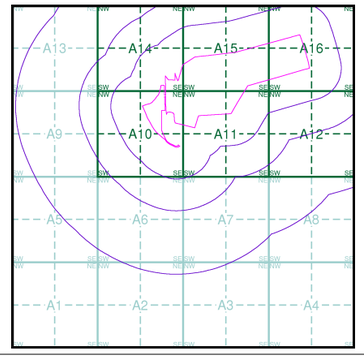
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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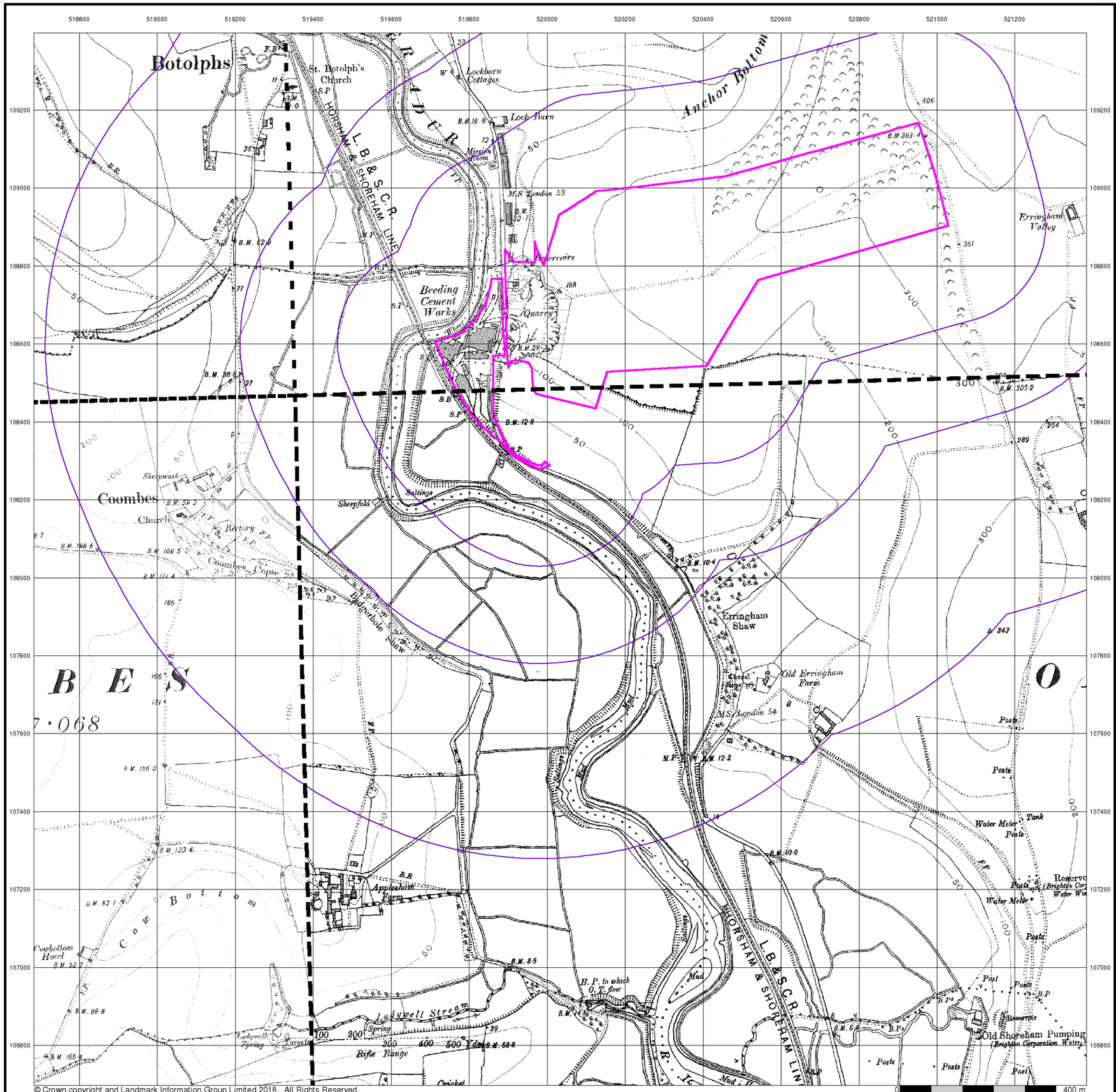
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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Sussex

Published 1912 - 1914

Source map scale - 1:10,560

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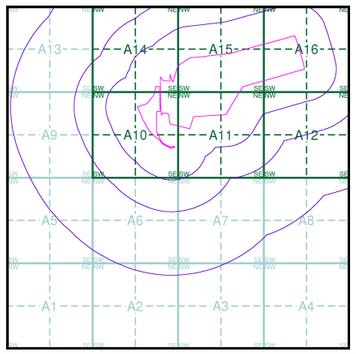
Map Name(s) and Date(s)

051SE 1914 1:10,560	052SW 1914 1:10,560
064NE 1913 1:10,560	065NW 1912 1:10,560

Historical Map - Slice A



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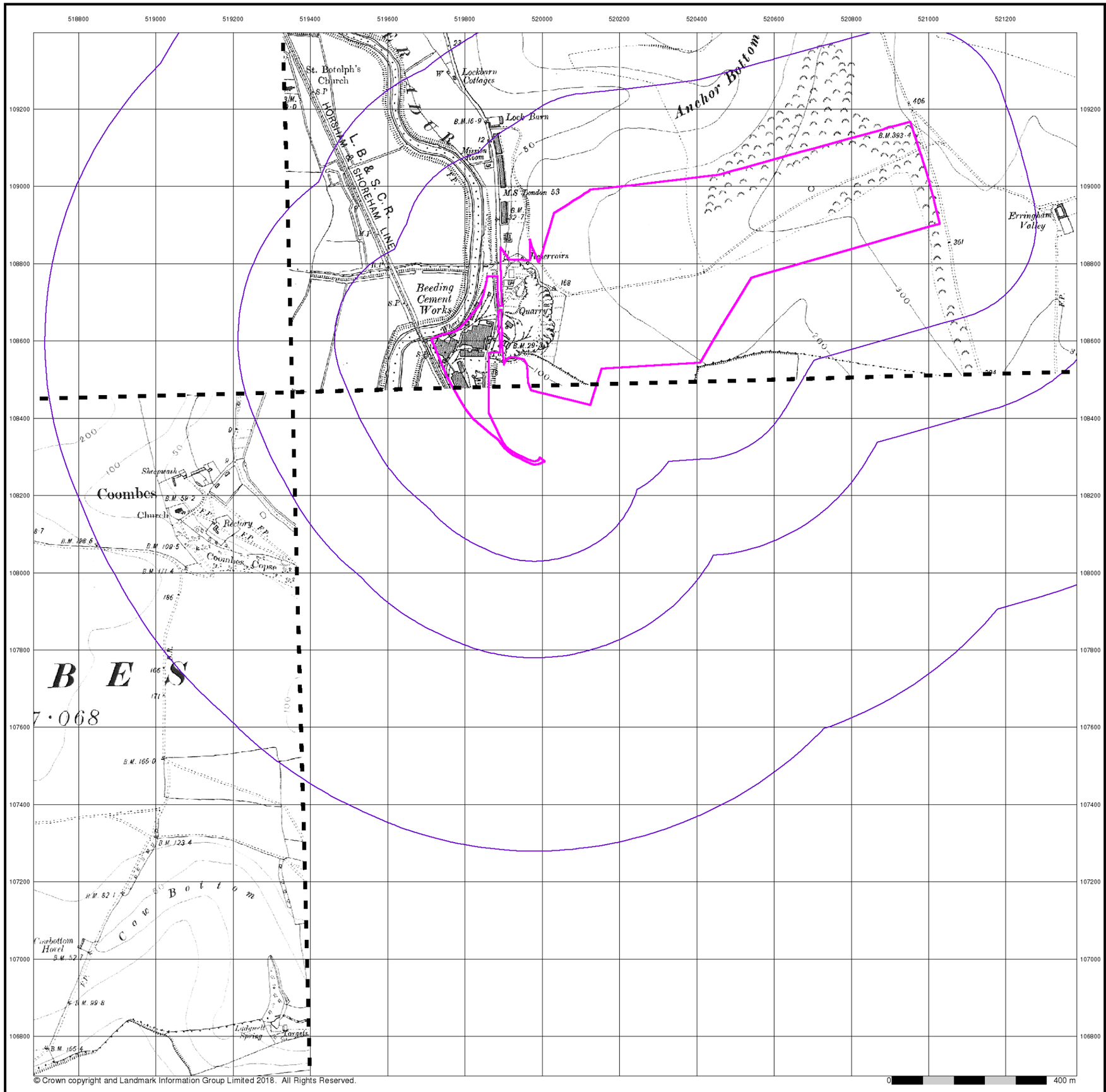

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Sussex

Published 1913 - 1914

Source map scale - 1:10,560

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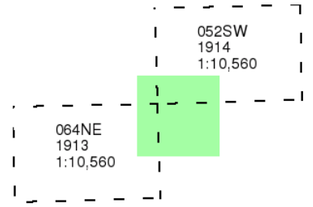
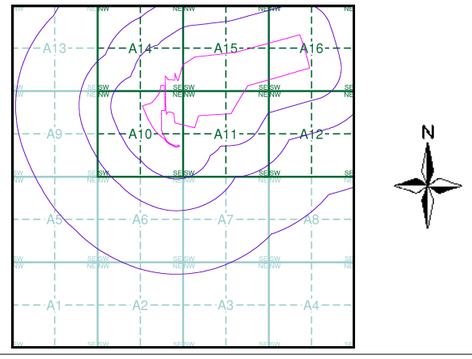


Historical Map - Slice A



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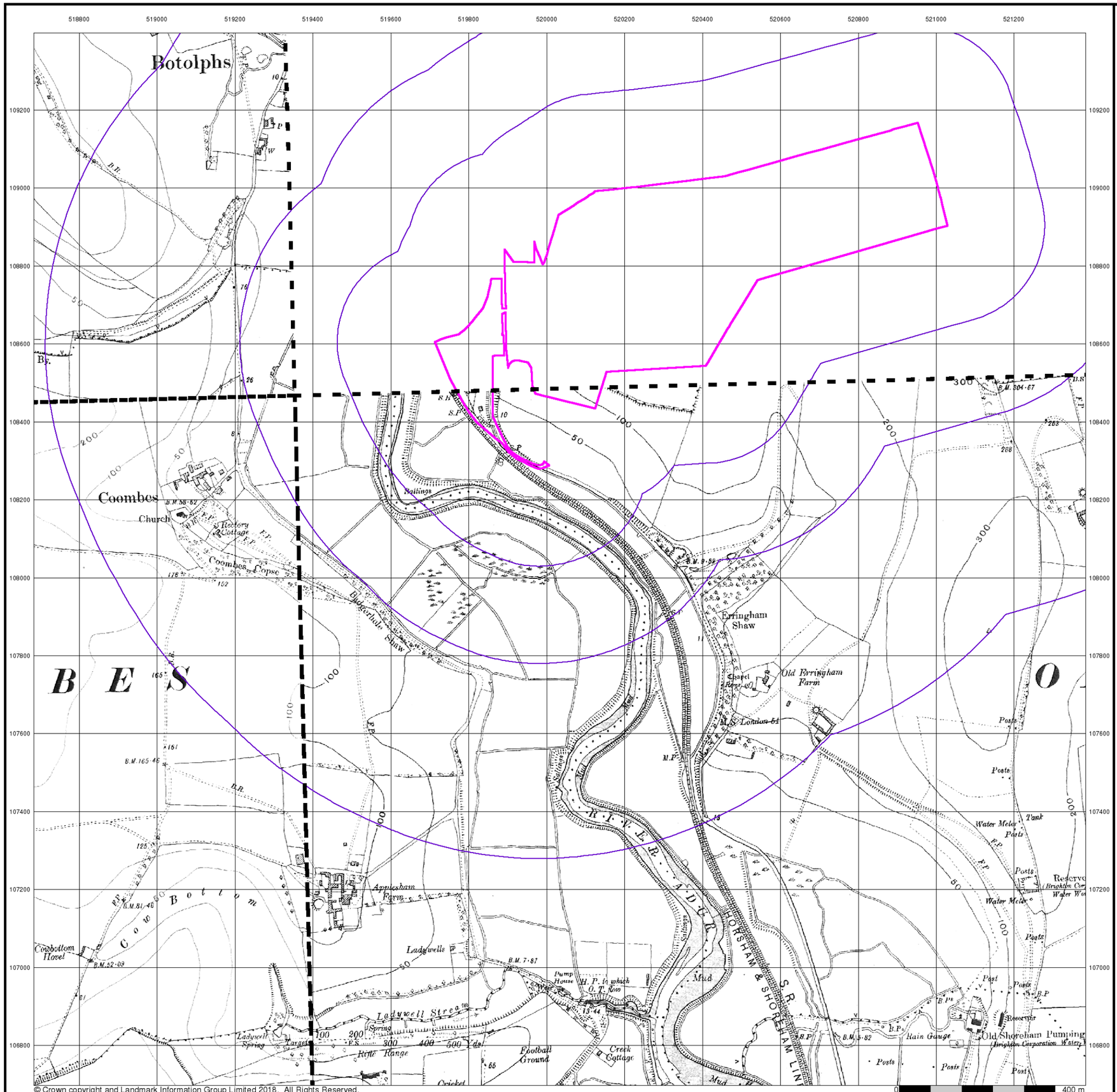

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Sussex

Published 1931 - 1932

Source map scale - 1:10,560

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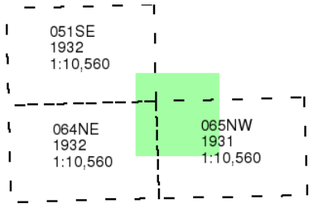
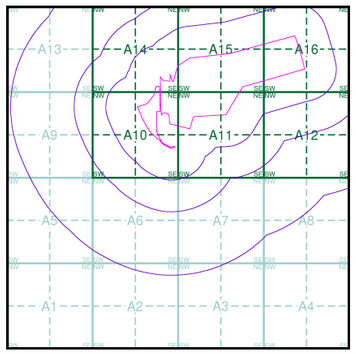
Map Name(s) and Date(s)



Historical Map - Slice A



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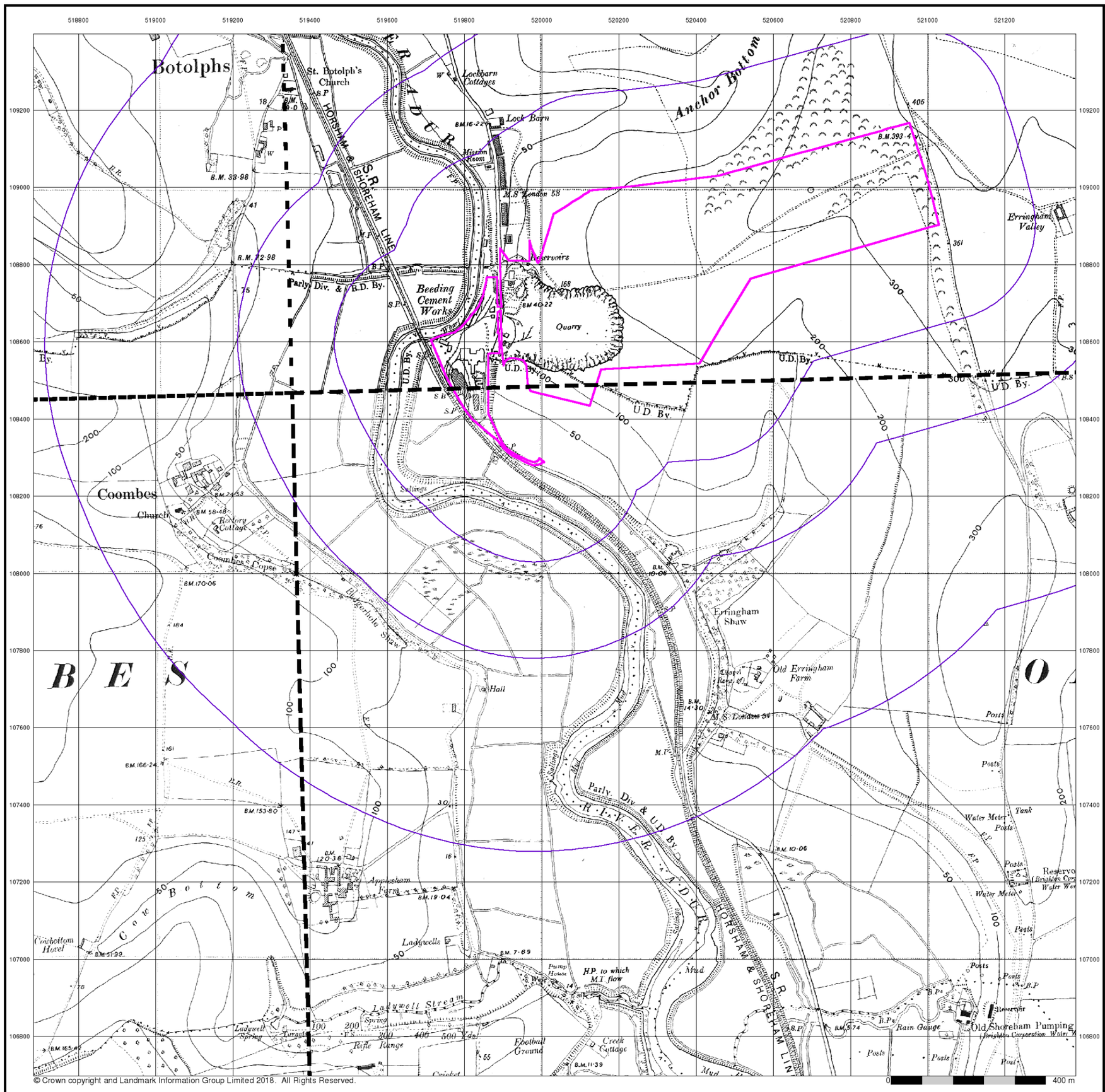

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Sussex

Published 1947

Source map scale - 1:10,560

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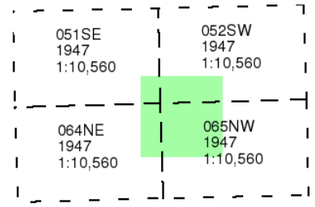
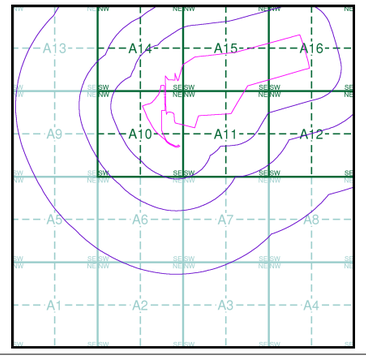
Map Name(s) and Date(s)



Historical Map - Slice A



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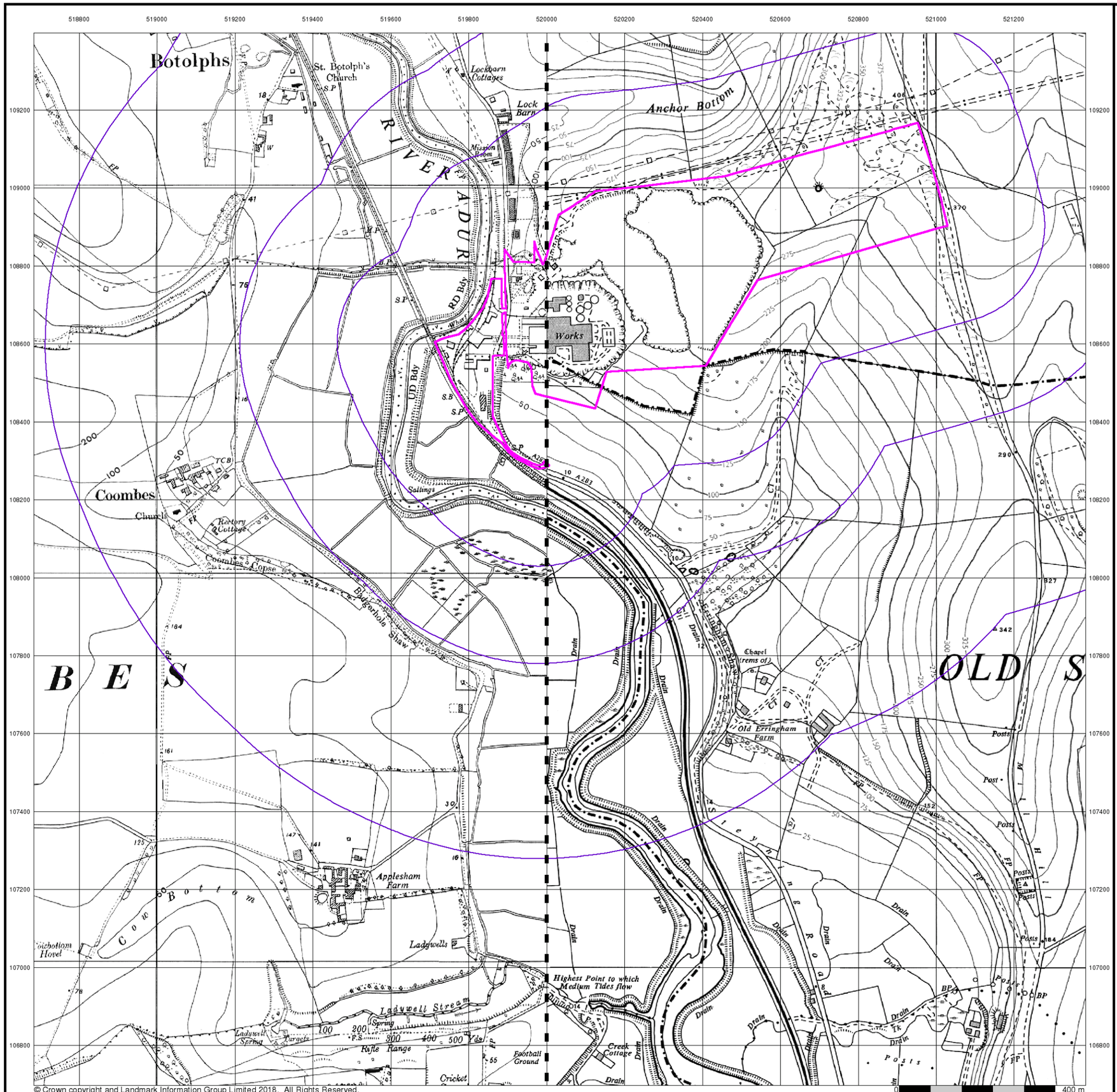

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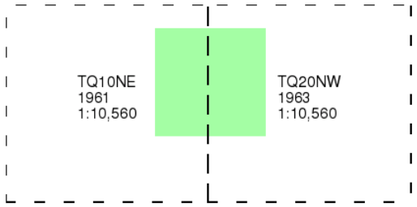
Ordnance Survey Plan

Published 1961 - 1963

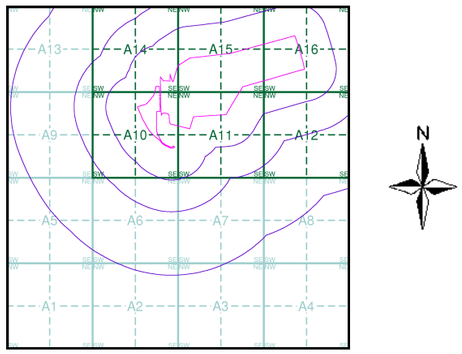
Source map scale - 1:10,000

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



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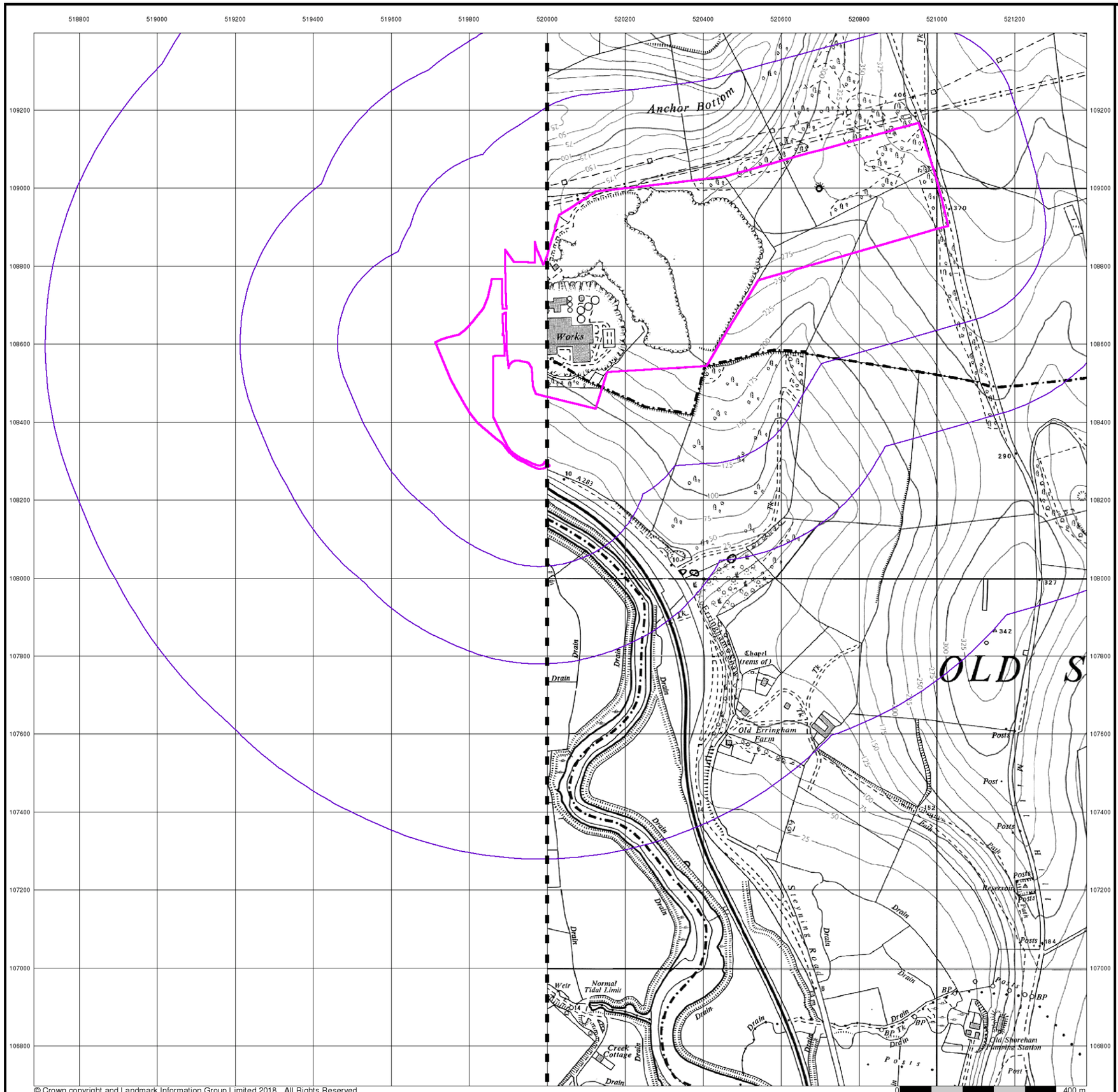

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Ordnance Survey Plan

Published 1968

Source map scale - 1:10,000

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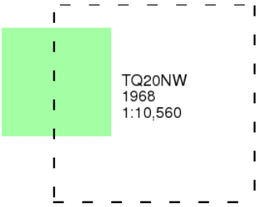
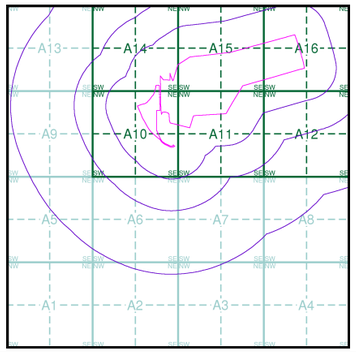
Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

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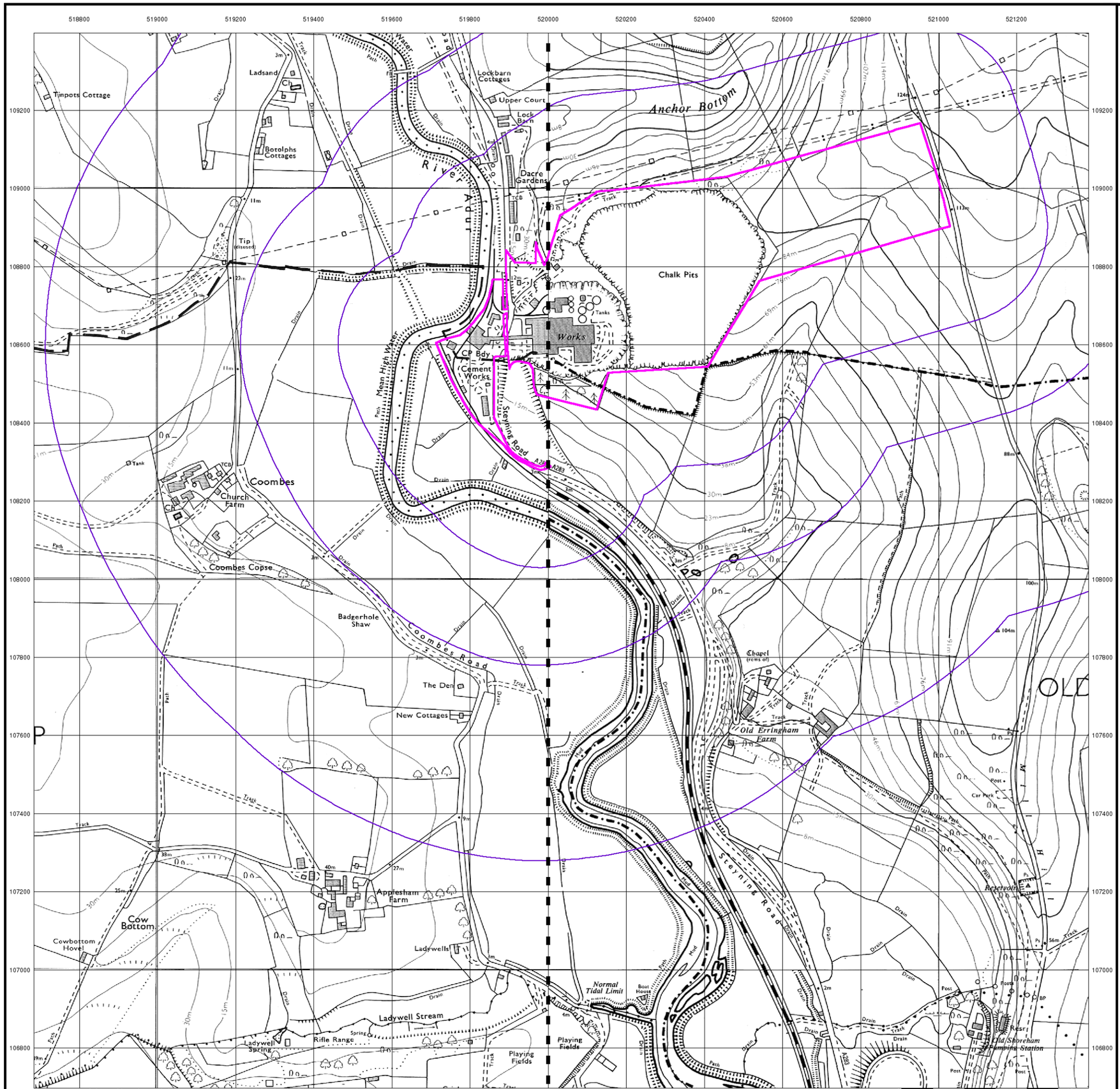

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Ordnance Survey Plan

Published 1972 - 1975

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.

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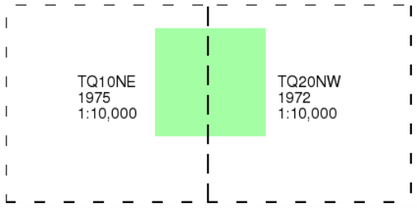
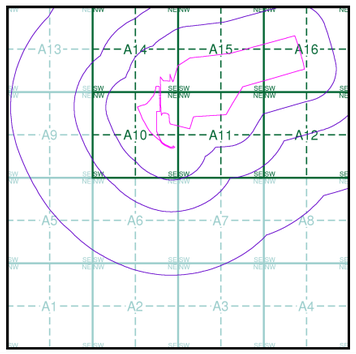


Historical Map - Slice A



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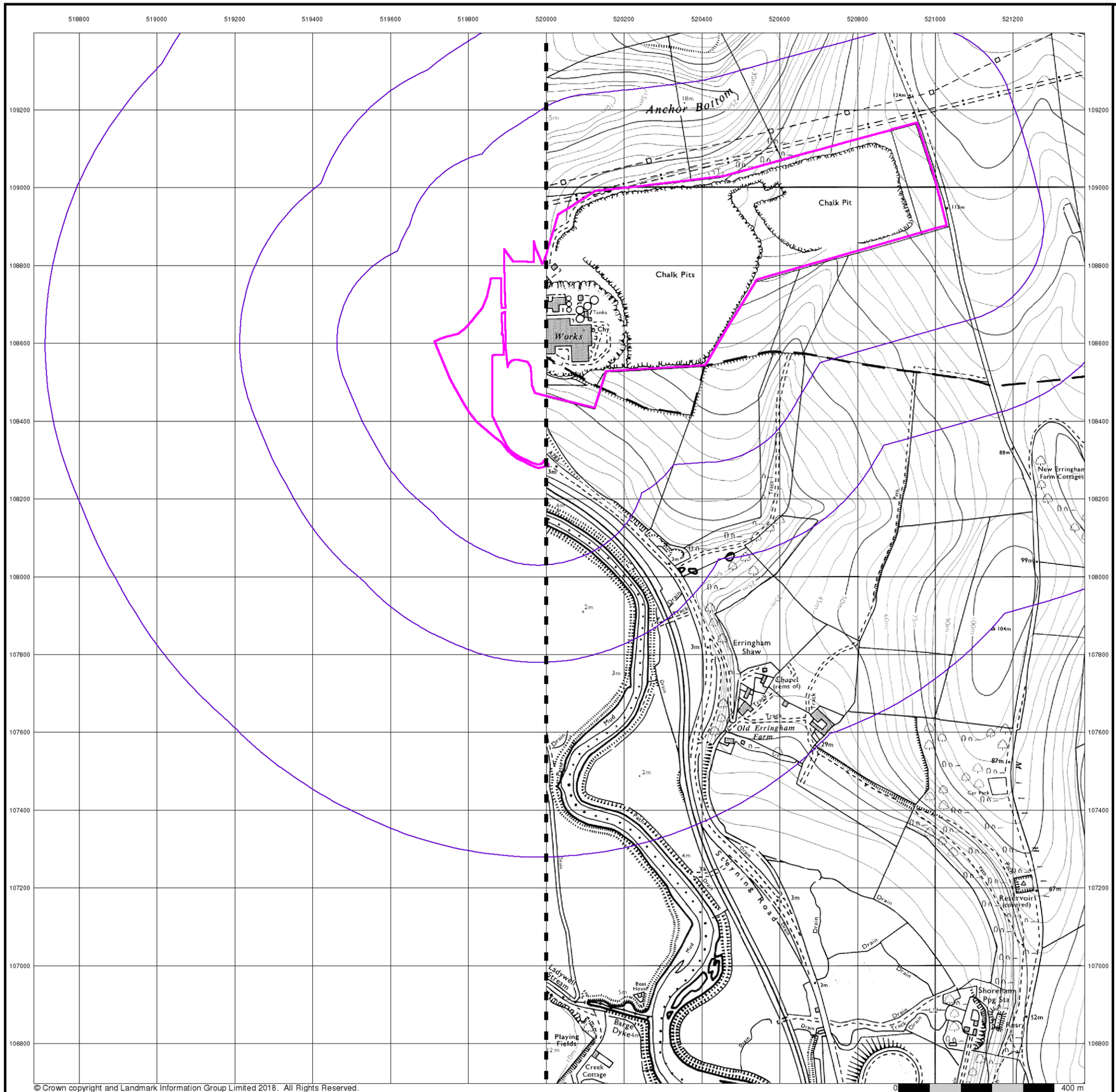

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Ordnance Survey Plan

Published 1984

Source map scale - 1:10,000

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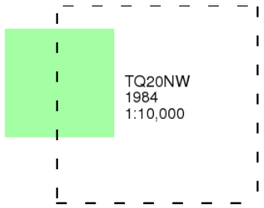
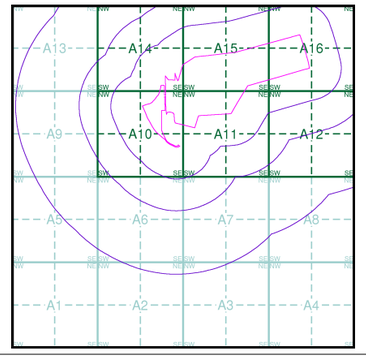


Historical Map - Slice A



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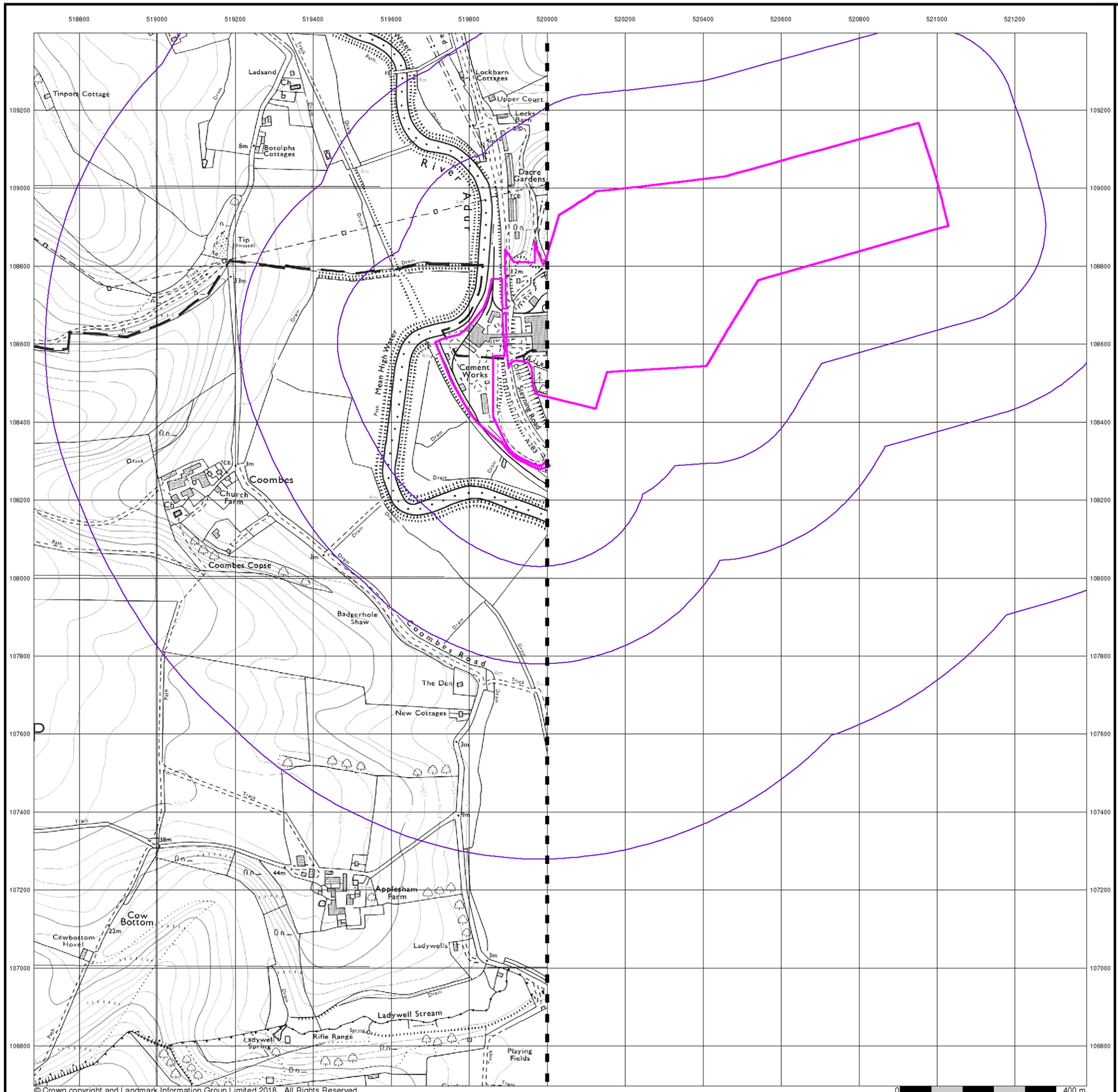

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Ordnance Survey Plan

Published 1990

Source map scale - 1:10,000

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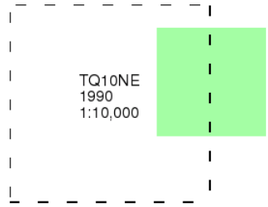
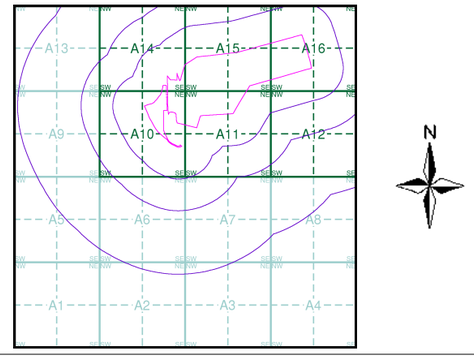


Historical Map - Slice A



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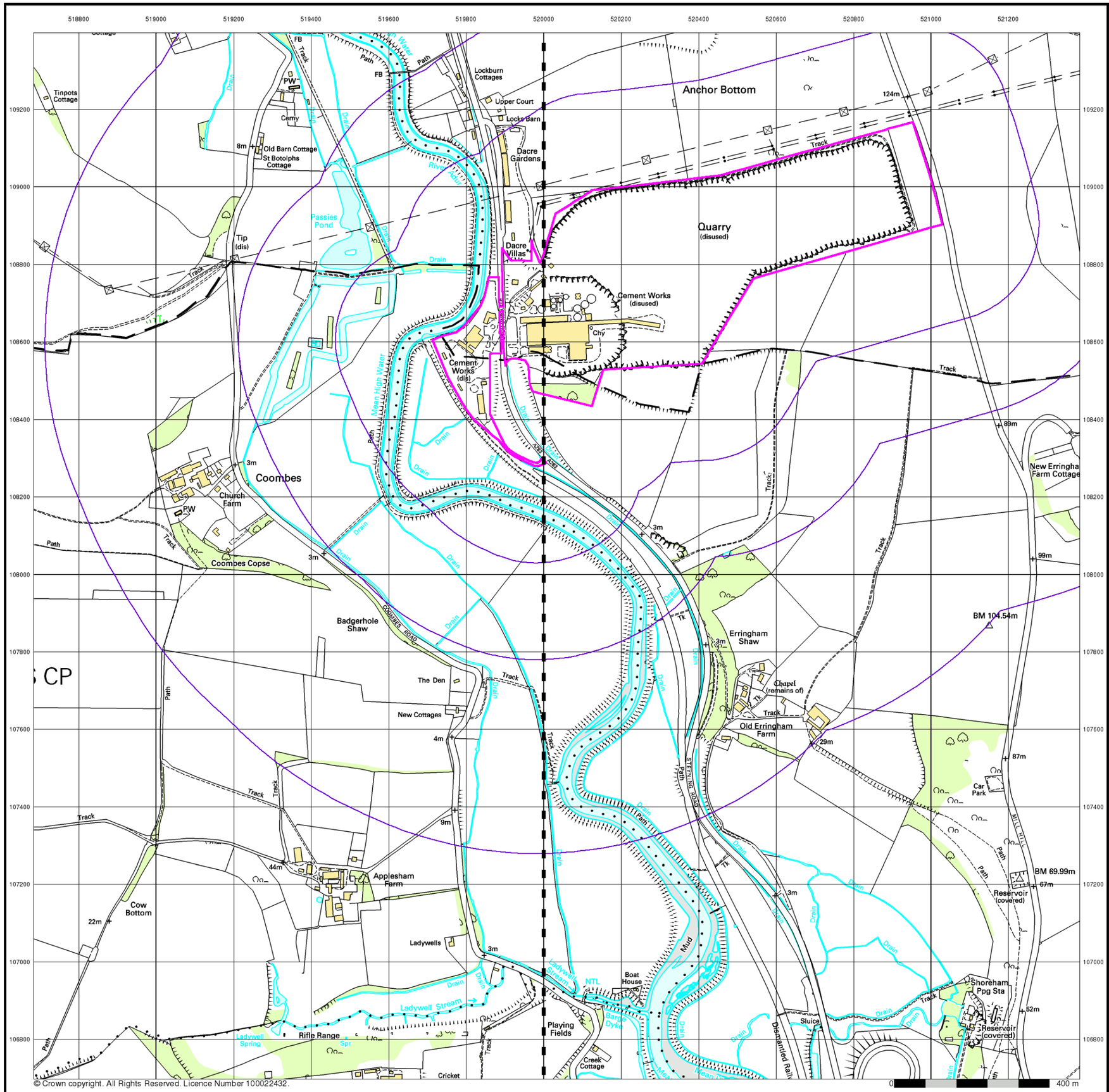

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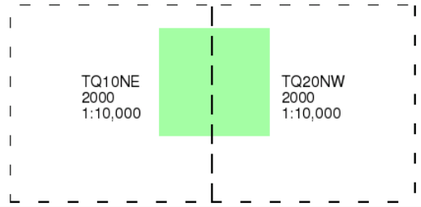
10k Raster Mapping

Published 2000

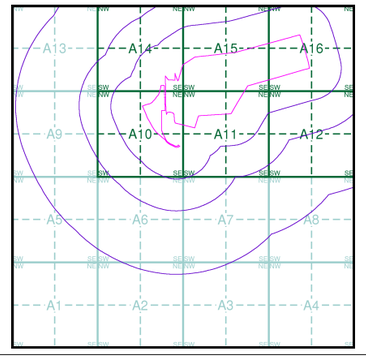
Source map scale - 1:10,000

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



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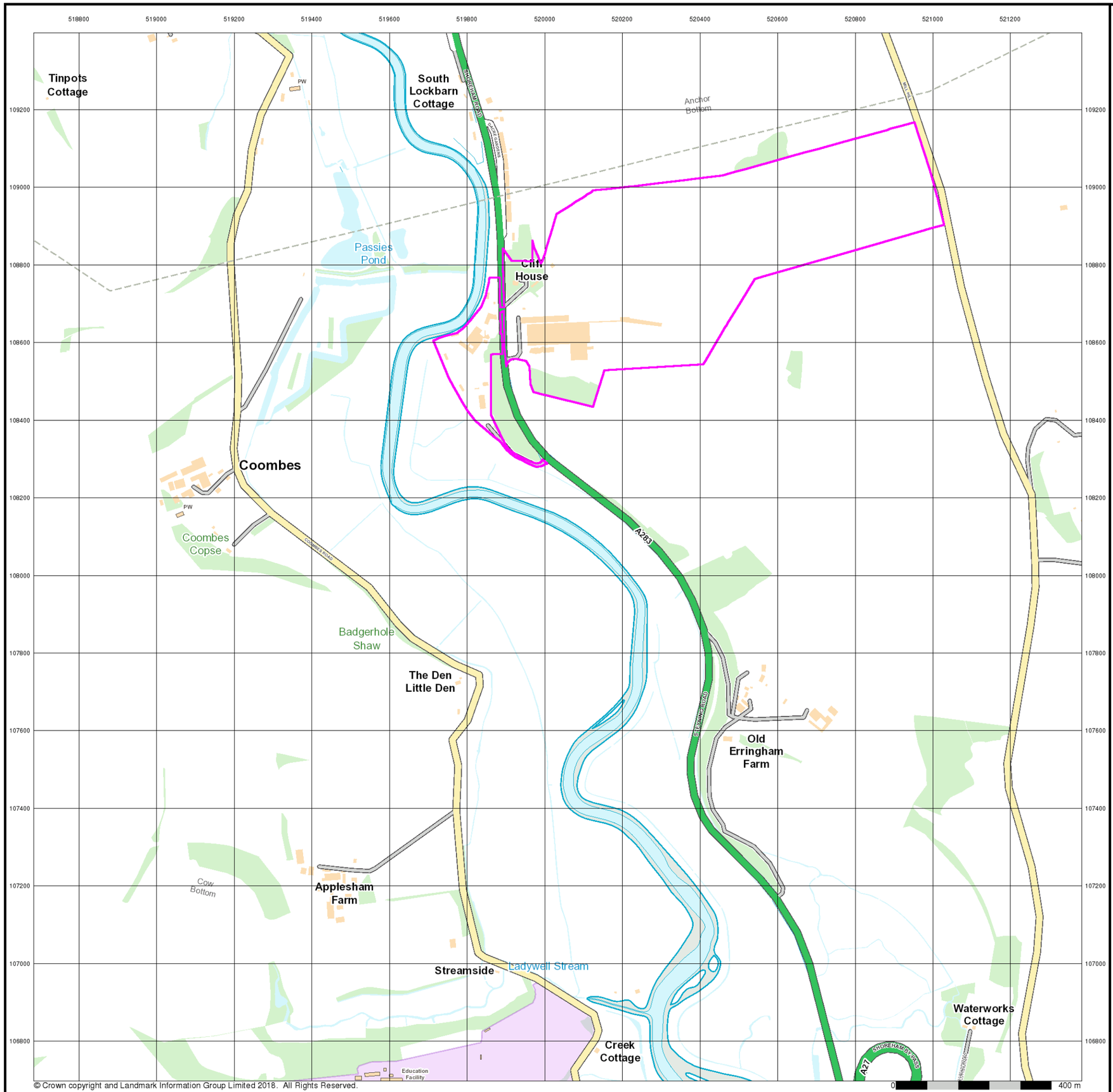
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

Landmark INFORMATION GROUP

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



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Street View

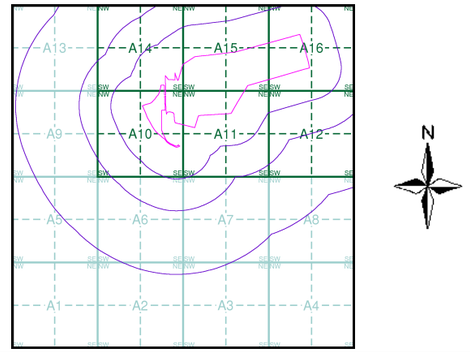
Published 2018

Source map scale - 1:10,000

Street View is a street-level map for the whole of Great Britain produced by the Ordnance Survey. These maps are provided at a nominal scale of 1:10,000

Map Name(s) and Date(s)

Street View Map - Slice A



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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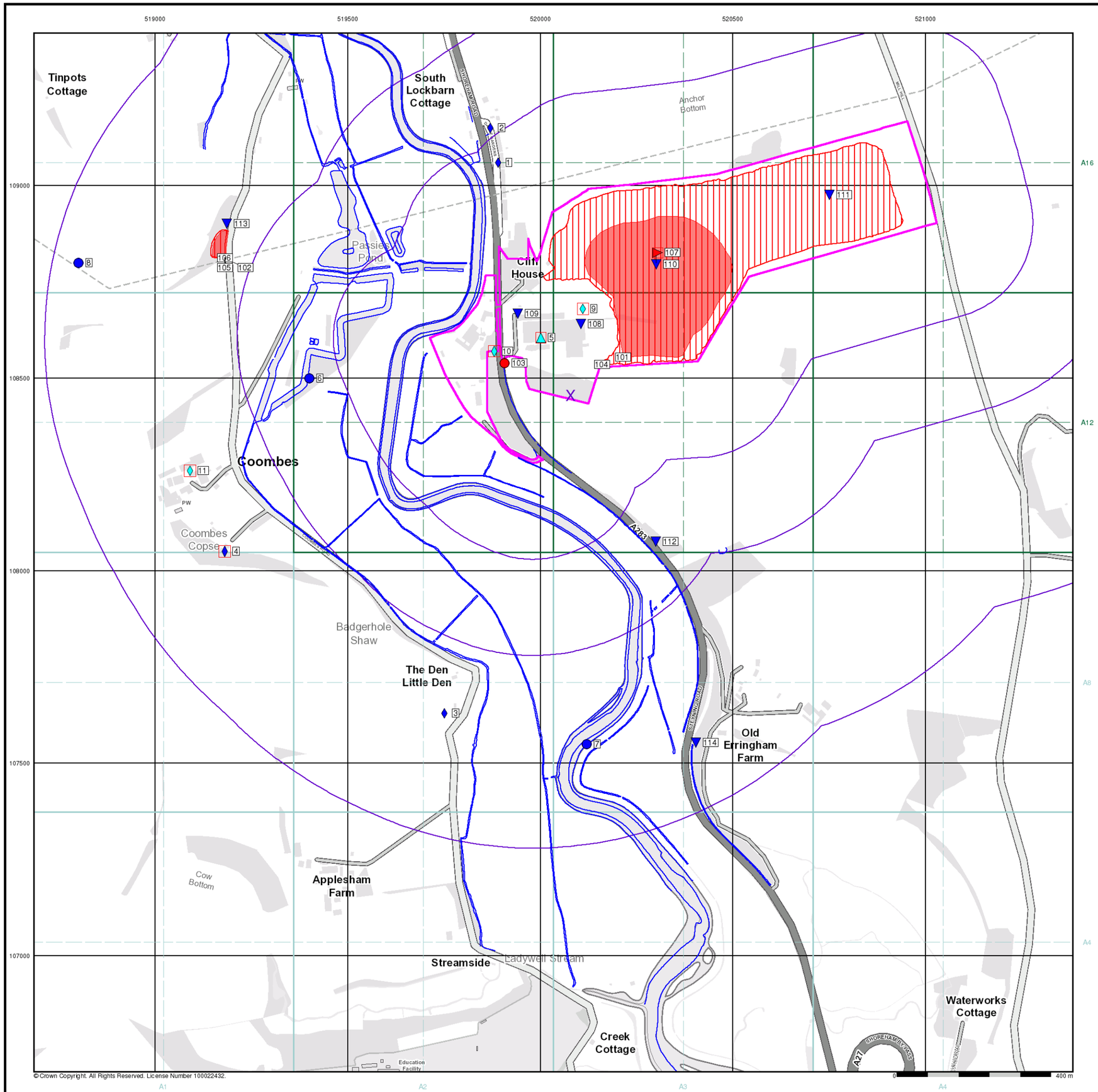

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LANDMARK INFORMATION GROUP®

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Geological

- BGS Recorded Mineral Site

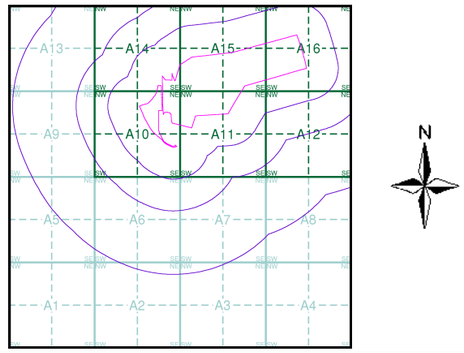
Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Site Sensitivity Map - Slice A



Order Details

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Customer Ref:	2018s0642
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Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

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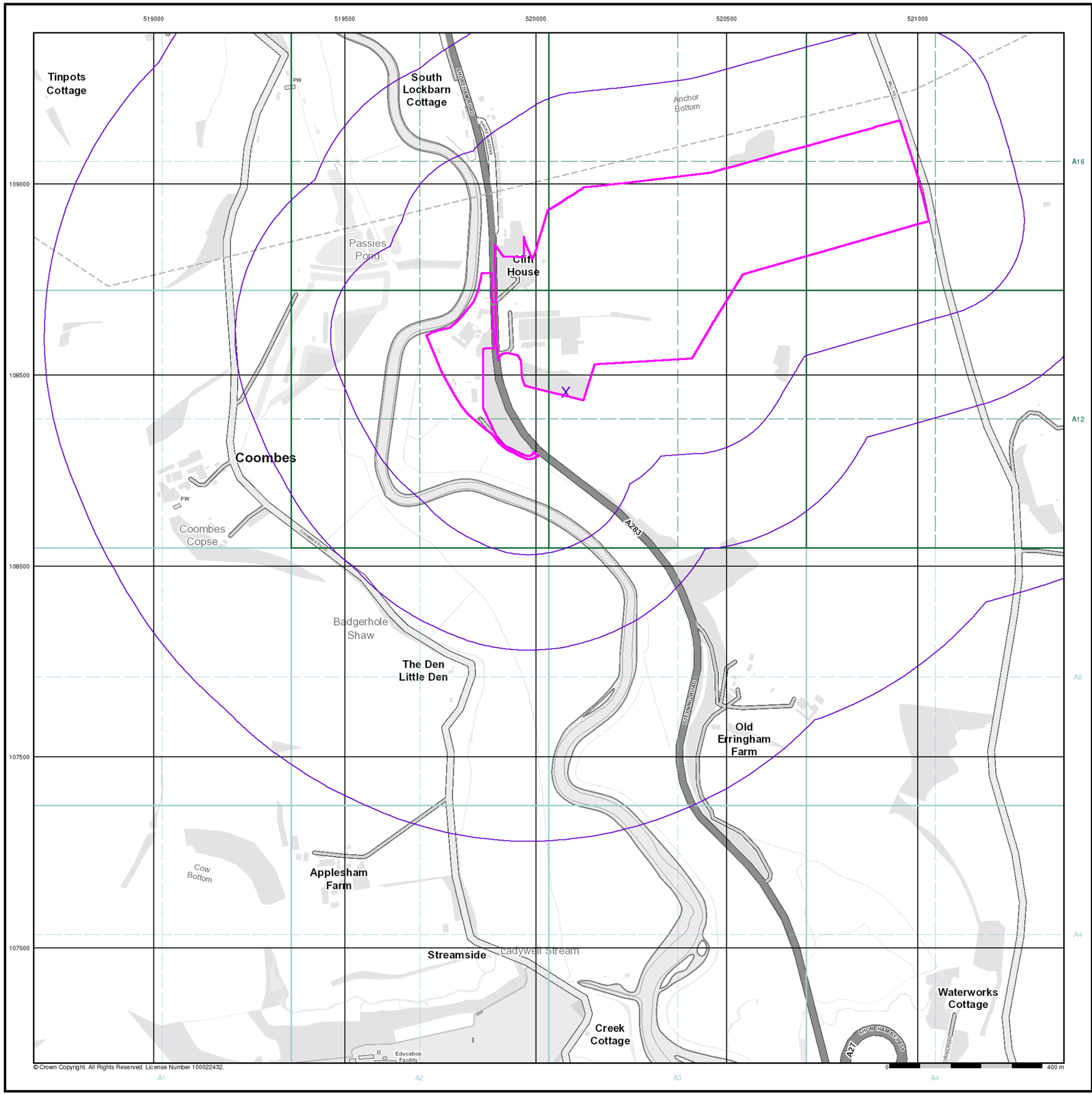

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LANDMARK INFORMATION GROUP®

Industrial Land Use Map

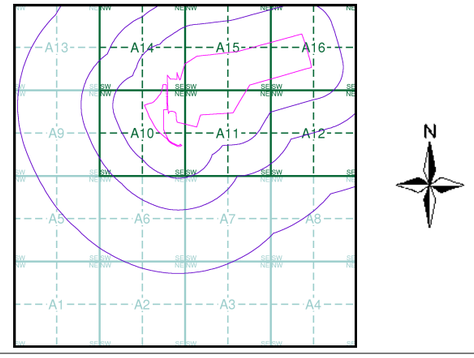
General

Specified Site
Specified Buffer(s)
Bearing Reference Point
Slice
Map ID

Industrial Land Use

Contemporary Trade Directory Entry
Fuel Station Entry
Gas Pipeline
Underground Electrical Cables

Industrial Land Use Map - Slice A



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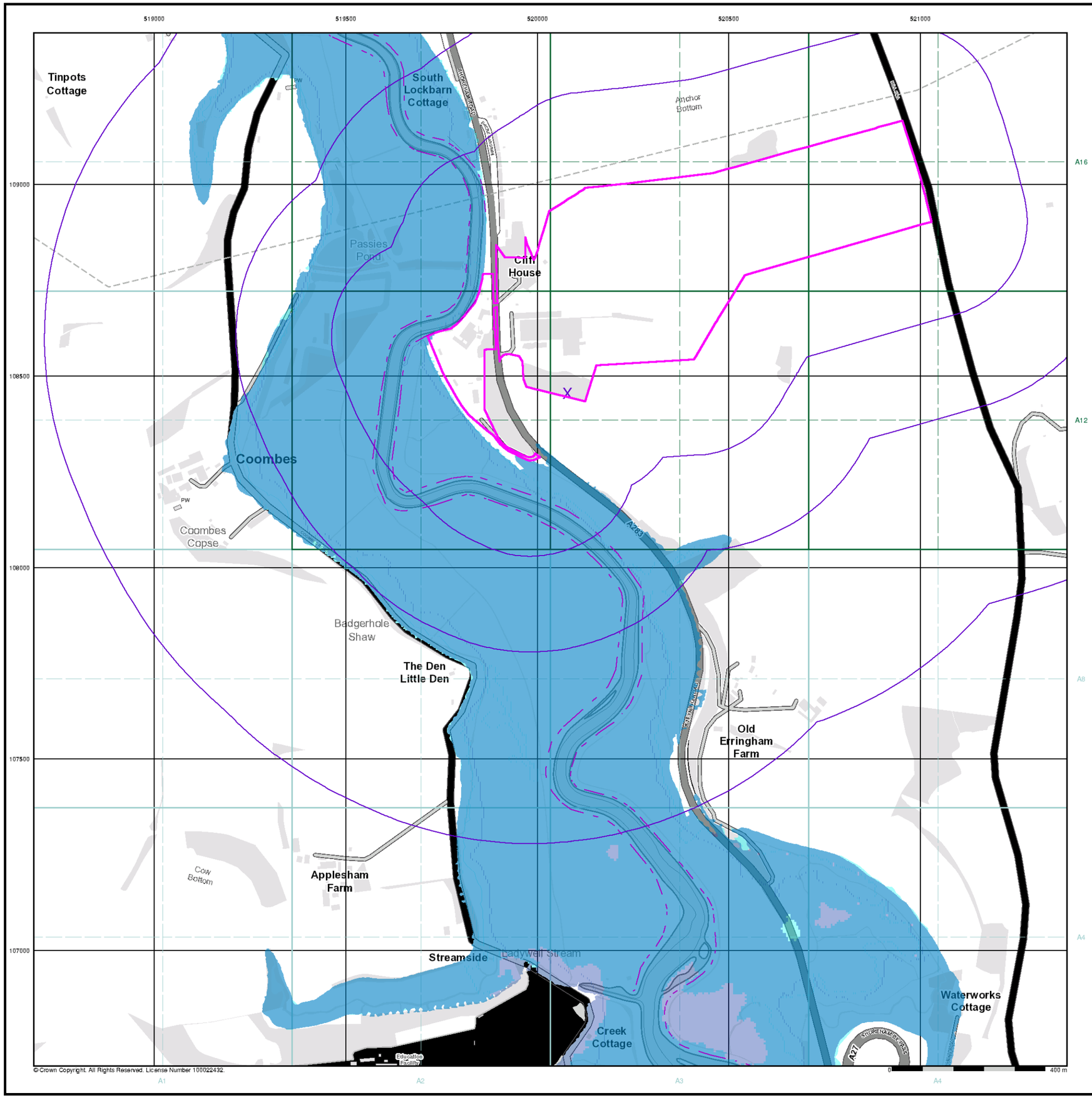

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LANDMARK INFORMATION GROUP®

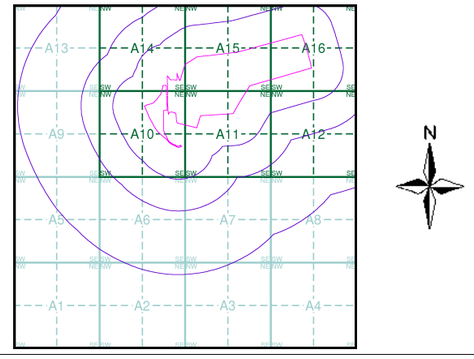
General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A



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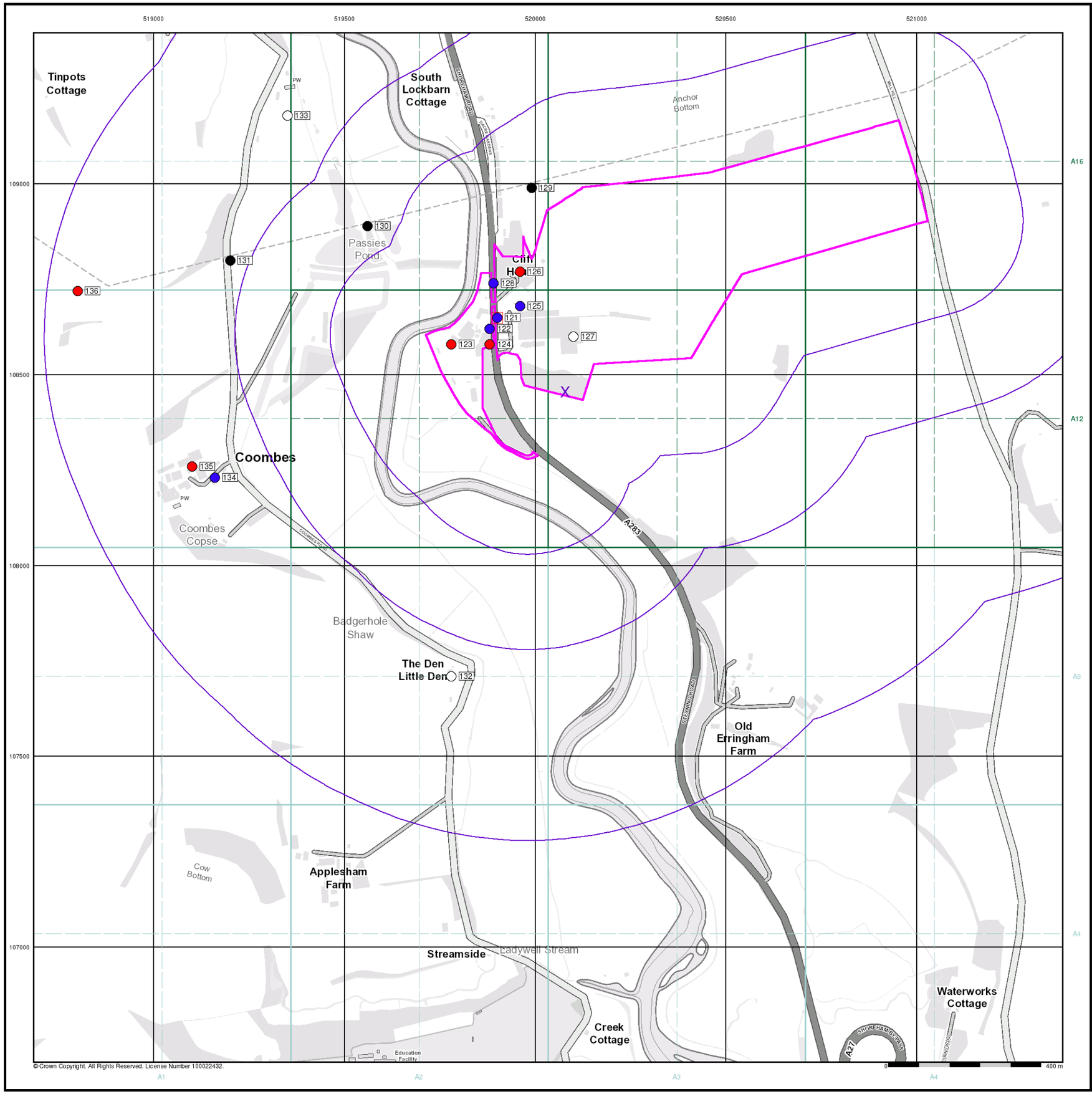

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LANDMARK INFORMATION GROUP®

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

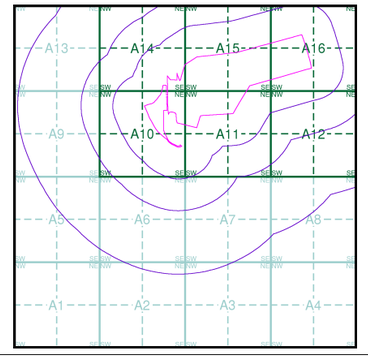
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A



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Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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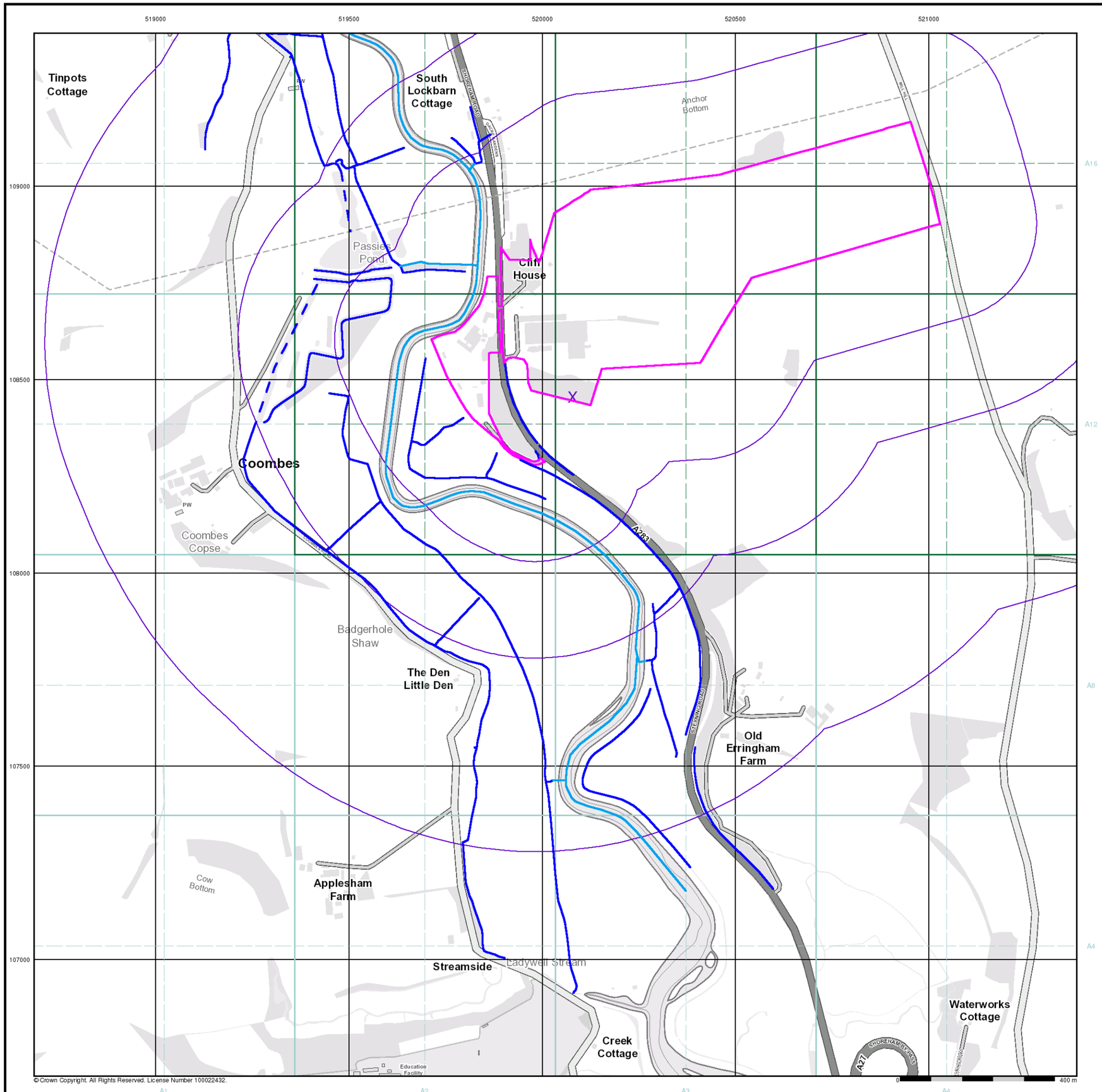

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LANDMARK INFORMATION GROUP®

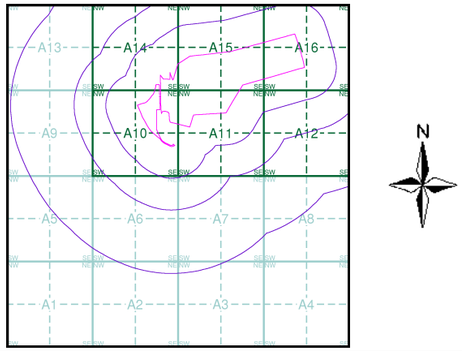
General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

OS Water Network Data

- Canal
- Reservoir
- Foreshore
- Marsh
- Tidal River
- Inland River
- Drain
- Other
- Lake
- Transfer
- Lock Or Flight Of Locks
- Sea

OS Water Network Map - Slice A



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Slice:	A
Site Area (Ha):	44.36
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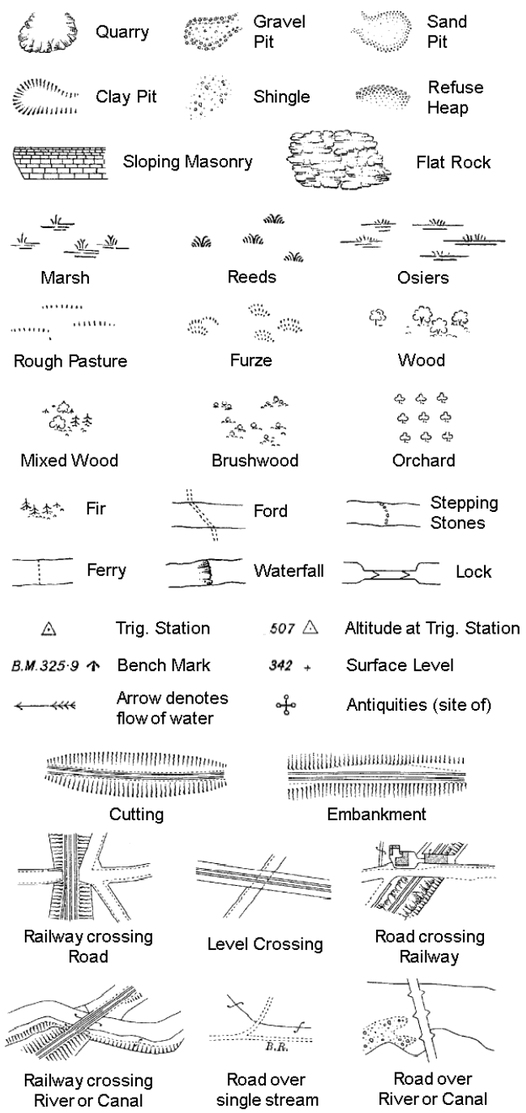
Historical Mapping Legends

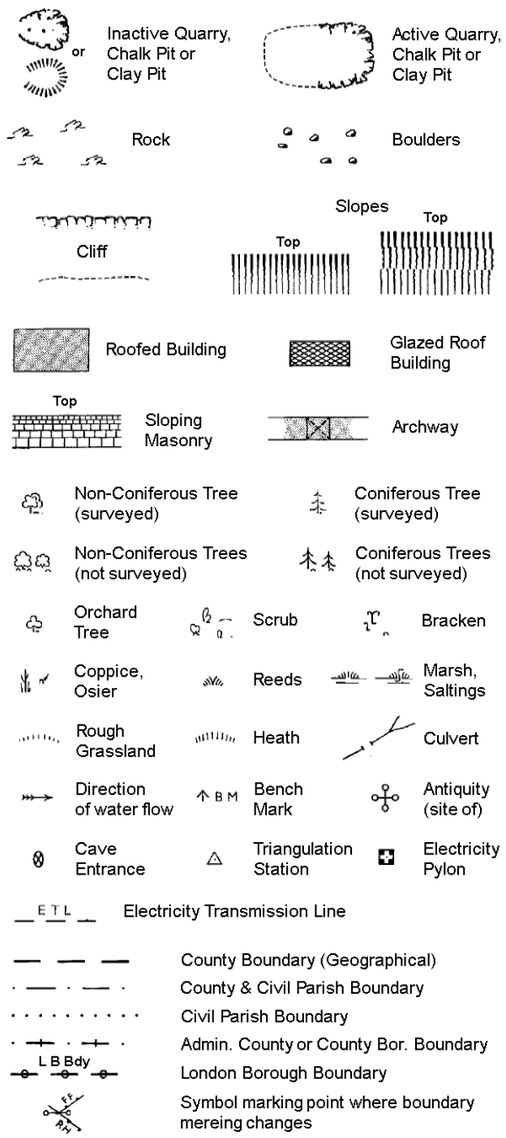
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy.
County Borough Boundary (England)
Co. Burgh Bdy.
County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

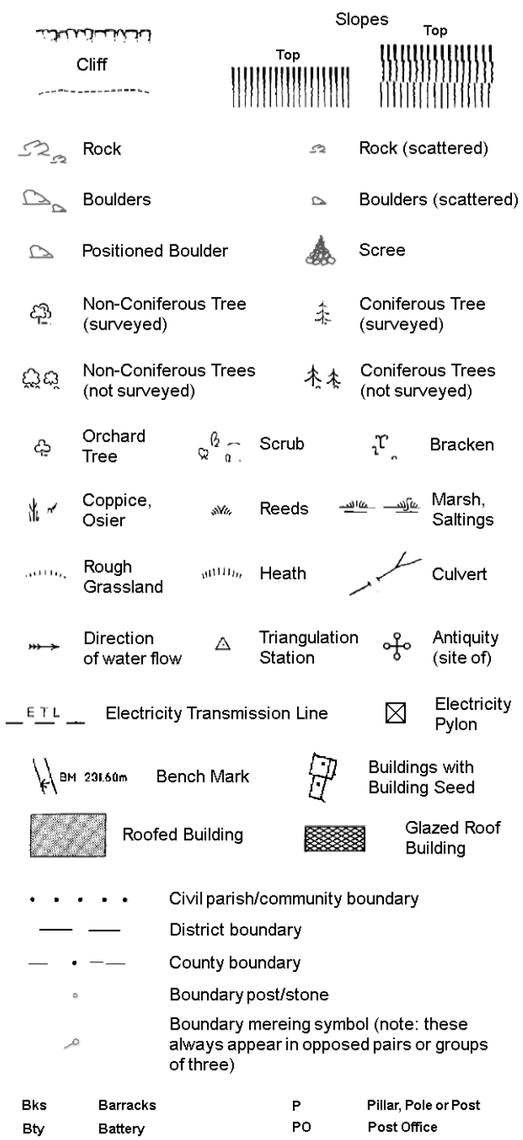
Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
L B Bdy
London Borough Boundary
Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

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



Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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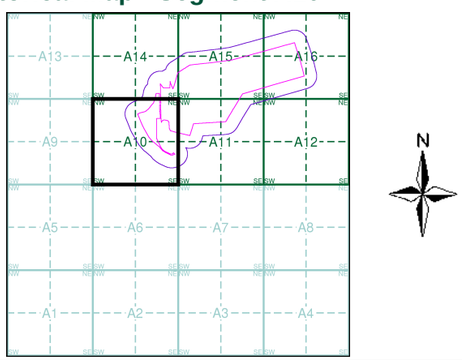
Historical Mapping & Photography included:

Historical Map - Segment A10



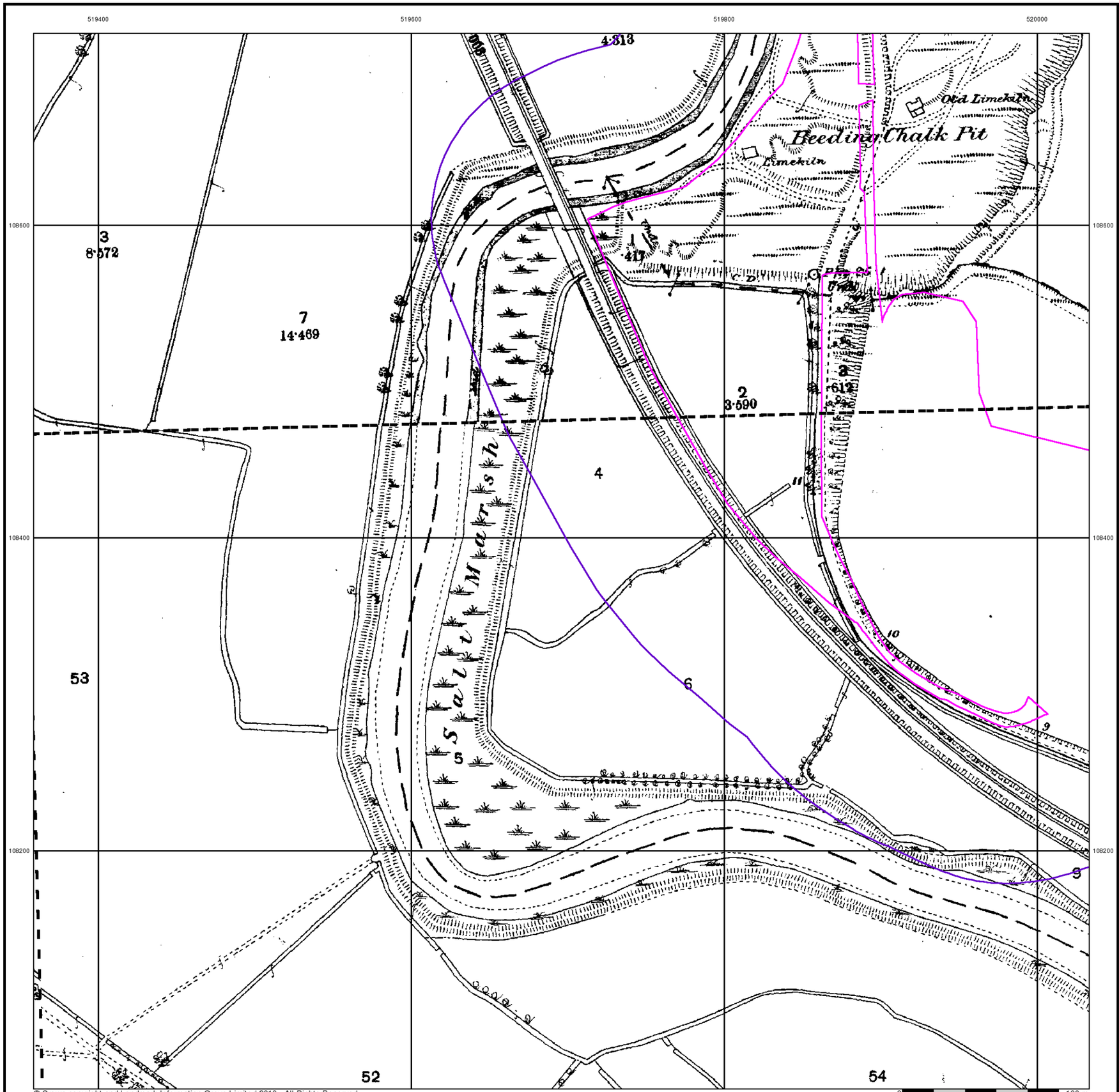
Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	100

Site Details

Site at 520371,108723

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



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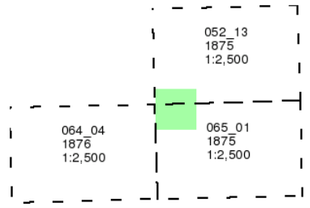
Sussex

Published 1875 - 1876

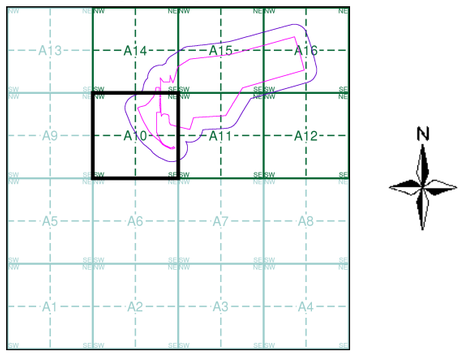
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A10



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Sussex

Published 1898

Source map scale - 1:2,500

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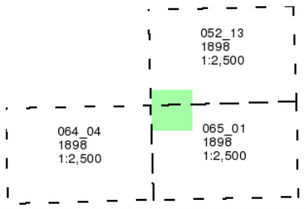
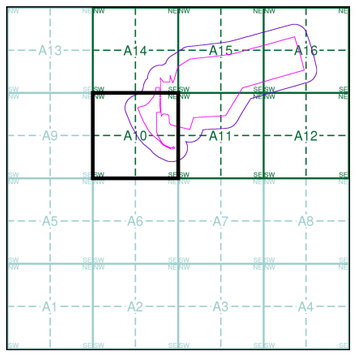
Map Name(s) and Date(s)



Historical Map - Segment A10



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Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	100

Site Details

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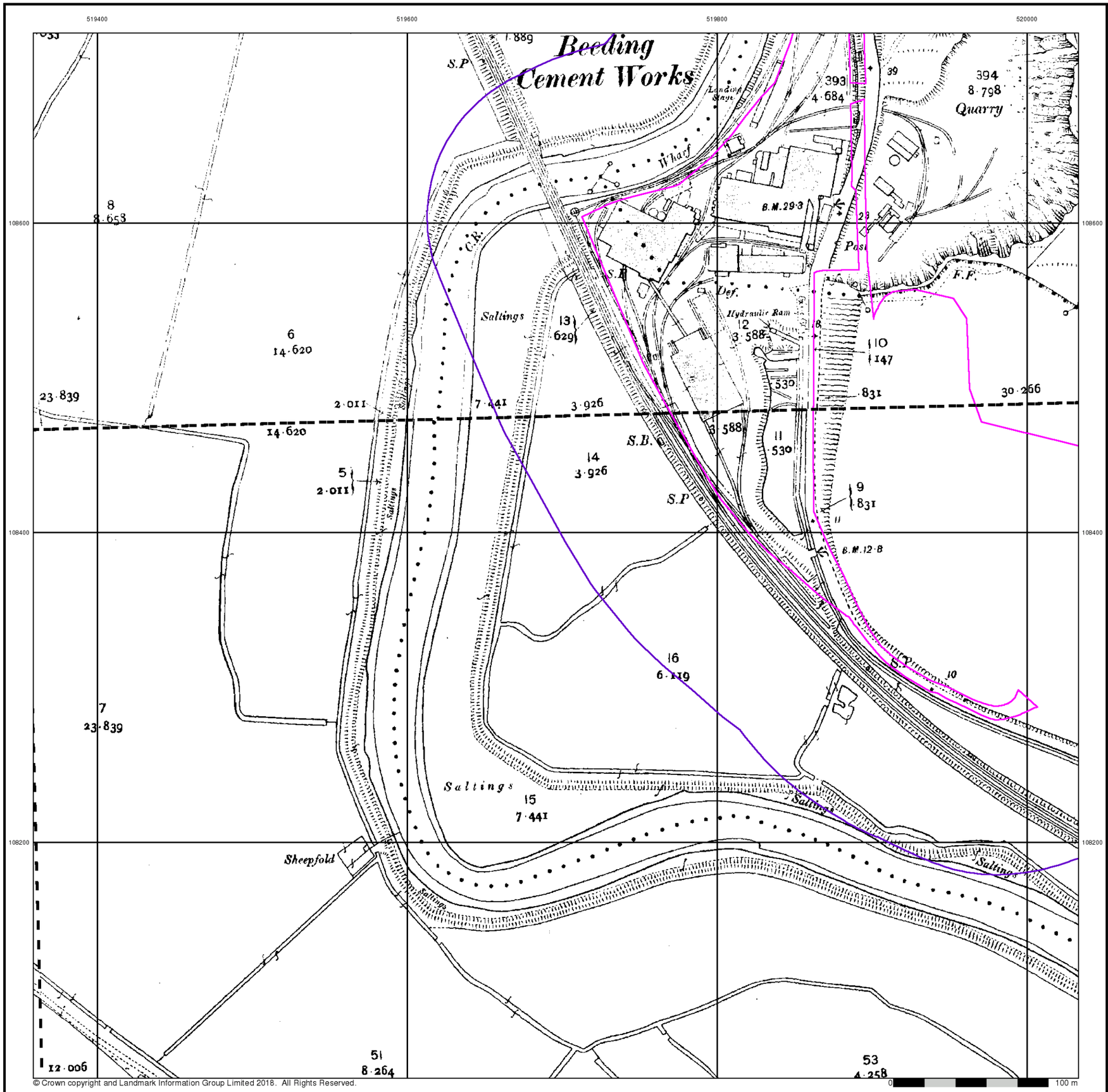

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Sussex

Published 1912

Source map scale - 1:2,500

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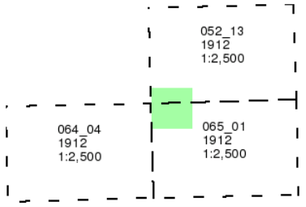
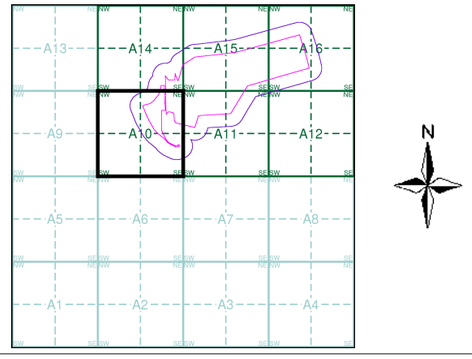
Map Name(s) and Date(s)



Historical Map - Segment A10



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519400 519600 519800 520000

108600 108400 108200

S.B.

S.P

14
3·058

6
3·986

7
6·581

8
1·116

16
6·037

15
6·227

10

Salting

7a
8·262

55a
7·454

51
8·264

53
4·258

1504
1·052

0 100 m

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Sussex

Published 1931 - 1933

Source map scale - 1:2,500

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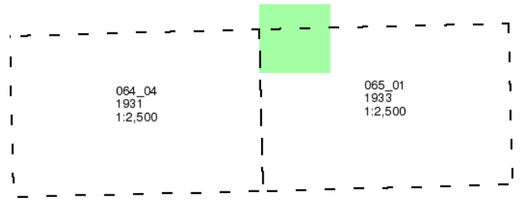
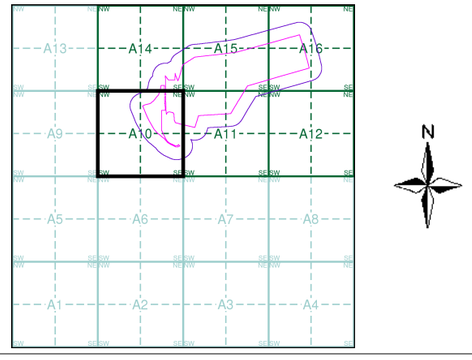
Map Name(s) and Date(s)



Historical Map - Segment A10



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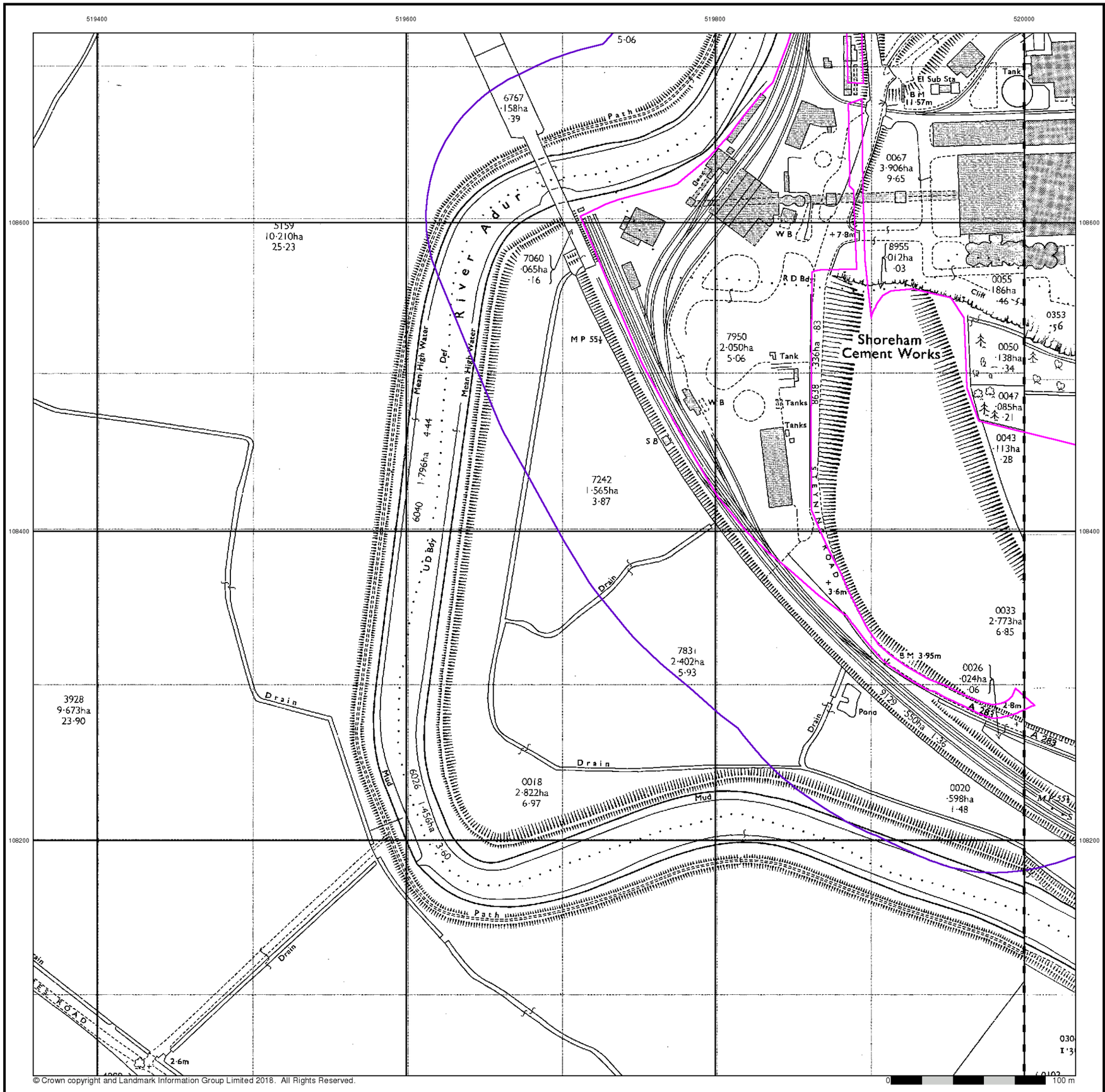

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Ordnance Survey Plan

Published 1957 - 1972

Source map scale - 1:2,500

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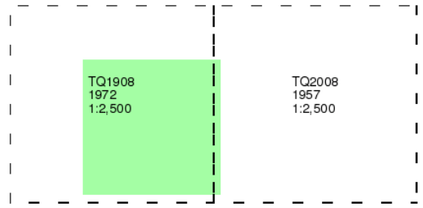
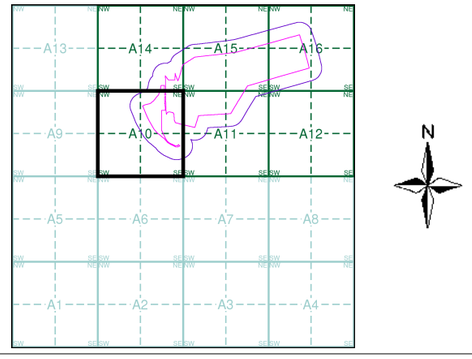
Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	100

Site Details

Site at 520371,108723

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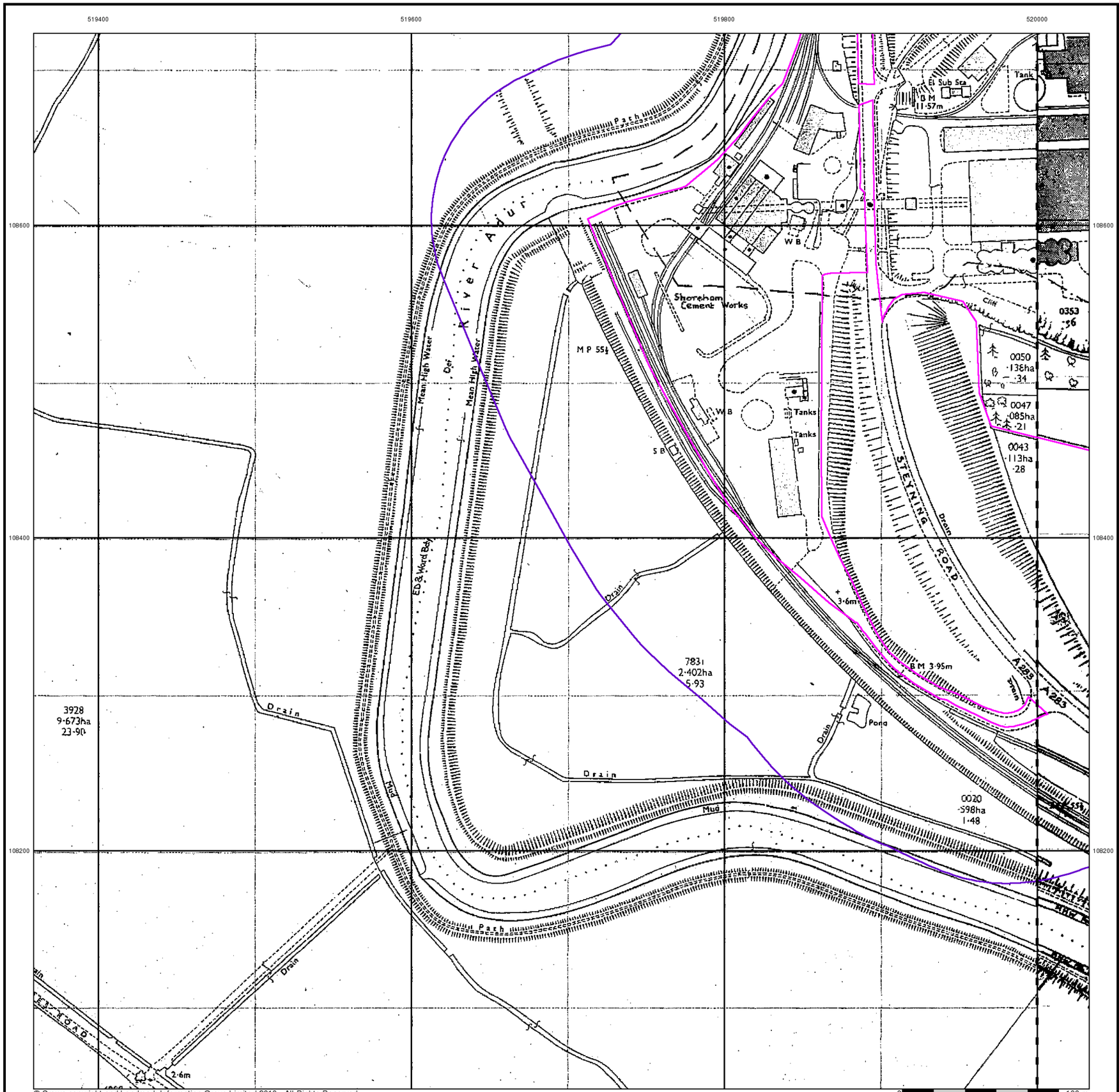
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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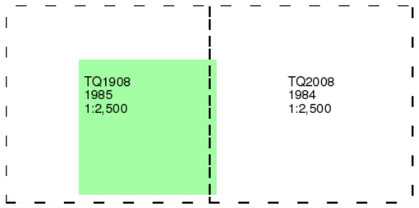
Additional SIMs

Published 1984 - 1985

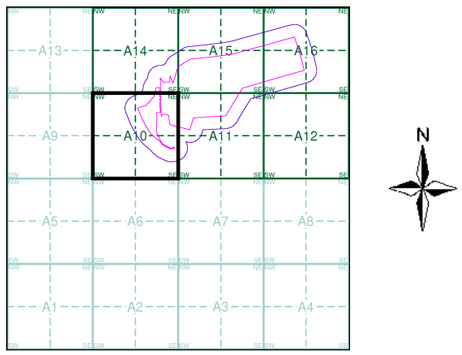
Source map scale - 1:2,500

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 A10



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	100

Site Details

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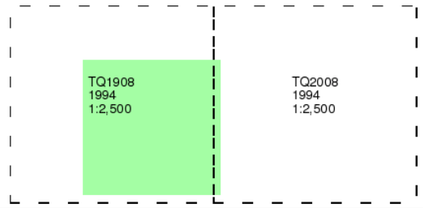
Large-Scale National Grid Data

Published 1994

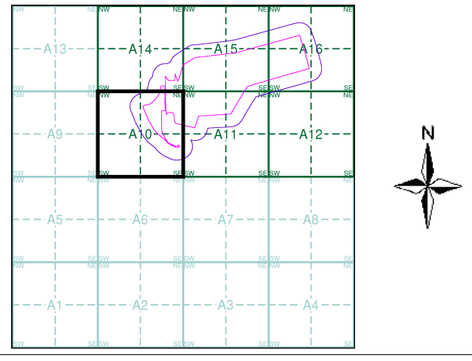
Source map scale - 1:2,500

'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 A10



Order Details

Order Number:	170375371_1_1
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Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	100

Site Details

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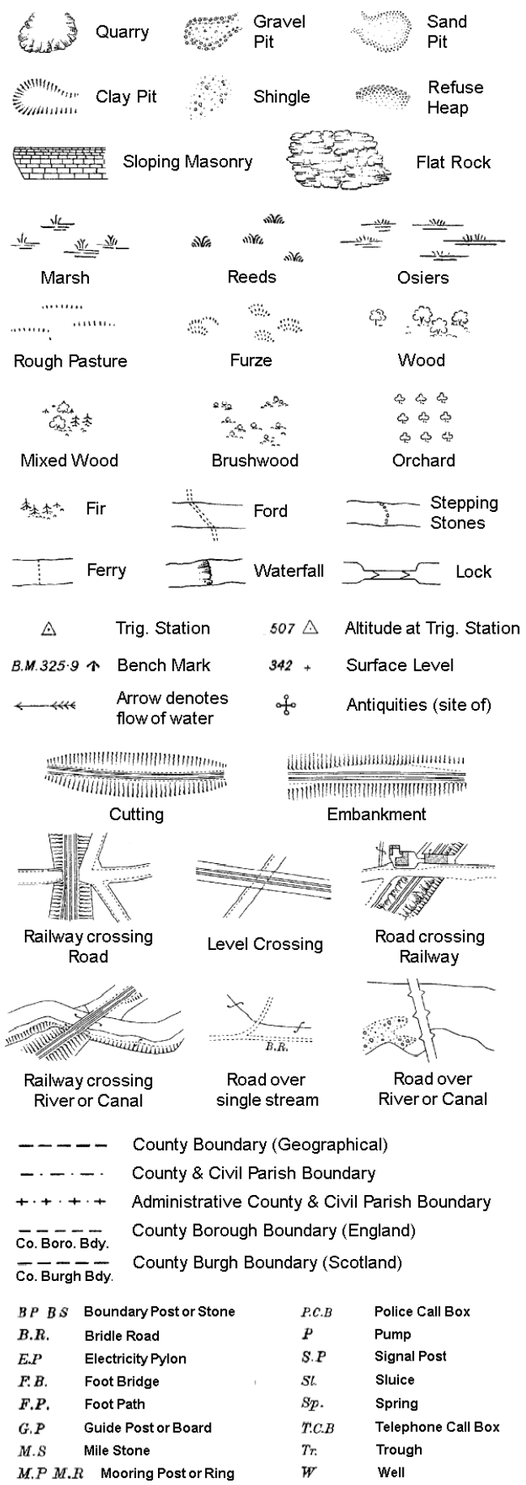
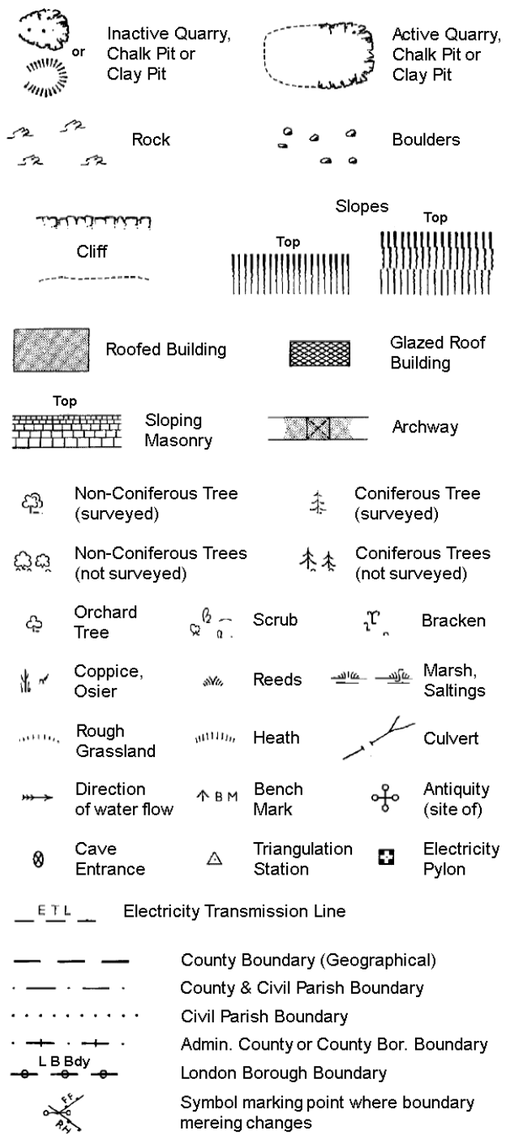
Historical Mapping Legends

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



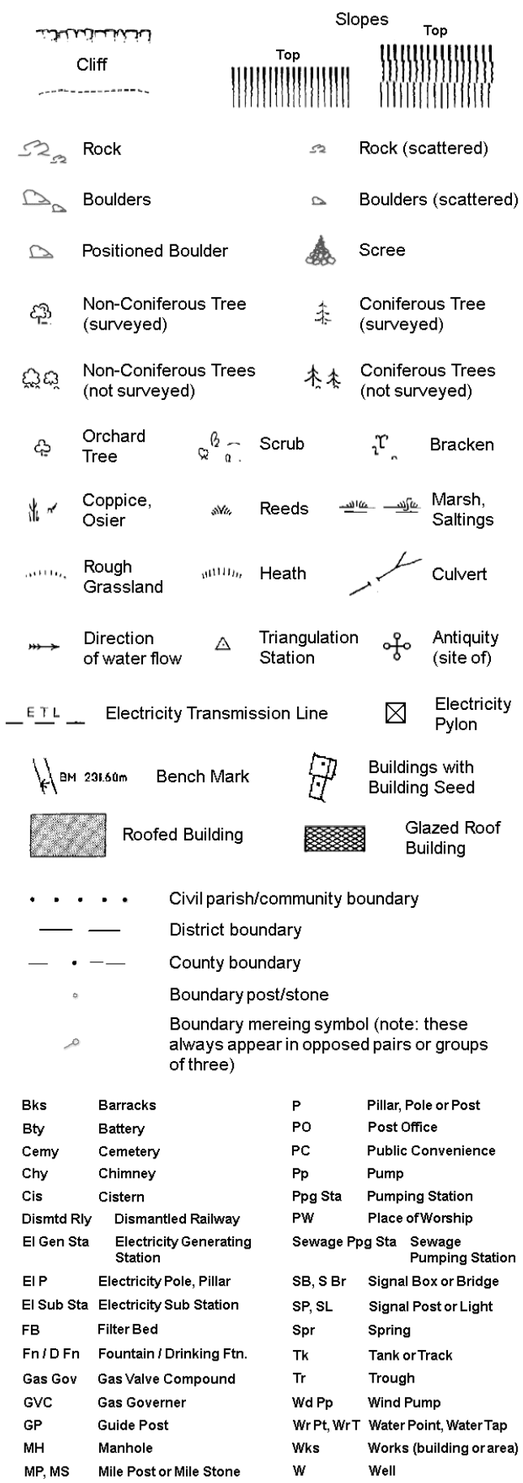
B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

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



BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

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



Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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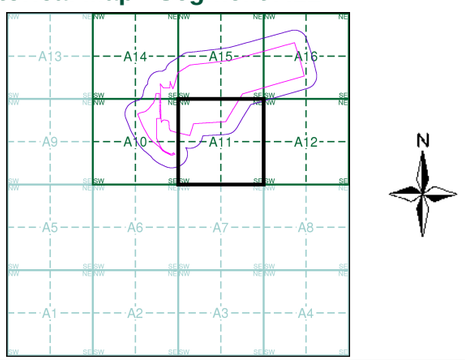
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Sussex	1:2,500	1875	2
Sussex	1:2,500	1898	3
Sussex	1:2,500	1912	4
Sussex	1:2,500	1933	5
Ordnance Survey Plan	1:2,500	1957	6
Additional SIMs	1:2,500	1984	7
Large-Scale National Grid Data	1:2,500	1994	8

Historical Map - Segment A11



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	100

Site Details

Site at 520371,108723

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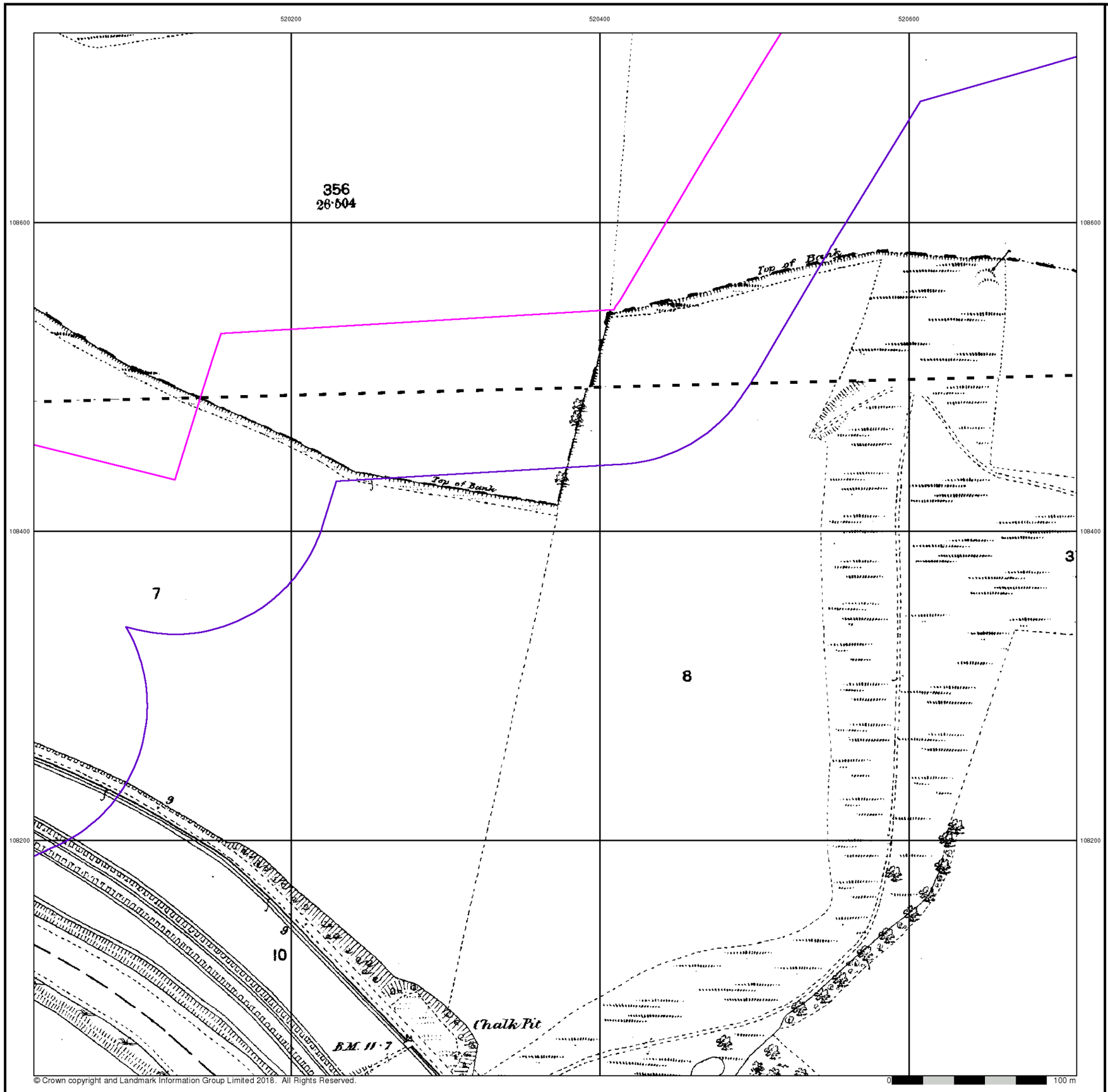

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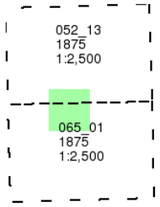
Sussex

Published 1875

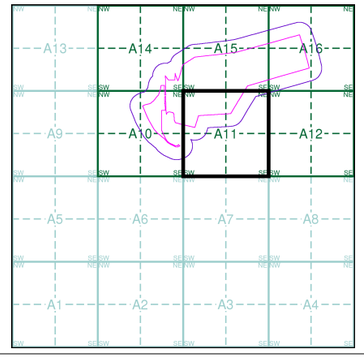
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



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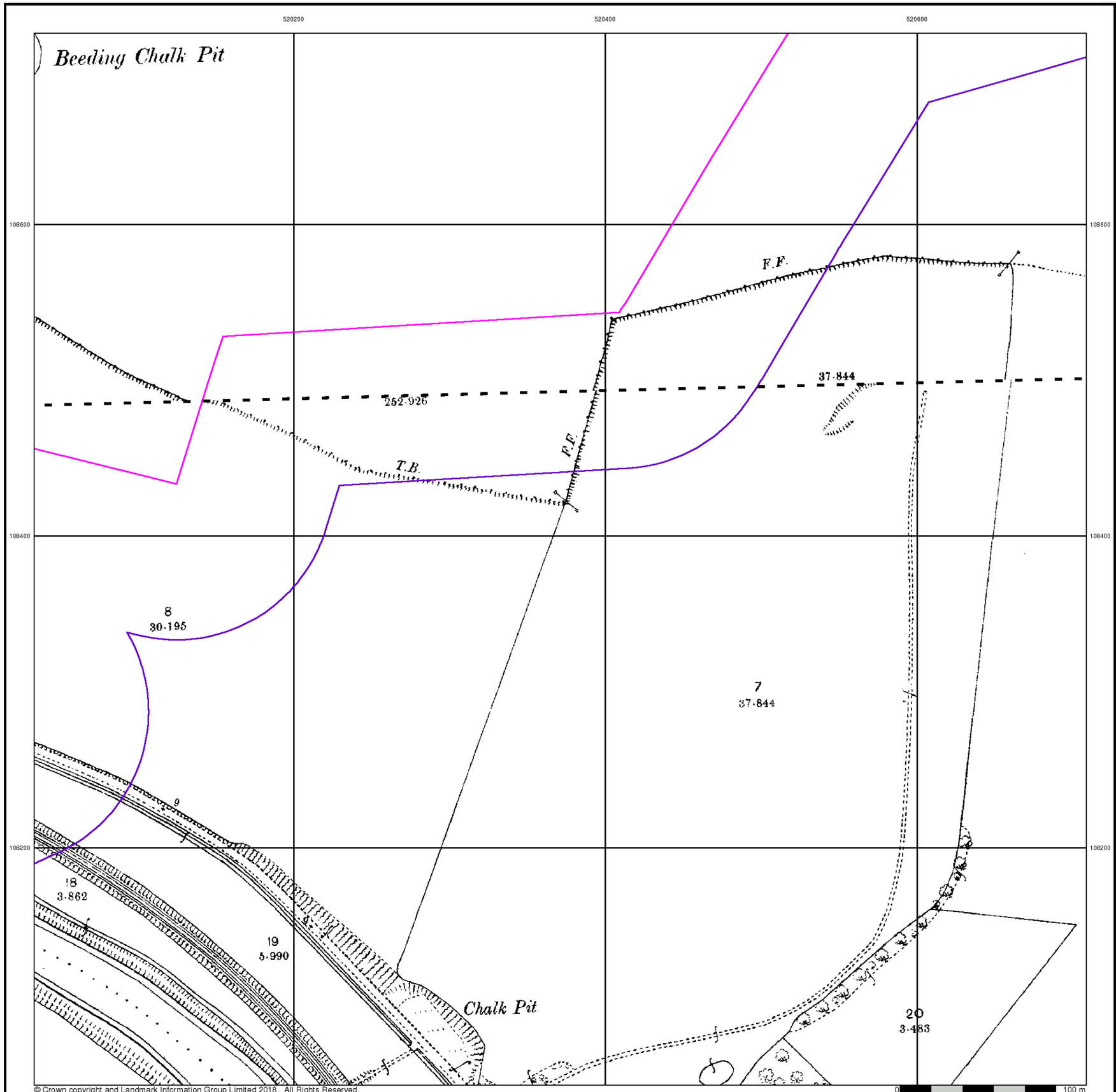

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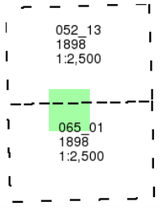
Sussex

Published 1898

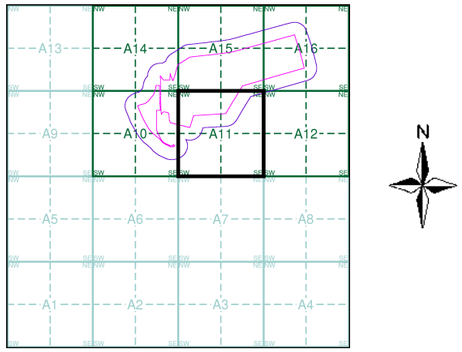
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	100

Site Details

Site at 520371,108723

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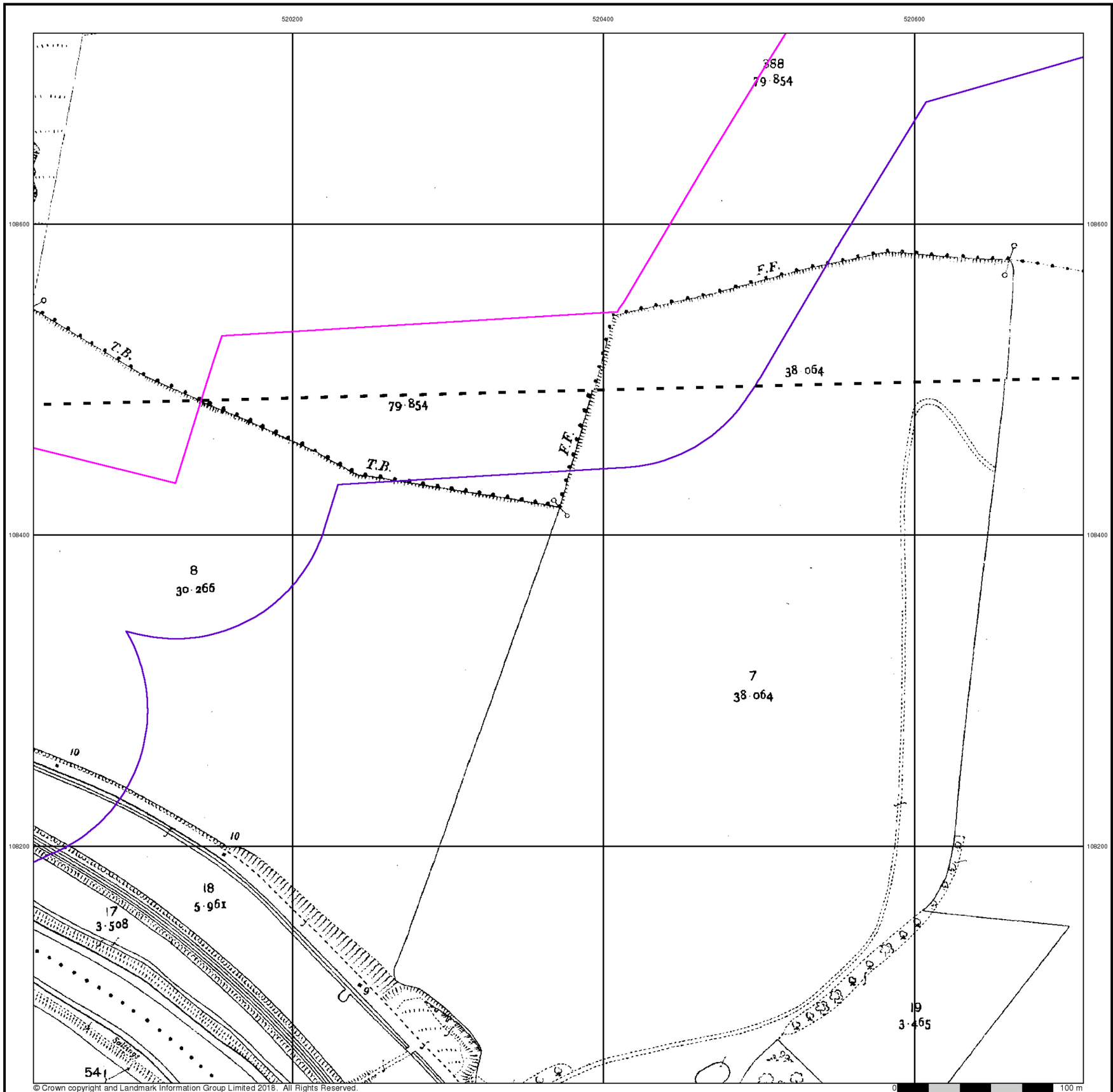

0 100 m

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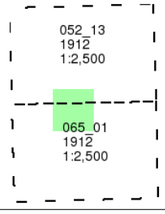
Sussex

Published 1912

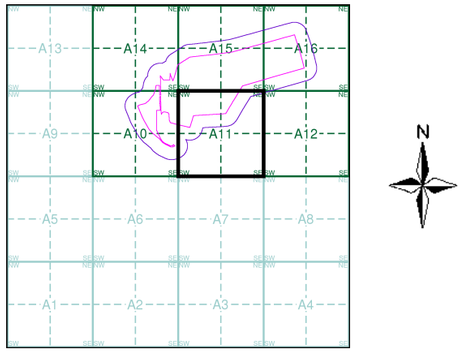
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

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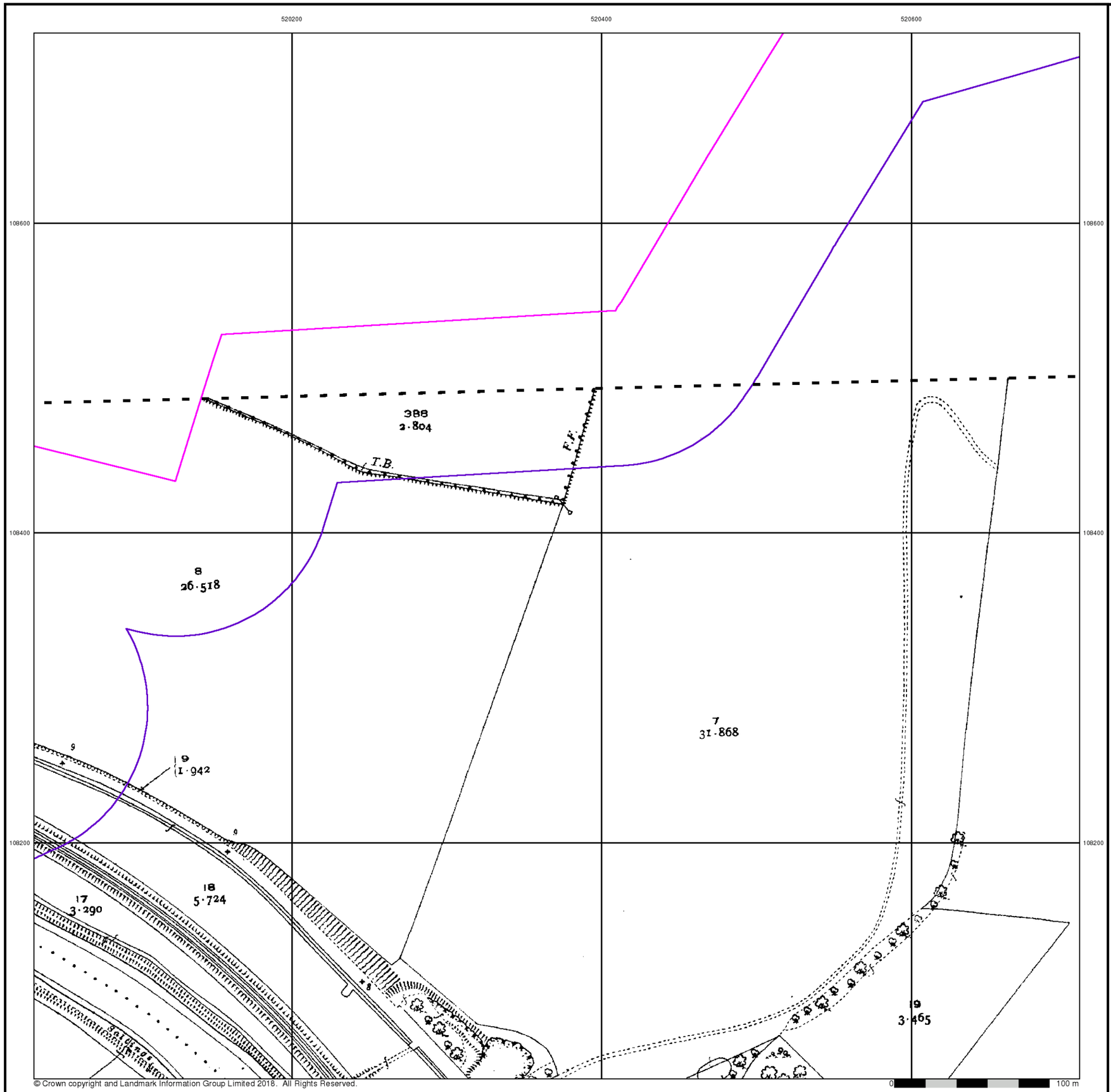

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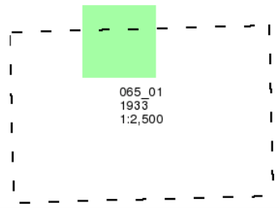
Sussex

Published 1933

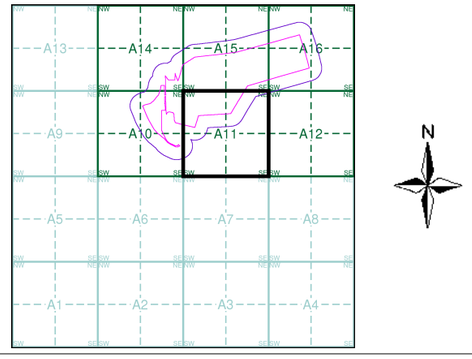
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



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Site Details

Site at 520371,108723

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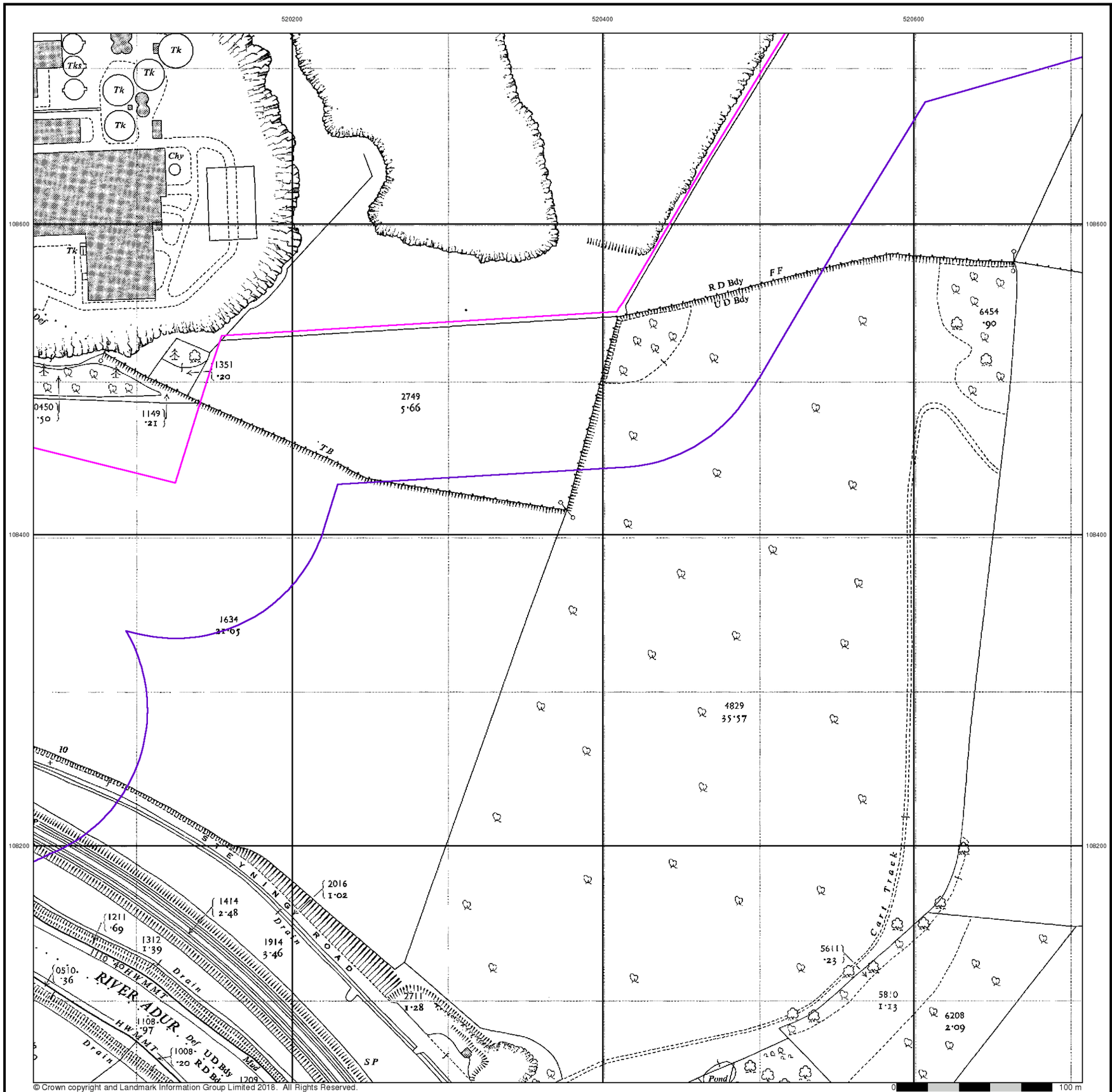

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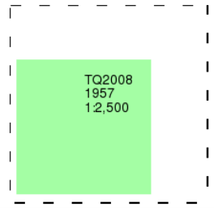
Ordnance Survey Plan

Published 1957

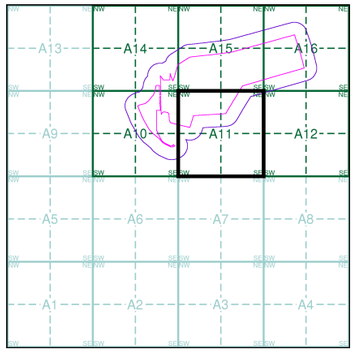
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



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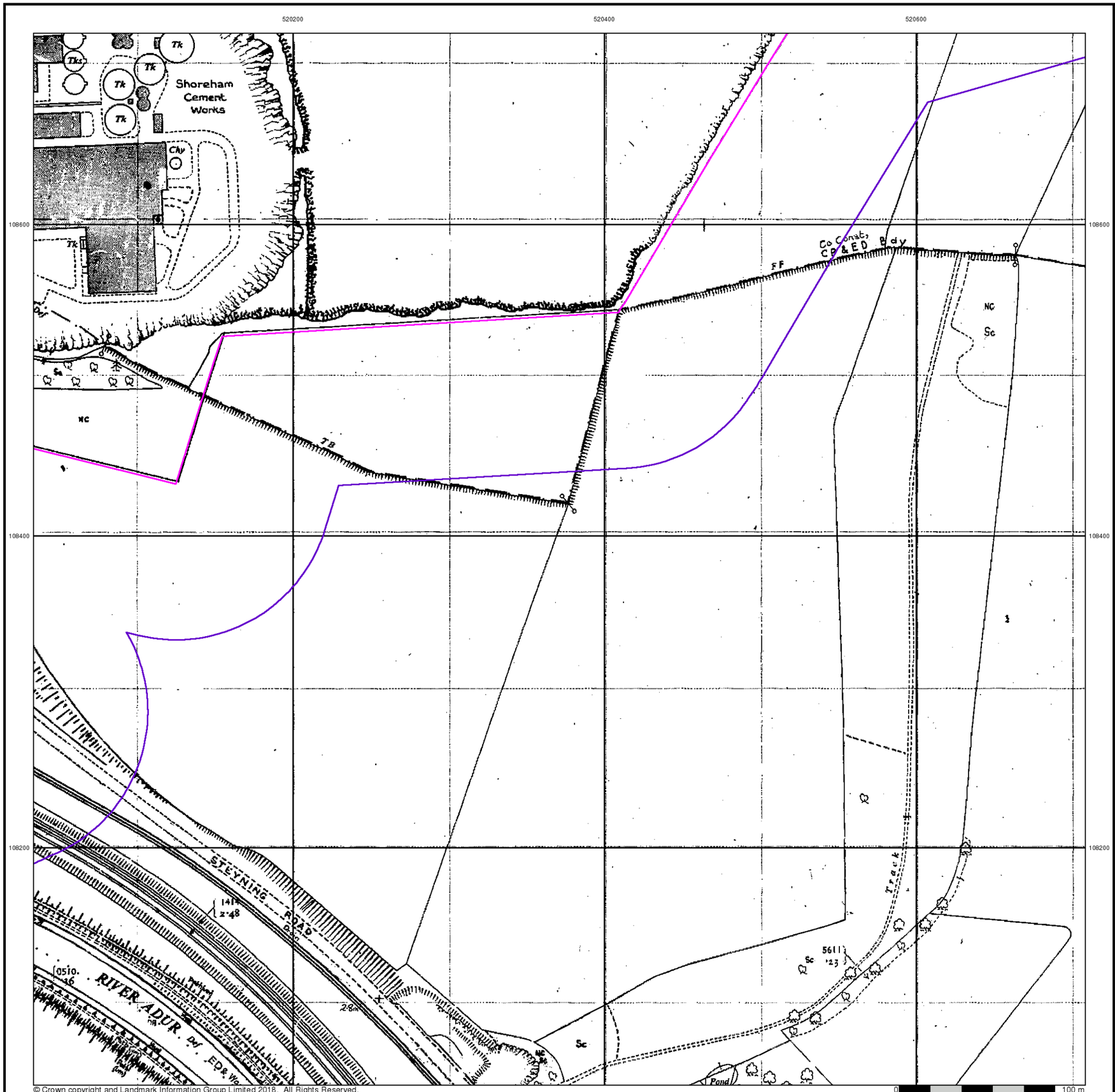

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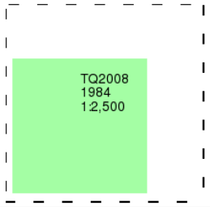
Additional SIMs

Published 1984

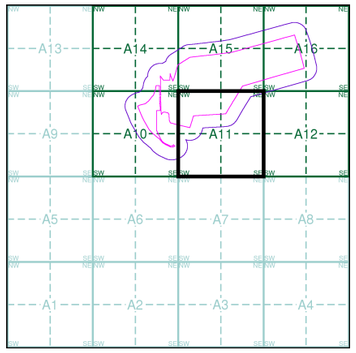
Source map scale - 1:2,500

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 A11



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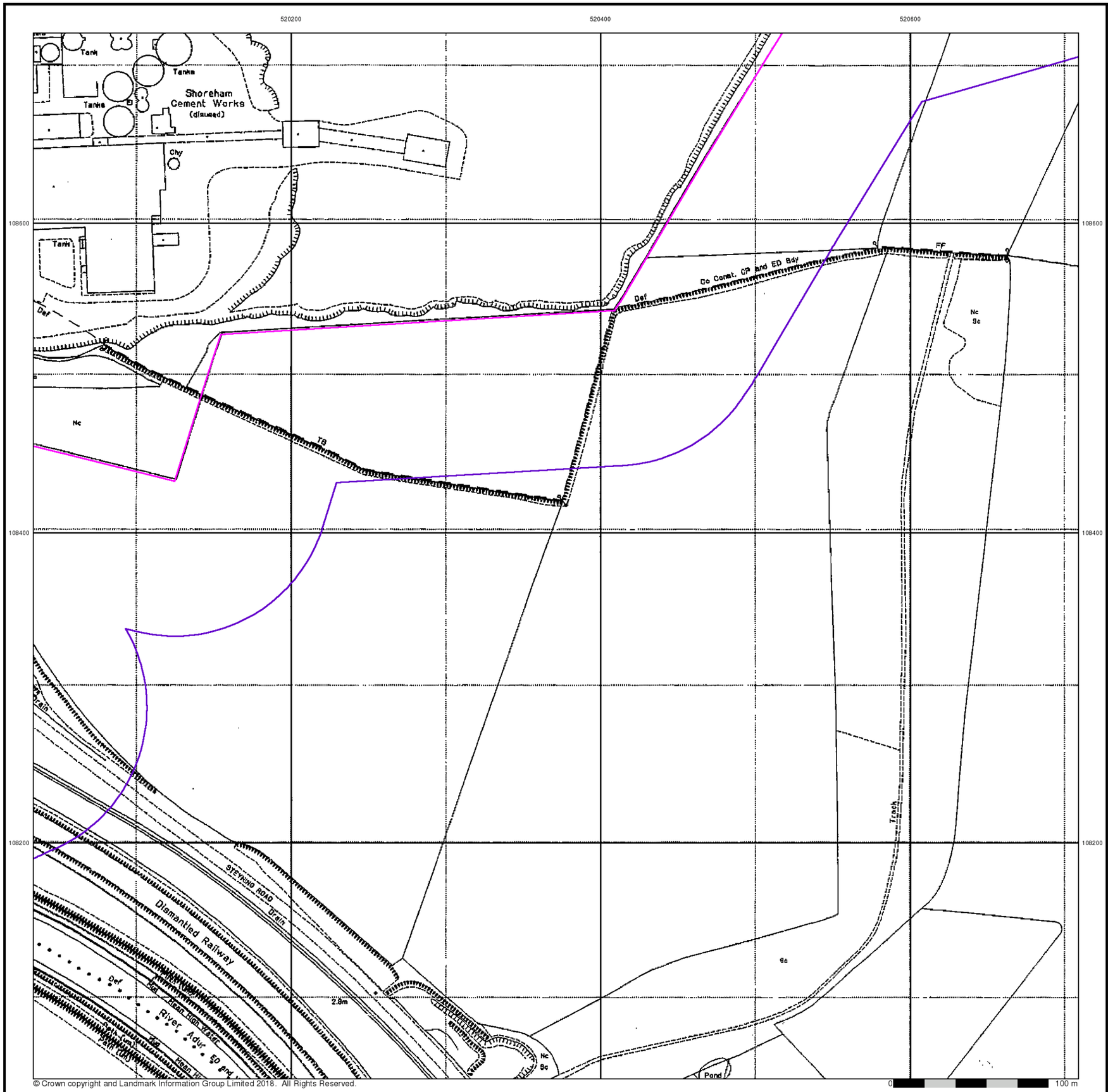

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LANDMARK INFORMATION GROUP®

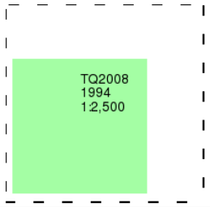
Large-Scale National Grid Data

Published 1994

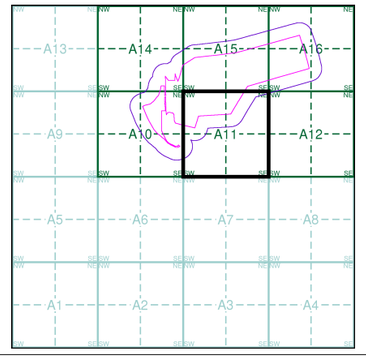
Source map scale - 1:2,500

'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 A11



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	100

Site Details

Site at 520371,108723

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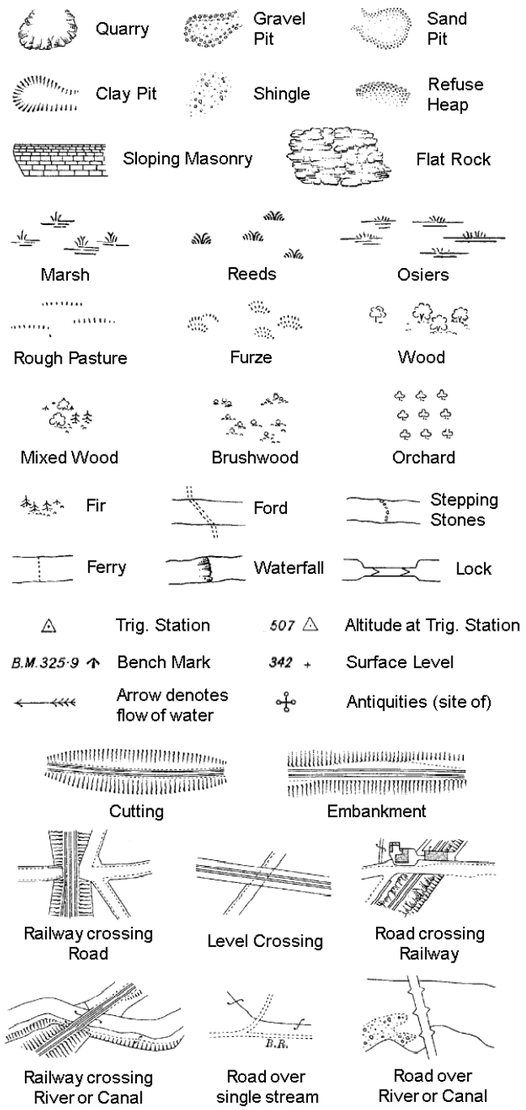
Historical Mapping Legends

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



County Boundary (Geographical)

County & Civil Parish Boundary

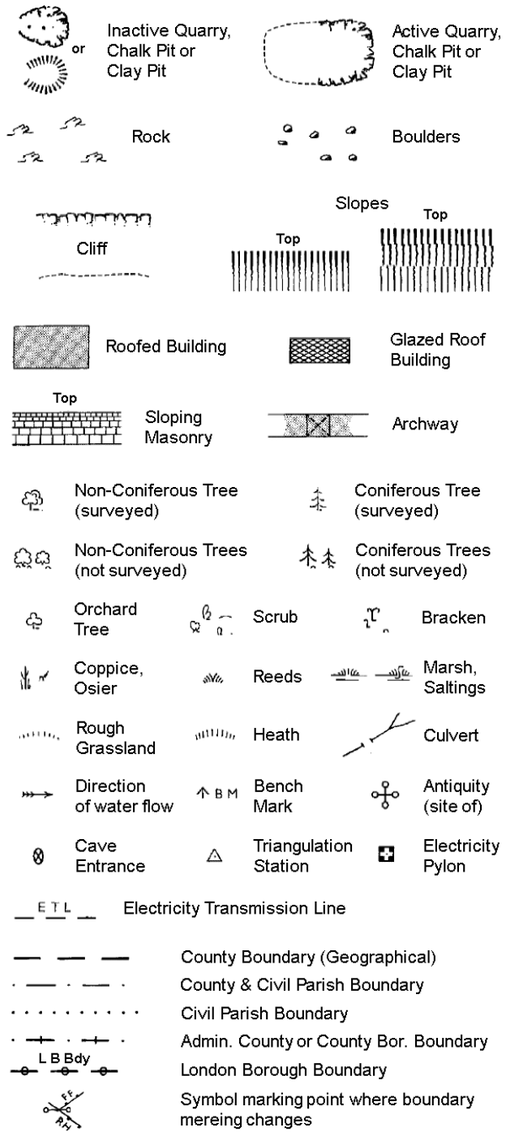
Administrative County & Civil Parish Boundary

Co. Boro. Bdy. County Borough Boundary (England)

Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

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



County Boundary (Geographical)

County & Civil Parish Boundary

Civil Parish Boundary

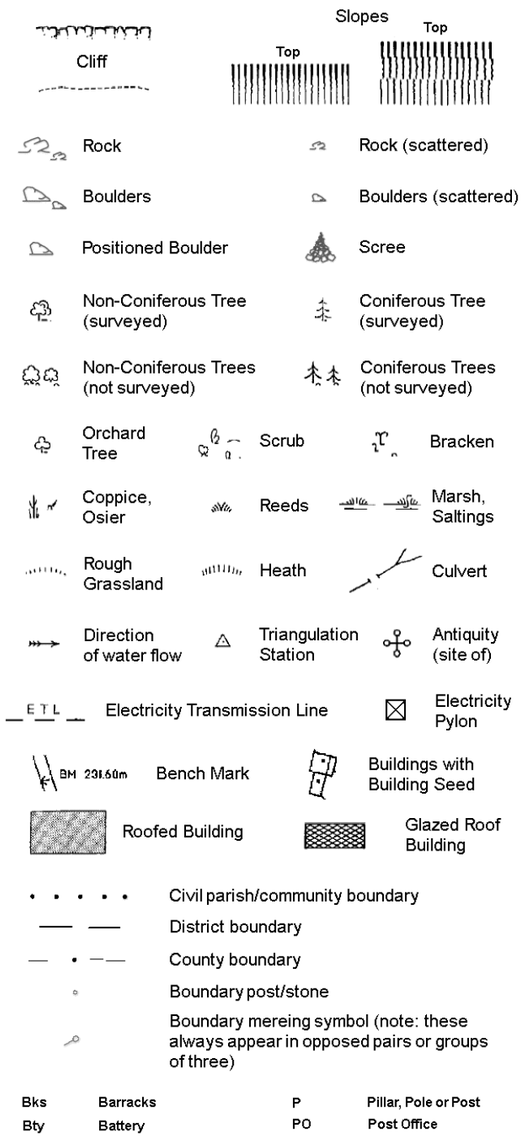
Admin. County or County Bor. Boundary

L B Bdy London Borough Boundary

Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

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



Civil parish/community boundary

District boundary

County boundary

Boundary post/stone

Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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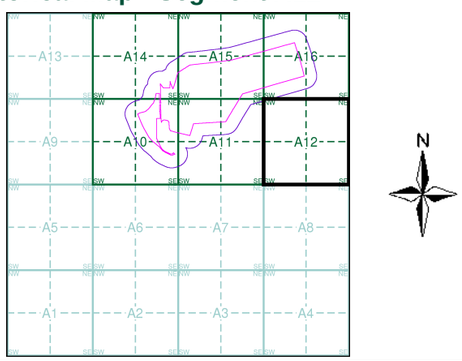
Historical Mapping & Photography included:

Historical Map - Segment A12



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	100

Site Details

Site at 520371,108723

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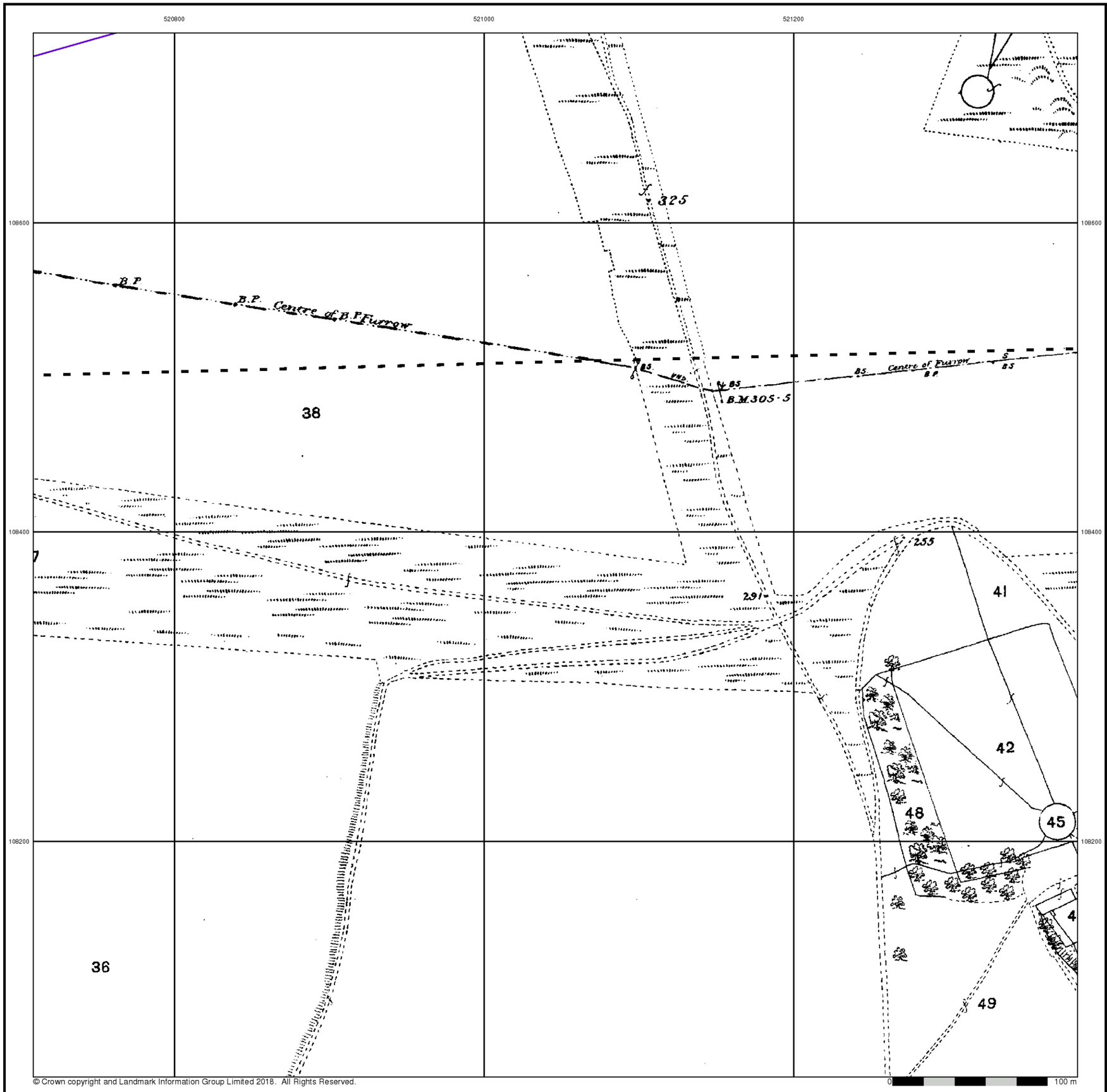

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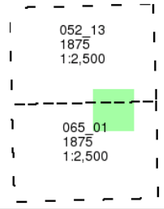
Sussex

Published 1875

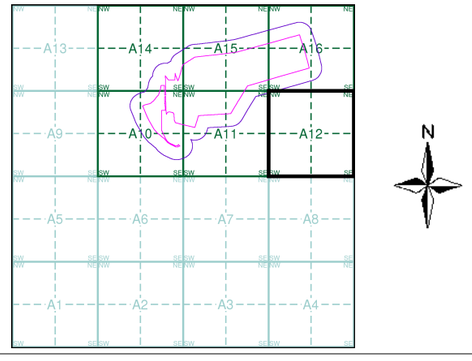
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A12



Order Details

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Site Details

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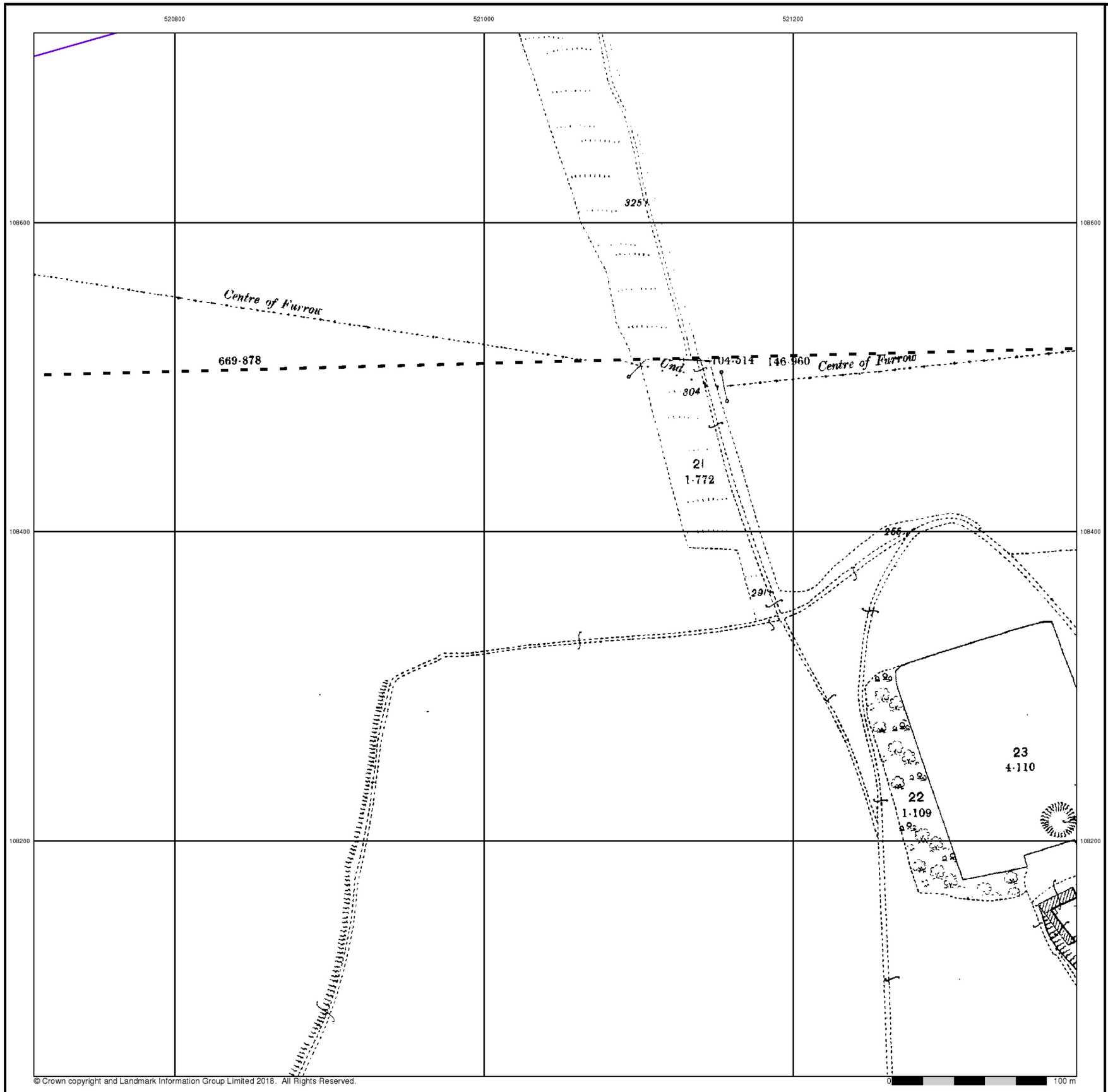

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Sussex

Published 1898

Source map scale - 1:2,500

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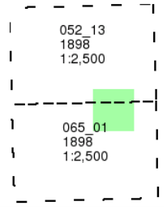
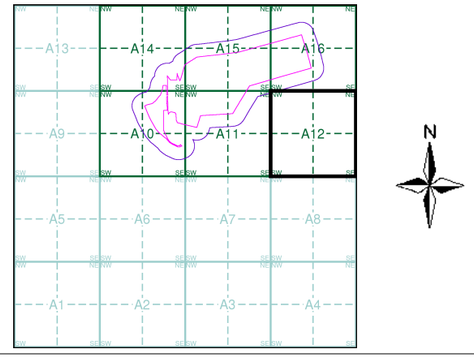
Map Name(s) and Date(s)



Historical Map - Segment A12



Order Details

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Customer Ref:	2018s0642
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Slice:	A
Site Area (Ha):	44.36
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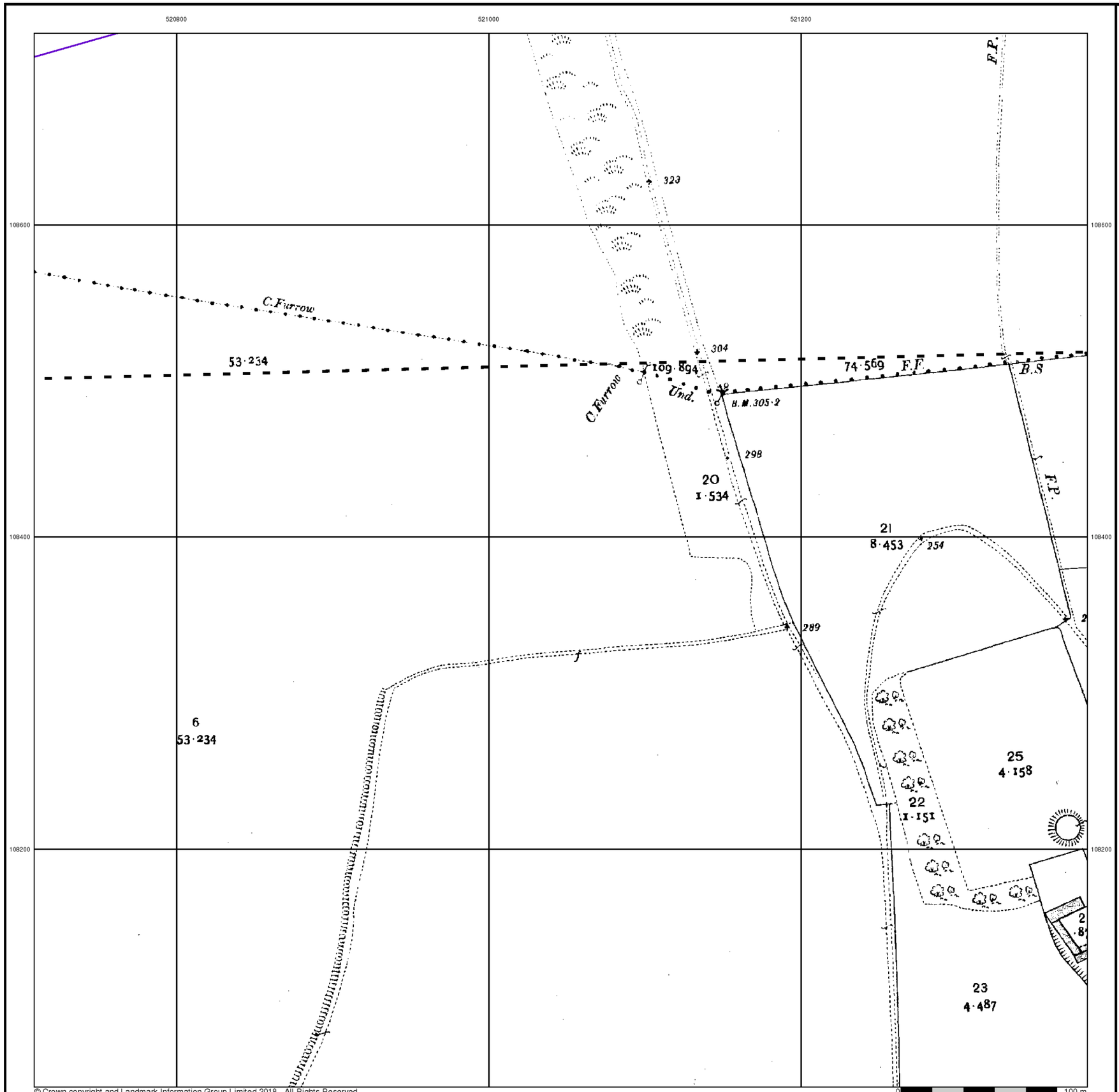

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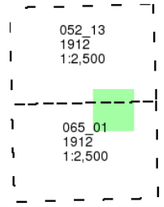
Sussex

Published 1912

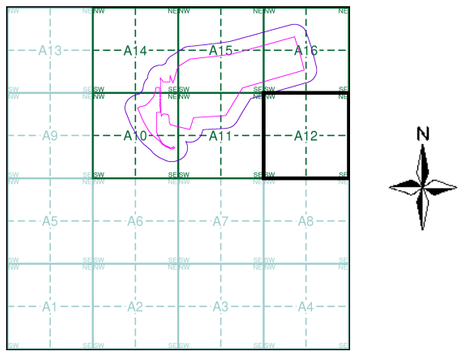
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A12



Order Details

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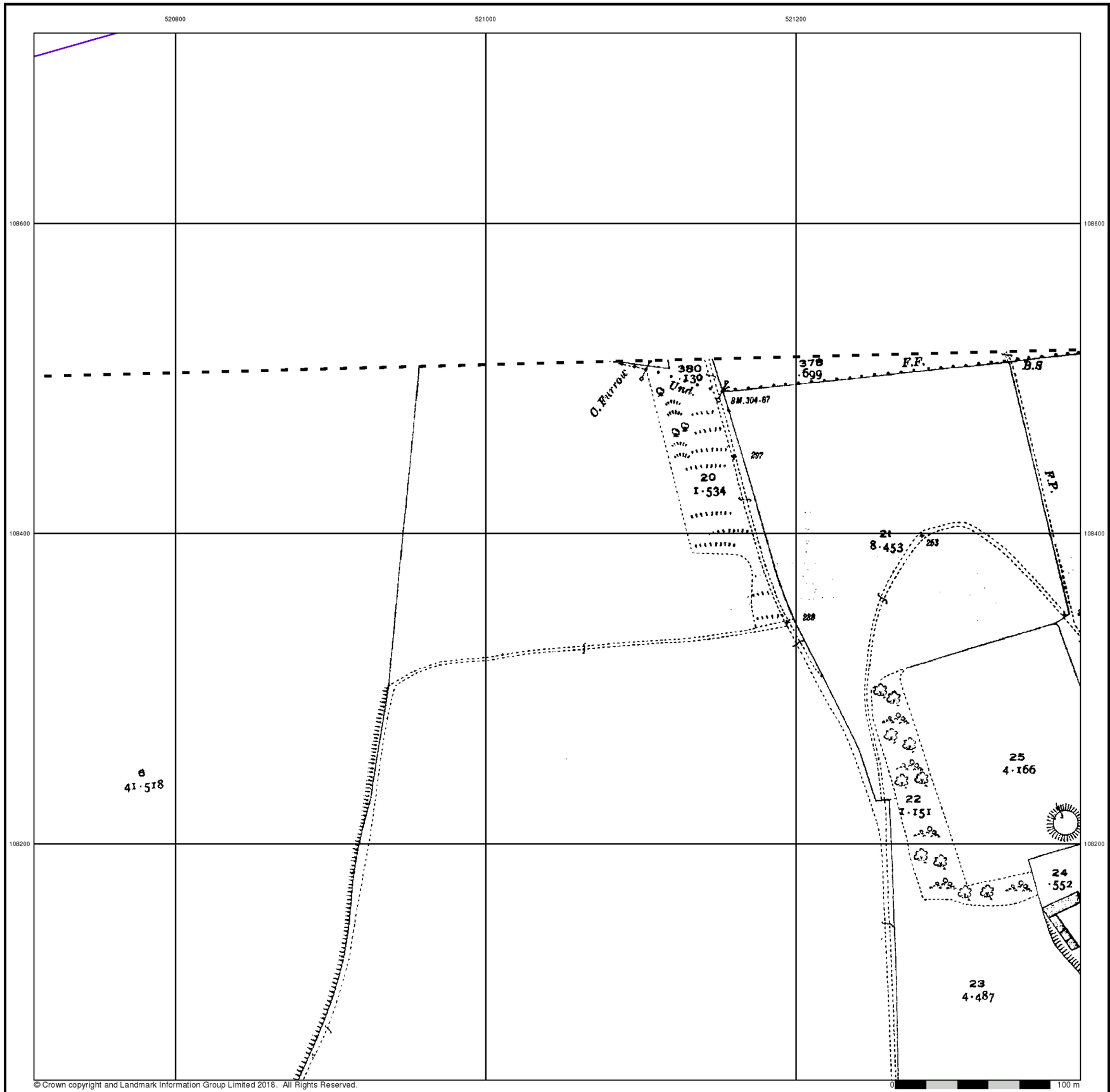

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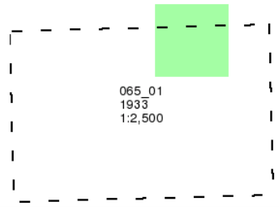
Sussex

Published 1933

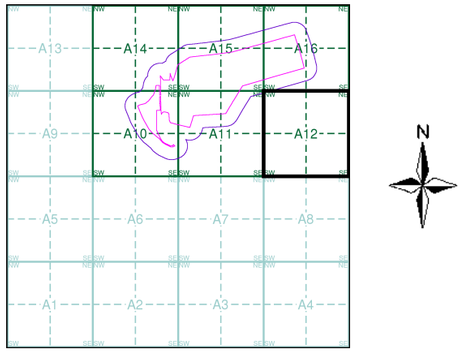
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A12



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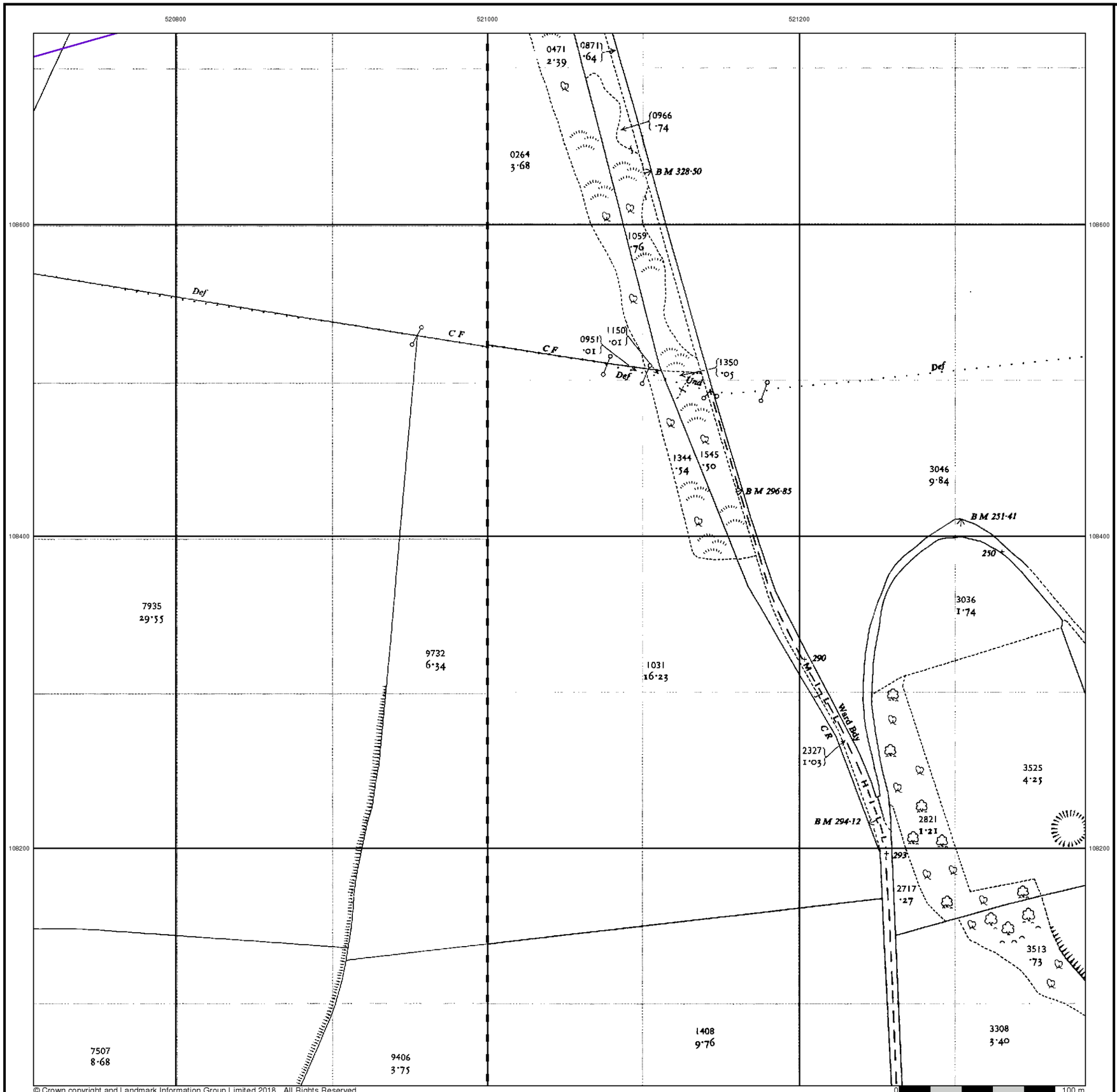

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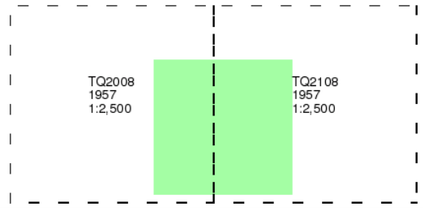
Ordnance Survey Plan

Published 1957

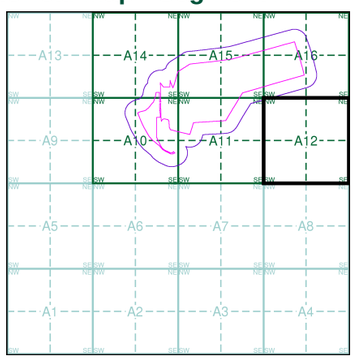
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A12



Order Details

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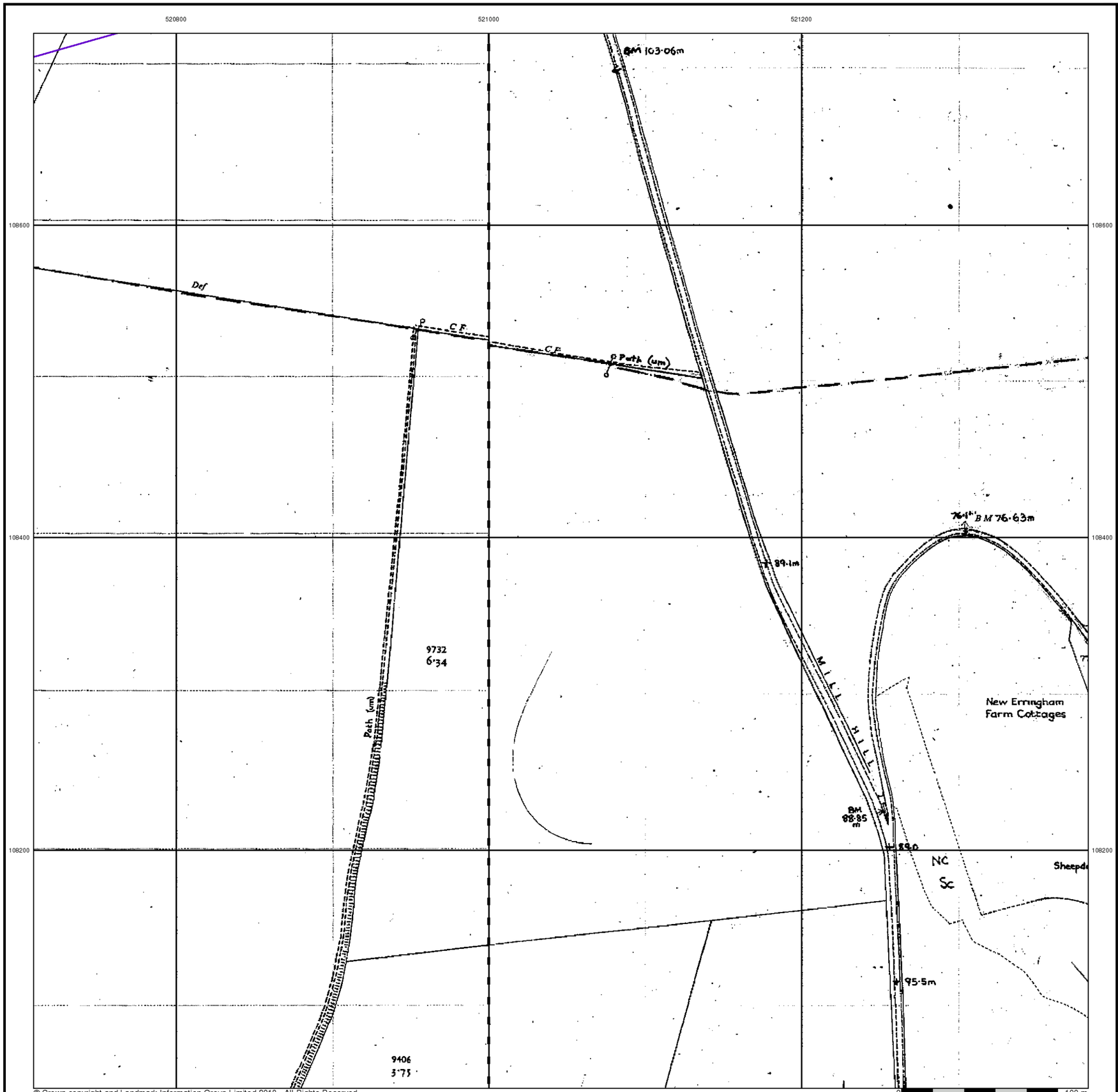
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	100

Site Details

Site at 520371,108723



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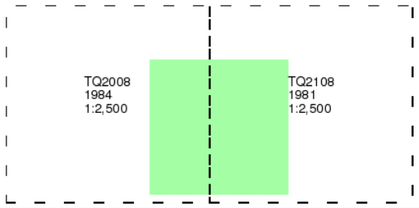
Additional SIMs

Published 1981 - 1984

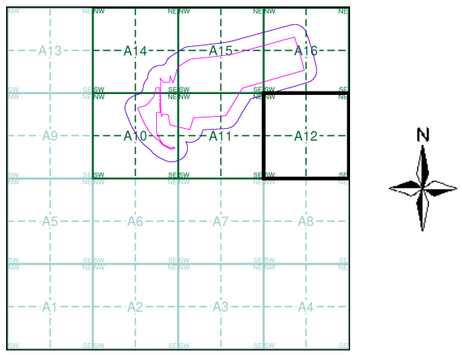
Source map scale - 1:2,500

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 A12



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
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Site Area (Ha):	44.36
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Site Details

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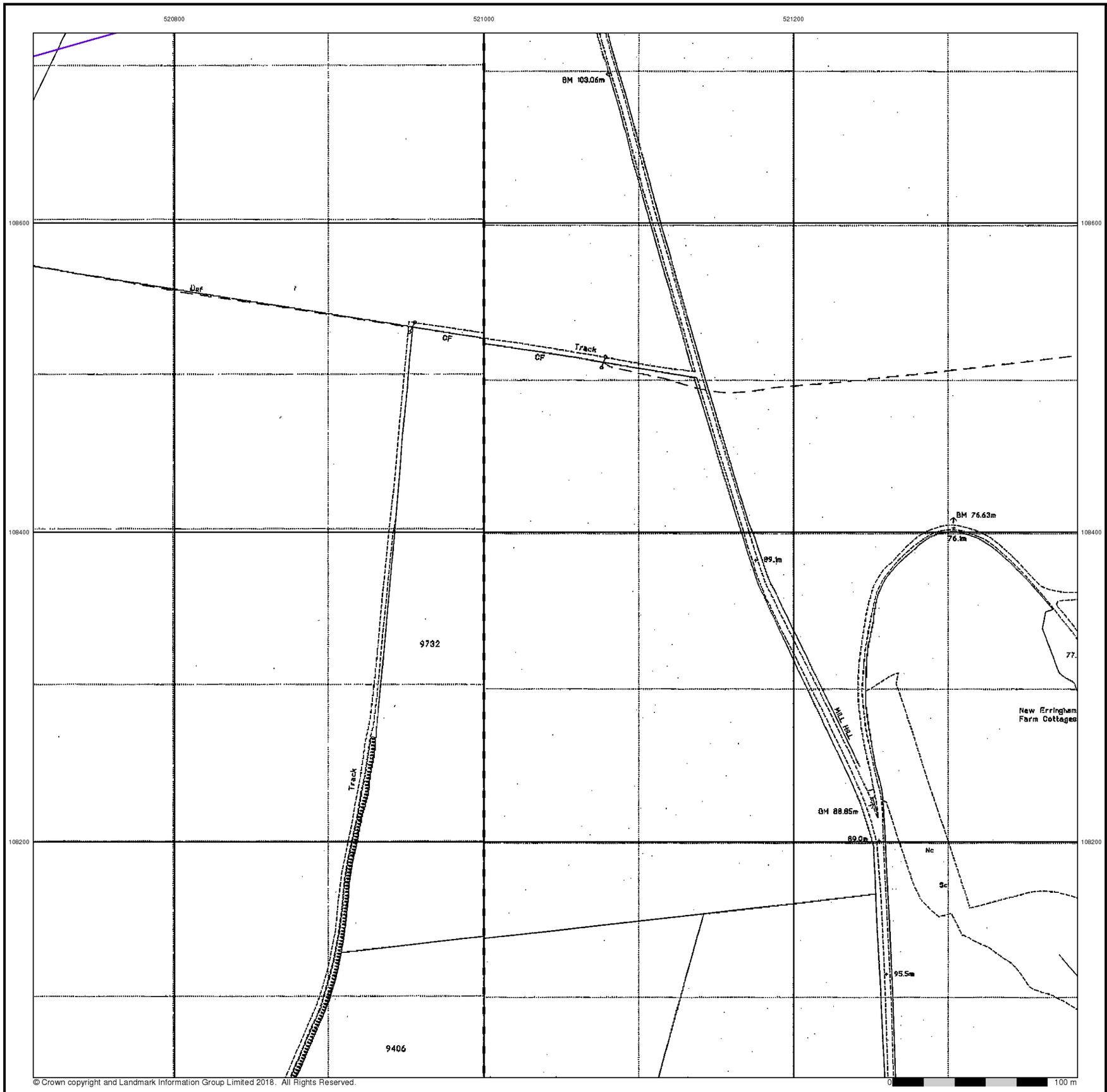

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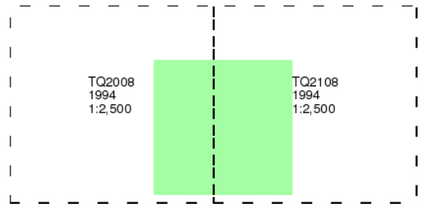
Large-Scale National Grid Data

Published 1994

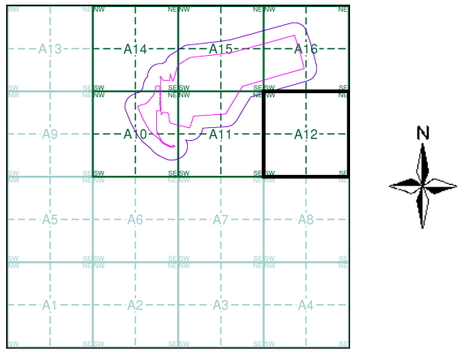
Source map scale - 1:2,500

'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 A12



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	100

Site Details

Site at 520371,108723

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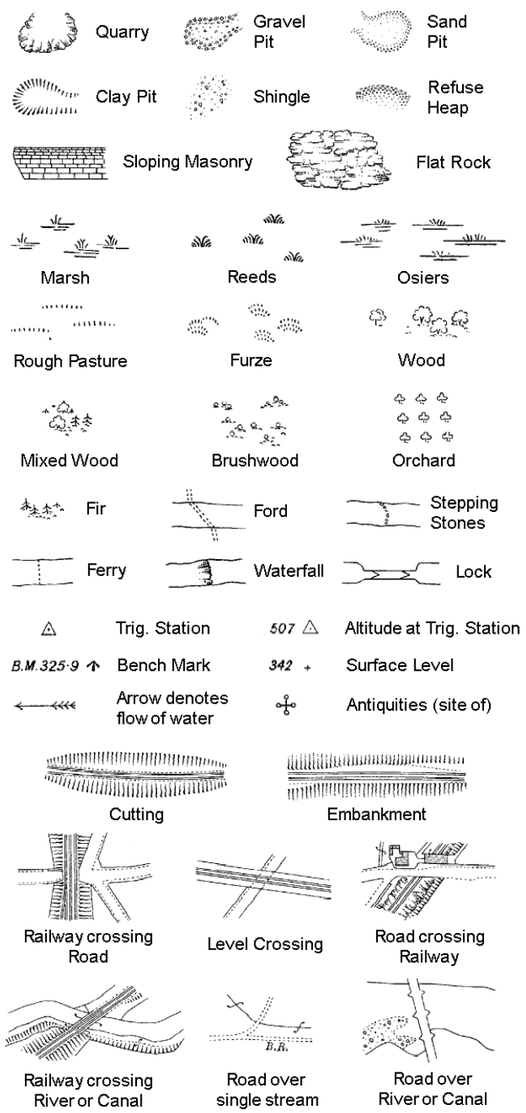
Historical Mapping Legends

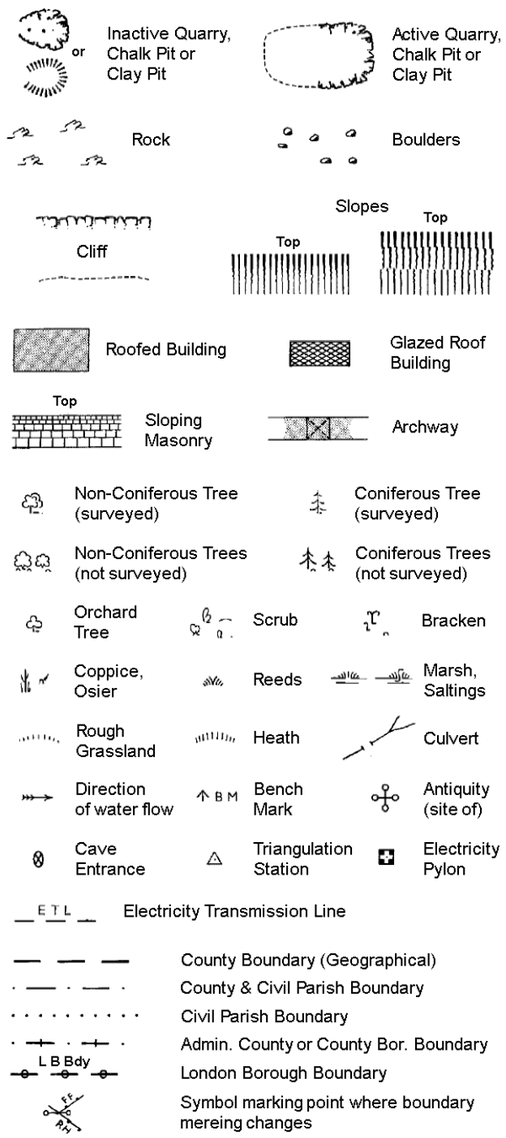
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy.
County Borough Boundary (England)
Co. Burgh Bdy.
County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

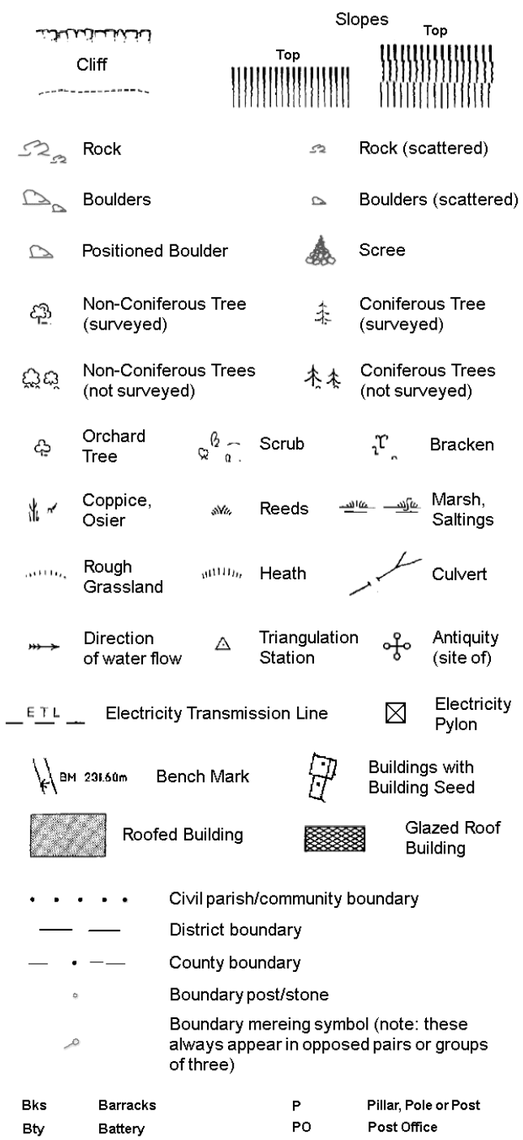
Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
L B Bdy
London Borough Boundary
Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

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



Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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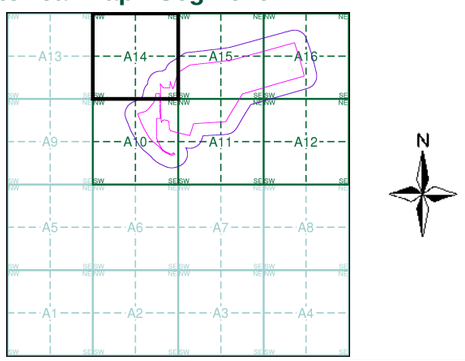
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Sussex	1:2,500	1875	2
Sussex	1:2,500	1898	3
Sussex	1:2,500	1912	4
Ordnance Survey Plan	1:2,500	1957 - 1972	5
Additional SIMs	1:2,500	1957 - 1985	6
Additional SIMs	1:2,500	1984 - 1986	7
Large-Scale National Grid Data	1:2,500	1994	8

Historical Map - Segment A14



Order Details

Order Number: 170375371_1_1
Customer Ref: 2018s0642
National Grid Reference: 520080, 108450
Slice: A
Site Area (Ha): 44.36
Search Buffer (m): 100

Site Details

Site at 520371,108723

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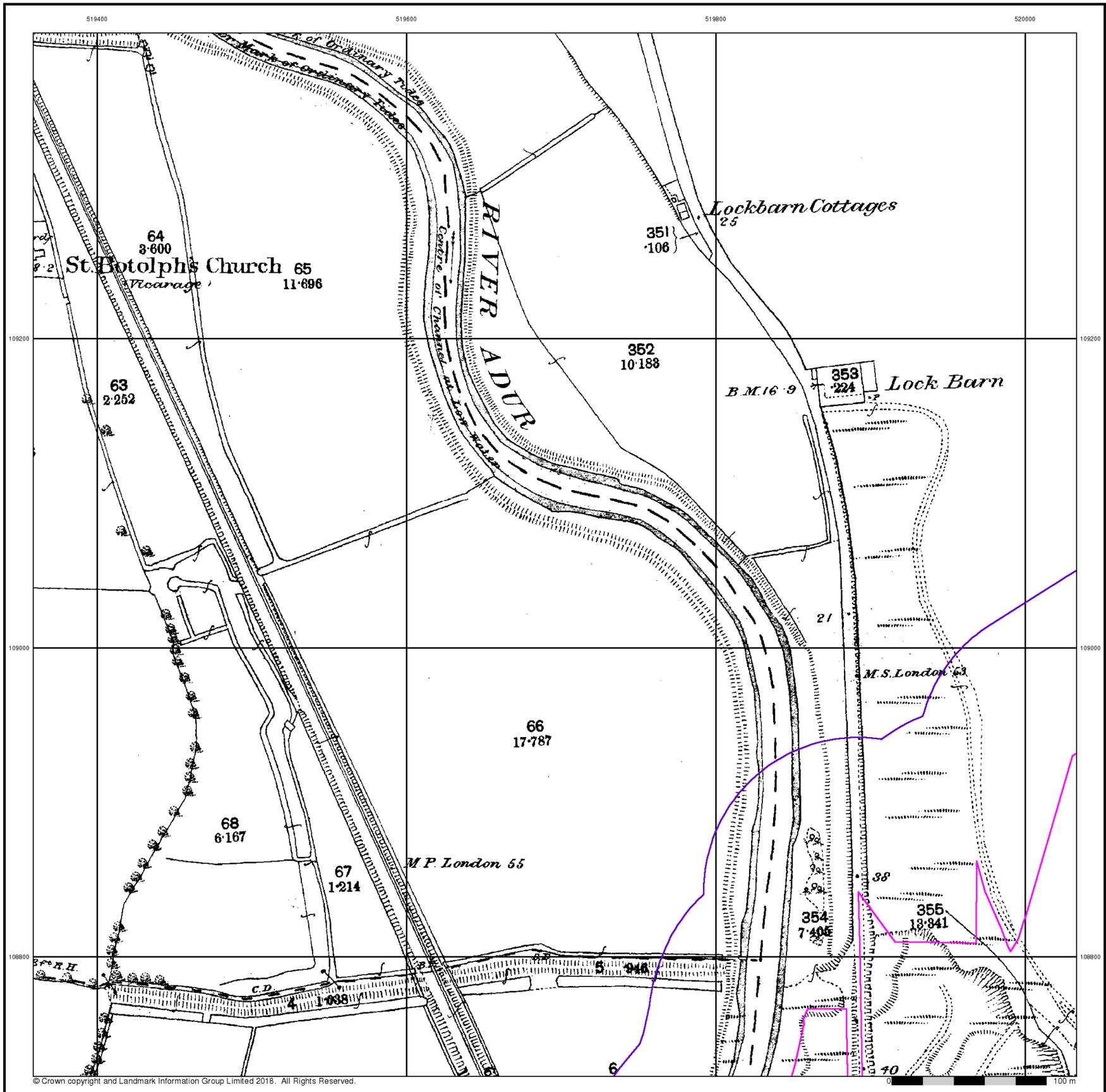

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Sussex

Published 1875

Source map scale - 1:2,500

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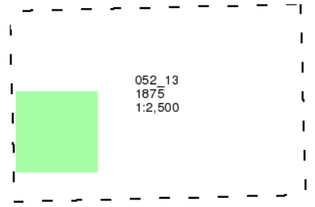
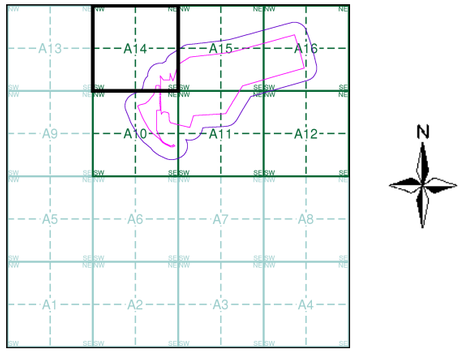
Map Name(s) and Date(s)



Historical Map - Segment A14



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	100

Site Details

Site at 520371,108723

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Web: www.envirocheck.co.uk

519400 519600 519800 520000

109200 109000 108800

A D U R

C.R.

L. B. & S. C. R. SHOREHAM & HORSHAM LINE

Lockbarn Cottages

Lock Barn

St. Botolph's Church (Vicarage)

High Water Mark of Ordinary Tides

M.S. London 33

M.P

B.P

C.D.

3 Ft. R. H.

13 3·440

12 11·910

14 2·344

15 2·556

16 18·023

17 1·250

18 6·058

385 10·112

386 ·221

387 3·690

389 2·764

390 3·254

391 ·369

1 1·008

2 ·956

3·148

·557

B.M. 16·9

0 100 m

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Sussex

Published 1898

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.

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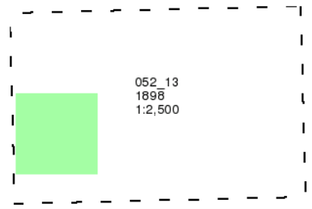
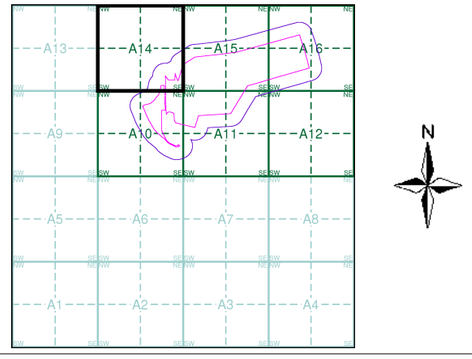


Historical Map - Segment A14



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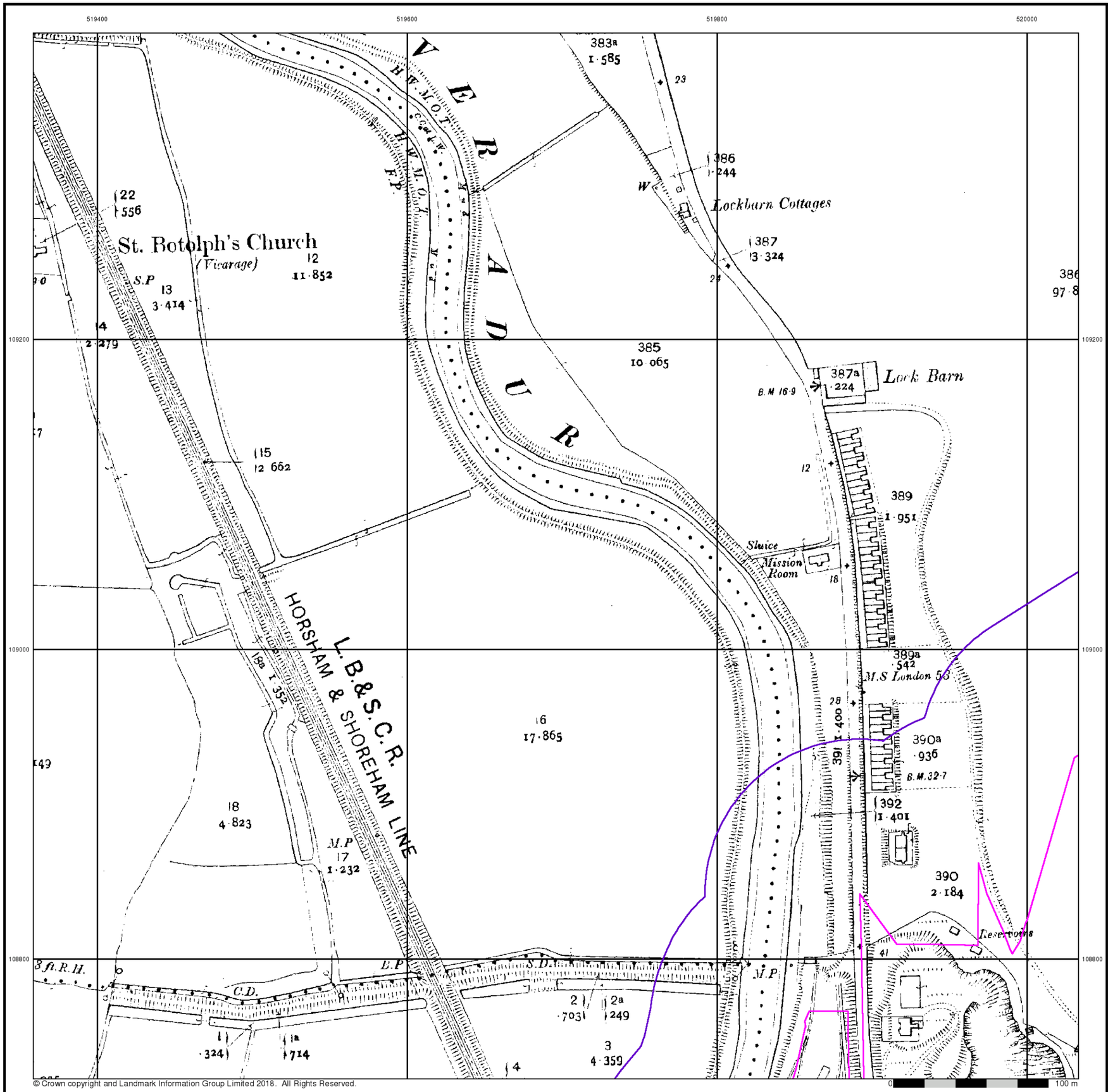

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Sussex

Published 1912

Source map scale - 1:2,500

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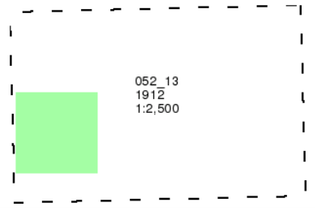
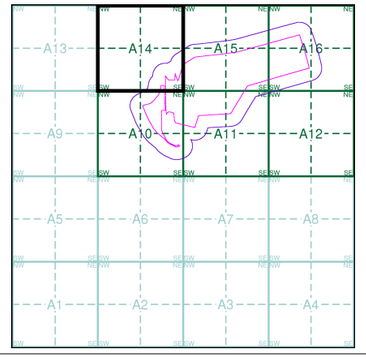


Historical Map - Segment A14



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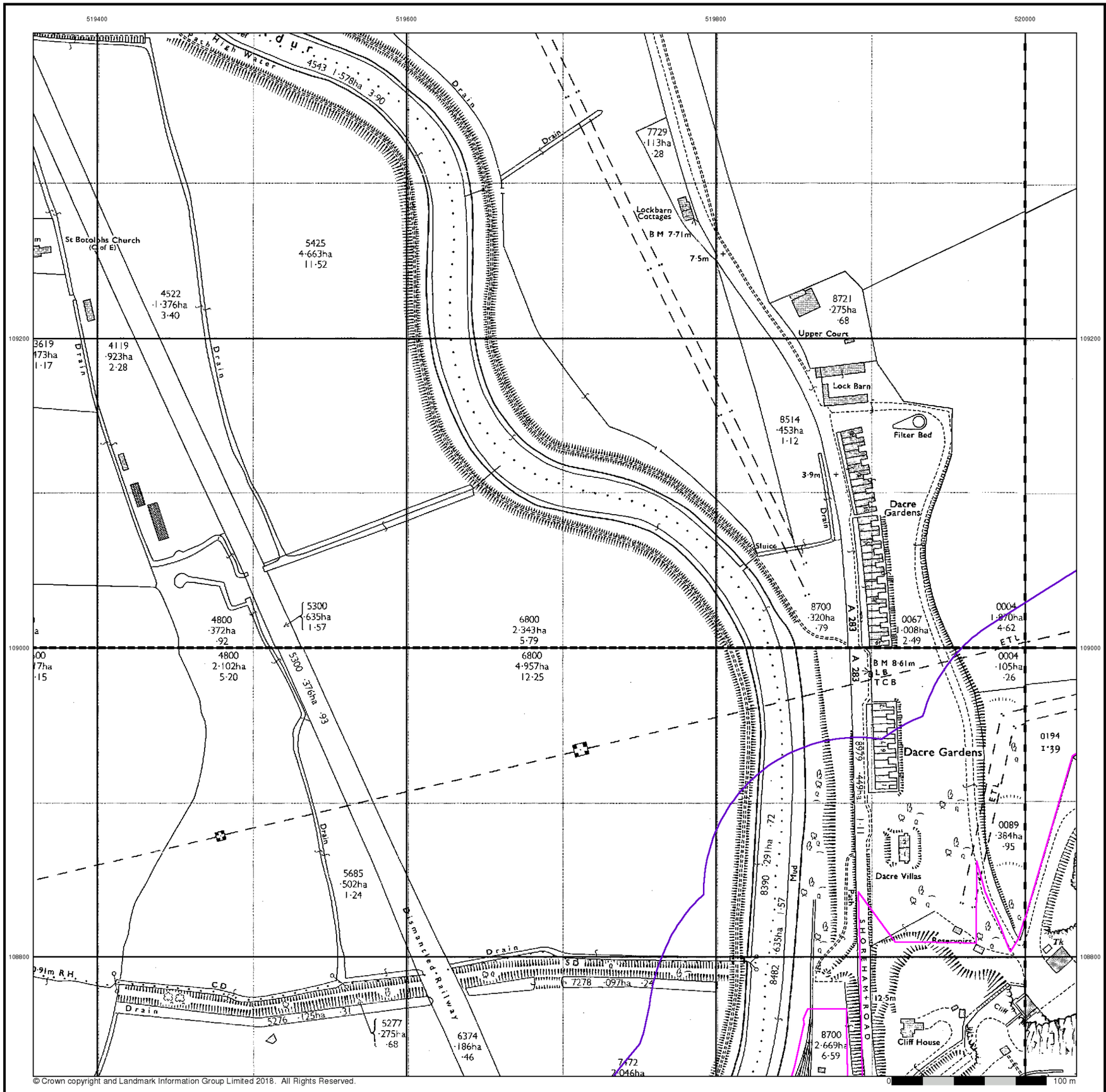

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Ordnance Survey Plan

Published 1957 - 1972

Source map scale - 1:2,500

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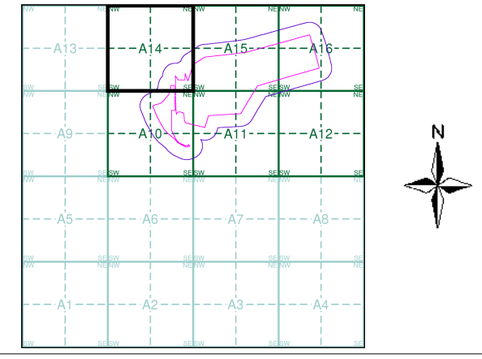
Map Name(s) and Date(s)

TQ1909 1972 1:2,500	TQ2009 1957 1:2,500
TQ1908 1972 1:2,500	TQ2008 1957 1:2,500

Historical Map - Segment A14



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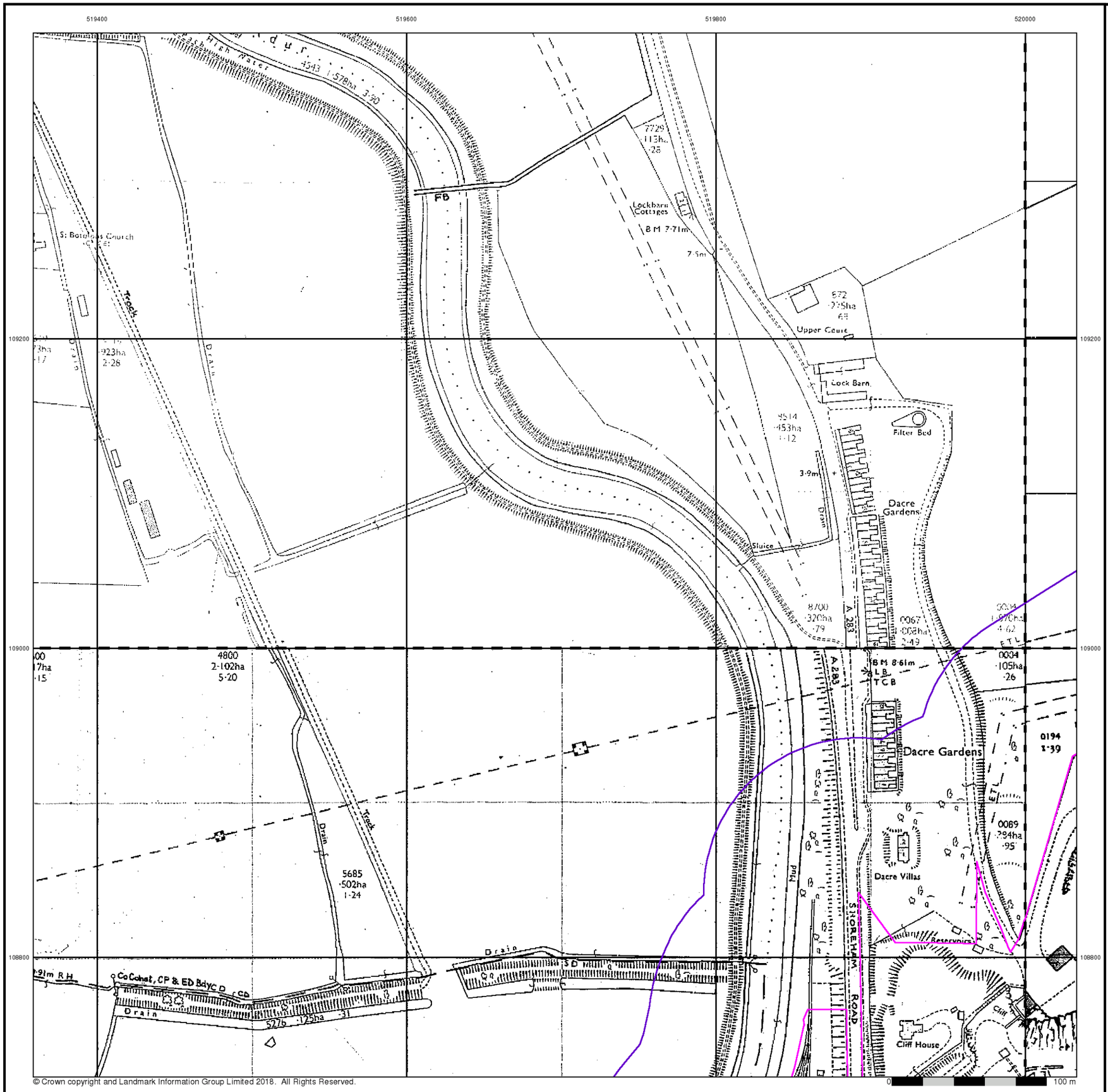

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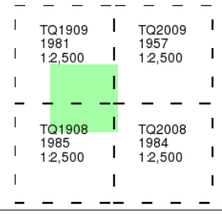
Additional SIMs

Published 1957 - 1985

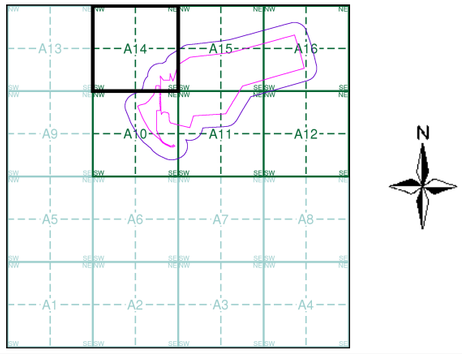
Source map scale - 1:2,500

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 A14



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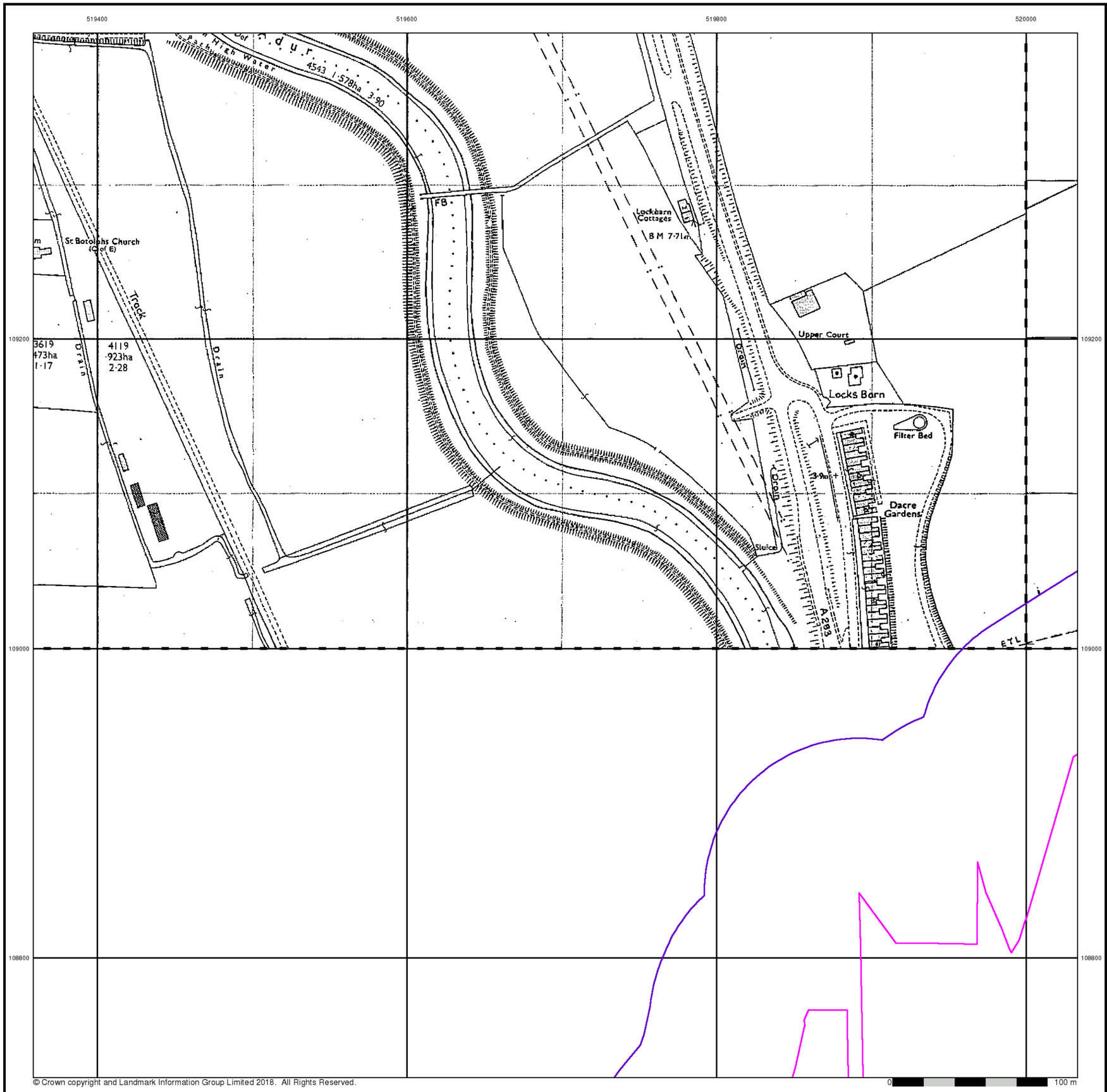

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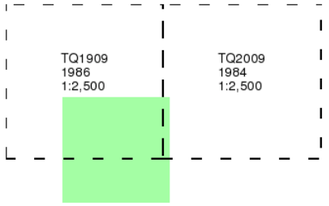
Additional SIMs

Published 1984 - 1986

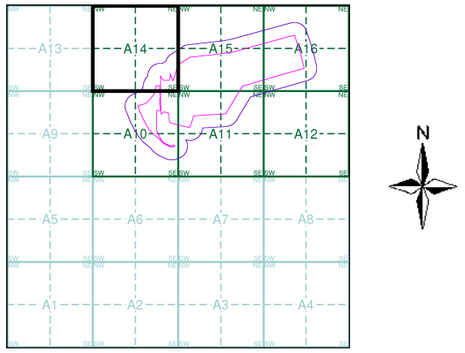
Source map scale - 1:2,500

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 A14



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519400 519600 519800 520000

109200 109000 108800

River Adur
Mean High Water
Path (um)
Path
Footbridge
North Lockbarn Cottage
South Lockbarn Cottage
BM 7.21m
Track
4119
Drain
Upper Court
Locka Barn
Filter Bed
Dacre Gardens
Sluice
Passies Pond
A 283
BM 8.6m
MLB
TCB
0004
0089
Dacre Villas
Mud
SHOREHAM ROAD
Cliff House
Co Const, CP and ED Bdy
OD
RH

0 100 m

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Large-Scale National Grid Data

Published 1994

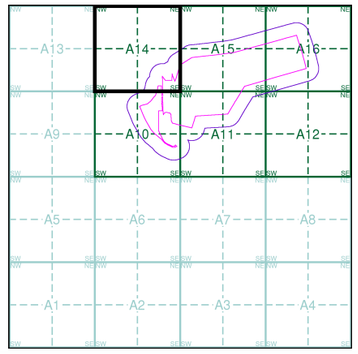
Source map scale - 1:2,500

'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)

TQ1909 1994 1:2,500	TQ2009 1994 1:2,500
TQ1908 1994 1:2,500	TQ2008 1994 1:2,500

Historical Map - Segment A14



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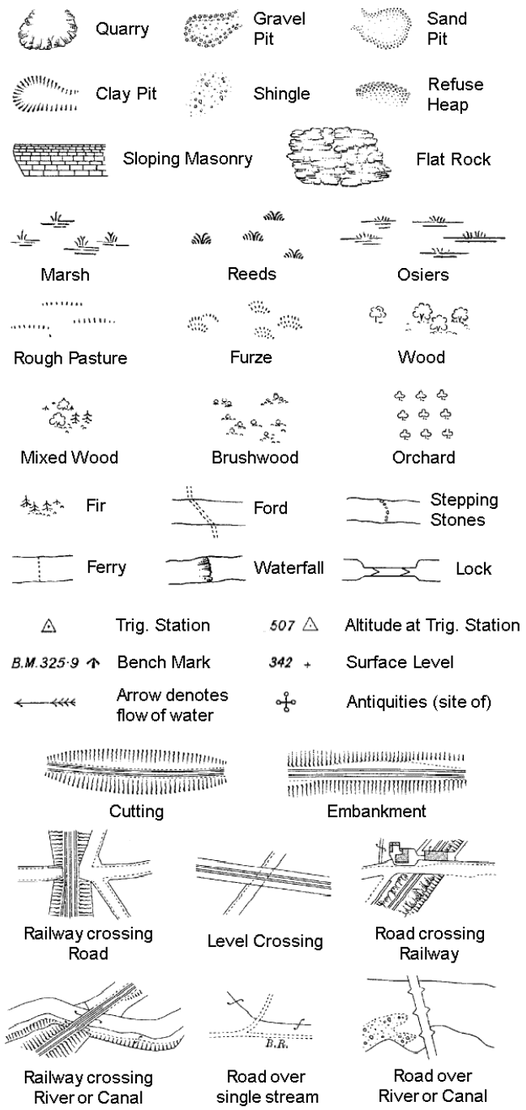
Historical Mapping Legends

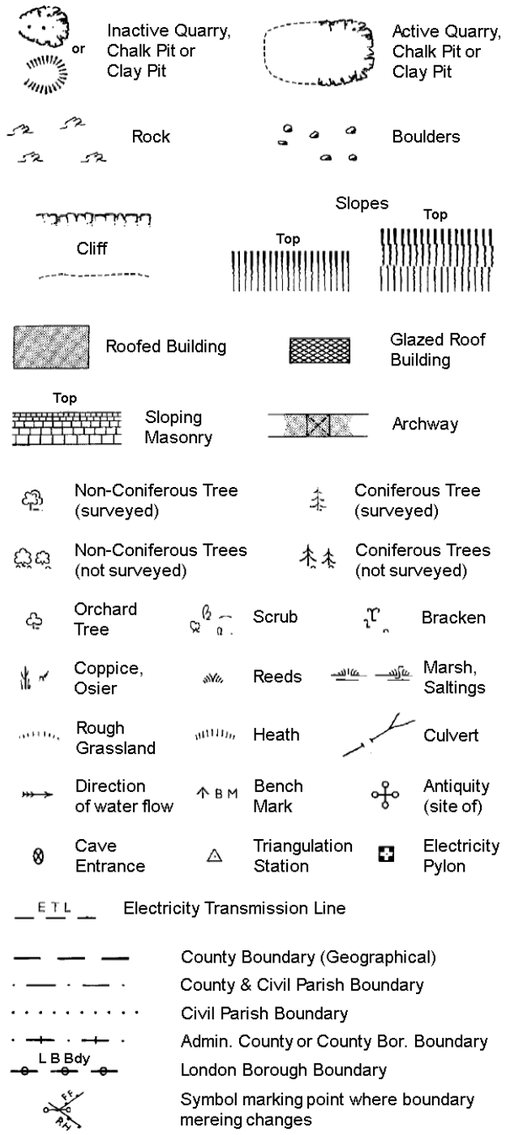
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy.
County Borough Boundary (England)
Co. Burgh Bdy.
County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

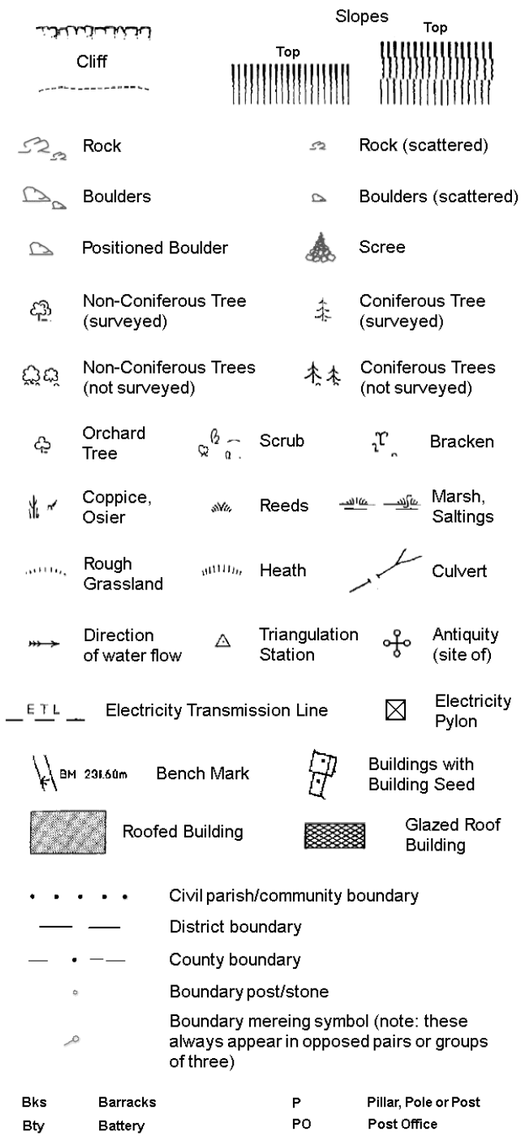
Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
L B Bdy
London Borough Boundary
Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

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



Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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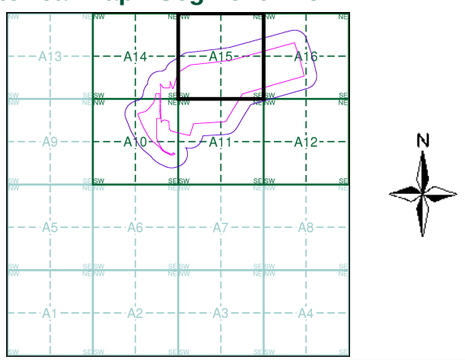
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Sussex	1:2,500	1875	2
Sussex	1:2,500	1898	3
Sussex	1:2,500	1912	4
Ordnance Survey Plan	1:2,500	1957	5
Additional SIMs	1:2,500	1957 - 1984	6
Additional SIMs	1:2,500	1984	7
Large-Scale National Grid Data	1:2,500	1994	8

Historical Map - Segment A15



Order Details

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Site Details

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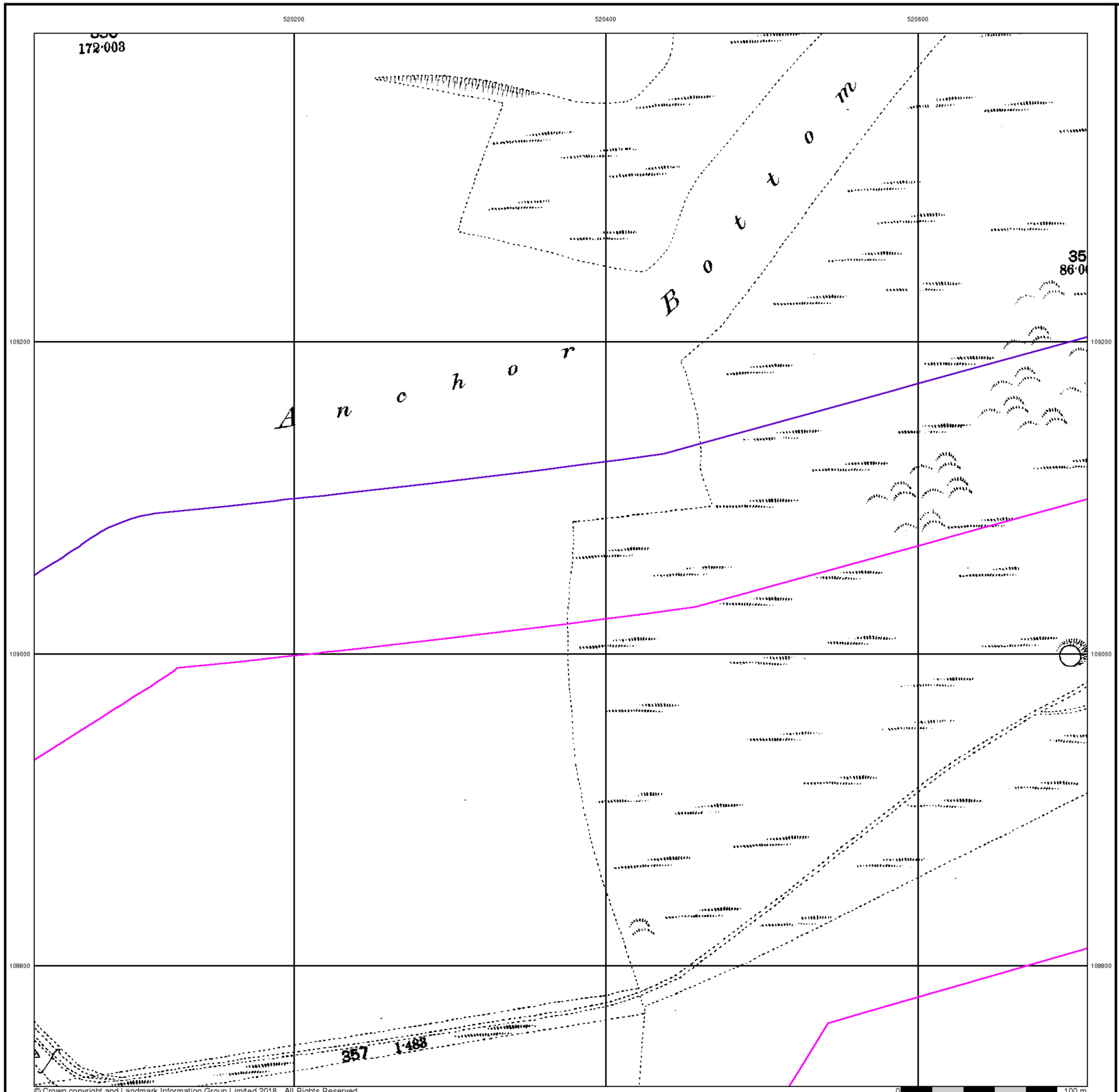

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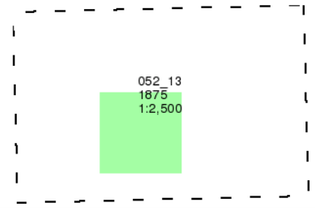
Sussex

Published 1875

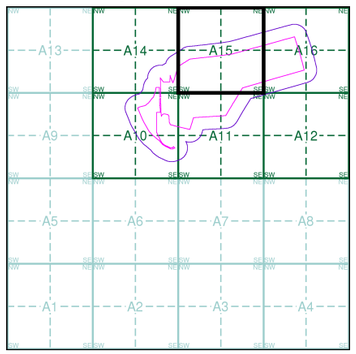
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A15



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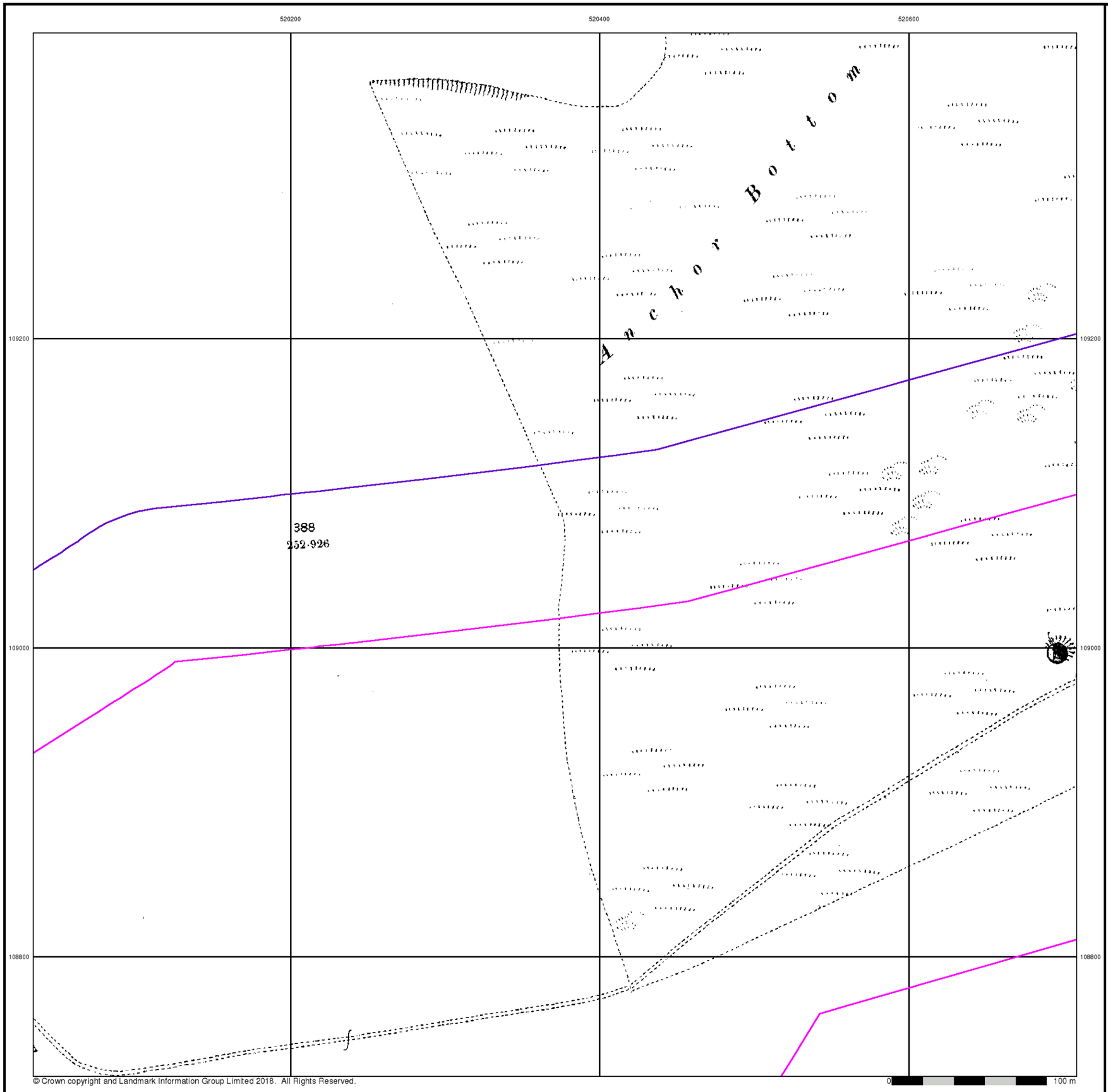

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Sussex

Published 1898

Source map scale - 1:2,500

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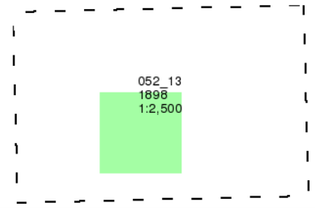
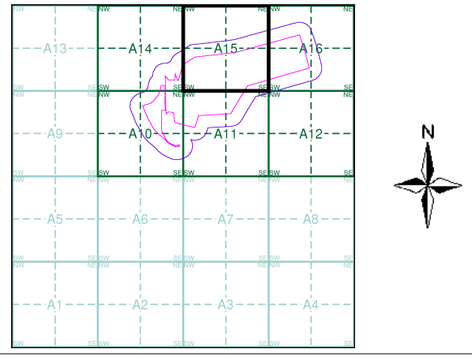


Historical Map - Segment A15



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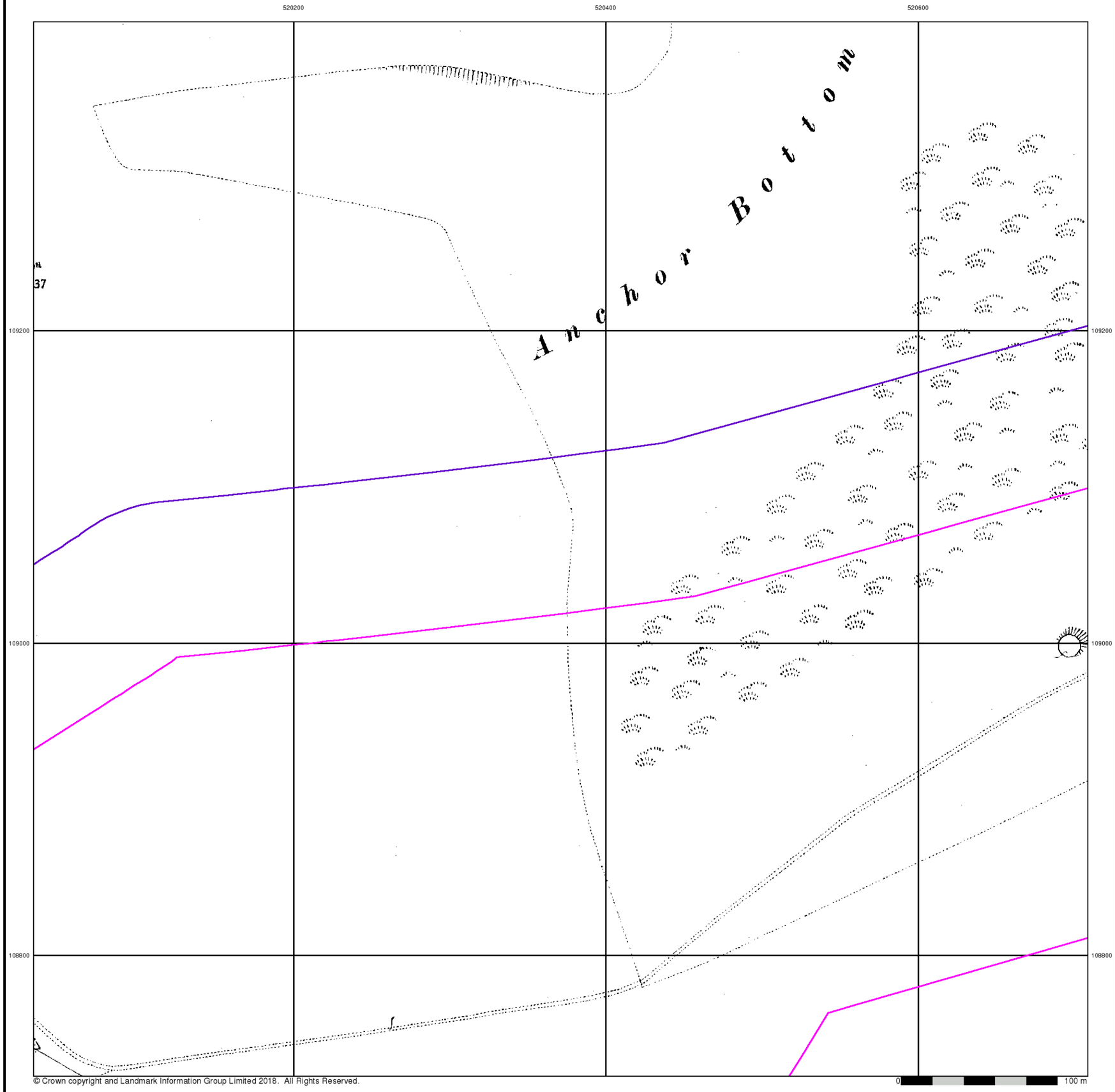

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Sussex

Published 1912

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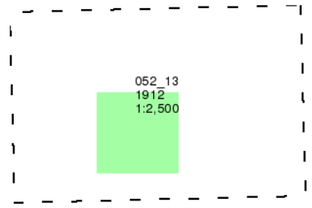
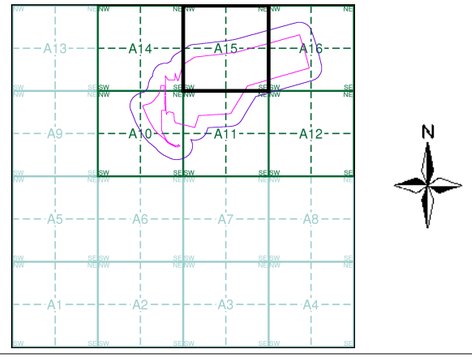


Historical Map - Segment A15



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	100

Site Details

Site at 520371,108723

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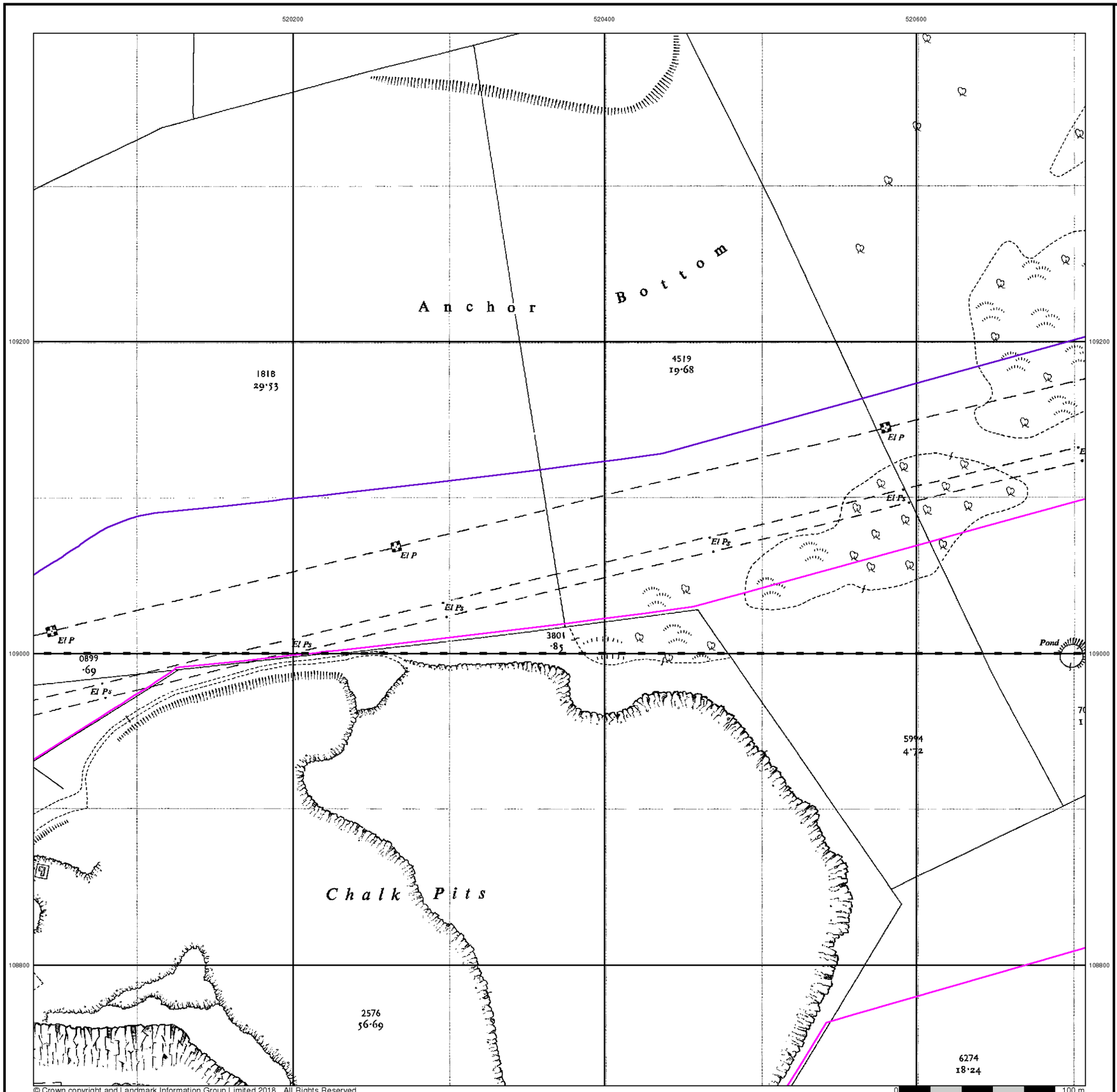
Web: www.envirocheck.co.uk



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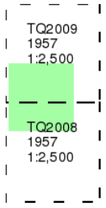
Ordnance Survey Plan

Published 1957

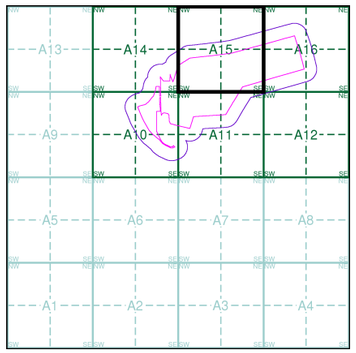
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A15



Order Details

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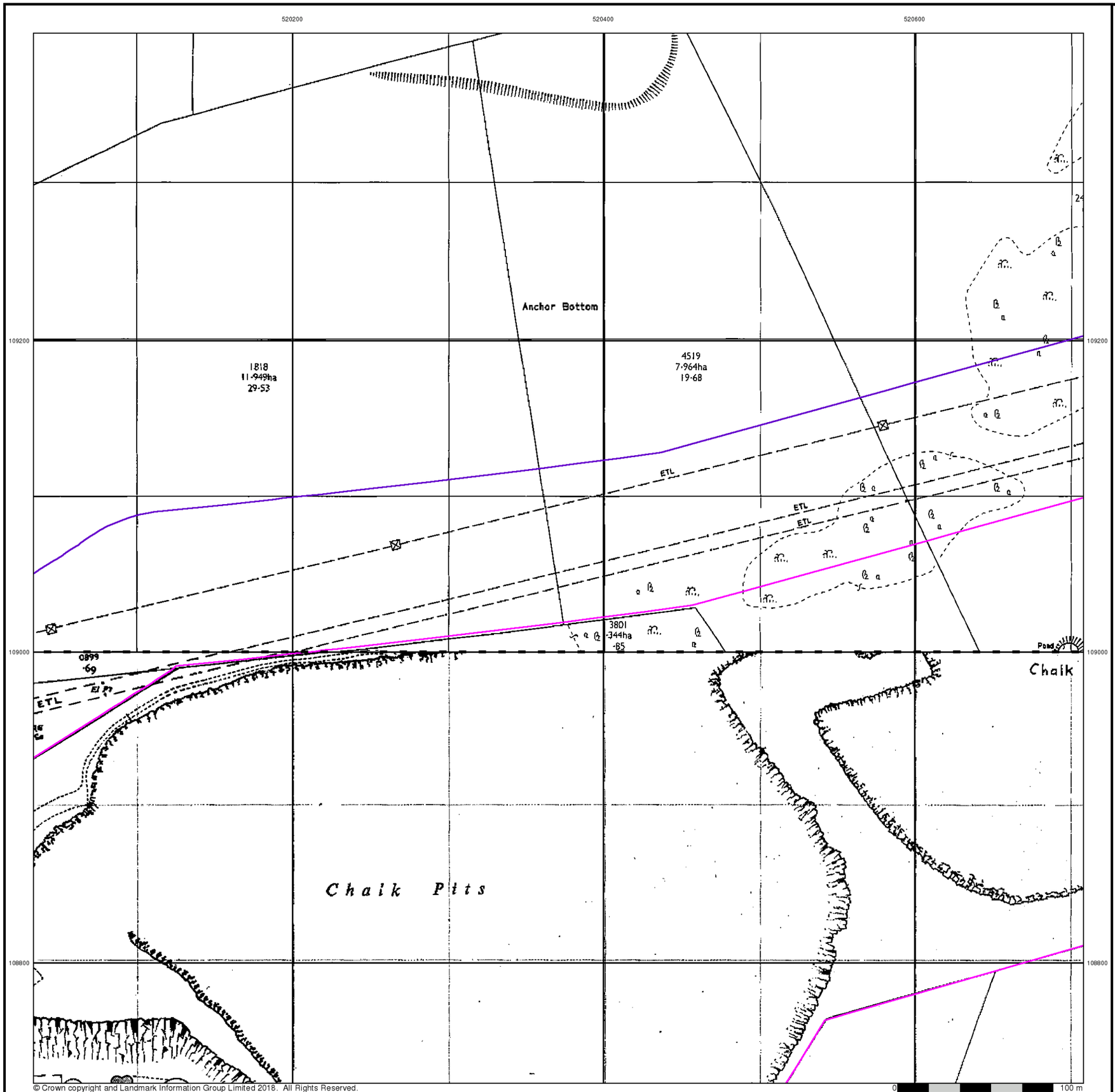

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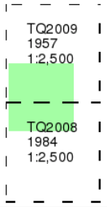
Additional SIMs

Published 1957 - 1984

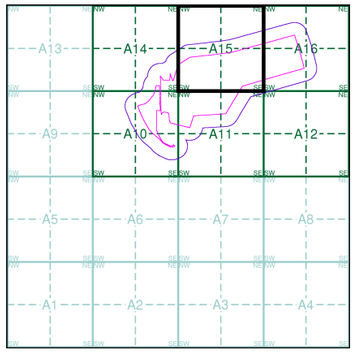
Source map scale - 1:2,500

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 A15



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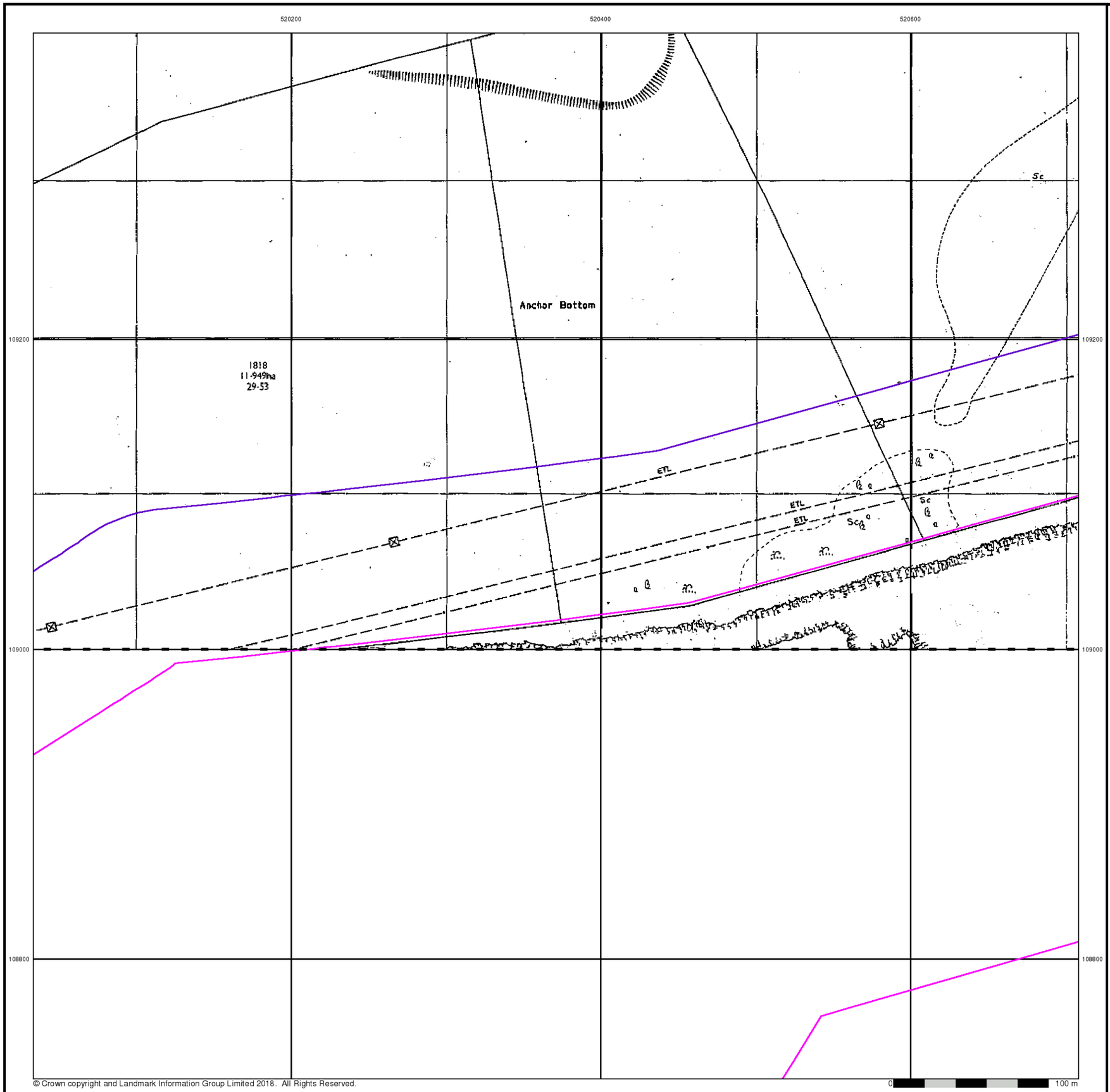

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Additional SIMs

Published 1984

Source map scale - 1:2,500

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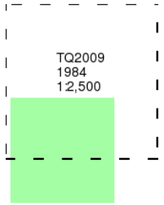
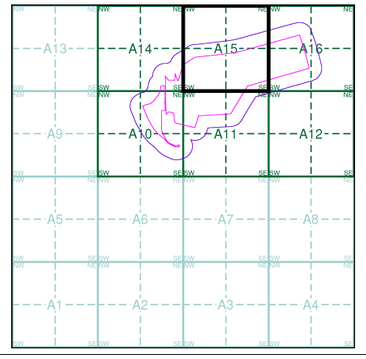


Historical Map - Segment A15



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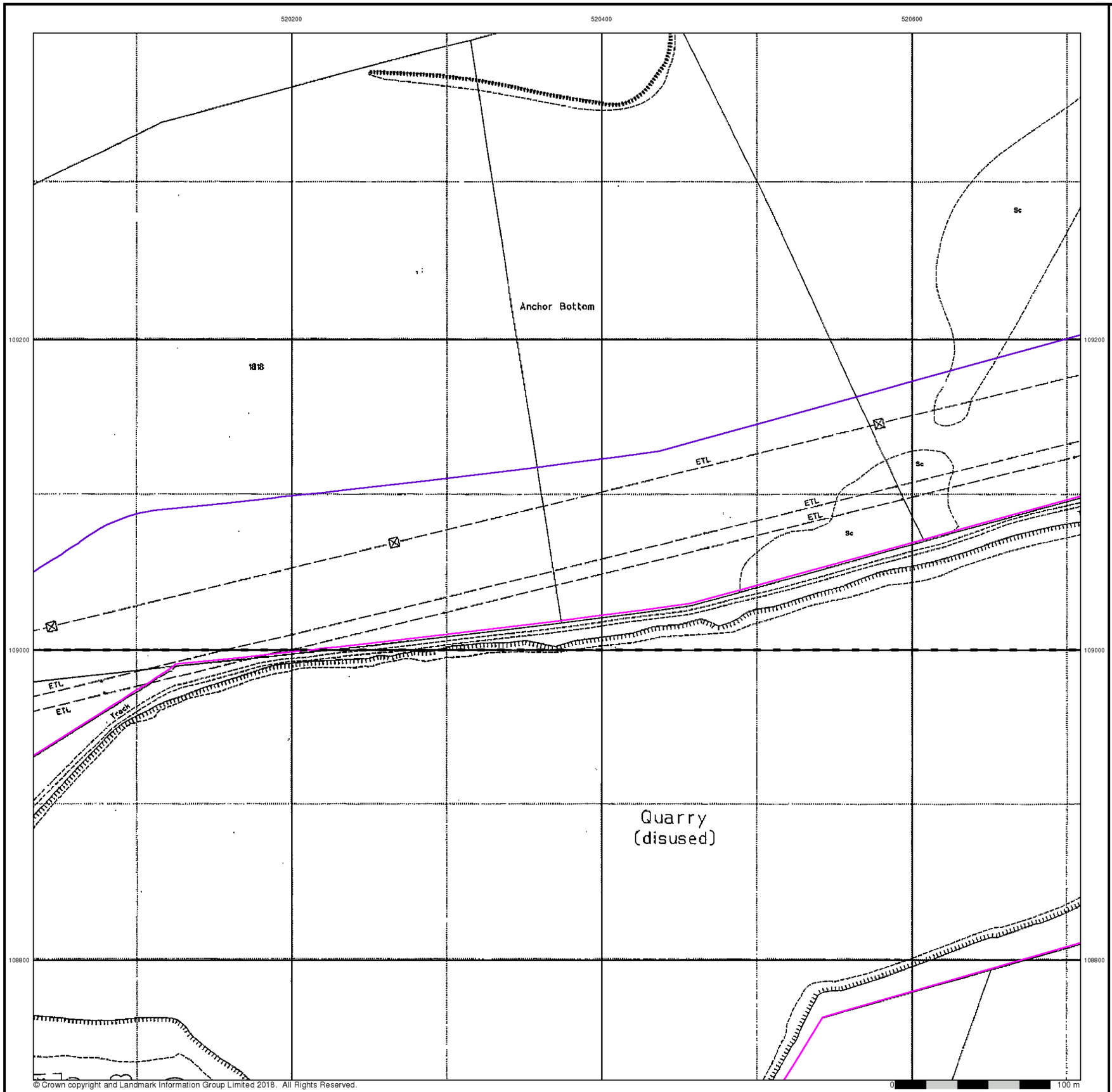

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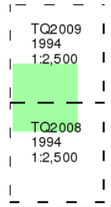
Large-Scale National Grid Data

Published 1994

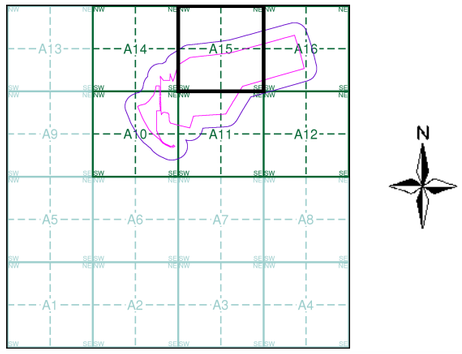
Source map scale - 1:2,500

'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 A15



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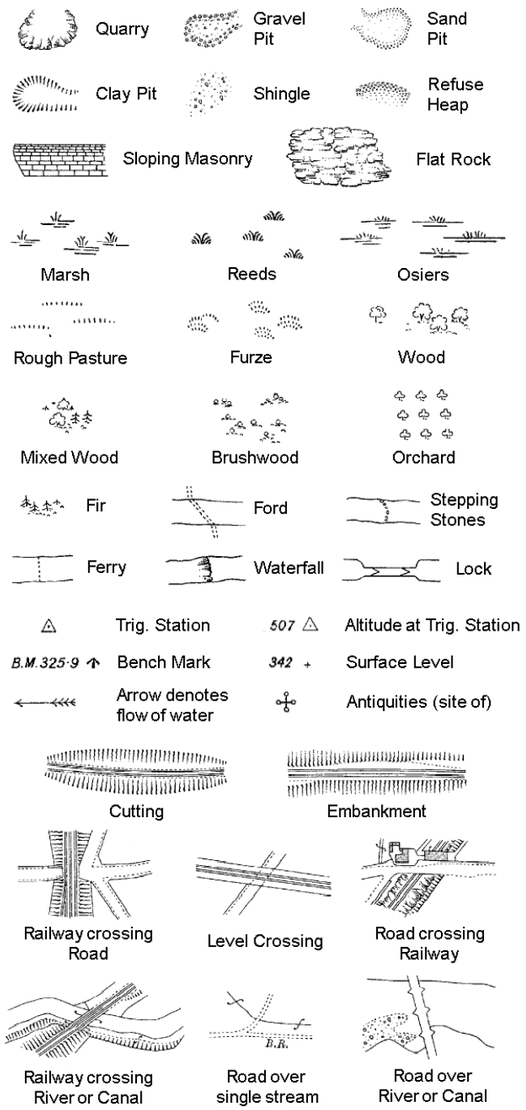
Historical Mapping Legends

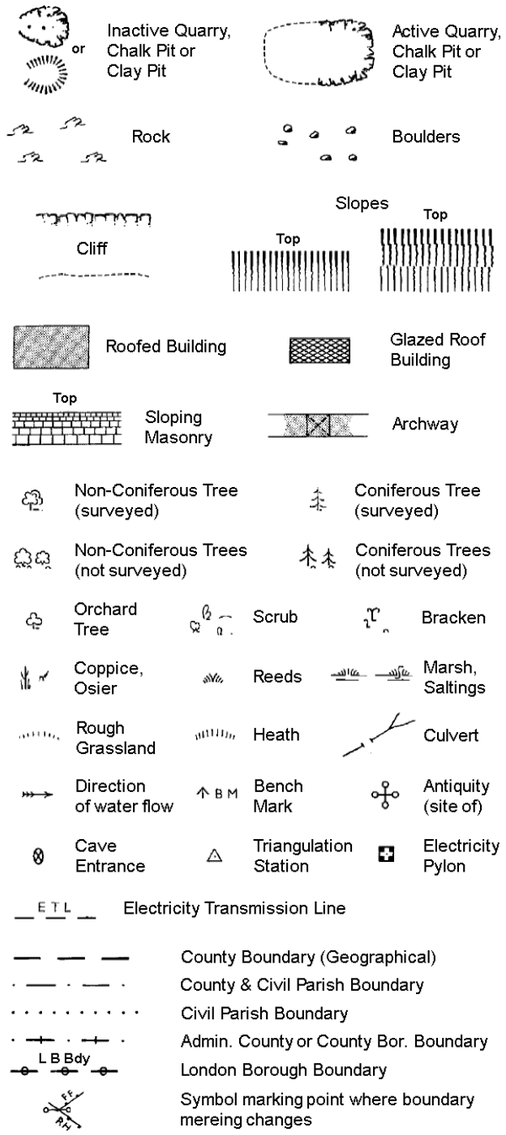
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy.
County Borough Boundary (England)
Co. Burgh Bdy.
County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

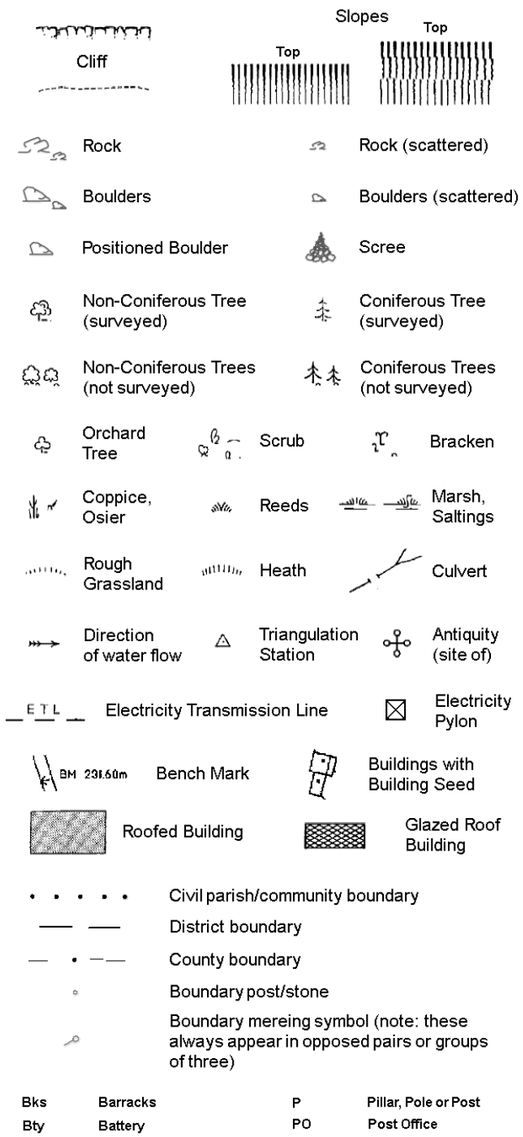
Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
L B Bdy
London Borough Boundary
Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

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



Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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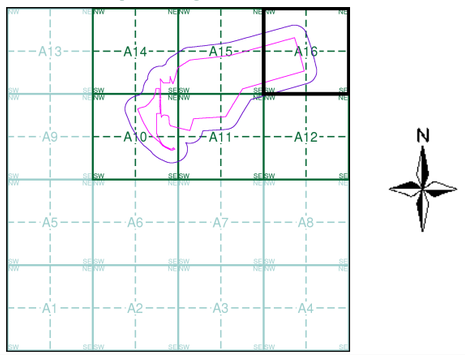
Historical Mapping & Photography included:

Historical Map - Segment A16



Order Details

Order Number: 170375371_1_1
Customer Ref: 2018s0642
National Grid Reference: 520080, 108450
Slice: A
Site Area (Ha): 44.36
Search Buffer (m): 100

Site Details

Site at 520371,108723

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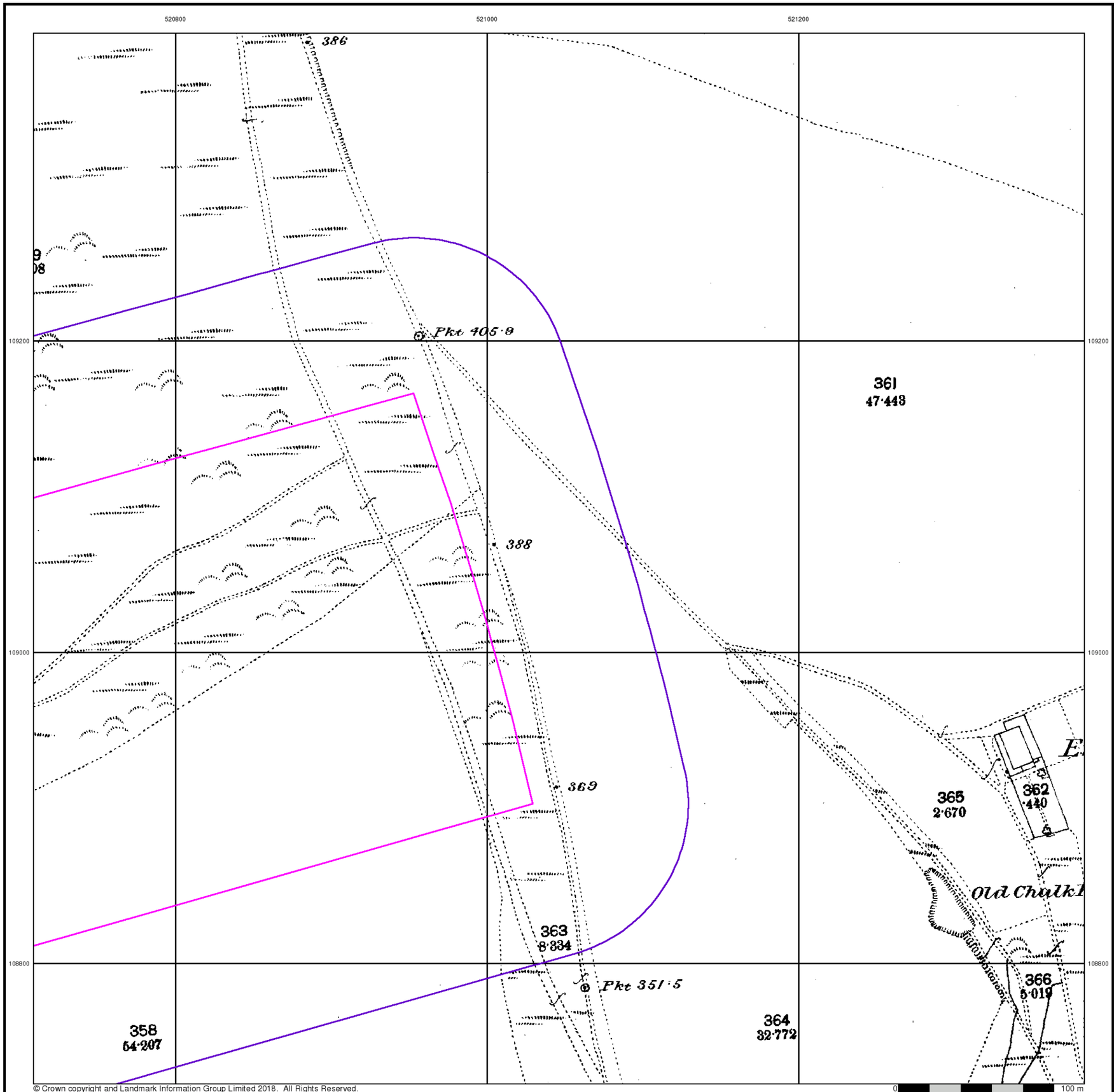

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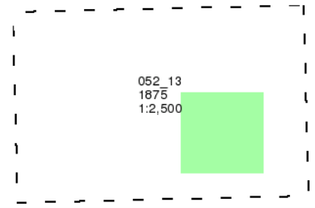
Sussex

Published 1875

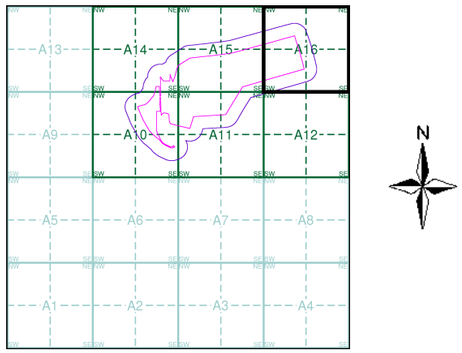
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A16



Order Details

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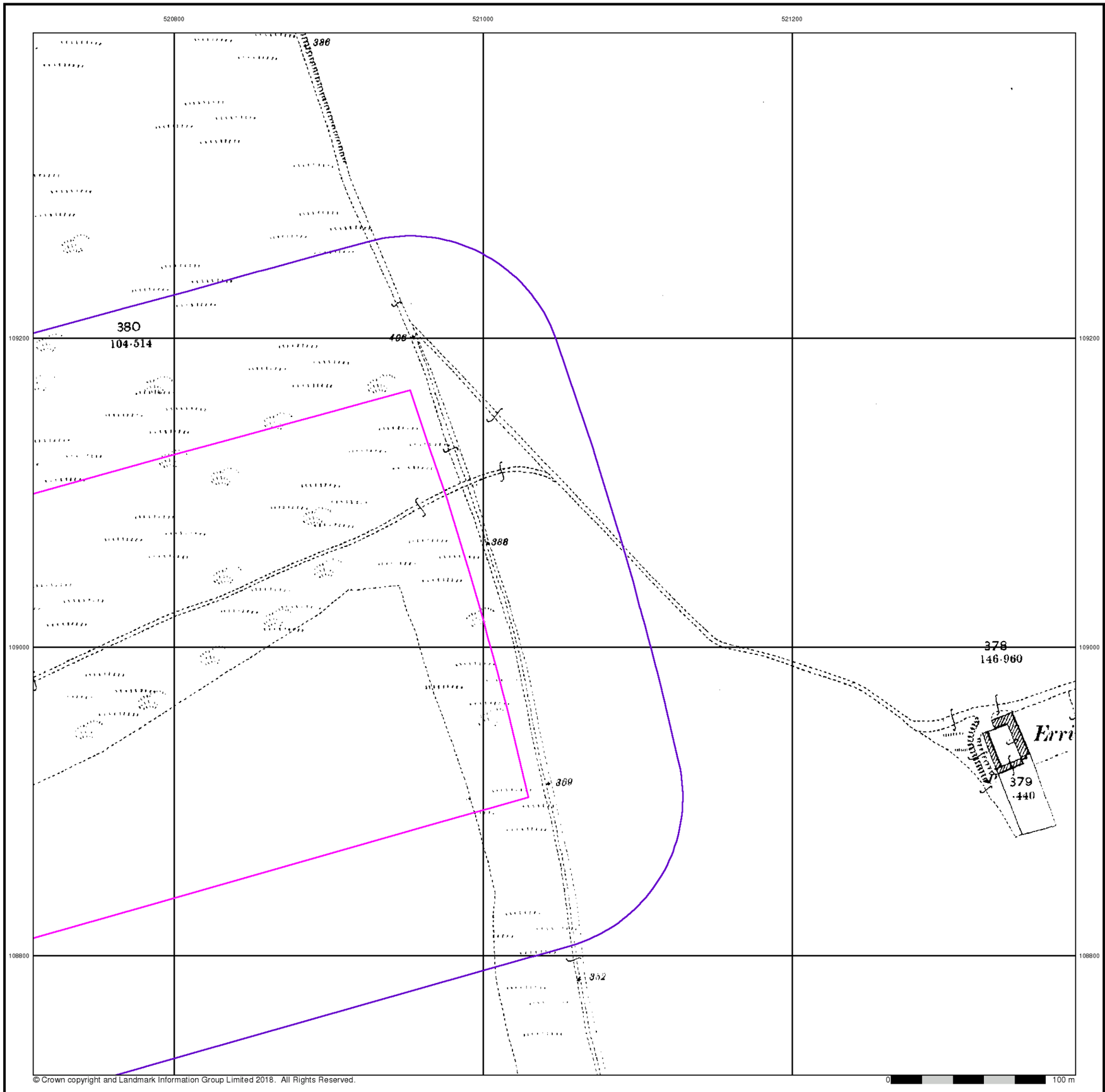

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LANDMARK INFORMATION GROUP®

Sussex

Published 1898

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.

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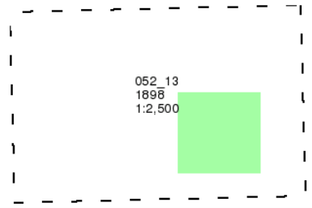
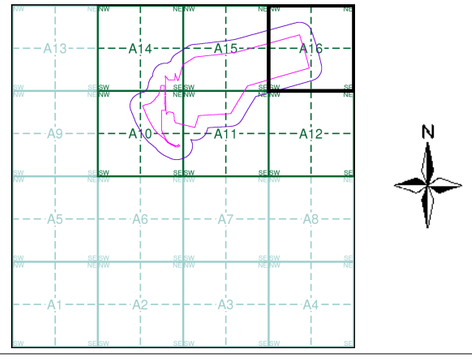


Historical Map - Segment A16



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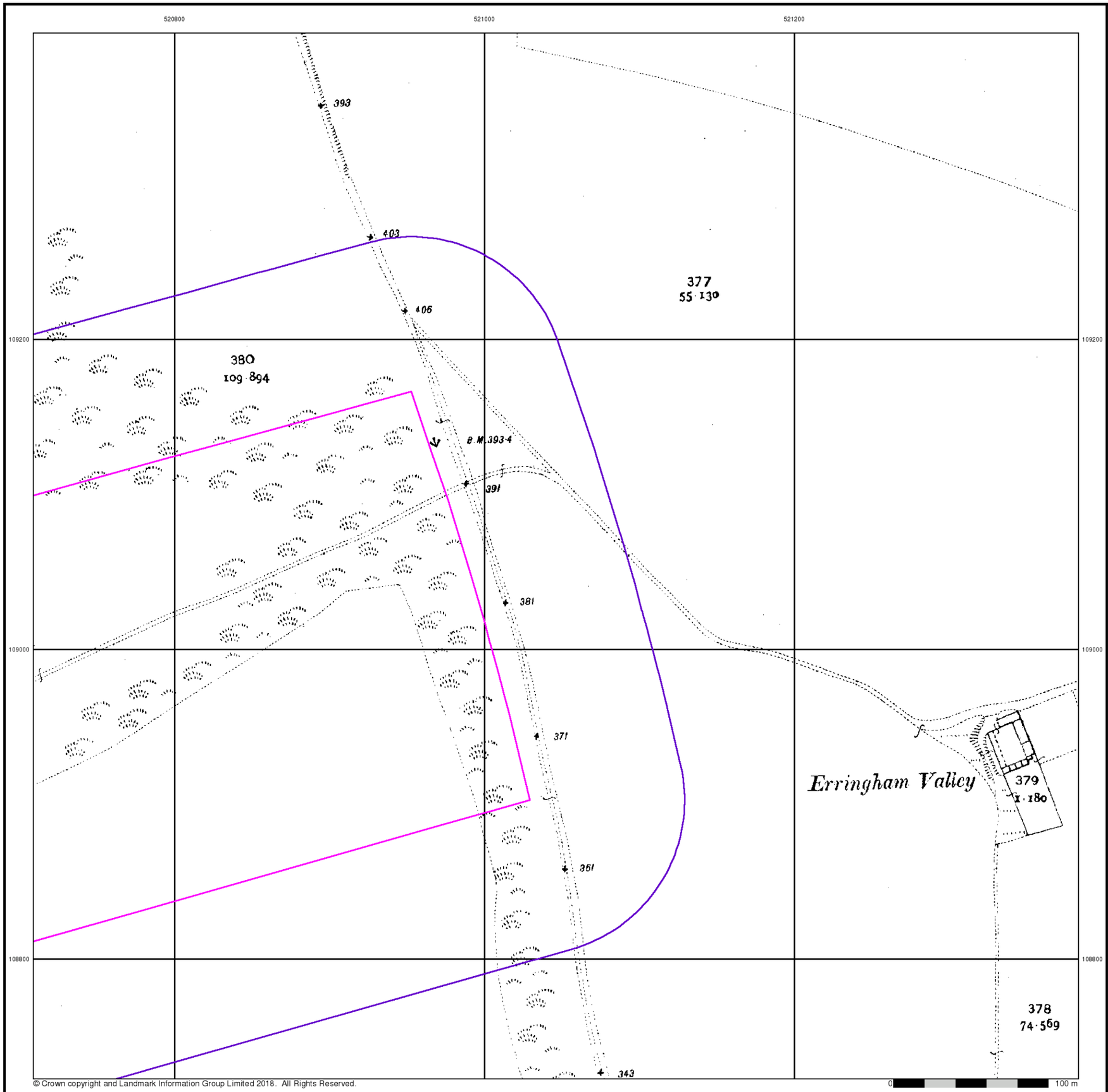

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Sussex

Published 1912

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.

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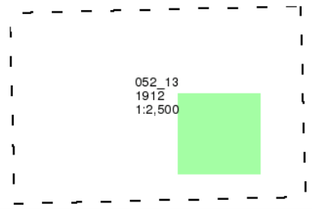
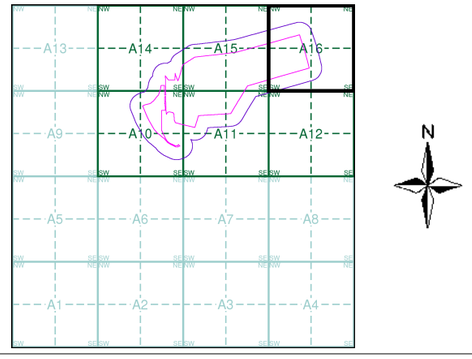


Historical Map - Segment A16



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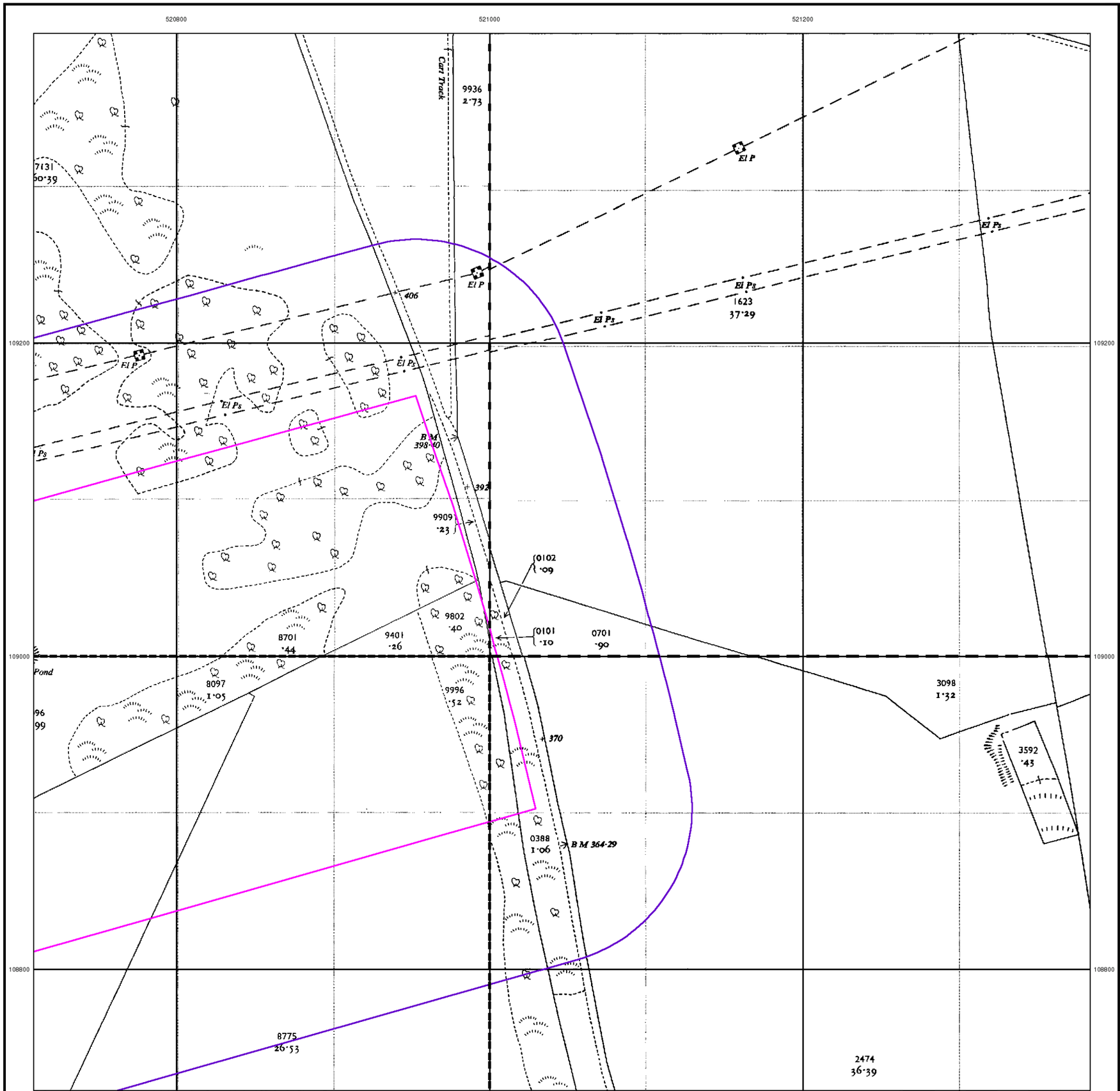

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Ordnance Survey Plan

Published 1957

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.

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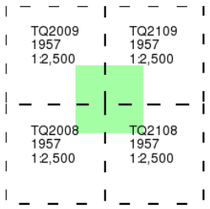
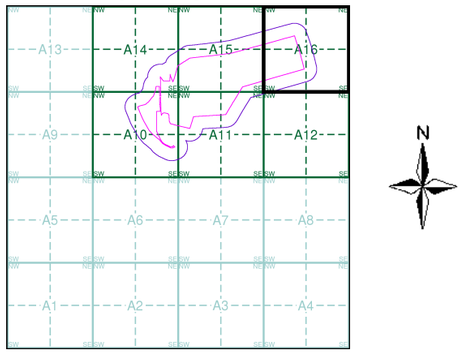


Historical Map - Segment A16



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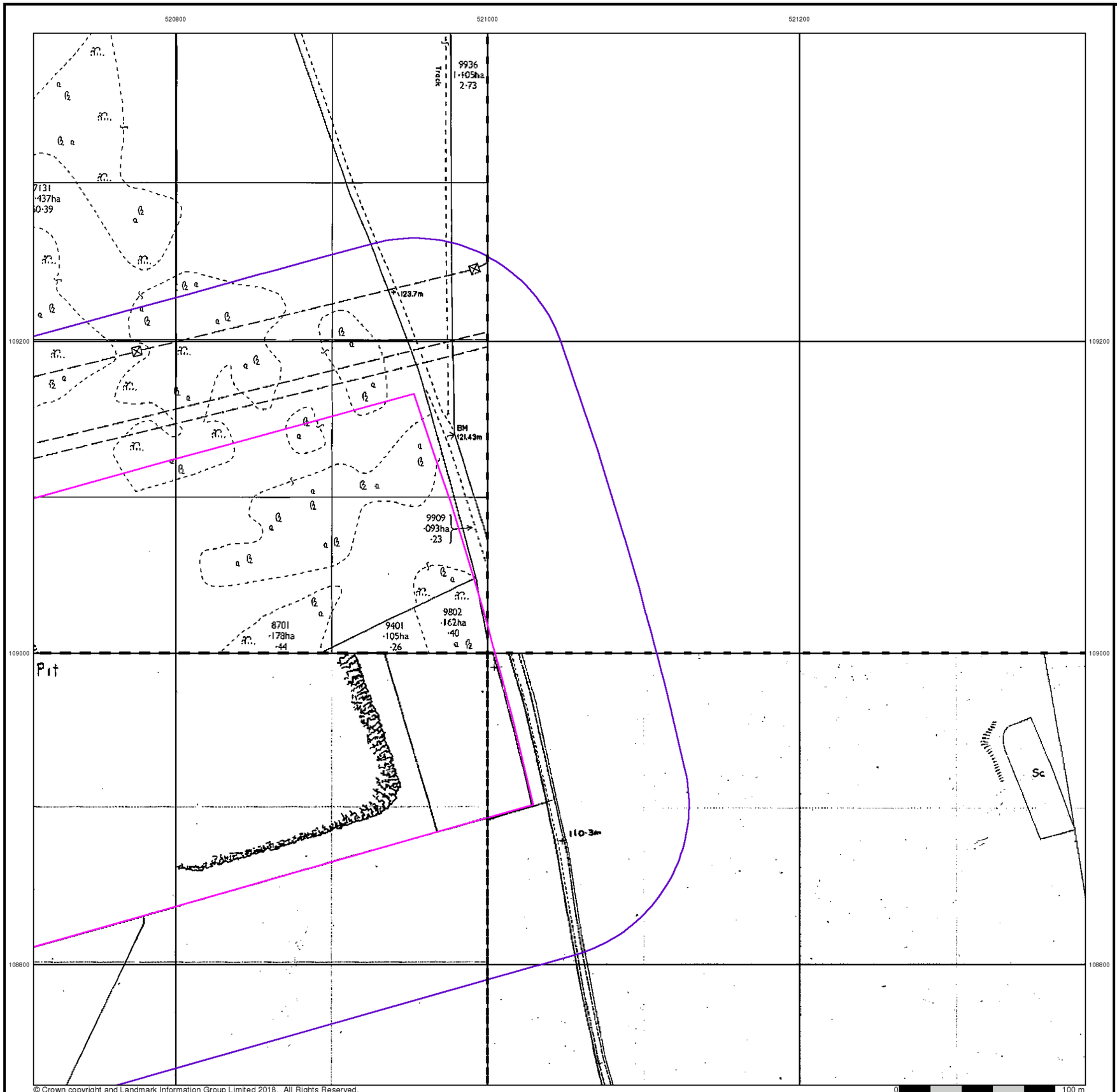

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Additional SIMs

Published 1957 - 1984

Source map scale - 1:2,500

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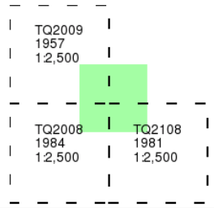
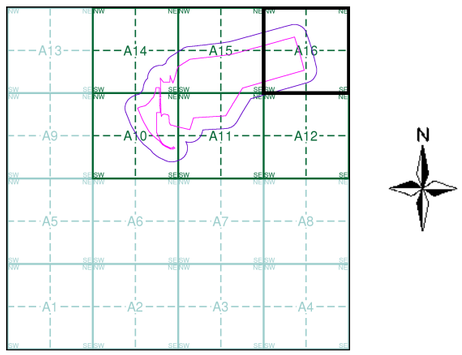


Historical Map - Segment A16



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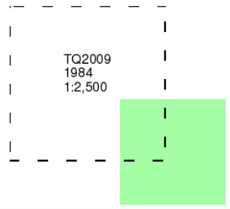
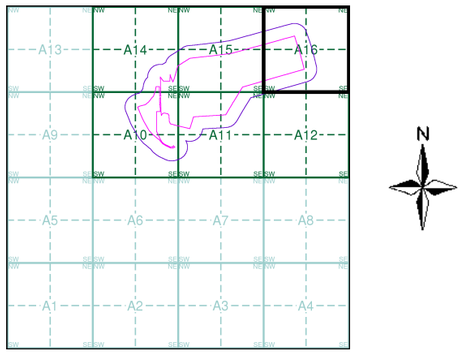
The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps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

Map Name(s) and Date(s)



Historical Map - Segment A16



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	100

Site Details

Site at 520371,108723

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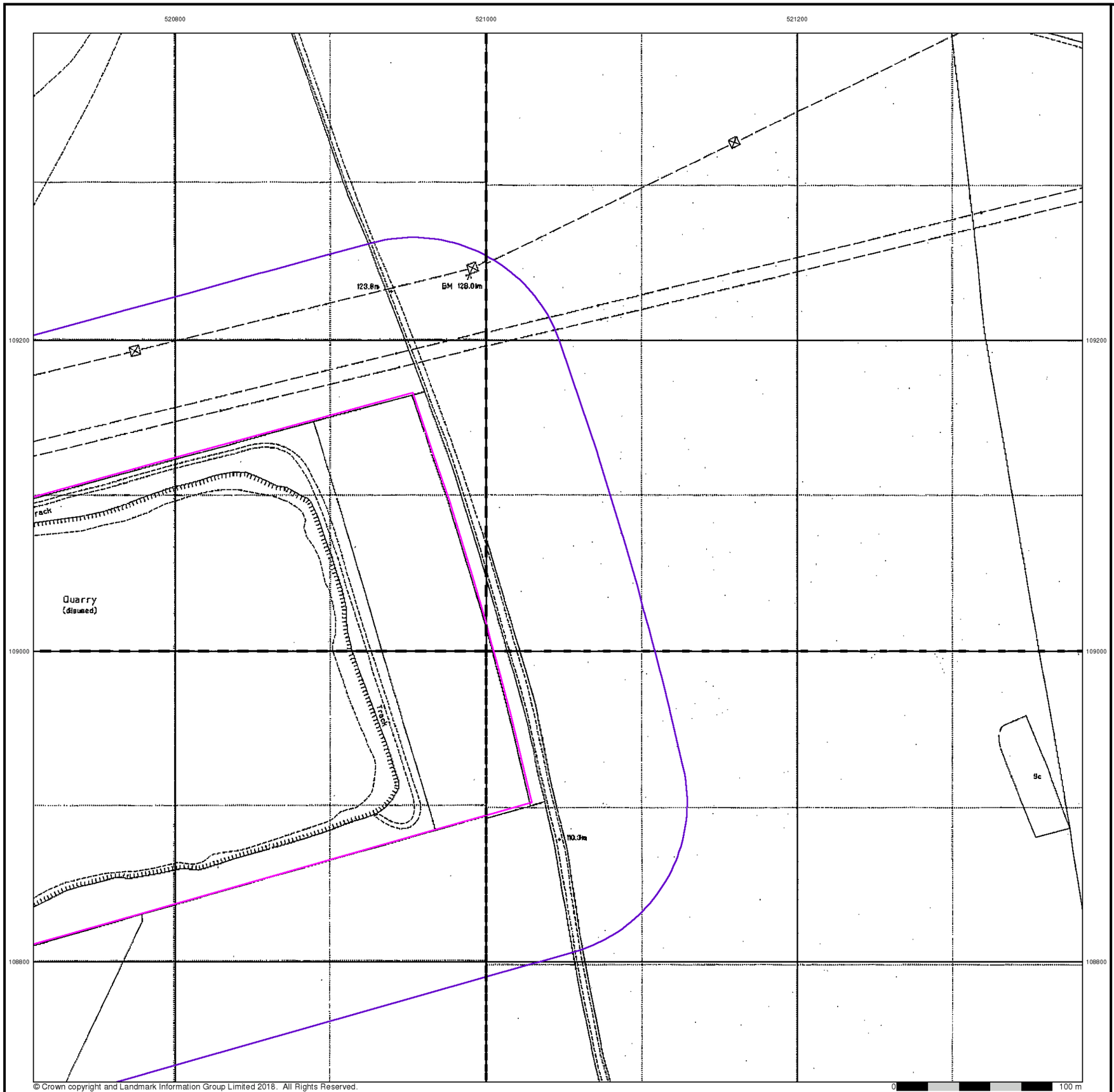

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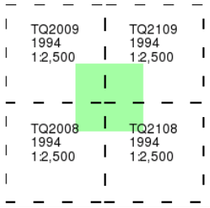
Large-Scale National Grid Data

Published 1994

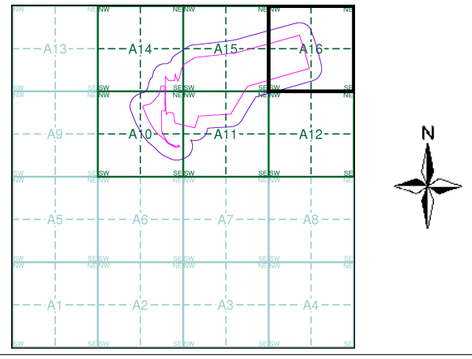
Source map scale - 1:2,500

'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 A16



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520080, 108450
Slice:	A
Site Area (Ha):	44.36
Search Buffer (m):	100

Site Details

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Groundwater Vulnerability

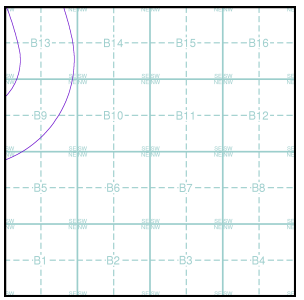
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes	Soil Classes
Major Aquifer (Highly Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Minor Aquifer (Variably Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Non Aquifer (Negligibly Permeable)	
Water or Sea	
Drift Deposit	

Site Sensitivity Context Map - Slice B



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	521670, 108780
Slice:	B
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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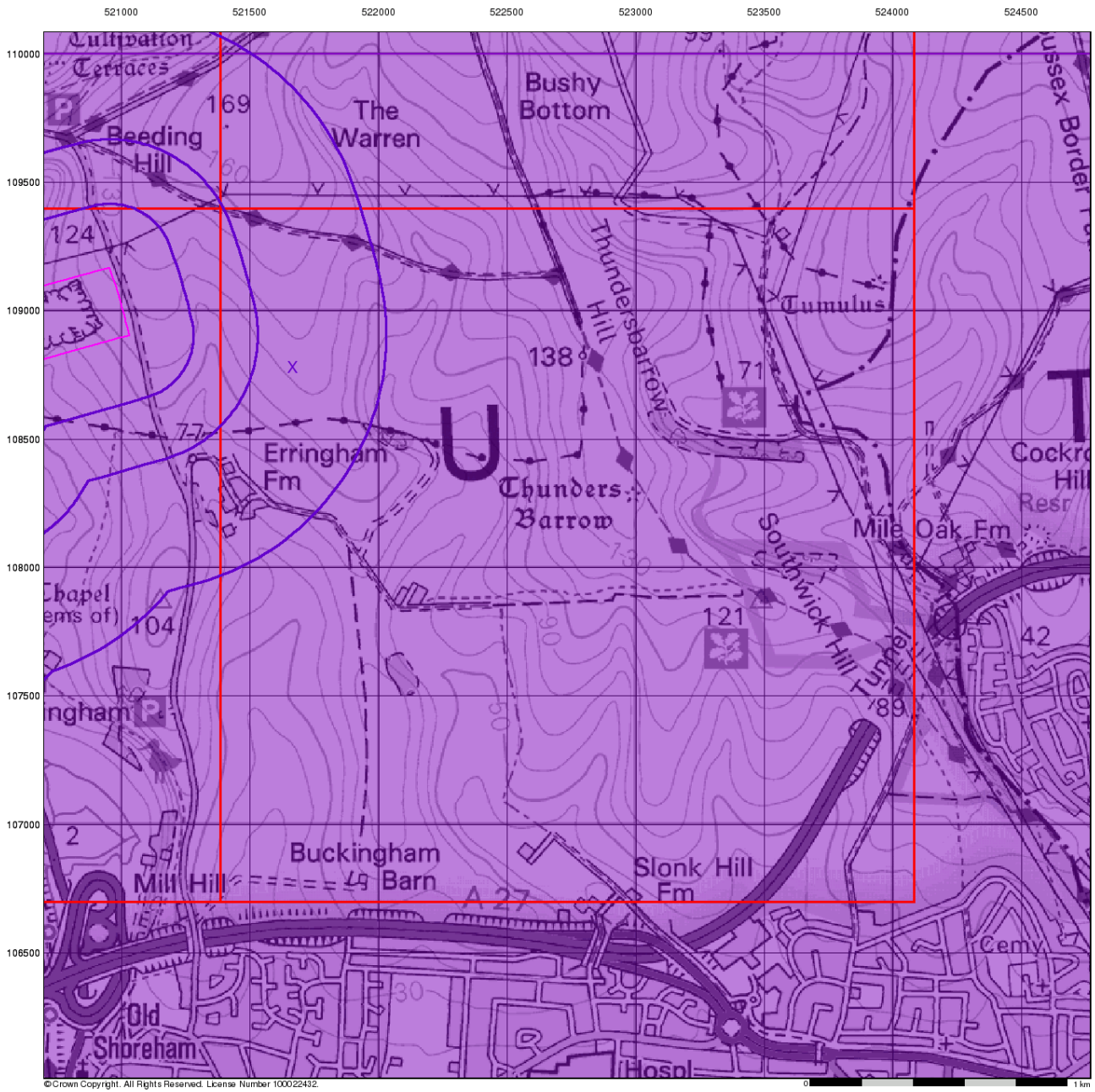

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Bedrock Aquifer Designation

General

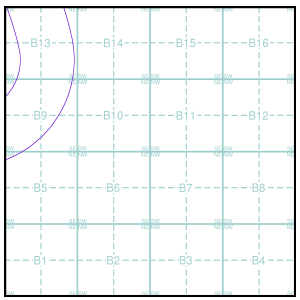
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice B



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	521670, 108780
Slice:	B
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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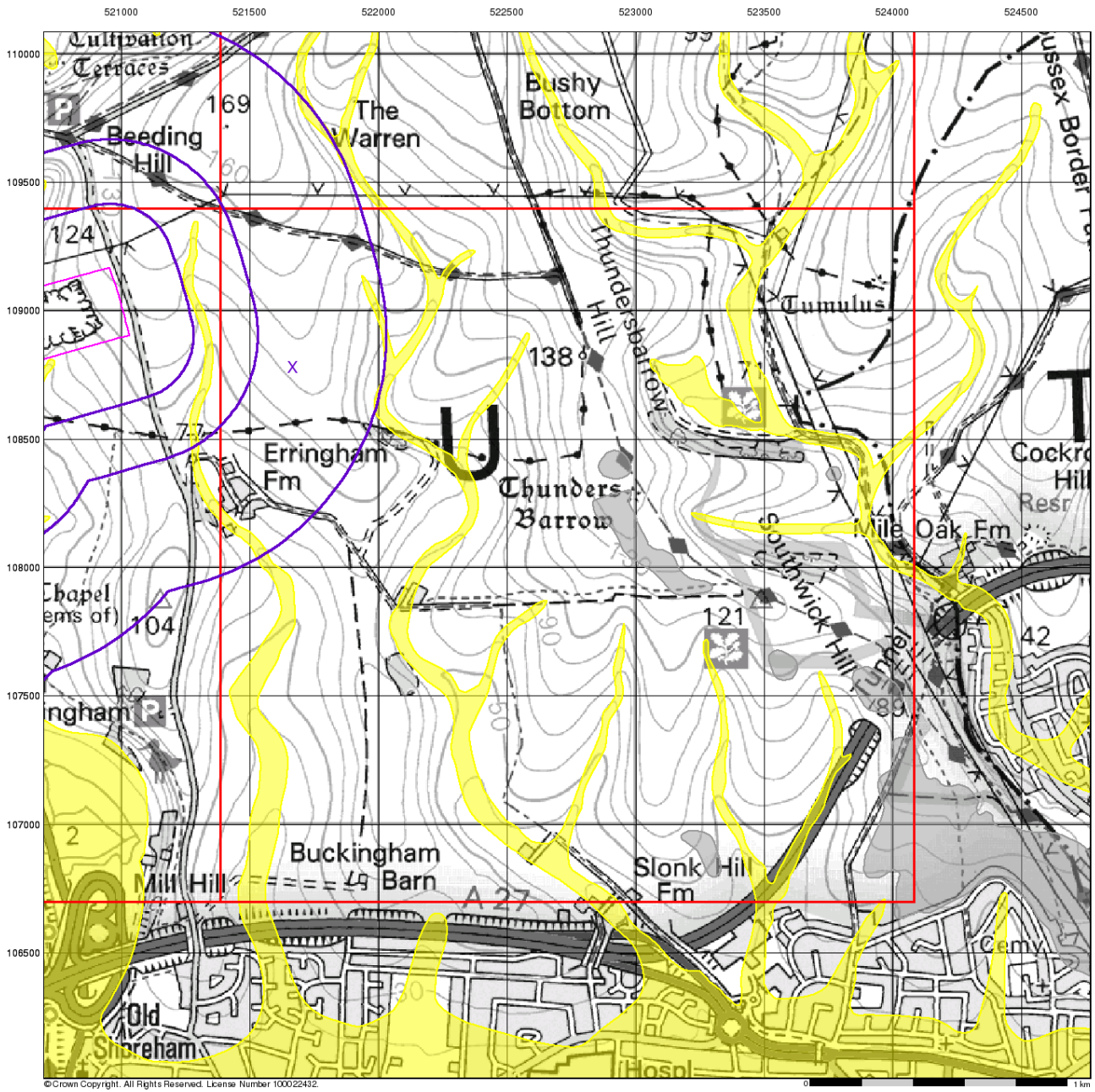

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Superficial Aquifer Designation

General

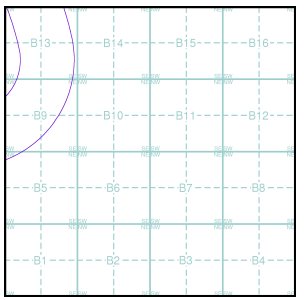
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice B



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	521670, 108780
Slice:	B
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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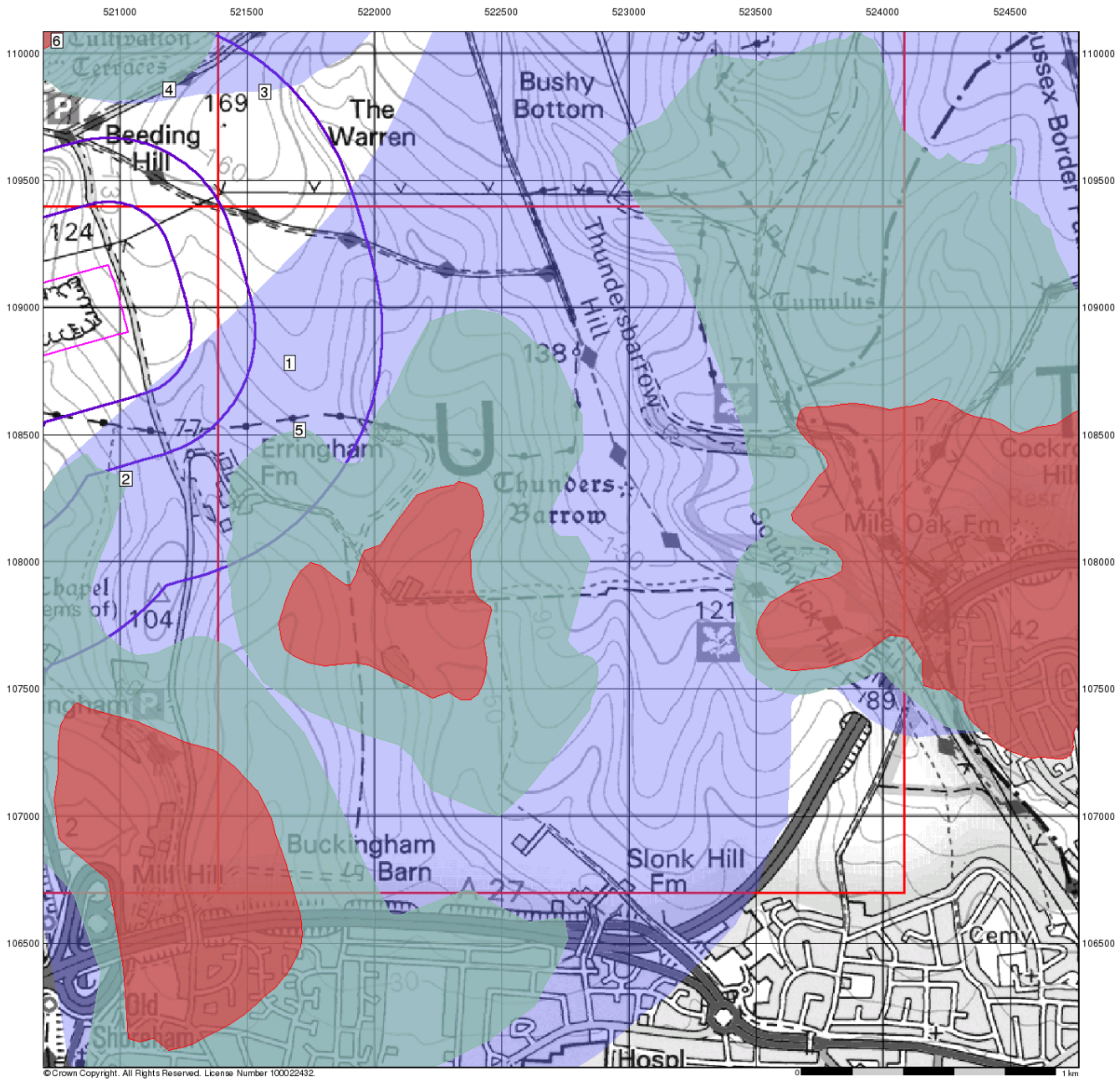

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Source Protection Zones

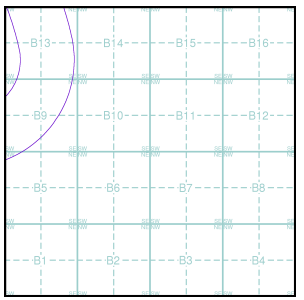
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)

Site Sensitivity Context Map - Slice B



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	521670, 108780
Slice:	B
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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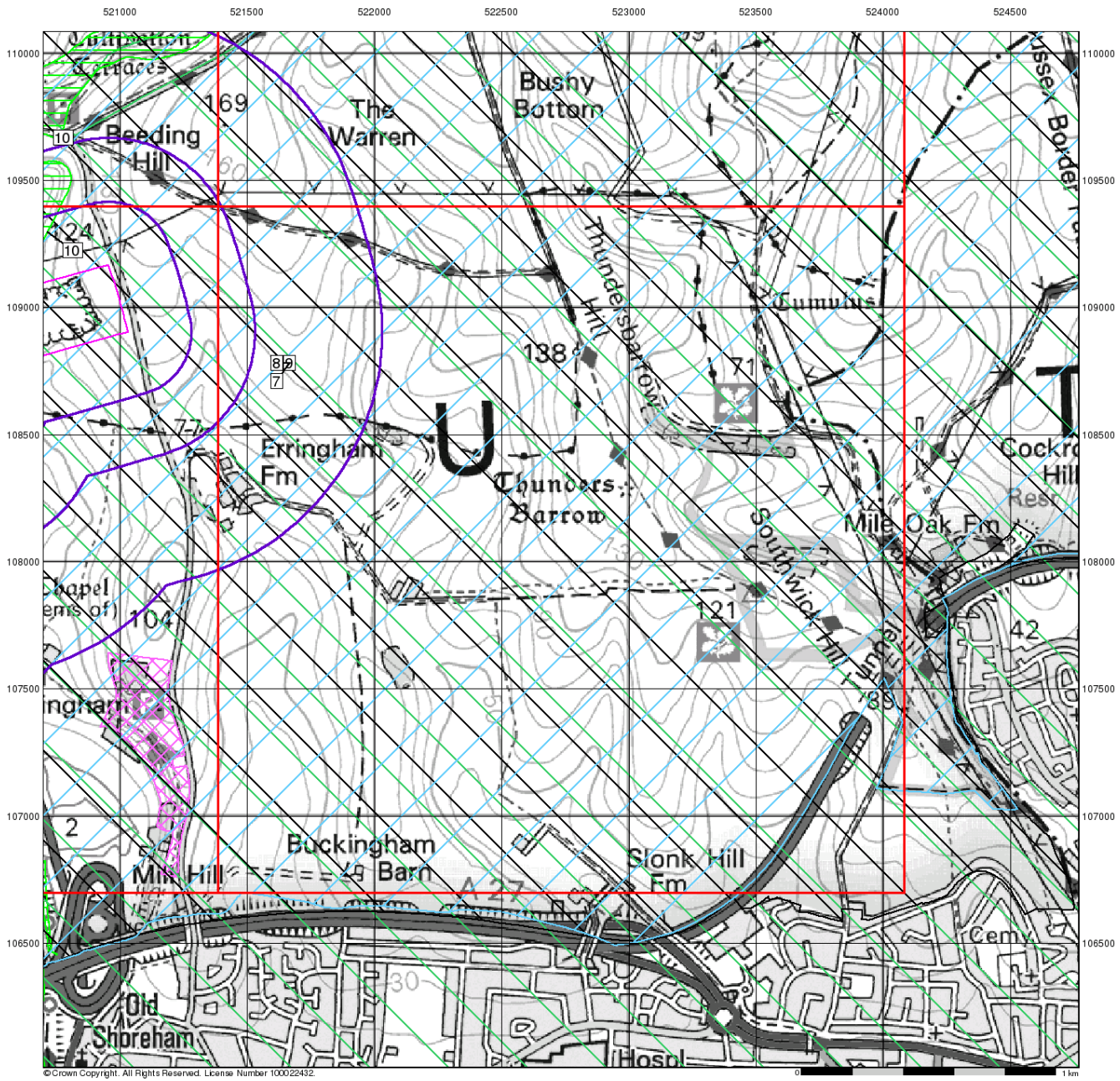

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Sensitive Land Uses

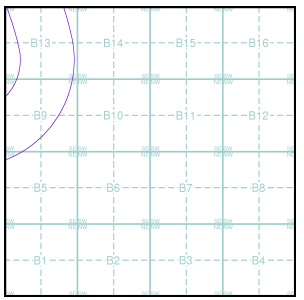
General

Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice B



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	521670, 108780
Slice:	B
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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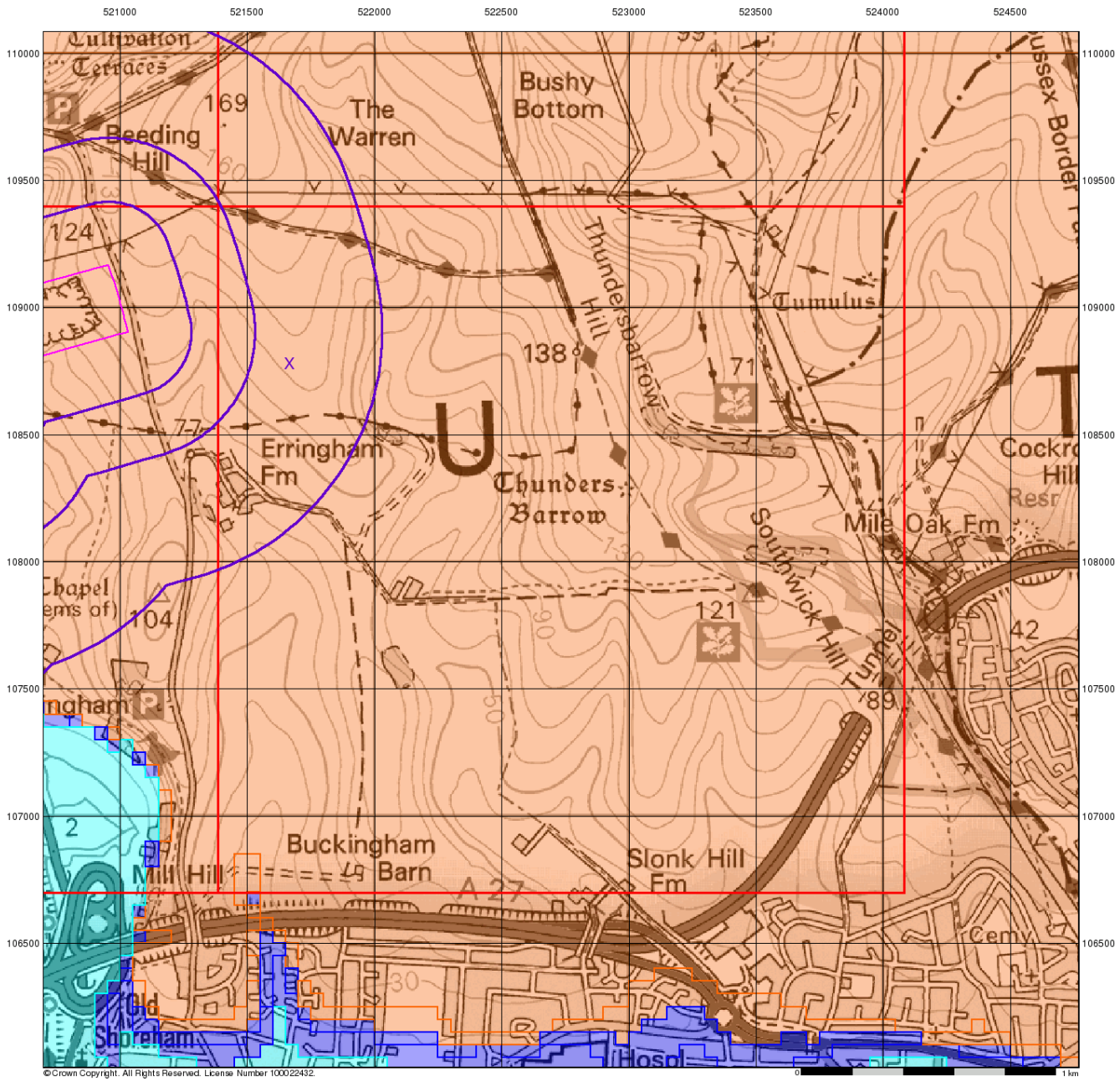
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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BGS Flood GFS Data

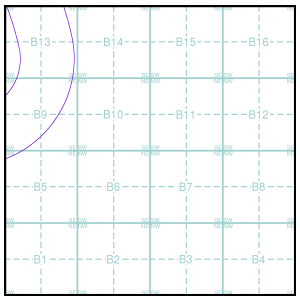
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice B



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	521670, 108780
Slice:	B
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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Envirocheck® Report:

Datasheet

Order Details:

Order Number:
170375371_1_1

Customer Reference:
2018s0642

National Grid Reference:
521670, 108780

Slice:
B

Site Area (Ha):
44.36

Search Buffer (m):
1000

Site Details:

Site at 520371,108723

Client Details:

Miss A Davis
JBA Consulting
Salt Mill
Saltaire
West Yorkshire
BD18 3LF

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Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.
In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Report Version v53.0

Contents

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes			n/a
Contaminated Land Register Entries and Notices					
Discharge Consents					
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls					
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature					
Pollution Incidents to Controlled Waters					
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 1				(*4)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 2	Yes	n/a	n/a	n/a
Drift Deposits			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 2	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 2	Yes	n/a	n/a	n/a
Source Protection Zones	pg 2		1	1	4
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines					

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 3	3	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS 1:625,000 Solid Geology	pg 4	Yes	n/a	n/a	n/a
BGS Recorded Mineral Sites					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 4	Yes		n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 4	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 4	Yes		n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 4	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 4	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards				n/a	n/a
Radon Potential - Radon Affected Areas	pg 4	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Industrial Land Use					
Contemporary Trade Directory Entries					
Fuel Station Entries					
Gas Pipelines					
Underground Electrical Cables					
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas	pg 5	1			
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks	pg 5	1			
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 5	1			
Ramsar Sites					
Sites of Special Scientific Interest	pg 5	1			
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	(SW)	0	1	520550 108100
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	B13SW (NW)	0	1	521666 108780
	Nearest Surface Water Feature None				
	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 10/41/260103 Permit Version: 101 Location: Mossy Bottom Ps Bh 1 Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Mossy Bottom Ps Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	B5NE (S)	1489	2	522040 107810
	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 10/41/260103 Permit Version: 100 Location: Mossy Bottom Ps Bh 1 Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 4500 Yearly Rate (m3): 1647000 Details: Mossy Bottom Ps Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 8th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	B5NE (S)	1489	2	522040 107810
	Water Abstractions Operator: Southern Water Services Plc Licence Number: 260103A Permit Version: Not Supplied Location: Mossey Bottom Pumping Station, BRIGHTON Authority: Environment Agency, Southern Region Abstraction: Spray Irrigation Abstraction Type: Not Supplied Source: Pond or Lake Daily Rate (m3): 4500 Yearly Rate (m3): 1647000 Details: Additional Purpose: Public Water Supply Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	B5NE (S)	1489	2	522040 107810
	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 10/41/260103 Permit Version: 101 Location: Mossy Bottom Ps Bh 1 Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Mossy Bottom Ps Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2015 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	B5NE (S)	1534	2	522040 107750

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (H1) - Soils which readily transmit liquid discharges because they are either shallow, or susceptible to rapid by-pass flow directly to rock, gravel or groundwater Map Sheet: Sheet 46 East Sussex Scale: 1:100,000	B13SW (NW)	0	2	521666 108780
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	B13SW (NW)	0	1	521666 108780
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	(W)	0	1	521355 108802
1	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	B13SW (NW)	222	2	521666 108780
2	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone II (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.	(SW)	392	2	521021 108324
3	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	(N)	637	2	521569 109848
4	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone II (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.	(NW)	651	2	521191 109856
5	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone II (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.	B9NW (S)	678	2	521705 108517
6	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone I (Inner Protection Zone): Travel time of 50 days or less to the groundwater source.	(NW)	888	2	520753 110049
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
	OS Water Network Lines None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Local Authority Landfill Coverage Name: Adur District Council - Has no landfill data to supply		0	3	521690 108547
	Local Authority Landfill Coverage Name: Horsham District Council - Has supplied landfill data		0	5	521666 108780
	Local Authority Landfill Coverage Name: West Sussex County Council - Has supplied landfill data		0	4	521666 108780

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: White Chalk Subgroup	B13SW (NW)	0	1	521666 108780
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	B13SW (NW)	0	1	521666 108780
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B13SW (NW)	0	1	521666 108780
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B13SW (NW)	0	1	521666 108780
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B13SW (NW)	0	1	521666 108780
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B13SW (NW)	0	1	521666 108780
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	(W)	0	1	521355 108802
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B13SW (NW)	0	1	521666 108780
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	(W)	0	1	521355 108802
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B13SW (NW)	0	1	521666 108780
	Radon Potential - Radon Affected Areas Affected Area: The property is in an Intermediate probability radon area (1 to 3% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	B13SW (NW)	0	1	521666 108780
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	B13SW (NW)	0	1	521666 108780

Sensitive Land Use

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	**Environmentally Sensitive Areas** Name: South Downs (decommissioned) Multiple Areas: N Total Area (m2): 690432994.81 Source: Natural England	B13SW (NW)	0	6	521666 108780
8	**National Parks** Name: South Downs Multiple Area: N Area (m2): 1652679314.3 Source: Natural England **Status: Fully Designated - designated as a National Park** Designation Date: 2nd November 2009	B13SW (NW)	0	6	521666 108780
9	**Nitrate Vulnerable Zones** Name: Sussex Chalk Description: Groundwater Source: Environment Agency, Head Office	B13SW (NW)	0	7	521666 108780
10	**Sites of Special Scientific Interest** Name: Beeding Hill To Newtimber Hill Multiple Areas: Y Total Area (m2): 3209597.86 Source: Natural England Reference: 1000374 Designation Details: Geological Conservation Review Designation Date: 10th November 1986 Date Type: Notified Designation Details: Local Wildlife Site Designation Date: 10th November 1986 Date Type: Notified Designation Details: Nature Conservation Review Designation Date: 10th November 1986 Date Type: Notified Designation Details: Site Of Special Scientific Interest Designation Date: 10th November 1986 Date Type: Notified	(NW)	0	6	520716 109297

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Horsham District Council - Environmental Health Department	February 2015	Annual Rolling Update
Adur District Council - Environmental Health Department	March 2014	Annual Rolling Update
Brighton & Hove City Council - Environmental Health Department	March 2015	Annual Rolling Update
Mid Sussex District Council - Environmental Services Section	November 2014	Annual Rolling Update
Discharge Consents		
Environment Agency - Southern Region	April 2018	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Southern Region	March 2013	As notified
Integrated Pollution Controls		
Environment Agency - Southern Region	October 2008	Variable
Integrated Pollution Prevention And Control		
Environment Agency - South East Region - Solent & South Downs Area	April 2018	Quarterly
Environment Agency - Southern Region	April 2018	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Horsham District Council - Environmental Health Department	June 2015	Variable
Brighton & Hove City Council - Environmental Health Department	November 2013	Variable
Adur District Council - Environmental Health Department	November 2014	Variable
Mid Sussex District Council - Environmental Services Section	September 2014	Variable
Local Authority Pollution Prevention and Controls		
Brighton & Hove City Council - Environmental Health Department	August 2015	Annual Rolling Update
Horsham District Council - Environmental Health Department	June 2015	Annual Rolling Update
Adur District Council - Environmental Health Department	November 2014	Annual Rolling Update
Mid Sussex District Council - Environmental Services Section	September 2014	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Brighton & Hove City Council - Environmental Health Department	August 2015	Variable
Horsham District Council - Environmental Health Department	June 2015	Variable
Adur District Council - Environmental Health Department	November 2014	Variable
Mid Sussex District Council - Environmental Services Section	September 2014	Variable
Nearest Surface Water Feature		
Ordnance Survey	September 2017	
Pollution Incidents to Controlled Waters		
Environment Agency - Southern Region	December 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Southern Region	March 2013	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - Southern Region	March 2013	As notified
Registered Radioactive Substances		
Environment Agency - Southern Region	January 2015	
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency - South East Region - Solent & South Downs Area	April 2018	Quarterly
Environment Agency - Southern Region - Kent and East Sussex	April 2018	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2018	Quarterly
Environment Agency - Southern Region - Sussex Area	April 2018	Quarterly
Water Abstractions		
Environment Agency - Southern Region	April 2018	Quarterly

Data Currency

Agency & Hydrological	Version	Update Cycle
Water Industry Act Referrals Environment Agency - Southern Region	October 2017	Quarterly
Groundwater Vulnerability Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Superficial Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Source Protection Zones Environment Agency - Head Office	January 2018	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	May 2018	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	May 2018	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	May 2018	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	May 2018	Quarterly
Flood Defences Environment Agency - Head Office	May 2018	Quarterly
OS Water Network Lines Ordnance Survey	May 2018	Quarterly
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	As notified

Data Currency

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	April 2018	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Southern Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - South East Region - Solent & South Downs Area	April 2018	Quarterly
Environment Agency - Southern Region - Kent and East Sussex	April 2018	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2018	Quarterly
Environment Agency - Southern Region - Sussex Area	April 2018	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - South East Region - Solent & South Downs Area	April 2018	Quarterly
Environment Agency - Southern Region - Kent and East Sussex	April 2018	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2018	Quarterly
Environment Agency - Southern Region - Sussex Area	April 2018	Quarterly
Local Authority Landfill Coverage		
Adur District Council	May 2000	Not Applicable
Brighton & Hove City Council - Environmental Health Department	May 2000	Not Applicable
Horsham District Council - Environmental Health Department	May 2000	Not Applicable
Mid Sussex District Council - Environmental Services Section	May 2000	Not Applicable
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Brighton & Hove City Council - Environmental Health Department	April 2003	Not Applicable
Adur District Council	May 2000	Not Applicable
Horsham District Council - Environmental Health Department	May 2000	Not Applicable
Mid Sussex District Council - Environmental Services Section	May 2000	Not Applicable
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Registered Landfill Sites		
Environment Agency - Southern Region - Kent and East Sussex	March 2003	Not Applicable
Environment Agency - Southern Region - Solent and South Downs	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Southern Region - Kent and East Sussex	March 2003	Not Applicable
Environment Agency - Southern Region - Solent and South Downs	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Southern Region - Kent and East Sussex	March 2003	Not Applicable
Environment Agency - Southern Region - Solent and South Downs	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	September 2017	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	Variable
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Horsham District Council - Planning Department	August 2015	Variable
Adur District Council	February 2016	Variable
Brighton & Hove City Council	February 2016	Variable
Mid Sussex District Council	January 2016	Variable
West Sussex County Council - Environment & Development	October 2006	Annual Rolling Update
Planning Hazardous Substance Consents		
Horsham District Council - Planning Department	August 2015	Variable
Adur District Council	February 2016	Variable
Brighton & Hove City Council	February 2016	Variable
Mid Sussex District Council	January 2016	Variable
West Sussex County Council - Environment & Development	October 2006	Annual Rolling Update

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology		
British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Recorded Mineral Sites		
British Geological Survey - National Geoscience Information Service	May 2018	Bi-Annually
CBSCB Compensation District		
Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas		
The Coal Authority - Property Searches	March 2014	As notified
Mining Instability		
Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain		
British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Compressible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Ground Dissolution Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Landslide Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Running Sand Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Radon Potential - Radon Affected Areas		
British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures		
British Geological Survey - National Geoscience Information Service	July 2011	As notified

Data Currency

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	May 2018	Quarterly
Fuel Station Entries Catalist Ltd - Experian	April 2018	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Underground Electrical Cables National Grid	December 2015	Bi-Annually
Sensitive Land Use	**Version**	**Update Cycle**
Ancient Woodland Natural England	October 2017	Bi-Annually
Areas of Adopted Green Belt Mid Sussex District Council	February 2018	As notified
Areas of Unadopted Green Belt Mid Sussex District Council	February 2018	As notified
Areas of Outstanding Natural Beauty Natural England	February 2018	Bi-Annually
Environmentally Sensitive Areas Natural England	January 2017	
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	February 2018	Bi-Annually
Marine Nature Reserves Natural England	January 2018	Bi-Annually
National Nature Reserves Natural England	February 2018	Bi-Annually
National Parks Natural England	April 2017	Bi-Annually
Nitrate Vulnerable Zones Environment Agency - Head Office Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	December 2017 October 2015	Bi-Annually
Ramsar Sites Natural England	February 2018	Bi-Annually
Sites of Special Scientific Interest Natural England	February 2018	Bi-Annually
Special Areas of Conservation Natural England	January 2018	Bi-Annually
Special Protection Areas Natural England	February 2018	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Useful Contacts

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	**Adur District Council** Civic Centre, Ham Road, Shoreham By Sea, West Sussex, BN43 6PR	Telephone: 01273 263000 Fax: 01273 454847 Email: info@adur.gov.uk Website: www.adur.gov.uk
4	**West Sussex County Council - Environment & Development** County Hall, Tower hall, Chichester, West Sussex, PO19 1RH	Telephone: 01243 777100 Website: www.westsussex.gov.uk
5	**Horsham District Council - Environmental Health Department** Park House, North Street, Horsham, Sussex, RH12 1RL	Telephone: 01403 215100 Fax: 01403 732790 Website: www.horsham.gov.uk
6	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
7	**Environment Agency - Head Office** Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.

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
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
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
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
R.D. Bdy. 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
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Electricity Transmission Line
Pole
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
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
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	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
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m 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

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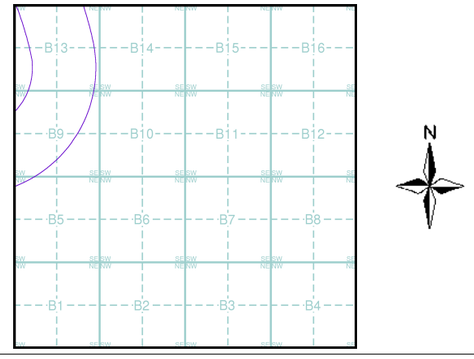
Historical Mapping & Photography included:

Historical Map - Slice B



Order Details

Order Number: 170375371_1_1
Customer Ref: 2018s0642
National Grid Reference: 521670, 108780
Slice: B
Site Area (Ha): 44.36
Search Buffer (m): 1000

Site Details

Site at 520371,108723

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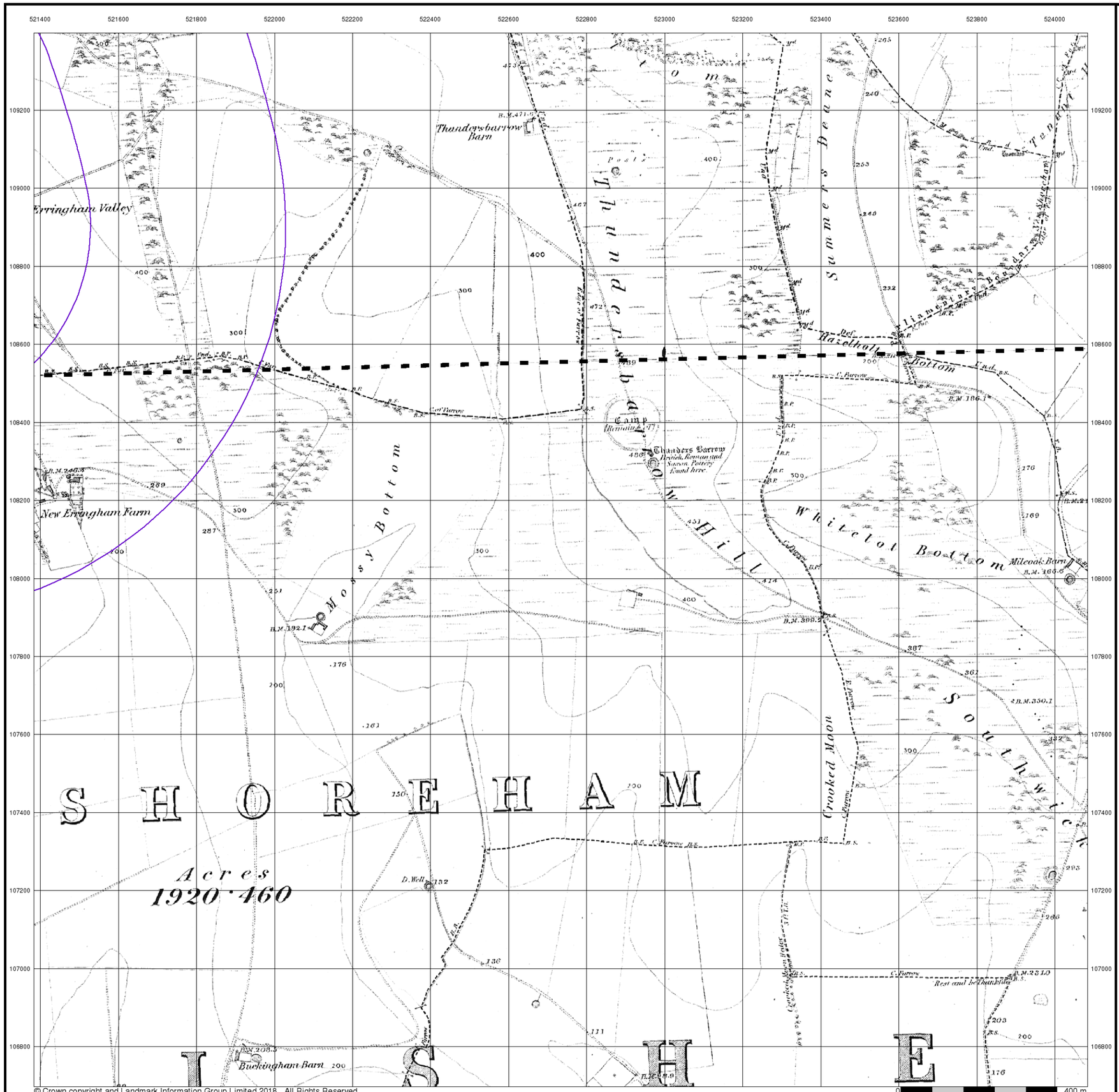

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Sussex

Published 1879

Source map scale - 1:10,560

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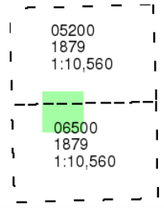
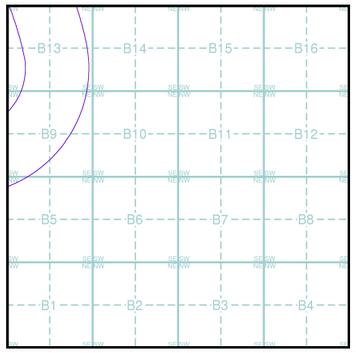
Map Name(s) and Date(s)



Historical Map - Slice B



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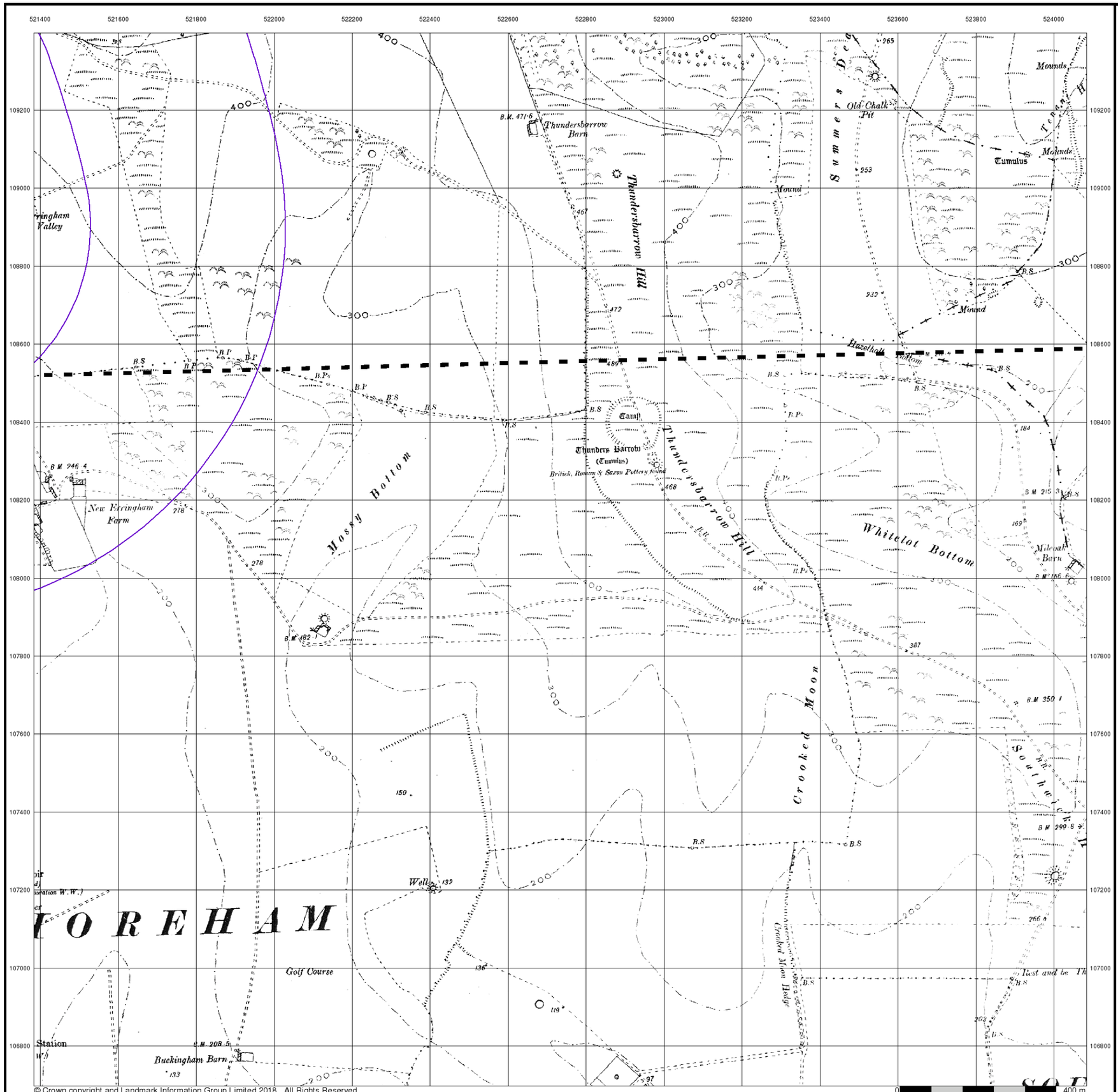

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Published 1899

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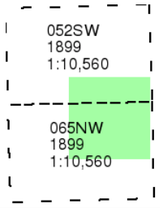
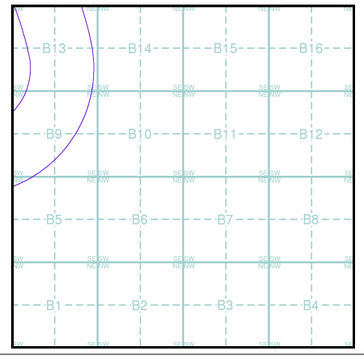


Historical Map - Slice B



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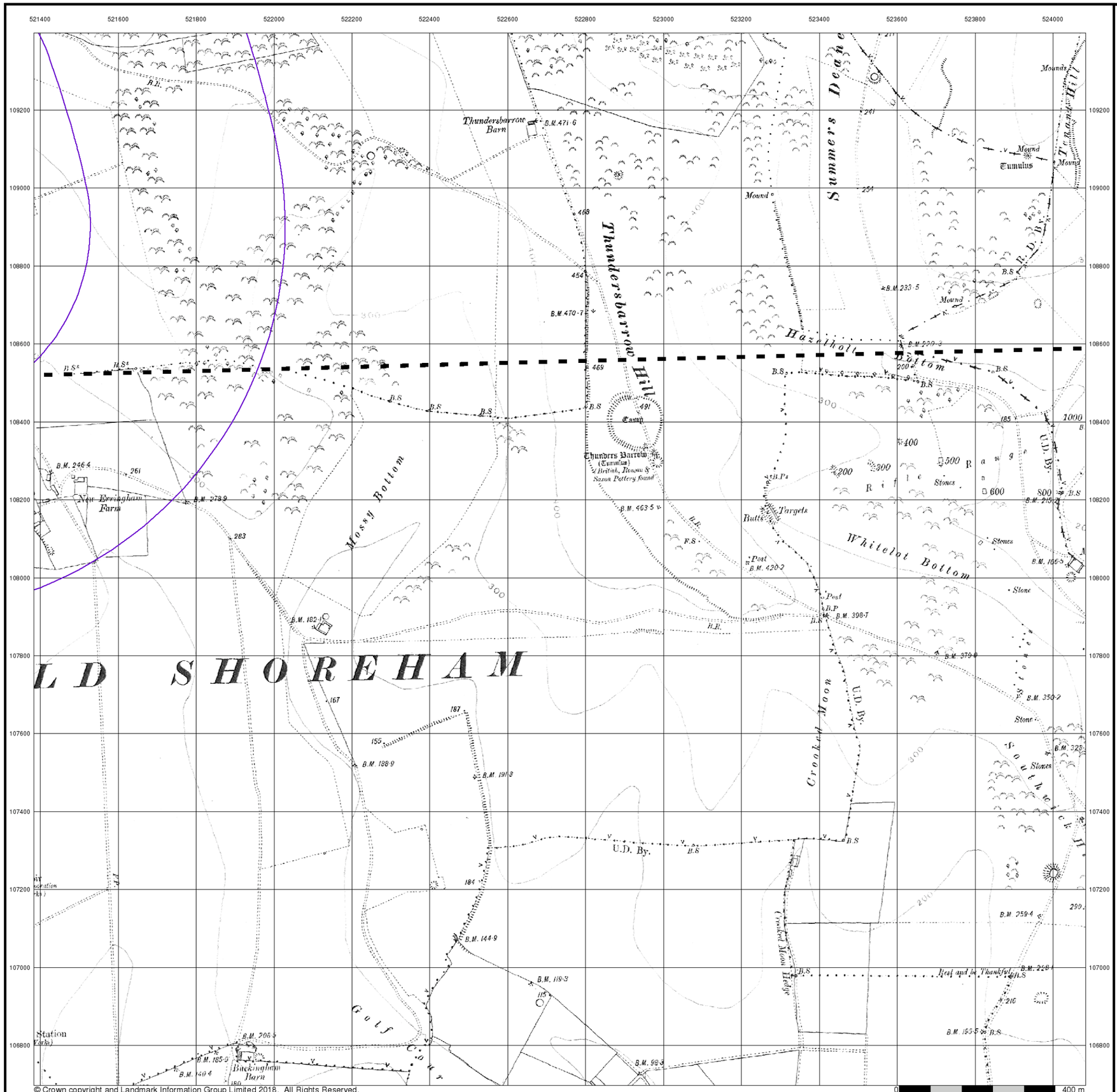

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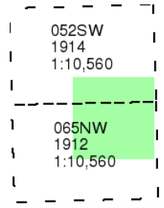
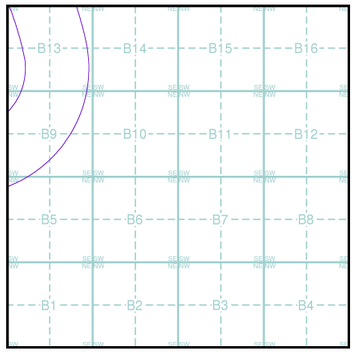


Historical Map - Slice B



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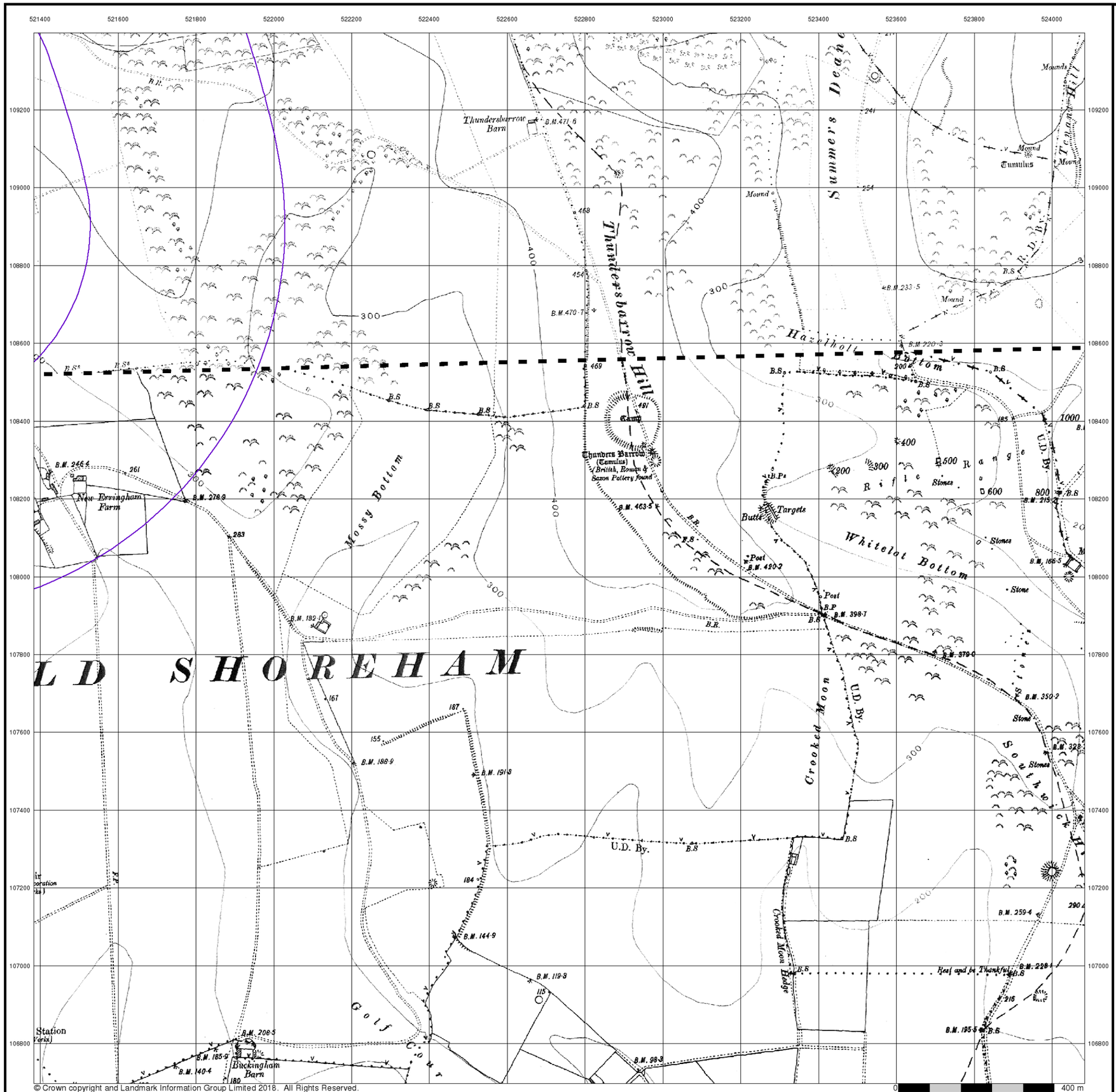

Envirocheck®

LANDMARK INFORMATION GROUP®

Sussex

Published 1912 - 1914

Source map scale - 1:10,560

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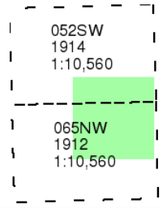
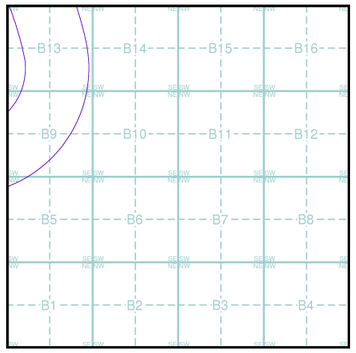
Map Name(s) and Date(s)



Historical Map - Slice B



Order Details

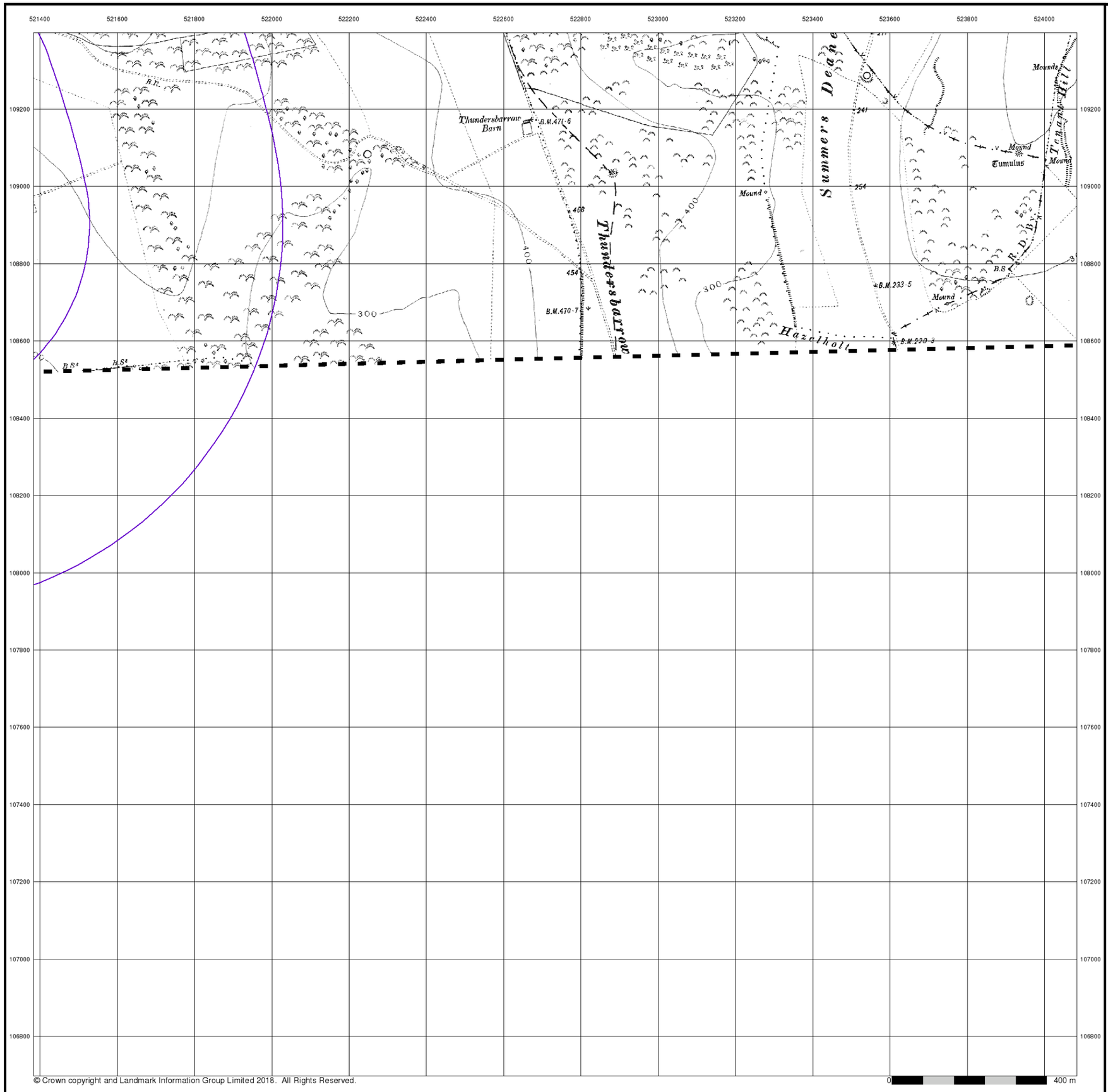
Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	521670, 108780
Slice:	B
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

Landmark INFORMATION GROUP

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



0 400 m

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Sussex

Published 1914

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.

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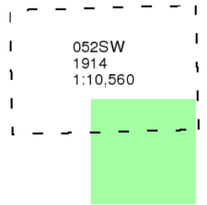
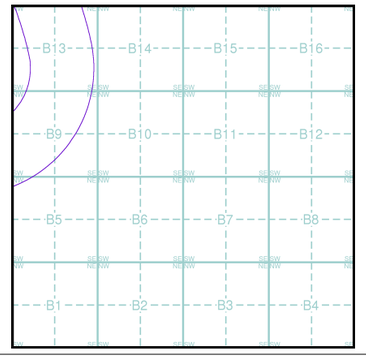


Historical Map - Slice B



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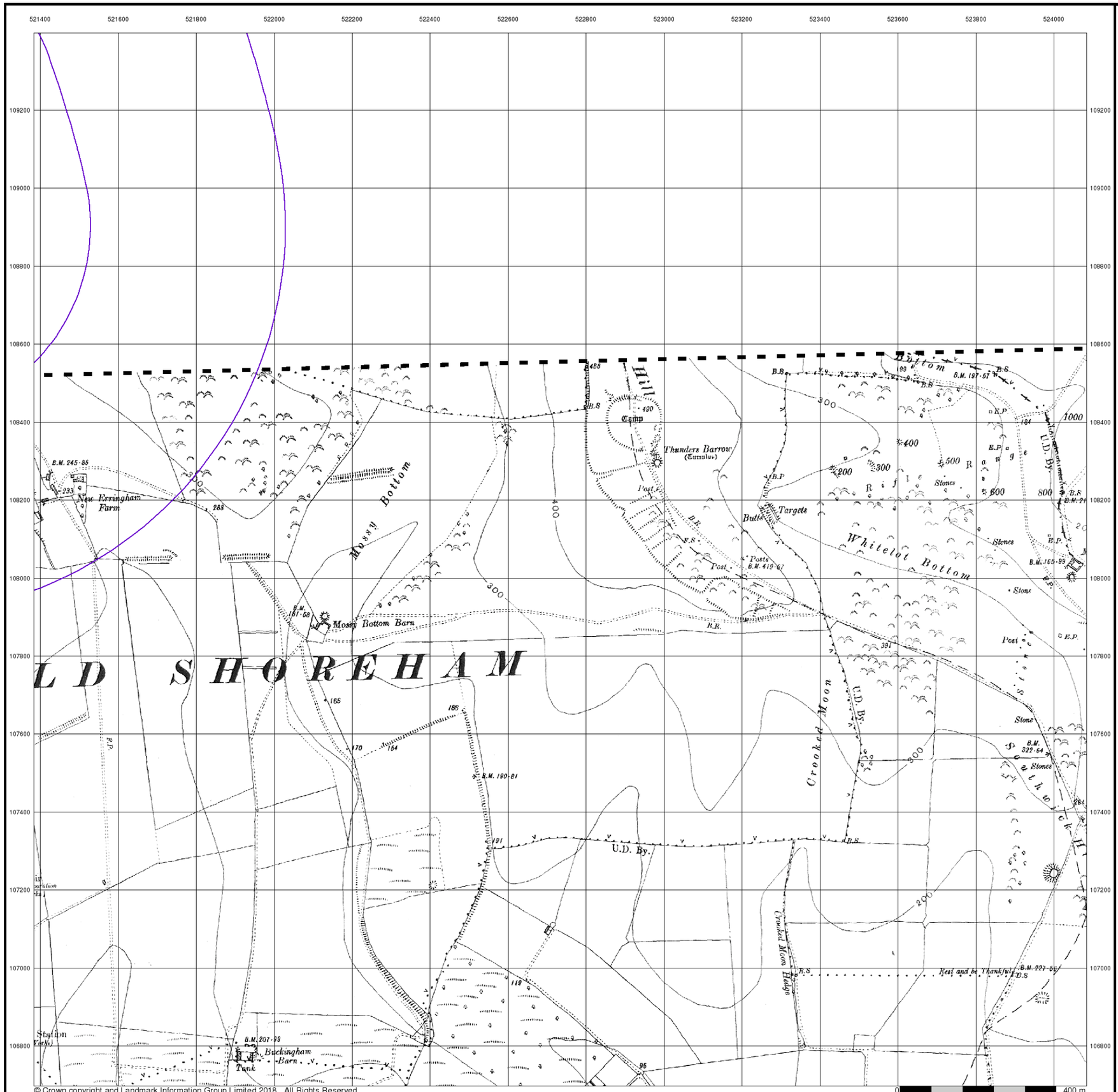

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Sussex

Published 1931

Source map scale - 1:10,560

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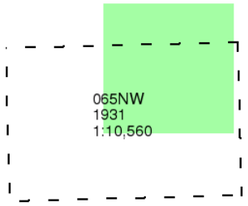
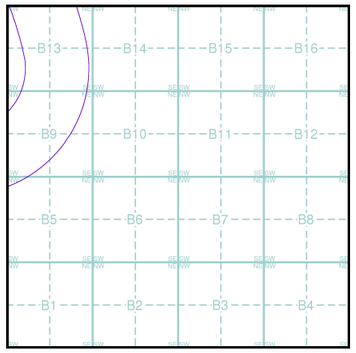
Map Name(s) and Date(s)



Historical Map - Slice B



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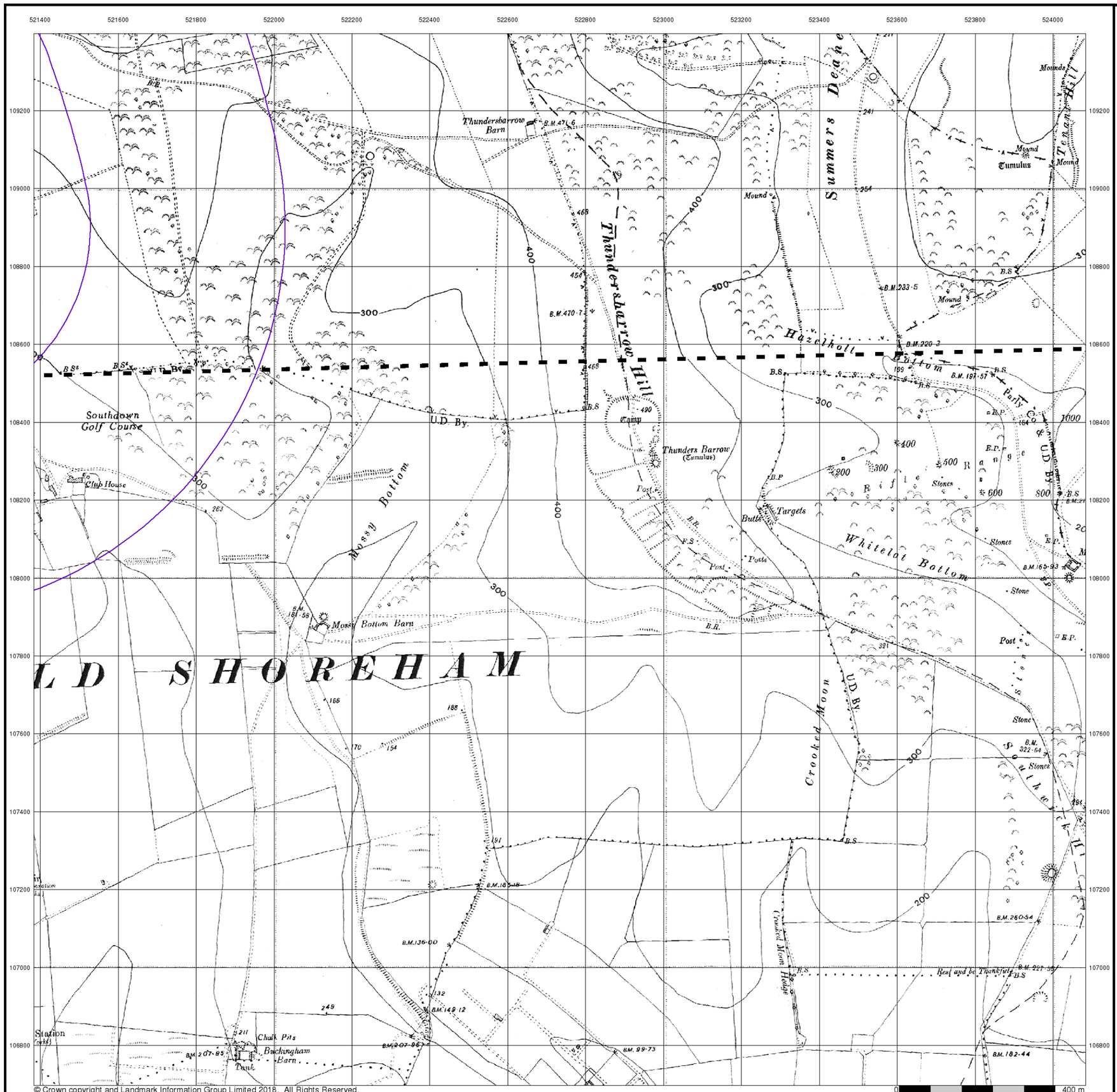

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Sussex

Published 1947

Source map scale - 1:10,560

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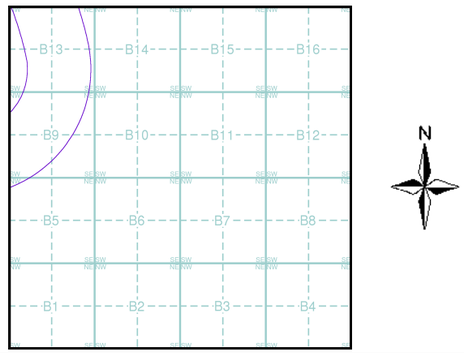
Map Name(s) and Date(s)

052SW
1947
1:10,560

065NW
1947
1:10,560

Historical Map - Slice B



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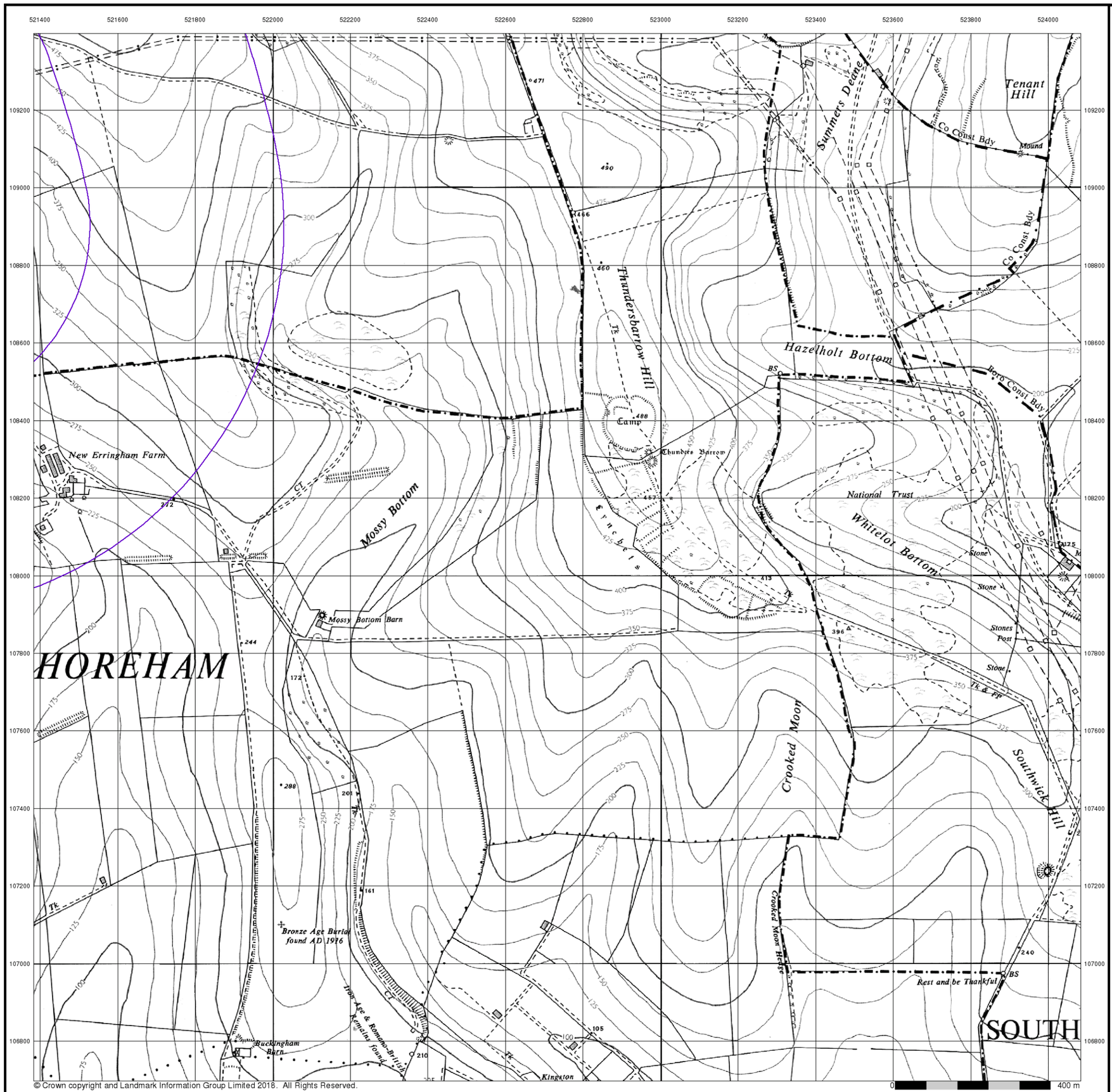

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Ordnance Survey Plan

Published 1963

Source map scale - 1:10,000

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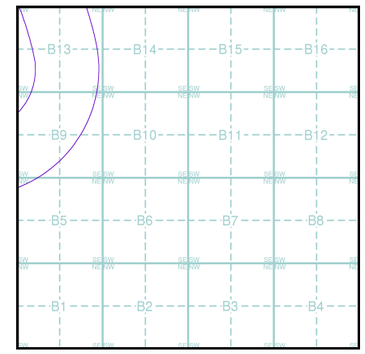
Map Name(s) and Date(s)

TQ20NW
1963
1:10,560

Historical Map - Slice B



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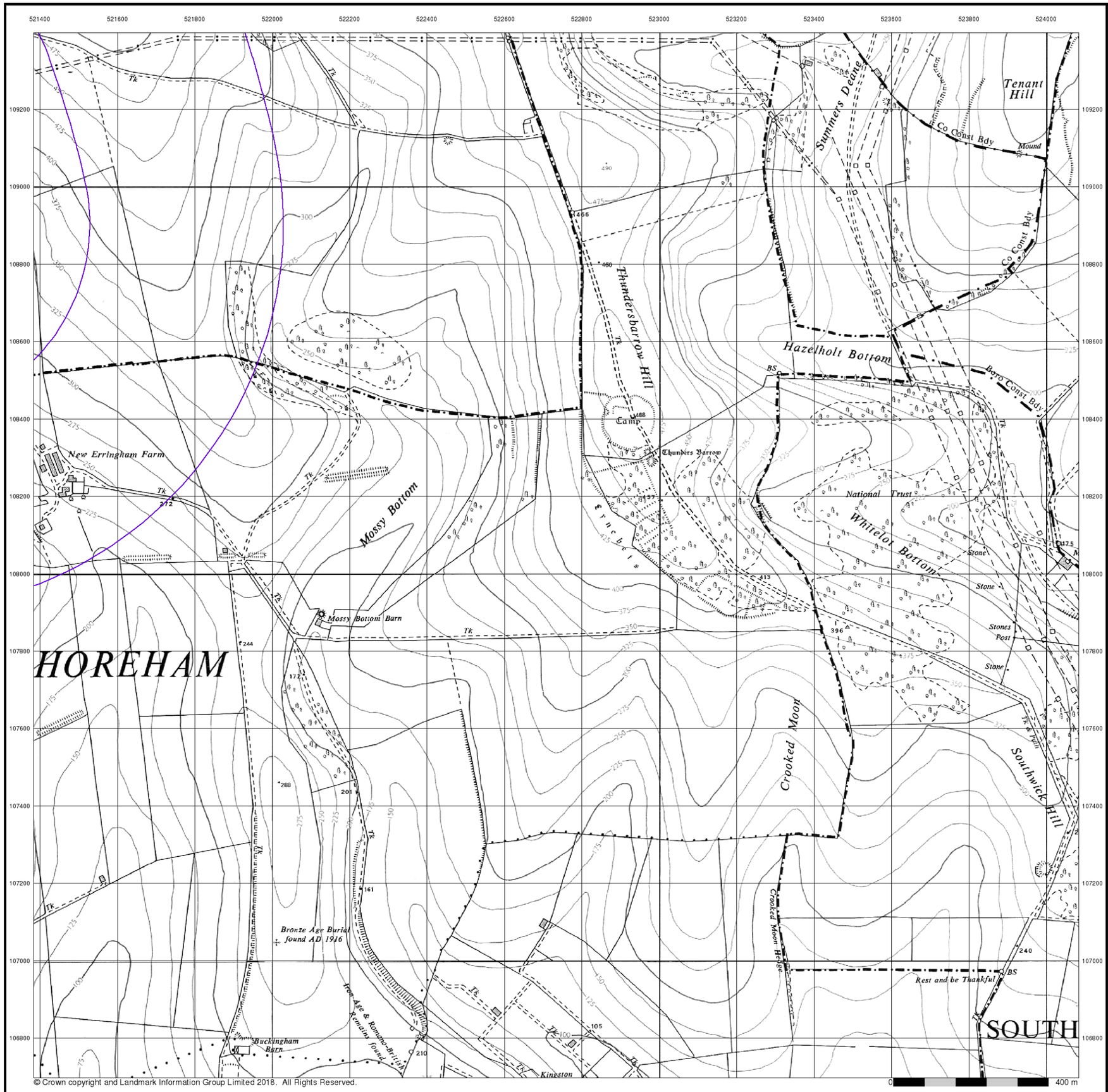

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Ordnance Survey Plan

Published 1968

Source map scale - 1:10,000

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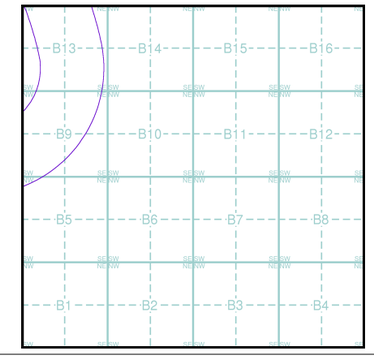
Map Name(s) and Date(s)

TQ20NW
1968
1:10,560

Historical Map - Slice B



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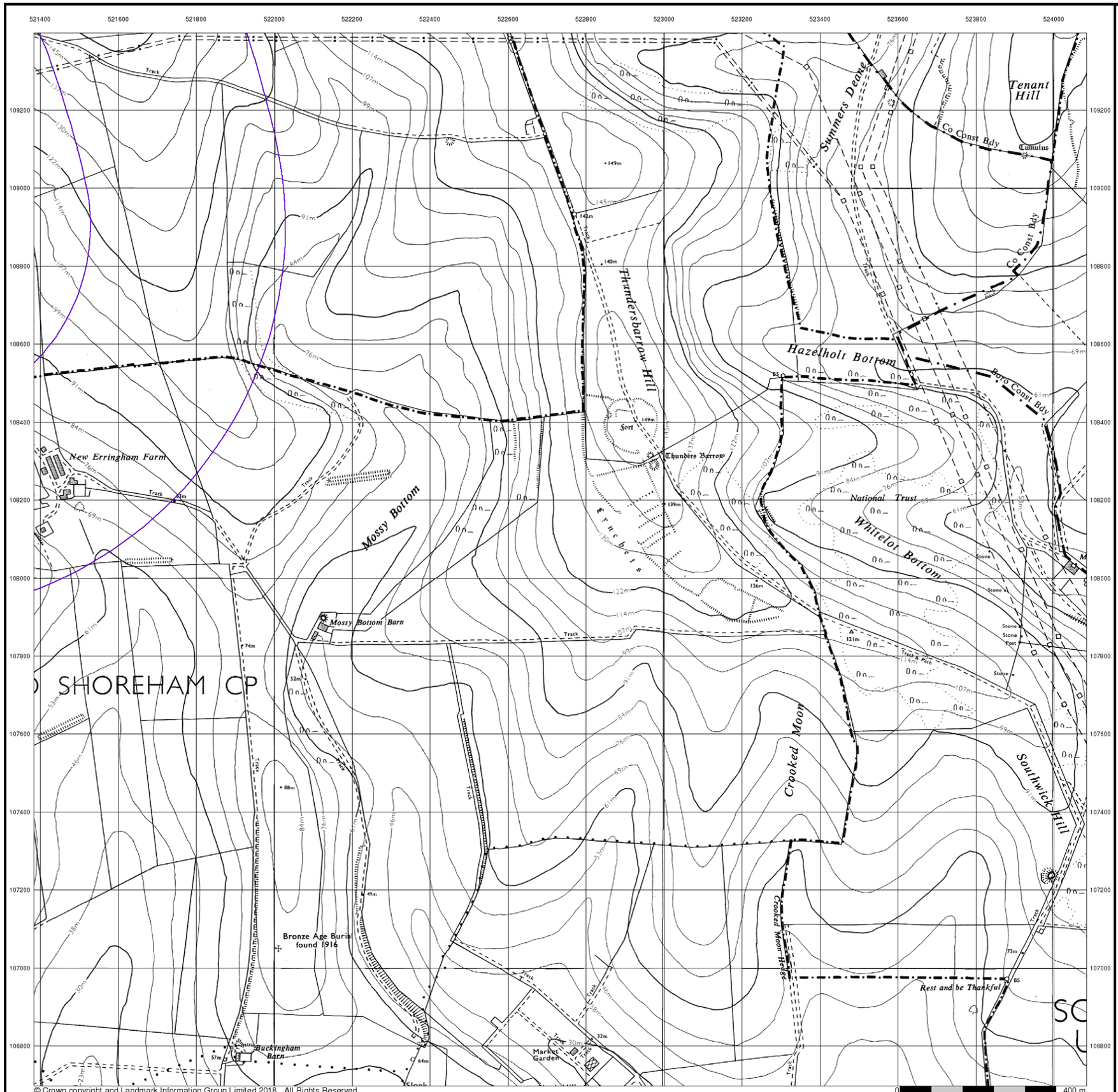

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Ordnance Survey Plan

Published 1972

Source map scale - 1:10,000

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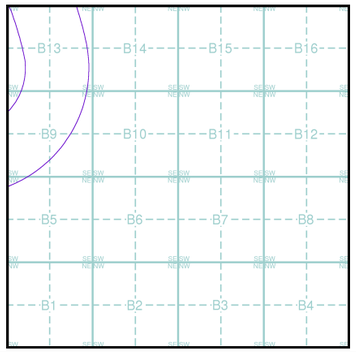
Map Name(s) and Date(s)

TQ20NW
1972
1:10,000

Historical Map - Slice B



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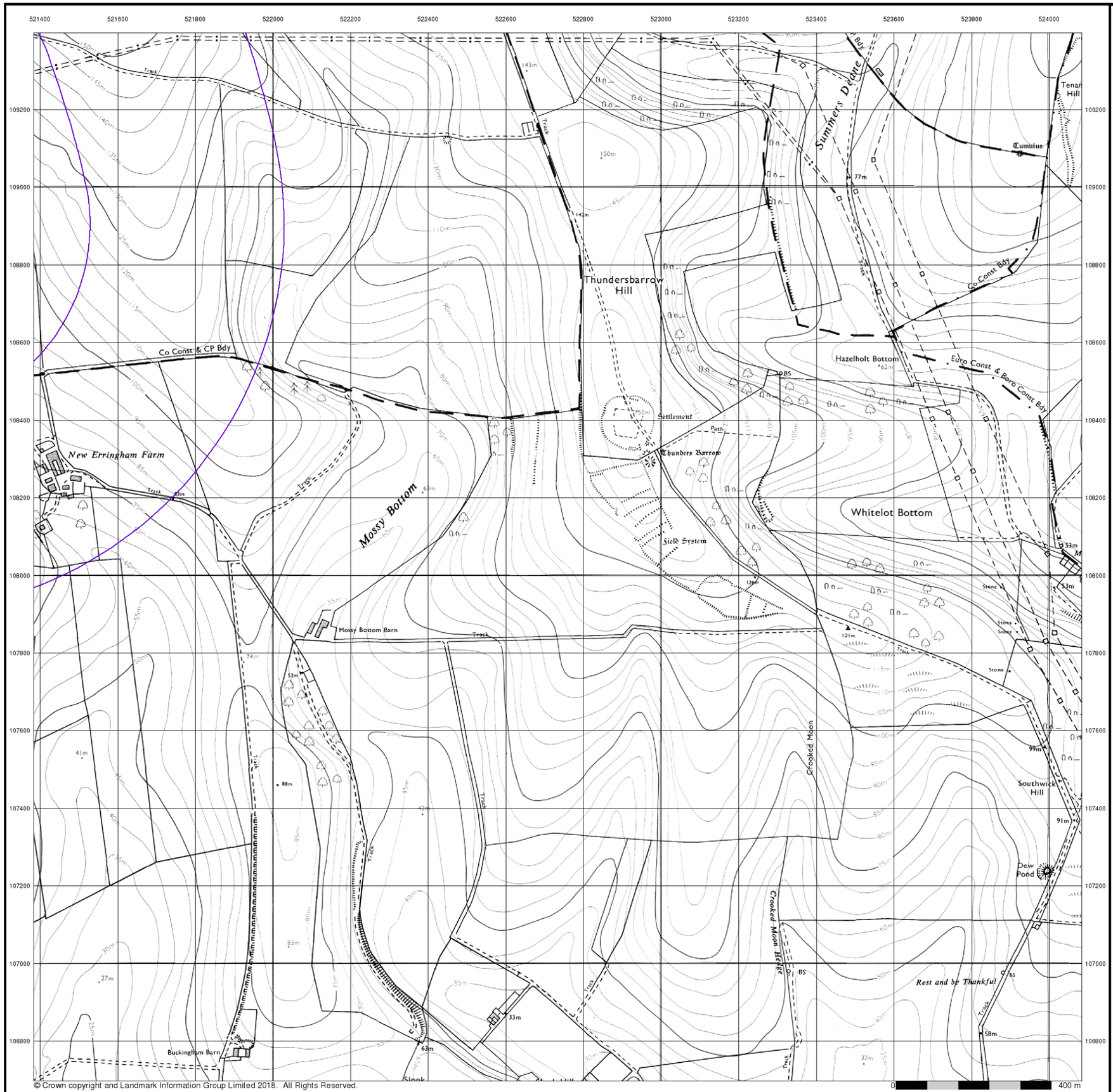

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Ordnance Survey Plan

Published 1984

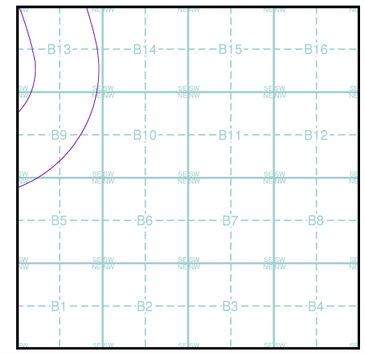
Source map scale - 1:10,000

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)

TQ20NW
1984
1:10,000

Historical Map - Slice B



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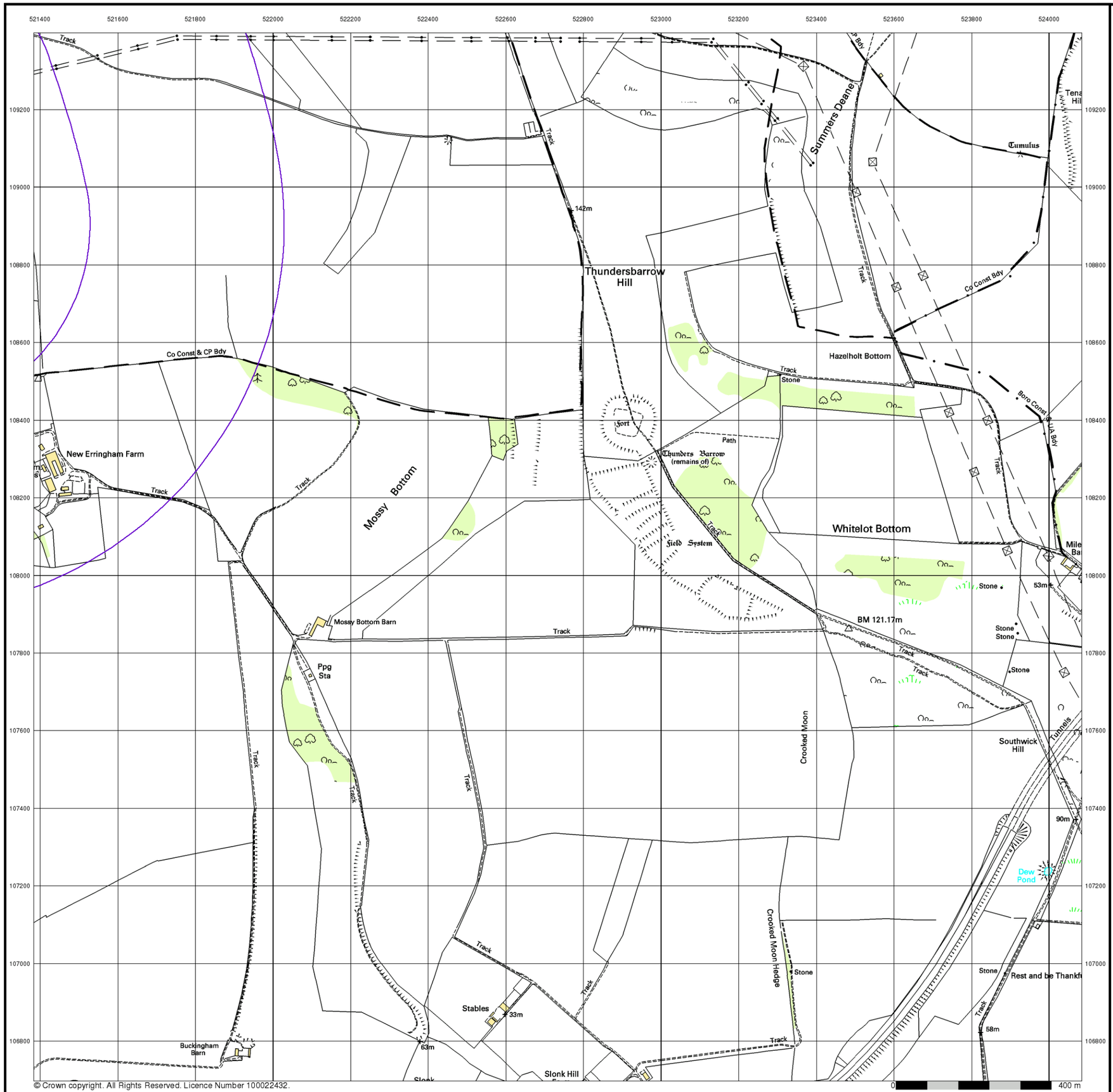

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LANDMARK INFORMATION GROUP®

10k Raster Mapping

Published 2000

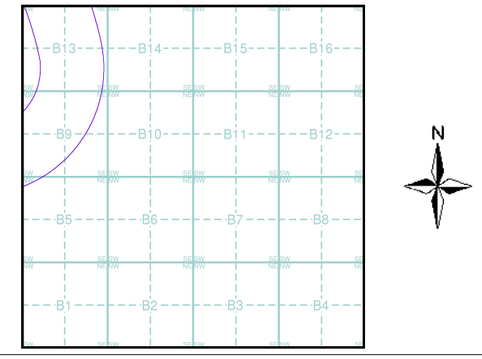
Source map scale - 1:10,000

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)

TQ20NW
2000
1:10,000

Historical Map - Slice B



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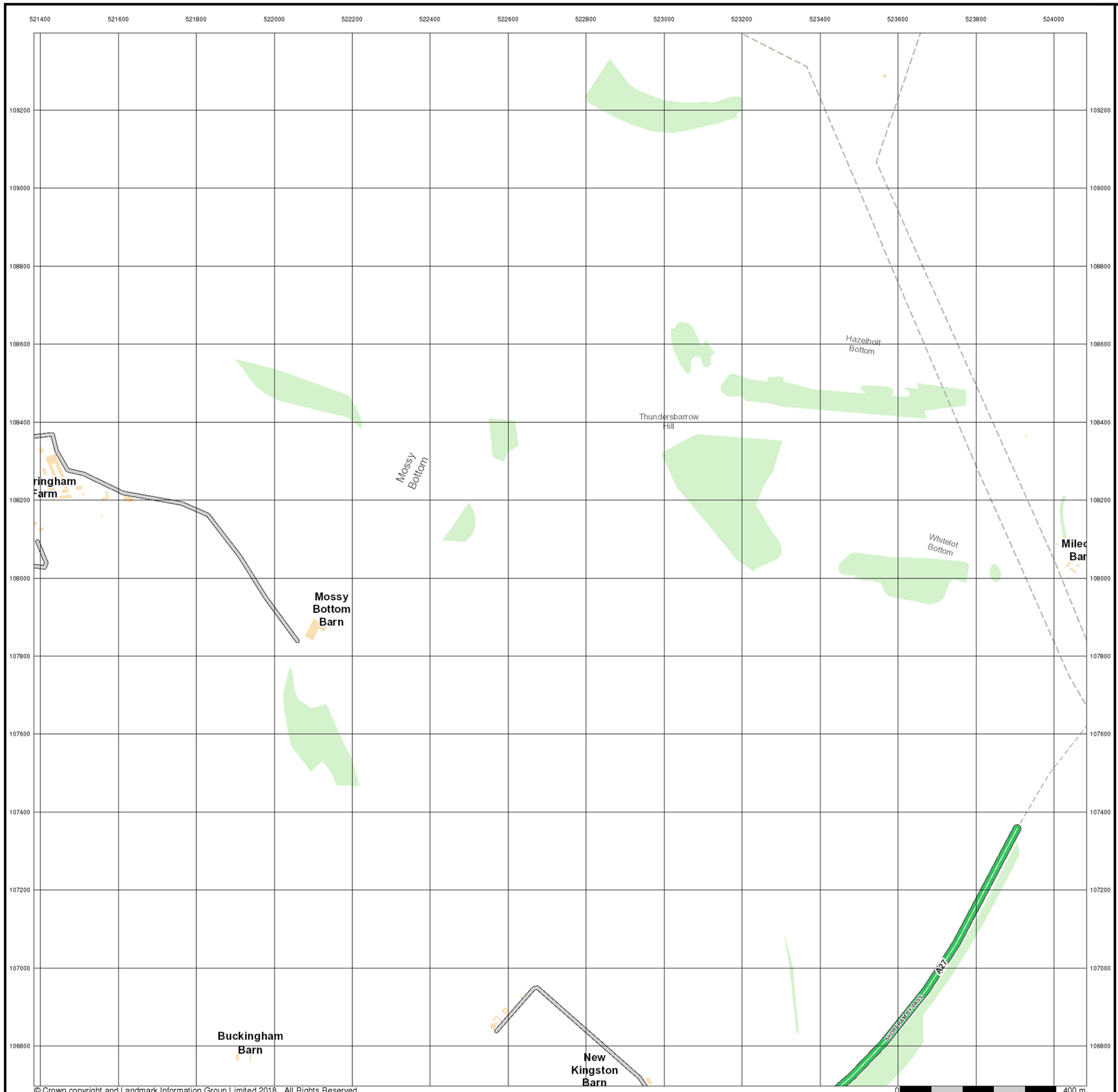

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Street View

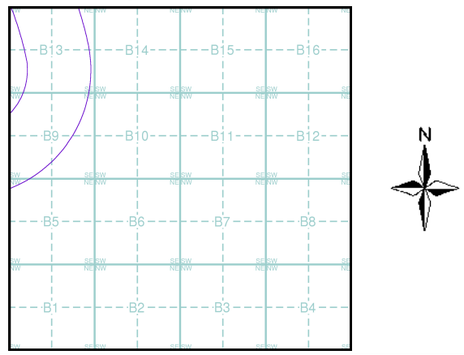
Published 2018

Source map scale - 1:10,000

Street View is a street-level map for the whole of Great Britain produced by the Ordnance Survey. These maps are provided at a nominal scale of 1:10,000

Map Name(s) and Date(s)

Street View Map - Slice B



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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
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
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
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
R.D. Bdy. 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
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Electricity Transmission Line
Pole
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
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
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	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
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m 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

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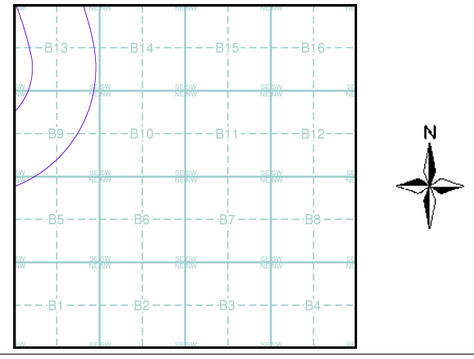
Historical Mapping & Photography included:

Historical Map - Slice B



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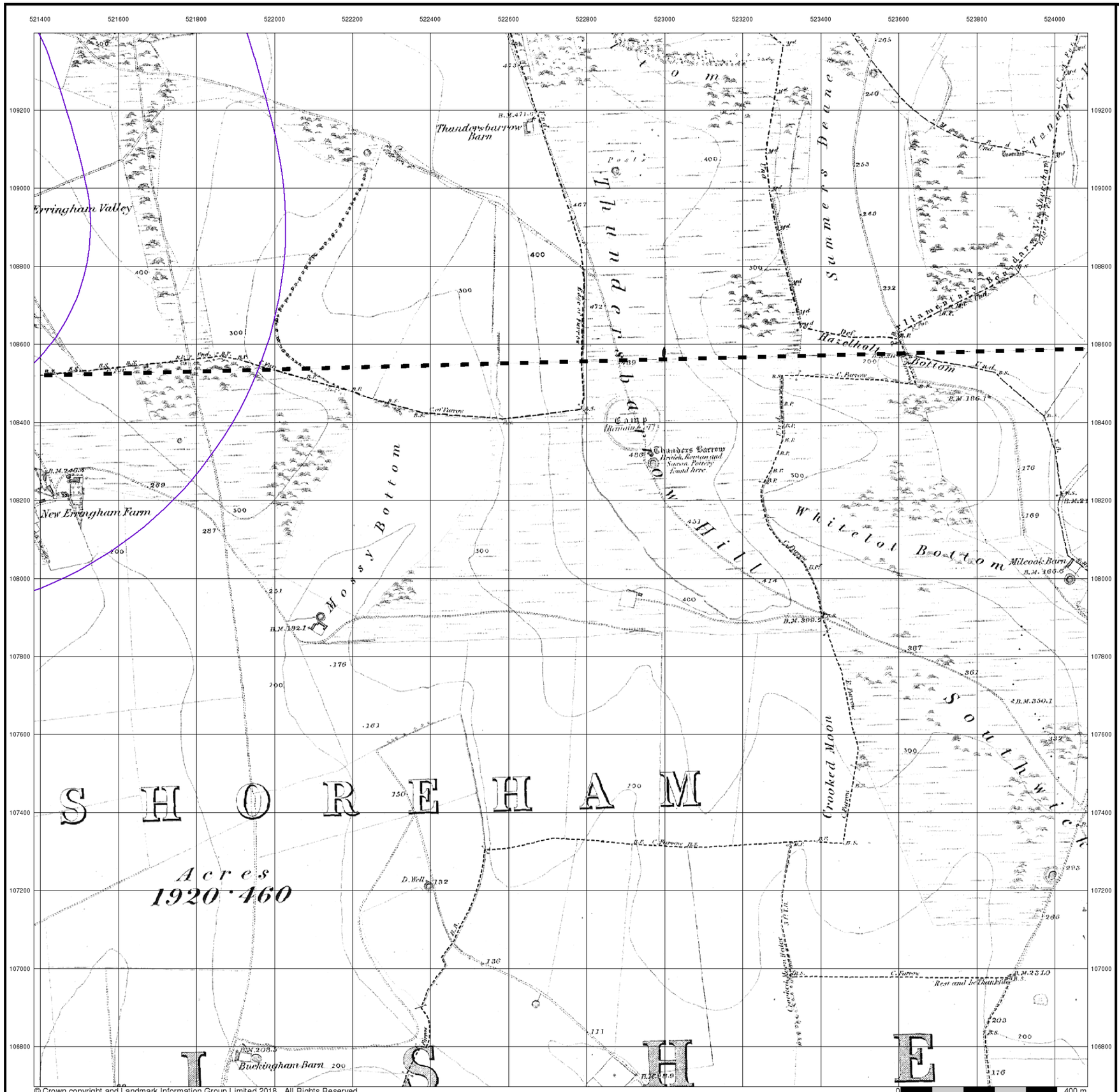

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LANDMARK INFORMATION GROUP®

Sussex

Published 1879

Source map scale - 1:10,560

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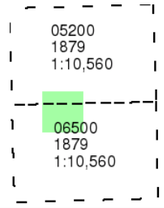
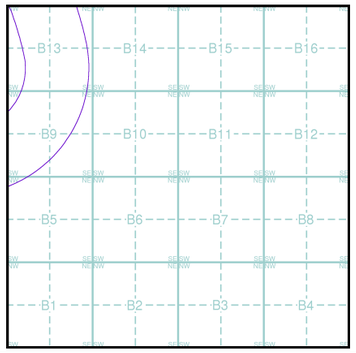
Map Name(s) and Date(s)



Historical Map - Slice B



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	521670, 108780
Slice:	B
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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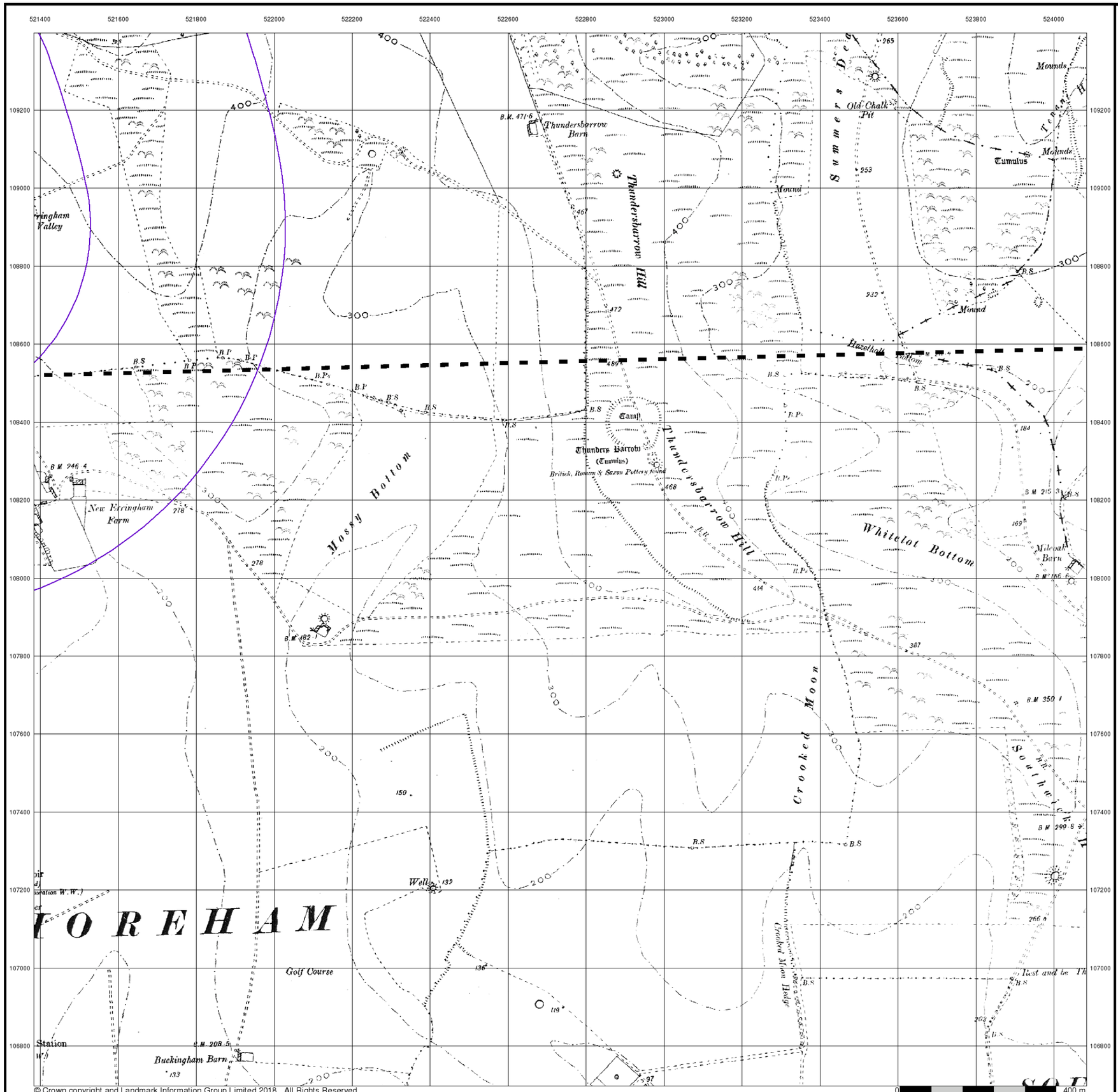

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Sussex

Published 1899

Source map scale - 1:10,560

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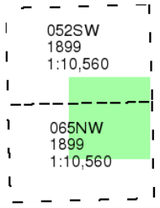
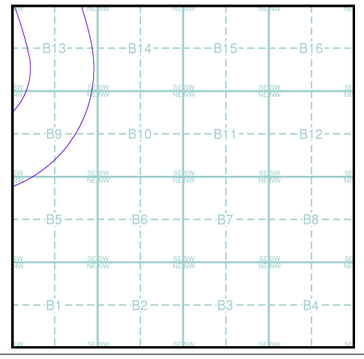


Historical Map - Slice B



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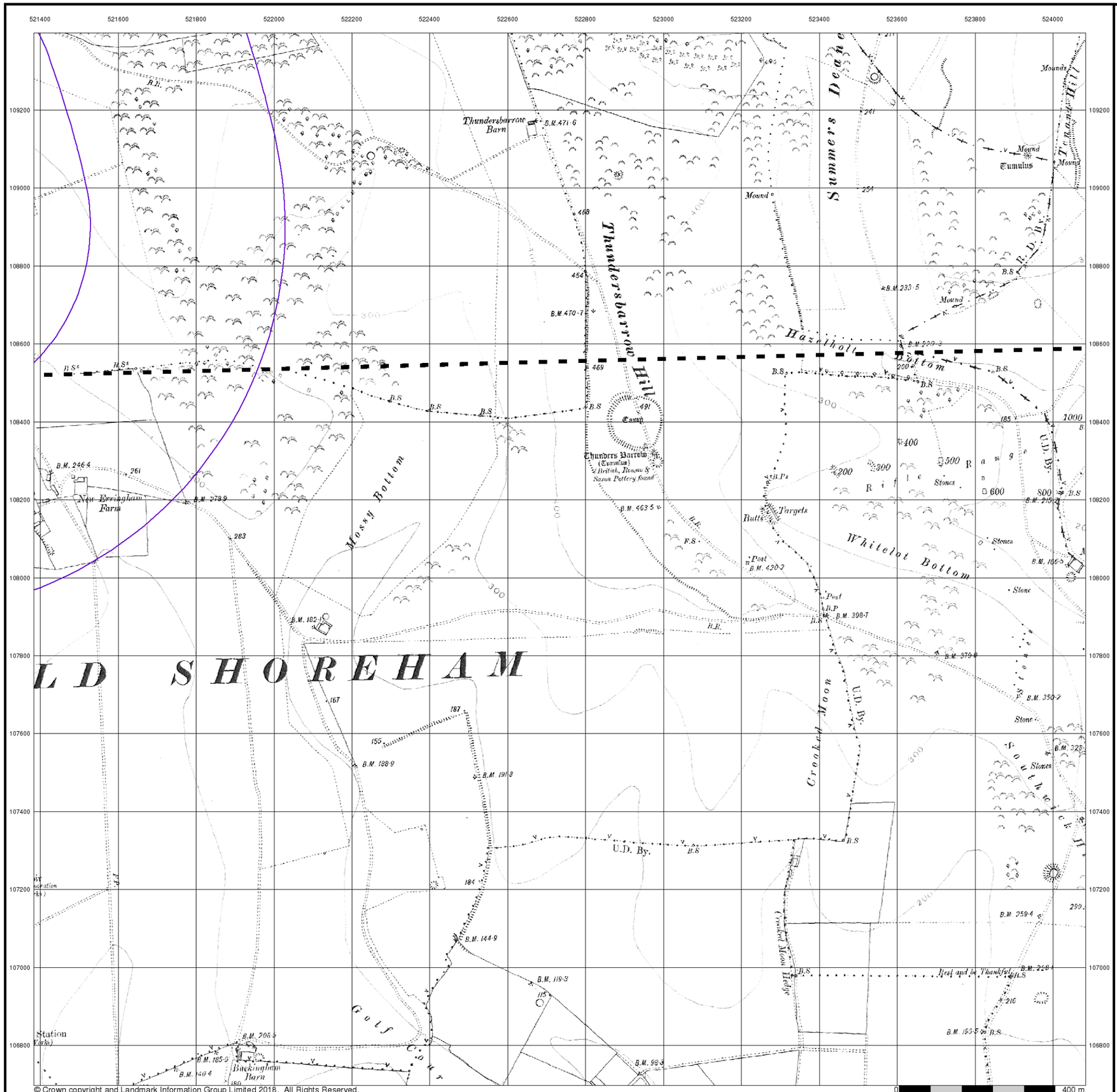

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Sussex

Published 1912 - 1914

Source map scale - 1:10,560

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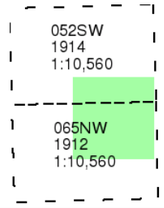
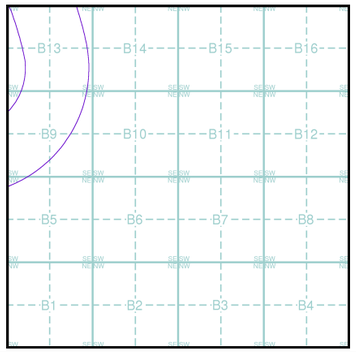


Historical Map - Slice B



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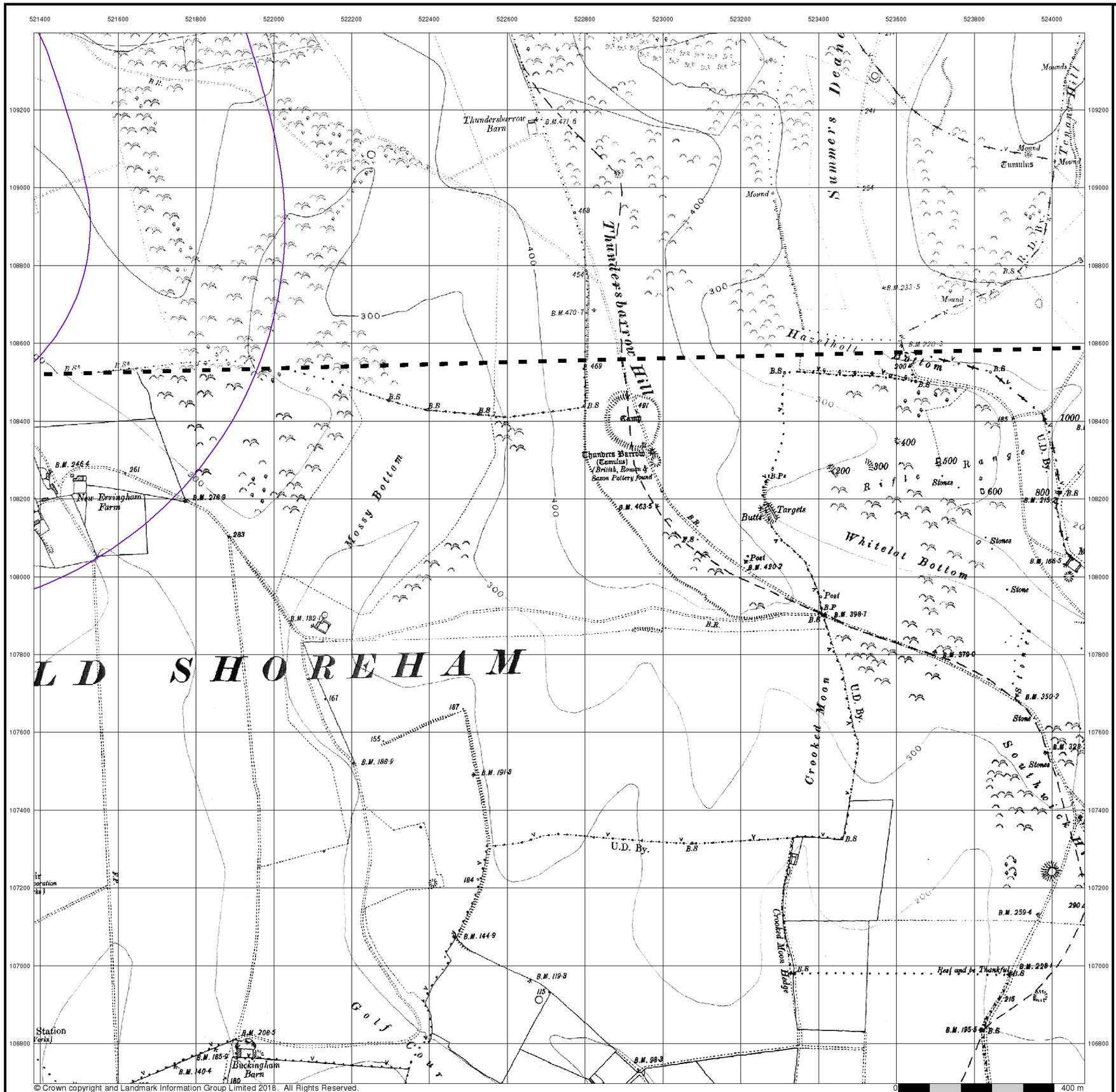

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Sussex

Published 1912 - 1914

Source map scale - 1:10,560

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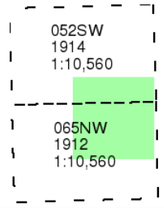
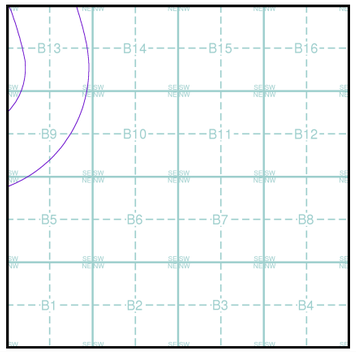


Historical Map - Slice B



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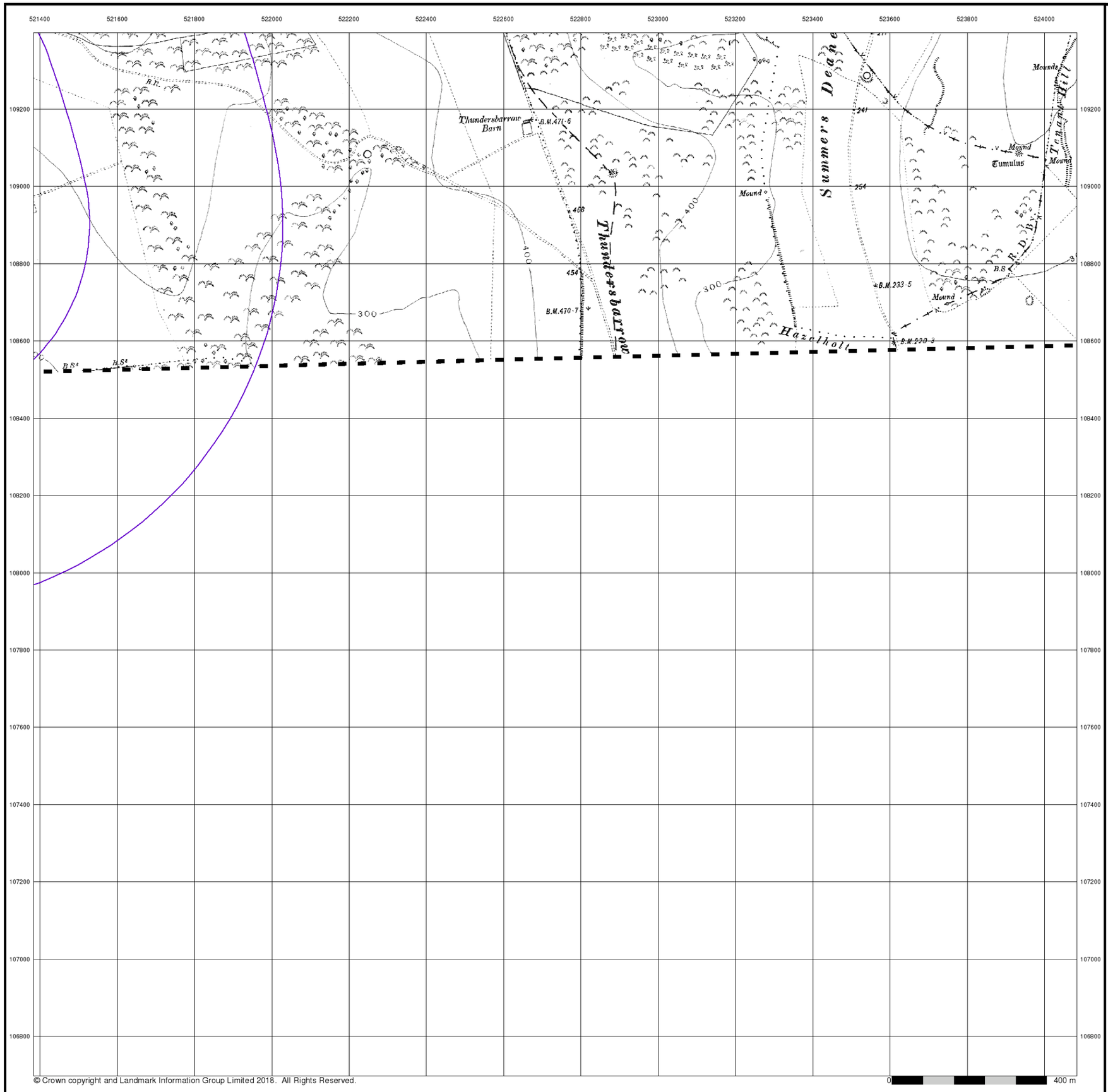

0 400 m

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Sussex

Published 1914

Source map scale - 1:10,560

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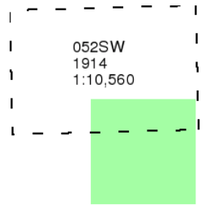
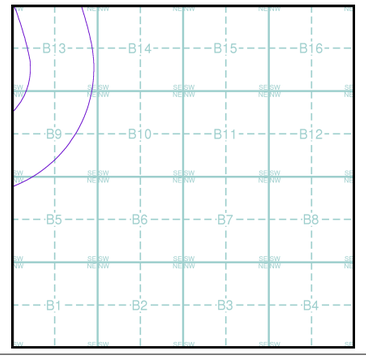


Historical Map - Slice B



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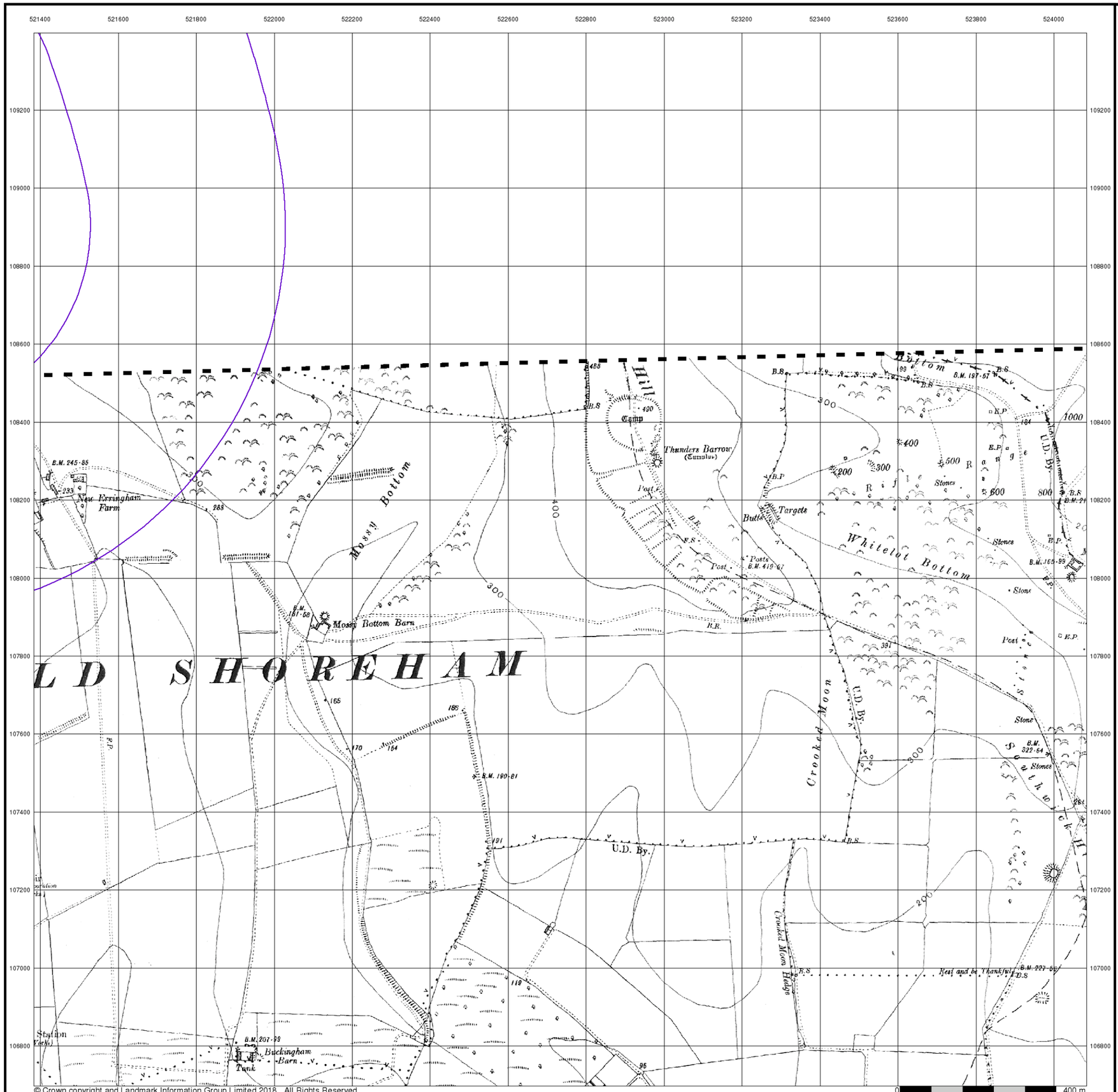

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Sussex

Published 1931

Source map scale - 1:10,560

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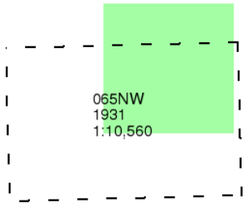
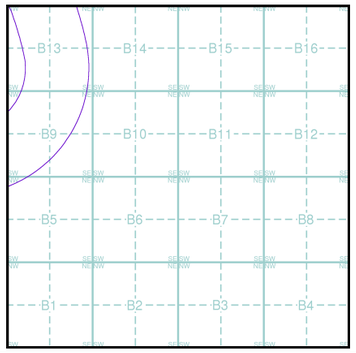
Map Name(s) and Date(s)



Historical Map - Slice B



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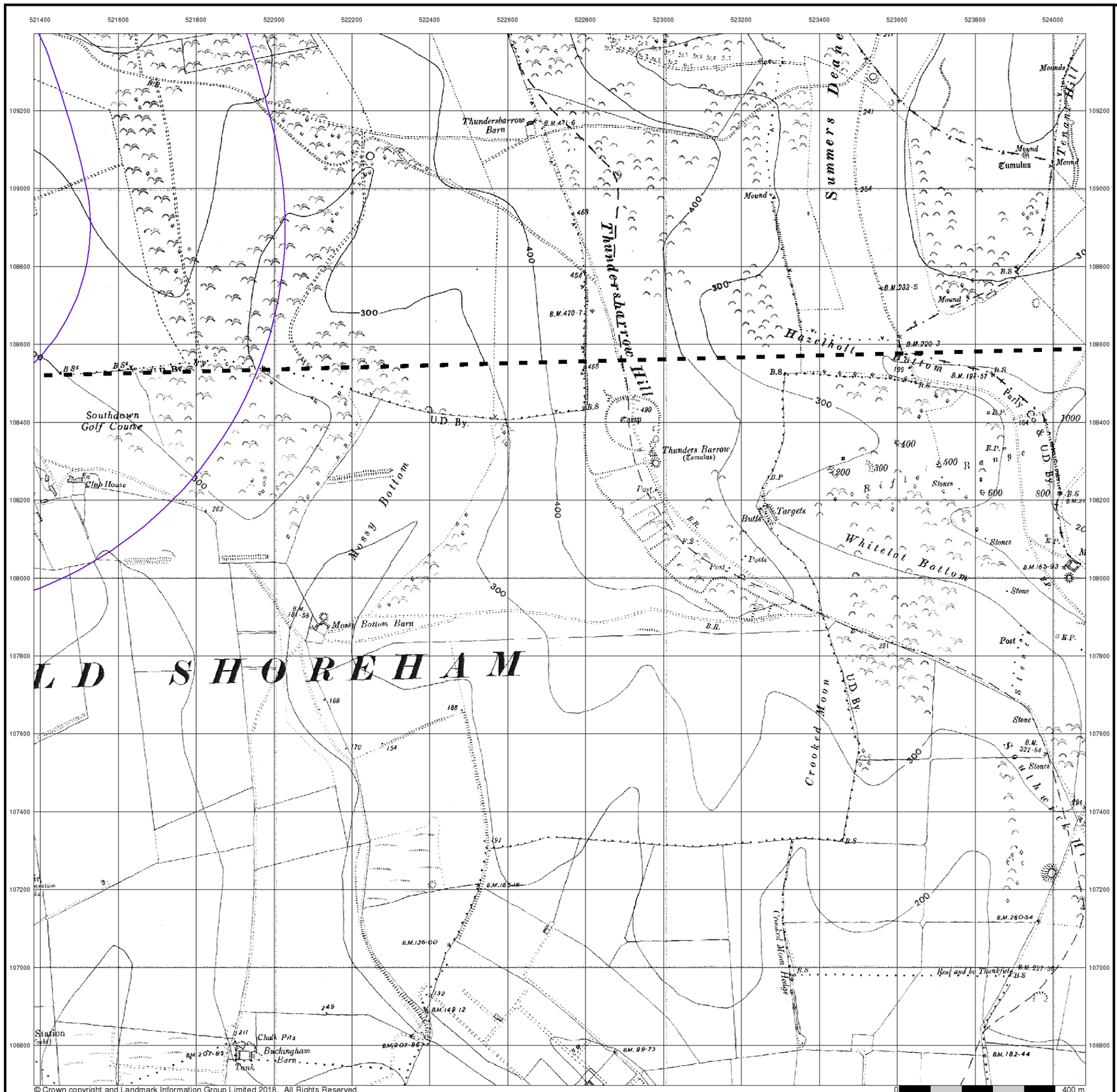

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Sussex

Published 1947

Source map scale - 1:10,560

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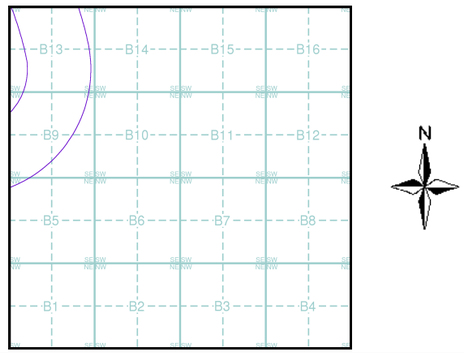
Map Name(s) and Date(s)

052SW
1947
1:10,560

065NW
1947
1:10,560

Historical Map - Slice B



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Site Details

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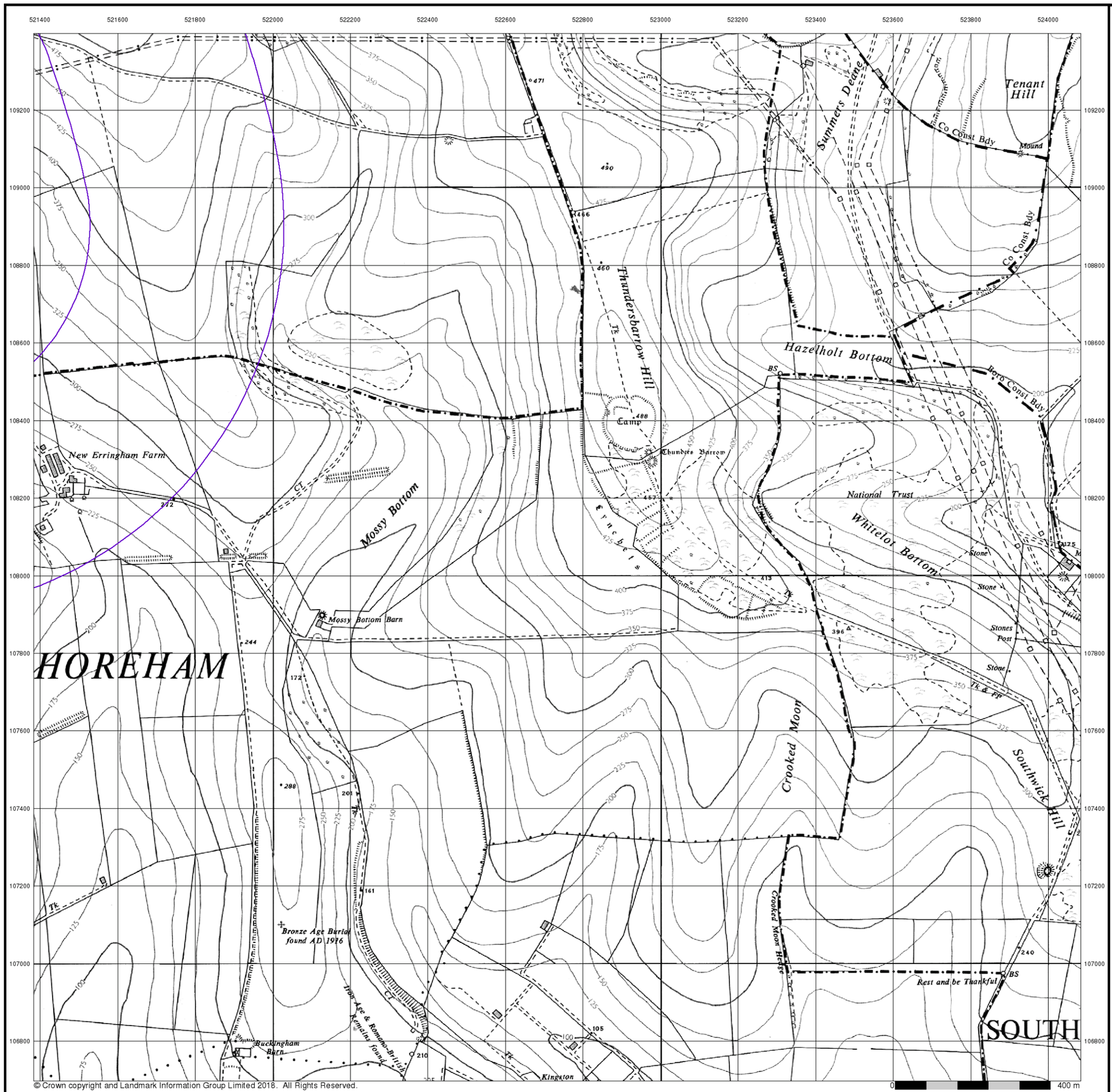

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Ordnance Survey Plan

Published 1963

Source map scale - 1:10,000

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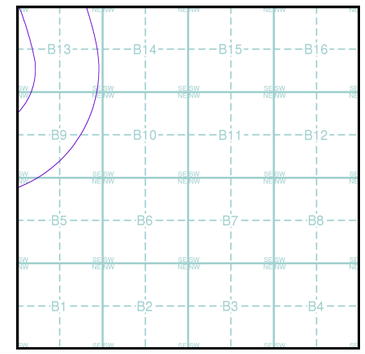
Map Name(s) and Date(s)

TQ20NW
1963
1:10,560

Historical Map - Slice B



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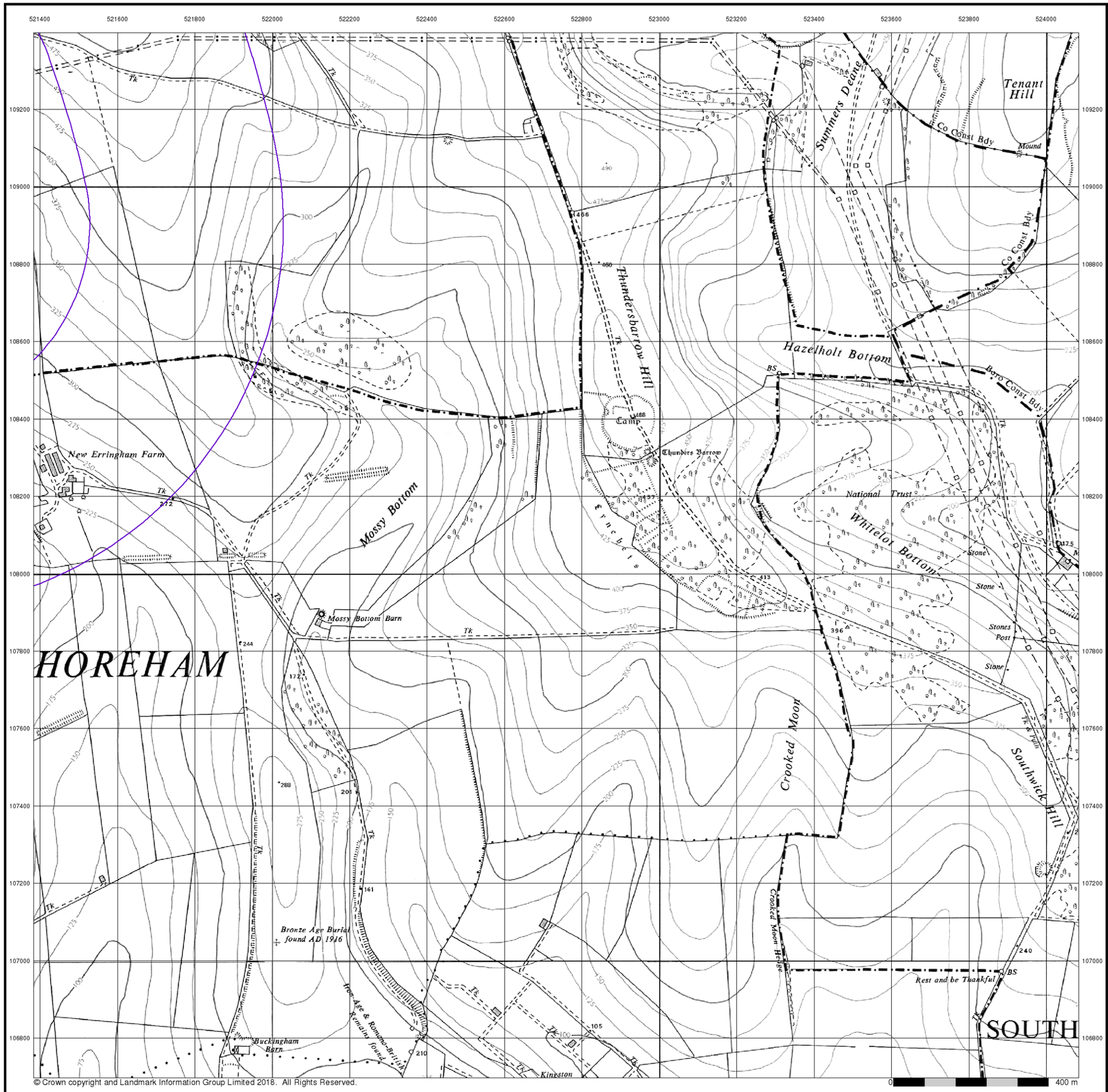

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Ordnance Survey Plan

Published 1968

Source map scale - 1:10,000

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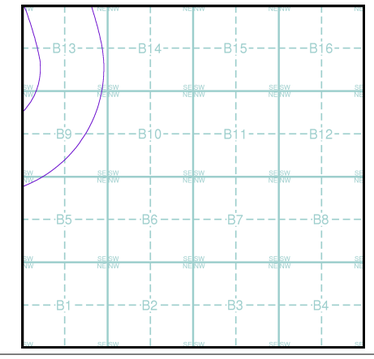
Map Name(s) and Date(s)

TQ20NW
1968
1:10,560

Historical Map - Slice B



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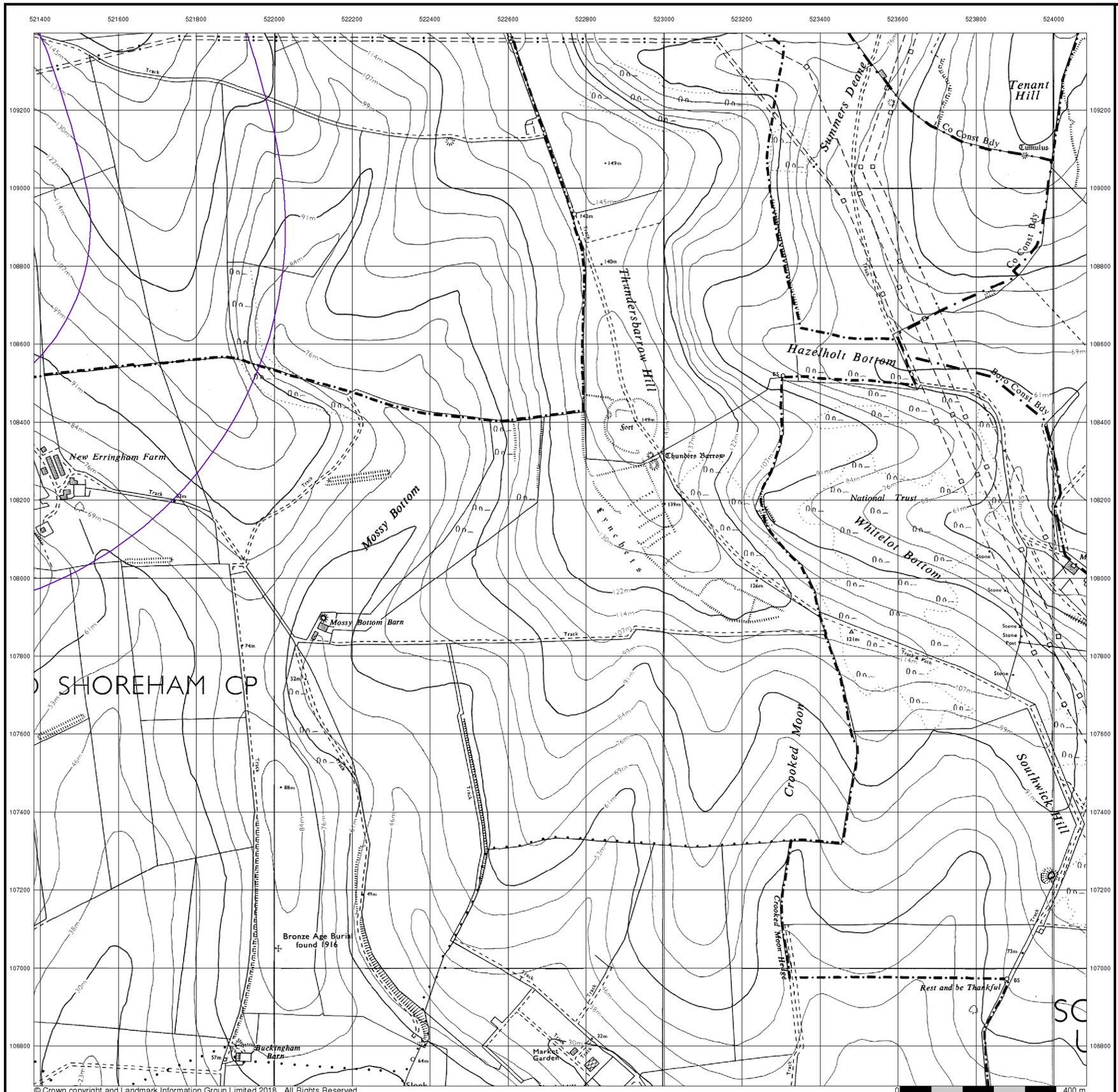

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Ordnance Survey Plan

Published 1972

Source map scale - 1:10,000

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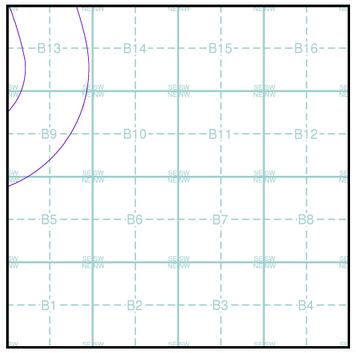
Map Name(s) and Date(s)

TQ20NW
1972
1:10,000

Historical Map - Slice B



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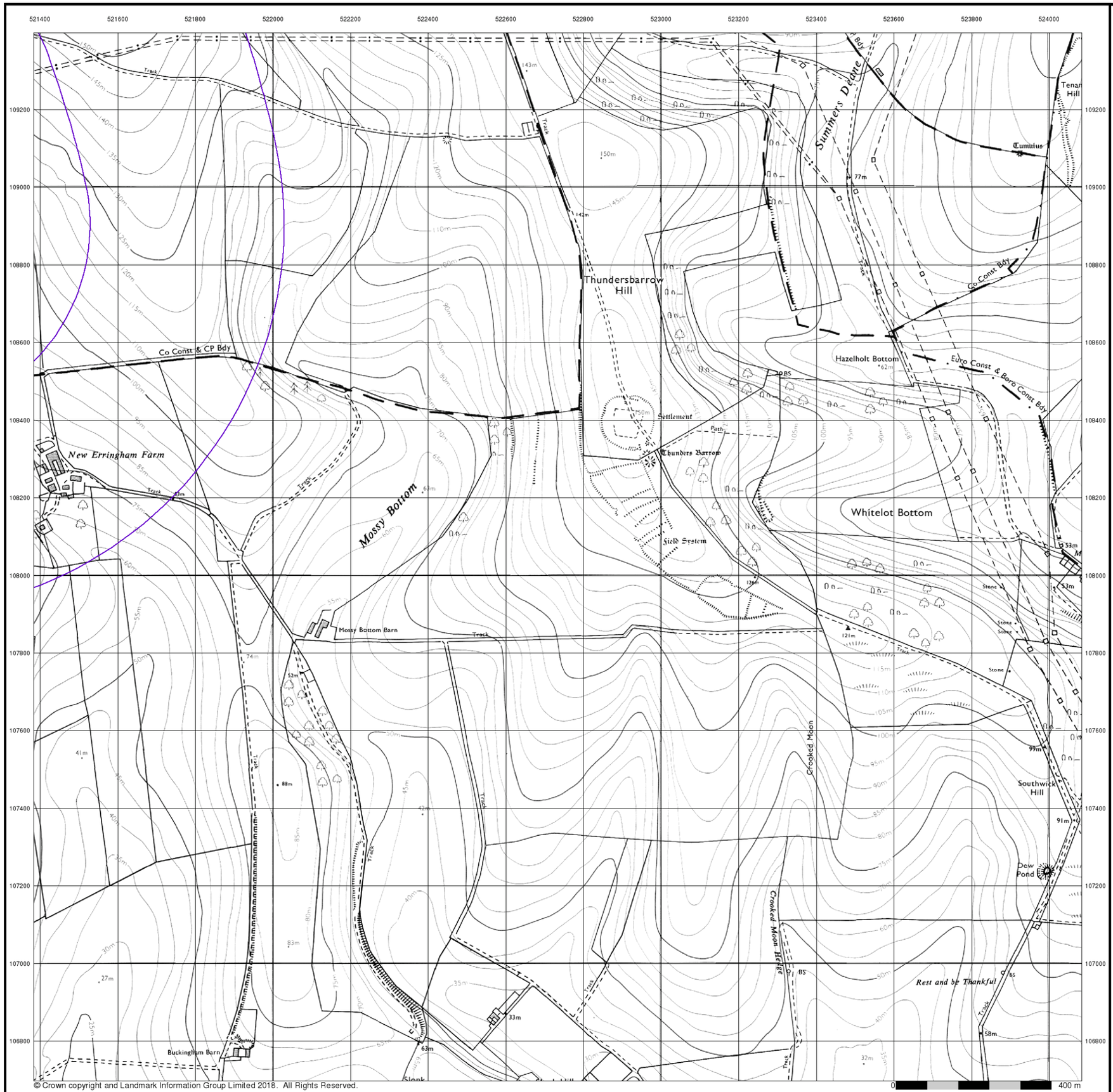

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Ordnance Survey Plan

Published 1984

Source map scale - 1:10,000

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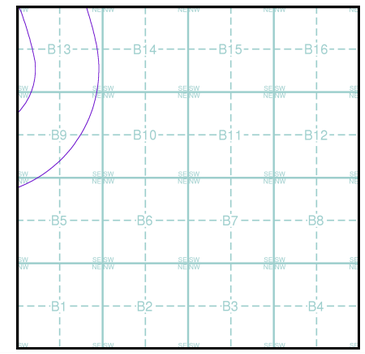
Map Name(s) and Date(s)

TQ20NW
1984
1:10,000

Historical Map - Slice B



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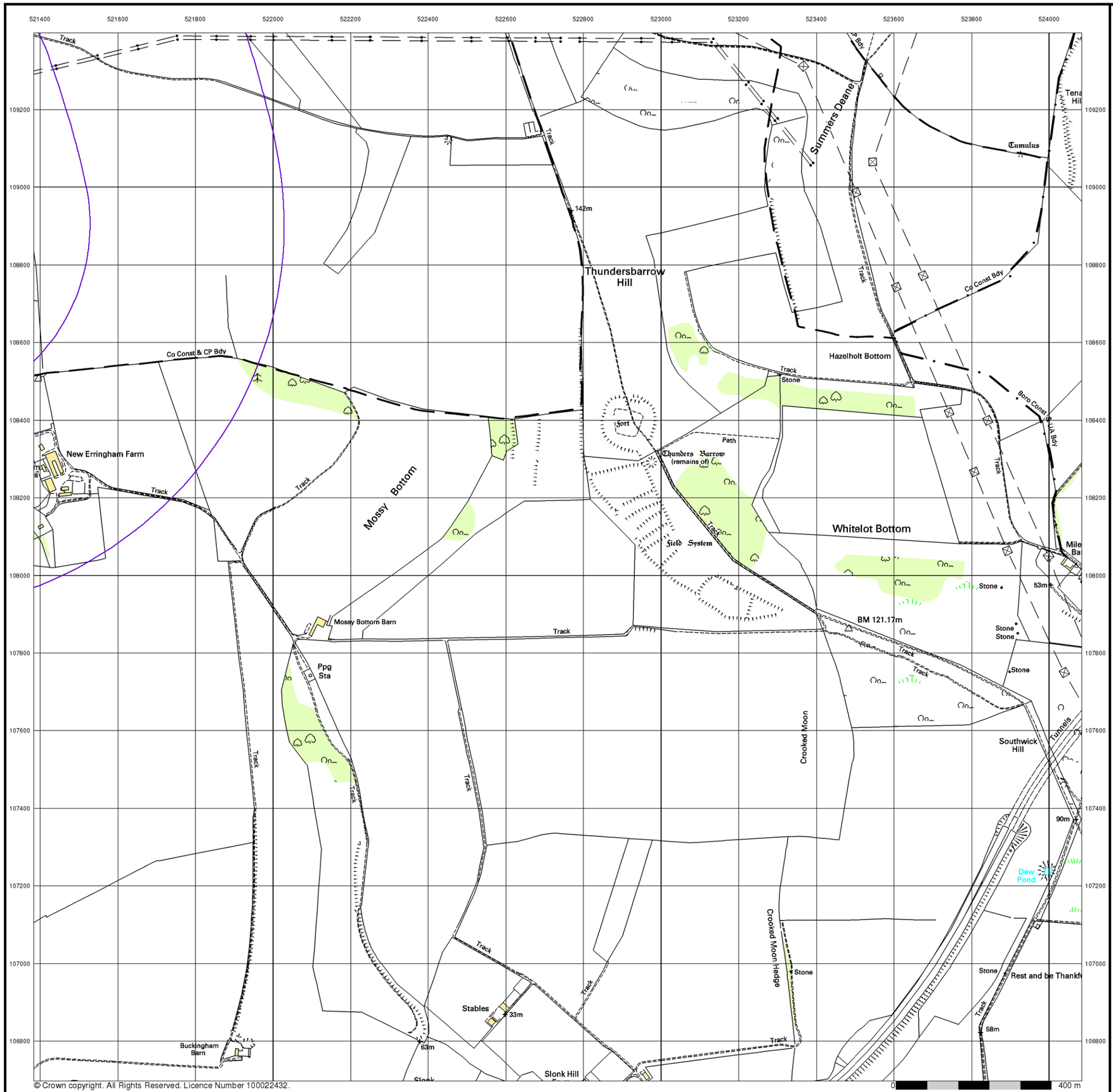

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10k Raster Mapping

Published 2000

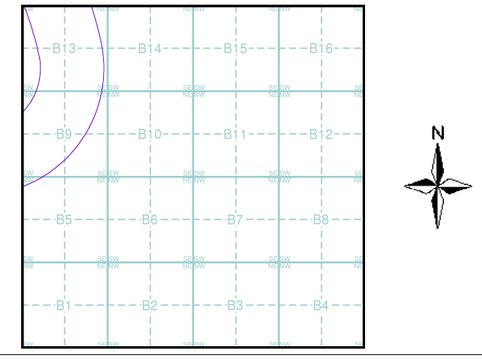
Source map scale - 1:10,000

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)

TQ20NW
2000
1:10,000

Historical Map - Slice B



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	521670, 108780
Slice:	B
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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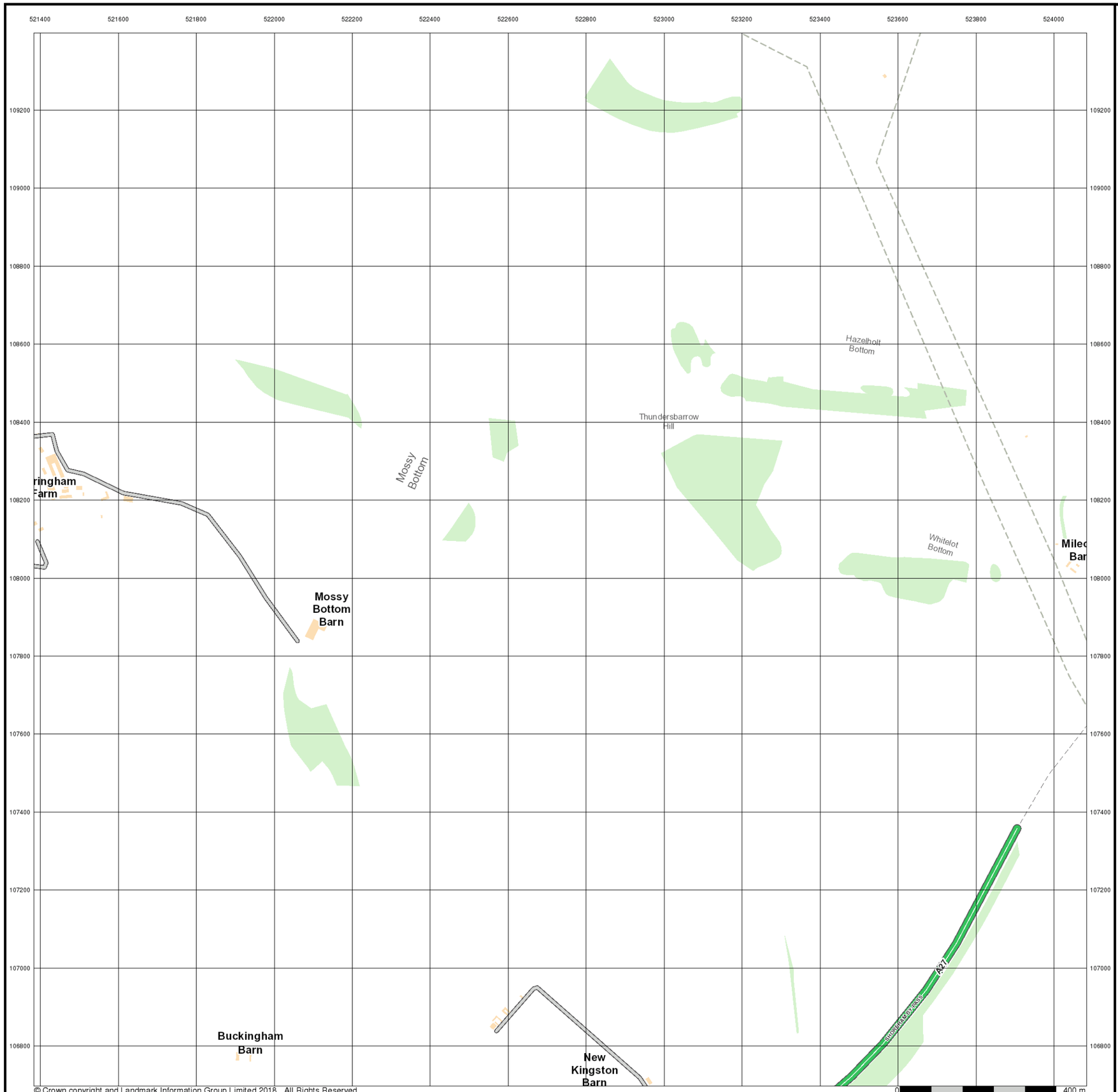

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Street View

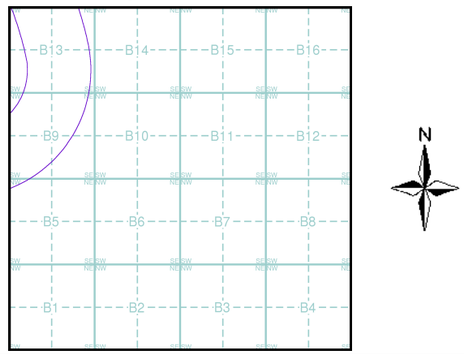
Published 2018

Source map scale - 1:10,000

Street View is a street-level map for the whole of Great Britain produced by the Ordnance Survey. These maps are provided at a nominal scale of 1:10,000

Map Name(s) and Date(s)

Street View Map - Slice B



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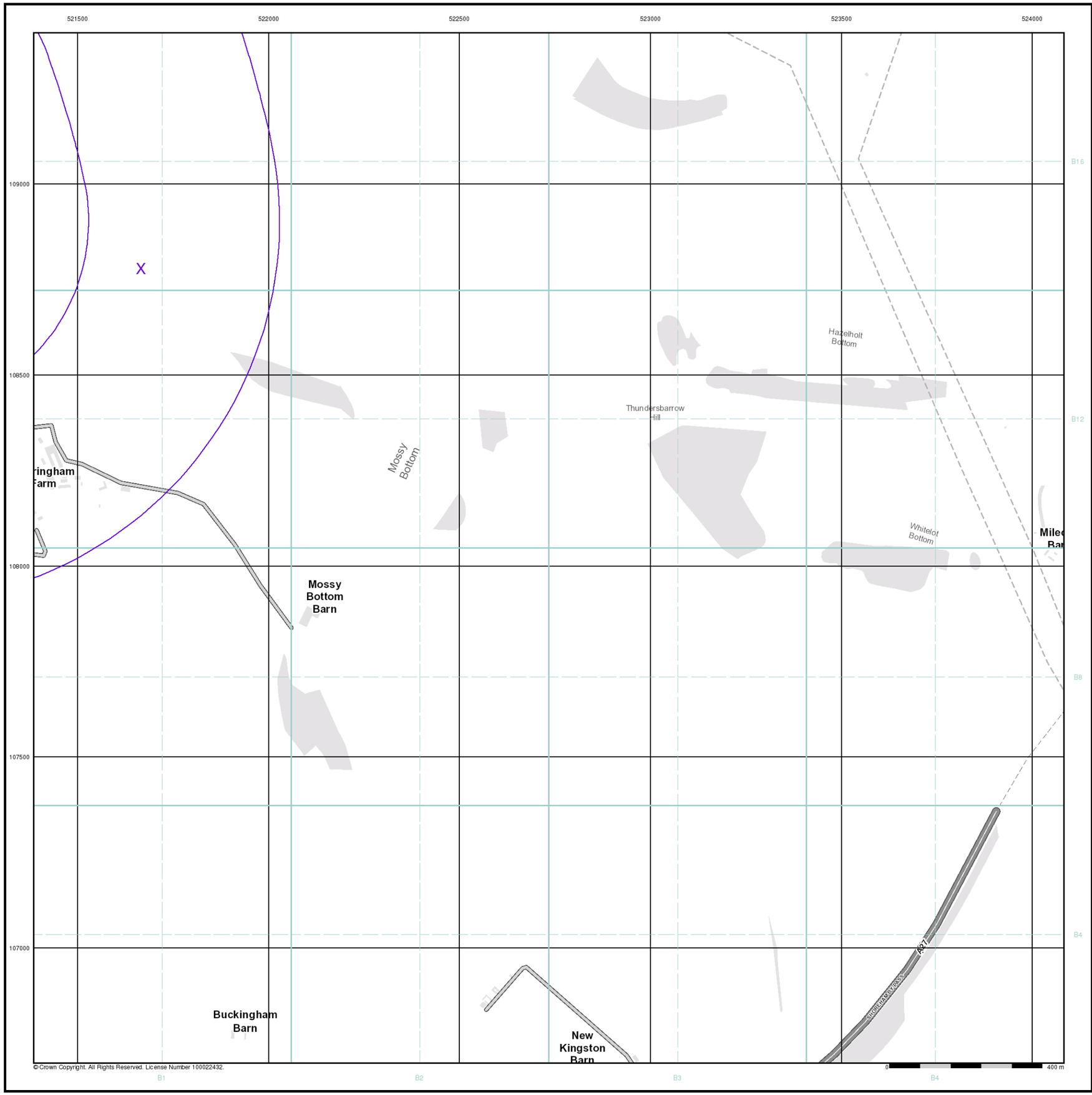

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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Geological

- BGS Recorded Mineral Site

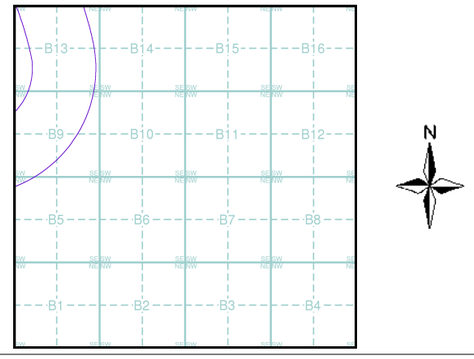
Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Site Sensitivity Map - Slice B



Order Details

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Customer Ref:	2018s0642
National Grid Reference:	521670, 108780
Slice:	B
Site Area (Ha):	44.36
Search Buffer (m):	1000

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Site at 520371,108723

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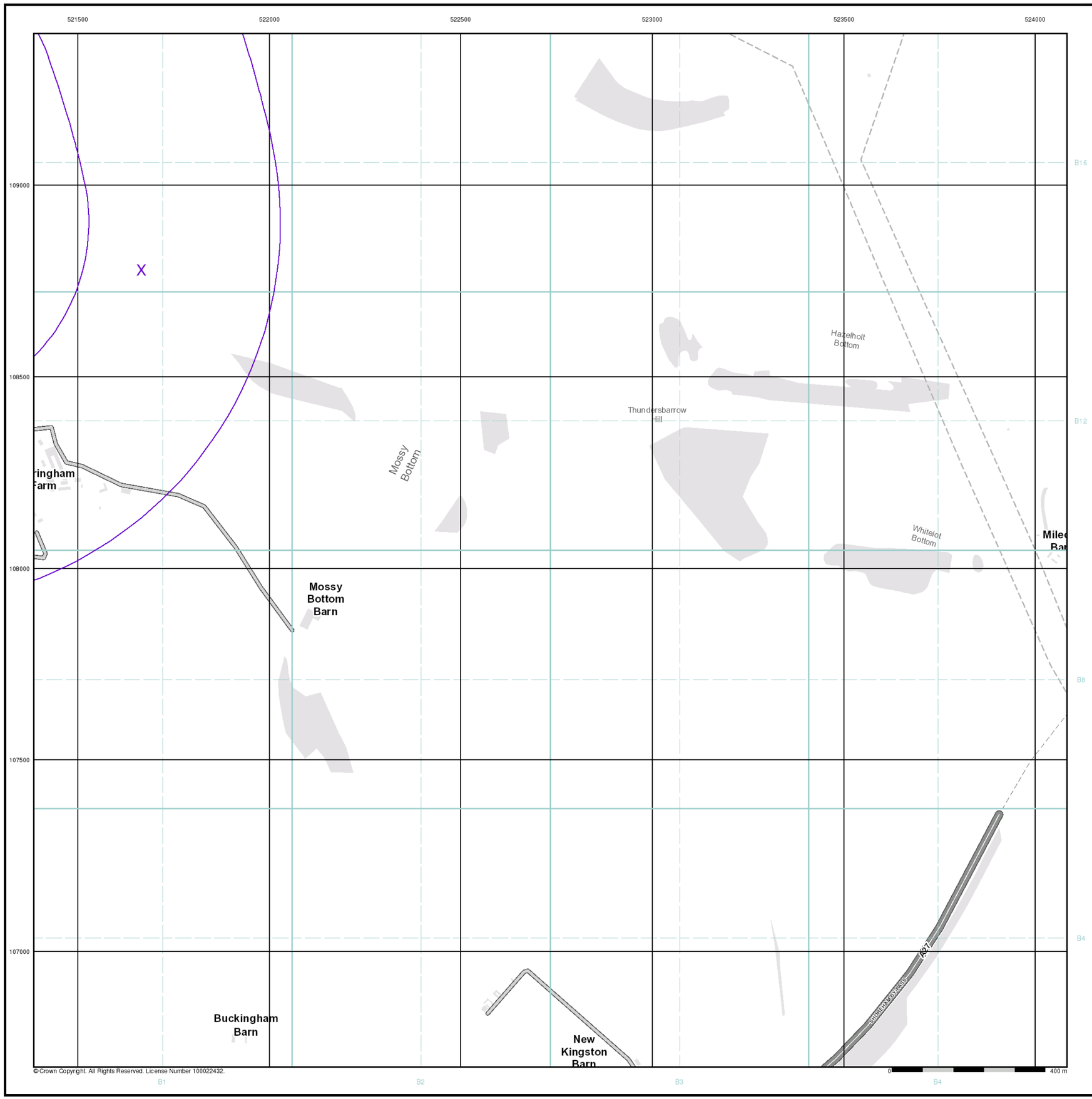

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Industrial Land Use Map

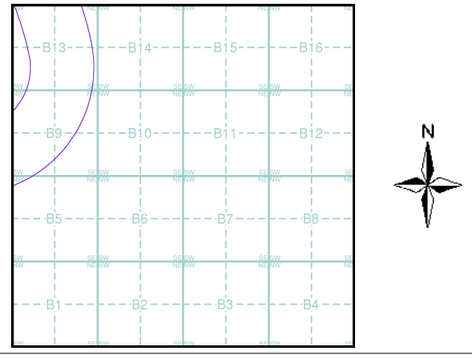
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Underground Electrical Cables

Industrial Land Use Map - Slice B



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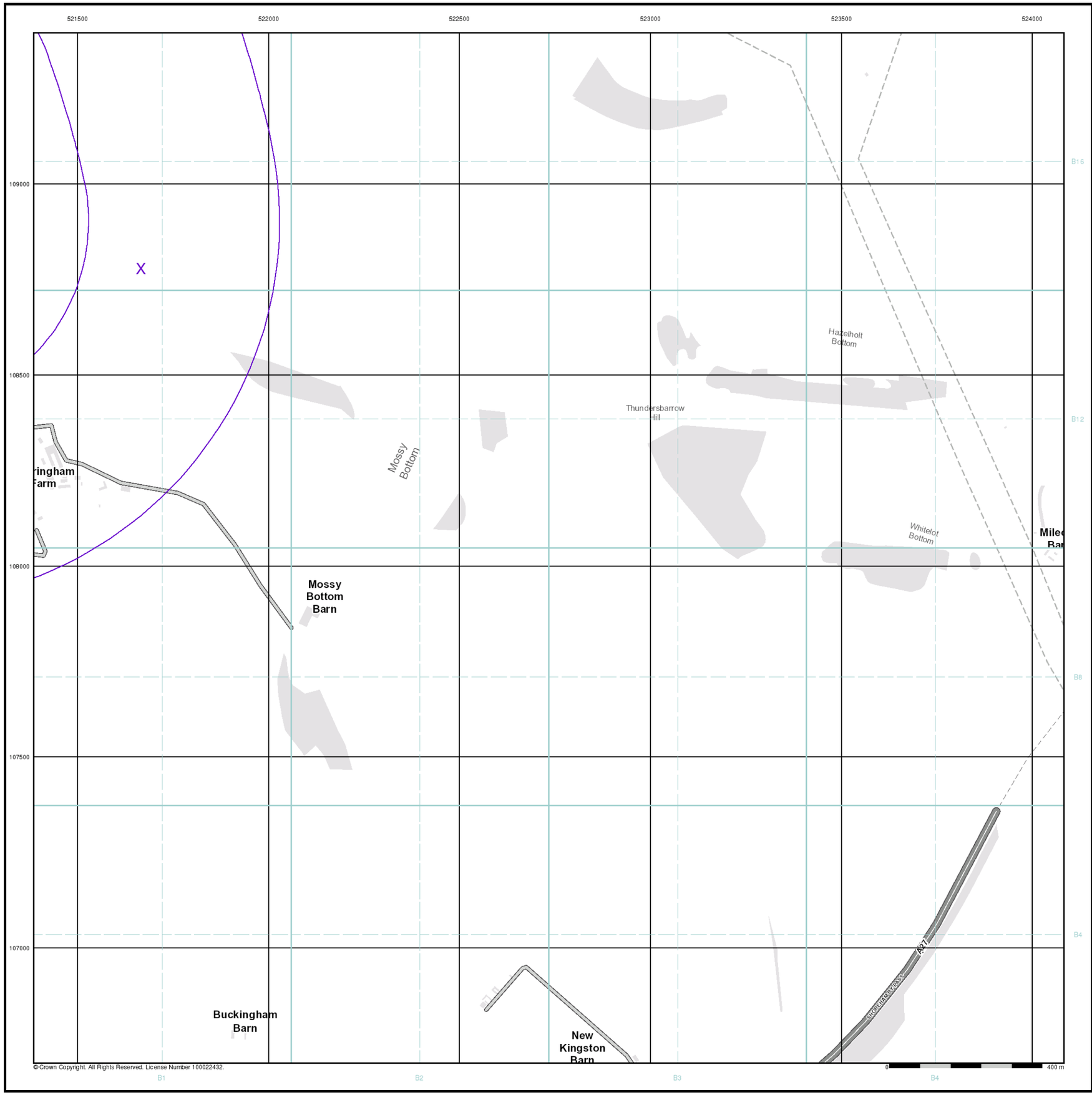

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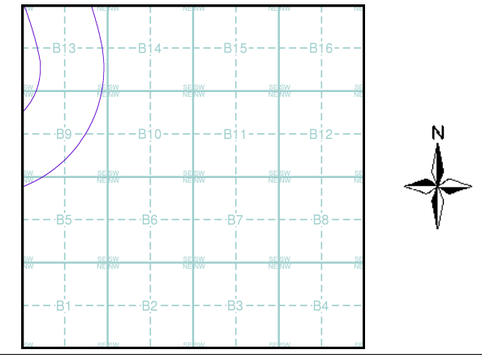
General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice B



Order Details

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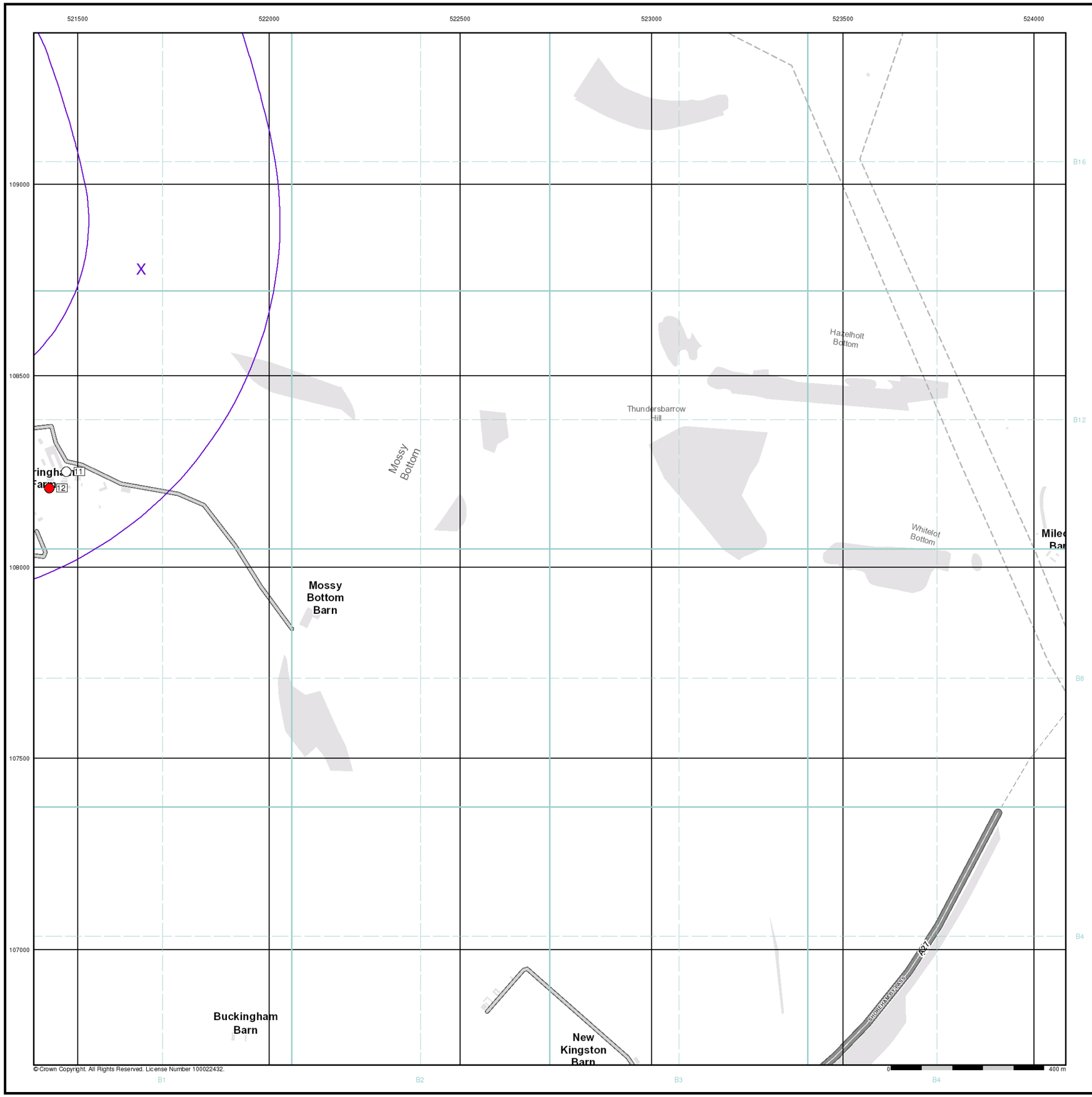

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LANDMARK INFORMATION GROUP®

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

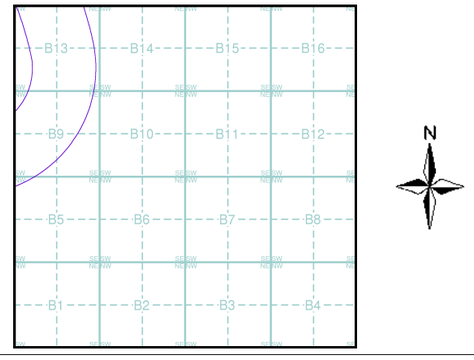
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice B



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	521670, 108780
Slice:	B
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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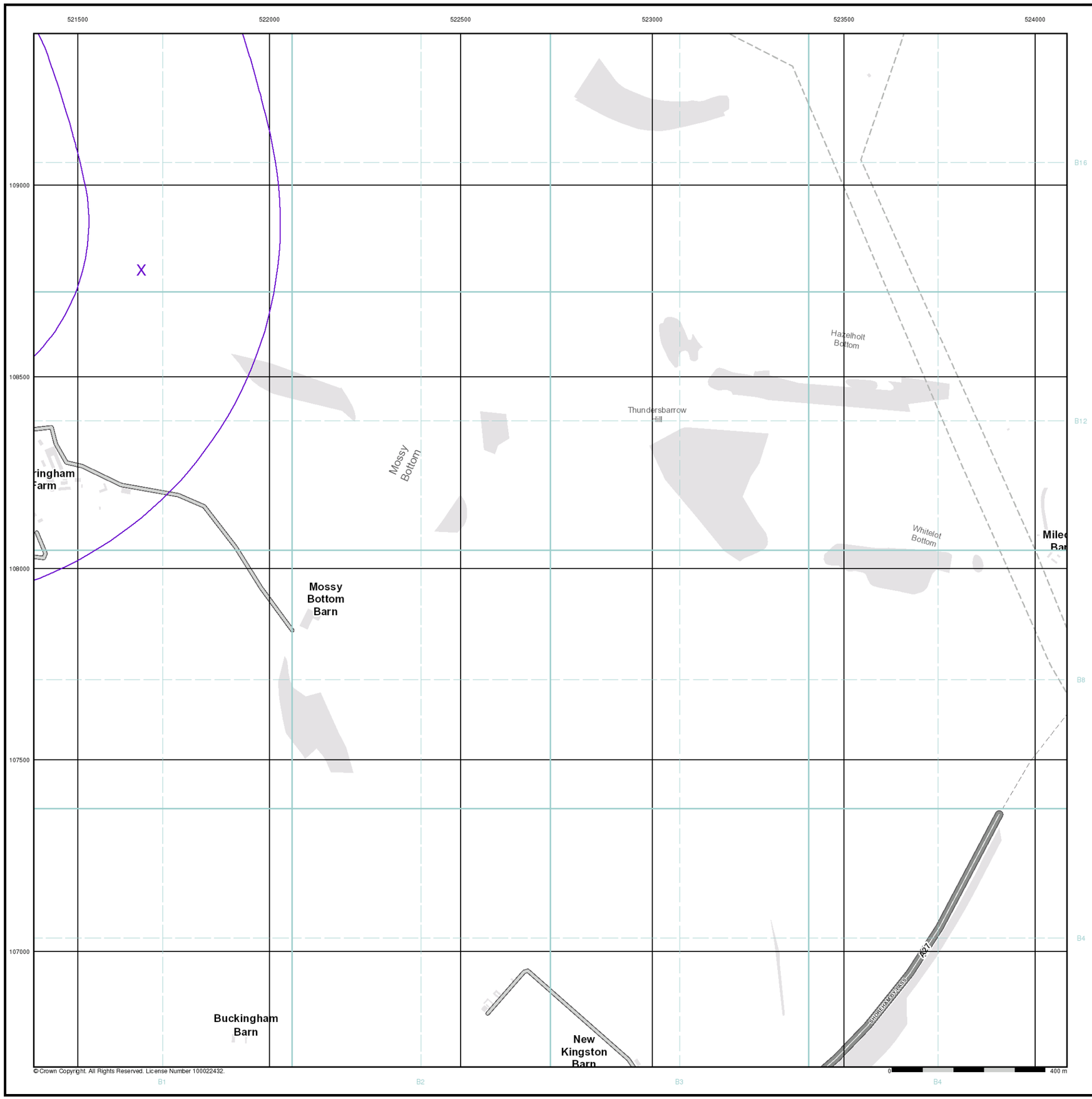

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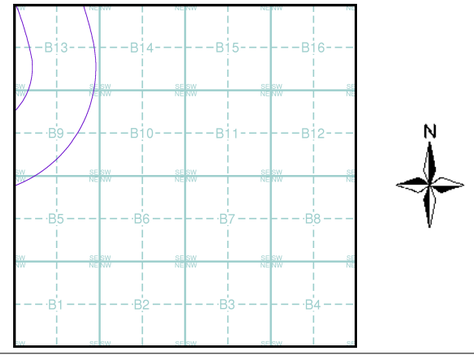
General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

OS Water Network Data

- Canal
- Reservoir
- Foreshore
- Marsh
- Tidal River
- Inland River
- Drain
- Other
- Lake
- Transfer
- Lock Or Flight Of Locks
- Sea

OS Water Network Map - Slice B



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Site Area (Ha):	44.36
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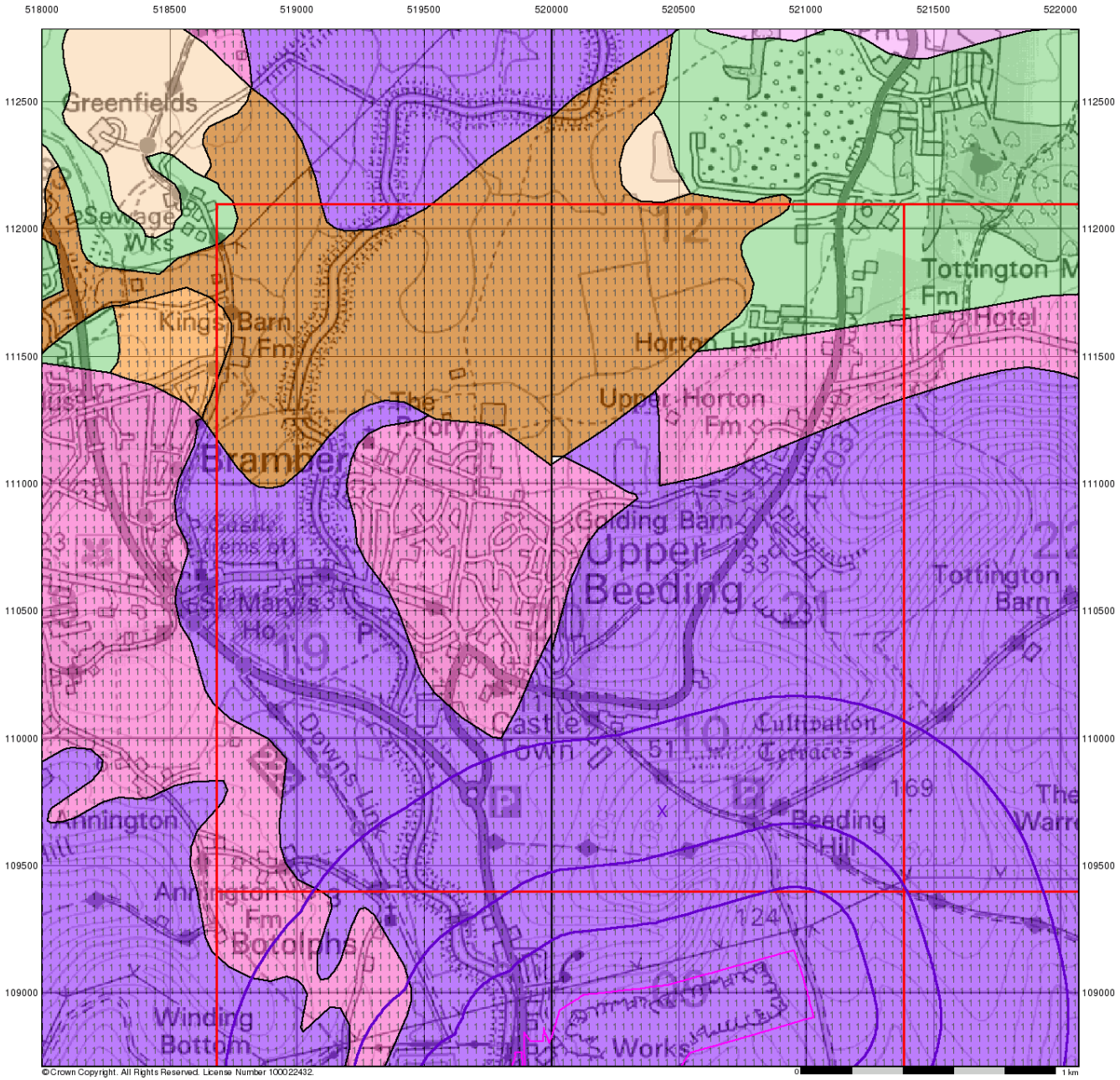

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Groundwater Vulnerability

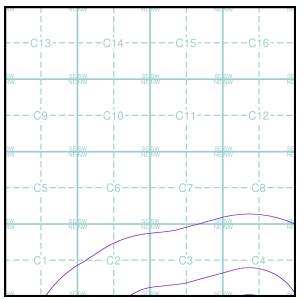
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes	Soil Classes
Major Aquifer (Highly Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Minor Aquifer (Variably Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Non Aquifer (Negligibly Permeable)	
Water or Sea	
Drift Deposit	

Site Sensitivity Context Map - Slice C



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520430, 109710
Slice:	C
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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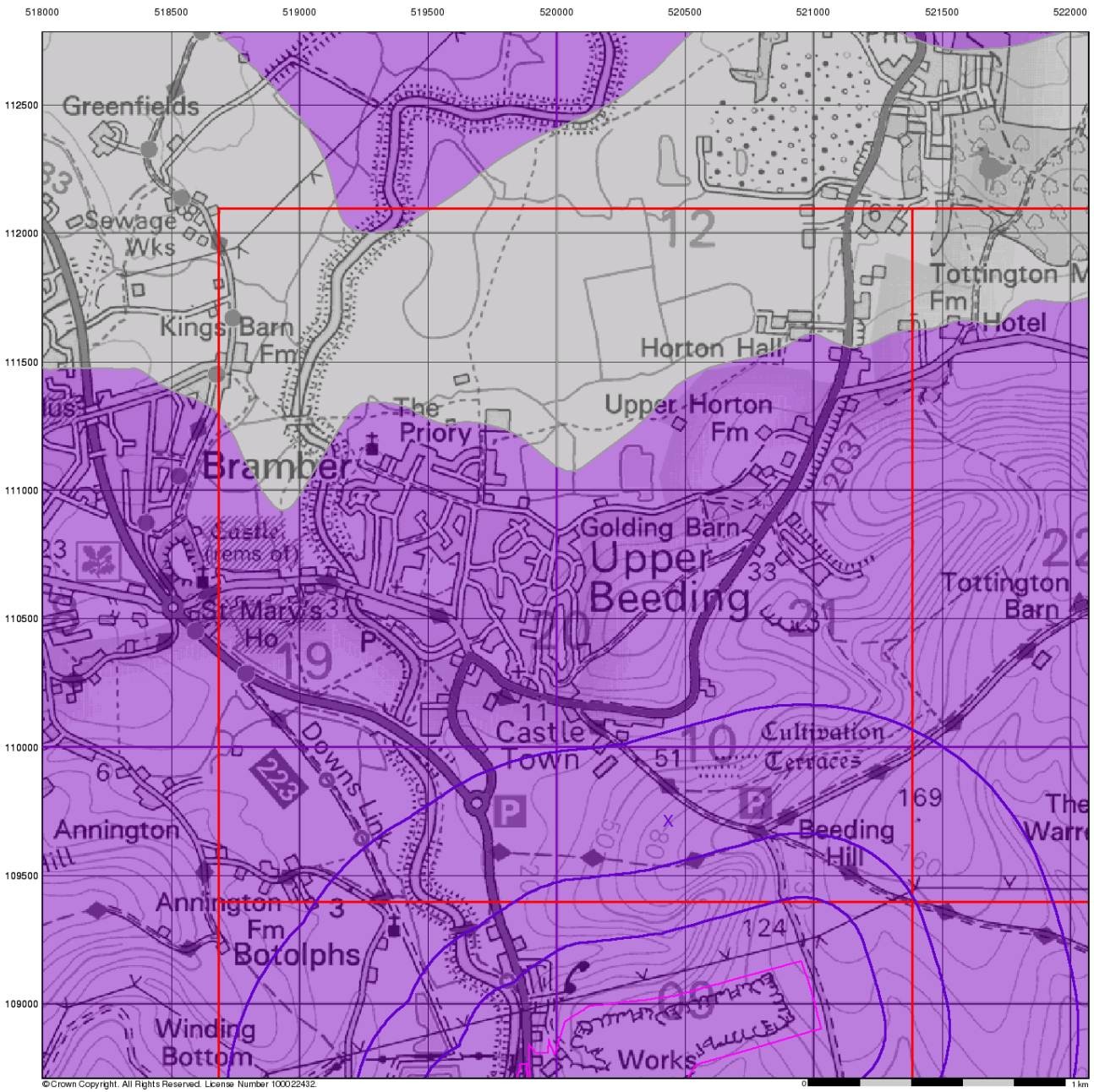

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Bedrock Aquifer Designation

General

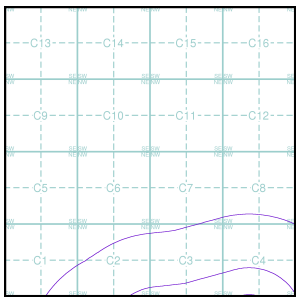
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice C



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520430, 109710
Slice:	C
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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Tel: 0844 844 9952
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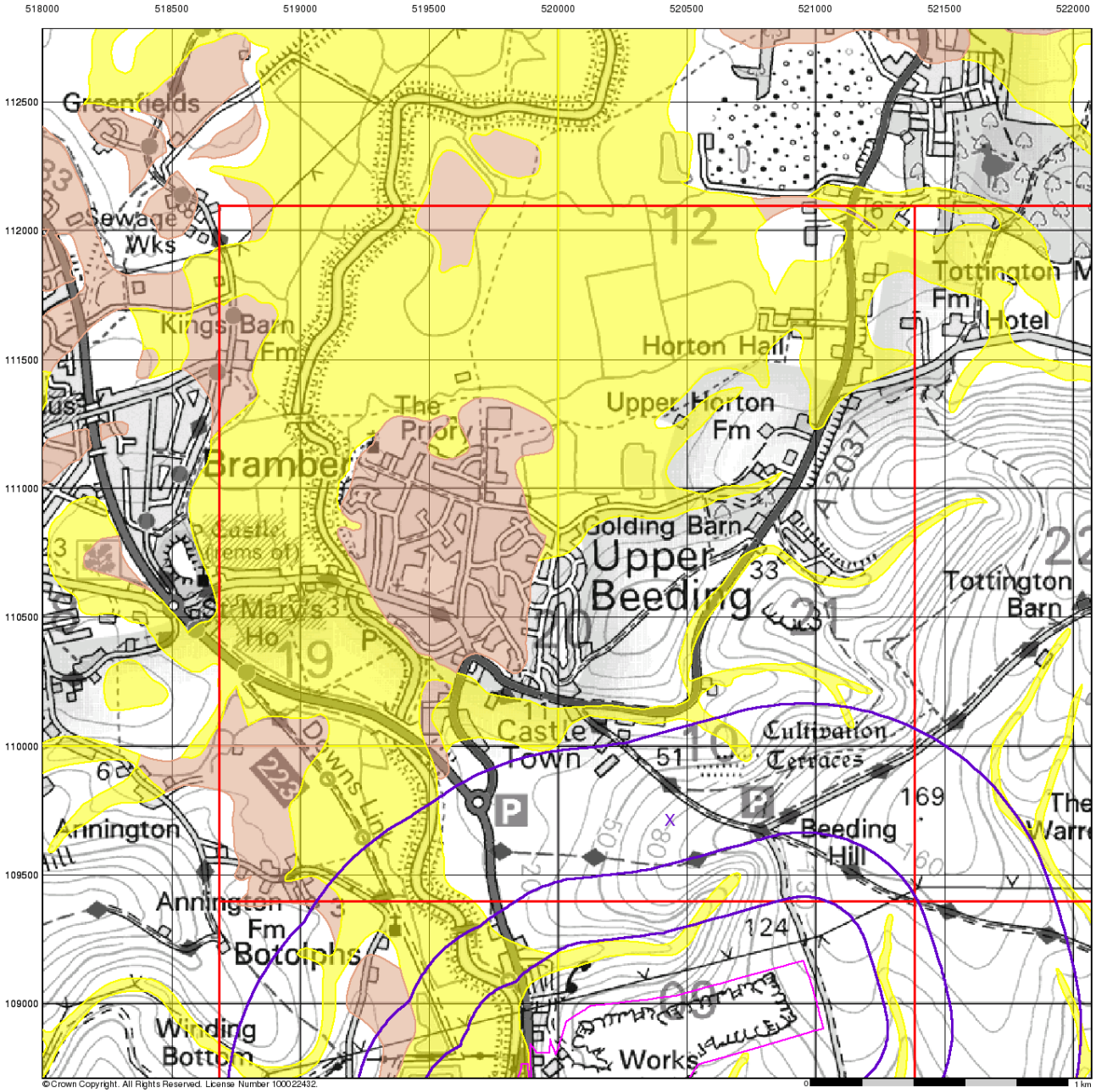

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Superficial Aquifer Designation

General

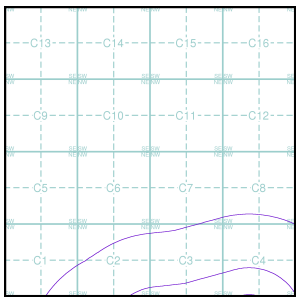
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice C



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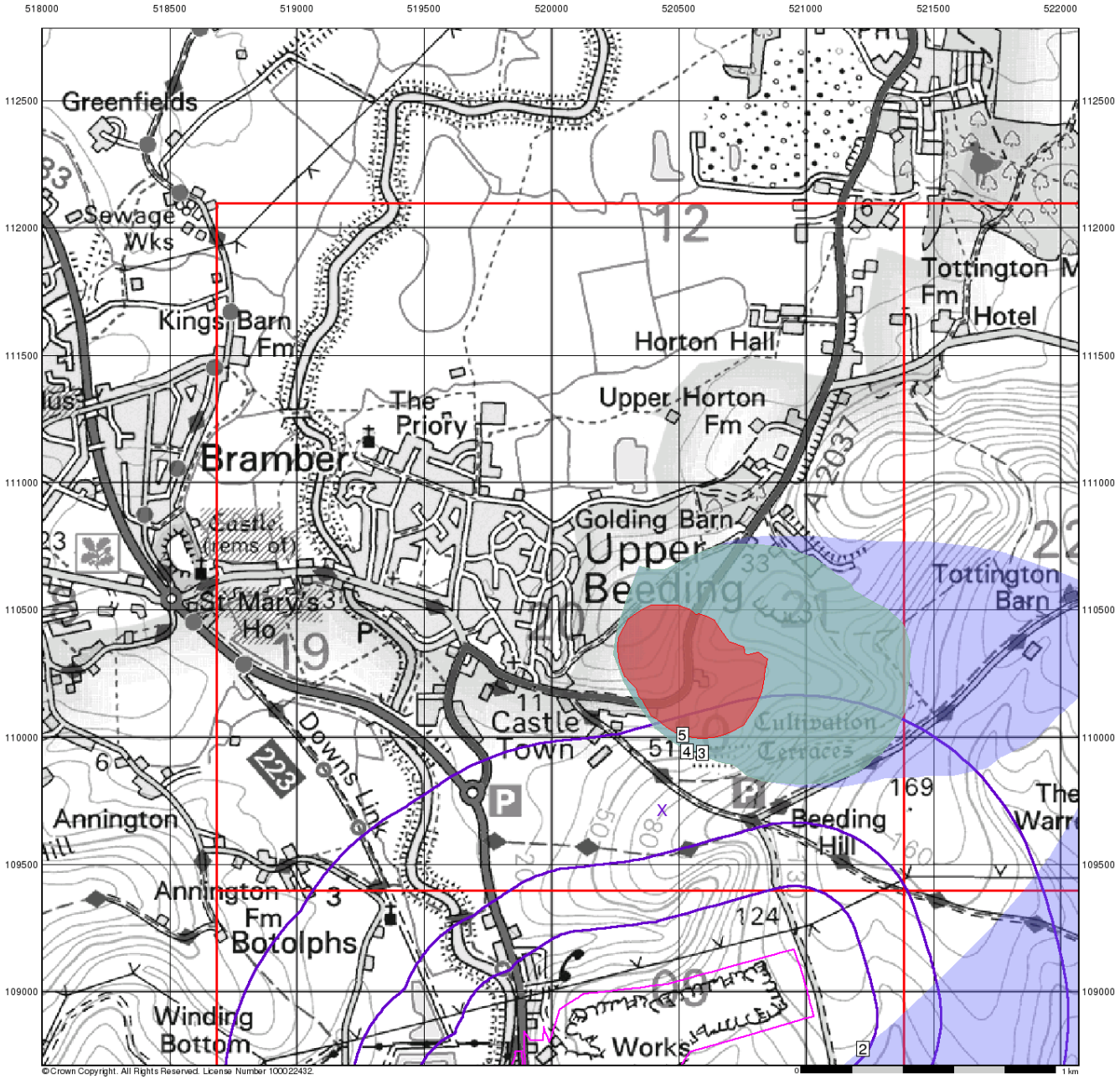

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Source Protection Zones

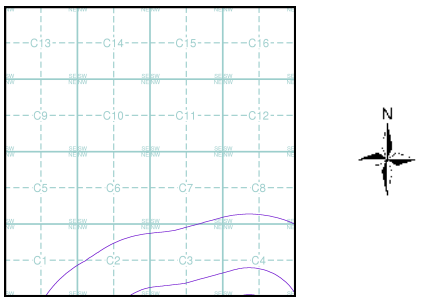
General

Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)

Site Sensitivity Context Map - Slice C



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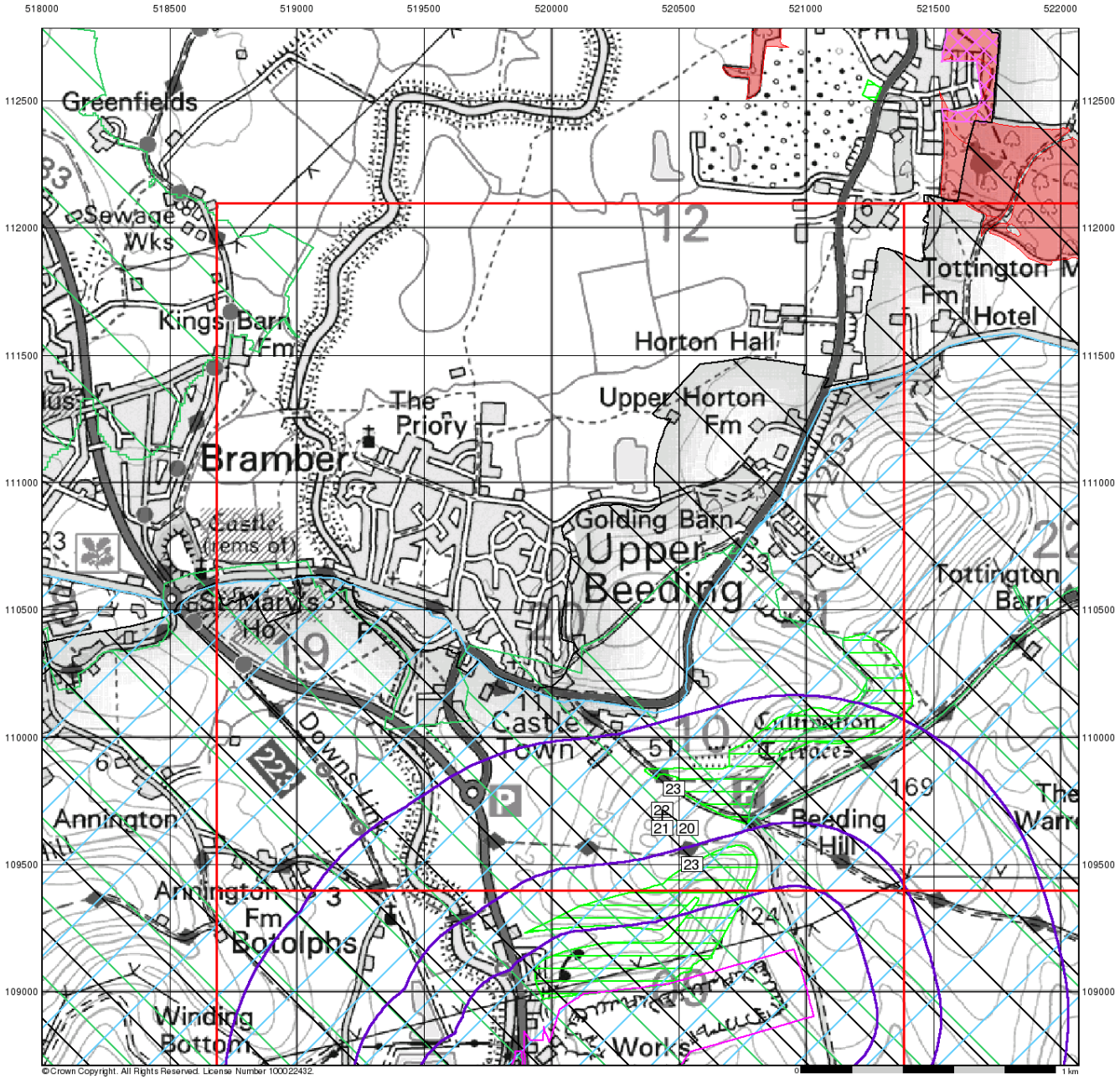

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Sensitive Land Uses

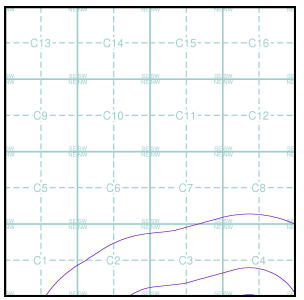
General

Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice C



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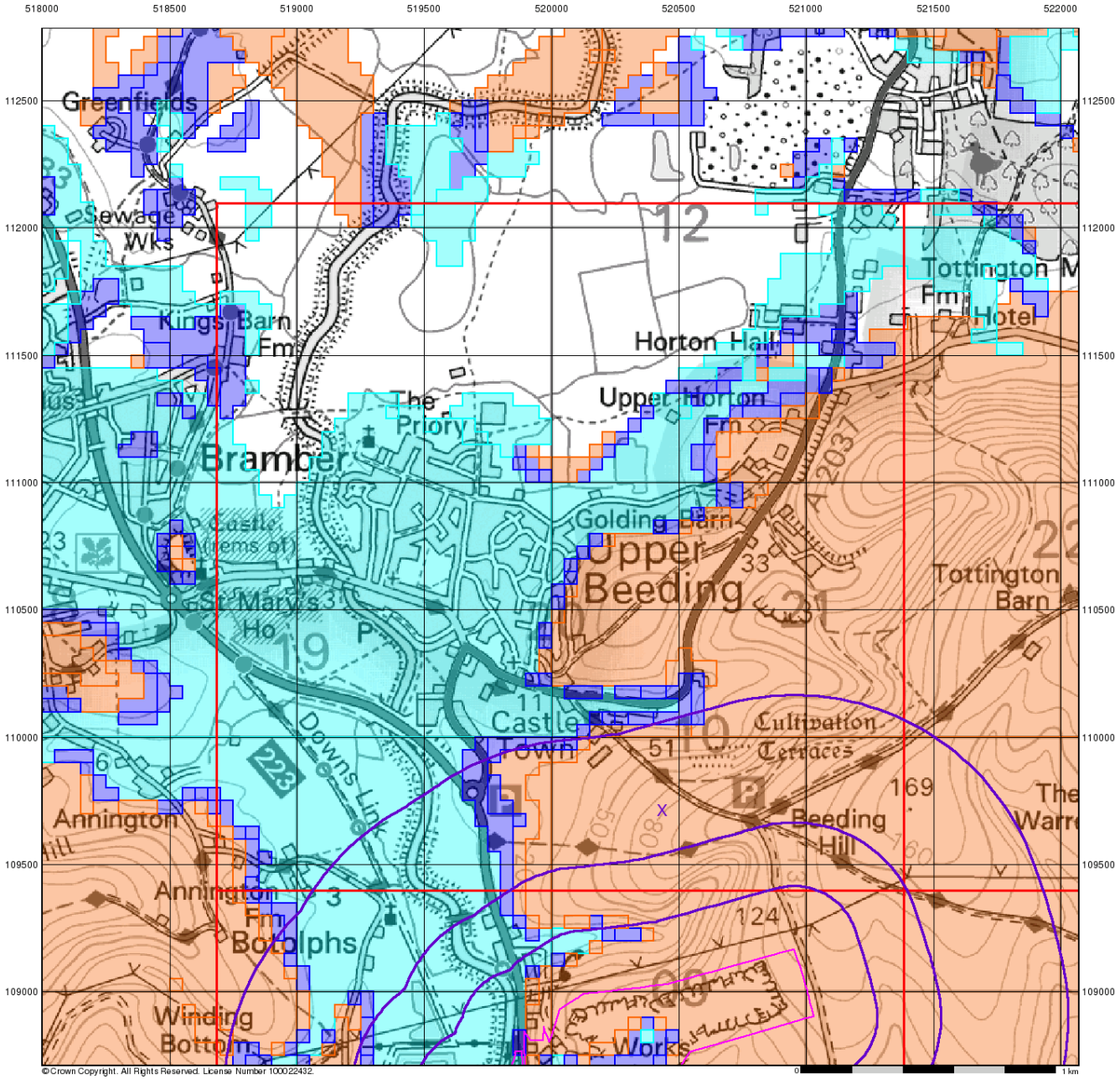

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BGS Flood GFS Data

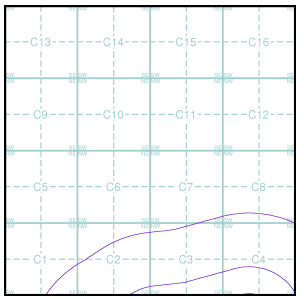
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice C



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Envirocheck® Report:

Datasheet

Order Details:

Order Number:
170375371_1_1

Customer Reference:
2018s0642

National Grid Reference:
520430, 109710

Slice:
C

Site Area (Ha):
44.36

Search Buffer (m):
1000

Site Details:

Site at 520371,108723

Client Details:

Miss A Davis
JBA Consulting
Salt Mill
Saltaire
West Yorkshire
BD18 3LF

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Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.
In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Report Version v53.0

Contents

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 3				1
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls					
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 3				Yes
Pollution Incidents to Controlled Waters					
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality	pg 3	1			
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 3				(*3)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 4	Yes	n/a	n/a	n/a
Drift Deposits			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 4	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 4	Yes	n/a	n/a	n/a
Source Protection Zones	pg 4		1		3
Extreme Flooding from Rivers or Sea without Defences	pg 4	Yes		n/a	n/a
Flooding from Rivers or Sea without Defences	pg 5		Yes	n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences	pg 5		Yes	n/a	n/a
OS Water Network Lines	pg 5		1		12

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 7	2	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS 1:625,000 Solid Geology	pg 8	Yes	n/a	n/a	n/a
BGS Recorded Mineral Sites	pg 8				1
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 8	Yes		n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 8	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 8	Yes		n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 8	Yes		n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 8	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 9	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 9	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas	pg 9	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Industrial Land Use					
Contemporary Trade Directory Entries					
Fuel Station Entries					
Gas Pipelines					
Underground Electrical Cables					
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas	pg 10	1			
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks	pg 10	1			
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 10	1			
Ramsar Sites					
Sites of Special Scientific Interest	pg 10	1			
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	0	1	520000 109100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	(S)	0	1	520050 108750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	(SW)	0	1	520000 109250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	C3SE (NE)	0	1	520434 109714
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	(S)	0	1	520400 108850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(S)	0	1	520450 108850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(S)	0	1	520434 108750
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(S)	0	1	520350 108900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(S)	0	1	520400 108900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(S)	0	1	520434 108900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(S)	0	1	520434 108850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	0	1	519900 108850
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(S)	0	1	520300 108850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(S)	0	1	520350 108850
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(S)	0	1	520450 108800
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	0	1	519950 108750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	0	1	520000 108750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(S)	0	1	520100 108750
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(S)	0	1	520150 108750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(S)	0	1	520250 108750
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	83	1	519950 109050
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	113	1	520100 109150

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	133	1	520050 109150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	145	1	519950 109100
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	151	1	520200 109200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	(SW)	156	1	520200 109250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(S)	177	1	520400 109250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(S)	183	1	520350 109250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(S)	195	1	520250 109250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(S)	239	1	520300 109300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	250	1	520200 109300
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	256	1	520150 109300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	272	1	519950 109250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	C2SE (W)	288	1	520000 109714
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	313	1	519950 109300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	341	1	519900 109300
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	C2NE (NW)	383	1	520000 109900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	C2SE (W)	410	1	519850 109700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	416	1	519300 108750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(SW)	438	1	519300 108900
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(SW)	473	1	519250 108850

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: Kier Rbw Ltd Property Type: Undefined Or Other Location: Temporary Offices In Beeding, At The Site Of The By-Pass, Construction. Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: N03237 Permit Version: 1 Effective Date: 5th July 1979 Issued Date: 5th July 1979 Revocation Date: 11th November 1996 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Into Land Receiving Water: Into Land **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	C2SE (W)	769	2	519730 109650
	Nearest Surface Water Feature	(SW)	518	-	519634 109320
	River Quality Name: Not Supplied GQA Grade: Unclassified Tidal River Reach: Not Supplied Estimated Distance (km): Not Supplied Flow Rate: Not Supplied Flow Type: Not Supplied Year: 1995	(SW)	0	2	519648 109256
	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 10/41/311008 Permit Version: 100 Location: Steyning P S Well 1 Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Steyning Groundwater Abs Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 8th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	C7SE (N)	1123	2	520550 110220
	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 10/41/311008 Permit Version: 100 Location: Steyning P S Well (With Boreholes) Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Steyning Groundwater Abs Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 8th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	C7SE (N)	1123	2	520550 110220

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Southern Water Services Ltd Licence Number: 10/41/311008 Permit Version: 100 Location: Steyning P S Well 2 Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Steyning Groundwater Abs Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 8th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	C7SE (N)	1123	2	520550 110220
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (H1) - Soils which readily transmit liquid discharges because they are either shallow, or susceptible to rapid by-pass flow directly to rock, gravel or groundwater Map Sheet: Sheet 45 West Sussex and Surrey Scale: 1:100,000	C2SE (W)	0	2	520000 109714
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (H1) - Soils which readily transmit liquid discharges because they are either shallow, or susceptible to rapid by-pass flow directly to rock, gravel or groundwater Map Sheet: Sheet 46 East Sussex Scale: 1:100,000	C3SE (NE)	0	2	520434 109714
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	C2SE (W)	0	1	520000 109714
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	C3SE (NE)	0	1	520434 109714
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	(SW)	0	1	520000 109197
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	(SE)	0	1	521279 109334
2	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	(SE)	222	2	521221 108775
3	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	C3NE (N)	637	2	520532 109950
4	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone II (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.	C3NE (N)	651	2	520532 109950
5	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone I (Inner Protection Zone): Travel time of 50 days or less to the groundwater source.	C3NE (N)	888	2	520515 110010
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial/Tidal Models Boundary Accuracy: As Supplied	(SW)	0	2	519747 109323

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	(SW)	1	2	519743 109328
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial/Tidal Models Boundary Accuracy: As Supplied	(SW)	2	2	519685 109380
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences Type: Flood Defences Reference: Not Supplied	(SW)	40	2	519777 109056
	Flood Defences Type: Flood Defences Reference: Not Supplied	(SW)	92	2	519639 109333
6	**OS Water Network Lines** Watercourse Form: Tidal river Watercourse Length: 1164.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Adur Catchment Name: Adur and Teville Primacy: 1	(SW)	214	3	519619 109314
7	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 82.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	C2SW (W)	722	3	519421 109475
8	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 410.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	(W)	765	3	519269 109395
9	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 171.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	(W)	788	3	519331 109395
10	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 524.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 2	C2SW (W)	793	3	519420 109478
11	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 54.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	C2SW (W)	793	3	519420 109533

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
12	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 266.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	C2SE (W)	804	3	519706 109676
13	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	C1SE (W)	823	3	519284 109399
14	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 10.1 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	C1SE (W)	825	3	519284 109399
15	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 268.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	C1SE (W)	834	3	519280 109408
16	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 331.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	C2NE (W)	904	3	519723 109813
17	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	C1SE (W)	950	3	519260 109550
18	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 220.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Adur and Teville Primacy: 1	C1SE (W)	952	3	519259 109552

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Local Authority Landfill Coverage Name: Horsham District Council - Has supplied landfill data		0	4	520434 109714
	Local Authority Landfill Coverage Name: West Sussex County Council - Has supplied landfill data		0	5	520434 109714

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: White Chalk Subgroup	C3SE (NE)	0	1	520434 109714
19	**BGS Recorded Mineral Sites** Site Name: Beeding Hill Chalk Pit Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 157336 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Cretaceous Geology: Lewes Nodular Chalk Formation Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	C4SW (E)	532	1	520788 109672
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	C3SE (NE)	0	1	520434 109714
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	C2SE (W)	0	1	520000 109714
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	(SW)	0	1	519797 109223
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	C2SE (W)	0	1	520000 109714
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	C3SE (NE)	0	1	520434 109714
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	C2SE (W)	0	1	520000 109714
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	C3SE (NE)	0	1	520434 109714
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	(SW)	0	1	519797 109223
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	(SW)	0	1	520000 109197
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	C3SE (NE)	0	1	520434 109714
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	C3NE (N)	203	1	520419 109816
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	C2SE (W)	242	1	520000 109587
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	C3SE (NE)	0	1	520434 109714
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	(SW)	0	1	520000 109197
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	C3SE (SE)	157	1	520644 109476

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	C3SE (SE)	160	1	520626 109447
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	C2SE (W)	242	1	520000 109714
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	C3SE (NE)	0	1	520434 109714
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	(SW)	0	1	520000 109197
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	C3SE (SE)	157	1	520644 109476
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	C2SE (W)	242	1	520000 109714
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	C3SE (NE)	0	1	520434 109714
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(SW)	0	1	519797 109223
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	C3SE (SE)	157	1	520644 109476
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	C2SE (W)	242	1	520000 109714
	Radon Potential - Radon Affected Areas Affected Area: The property is in an Intermediate probability radon area (1 to 3% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	C3SE (NE)	0	1	520434 109714
	Radon Potential - Radon Affected Areas Affected Area: The property is in an Intermediate probability radon area (1 to 3% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	C2SE (W)	0	1	520002 109714
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	C3SE (NE)	0	1	520434 109714
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	C2SE (W)	0	1	520002 109714

Sensitive Land Use

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
20	**Environmentally Sensitive Areas** Name: South Downs (decommissioned) Multiple Areas: N Total Area (m2): 690432994.81 Source: Natural England	C3SE (NE)	0	6	520434 109714
21	**National Parks** Name: South Downs Multiple Area: N Area (m2): 1652679314.3 Source: Natural England **Status: Fully Designated - designated as a National Park** Designation Date: 2nd November 2009	C3SE (NE)	0	6	520434 109714
22	**Nitrate Vulnerable Zones** Name: Sussex Chalk Description: Groundwater Source: Environment Agency, Head Office	C3SE (NE)	0	7	520434 109714
23	**Sites of Special Scientific Interest** Name: Beeding Hill To Newtimber Hill Multiple Areas: Y Total Area (m2): 3209597.86 Source: Natural England Reference: 1000374 Designation Details: Geological Conservation Review Designation Date: 10th November 1986 Date Type: Notified Designation Details: Local Wildlife Site Designation Date: 10th November 1986 Date Type: Notified Designation Details: Nature Conservation Review Designation Date: 10th November 1986 Date Type: Notified Designation Details: Site Of Special Scientific Interest Designation Date: 10th November 1986 Date Type: Notified	C3SE (SE)	0	6	520552 109500

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Horsham District Council - Environmental Health Department	February 2015	Annual Rolling Update
Discharge Consents		
Environment Agency - Southern Region	April 2018	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Southern Region	March 2013	As notified
Integrated Pollution Controls		
Environment Agency - Southern Region	October 2008	Variable
Integrated Pollution Prevention And Control		
Environment Agency - South East Region - Solent & South Downs Area	April 2018	Quarterly
Environment Agency - Southern Region	April 2018	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Horsham District Council - Environmental Health Department	June 2015	Variable
Local Authority Pollution Prevention and Controls		
Horsham District Council - Environmental Health Department	June 2015	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Horsham District Council - Environmental Health Department	June 2015	Variable
Nearest Surface Water Feature		
Ordnance Survey	September 2017	
Pollution Incidents to Controlled Waters		
Environment Agency - Southern Region	December 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Southern Region	March 2013	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - Southern Region	March 2013	As notified
Registered Radioactive Substances		
Environment Agency - Southern Region	January 2015	
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency - South East Region - Solent & South Downs Area	April 2018	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2018	Quarterly
Environment Agency - Southern Region - Sussex Area	April 2018	Quarterly
Water Abstractions		
Environment Agency - Southern Region	April 2018	Quarterly
Water Industry Act Referrals		
Environment Agency - Southern Region	October 2017	Quarterly
Groundwater Vulnerability		
Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits		
Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations		
British Geological Survey - National Geoscience Information Service	August 2015	As notified
Superficial Aquifer Designations		
British Geological Survey - National Geoscience Information Service	August 2015	As notified
Source Protection Zones		
Environment Agency - Head Office	January 2018	Quarterly

Data Currency

Agency & Hydrological	Version	Update Cycle
Extreme Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	May 2018	Quarterly
Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	May 2018	Quarterly
Areas Benefiting from Flood Defences		
Environment Agency - Head Office	May 2018	Quarterly
Flood Water Storage Areas		
Environment Agency - Head Office	May 2018	Quarterly
Flood Defences		
Environment Agency - Head Office	May 2018	Quarterly
OS Water Network Lines		
Ordnance Survey	May 2018	Quarterly
BGS Groundwater Flooding Susceptibility		
British Geological Survey - National Geoscience Information Service	May 2013	As notified
Waste	**Version**	**Update Cycle**
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	April 2018	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Southern Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - South East Region - Solent & South Downs Area	April 2018	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2018	Quarterly
Environment Agency - Southern Region - Sussex Area	April 2018	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - South East Region - Solent & South Downs Area	April 2018	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2018	Quarterly
Environment Agency - Southern Region - Sussex Area	April 2018	Quarterly
Local Authority Landfill Coverage		
Horsham District Council - Environmental Health Department	May 2000	Not Applicable
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Horsham District Council - Environmental Health Department	May 2000	Not Applicable
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Registered Landfill Sites		
Environment Agency - Southern Region - Solent and South Downs	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Southern Region - Solent and South Downs	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Southern Region - Solent and South Downs	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive	September 2017	Bi-Annually
Explosive Sites Health and Safety Executive	March 2017	Variable
Notification of Installations Handling Hazardous Substances (NIHHS) Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements Horsham District Council - Planning Department West Sussex County Council - Environment & Development	August 2015 October 2006	Variable Annual Rolling Update
Planning Hazardous Substance Consents Horsham District Council - Planning Department West Sussex County Council - Environment & Development	August 2015 October 2006	Variable Annual Rolling Update
Geological	**Version**	**Update Cycle**
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	May 2018	Bi-Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	As notified

Data Currency

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	May 2018	Quarterly
Fuel Station Entries Catalist Ltd - Experian	April 2018	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Underground Electrical Cables National Grid	December 2015	Bi-Annually
Sensitive Land Use	**Version**	**Update Cycle**
Ancient Woodland Natural England	October 2017	Bi-Annually
Areas of Outstanding Natural Beauty Natural England	February 2018	Bi-Annually
Environmentally Sensitive Areas Natural England	January 2017	
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	February 2018	Bi-Annually
Marine Nature Reserves Natural England	January 2018	Bi-Annually
National Nature Reserves Natural England	February 2018	Bi-Annually
National Parks Natural England	April 2017	Bi-Annually
Nitrate Vulnerable Zones Environment Agency - Head Office Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	December 2017 October 2015	Bi-Annually
Ramsar Sites Natural England	February 2018	Bi-Annually
Sites of Special Scientific Interest Natural England	February 2018	Bi-Annually
Special Areas of Conservation Natural England	January 2018	Bi-Annually
Special Protection Areas Natural England	February 2018	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Useful Contacts

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	**Ordnance Survey** Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
4	**Horsham District Council - Environmental Health Department** Park House, North Street, Horsham, Sussex, RH12 1RL	Telephone: 01403 215100 Fax: 01403 732790 Website: www.horsham.gov.uk
5	**West Sussex County Council - Environment & Development** County Hall, Tower hall, Chichester, West Sussex, PO19 1RH	Telephone: 01243 777100 Website: www.westsussex.gov.uk
6	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
7	**Environment Agency - Head Office** Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.

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
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
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
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
R.D. Bdy. 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
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Pylon
Electricity Transmission Line
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
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
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Mud
Sand
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
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m 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

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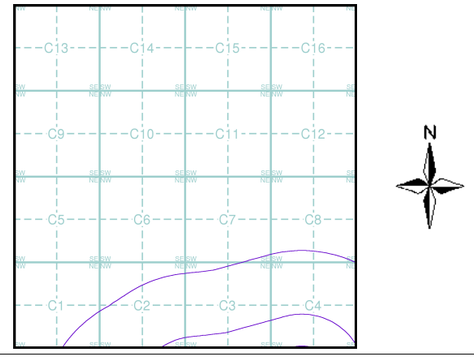
Historical Mapping & Photography included:

Historical Map - Slice C



Order Details

Order Number: 170375371_1_1
Customer Ref: 2018s0642
National Grid Reference: 520430, 109710
Slice: C
Site Area (Ha): 44.36
Search Buffer (m): 1000

Site Details

Site at 520371,108723

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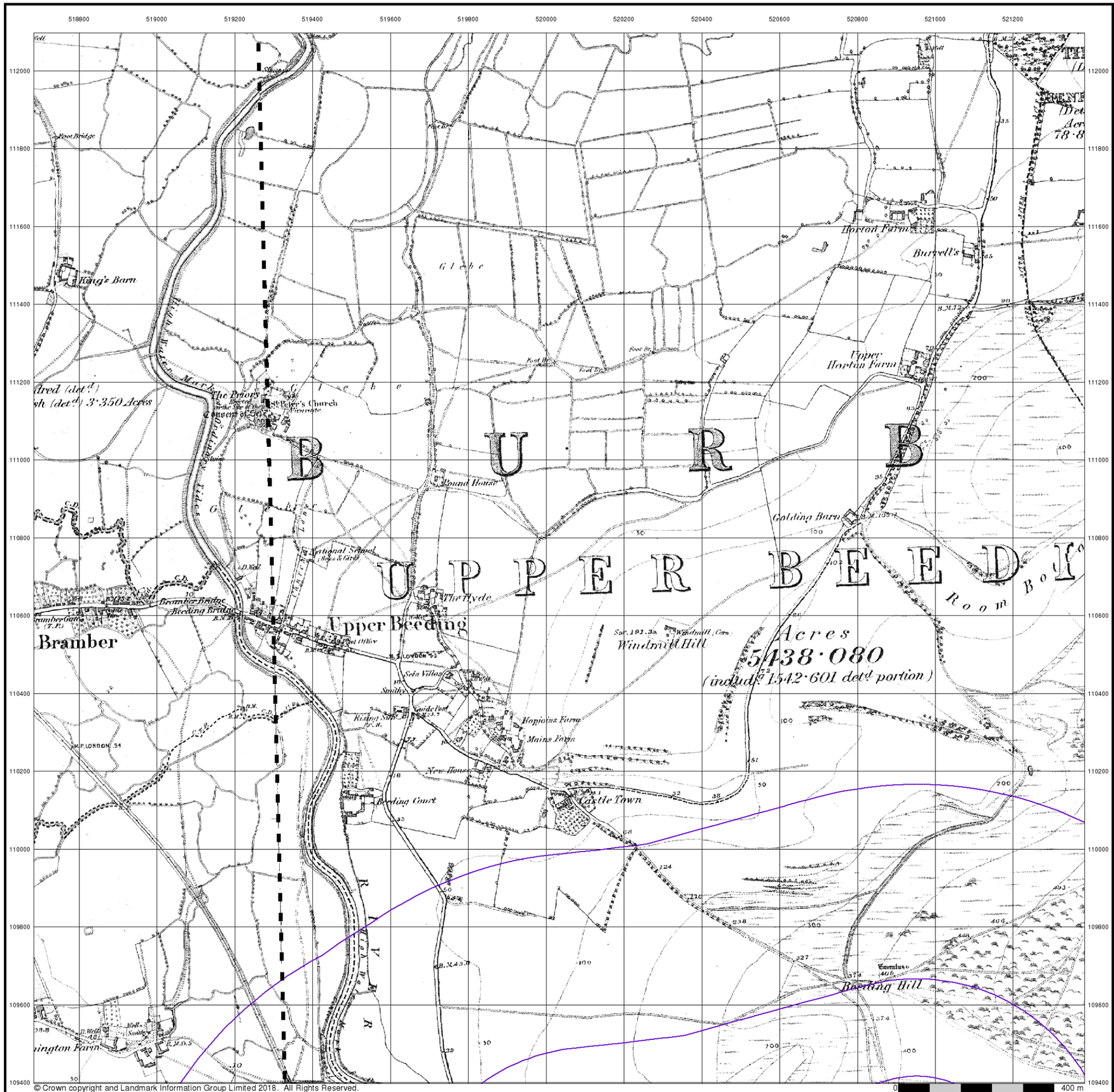
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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Published 1879

Source map scale - 1:10,560

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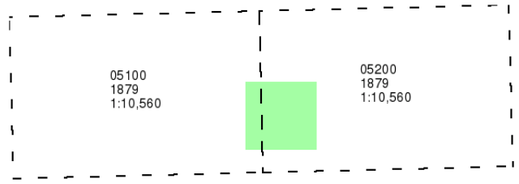
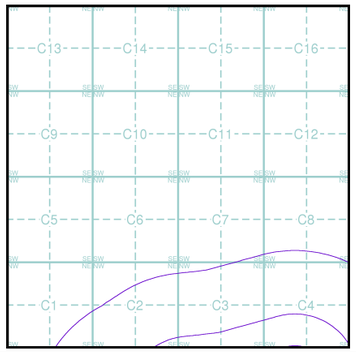
Map Name(s) and Date(s)



Historical Map - Slice C



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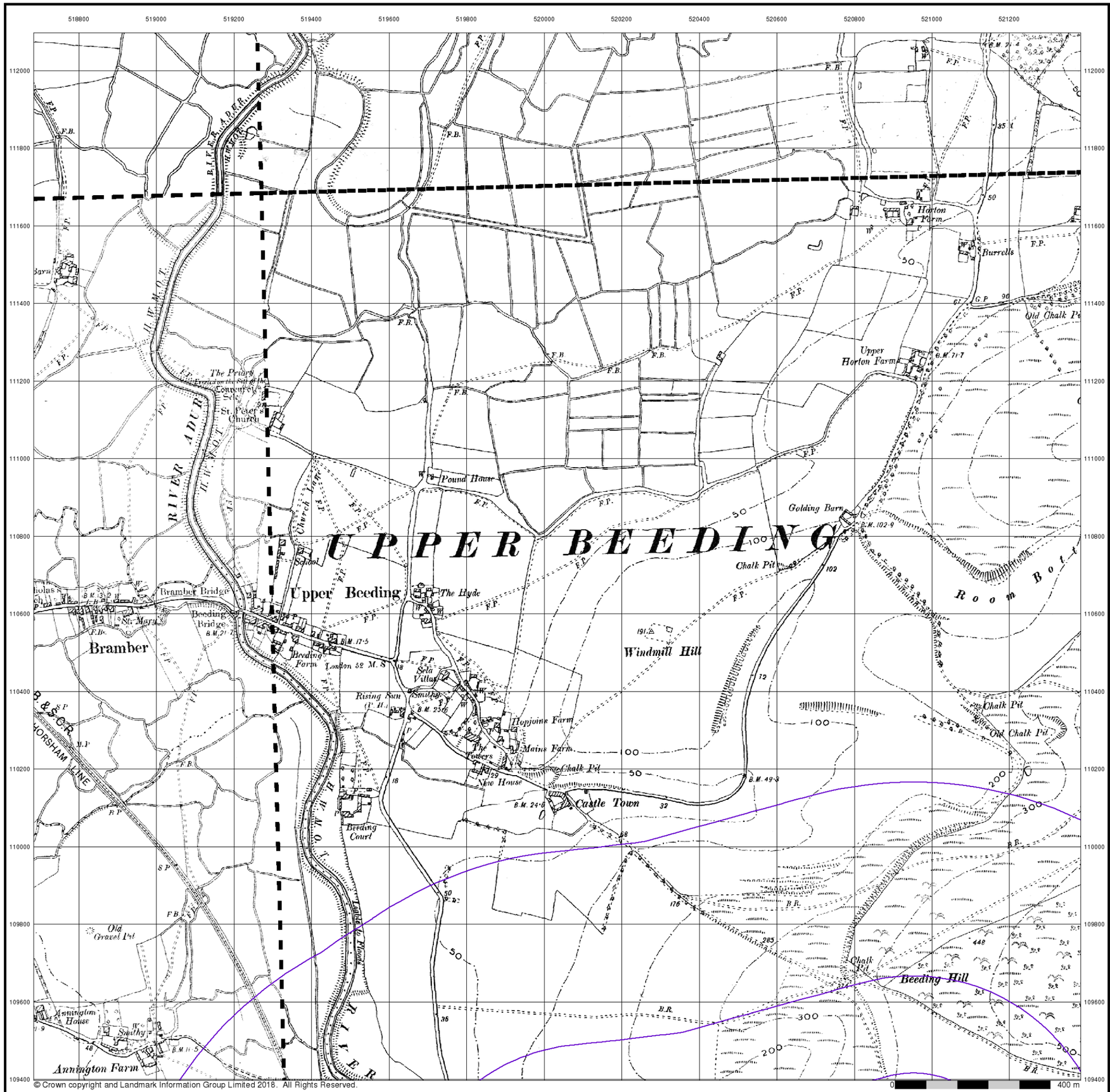

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Published 1898 - 1899

Source map scale - 1:10,560

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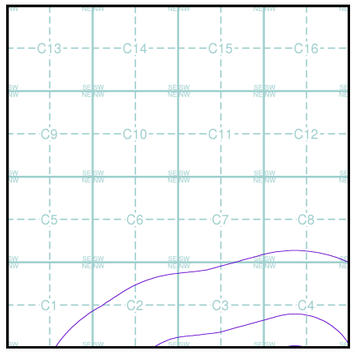
Map Name(s) and Date(s)

051NE 1898 1:10,560	052NW 1899 1:10,560
051SE 1899 1:10,560	052SW 1899 1:10,560

Historical Map - Slice C



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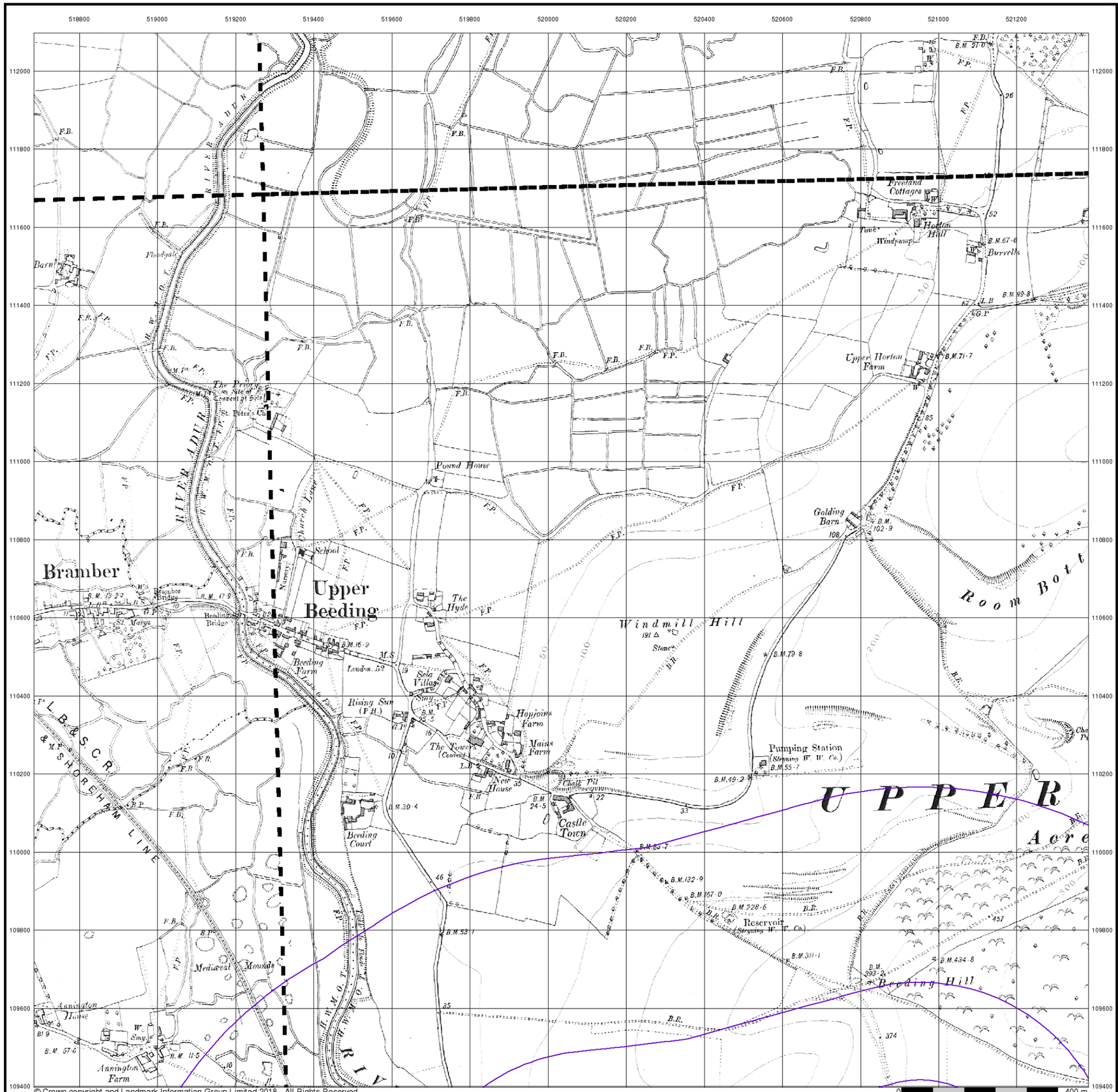

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Published 1912 - 1914

Source map scale - 1:10,560

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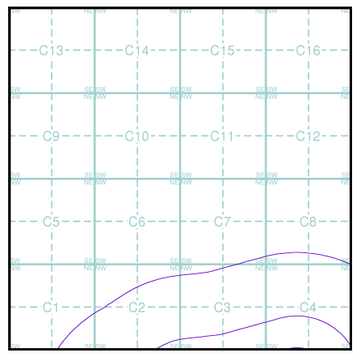
Map Name(s) and Date(s)

051NE 1914 1:10,560	052NW 1912 1:10,560
051SE 1914 1:10,560	052SW 1914 1:10,560

Historical Map - Slice C



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Site Details

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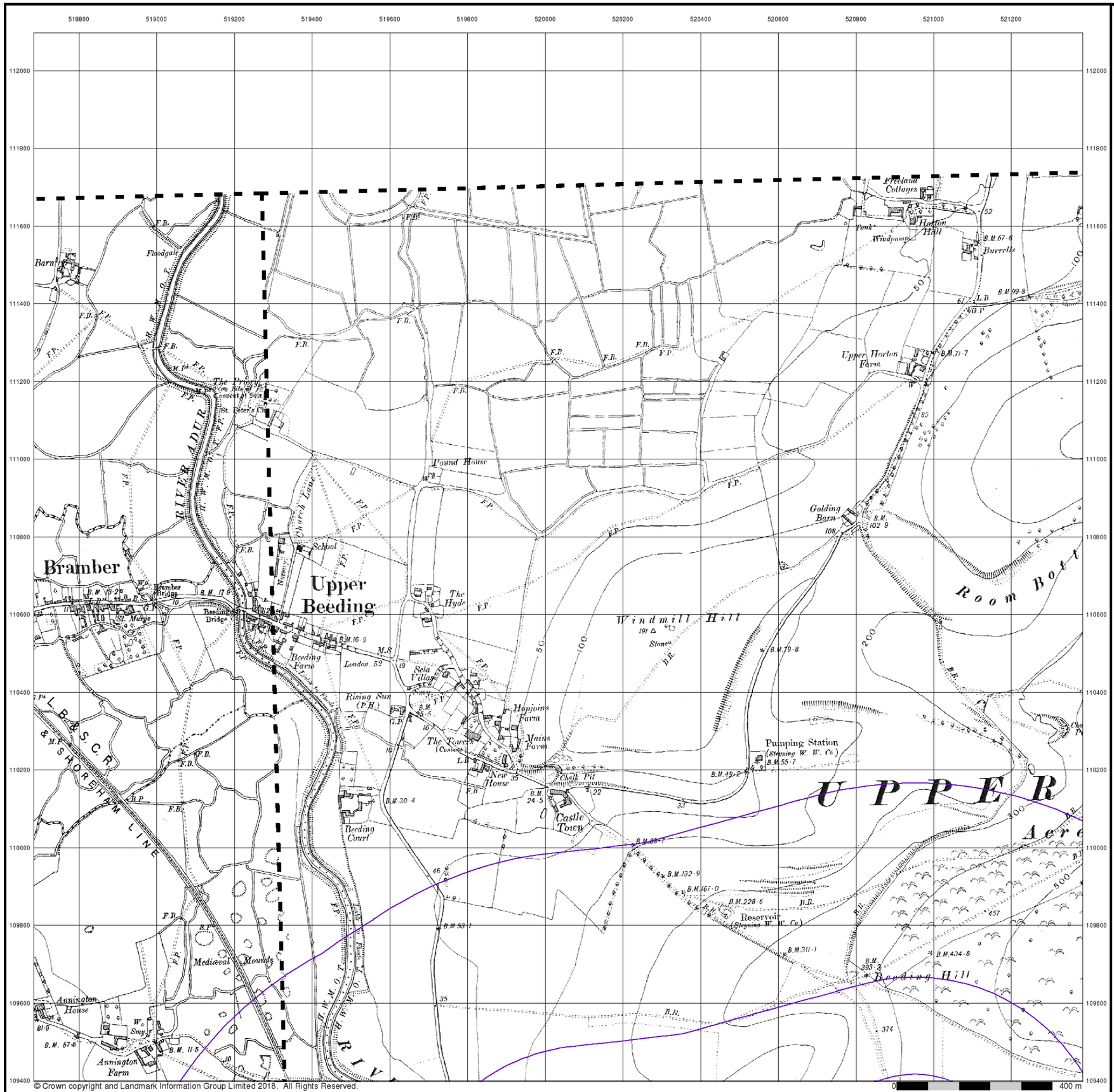

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Published 1914

Source map scale - 1:10,560

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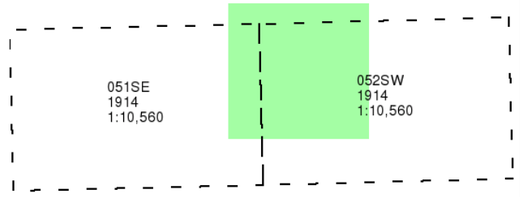
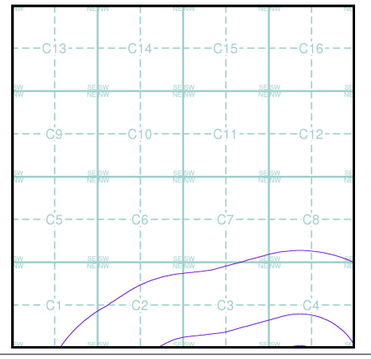


Historical Map - Slice C



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Site Area (Ha):	44.36
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Site Details

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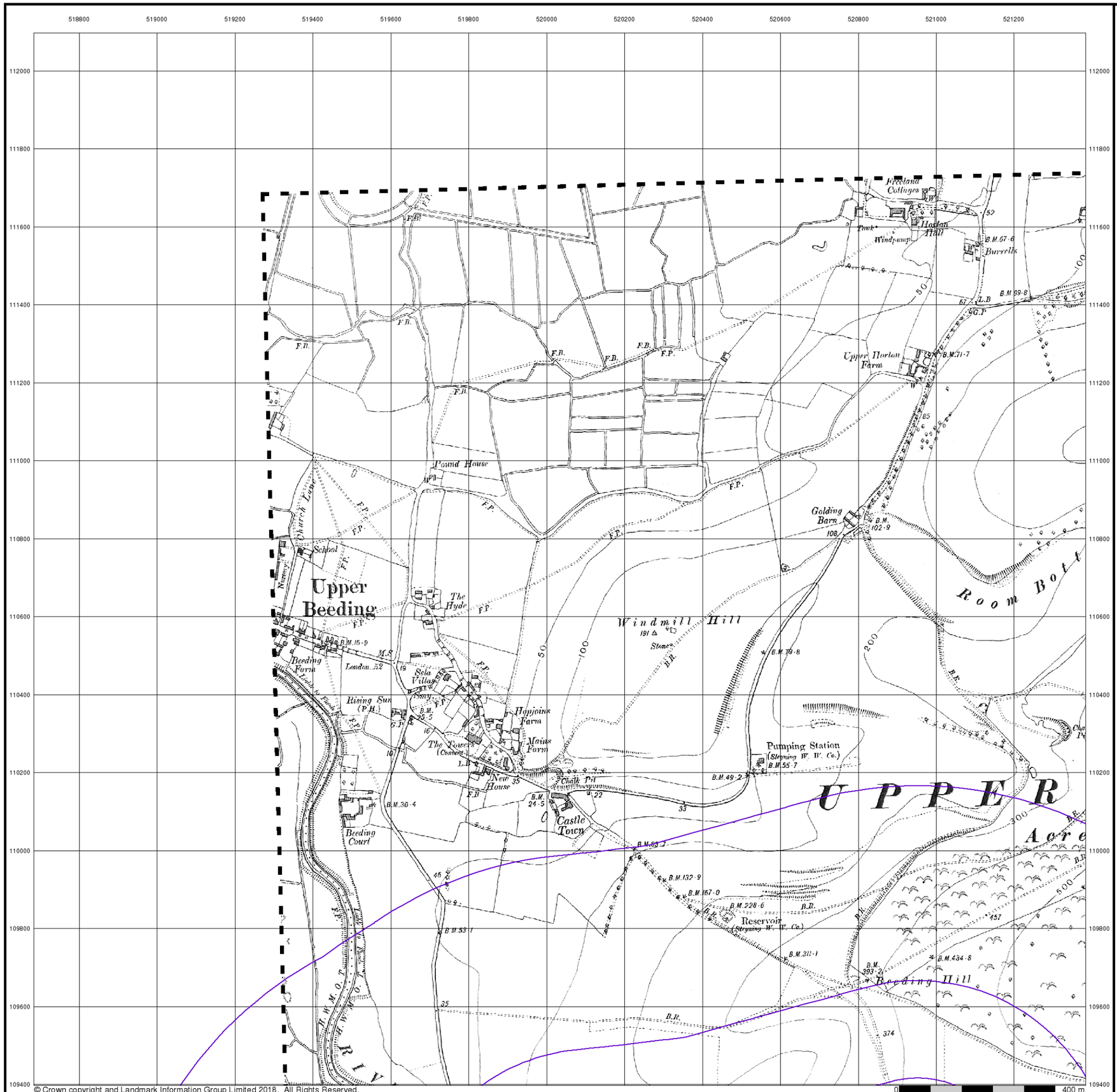

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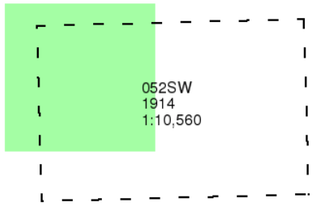
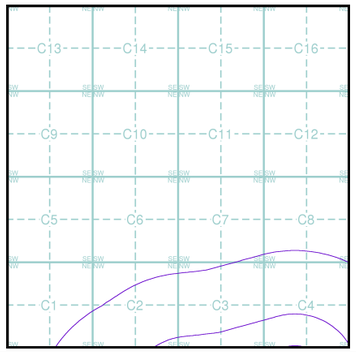
Map Name(s) and Date(s)



Historical Map - Slice C



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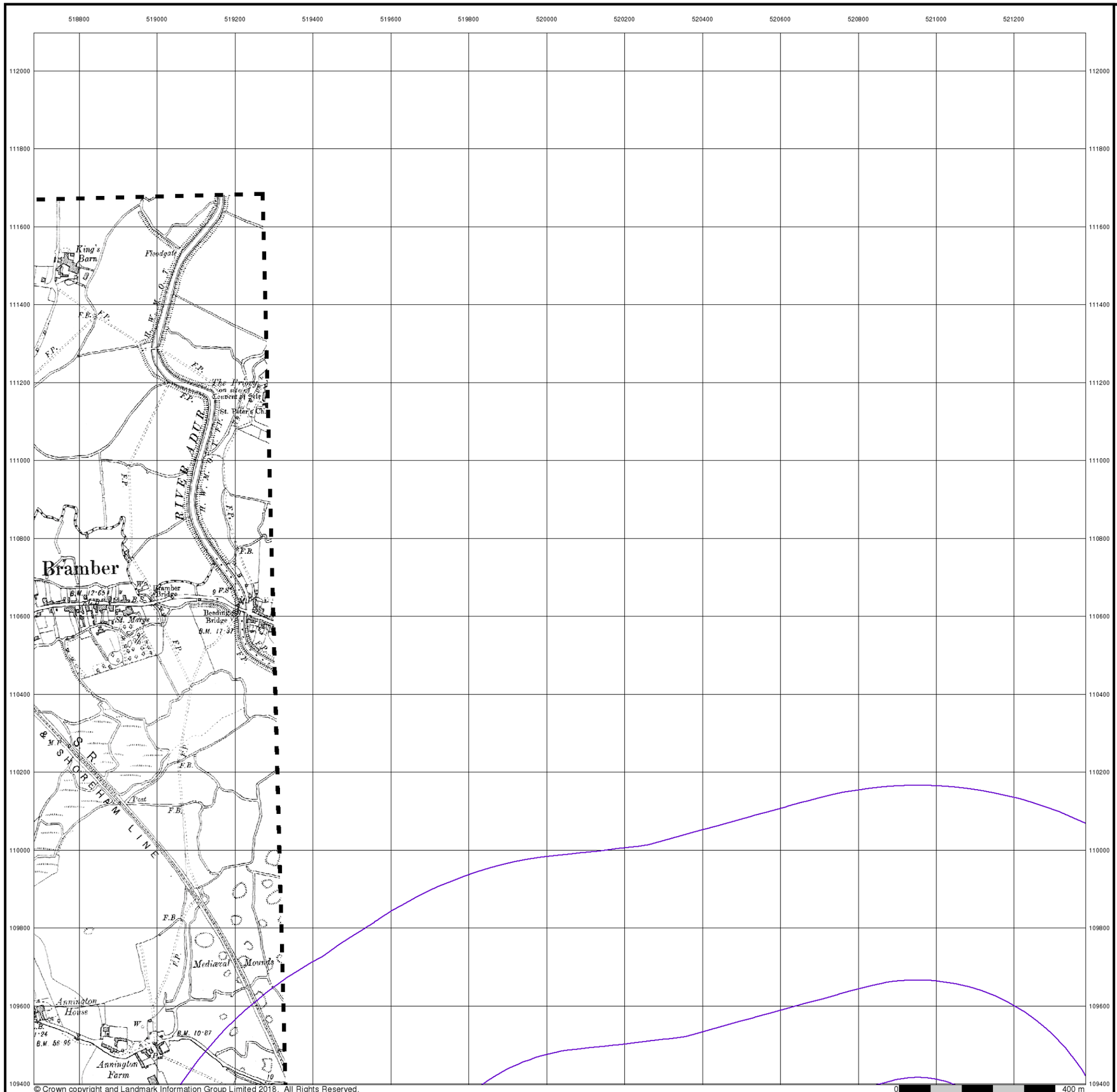

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Sussex

Published 1932

Source map scale - 1:10,560

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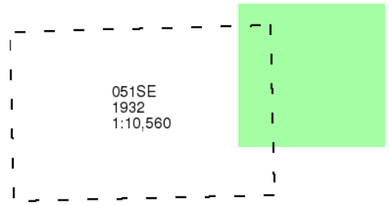
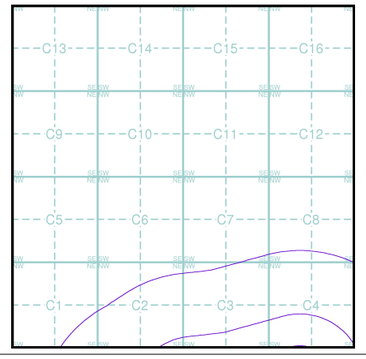
Map Name(s) and Date(s)



Historical Map - Slice C



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520430, 109710
Slice:	C
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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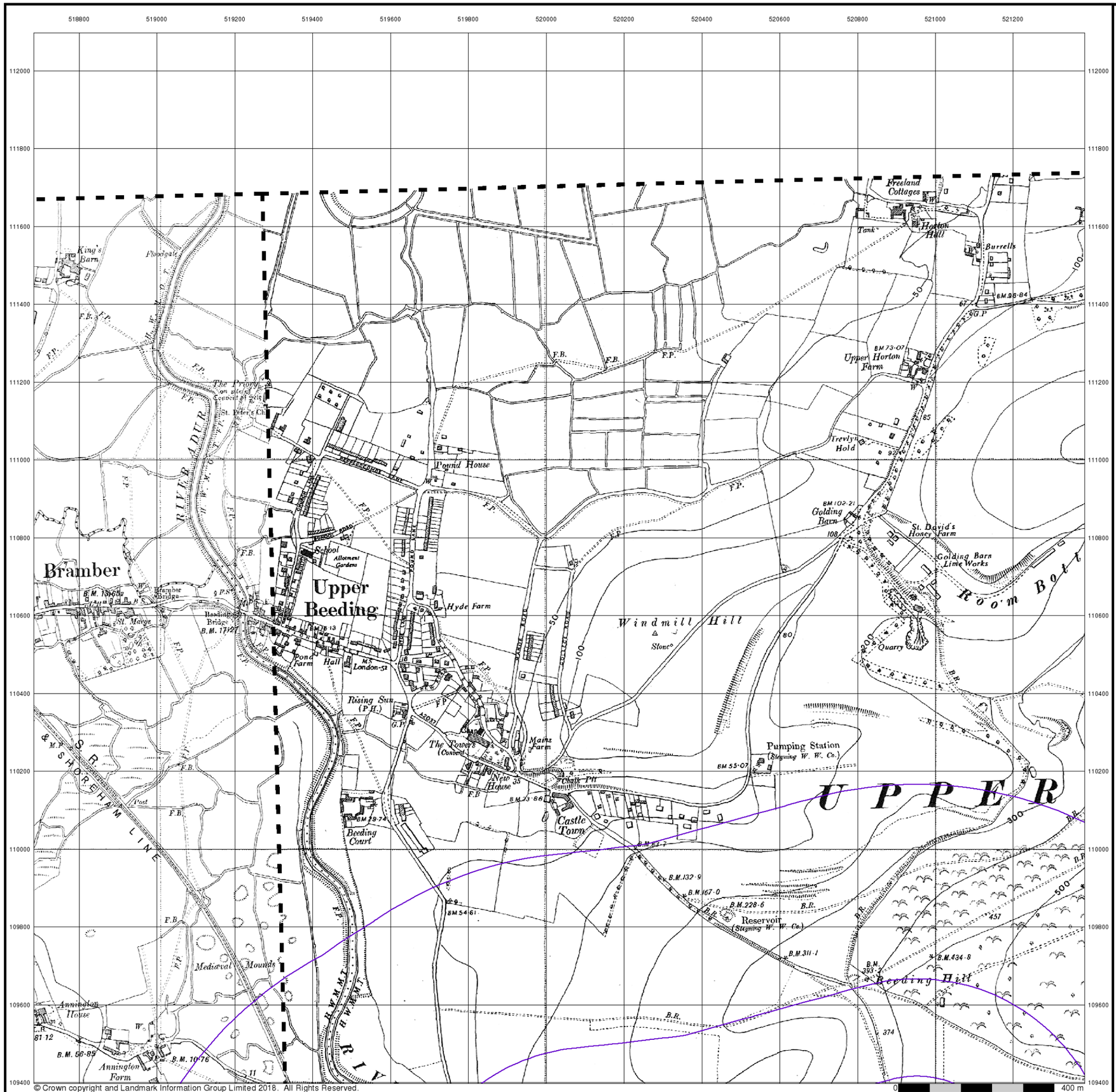

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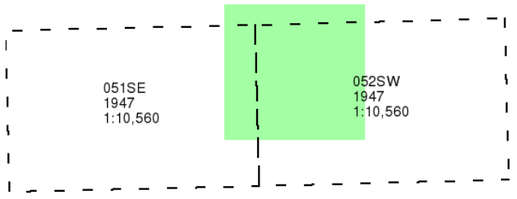
Sussex

Published 1947

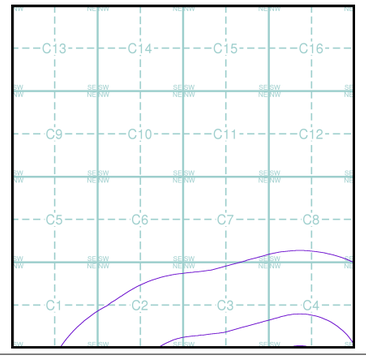
Source map scale - 1:10,560

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 C



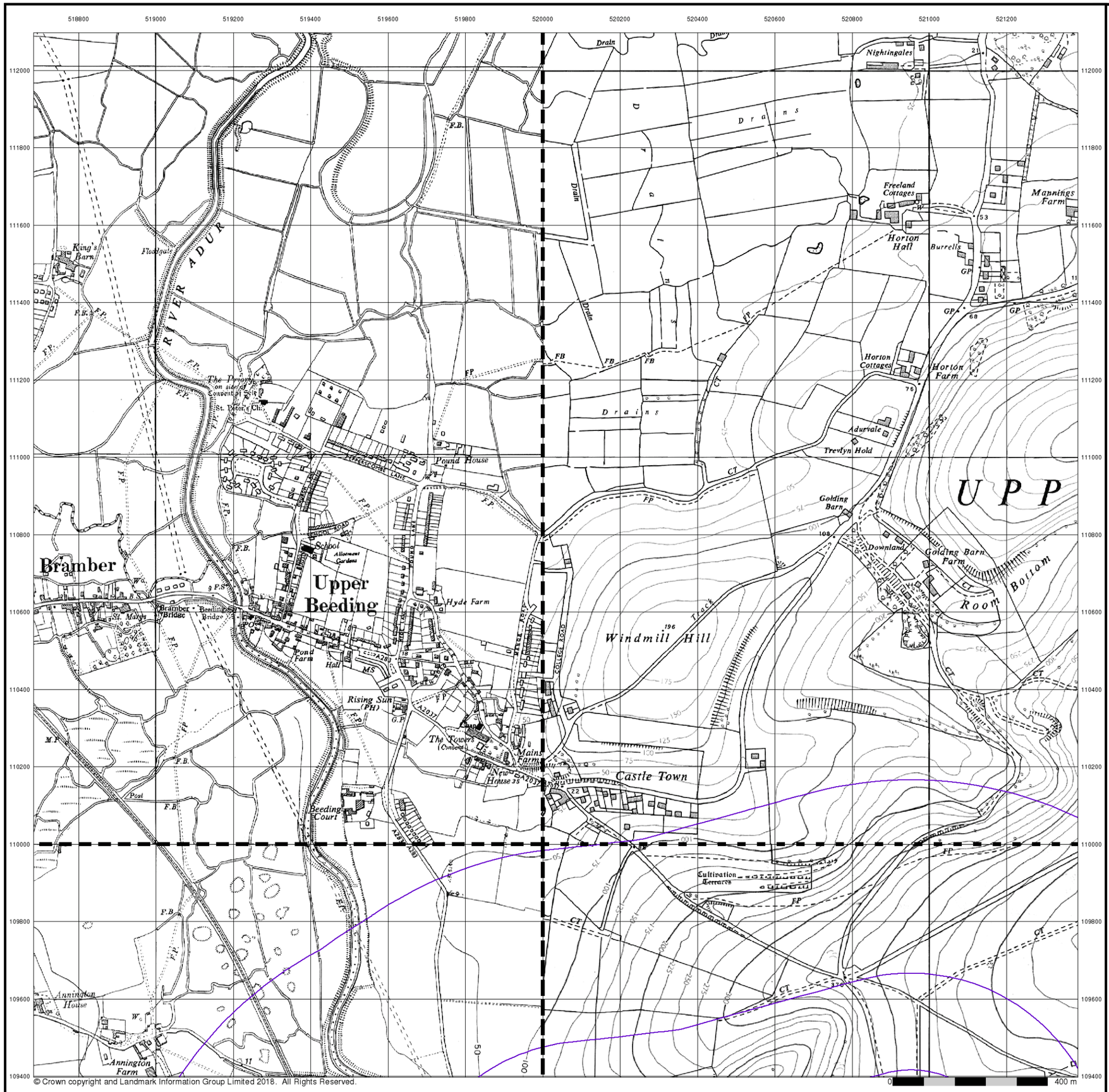
Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520430, 109710
Slice:	C
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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



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Ordnance Survey Plan

Published 1961 - 1963

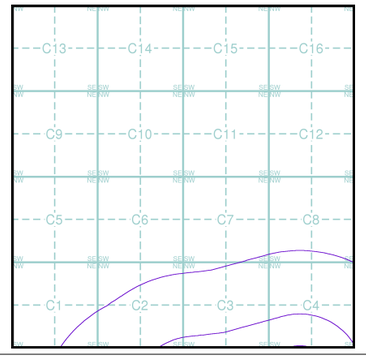
Source map scale - 1:10,000

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)

TQ11SE 1961 1:10,560	TQ21SW 1962 1:10,560
TQ10NE 1961 1:10,560	TQ20NW 1963 1:10,560

Historical Map - Slice C



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520430, 109710
Slice:	C
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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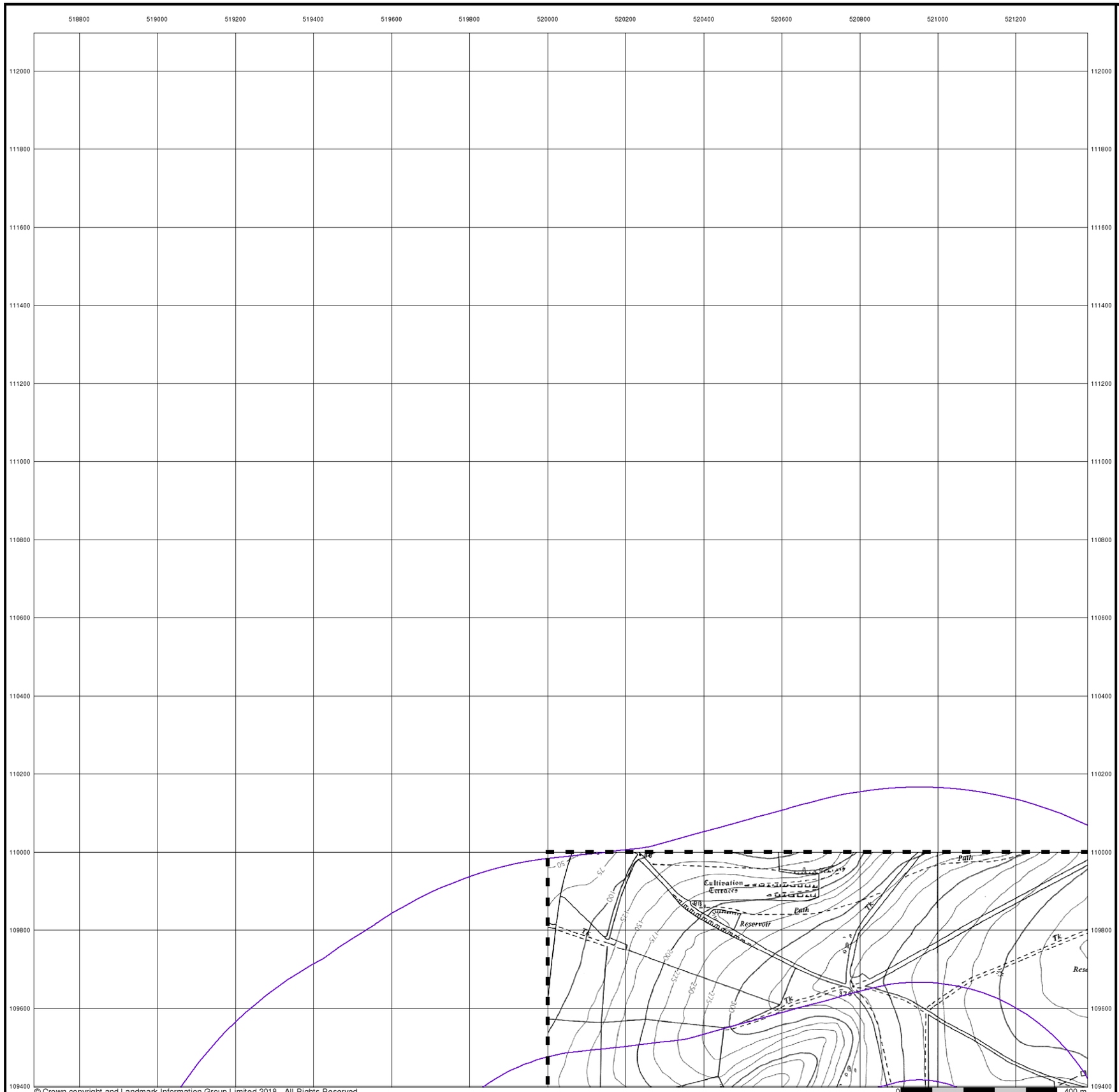

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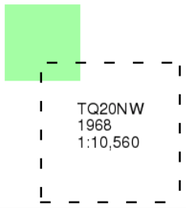
Ordnance Survey Plan

Published 1968

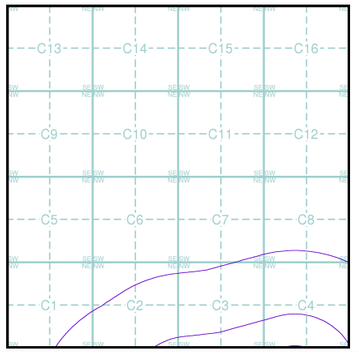
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice C



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
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Slice:	C
Site Area (Ha):	44.36
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Site Details

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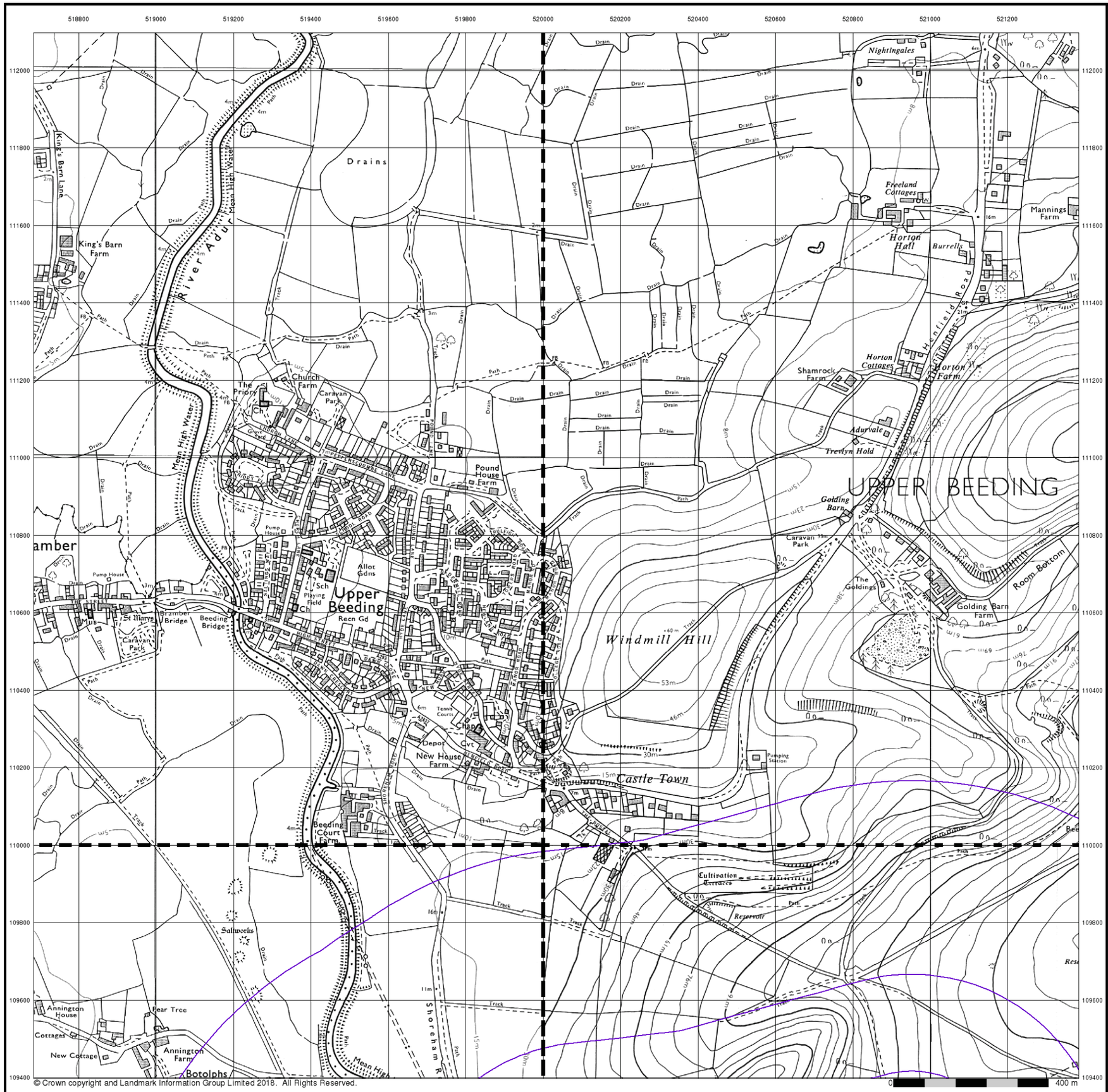

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Ordnance Survey Plan

Published 1972 - 1977

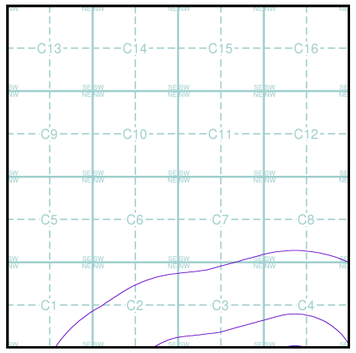
Source map scale - 1:10,000

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)

TQ11SE 1977 1:10,000	TQ21SW 1976 1:10,000
TQ10NE 1975 1:10,000	TQ20NW 1972 1:10,000

Historical Map - Slice C



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520430, 109710
Slice:	C
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

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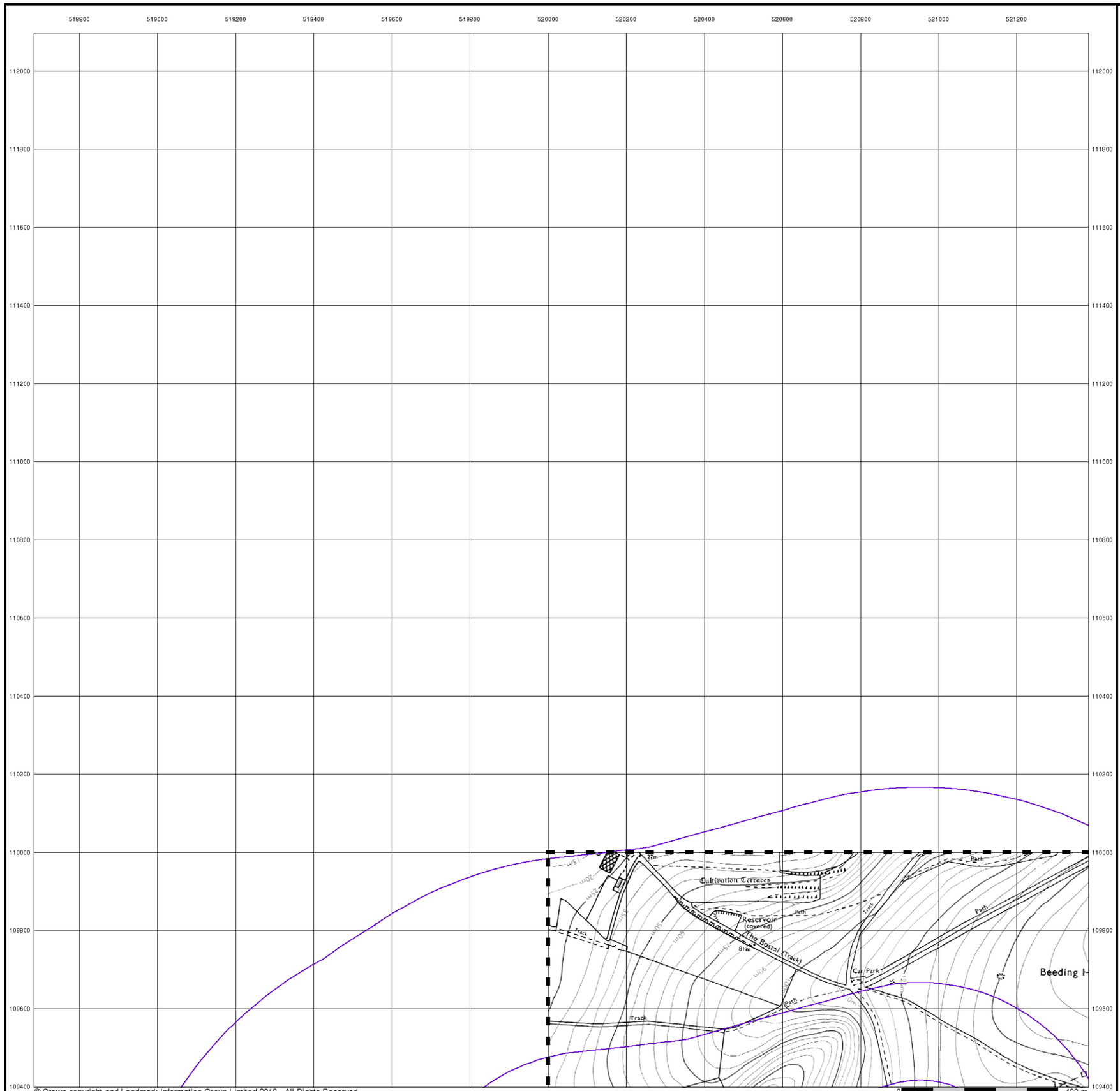

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Ordnance Survey Plan

Published 1984

Source map scale - 1:10,000

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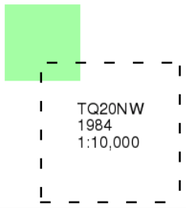
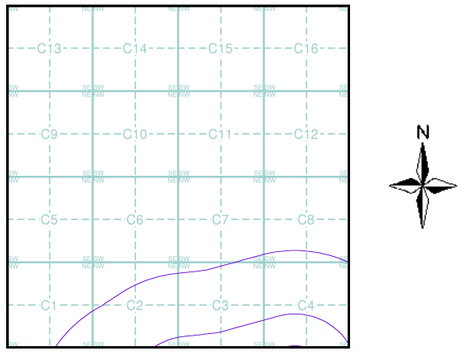
Map Name(s) and Date(s)



Historical Map - Slice C



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520430, 109710
Slice:	C
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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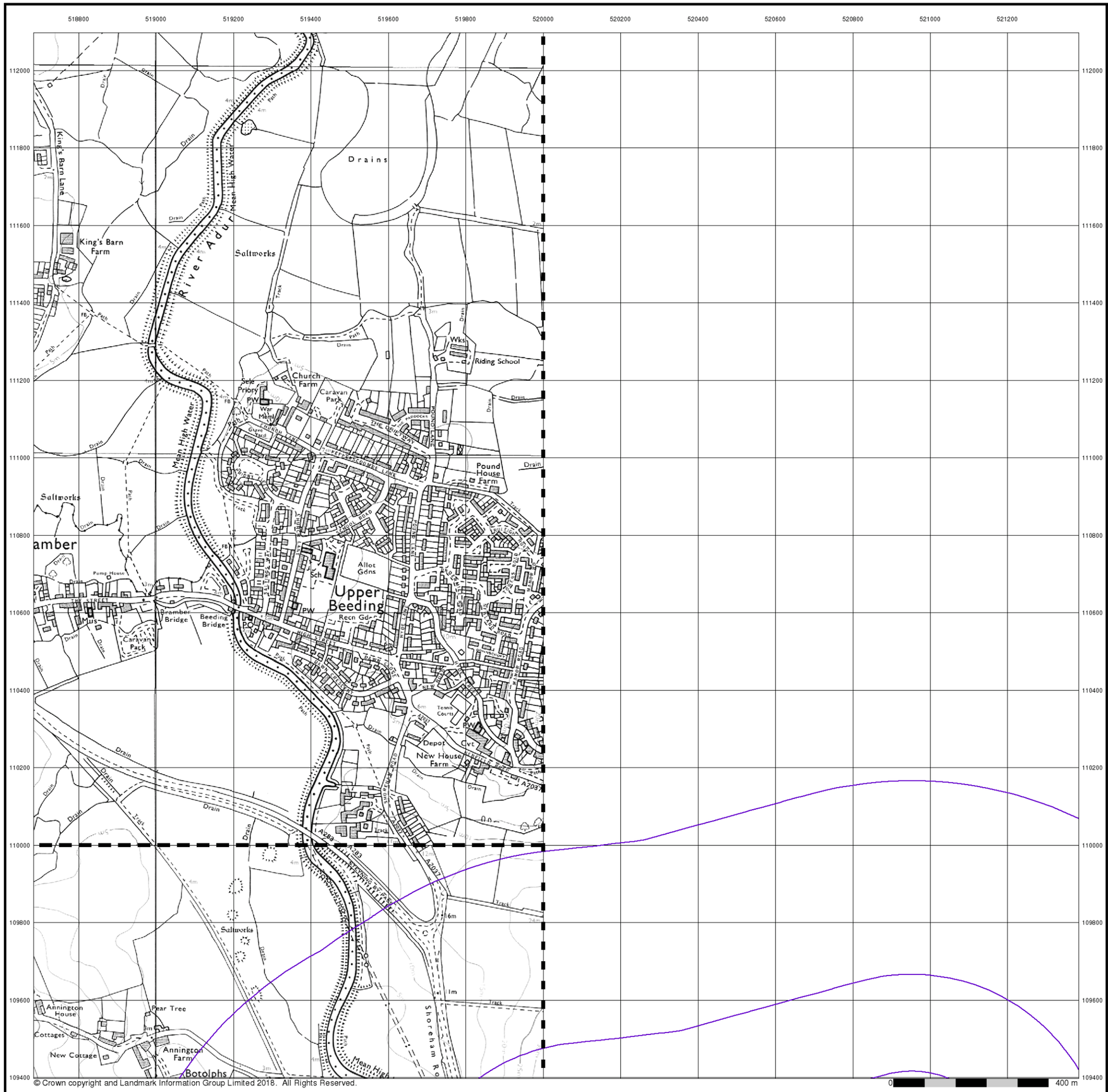

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Ordnance Survey Plan

Published 1990 - 1993

Source map scale - 1:10,000

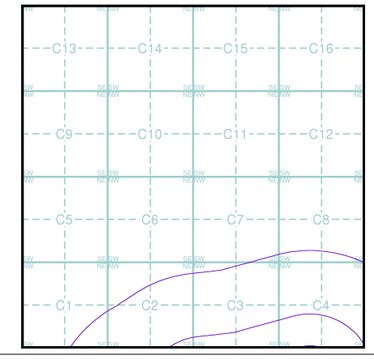
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

Map Name(s) and Date(s)

TQ11SE
1993
1:10,000

TQ10NE
1990
1:10,000

Historical Map - Slice C



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520430, 109710
Slice:	C
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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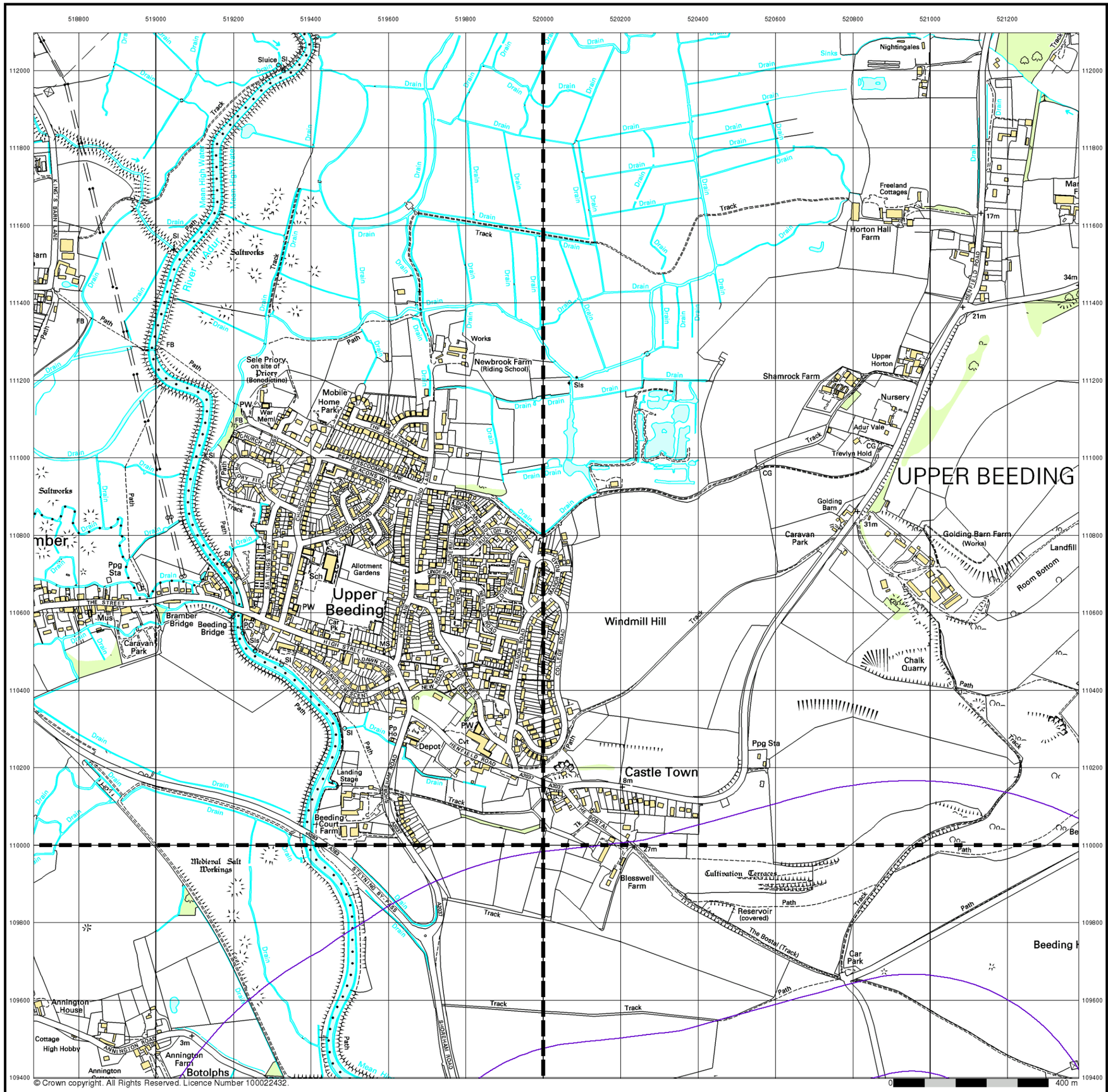

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LANDMARK INFORMATION GROUP®

10k Raster Mapping

Published 2000

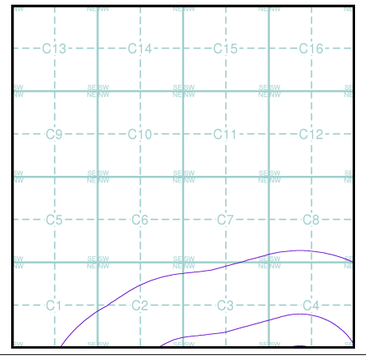
Source map scale - 1:10,000

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)

TQ11SE 2000 1:10,000	TQ21SW 2000 1:10,000
TQ10NE 2000 1:10,000	TQ20NW 2000 1:10,000

Historical Map - Slice C



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520430, 109710
Slice:	C
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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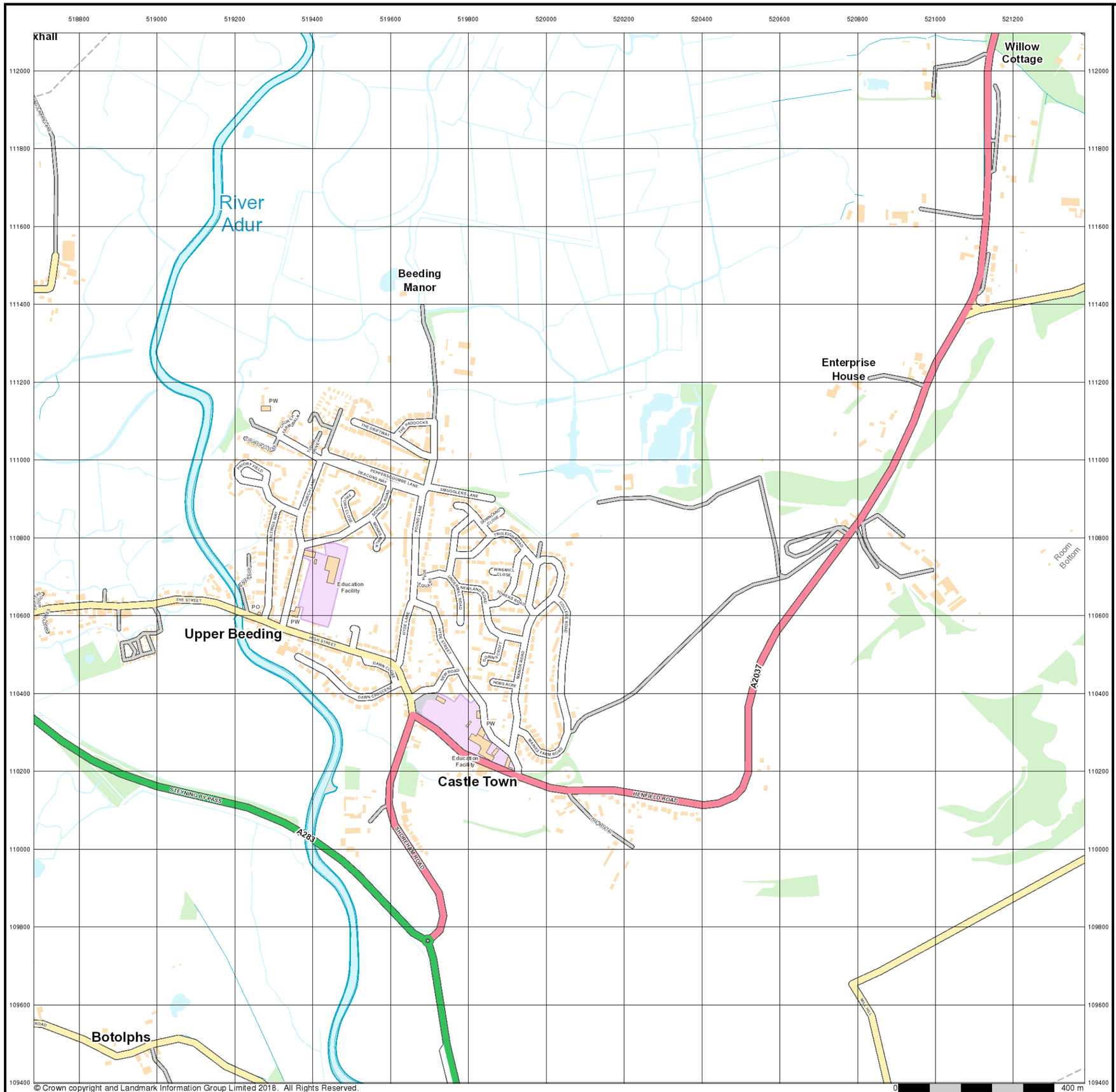

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LANDMARK INFORMATION GROUP®

Street View

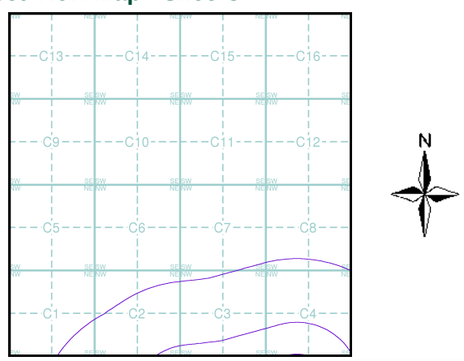
Published 2018

Source map scale - 1:10,000

Street View is a street-level map for the whole of Great Britain produced by the Ordnance Survey. These maps are provided at a nominal scale of 1:10,000

Map Name(s) and Date(s)

Street View Map - Slice C



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520430, 109710
Slice:	C
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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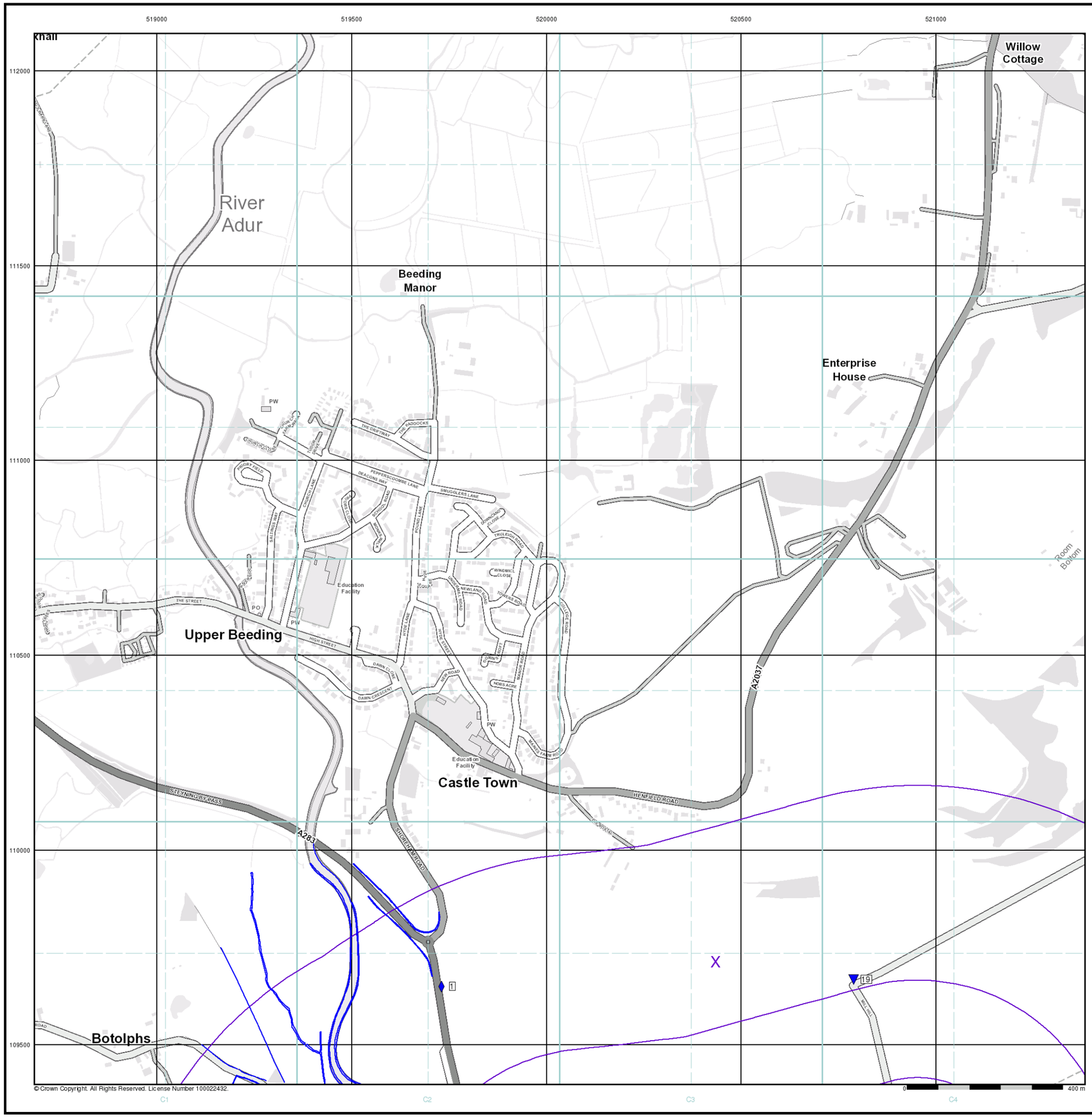

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LANDMARK INFORMATION GROUP®

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Geological

- BGS Recorded Mineral Site

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry

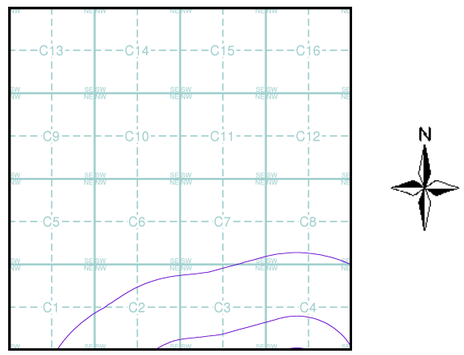
Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Site Sensitivity Map - Slice C



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520430, 109710
Slice:	C
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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

519000 519500 520000 520500 521000

112000 111500 111000 110500 110000 109500

C16 C12 C8 C4

C1 C2 C3 C4

Willow Cottage

River Adur

Beeding Manor

Enterprise House

Upper Beeding

Castle Town

Botolphs

Education Facility

PW

PO

THE STREET

HIGH STREET

STEYNING BYPASS

A283

A2037

HENFIELD ROAD

SHOREHAM ROAD

X

0 400 m

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Industrial Land Use Map

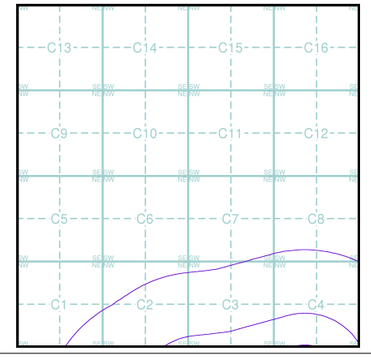
General

Specified Site
Specified Buffer(s)
Bearing Reference Point
Slice
Map ID

Industrial Land Use

Contemporary Trade Directory Entry
Fuel Station Entry
Gas Pipeline
Underground Electrical Cables

Industrial Land Use Map - Slice C



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520430, 109710
Slice:	C
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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519000 519500 520000 520500 521000

112000 111500 111000 110500 110000 109500

C16 C12 C8 C4

Knall

River Adur

Beeding Manor

Willow Cottage

Enterprise House

Upper Beeding

Castle Town

Botolphs

Education Facility

Education Facility

PW PW PW PW PO PO

THE STREET HIGH STREET

THE GRUTNAY THE PADDOCKS

PEPPERDODDIMER LANE SMUGGLERS LANE

DAWN CLOSE DAWN CRESCENT

MILL ROAD MANOR ROAD

HENFIELD ROAD

SHOOTER'S FARM ROAD

A2037

A283

STEYNING BY-PASS

Room Bottom

X

C1 C2 C3 C4

0 400 m

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LANDMARK INFORMATION GROUP®

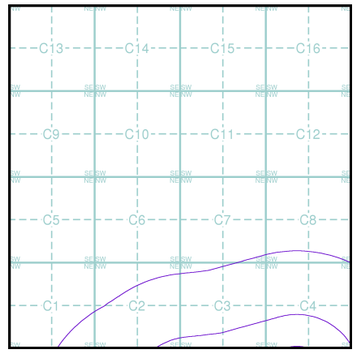
General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice C



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Search Buffer (m):	1000

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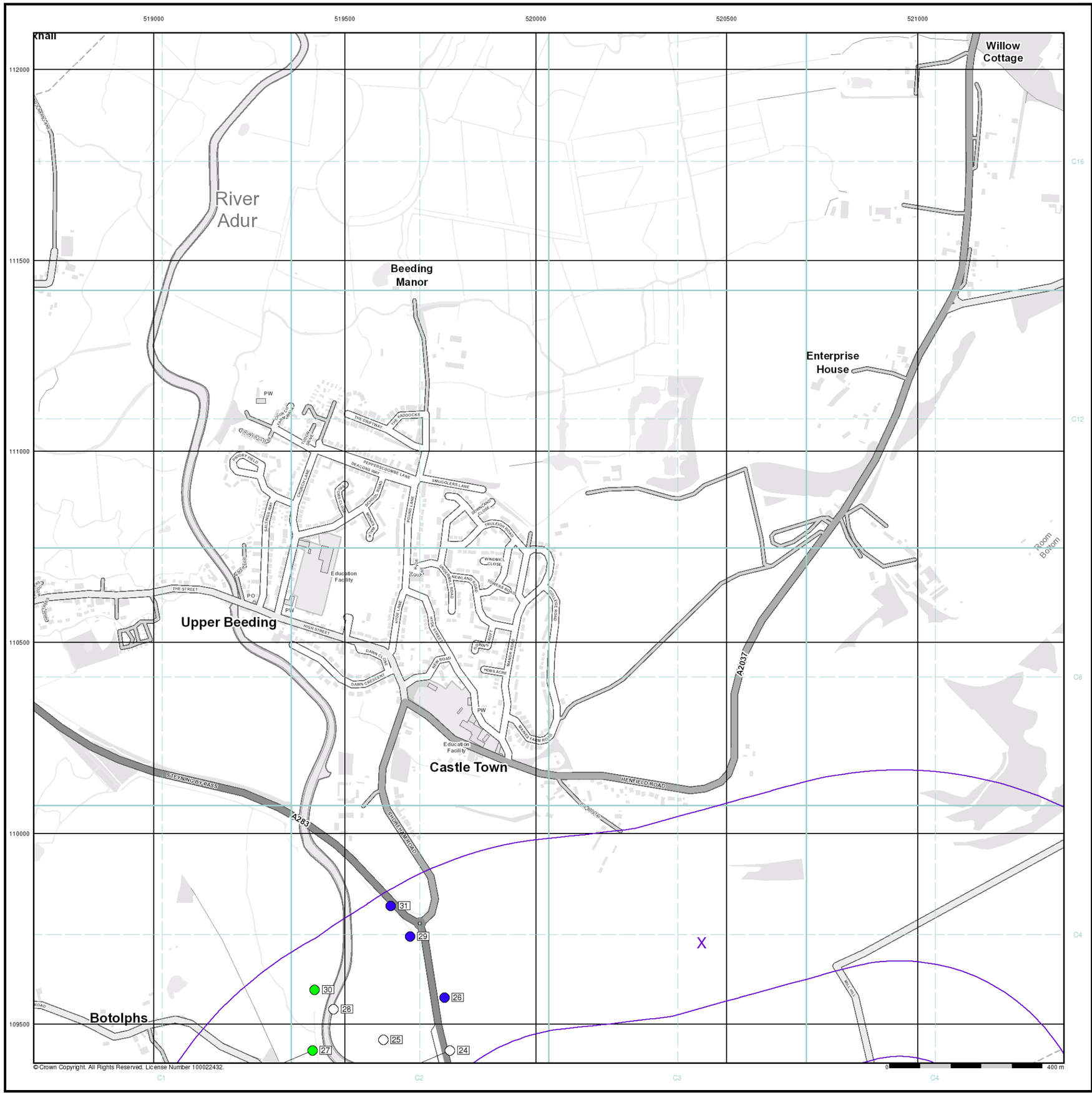

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LANDMARK INFORMATION GROUP®

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

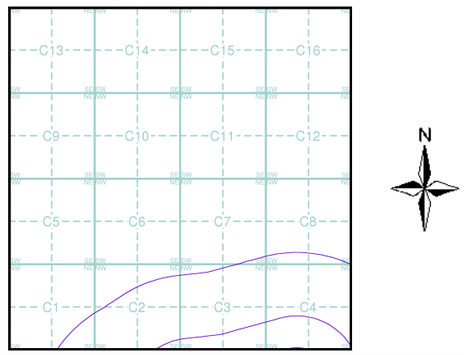
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice C



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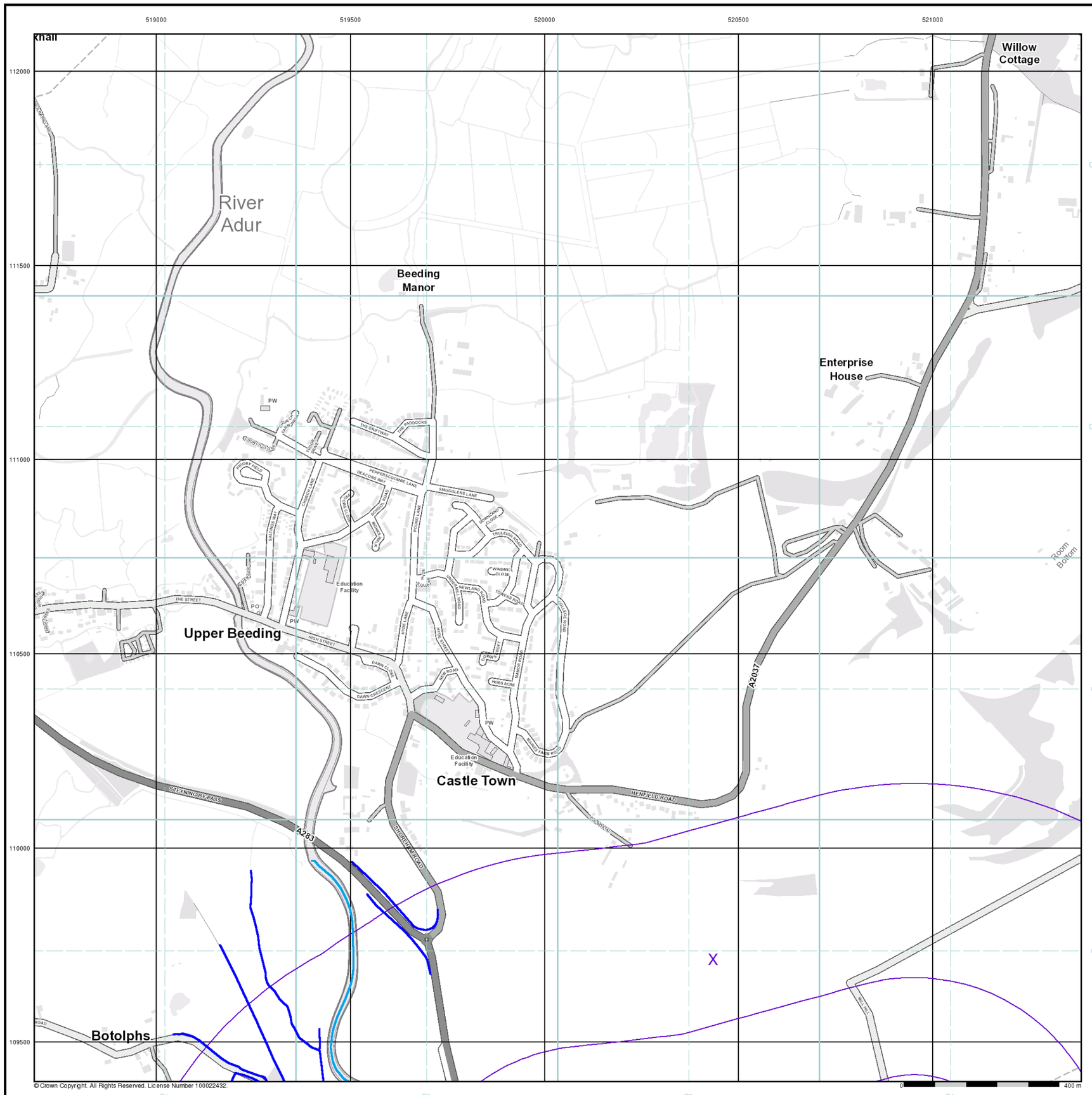


Envirocheck®

LANDMARK INFORMATION GROUP®

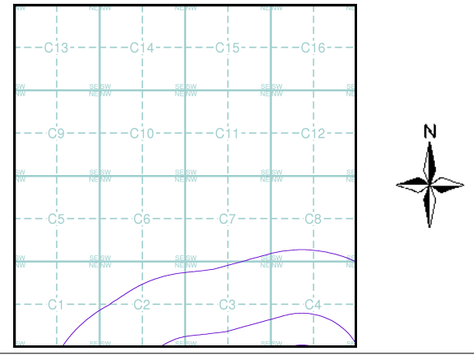
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

OS Water Network Data

- Canal
- Reservoir
- Foreshore
- Marsh
- Tidal River
- Inland River
- Drain
- Other
- Lake
- Transfer
- Lock Or Flight Of Locks
- Sea

OS Water Network Map - Slice C



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	520430, 109710
Slice:	C
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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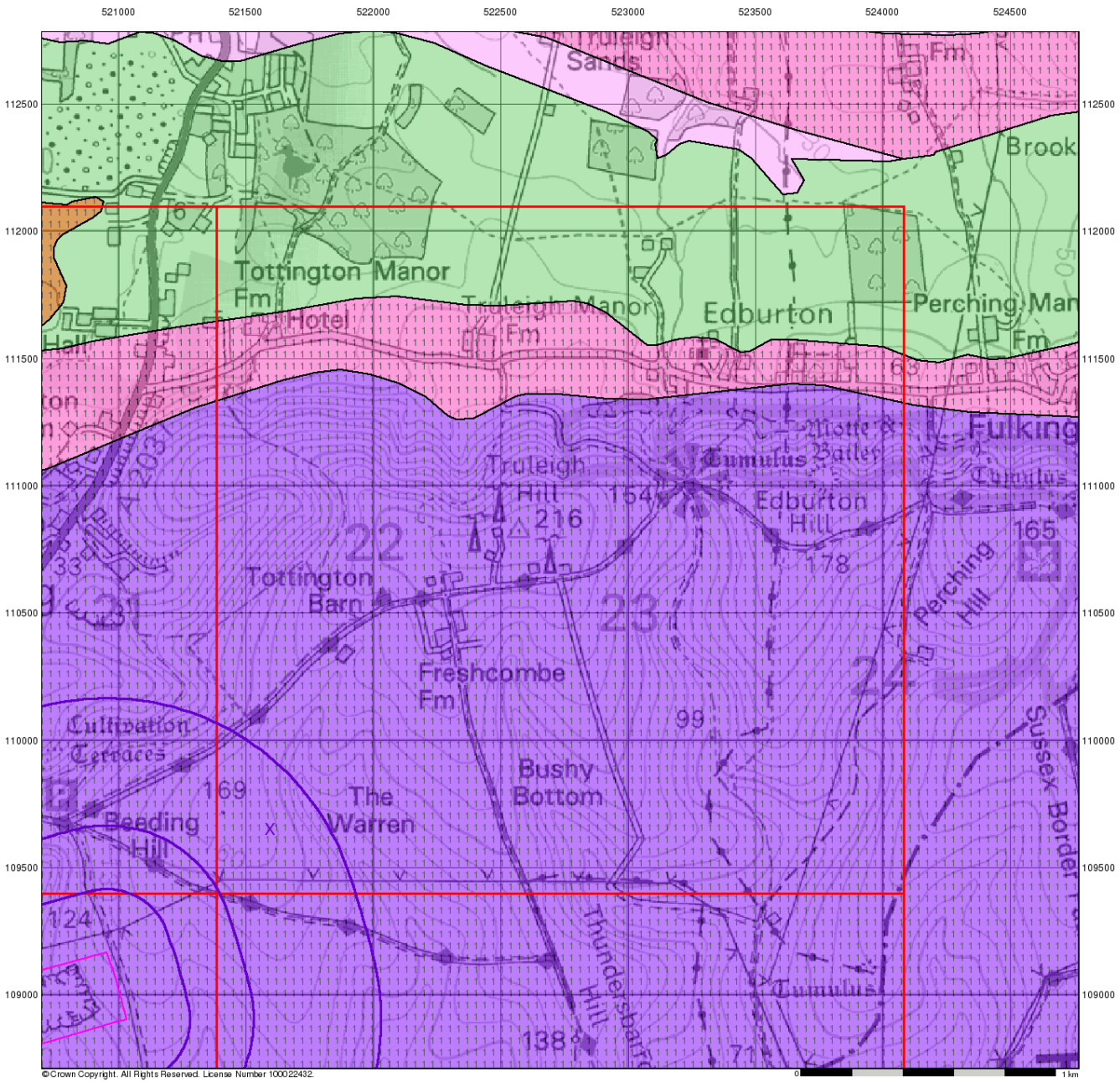

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Groundwater Vulnerability

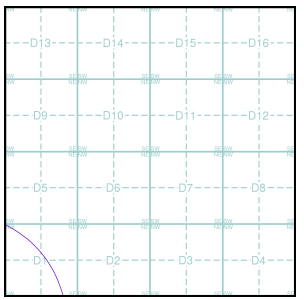
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes	Soil Classes
Major Aquifer (Highly Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Minor Aquifer (Variably Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Non Aquifer (Negligibly Permeable)	
Water or Sea	
Drift Deposit	

Site Sensitivity Context Map - Slice D



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	521590, 109650
Slice:	D
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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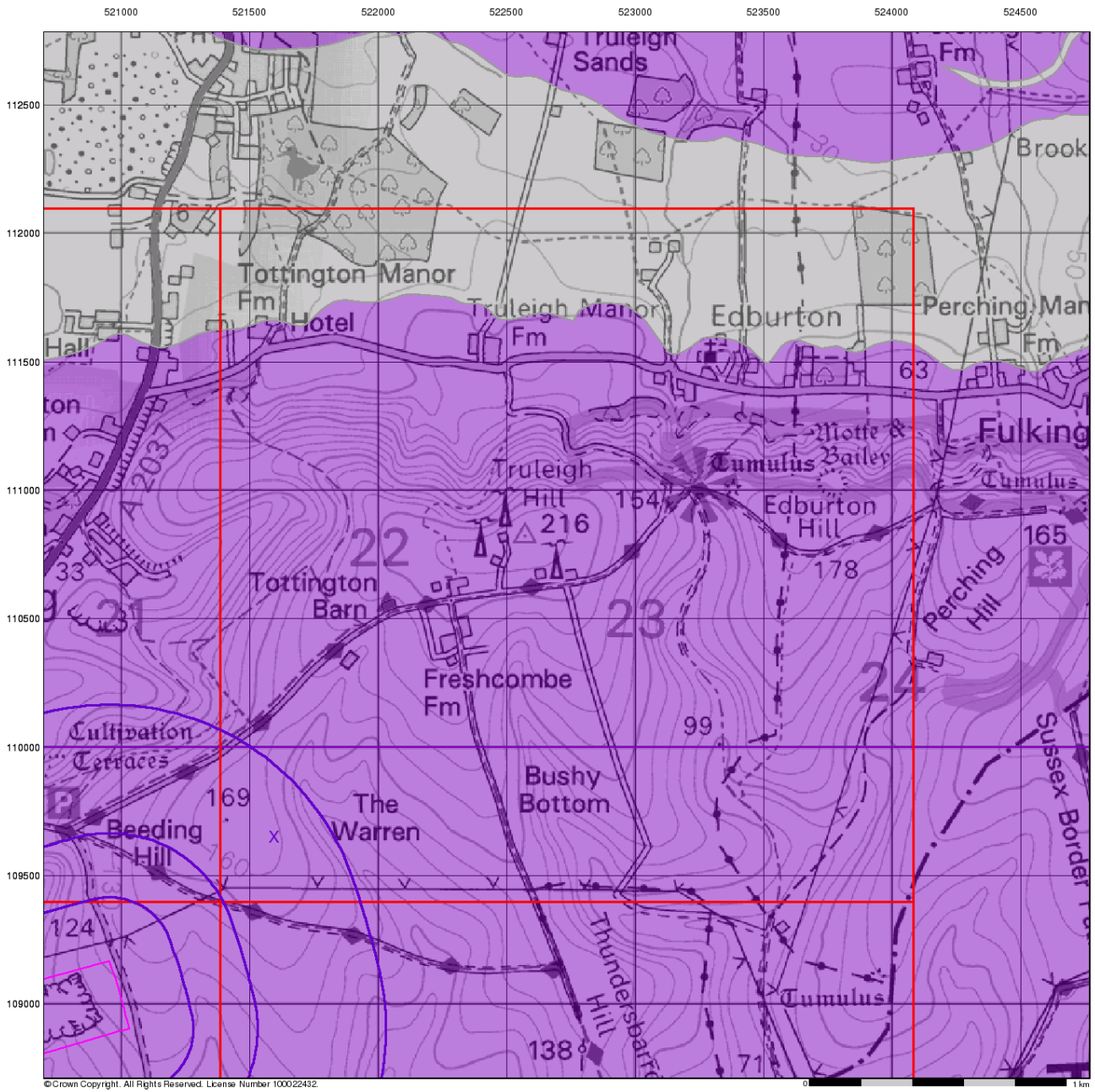

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Bedrock Aquifer Designation

General

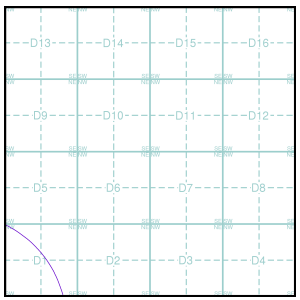
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice D



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	521590, 109650
Slice:	D
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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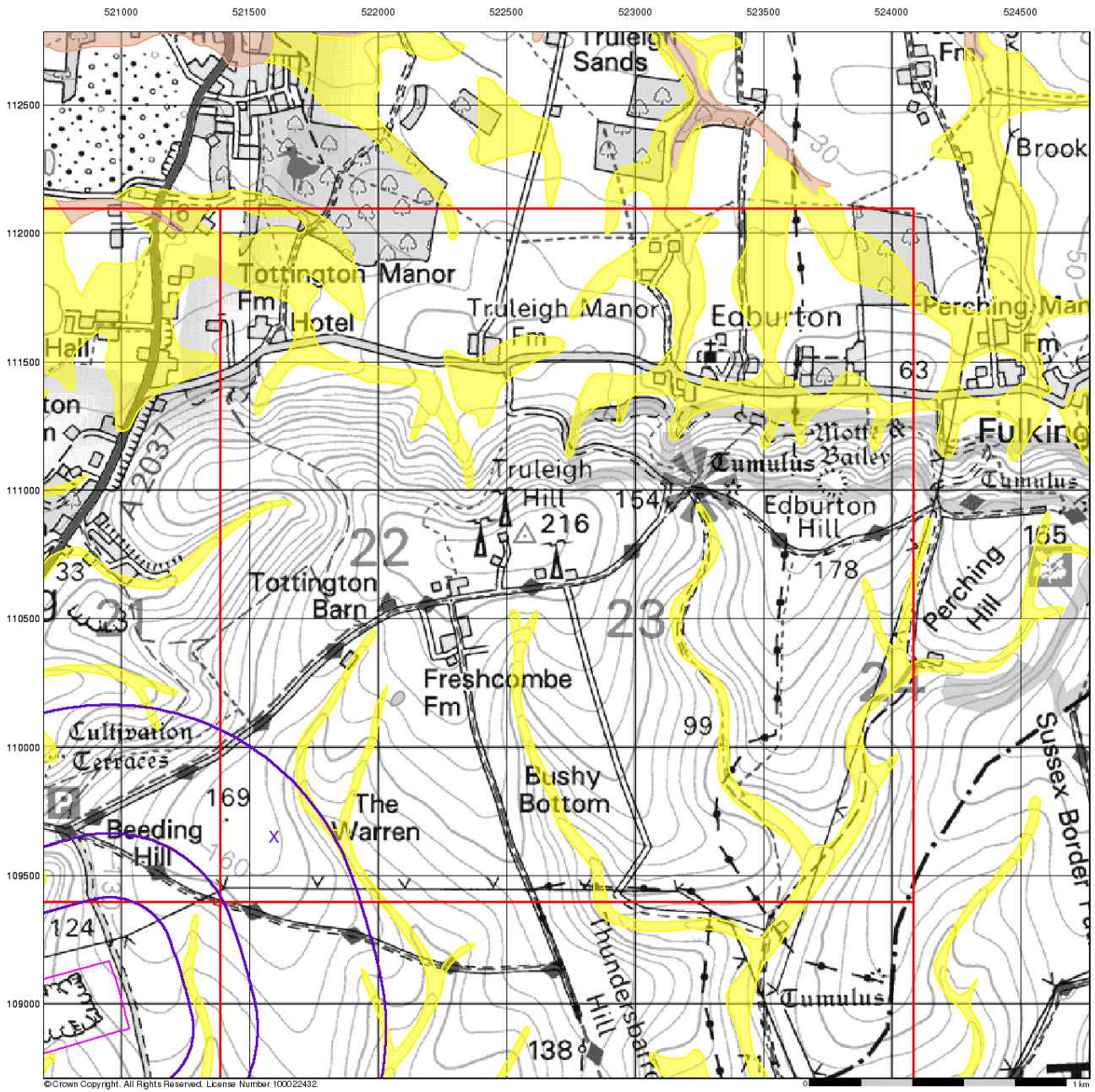

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Superficial Aquifer Designation

General

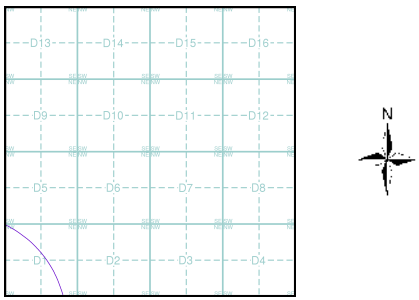
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice D



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	521590, 109650
Slice:	D
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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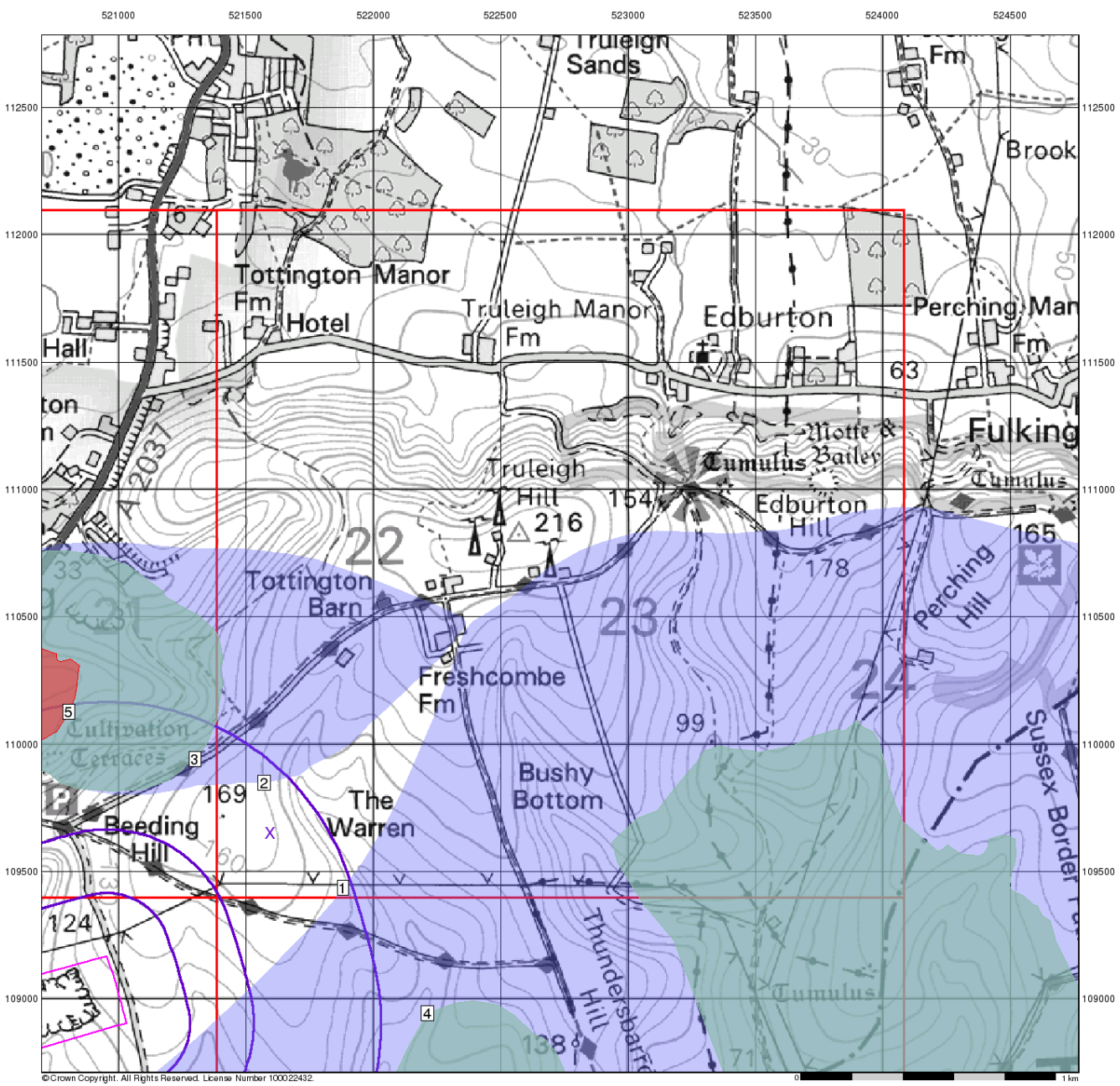

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Source Protection Zones

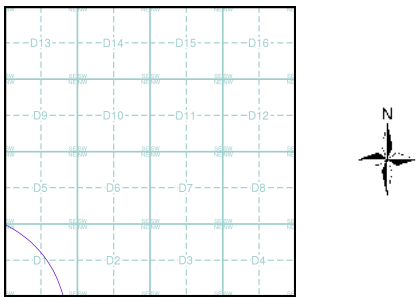
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)

Site Sensitivity Context Map - Slice D



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	521590, 109650
Slice:	D
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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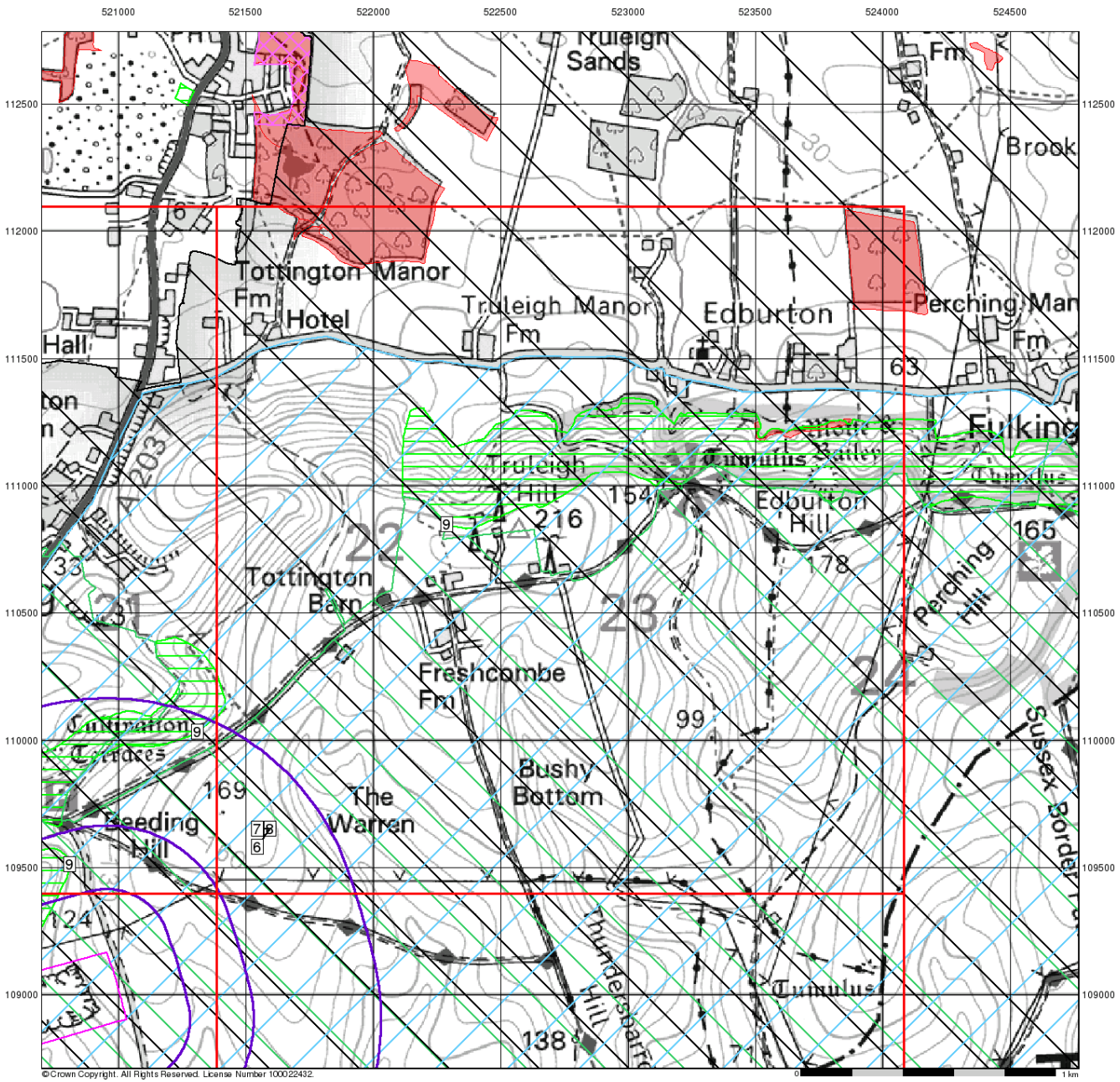
Web: www.envirocheck.co.uk



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Sensitive Land Uses

General

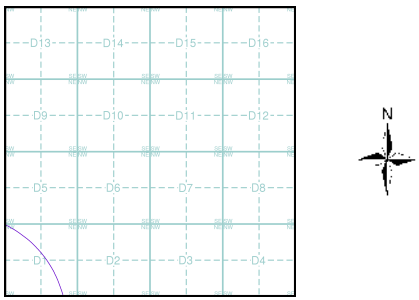
Specified Site | Specified Buffer(s) | Bearing Reference Point

Slice | Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice D



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	521590, 109650
Slice:	D
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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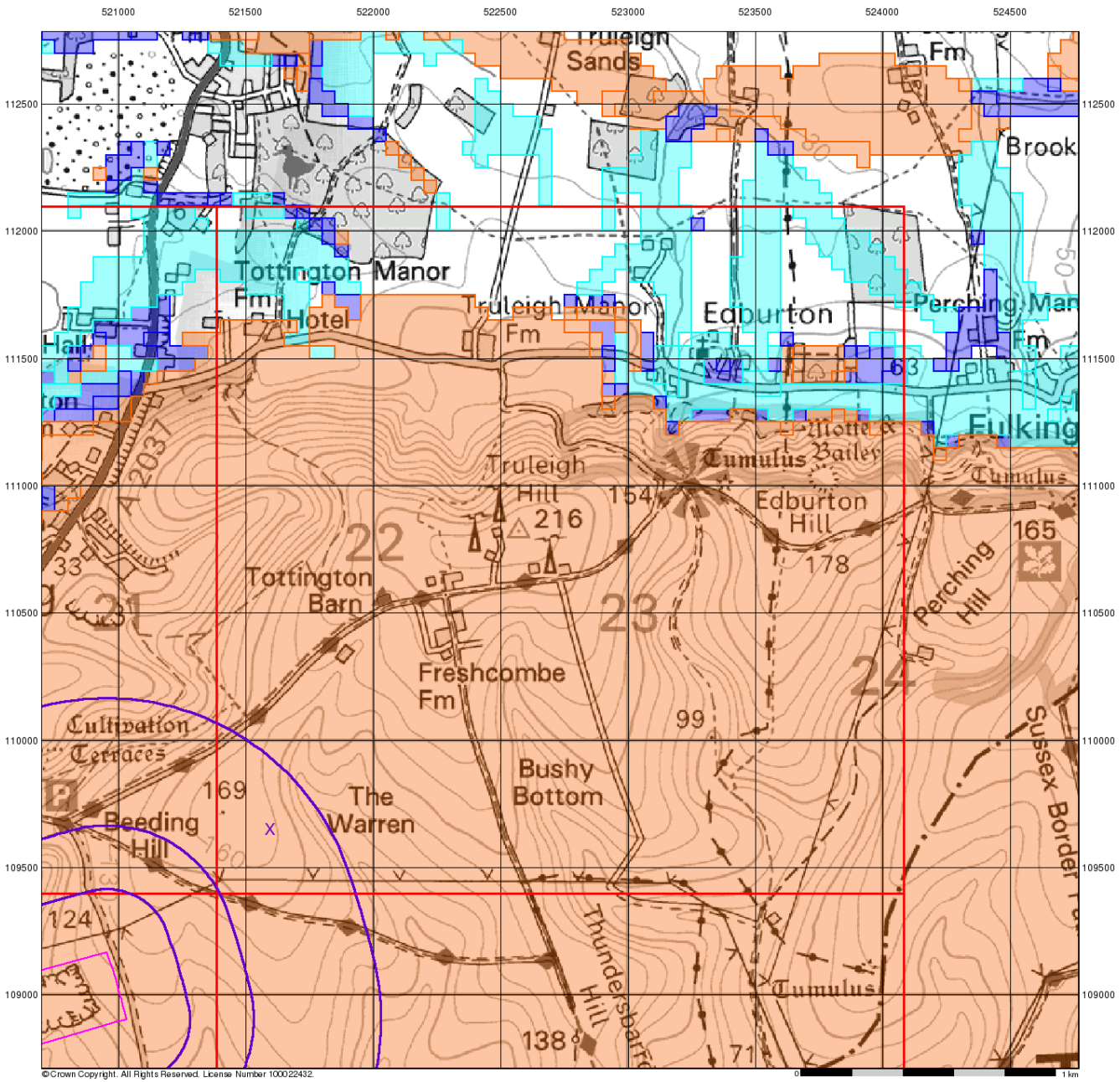

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BGS Flood GFS Data

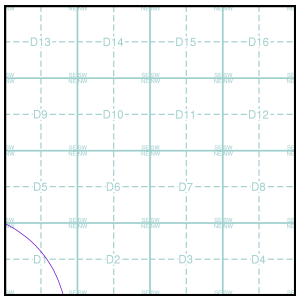
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice D



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	521590, 109650
Slice:	D
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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Envirocheck® Report:

Datasheet

Order Details:

Order Number:
170375371_1_1

Customer Reference:
2018s0642

National Grid Reference:
521590, 109650

Slice:
D

Site Area (Ha):
44.36

Search Buffer (m):
1000

Site Details:

Site at 520371,108723

Client Details:

Miss A Davis
JBA Consulting
Salt Mill
Saltaire
West Yorkshire
BD18 3LF

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Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.
In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Report Version v53.0

Contents

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes			n/a
Contaminated Land Register Entries and Notices					
Discharge Consents					
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls					
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature					
Pollution Incidents to Controlled Waters					
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 1				(*1)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 1	Yes	n/a	n/a	n/a
Drift Deposits			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 1	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 1	Yes	n/a	n/a	n/a
Source Protection Zones	pg 1		1		4
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines					

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 3	2	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS 1:625,000 Solid Geology	pg 4	Yes	n/a	n/a	n/a
BGS Recorded Mineral Sites					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 4	Yes		n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 4	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 4	Yes		n/a	n/a
Potential for Landslide Ground Stability Hazards				n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 4	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards				n/a	n/a
Radon Potential - Radon Affected Areas	pg 4	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Industrial Land Use					
Contemporary Trade Directory Entries					
Fuel Station Entries					
Gas Pipelines					
Underground Electrical Cables					
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas	pg 5	1			
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks	pg 5	1			
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 5	1			
Ramsar Sites					
Sites of Special Scientific Interest	pg 5	1			
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	D1SW (W)	0	1	521593 109654
	Nearest Surface Water Feature None				
	Water Abstractions Operator: West Sussex County Council Licence Number: 10/41/311201 Permit Version: 100 Location: Tottington Barn Authority: Environment Agency, Southern Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Land And Buildings At Tottington Barn, Truleigh Hill, Shoreham-By-Sea. Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 23rd September 1993 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	D5NE (NE)	1634	2	522000 110420
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (H1) - Soils which readily transmit liquid discharges because they are either shallow, or susceptible to rapid by-pass flow directly to rock, gravel or groundwater Map Sheet: Sheet 46 East Sussex Scale: 1:100,000	D1SW (W)	0	2	521593 109654
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	D1SW (W)	0	1	521593 109654
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	D1NW (NE)	0	1	521715 109755
1	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	D1SE (SE)	222	2	521881 109434
2	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	D1NW (N)	637	2	521569 109848
3	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone II (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.	(NW)	651	2	521300 109942
4	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone II (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.	(SE)	678	2	522211 108942
5	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone I (Inner Protection Zone): Travel time of 50 days or less to the groundwater source.	(NW)	888	2	520803 110128
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
	OS Water Network Lines None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Local Authority Landfill Coverage Name: Horsham District Council - Has supplied landfill data		0	3	521593 109654
	Local Authority Landfill Coverage Name: West Sussex County Council - Has supplied landfill data		0	4	521593 109654

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: White Chalk Subgroup	D1SW (W)	0	1	521593 109654
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	D1SW (W)	0	1	521593 109654
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	D1SW (W)	0	1	521593 109654
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	D1SW (W)	0	1	521593 109654
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	D1SW (W)	0	1	521593 109654
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	D1SW (W)	0	1	521593 109654
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	D1SW (W)	0	1	521593 109654
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	D1NW (NE)	0	1	521715 109755
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	D1SW (W)	0	1	521593 109654
	Radon Potential - Radon Affected Areas Affected Area: The property is in an Intermediate probability radon area (1 to 3% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	D1SW (W)	0	1	521593 109654
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	D1SW (W)	0	1	521593 109654

Sensitive Land Use

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	**Environmentally Sensitive Areas** Name: South Downs (decommissioned) Multiple Areas: N Total Area (m2): 690432994.81 Source: Natural England	D1SW (W)	0	5	521593 109654
7	**National Parks** Name: South Downs Multiple Area: N Area (m2): 1652679314.3 Source: Natural England **Status: Fully Designated - designated as a National Park** Designation Date: 2nd November 2009	D1SW (W)	0	5	521593 109654
8	**Nitrate Vulnerable Zones** Name: Sussex Chalk Description: Groundwater Source: Environment Agency, Head Office	D1SW (W)	0	6	521593 109654
9	**Sites of Special Scientific Interest** Name: Beeding Hill To Newtimber Hill Multiple Areas: Y Total Area (m2): 3209597.86 Source: Natural England Reference: 1000374 Designation Details: Geological Conservation Review Designation Date: 10th November 1986 Date Type: Notified Designation Details: Local Wildlife Site Designation Date: 10th November 1986 Date Type: Notified Designation Details: Nature Conservation Review Designation Date: 10th November 1986 Date Type: Notified Designation Details: Site Of Special Scientific Interest Designation Date: 10th November 1986 Date Type: Notified	(W)	0	5	520807 109513

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Horsham District Council - Environmental Health Department	February 2015	Annual Rolling Update
Adur District Council - Environmental Health Department	March 2014	Annual Rolling Update
Brighton & Hove City Council - Environmental Health Department	March 2015	Annual Rolling Update
Mid Sussex District Council - Environmental Services Section	November 2014	Annual Rolling Update
Discharge Consents		
Environment Agency - Southern Region	April 2018	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Southern Region	March 2013	As notified
Integrated Pollution Controls		
Environment Agency - Southern Region	October 2008	Variable
Integrated Pollution Prevention And Control		
Environment Agency - South East Region - Solent & South Downs Area	April 2018	Quarterly
Environment Agency - Southern Region	April 2018	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Horsham District Council - Environmental Health Department	June 2015	Variable
Brighton & Hove City Council - Environmental Health Department	November 2013	Variable
Adur District Council - Environmental Health Department	November 2014	Variable
Mid Sussex District Council - Environmental Services Section	September 2014	Variable
Local Authority Pollution Prevention and Controls		
Brighton & Hove City Council - Environmental Health Department	August 2015	Annual Rolling Update
Horsham District Council - Environmental Health Department	June 2015	Annual Rolling Update
Adur District Council - Environmental Health Department	November 2014	Annual Rolling Update
Mid Sussex District Council - Environmental Services Section	September 2014	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Brighton & Hove City Council - Environmental Health Department	August 2015	Variable
Horsham District Council - Environmental Health Department	June 2015	Variable
Adur District Council - Environmental Health Department	November 2014	Variable
Mid Sussex District Council - Environmental Services Section	September 2014	Variable
Nearest Surface Water Feature		
Ordnance Survey	September 2017	
Pollution Incidents to Controlled Waters		
Environment Agency - Southern Region	December 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Southern Region	March 2013	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - Southern Region	March 2013	As notified
Registered Radioactive Substances		
Environment Agency - Southern Region	January 2015	
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency - South East Region - Solent & South Downs Area	April 2018	Quarterly
Environment Agency - Southern Region - Kent and East Sussex	April 2018	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2018	Quarterly
Environment Agency - Southern Region - Sussex Area	April 2018	Quarterly
Water Abstractions		
Environment Agency - Southern Region	April 2018	Quarterly

Data Currency

Agency & Hydrological	Version	Update Cycle
Water Industry Act Referrals Environment Agency - Southern Region	October 2017	Quarterly
Groundwater Vulnerability Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Superficial Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Source Protection Zones Environment Agency - Head Office	January 2018	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	May 2018	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	May 2018	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	May 2018	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	May 2018	Quarterly
Flood Defences Environment Agency - Head Office	May 2018	Quarterly
OS Water Network Lines Ordnance Survey	May 2018	Quarterly
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	As notified

Data Currency

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	April 2018	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Southern Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - South East Region - Solent & South Downs Area	April 2018	Quarterly
Environment Agency - Southern Region - Kent and East Sussex	April 2018	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2018	Quarterly
Environment Agency - Southern Region - Sussex Area	April 2018	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - South East Region - Solent & South Downs Area	April 2018	Quarterly
Environment Agency - Southern Region - Kent and East Sussex	April 2018	Quarterly
Environment Agency - Southern Region - Solent and South Downs	April 2018	Quarterly
Environment Agency - Southern Region - Sussex Area	April 2018	Quarterly
Local Authority Landfill Coverage		
Adur District Council	May 2000	Not Applicable
Brighton & Hove City Council - Environmental Health Department	May 2000	Not Applicable
Horsham District Council - Environmental Health Department	May 2000	Not Applicable
Mid Sussex District Council - Environmental Services Section	May 2000	Not Applicable
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Brighton & Hove City Council - Environmental Health Department	April 2003	Not Applicable
Adur District Council	May 2000	Not Applicable
Horsham District Council - Environmental Health Department	May 2000	Not Applicable
Mid Sussex District Council - Environmental Services Section	May 2000	Not Applicable
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Registered Landfill Sites		
Environment Agency - Southern Region - Kent and East Sussex	March 2003	Not Applicable
Environment Agency - Southern Region - Solent and South Downs	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Southern Region - Kent and East Sussex	March 2003	Not Applicable
Environment Agency - Southern Region - Solent and South Downs	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Southern Region - Kent and East Sussex	March 2003	Not Applicable
Environment Agency - Southern Region - Solent and South Downs	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	September 2017	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	Variable
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Horsham District Council - Planning Department	August 2015	Variable
Adur District Council	February 2016	Variable
Brighton & Hove City Council	February 2016	Variable
Mid Sussex District Council	January 2016	Variable
West Sussex County Council - Environment & Development	October 2006	Annual Rolling Update
Planning Hazardous Substance Consents		
Horsham District Council - Planning Department	August 2015	Variable
Adur District Council	February 2016	Variable
Brighton & Hove City Council	February 2016	Variable
Mid Sussex District Council	January 2016	Variable
West Sussex County Council - Environment & Development	October 2006	Annual Rolling Update

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology		
British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Recorded Mineral Sites		
British Geological Survey - National Geoscience Information Service	May 2018	Bi-Annually
CBSCB Compensation District		
Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas		
The Coal Authority - Property Searches	March 2014	As notified
Mining Instability		
Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain		
British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Compressible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Ground Dissolution Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Landslide Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Running Sand Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Radon Potential - Radon Affected Areas		
British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures		
British Geological Survey - National Geoscience Information Service	July 2011	As notified

Data Currency

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	May 2018	Quarterly
Fuel Station Entries Catalist Ltd - Experian	April 2018	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Underground Electrical Cables National Grid	December 2015	Bi-Annually
Sensitive Land Use	**Version**	**Update Cycle**
Ancient Woodland Natural England	October 2017	Bi-Annually
Areas of Adopted Green Belt Mid Sussex District Council	February 2018	As notified
Areas of Unadopted Green Belt Mid Sussex District Council	February 2018	As notified
Areas of Outstanding Natural Beauty Natural England	February 2018	Bi-Annually
Environmentally Sensitive Areas Natural England	January 2017	
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	February 2018	Bi-Annually
Marine Nature Reserves Natural England	January 2018	Bi-Annually
National Nature Reserves Natural England	February 2018	Bi-Annually
National Parks Natural England	April 2017	Bi-Annually
Nitrate Vulnerable Zones Environment Agency - Head Office Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	December 2017 October 2015	Bi-Annually
Ramsar Sites Natural England	February 2018	Bi-Annually
Sites of Special Scientific Interest Natural England	February 2018	Bi-Annually
Special Areas of Conservation Natural England	January 2018	Bi-Annually
Special Protection Areas Natural England	February 2018	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Useful Contacts

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	**Horsham District Council - Environmental Health Department** Park House, North Street, Horsham, Sussex, RH12 1RL	Telephone: 01403 215100 Fax: 01403 732790 Website: www.horsham.gov.uk
4	**West Sussex County Council - Environment & Development** County Hall, Tower hall, Chichester, West Sussex, PO19 1RH	Telephone: 01243 777100 Website: www.westsussex.gov.uk
5	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
6	**Environment Agency - Head Office** Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.

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
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
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
Co. Boro. Bdy.
County Borough Boundary (England)
Co. Burgh Bdy.
County Burgh Boundary (Scotland)
R.D. Bdy.
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
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Pylon
Electricity Transmission Line
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
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
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Mud
Sand
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
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m 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

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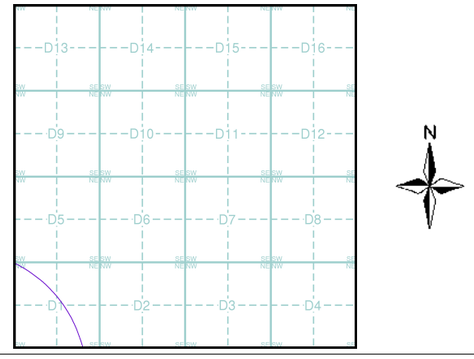
Historical Mapping & Photography included:

Historical Map - Slice D



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Site Details

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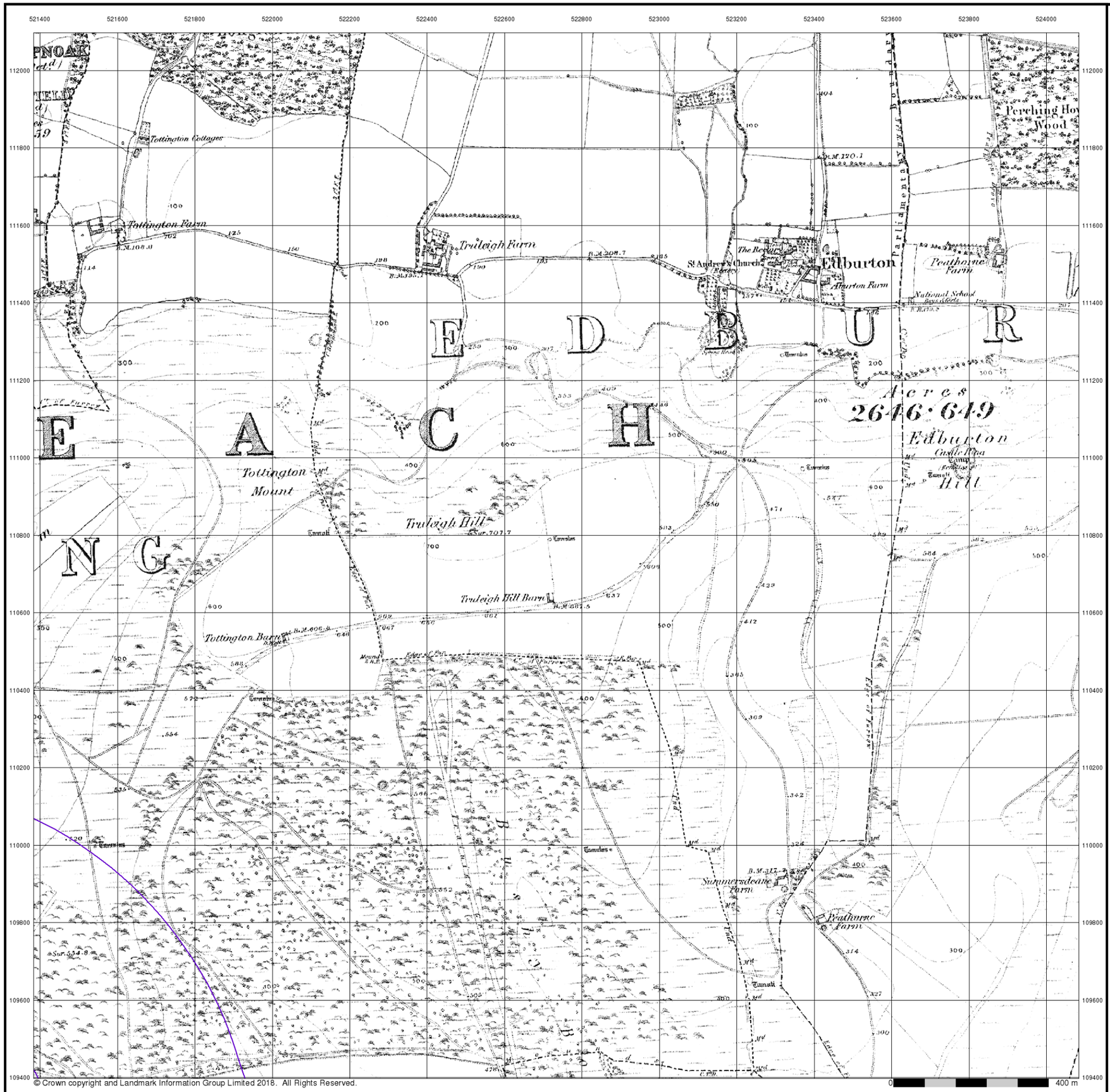

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Published 1879

Source map scale - 1:10,560

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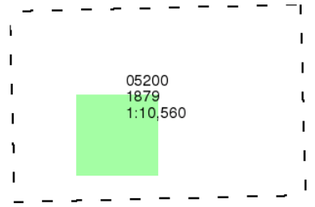
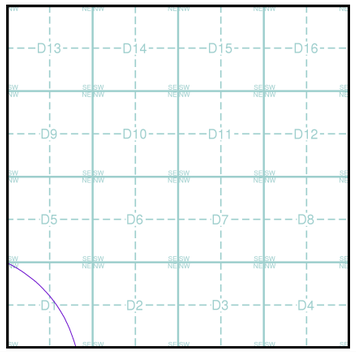
Map Name(s) and Date(s)



Historical Map - Slice D



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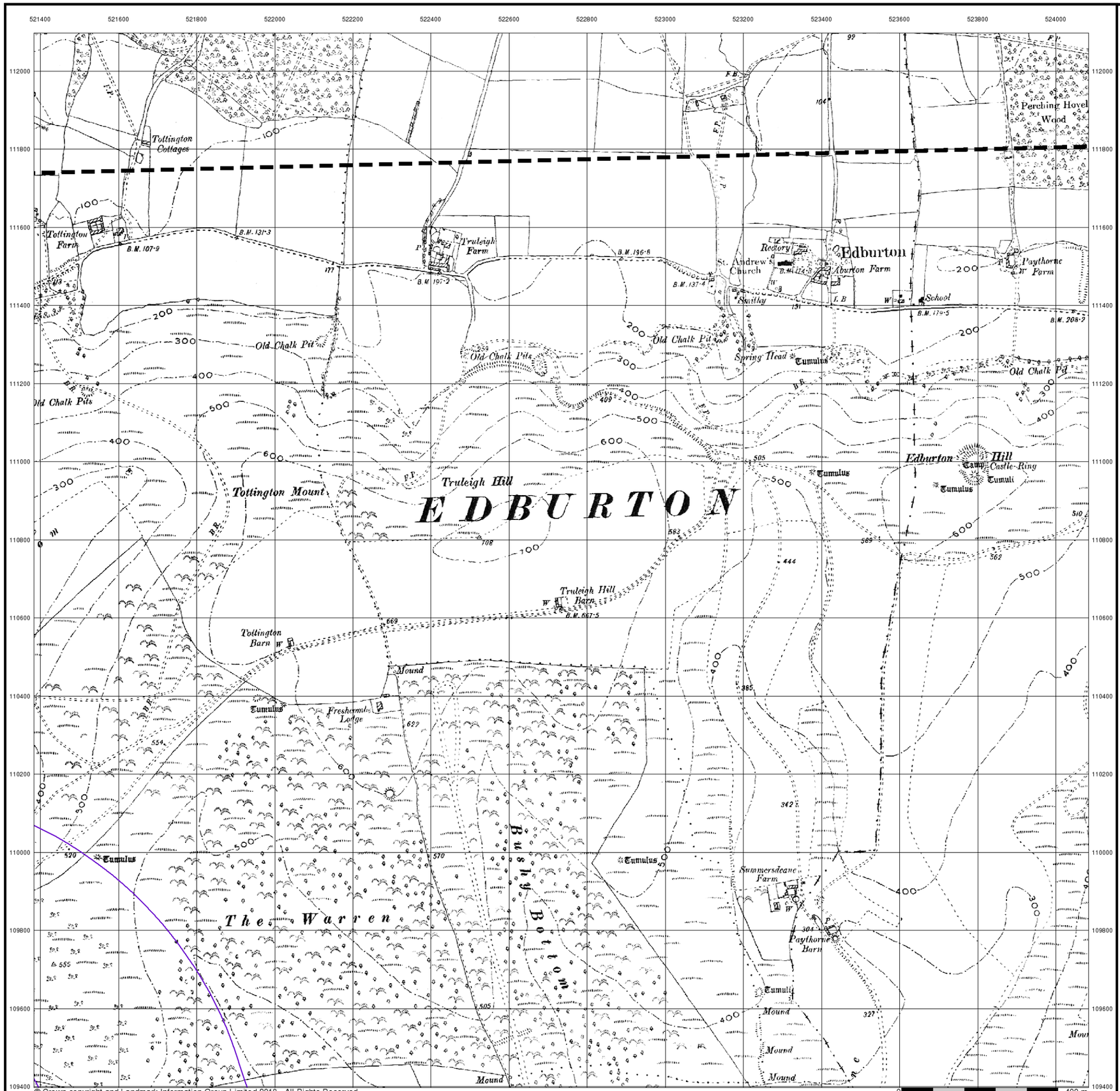

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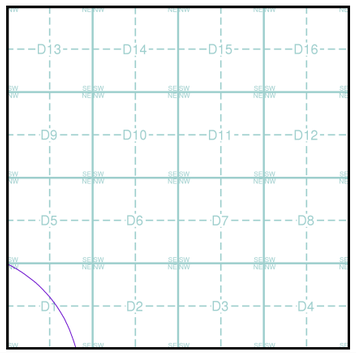
Map Name(s) and Date(s)

052NW
1899
1:10,560

052SW
1899
1:10,560

Historical Map - Slice D



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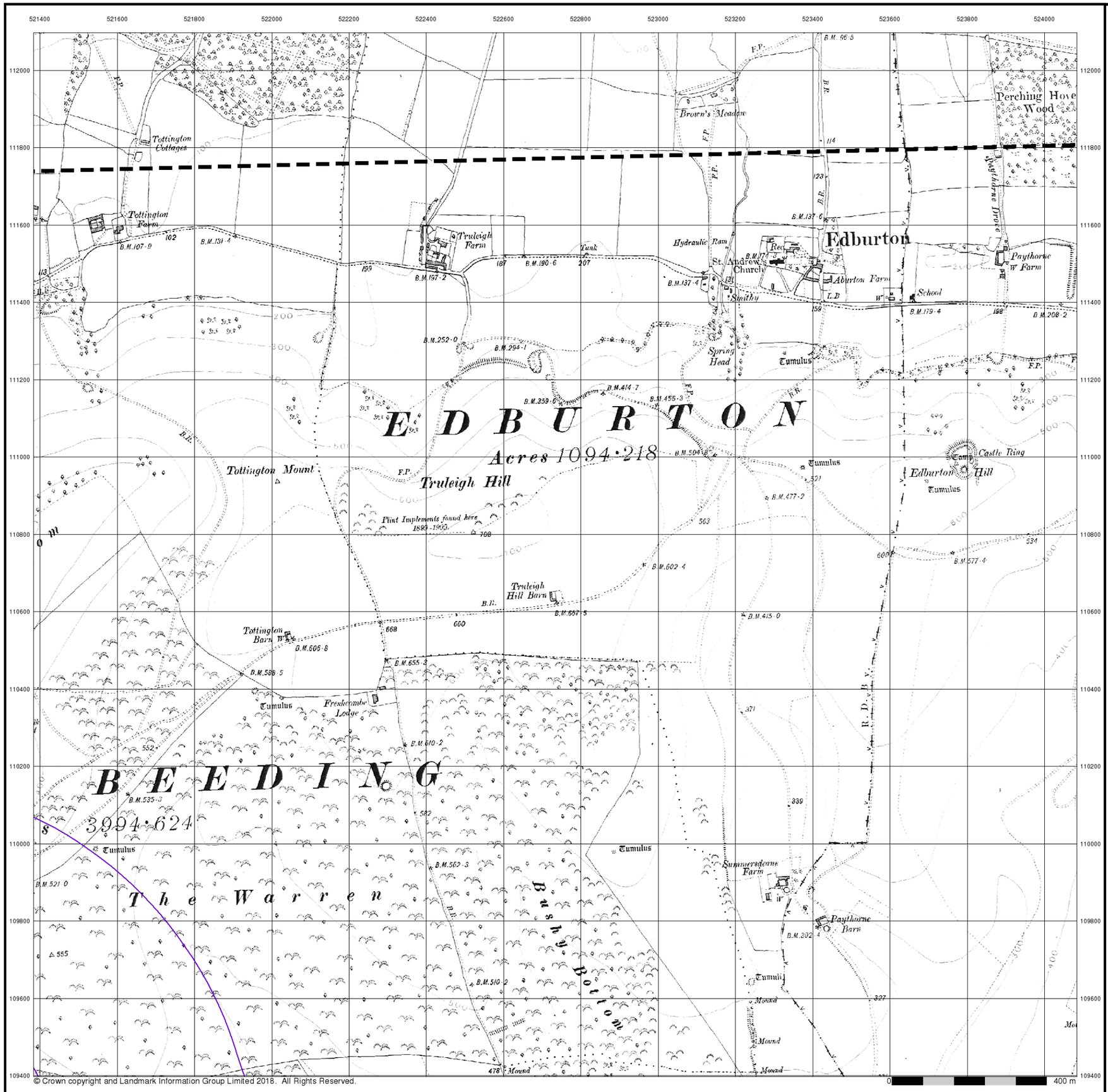

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Published 1912 - 1914

Source map scale - 1:10,560

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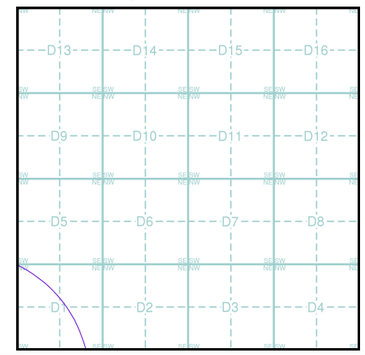
Map Name(s) and Date(s)

052NW
1912
1:10,560

052SW
1914
1:10,560

Historical Map - Slice D



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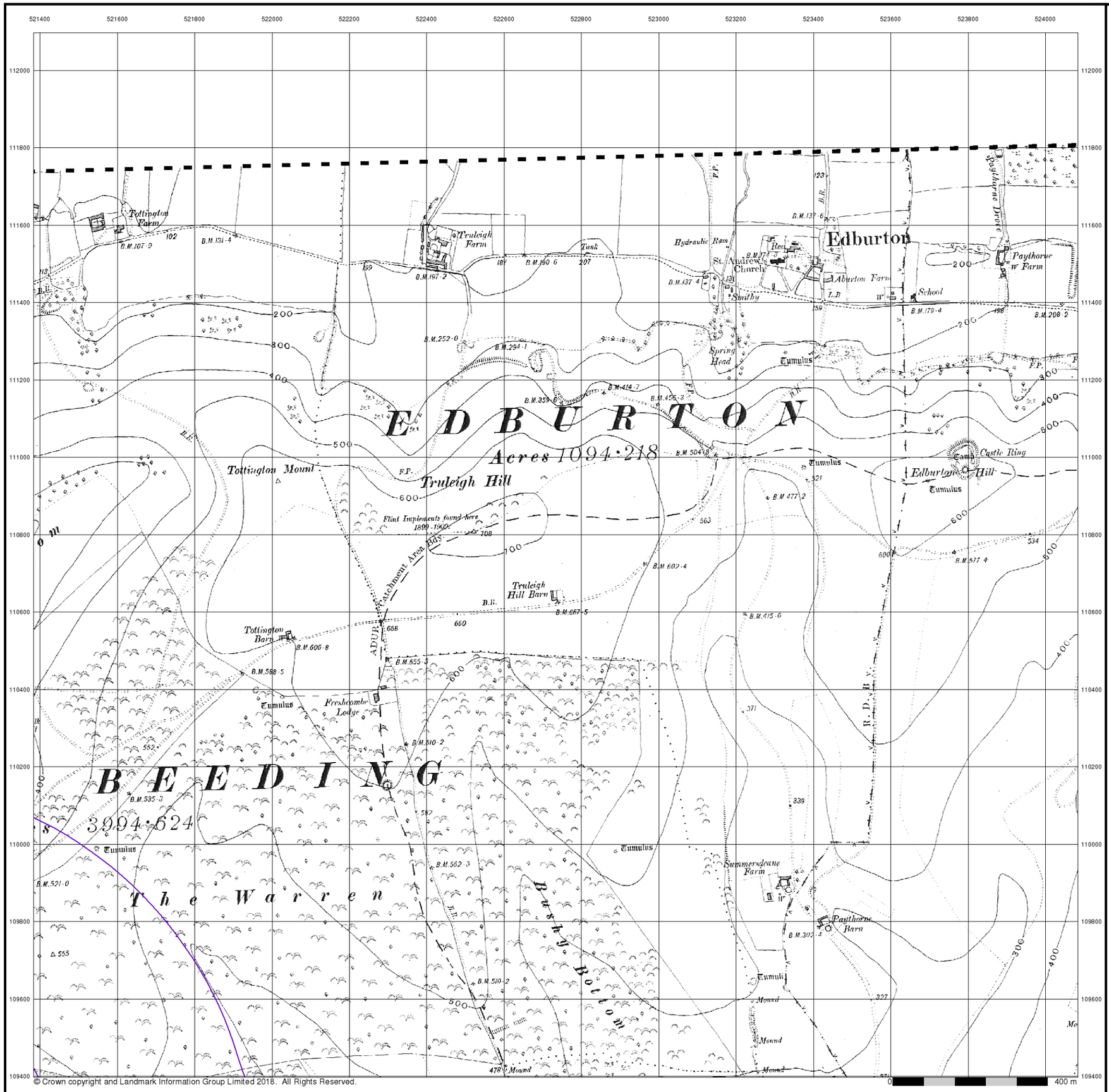

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Published 1914

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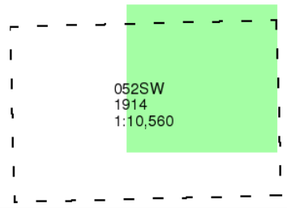
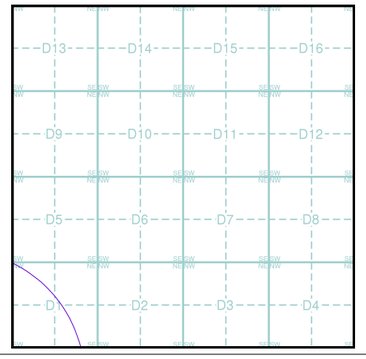
Map Name(s) and Date(s)



Historical Map - Slice D



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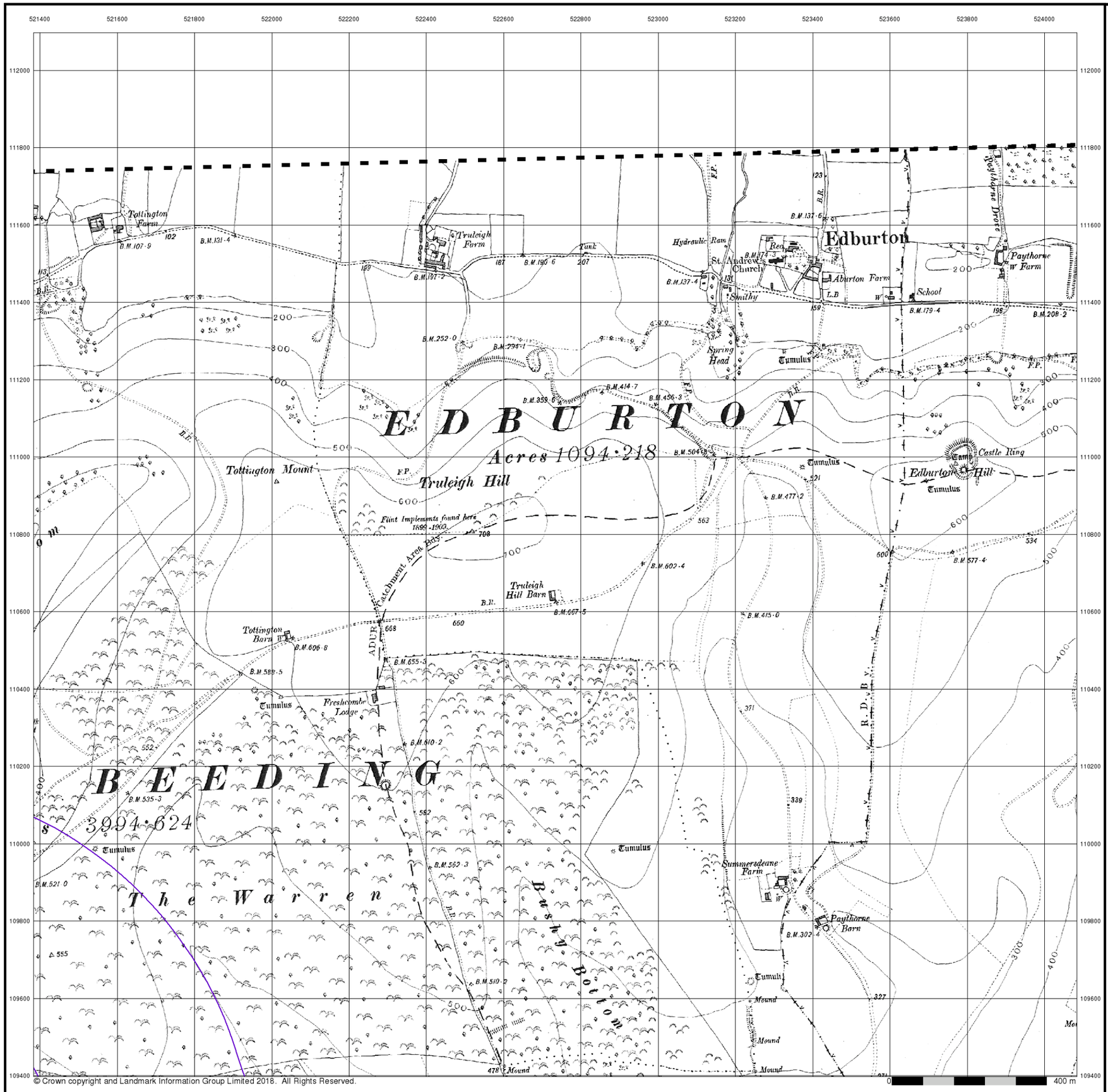

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Published 1914

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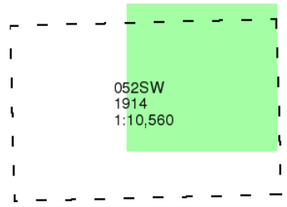
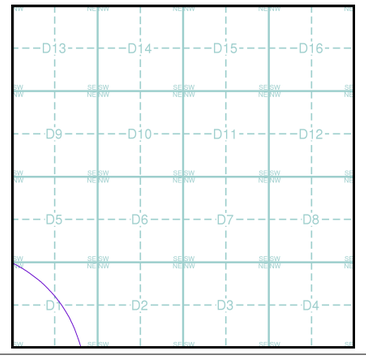


Historical Map - Slice D



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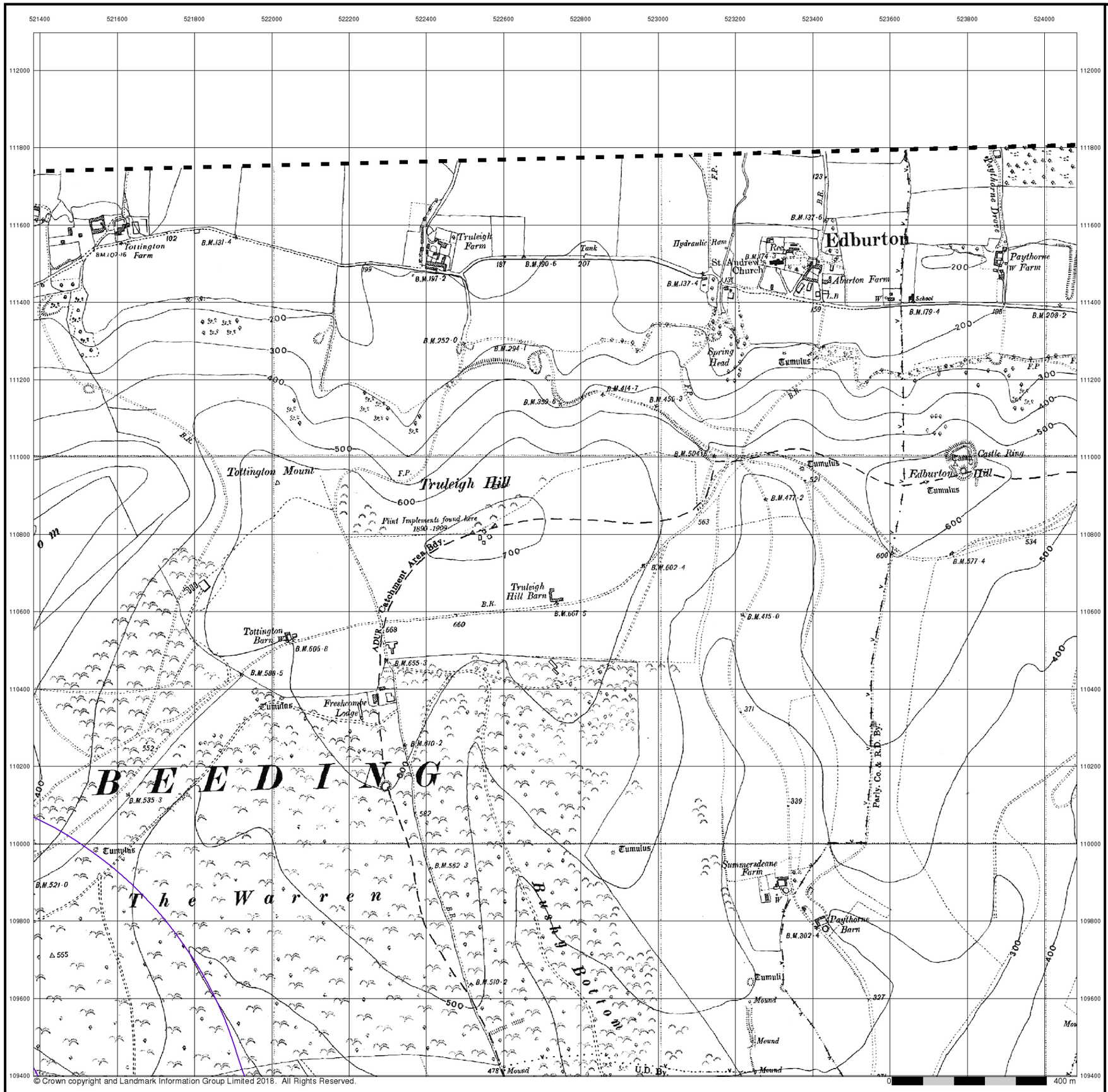

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LANDMARK INFORMATION GROUP®

Sussex

Published 1947

Source map scale - 1:10,560

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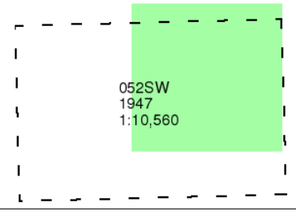
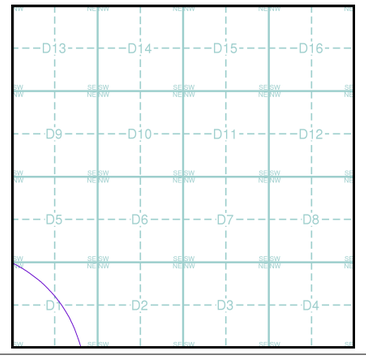
Map Name(s) and Date(s)



Historical Map - Slice D



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Search Buffer (m):	1000

Site Details

Site at 520371,108723

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Web: www.envirocheck.co.uk

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Ordnance Survey Plan

Published 1962 - 1963

Source map scale - 1:10,000

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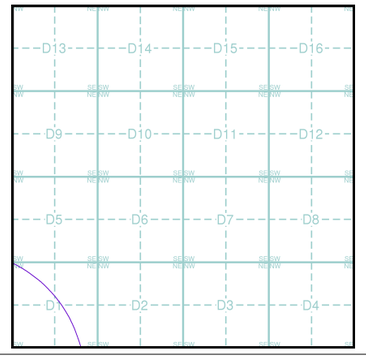
Map Name(s) and Date(s)

TQ21SW
1962
1:10,560

TQ20NW
1963
1:10,560

Historical Map - Slice D



Order Details

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Customer Ref:	2018s0642
National Grid Reference:	521590, 109650
Slice:	D
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

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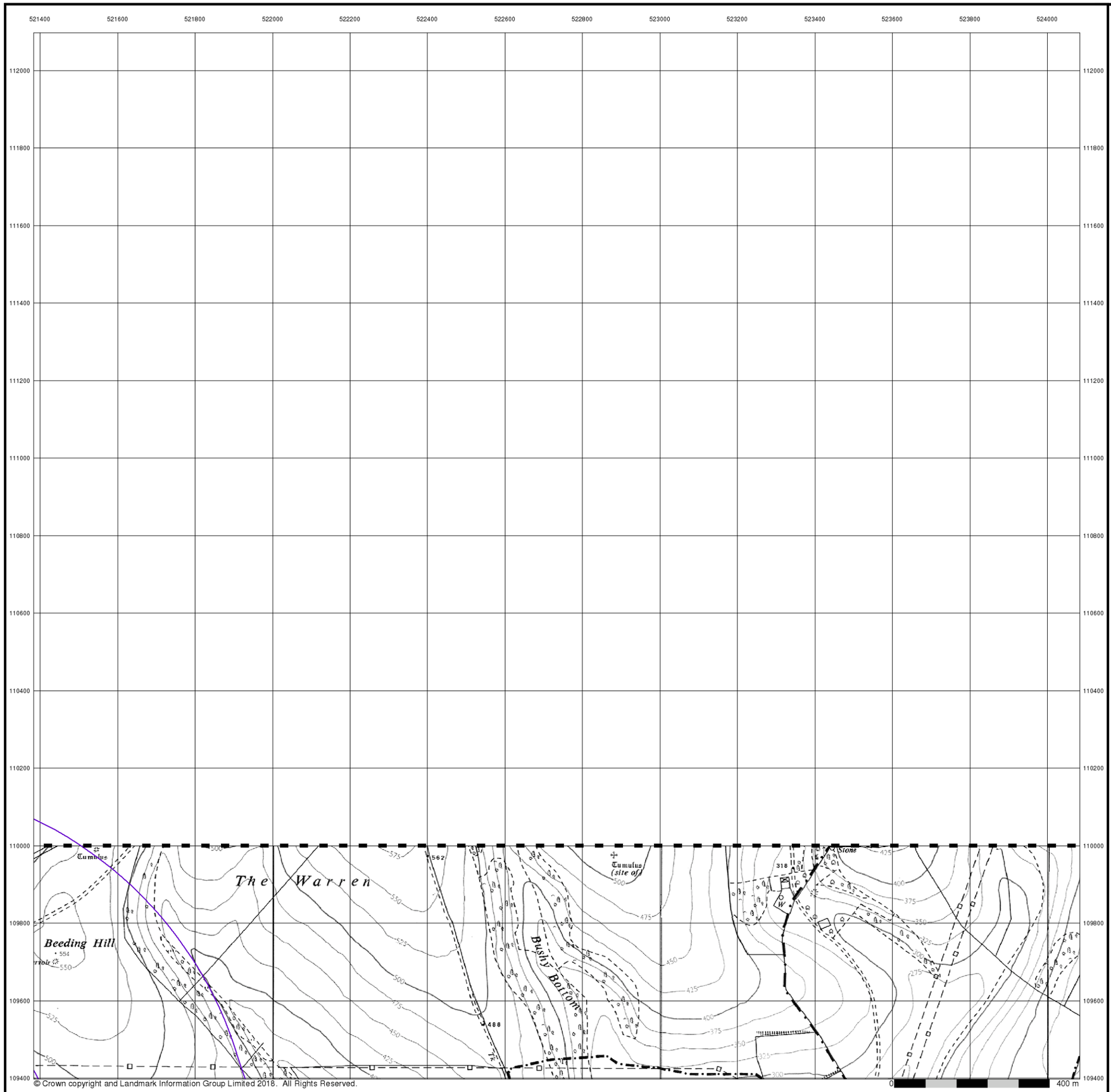

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Ordnance Survey Plan

Published 1968

Source map scale - 1:10,000

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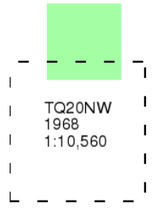
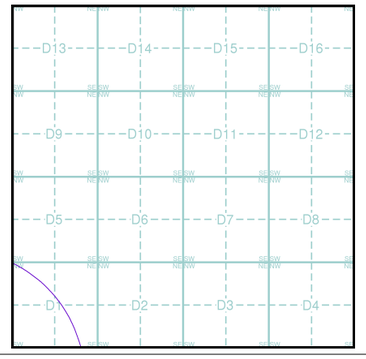
Map Name(s) and Date(s)



Historical Map - Slice D



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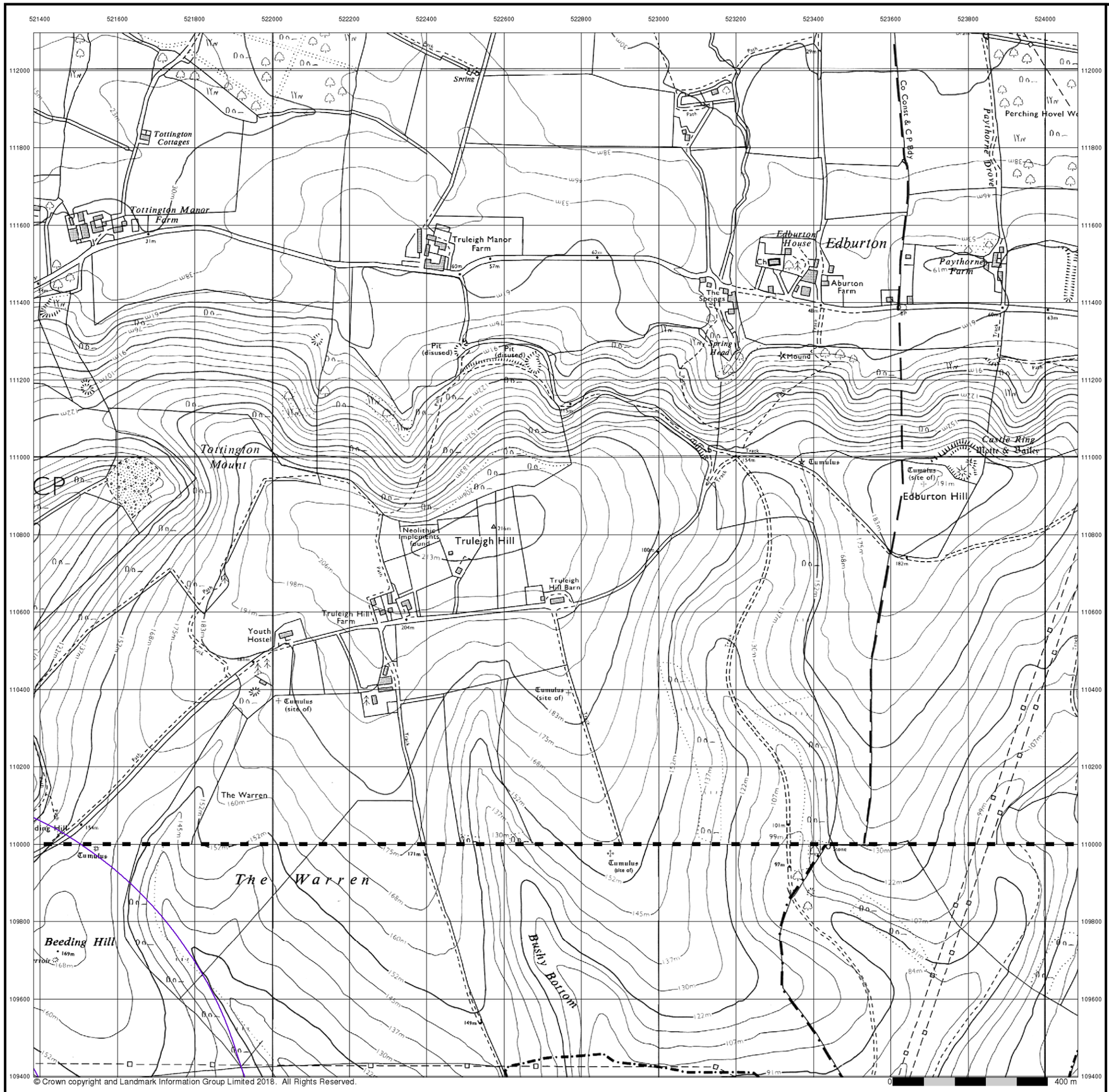

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Ordnance Survey Plan

Published 1972 - 1976

Source map scale - 1:10,000

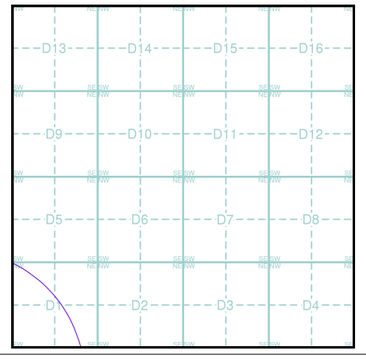
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

TQ21SW
1976
1:10,000

TQ20NW
1972
1:10,000

Historical Map - Slice D



Order Details

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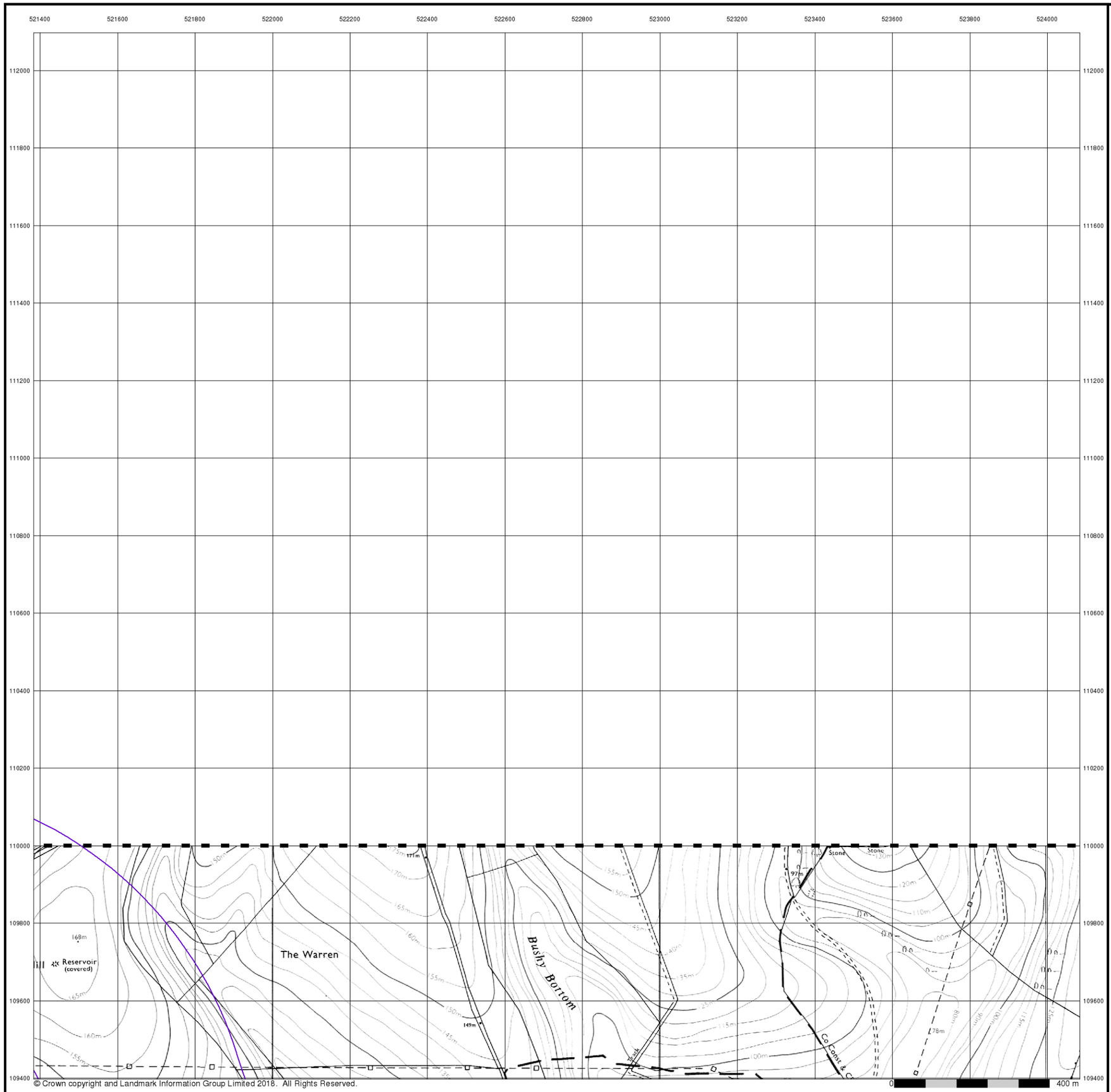

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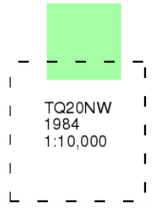
Ordnance Survey Plan

Published 1984

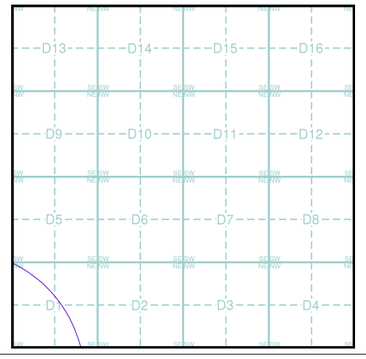
Source map scale - 1:10,000

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 D



Order Details

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Site Details

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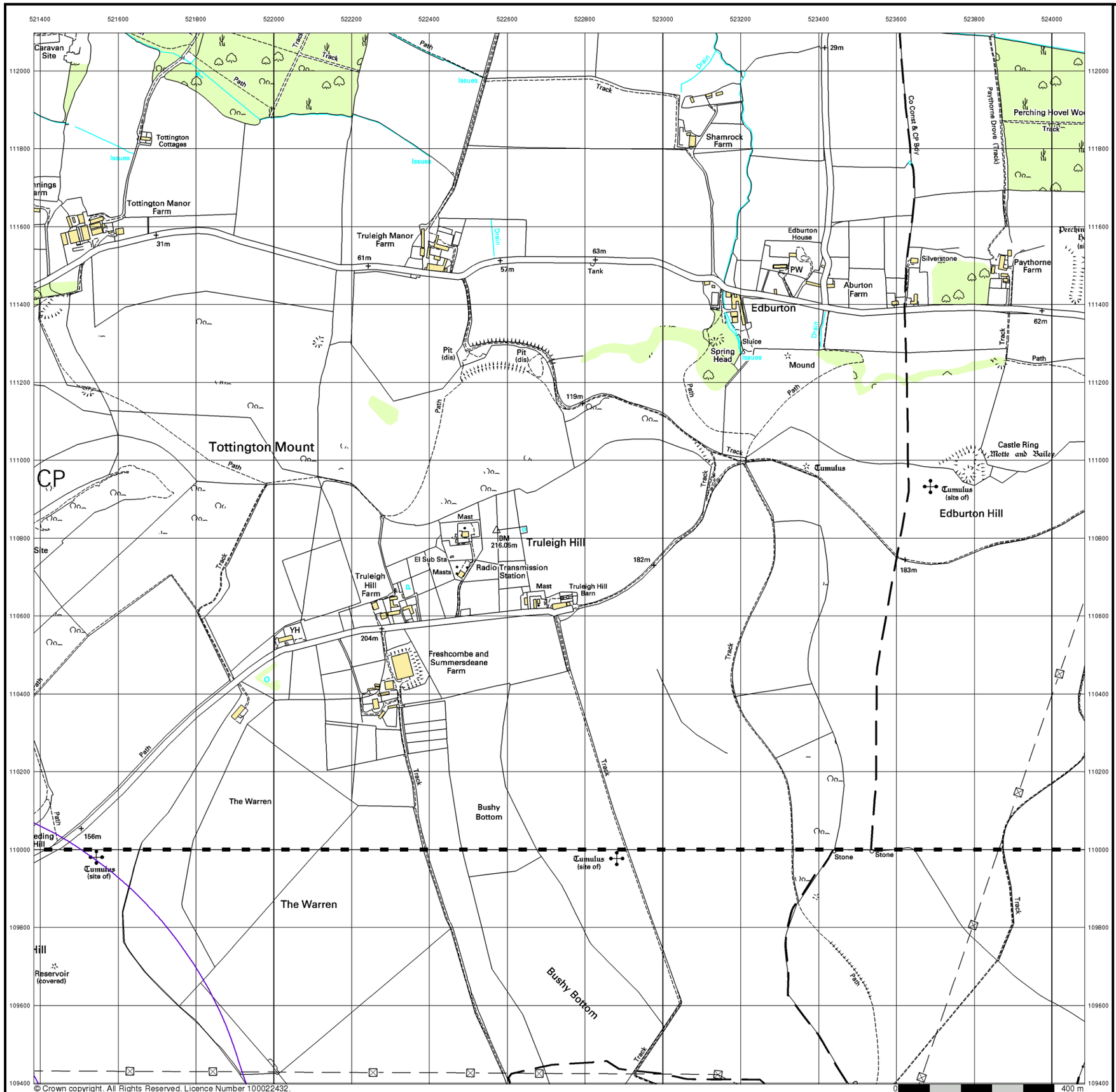

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LANDMARK INFORMATION GROUP®

10k Raster Mapping

Published 2000

Source map scale - 1:10,000

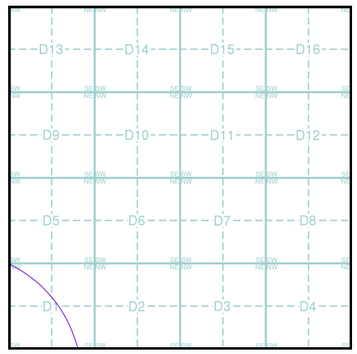
The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks 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)

TQ21SW
2000
1:10,000

TQ20NW
2000
1:10,000

Historical Map - Slice D



Order Details

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Customer Ref:	2018s0642
National Grid Reference:	521590, 109650
Slice:	D
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

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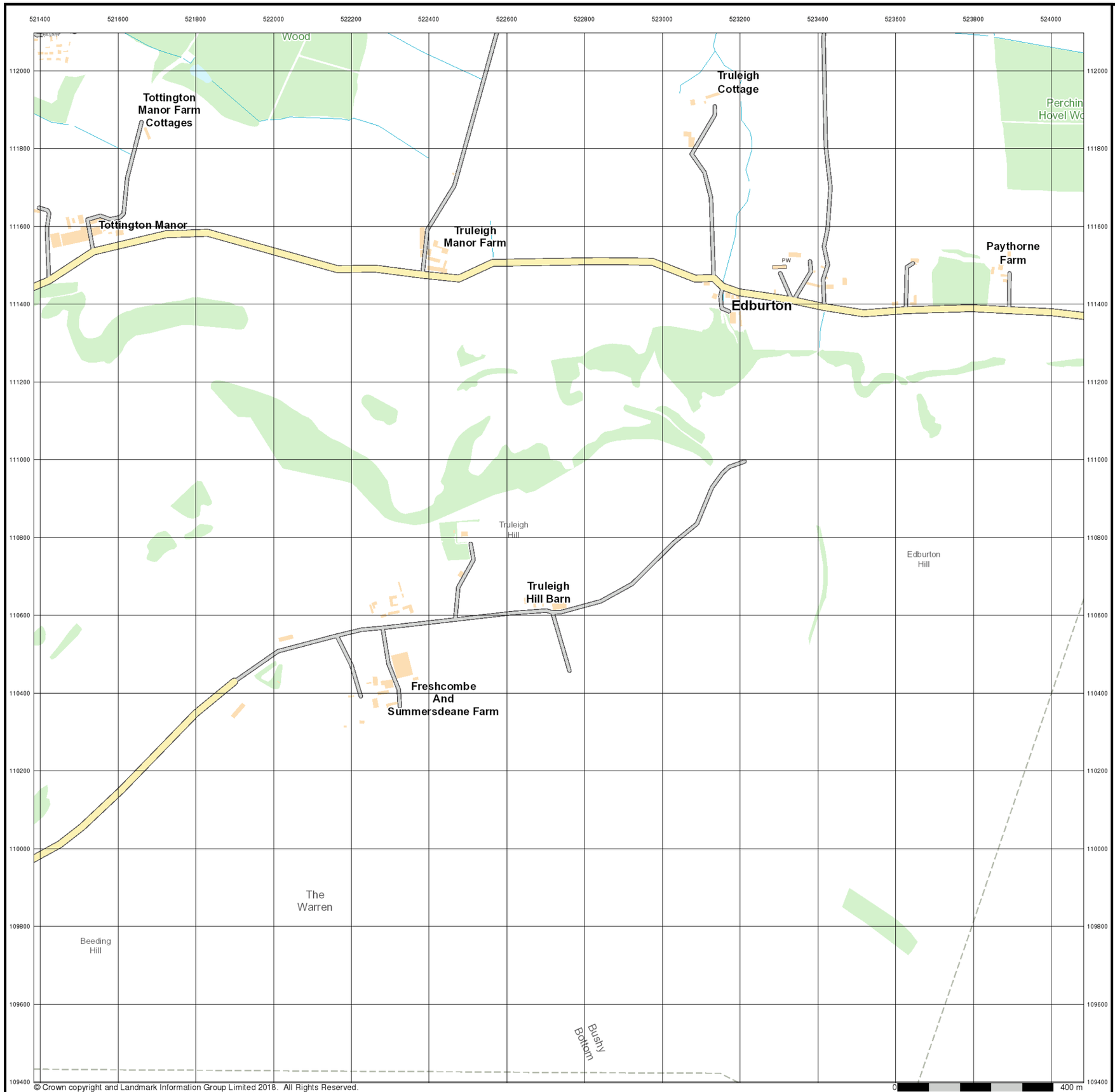


Envirocheck®

LANDMARK INFORMATION GROUP®

Street View

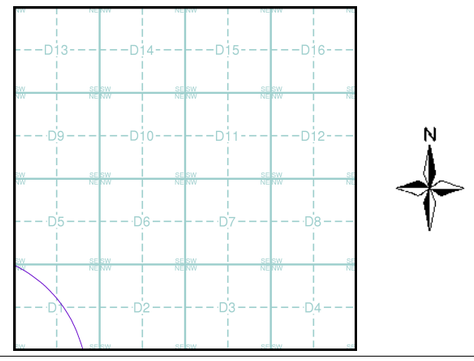
Published 2018

Source map scale - 1:10,000

Street View is a street-level map for the whole of Great Britain produced by the Ordnance Survey. These maps are provided at a nominal scale of 1:10,000

Map Name(s) and Date(s)

Street View Map - Slice D



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
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Site Area (Ha):	44.36
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Site Details

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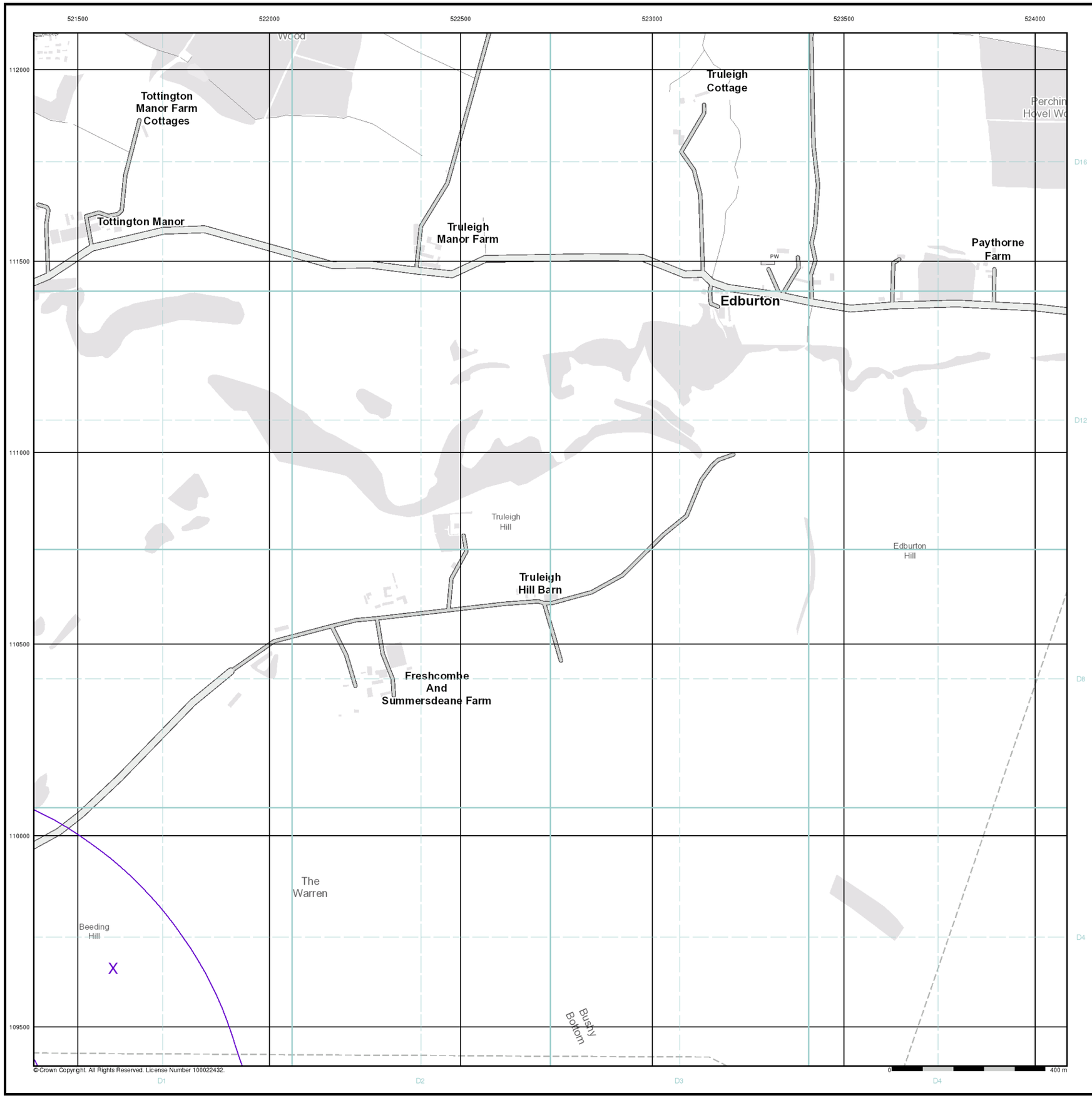

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LANDMARK INFORMATION GROUP®

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Geological

- BGS Recorded Mineral Site

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry

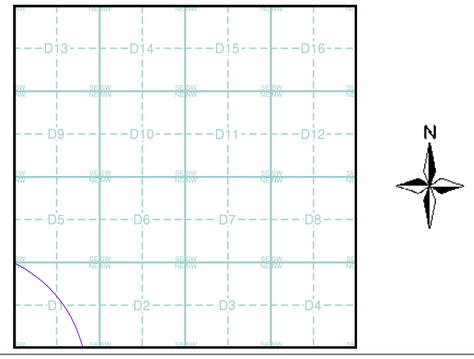
Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Site Sensitivity Map - Slice D



Order Details

Order Number:	170375371_1_1
Customer Ref:	2018s0642
National Grid Reference:	521590, 109650
Slice:	D
Site Area (Ha):	44.36
Search Buffer (m):	1000

Site Details

Site at 520371,108723

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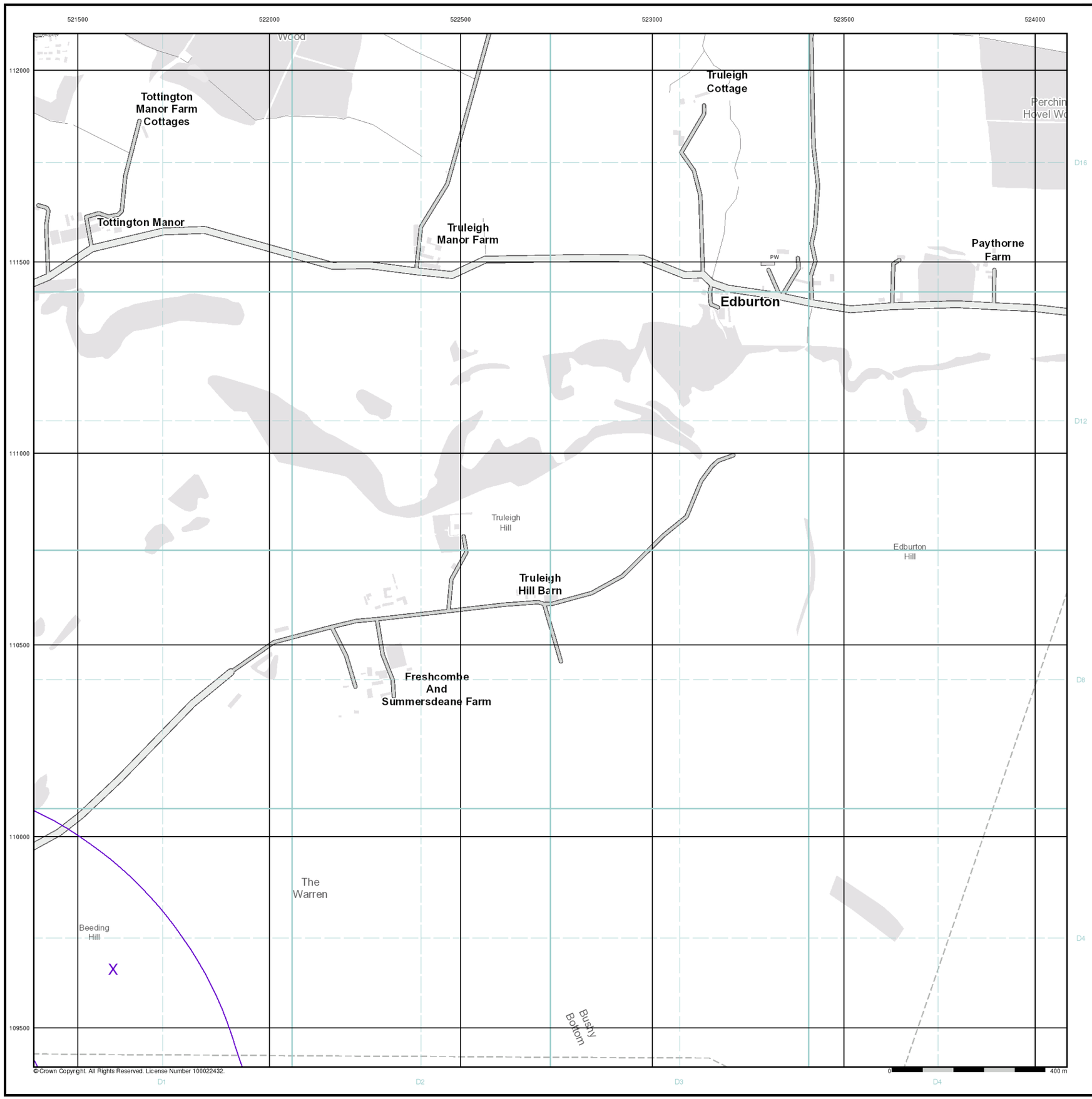

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Industrial Land Use Map

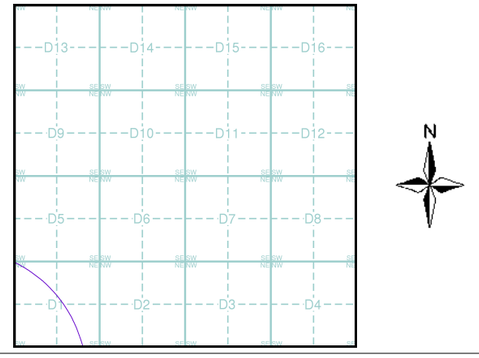
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Underground Electrical Cables

Industrial Land Use Map - Slice D



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Search Buffer (m):	1000

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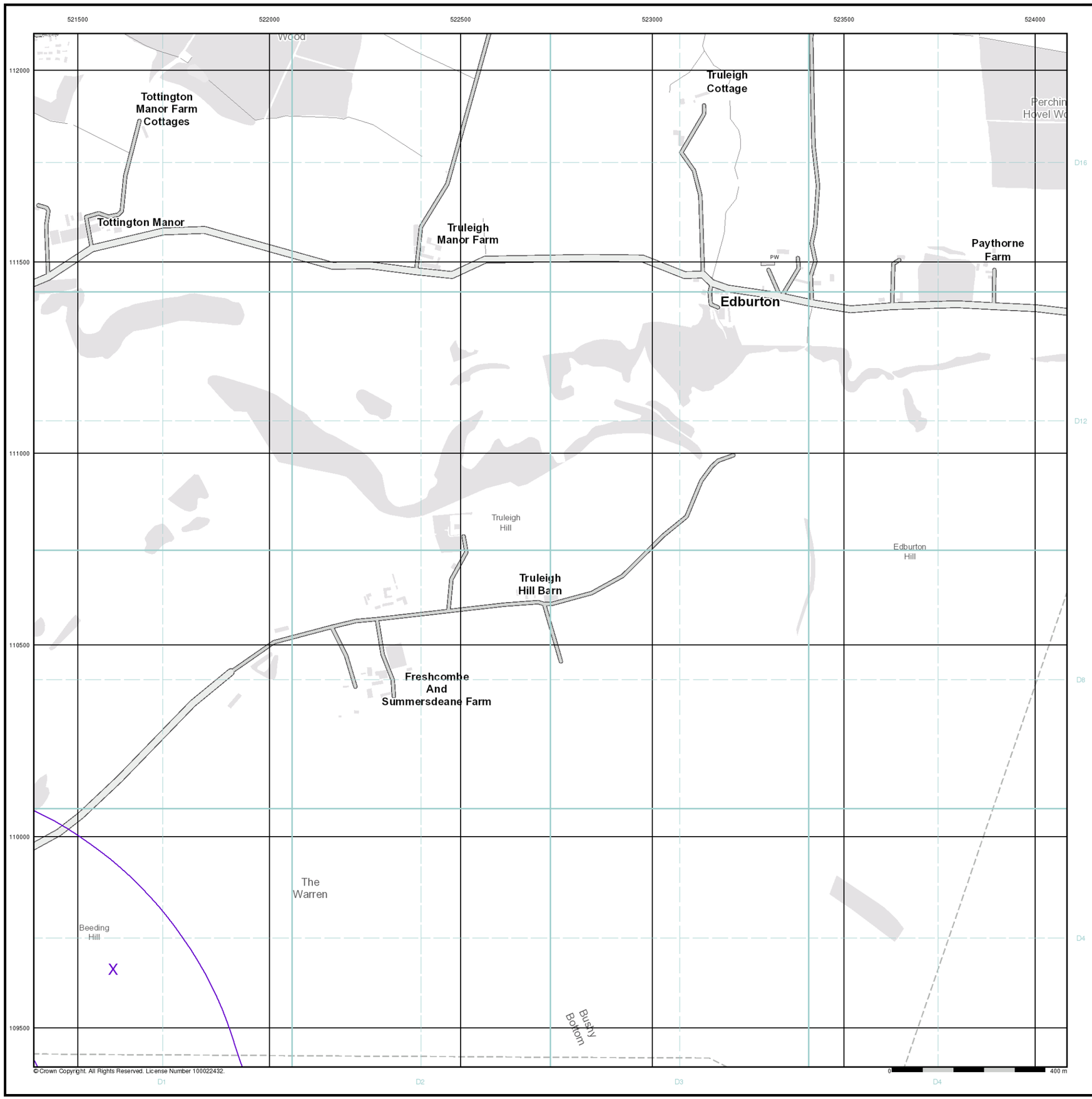

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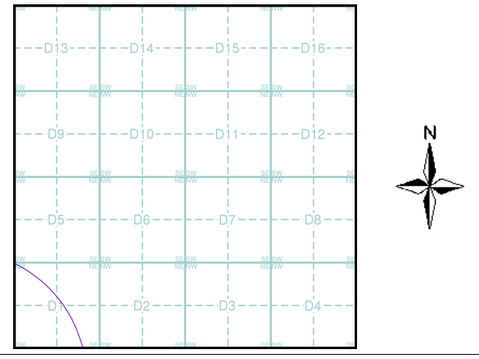
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice D



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Slice:	D
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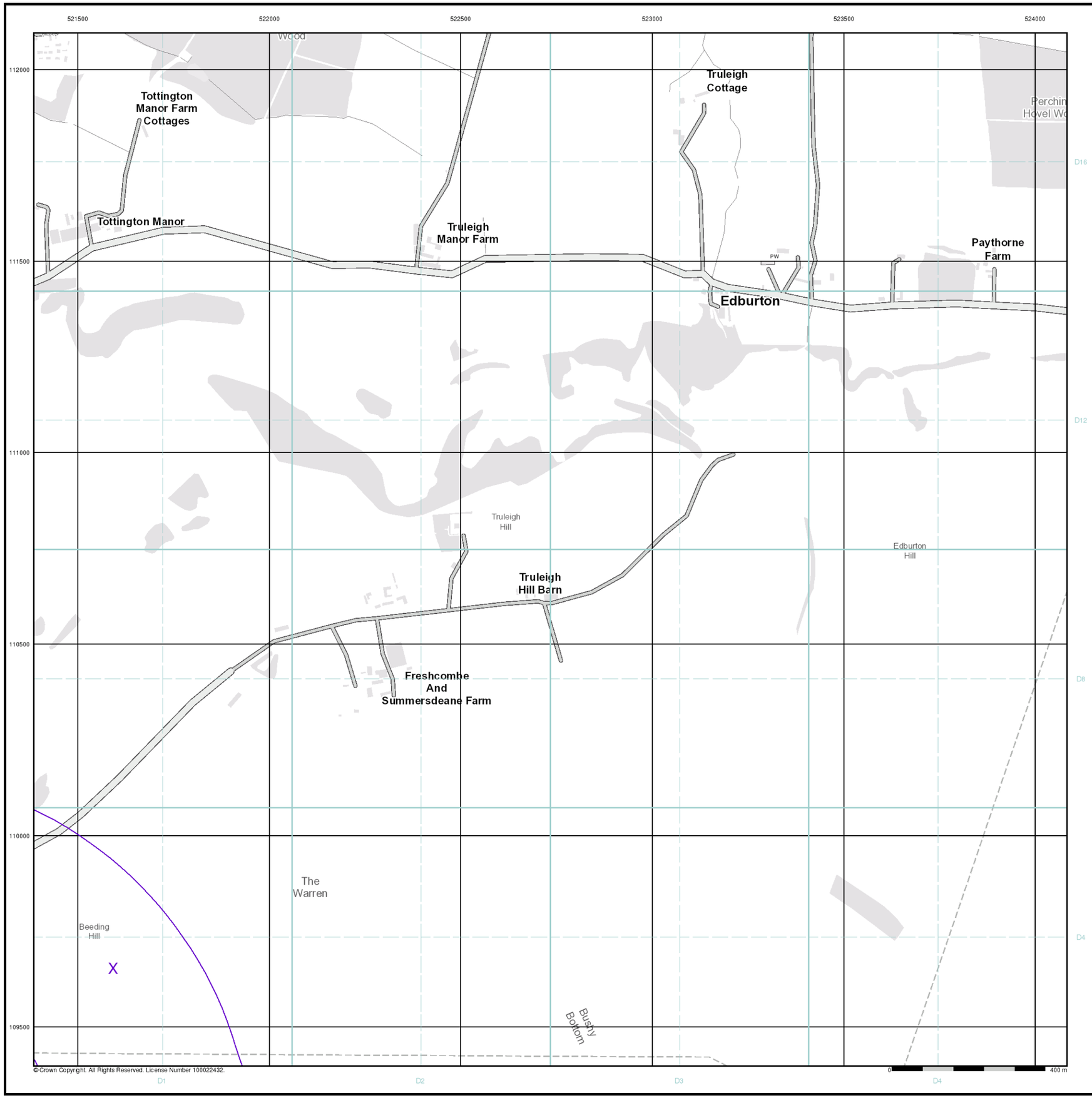


Envirocheck®

LANDMARK INFORMATION GROUP®

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

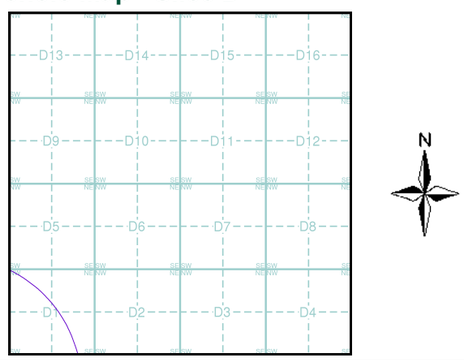
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice D



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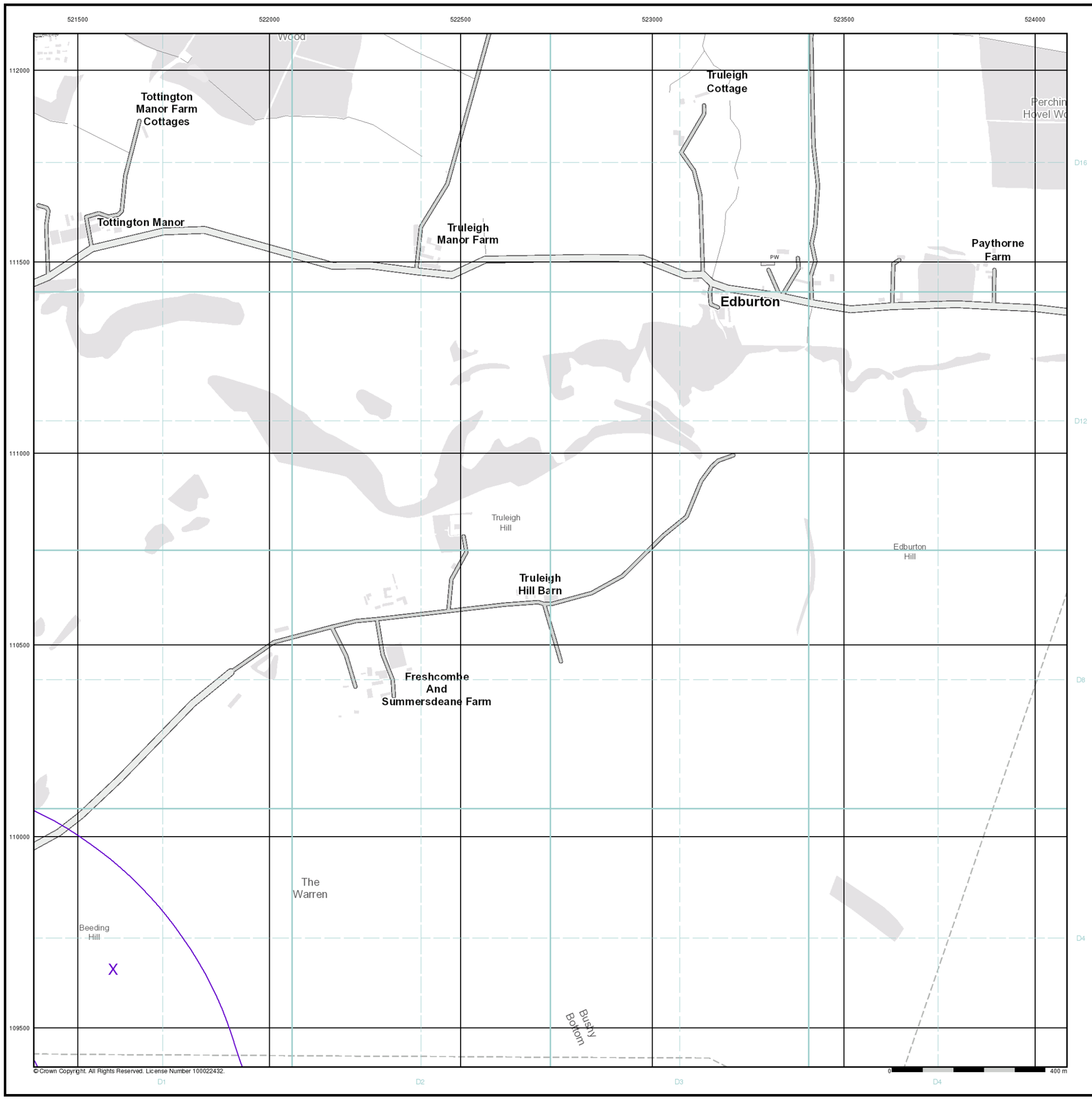

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LANDMARK INFORMATION GROUP®

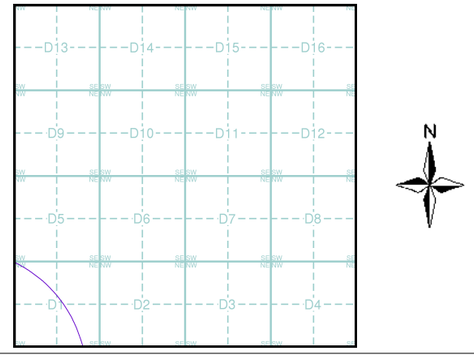
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

OS Water Network Data

- Canal
- Reservoir
- Foreshore
- Marsh
- Tidal River
- Inland River
- Drain
- Other
- Lake
- Transfer
- Lock Or Flight Of Locks
- Sea

OS Water Network Map - Slice D



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D Methodology for Preliminary Environmental Assessment

D.1 Site history

Ordnance Survey maps of Britain are available from the late 1880s to the present time. These maps provide an excellent record of historical uses of a site. This can be very important in assessing the potential for environmental liabilities associated with a site, since the site owner may be held responsible for historic pollution which could be released, even if it is not caused by current activities operating on the site. Historical maps can show if the facility was, for example, the location for a former industrial site, mineral working or landfill.

Historic map extracts supplied by Landmark Information Group were reviewed. Details of the maps studied are contained in Appendix B.

D.2 Site sensitivity

The vulnerability of the site with respect to the potential for contamination of the surface and subsurface aqueous environments was assessed using British Geological Survey (BGS) data and Environment Agency (EA) data on groundwater and surface water sensitivity. With respect to groundwater, and wherever possible surface water, likely receptors in the form of abstractions have been obtained from the Landmark Information Group (Envirocheck report contained in Appendix C). Information, pertaining to the classification of the aquifer, nature and direction of groundwater flow, distance to licensed abstractions, nature of overlying strata and whether the site was located within a groundwater protection zone was sought from EA and available map information from the BGS, in order to determine the hydrogeological sensitivity. The 1:25,000 Ordnance Survey sheet for the area was used to determine the location of surface watercourses, the quality of which were then determined through consultation with EA data. The combination of distance to the watercourse and its quality were used to assess its sensitivity to pollution. Based on all the available information a summary assessment of vulnerability to contamination of surface and sub-surface waters was made.

D.3 Public registers

In relation to this site, and due to the time constraints of this exercise, the information from the public register was accessed from a commercially available database operated by the Landmark Information Group (Appendix C). The data supplied covers a 1 km buffer area around the site boundary. This is the only method by which the required information can be gathered in the time available. This database contains the information supplied to it by EA, and the other statutory authorities; however, for the purposes of this report JBA does not accept any liability for the accuracy or otherwise of the information obtained from the Landmark Information Group.

D.4 Qualitative risk assessment methodology

Risk assessment is the process of collating known information on a hazard or set of hazards in order to estimate actual or potential risks to receptors. The receptor may be human health, a water resource, a sensitive local ecosystem or even future construction materials. Receptors can be connected with the hazard under consideration via one or several exposure pathways (e.g. the pathway of direct contact). Risks are generally managed by isolating or removing the hazard, isolating the receptor, or by intercepting the exposure pathway. Without the three essential components of a source (hazard), pathway and receptor, there can be no risk. Thus, the mere presence of a hazard at a site does not mean that there will necessarily be attendant risks. The following risk assessment thus focuses on those parts of the site where hazards or potential hazards have been identified and is not general to the whole site.

D.4.1 Hazards

Potential sources of contamination are identified for the site, based on a review of the current and previous site uses. Not only the nature but also the likely extent of any contamination is considered, e.g. whether such contamination is likely to be localised or widespread.

D.4.2 Receptors

The varying effects of a hazard on individual receptors depends largely on the sensitivity of the target. Receptors include any people, animal or plant population, or natural or economic resources within the range of the source which are connected to the source by the transport pathway. Receptors can, in addition, extend to remediation processes and future construction materials that may be adversely affected by on-site contamination. In general, however, receptors can be divided into a number of groups dependant on the final use of the site.

D.4.3 Pathways

The mere presence of contamination does not infer a risk. The exposure pathway determines the dose delivered to the receptor and the effective dose determines the extent of the adverse effect on the receptor. The pathway which transports the contaminants to the receptor or target generally involves conveyance via soil, water or air.

D.4.4 Exposure assessment

By considering the source, pathway and receptor, an assessment is made for each contaminant on a receptor by receptor basis with reference to the significance and degree of the risk. In assessing this information, a measure is made of whether the source contamination can reach a receptor, determining whether it is of a major or minor significance. The exposure risks are assessed against the present site conditions. The assessment of risk presented here has been based upon the procedure outlined in DEFRA Circular 01/2006. In addition, DEFRA, with the Collaborative Centre of Excellence in Understanding and Managing Natural and Environmental Risks, Cranfield University, has published guidance on risk assessment (Guidelines for Environmental Risk Assessment and Management). A guide to good practice for contaminated land risk assessment has also been produced by CIRIA (CIRIA C552 2001). This guidance from DEFRA and CIRIA states that the designation of risk is based upon a consideration of both:

- The likelihood of an event (probability); [takes into account both the presence of the hazard and receptor and the integrity of the pathway].
- The severity of the potential consequence [takes into account both the potential severity of the hazard and the sensitivity of the receptor].

Table C 1 provides a classification of the potential severity of contamination risks occurring at the site.

Table C 1 Classification of Associated Hazard [Potential Severity] (modified from CIRIA C552)

Classification	Associated Hazard [Potential Severity]
Severe	Short-term (acute) risks to human health likely to result in significant harm. Short-term risk of pollution to a sensitive water resource or ecosystem. Catastrophic damage to crops/buildings/property/infrastructure, including off-site soils. Short-term risk to a particular ecosystem or organism forming part of such an ecosystem.
Medium	Chronic damage to human health. Risk of pollution of sensitive water resource or ecosystem. Significant change in a particular ecosystem. Significant damage to crops/buildings/property/infrastructure (on or off-site). Contamination of off-site soils.
Mild	Pollution of non-sensitive water resources. Significant damage to crops/buildings/property/infrastructure (on or off-site).
Minor	Harm, although not necessarily significant harm which may result in a financial loss. Easily preventable, non-permanent health effects on humans, or no effects. Easily repairable damage to crops/buildings/property/infrastructure.

Table C 2 outlines the probability of contamination risks classifications used within this assessment. Where no pollution linkage occurs, there is no likelihood of contamination risk.

Table C 2 Classification of probability

Classification	Definition of Probability
High	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low	There is a pollution linage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such an event would take place and is less likely in the shorter term.
Unlikely	There is a pollution linkage, but circumstances are such that it is improbable that an event would occur even in the very long-term.

Once the classification of consequence and probability has been assigned to a pollution linkage, the risk associated with it can be evaluated. Table C 3shows how a risk category is assigned based on the consequence and probability. Definitions of each risk category and

the investigation actions that are likely to be necessary in each case are given in Table C 4. These definitions and the risk matrix are based upon CIRIA C552.

Table C 3 Contamination risk matrix

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate/ Low Risk
	Likely	High Risk	Moderate Risk	Moderate/ Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate/ Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate/ Low Risk	Low Risk	Very Low Risk	Very Low Risk

Table C 4 Contamination risk matrix

Risk Category	Definition and likely actions required
Very high	There is a high probability of severe harm to a defined receptor, or there is evidence that severe harm is currently taking place. The risk is likely to result in a substantial liability. Urgent investigation (if not already undertaken) and remediation is likely to be required.
High	Harm to a designated receptor is likely. The risk, if realised, is likely to present a substantial liability. Urgent investigation (if not already undertaken) is likely to be required.
Moderate	Harm to a designated receptor is possible. However, it is either relatively unlikely that the harm would be severe, of if any harm were to occur it is more likely that the harm would be relatively mild. Investigation is likely to be required to clarify the level of potential liability and risk.
Low	Harm to a designated receptor is possible but is likely to be mild at worst. Further investigation is not required at this stage.
Very low	There is a low possibility of harm to a designated receptor occurring, and if it were to be realised it would be likely to be mild at worst. Further investigation is not required at this stage.

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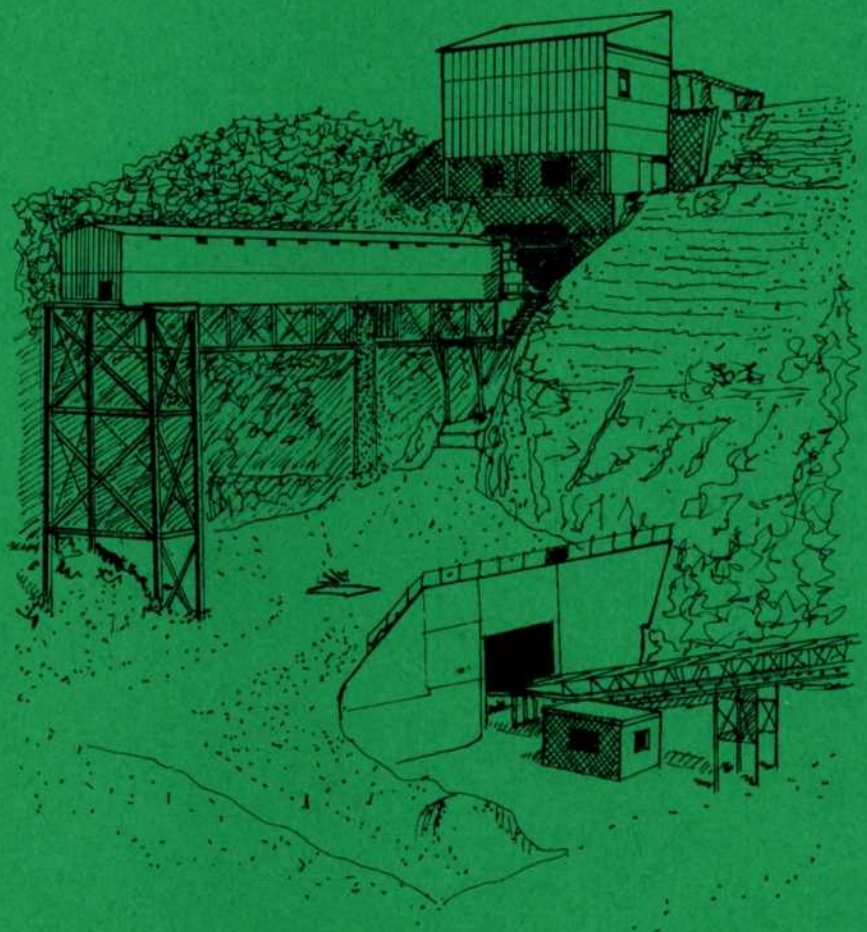
SUSSEX INDUSTRIAL HISTORY



SHOREHAM CEMENT WORKS
CHALK CRUSHING PLANT

West Sussex Brewers – Swanbourne Pumphouse – Hammond Family and Mills – Shoreham Cement Works – Pullinger's Registered Designs – Balcombe Road Forge

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THIRTY FOUR 2004

Edited by Dr. Brian Austen, 1 Mercedes Cottages, St. John's Road, Haywards Heath, West Sussex RH16 4EH (Tel. 01444 413845). The Editor would be interested to hear from prospective contributors of articles of any length. Shorter notices can be included in the Society's *Newsletter* which is issued four times a year.

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Membership enquiries to the Hon. Secretary, R.G. Martin, 42 Falmer Avenue, Saltdean, Brighton BN2 8FG (Tel. 01273 271330).

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THE BREWERS OF WEST SUSSEX

Peter Holtham

With the closure of King and Barnes' Horsham brewery in 2000, West Sussex lost its last historic brewery. Below is a comprehensive list of all brewers known to have operated in the county up until World War II. Present day county boundaries have been taken. Sadly there are very few visible remains but where some do exist a mark [VR] has been added to the text.

Since the terms "brewer" and "publican" are often synonymous it is possible that some entries may relate to pubs that did not in fact brew their own beer. Several small independent concerns and brew-pubs have since come (and gone) and these will be the subject of a later article.

SOURCES

The main source of the information has been the county and town trade directories found in the various reference libraries. This has been supplemented by rate books where available. The photographs were taken by the author.

ACKNOWLEDGEMENTS

I am greatly indebted to Pat Saunders for information on Chichester and Arundel and those business that were taken over by Allied Brewery.

EXPLANATIONS of the TEXT

Since directories are not usually available for every year the symbols "-" and "+" have been used to mean "before" and "after" the stated date. "Taken over by" has been abbreviated to "t.o.b." in most cases.

The author would be pleased to provide additional information on any of these entries and to receive further information.

ANGMERING

At 29, High Street:-

-1845/51+	Smith, George, (and baker and miller)

ARDINGLY

At Hapstead:-

-1858+	Comber, Thomas, (and butcher)

ARUNDEL

The Eagle Brewery, Tarrant Street [VR at TQ 170069]

1832	built replacing an earlier brewery by Puttock, Edward Bowden & Watkins, Robert.
1839/71	Osborne, William & Duke, William
1872/78	Harrison, Henry
1878/98	Lambert, Isaac Cowley & Norris, Edward Thomas
1898/1935	Lambert & Norris Ltd
1910	The 81 pubs were taken over by Friary Holroyd & Healys Breweries Ltd

The Swallow Brewery, Queen Street [some VR at TQ 019069]

-1783+	Picknell, George (post 1774)
-1793+	Puttock, Edward
1803	Byass
1803/07+	Messrs.Puttock & Constable
-1810/32	Messrs.Puttock
1832/43+	Constable, George
-1845/89+	Constable, George S
-1900/05	Constable, George & Sons
1905/21	Constable, George S Ltd.
1922/54	Henty & Constable (Brewers) Ltd
c1922	brewing ceased and business was transferred to Chichester

"The Wheatsheaf" Maltravers Street,

-1828/32+	Leshley, James (maltster)
-1839+	Leshley, James (brewer and maltster)
-1851+	Leshley, James (brewer)

"The Kings Arms" Tarrant Street

-1855+	Hersee, Caroline Mrs

BILLINGSHURST

High Street, (next to the "Kings Head")
-1851+ Mitchell, Richard (and John)

BINSTEAD

-1861+ Ellis, Edward (brewer, maltster and farmer), see also at Walberton).

BOGNOR

"Berkeley Arms", 35, West Street,
-1839/55+ Pacy, Thomas
-1865+ Pacy, Henry

"Kings Head", Steyne Street
-1839+ Tomsett, Henry
-1858+ Pacy, Charles

"Anchor", High Street,
-1845/61+ Tomsett, Timothy

"Waterloo Inn", Waterloo Square,
-1855/62+ Pacy, Edward

The Upper Bognor Brewery, Mead Lane,
-1810/-32 Turner & Hardwick
-1832/65+ Turner, Richard & Nathaniel
-1869/79 Turner, Richard Talmy.
1880/81+ Gibbons Brothers.
1882/89+ Gibbons, Charles Percy
Oct.1893 Receiver appointed
Nov. 1893 Creditors' Meeting held.

The Victoria Brewery Inn, Charlwood Street,
-1866/86+ Allen Richard
-23.11.1891 Allen, Mrs Sarah Ann
1891 pub sold to Mitcham Brewery

BOLNEY

-1855+ Cripps, James
-1858+ Peterfield, George
-1866+ Scrase, Daniel

BURGESS HILL

St Johns Brewery, London Road,
-1861/73+ Charman, Thomas
-1877/83 Stroud, Thomas Saunders
1883/90 Pitcher, Charles H.
1890/98+ Stroud, Thomas Saunders

The Bridge Brewery, Fairplace Hill,
-1877+ Hyde, Alfred Benjamin
1882 Sold by Hyde Bros.

CHICHESTER

(Most of this information has been provided by Pat Saunders)

The Eastgate Brewery, The Hornet, [VR at SU 866047]
-1811/11.10.1849 Wooldridge, Stephen sen.
1849/58+ Wooldridge, Stephen jun.(at first assisting mother Martha).
+1858/c1875 Goldring, John & Co.
1879 t.o.b. Gales Ltd of Horndean

also in the Hornet:-
-1839+ Hammond, Elizabeth

The Globe Brewery, South Street, Southgate,
-1846/-51 Purchase, Stephen
-1852/55 Purchase, Thomas
-1869+ Purchase, Thomas
-1873/77+ Purchase, Arthur

The Lion Brewery St Pancras, [VR at SU 869052]
1773+/1818 Florance, Christopher
1818/45 Florance, Edmund
1845/69 Florance, William Adames
1869/82 Walter, Richard & Walter, Robert Canning
1882 sold to the East Walls Brewery and closed.

At Westhampnett:-
-1784/93+ Legg, John (died 1811)

At the "Swan Inn", Westgate:-
-1861/c76 Mant, William
-1877/80 Tart, William

The South Street, Brewery South Street, [VR at SU 860046]
-1755/+ Coote, Thomas
-1784+ Drew & Frew (maltster in Chapel Street)
c1785 James Drew died?
-1793+ Trew
-1796+ Trew, Thomas & Raper, William (South Street)
-1817 Thomas Trew bankrupt
-1828/31 Gatehouse, George & John Covey
1831/47 Gatehouse, Richard & George
1847/89 Gatehouse, Richard
1889 33 pubs sold to the Westgate Brewery

St Martins Brewery, St Martins Lane, formerly Hog Lane,
-1785+ Fletcher, George & Teresa (St Martins Lane)
-1809+ Combs, George (West Lane)
-1828/32+ Combes, Geo.
-1837/39+ Wares, William (or Warren?)
-1839+ Combes & Co.(leased by Stephen Wooldridge from 1837)
-1841/45 Combs, Henry Knott (died April 1845)

1845/54 (widow Theresa Combs)
?1854/61+ Wares, William
-1865/77+ Triggs, Thomas

At Tower St:-
-1858+ Triggs, Thomas

The Victoria Brewery, St Pancras,
c1744 original brew house built
-1779 held in trust by William Wooldridge for William Field
-1795/1812 Churcher, Thomas
1818+ Rhoades, Thomas (listed as having malthouse in St Pancras in 1822)
c1830 (The Deller family who may not have initially brewed?)
-1845+ Deller, Richard
-1849/81+ Deller, William Richard

The Westgate Brewery, Westgate,
1751 Brewery founded (by John Dearling?)
-1784/1793+ Dearling, John
-1793/1827 Humphrey, William & Edward
1827/30 Henty, George.
1830/55 Henty, George & Robert
1855/74 Henty, George.
1874/89 Henty, George & Son
1889/93 Henty, George & Sons
1893/1921 Henty, George & Sons Ltd
1921/55 Henty & Constable (Brewers) Ltd
1955 pubs shared out between Friary Meux and Tamplins of Brighton

The East Walls Brewery, East Walls,
-1779 built by John Dearling
-1832 Atkey, James sen.
1837/8.8.1851 Atkey, James jun.
8.8.1851/25.11.1865 Atkey, James William exors of Atkey, James jun
25.11.1865/c80 Atkey, Charles John
-1881/89 Royds & Marsden
1889 closed premises auctioned and the 22 pubs bought by Lambert & Norris of Arundel who retained the malthouse in St Pancras.

Eastgate
-1832+ Bigwood, James

Lion Street
-1845+ Boniface, Benjamin

Tower Street,
-1786/1812 Cobden, William brewery & malthouse

At East Street,
-1784/1800+ Dearling, John

Chapel Street
-1828+ Elliot, Obadiah (brewer & maltster Chapel St)
-1855+ Elliot & Son (maltsters East St)

At 83, West Street:-
-1841+ Meacher, Robert

At George Street:-
-1841/51+ Pannall, George

The Northend Brewery, The "White Horse", Broyle Road,
-1811/-17 Gatehouse, Thomas and John

-1755/75 Ridge, John
1775/1804 Ridge, William

The "Angel -"St Paul's Road/Old Broyle Road
1846/58+ Harmsworth, Henry (publican brewer)

Misc.Brewers in North Street,
-1755/75 Ridge, John
1775/1804 Ridge, William
-1828/32+ Seymour, George.
-1839+ Johnson, George
-1869+ Dixon & Son

COCKING

-1845+ Davies, Thomas (retail brewer & maltster)

CRAWLEY

New Road Brewery, New Road,/1, Post Office Road,
-1873/1907 Ockenden, George & Son

Station Brewer, Springfield Road, [VR at TQ 266363]
-1865/77+ Ockenden, Charles
-1881/1907 Ockenden, George & Son

"The Brewery Shades", High Street,
-1873/77+ Chantler, George

at New Town, Ifield:-
-1869+ Chantler & Holder
-1889+ Holder, Henry

and:-
-1875+ Butcher, G.C. location?

CUCKFIELD

The Dolphin Brewery, High Street,
-1839/51 Best, Thomas
-1855/73+ Best Thomas William
-1877/94+ Langton, Joseph

1894+/-1898 Golding
1898 bought by Southdown & East Grinstead Breweries Ltd

DUNCTON

The "Cricketers", formerly the "Swan".
-1867 publican brewer, no details

EASTERGATE

-1845+ Newport, Henry

EAST GRINSTEAD

The East Grinstead Brewery, 32, North End London Road [VR at TQ 376393]

-1881/92 Coomber, George
1892 (taken over by Bushell's Black Eagle Brewery, Westerham

The Hope Brewery, London Road,
-1828+ Wood, Thomas
-1839/44 Burt & Hooker
1844/55+ Kenward, Edward
1857/77 Absalom, Charles
1877/86 Dashwood, John Thomas
-1889/94 Dashwood, John Thomas & Co.
1895/1920 bought by Southdown & East Grinstead Breweries Ltd
1920/24.4.1922 Leased to Tamplins Ltd, Brighton
24.4.1922 Sold to Tamplins Ltd, Brighton. brewery demolished

The Sussex Brewery, London Road
-1861+ Jones, William (previously at "Railway Hotel")
-1865+ Wise, Edmond

The "Green Dragon", 7/11, High Street,
-1794+ Harman, William (brewer)
-1799+ Harman, William (malt dealer)

EMSWORTH

The Sussex Brewery, Main Road, Hermitage,
-1869/81+ Miller, Abraham

FELPHAM

At the "Thatched House"(?)
-1839+ Prior, William & Charles (maltsters)
-1851/55+ Prior, William (brewer & maltster)

FERNHURST

The Bell (Vale) Brewery, North Ambersham
-1877+ Kiln & Stampe
-1881+ Kiln, Walter & Lewis
-1886/98+ Kiln, Walter

FINDON

-1845+ Marner, Thomas (brewer & maltster)
-1851+ Peters, John

FISHERSGATE

"Kings Head", Fishersgate Terrace,
-1851/58+ Collins, Edward (brewer & maltster)
-1869+ Smithers, Henry (maltsters)

FITTLEWORTH

-1855/58+ Urbin, David

HAYWARDS HEATH

The Haywards Heath Brewery, Mill Green Road,
-1873+ Power & Blest
-1877+ Power, Willoughby Hamilton
-1881+ Verral, Harry Stuart
-1883/86 Cranshaw, Alfred T
1886/1888 Sharp & Son
1888 Burnt down

HENFIELD

The Beehive Brewery, Hewitts, Golden Square
-1839/51+ Patching, James
1851+/? Frost, James William

The "White Swan", High Street,
-1845/55+ Bignell, Stephen
-1858/61+ Bignell, Miss (Maria?)

The "Bell", High Street.
-1858+ Parsons, William

Behind Rosemount, Nep Town
(date?) Rich, James

Early 19th Century Harwood, Nathan

The Mockbridge Brewery, Mockbridge, [VR at TQ 210181]

-1828/45+ Hughes, Henry (maltsters)
-1852+ Hughes, John Alfred (maltster)
-1855/58+ Hughes, John Alfred (brewer & maltster)
-1869+ Bowler, William Thomas (brewer & maltster)
-1873/89+ Bowler, Thomas (brewer)
-1894/1914+ Bowler, Frank (brewer)

The Bull, Mockbridge

-1806 Woolven, Richard

HORSHAM

Allens Brewery, Carfax

-1828/31.12.1834 Allen, William
1.1.1835/25.3.1841 Michell, Henry

The East Street Brewery, 58, now 70 East Street [VR at TQ 176303]

c1800 Founded?
-1869+ Dempster, Joseph
-1873+ Marshall, Charles Frederick
-1877+ Usher, Robins & Co.,
c1878/1906 Barnes, George Hodsoll
1906/ King & Barnes Ltd

also at East Street:-

-1845/55 Stovell, Stephen (1855 at East Parade)
and
-1855/58+ Luxford, George
and
1855/77+ Underhill, Daniel (1873/7 at 1, Denne Road)

The Fountain (& Cock) Brewery, (15), Carfax,

-c1781/1821 Thornton, Richard
1824 (Coppard, Thomas & Dawson, John –trustees)
-1825/39 (Gates, John & Coppard, Thomas –trustees T/A Gates & Co.)
1839+ Rawlinson & Gates
-1845/51+ Gates, Richard & Co.,
24.8.1852 Offered for sale
22.7.1853 Bought by W Holden a wine & spirit merchant.
c1890 King & Son

The North Brewery Brewery, The Bishopric,

-1845/58+ Turner, Richard, (maltsters)
-1862 Satchells
-1862/c70 (Satchell & King)
-1865/1893 King & Son (c1870 Brewing transferred to the Bishopric.
1893/1906 King & Sons Ltd
1906/21.7.2000 King & Barnes Ltd sold to Hall & Woodhouse Ltd, Dorset

The West Street Brewery, Worthing Road,

-1784/32+ Rawlinson, John
25.3.41/25.10.74 Michell, Henry (I)
25.10.74/1908 Michell, Henry (II)
1908/8.3.1912 (exors of Henry Michell, Michell, Maria(widow); Michell, Guy(son);Dewing, Maurice).
8.3.1912 Taken over by the Rock Brewery, Brighton

The North (Parade) Brewery, North Parade

-1855/58+ Honeywood Drew
-1861+ Satchells
-1861/65+ Satchell & King
(1870 Brewing transferred to the Bishopric.)

The North Street Brewery, North Street,

-1796/1801+ Mr Thornton? Bankrupt 1820
-1858/73+ Thornton, James
-1877+ Thornton, Mrs Elizabeth Caroline

Springfield Road,

-1845+ Parsons, Robert

HURSTPIERPOINT

The Sussex Brewery, Hurst Brewery, The Brewery 23/5, Cuckfield Road, [VR at TQ 280166]

Brewing at the "New Inn" ?

-1839/51+ Smith, Thomas
-1855+ Smith, Thomas (maltster only at final site)
-1858/61+ Smith, Thomas & Son
-1865+ Smith, Philip at Cuckfield Road

-1866+ Smith, & Son
-1869+ Smith, Thomas & Son
Smith, Philip
-1873+ Smith, Philip & Son
-1877+ King & Taylor
-1881+ Saltmarsh, George Thomas
-1883/1911+ Couchman, John Edwin
1912 t/o by West Street Brewery, Brighton

and
-1855/58+ King, William

KIRDFORD

"Half Moon"8, South Street,
-1877+ Mitchener, Mrs Elizabeth
-1881 Mitchener, John

LAGNESS

The Lagness Brewery, Pagham
-1845/81+ Collins, George

LANCING

"Farmers Hotel"17, South Street, Farmers Lane/ Kings Road,
-1851+ Dabbs, William

LAVANT

-1810+ Ayling, Thomas
-1845/61+ Aylng, Thomas

LINDFIELD

The Lindfield Brewery, High Street, [VR at TQ 346254]

1814+/-1820 Stone, Richard Buckley
July 1820/+ Durrant, William and Wileman, Thomas
-1828+ Durrant, Wm
-1839+ Durrant, Wm
-1845/98+ Durrant, Edward
-1902/c1906 Durrant, Mrs Fanny Sarah
c1906 brewing ceased
29.9.1909 pubs sold to Ballards & Co. of Lewes

LITTLEHAMPTON

The Anchor Brewery, High Street,
c1816/32+ Corfe, James
-1839+ Constable, G.S.
-1845+ Constable, George
-1851/58+ Puttock, George Bowden
-1861/85 Constable, Thomas (bry rebuilt 1871)
1885/1896 Constable, George Sefton
1896/1904 Constable, George Sefton & Sons (Archibald Constable).)
1904/1917 Constable, George Sefton & Sons Ltd (Archibald Constable).
1917 - Beer brewing transferred to the Swallow Brewery, Arundel, mineral water manufacture retained at Littlehampton.

Also:-
-1832+ Butt & Son

-1851/58+ Greenfield, George

LODSWORTH

At "George & Dragon, Halfway Bridge,
-1877+ Smith, George

LOXWOOD

The "Onslow Arms", Guildford Road,
-1845+ Hawkins, Jesse (brewer & maltster)
-1858+ Sopp, John
-1877+ Knowles, Robert

LURGASHALL

"The Noahs Ark" (pub brewery?)
-1845+ Challen, William (maltster)
-1858/69+ Cooper, Edward (miller & maltster)
-1873+ Payne, George (maltster)
-1881+ Callingham, Sidney

MIDHURST

The Angel Steam Brewery, North Street,
-1839+ Purchase, Thomas
-1845+ King, Thomas
-1858/-75 King, Thomas
-1875/1902+ Parker, John (died 1896)
1902/12+ Parker & Co.,
-1917/21+ Parker & Popplewell
1923 5 pubs purchased by Gales Ltd of Horndean

in West Street:-
-1839/45+ Peat, George Jun.
-1851/1858+ Peat, Mary
-1861/66+ Peat, William
-1873/98+ Lewis, Alfred
-1902/08+ Lewis, Alfred & Son

At the "Red Lion", Lion Street,
-1828+ Hall, James
-1832+ Hall, John

and:-
-1784/94+ Stubbington, William (brewer & maltster)

-1784+ Upperton, Adams (brewer & maltster)
-1794+ Upperton, Adams (brewer)

-1828+ Greenhill, Jos (brewer & maltster)

-1828+ White, John maltster
-1832+ White, John (brewer & maltster)

NYETIMBER

-1861/77+ Collins, Charles
and
-1869/73+ Wingate, Thomas (at the "Lamb"?, Pagham))

PETWORTH

The "Angel", Angel Street,
-1784/98+ Hampton, Thomas (maltster)
-1828+ Wild & Greenfield (maltsters)
Wild, Wm (brewer)
-1832+ Wild & Greenfield (maltsters)
Greenfield, John Osborn (brewer)
-1839+ Greenfield. John Osborn (brewer)

at Golden Square,
-1828+ Challen, Benjamin & Stephen (maltsters)
-1832+ Challen, Benjamin (brewers & maltsters)
-1845/51+ Challen, Benjamin (maltster)

The Stag Brewery, High Street, [VR at SU 977215]

-1845/21.3.1872 Milton, James
21.3.1872 Milton, James died
1872/16.10.1899 Milton, Manning
8.5.1900 sold to Friary Holroyd & Healys Breweries Ltd

The "Swan" & "Half Moon" Market Place,
-1855+ Dempster, Charles
-1861/73+ Dempster, Charles
-1877/81+ Pyecroft, Thomas

North Street
-1858+ Burgess, James

New Grove Street
-1845/55+ Matthews, William

and:-
-1798+ Puttick, Edward

-1828+ Livesque, John

PLAISTOW

-1858+ Pullen, Henry

POYNINGS

The Poynings Brewery
-1851+ Gumbrell, Samuel
-1855/86+ Cuttress, George Stephen Cave
-1889/1925 Cuttress & Son
4.6.1925/1940 Molesworth's Poynings Brewery Ltd

PULBOROUGH

-1839+ Pink, Thomas (retail brewer)

-1858+ Urben, David (brewer & cooper)

ROGATE

The Sandhill Brewery
-1877+ Seward, George Haw.

RUDGWICK

The "Plough"
-1869/77+ Grinstead, James

SHOREHAM

The Albion Steam Brewery, the High Street,
-1828+ Wileman, Thomas....(location?)
-1832+ Trew, George....(do?)
-1839+ Baker, Henry...(do?)
-1841+ Baker, William.....(do?)

-1851/-55 Bungard, John
-1855+ Patching, James
-1869+ Keeping, Alfred
-1871/73+ Tucker, Benjamin
-1875+ Keeping, A (?)
-1877/89+ Albion Brewery
1889 sold to E Robins of Hove

6, Ropetackle Street,
-1861/-71 Challen, Henry

15, White Lion Street
-1841+ Blann, Thomas

and:-
-1798+ Harrington, Charles
-1798+ Innote, John

SIDLESHAM

-1851+ Stevens, William
-1855/66+ Stevens, William & Sons
-1869/77+ Stevens, George & Walter
-1881/94+ Stevens, Walter & Herbert

SINGLETON

-1845+ Leamon, Joseph
-1861+ Leamon, Henry
-1865/66+ Humphrey, George
-1881 Humphrey, George ...(.at West Dean)

SLINDON

-1828/45+ Willshear, John
-1855/61+ Willshear, Charles
-1865/-71 Willshear & Co.,

SLINFOLD

"The Kings Head",
-1861+ Grinstead, George

SOUTHWICK

The Southwick Brewery,
c1790/1800 owned by a partnership of Newman, James; Gravely, William; Rice, John; and Hall, Nathaniel
1820/6.9.1820 Tamplin, Richard (-when burnt down).

"The Gardeners Arms",
-1851+ Page, Thomas

and:-
-1851+ Smith, W. (brewer & maltster
-1855+ Smith, W (maltster)

STEYNING

7, Church Street,
-1839/1851+ Banfield, William (brewer)
-1881/98+ Banfield, John (brewer & cooper)

Michells Brewery, High Street, [VR at TQ 177110]
1772/1822 Stoveld, John
30.9.1822/-52 Michell, Edward
-1852 Michell, Edward & George
1852/57 Michell, George & Mark
1857/61+ Michell, George & Mrs Harriet
-1865/73+ Michell, Edward & Sons
-1877/98 Michell, George & Edward.
1.7.1898 Merged with George Gates' "Three Tuns Brewery"

The Three Tuns Brewery, (Gates' Brewery)
High Street,
-1828/45+ Gates, George
-1852/95+ Gates, George (junior)
-1899/1915+ The Steyning Breweries Ltd
1917 brewing ceased, damaged by fire
1919 company t.o.b. Rock Brewery of Brighton
c1928 brewery tower demolished

and:-
-1779/84+ Peto, Jeremy
-1798+ Thornton, Richard

-8.7.1832+ Keeping, John & Co.
-1832+ Keeping & Jones
(may have **owned** the Three Tuns Brewery?)

-1851+ Read, William

STORRINGTON

"The Eleven Cricketers",
-1858+ Goodger, George

TANGMERE

-1861/69+ Pacy, Frederick

TILLINGTON

"The Horse Guards"
-1858+ Chalwin, Charles
-1877+ Milton, Manning

UPPER BEEDING

The "Bridge Inn", High Street,
-1852+ Blann, Edward
-1861/64 Blann, Edward & Ambrose
1864/77+ Blann, Ambrose

WALBERTON

The Street, [VR at SU 975057]

-1828+	Ellis, William
-1832/39+	Edward Ellis & Farnden,
-1845/69	Ellis, Edward (died 1869)
1869/77+	Ellis, Mrs Matilda
-1881/1922	Ellis, Matilda & Son
19.4.1922	Taken over by Rock brewery, Brighton, brewery and 4 pubs later purchased by Hoare & Co. London

WALDERTON

-1855+	Davis, William
-1858+	Davis, William (maltster only)

WEST ASHLING

-1851/55+ Coles, David

WEST DEAN

St Martins Brewery

-1881+	Humphrey, George ... West Dean

WESTBOURNE

Gosden Green,

-1865/66+	Hatch, Andrew Bone
-1869+	Hatch, Andrew Bone (maltster only)

WISBOROUGH GREEN

The "Fox & Hounds" Round Street Common,

-1855+	Hawkins, Jesse (maltster)
-1858+	Hawkins, Messrs. E & G (maltster & brewer)
-1861+	Hawkins, Enoch (maltster)
-1865/66+	Hawkins, James (brewer & maltster)
-1869+	Knowles, Robert (brewer only)

WORTHING

The Albion Steam 33, Chapel Street,

-1850/69	Russell, Thomas
1870	Craston, Thomas

The Railway Brewery, North Street,

-1820/22+	Carter, Charles (sen.)
-1836/46+	Mitchell, Henry (maltster)
-1856+	Allen, Alfred (maltster)
-1861	Allen, Dennett (maltster , at Victoria Cottage)
1862/66	Allen, Dennett (brewer &maltster)

The Ann Street Brewery 17 & 19, Ann Street,

-1818/24+	Jones, John
-1828/46+	Carter, William
-1850/-66	Carter, John

"Old House at Home", Broadwater Street East,

c1858	Apted, James

The Cannon Brewery, Cooks Row/Chatsworth Road,

-1822+	Wicks & Knight
-30.4.1824+	Wicks, Joseph
-30.12.1824+	Tamplin & Co.
-25.10.1825+	Osborne?, James
-5.10.1827+	Tidy, James
-1836+	Messrs. Mitchell
-1838/50+	Michell, Henry
-1855/69+	Feest, James & Miss Ann
-1873/78	Feest, James
1879/94	Baker, James
1896/97	Ball,T .....probably only publican(?)
1898	Howard, E.J. ..... do.

The Fountain Brewery, 16, Chapel Road,

1823	built
1823/26	Carter, Charles (I)
1827/28+	Carter, William
-1832/39	Carter, Charles (II)
1839/47	Elliot, Edwin trustee of Carter, Charles (query brewer = Mitchell, James?)
-1845+	Carter, Mrs Mary Ann
-1846 May+	Carter, James (but owners = exors of Chas Carter)
1847/63	Carter, James & Richard
1863/89	Carter, Richard

The "Jolly Brewers" formerly "Brewers Arms" 39, Clifton Road, New Town,

-1836+	Palmer, William
-1838/45	Knowles, William
1846/56+	Sargent, George
-1866+	Brown, -
-1881+	Gravett, Matthew
-1898/1921+	Gravett, George

The "Brewers Arms"/"Cricketers" Broadwater Street West,

-1853/55+	Luff, Thomas

35/37, Broadwater Street West

c1830/49	Thatcher, John

North Street/High Street/Chapel Road,

-1828+	Michell, Henry (maltster, North Street)

-1832+ Michell, Henry (brewer, High Street)
-1836+ Messrs. Mitchell (brewery, & malthouse, Cooks Row)
-1838+ Mitchell (Cannon Brewer & malthouse, Cooks Row)
-1839+ Michell, Henry (brewer, Chapel Road}
-1838/46+ Mitchell, Henry (maltster, North Street)
-1846+ Mitchell, Henry (brewery, Cooks Row)

The Montague Brewery, 46 later 64, Montague Street,
-1846+ Lephard, Edmund
-1855+ Bartlett, Francis
-1857/58+ Croucher, Stephen
-1866+, Searle, Jacob
1878/84, Searle, Jacob
1885 Rice, J.H.
1886+ Searle, Jacob
-1888 Lee, R
1889/90 Potton, F
1891 Lewis, C.S.
1892/93 "Montague Brewery"
1894/1902+ Cornford, Thomas

The New Street Brewery, 13, New Street,
-1845/46+ Clark, William
-1850/56+ Slaughter, James
-1861+ Broocks, George
1863/1923+ Pacy, George

Patricks Brewery, Brewery Place,
-1818/9 Patrick, Henry
1819+ Patrick & Co.
-20.10.1820/-1824 Tamplin

"The Spaniard Inn", Chapel Street,
-1857+ Bicknell, Maria
-1862/4+ Bicknell, Maria

The Egremont Brewery, The Tower Brewery, Warwick Road, [VR at TQ 152026]

1835 built
1835/61 Greenfield, George
1862/79+ Greenfield, Walter
1880/1917+ Chapman, Harry
-1920/23+ Adams, Ernest
1924 t.o.b. Kemptown Brewery of Brighton

The Warwick Brewery, 25/7, Ann Street, [VR at rear i.e. north TQ 150027]
-1832+ Farmer, John
-1836/66+ Slaughter, William
-1869/77 Slaughter, John
1878 "Ann Street Brewery"
1879/91 "Warwick Brewery"

The Vine Brewery, 27, High Street, [VR at TQ 132042] *West Tarring.*
-1881/1906+ Parsons, Henry
-1908/27+ Parsons & Sons
1930/4 beer retailer only
8.8.1937 Parson, Henry died
1938 brewery and pub offered for sale

5, Richmond Place,
-1858+ Booker, John

7, Chapel Road,
1889/90 Bruford & Co. Ltd

Chapel Street,
-1827/28+ Pledge, Edward
-1838+ Hampshire, James

High Street,
-1828+ Hampshire & Tee

Marine Place
-1826+ Wicks, James

John Street,
-1832+ Wicks, William
-1836/39+ Perry, William

North Street,
-1824/27 Penfold, James (T/A Penfold & Stevens?)
1828/32+ Belchamber, James

48, Station Street (Road),
-1876+ Moore, L.B.

Steine,
-30.4.1824+ Parsons, George
-2.1.1826+ Walker, Richard Watt

1 & 2, Brewery Place,
1820/22+ Tamplin & Co.,

THE SWANBOURNE LAKE PUMPHOUSE, ARUNDEL (GR: TQ 018077)

Tony Baxter

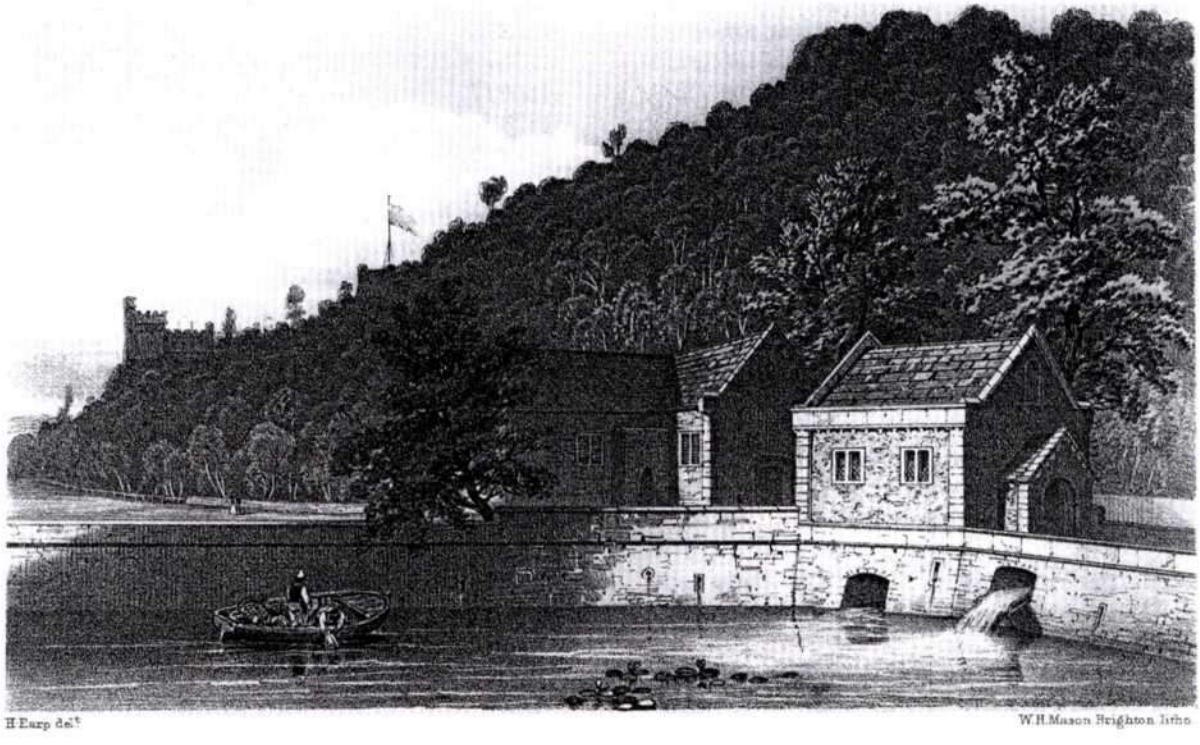

Fig. 1 Pumphouse, 1846. Designed by Robert Abraham for the 13th Duke. (from Frederick Mason, *Illustrations of Arundel Castle* (Arundel 1846)

A short distance to the north of Arundel Castle lies Swanbourne Lake, created before the Conquest as a mill pond but then in the late 1700s enlarged to become an ornamental lake with a new mill pond built at the southern end of the lake to serve the mill which was painted by Constable in 1837. This was demolished soon after and in its place appeared the pumphouse, the subject of this story. The history of the pumphouse is unbalanced by an almost total lack of precise information about the first 50 years of its existence. It is only from documents dated just before 1900 that anything reliable begins to emerge. Moreover, the pumphouse was not the beginning of water pumping up to Arundel Castle, though again little is known about the earlier arrangements for pumping and storage. Nevertheless what is known will be set out to provide some sort of background to the story of the part played by the existing pumphouse in water provision for the Castle and Town. It is perhaps surprising that the building has survived at all, bearing in mind that the other pumphouses built later to increase the water supply have all disappeared without trace.

The earliest reference to a water supply for the Castle is in a report in *Kingdom's Weekly Post* of 1 January 1644 about the Civil War siege of Arundel Castle by the Parliamentary forces under command of Sir William Waller. He was confident that unless relief came within five days the defenders would be forced to surrender as a result of, amongst other shortages, lack of water because "the pipes are cut, which straightens their water ... ". This implies an external source, located perhaps by one of the many springs at Swanbourne where almost all the other later pumps were, and either fed directly to the Castle or via some sort of cistern. There is of course no indication of what sort of pumps were used, nor whether they were wheel or gin driven, nor indeed when they were installed. The Parliamentarians subsequently destroyed the defences of the castle, though the domestic accommodation was retained. Spasmodic attempts were made during the next 150 years to improve this accommodation but not until the Regency days was any substantial rebuilding achieved. This perhaps explains in part the paucity of records of the water supply arrangements during this period.

Nevertheless, by 1705 the pumping arrangements had clearly become inadequate, because "the Lady of the Castle" (name unknown) asked an engineer, Joseph Black, for an estimate for two possible pumping systems. It is significant that in 1701 Thomas, the 8th Duke, succeeded to the title and no doubt in this Estimate we see a new broom at work. A transcript of this document is reproduced at Appendix 1. The first system was for an engine house containing the pump(s) driven by a water wheel through a crankshaft "3½ inches square" delivering the water through a 2 inch lead pipe, up to a cistern and thence to the Castle under gravity. The other system was for a horse gin and engine house under the Castle wall using the same well as the fellmonger. There is no indication whether "my Lady" chose one or both of the systems and certainly there is no trace left of either. It does however seem likely that at least the former was built because in a document dated 1731[1] reference is made to water being supplied from a spring at Swanbourne apparently by way of a cistern in Little Park. An old map of 1855[2] shows a small cistern some 150 yards to the north-west of the Castle which was abandoned and grassed over in the 1960s; this could well have the the cistern built by Joseph Black.

Nothing more is heard of the Castle's water supply for over 100 years until 1846 when, in place of the old Swanbourne mill buildings a pumphouse designed by Robert Abraham was built, described in the *Illustrated London News* 5 December as being of "flint and stone in the Norman style, with a waterwheel of 10 horse-power..." (Fig. 1). Whether the wheel was overshot or breastshot is not known. Unfortunately there are no documents of the time that set out any details of the pumping equipment. It is not until 1891 when a report by A.F. Phillips[3] on the then existing equipment reveals that "the existing pumps are 2 sets of 3 Barrels each 7 inches diameter and 14 inches stroke. The system operates at 10 revolutions per minute so each set should theoretically pump 3,400 gallons per hour (Test gave 2,400 gallons per hour) ... ". There is no indication of who originally installed the equipment nor of any maker's name. The purpose of each set of pumps is not mentioned; but unless there has been a radical change since 1846, which seems improbable, then one set pumped drinking water from a spring about 40 feet due west and the other set pumped lake water.

The report also gives details of the water storage arrangements and refers to three tanks (reservoirs or cisterns): the Fire Tank, the Organ Tank and the Castle Tank. It is impossible to pinpoint which tank was where because, apart from the odd naming, almost every other subsequent document calls the tanks by different names e.g. "Small Tank, Large Tank, Upper Tank, Lower Tank, Town Tank", or to decide which set of pumps fed which tank. Nonetheless the fact remains that there certainly were three tanks then in existence. Apart from the c.1705 one, a new one had been built in 1846, located to the north-east of what is now the Castle cricket ground. This was a handsome building, part sunk in the ground and part above, of red brick with stone dressings. The building is still there though much dilapidated having been taken out of use after World War II. The third tank was situated about 100 yards to the north-west of the second one, shown on the OS 25 in : 1 mile of 1875. This was built in 1873 to implement the Duke's agreement given in 1871 to supply water to Arundel town.[4] Reference to the 'Organ Tank' is interesting: the Cathedral was finished in 1873 (called the Church of St. Philip Neri until 1965) and the organ bellows were powered by a water engine supplied presumably from this organ tank – as this is the only reference anywhere to such a tank, it is not known to which of the three actual tanks he was referring. Apparently the water supply was also sufficient to power not only the hydraulic lift in the Castle but also the dynamos of the first electricity station, (the Castle was illuminated by electric light in 1877) though these were superseded in the 1890s by steam-powered generators installed by the Brush Electrical Engineering Company of Loughborough.[5]

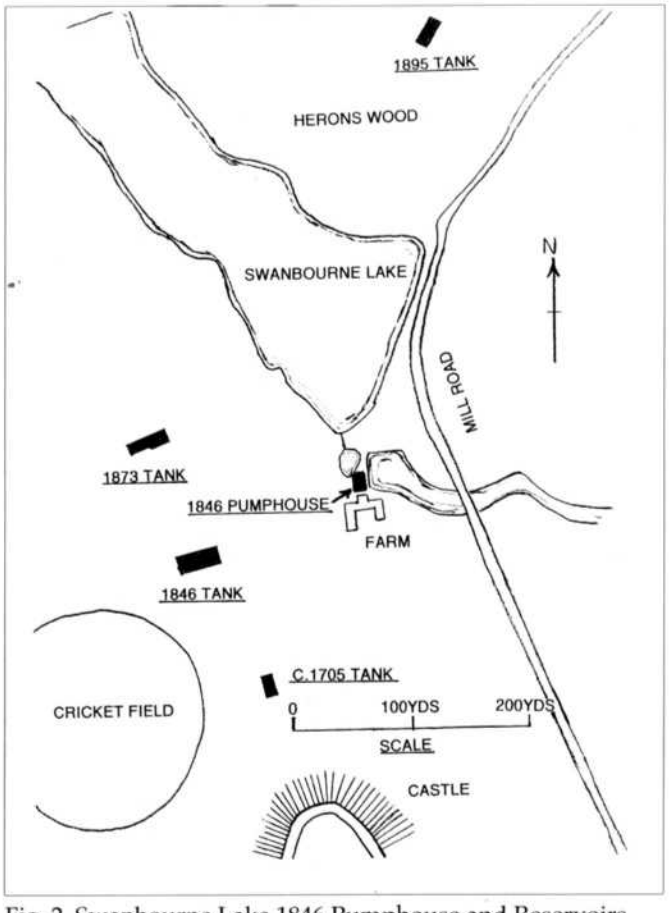

Fig. 2 Swanbourne Lake 1846 Pumphouse and Reservoirs

These arrangements continued until the late 1880s, by which time it must have become clear that the one pumphouse was barely able to cope with the rising demand both from the growing town and from the need for a more comprehensive fire hydrant system operating at a higher pressure. It was for these reasons that the engineer, A.F. Phillips of Westminster, was called in to examine the problem and to make recommendations. This he did in his report referred to above. His solution was to build a second pumphouse, located about 75 yards to the north-west of the first one in a worked-out chalk quarry. The general design and materials matched the existing house, though on a larger scale. It contained two Crossley gas engines (gas supplied from the Arundel Gas Works) each of nominal 12 hp each driving a set of three pumps, which drew their water from a specially sunk bore-hole. To accommodate this new water supply at the required pressure, a further reservoir was built by Heron's Wood on the high ground north of Swanbourne Lake, some 150 feet above the castle quadrangle (at Fig. 2 is a sketch-map showing the relative locations of the Castle, the pumphouse and the four reservoirs). The opportunity was also taken to renew the Water Mains and increase their carrying capacity. The work was successfully completed by 1895.[6]

Not long afterwards concern was being felt about the state of the old pumphouse and waterwheel. In a report by the Duke of Norfolk's Agent, Edward Mostyn,[7] he stated "the existing waterwheel is a very old one and quite inadequate for the work and it is proposed to substitute a turbine which would largely increase the pumping power and necessitate our working the gas engines much less frequently and be a great saving of expense... ". His recommendation was accepted and permission[8] sought from the trustees of the estates for the "erection of a Turbine with all necessary machinery for the supply of water to the mansion house, Arundel Castle, at a cost not exceeding £1,000 ... ". It is assumed that the necessary permission was granted, the work put in hand and completed during 1902, because on 8 October 1902 George Sparks, surveyor, reported[9] that the "... work had been properly executed and that the sum of One thousand pounds is properly payable by the trustees in respect thereof". Sadly no written records can be found of what work was carried out or which firm was employed. The only evidence is what remains. Fortunately, when the abandoned machinery was surveyed by the late John Haselfoot and Alan Allnutt in 1973 a handsome brass plate was found on an A-frame bearing the name "Stothert & Pitt Ltd Engineers Bath". Bearing in mind that the firm did not become a public registered company until 1898, this could imply that the present sets of pumps were new in 1902. On the other hand, as the dimensions of the new and old pumps appear to be the same it is also possible that the old pumps were merely refurbished. Which raises the intriguing possibility that Stothert & Pitt were responsible for the original installation in 1846. Who knows?

The two drawings (Figs. 3 & 4 by Ron Martin) show respectively the layout of the pumphouse and that of the turbine, pumps and associated gearing. At Appendix 2 is a brief description of its operation. It has never been possible to examine the turbine closely because it has always been submerged. Nonetheless it has been seen by experts and the general consensus of opinion is that it is probably based on a Fourneyron design. It is also reasonable to suppose that it was manufactured by Stothert & Pitt themselves, they having been making turbines since at least 1880. The output from the new arrangements must have been significantly better, for when it was measured some 50 years later each set was still producing about 4,000 gallons per hour – no doubt because powered by a turbine it would have been possible to speed up the operation of the pumps. Although many approaches have been made to the known repositories of the Company's records (it closed in 1989) nothing has been found relating to Swanbourne; it is well known that many records were lost during World War II air raids and as a result of frequent floods.

So in 1902 the old pumphouse started a new lease of life, but then once again a complete silence descends on the area, broken only during the World War II apparently by the military who installed, in the present Southern Water compound, a Blackstone diesel-powered centrifugal pump (output 3,300 gallons per hour) presumably for their own dedicated use. Ten years after the War ended, Penfolds the engineering firm in Arundel, were commissioned to design and instal a new pumping system. This was completed in 1956 and consisted of an electrically-driven Pulsometer centrifugal pump of 50,000 gallons per hour capacity – nearly twice the output of all the other pumps put together! This was installed in a brick-built pump-house near to the 1895 house. It is only at this time that we discover that in the 1930s the old gas engines in the latter house were replaced by Penfolds with two second-hand Clayton 2-stroke semi-diesel engines of 50 bhp and 25 bhp respectively.

With the advent of the Pulsometer pump the old reciprocating pumps were relegated to a mere standby role and, in the case of the 1846 house, taken out of commission altogether shortly afterwards. This was followed a few years later by the de-commissioning of the 1895 pumphouse and its complete demolition. Then, in April 1966, what was quaintly called "The Duke of Norfolk's Water Undertaking" was sold to Worthing Corporation for £17,200 plus, at valuation, any stocks and fittings. By 1969 they had sunk a new

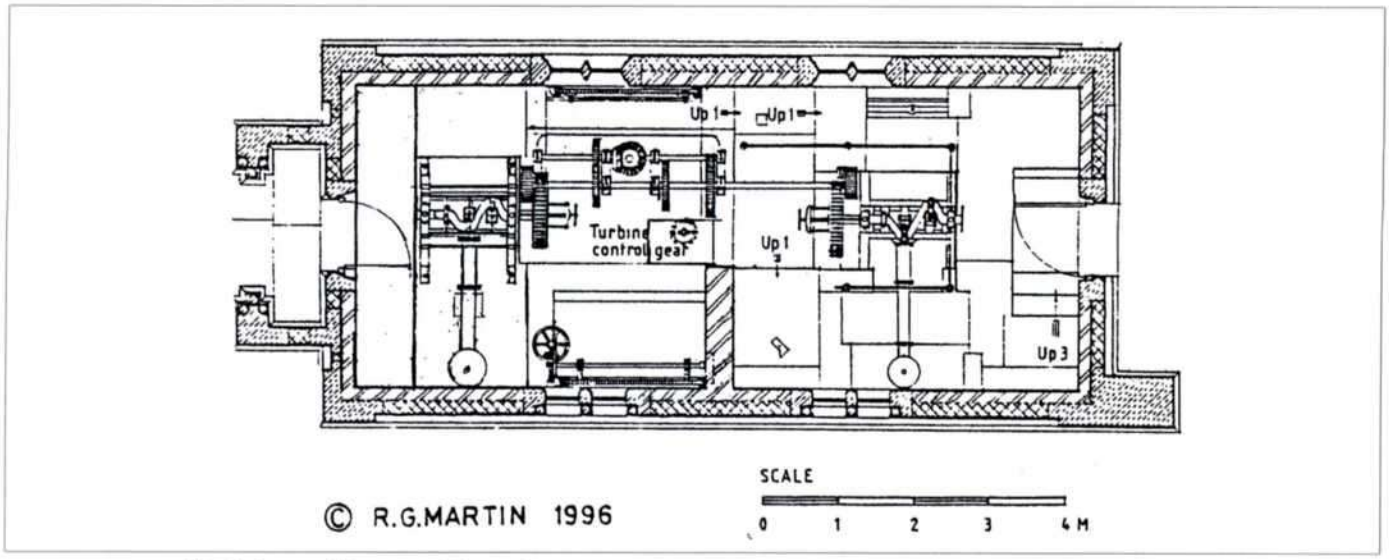

Fig. 3 Internal Layout of Pumphouse

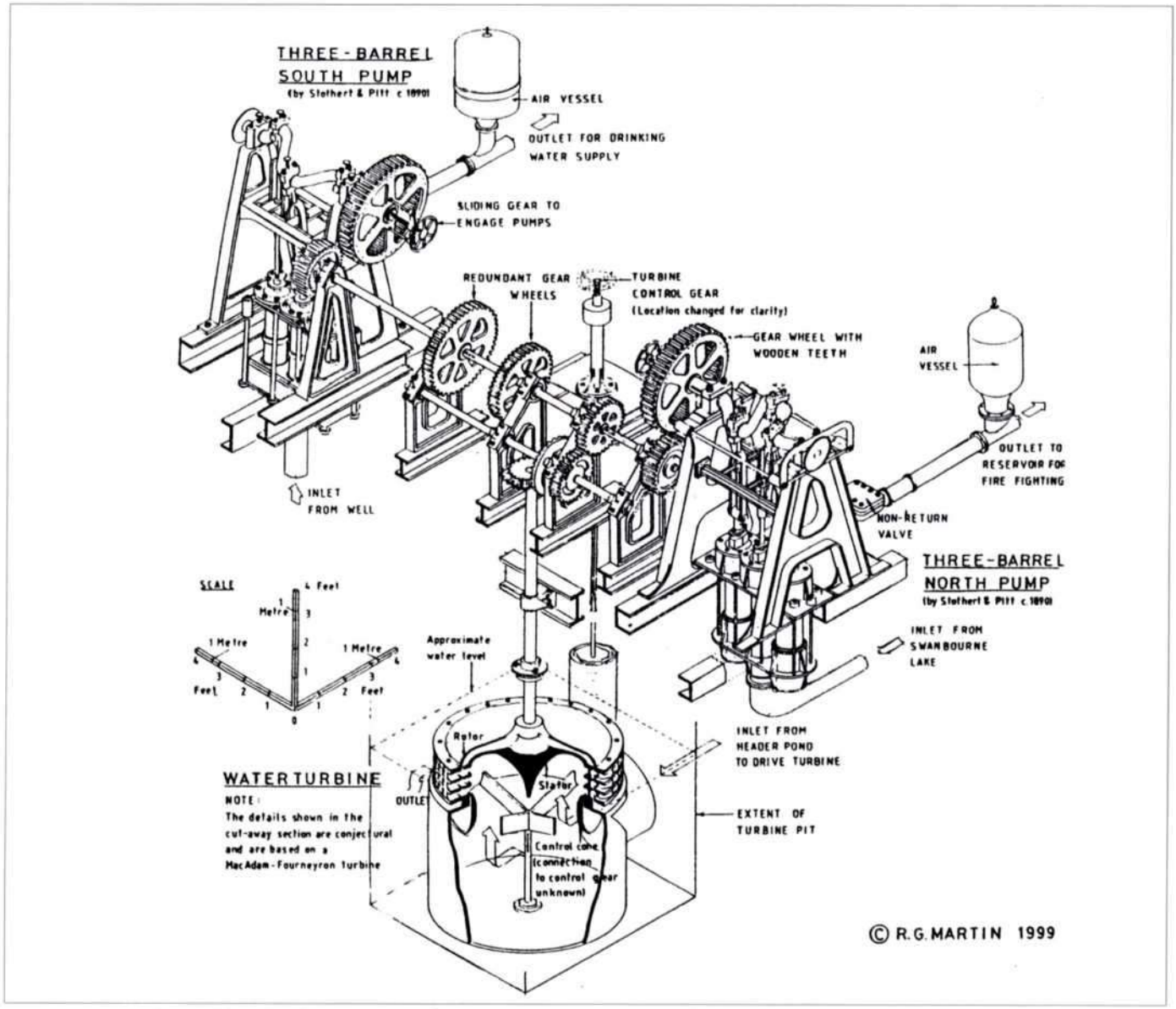

Fig. 4 Details of pumping machinery installed 1902 by Stothert & Pitt Ltd.

Fig. 5 Derelict Pumphouse 1997

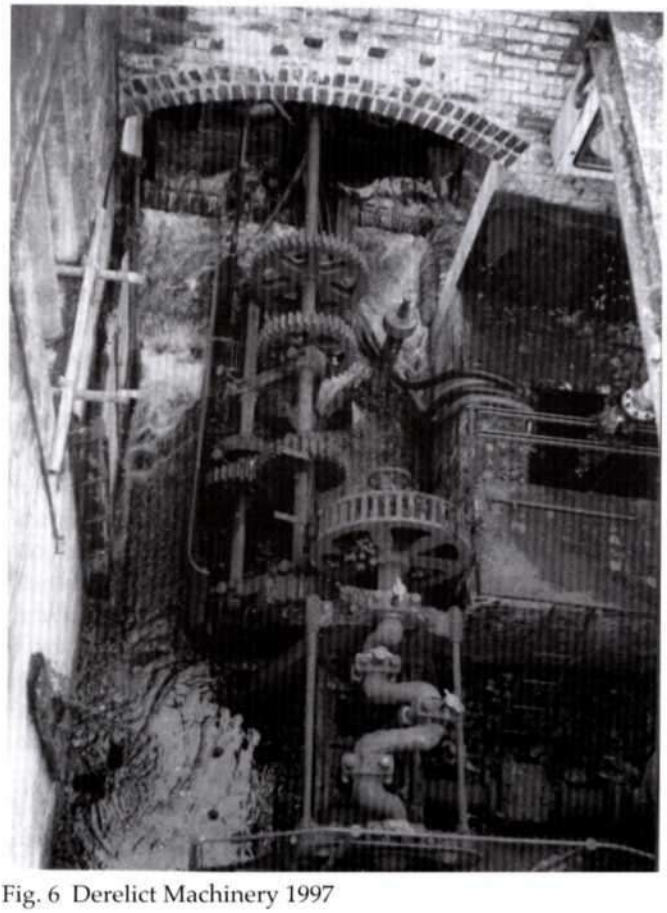

Fig. 6 Derelict Machinery 1997

borehole with a submersible pump and demolished Penfolds' 1956 house and pump. Fortunately the old 1846 pumphouse was never included in the sale to Worthing, otherwise it would have undoubtedly suffered the same fate.

Meanwhile the old pumphouse gradually became derelict. In 1964 or thereabouts its roof collapsed and nature took over. Not until 1973 was it visited by SIAS., when it was cleared of undergrowth and, as mentioned earlier, recorded (Figs. 5 & 6). It was also discovered, however, that at some time before this, either a rogue spring had broken into the tunnel which carried the spring water supply pipe, or the pipe itself had fractured. The resulting flooding of the pumphouse has hampered all subsequent work on the machinery. At the time an approach was made to the Estate Manager to re-roof the pumphouse but this was rejected on grounds of insufficient funds. Another 20 years was to elapse before things started moving again. Even then it was not until early in 1998 that the re-roofing and repairs were completed. Agreement was reached with all concerned that the machinery would be conserved, that a viewing platform with information boards would be constructed at the north end and that in due course the pumphouse would be opened to the public as a static exhibition with entry via the old mill pond enclosure – which had become a trout pond open to the public. Grants were accordingly obtained from the West Sussex County Council and "Millennium Awards for All" for both lighting and the viewing platform. Work was completed

Fig. 7 Present exterior

during 2000 (Figs. 7 & 8) and the pumphouse formally opened in June 2001 by the then Earl of Arundel (now Duke of Norfolk) and our President, Air Marshal Sir Frederick Sowrey. So the old pumphouse has had yet another new lease of life and it is to be hoped that one day sufficient funds will become available to control the flooding and to restore the machinery to full working order.

ACKNOWLEDGEMENTS To R.M. Palmer and F. Penfold for their help in preparing this article and to R.M. Palmer and the late J.M.B. Bevan for the early photographs of the pumphouse.

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2. By M.E. Hadfield. Original in Sheffield City Library (Reference unknown).
3. Arundel Castle Archives. Bundle 2243.
4. ibid. Letter dated 6 Nov 1873.
5. John M. Robinson, *Arundel Castle* (Chichester 1994) p.49.
6. "Instructions for Working Arundel Water Works 1895".
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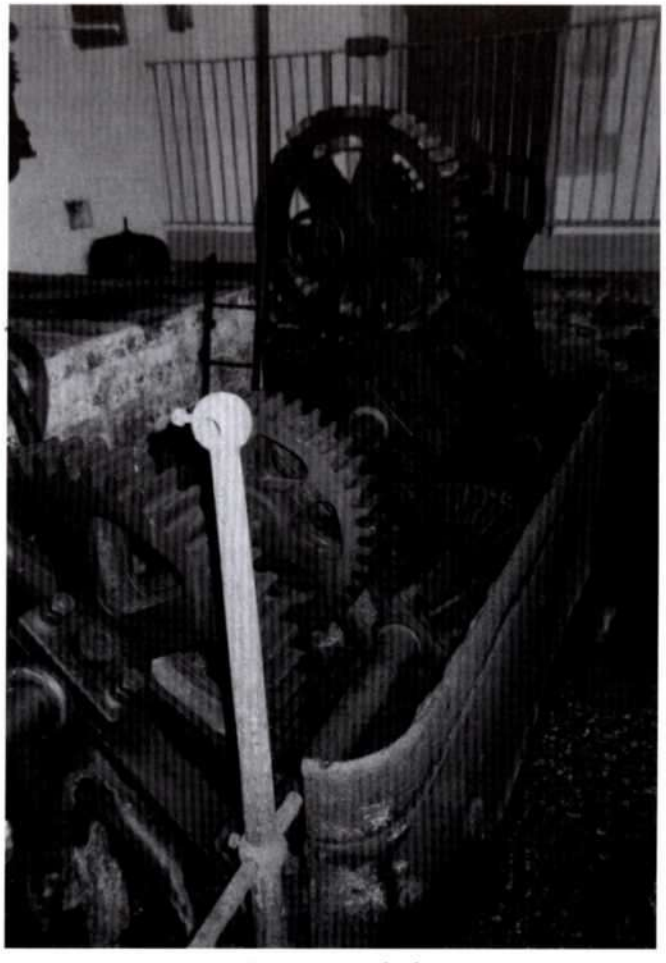


Fig. 8 Present interior looking north showing viewing platform

APPENDIX 1

Transcript of 1705 Estimate for Water Engines at Arundel. (Reference: Arundel Castle MS A339)

An Estimate of the charge for
making an Engine to go by Water

ffor the Ground work with the Water wheel and House to contain the same, with the Laborers work, and all the Iron work, and brass work belonging to the Engine, to fill a Two Inch pipe, being Substantiall and well made, for Duration, the Crank being Three Inches and an half square, and all other work proportionable thereto. My Lady finding the Timber, Stone, Mortar and Tiles. ..... £515 : - : -

But if my Lady is Contented with work less substantiall, it may be done for ..... £360 : - : -
And as much gotten as by the other price.

For the Horse work to raise
Water from the spring weed by the ffellmonger under the Castle wall -

ffor building the House, and making the place Convenient, and Engine, Wheels, and all other Materialls belonging, If substantiall and Lasting ..... £365 : - : -
If less substantiall. ..... £256 : - : -
Timber, Stones, Mortar and Tiles being allowed as above.

As to the Price of Lead Pipes, you shall know in few daies, and what will be taken for burning, joyning and laying.

The value of the Cestern must be left till my Lady's pleasure is known, what quantity of Water she would have it contain

(On the reverse) - Feb^{y} ye 18th 1705
y^{e}, Engenere about y^{e} matter at Arundell in Susex
The Engenere's name is Joseph Black and y^{e} workman's Henery Tandy who lives in Barbicon in London

APPENDIX 2

Operation of Present Pump Machinery.

Water from the old mill pond (now the fish pond) entered the Turbine through a submerged duct, the amount of water being controlled by a valve within the turbine operated manually by a handwheel mounted above the gearwheels. The water then passed radially outwards through both the fixed and moving blades so driving the vertical turbine shaft. This in turn, through the system of gears and shafts, drove the crankshafts of the two sets of pumps. Note the two large gears on the end of the crankshafts which had wooden teeth, a common Millwright practice to avoid breaking the cast iron gear wheels in case of jamming.

Each crankshaft drove three vertical piston rods. As each piston rose in turn, it drew water from the inlet pipe up into the barrel through a non-return valve in its base. When the piston – which also had a non –return valve incorporated in it – descended, the water in the barrel beneath the piston passed up through its valve into the upper part of the barrel. On the piston's next up-stroke, the water above was forced into the common delivery pipe through yet another non-return valve which prevented the water being sucked back into the barrel. Finally, the water passed through an air-vessel designed to even out the flow.

The set of pumps nearest to the turbine drew its supply of water from the fishpond and discharged it up to one or other of the reservoirs for general purpose and fire-fighting use.

The other set of pumps drew drinking water from a nearby well spring and delivered it to the special reservoir nearest to the Castle. An elaborate system of interlinking pipes and valves controlled the supply to the reservoirs; and it was even possible to change over the functions of the two sets of pumps in case of emergency.

THE HAMMOND FAMILY CONNECTION WITH SUSSEX MILLS

Robin Jones

Introduction

Since becoming the Editor of the Sussex Mills Group Newsletter, I have received a wide selection of interesting letters, articles and general information on a variety of mill related topics, which I have published in various issues of the Newsletters. Michael Dillon of Eastbourne, Archivist of the Friends of Windmill Hill Windmill, made a general request for some historical information about the Windmill in the Friends Newsletter No. 5 dated July 2002. This resulted in correspondence from Mrs. Josephine Potten and her son Ray of Hove, and from Miss E. Mary Selina Hammond of St Albans who are members of the Sussex Industrial Archaeology Society, and are also related to Charles Edwin Hammond who on 7 May 1873 took out a patent for a centrifugal governing mechanism to control the speed of the sweeps of a windmill, one example being incorporated in the mill at Windmill Hill (Fig. 7). As this information was too comprehensive for the Newsletter, I have put together the following article from the correspondence received and associated documentation. I have also included some photographs of the mills and other features mentioned. The photographs Fig. 4 to 6 and 8, were kindly provided by the family of Josephine Potten. All other photographs were taken by the author in 2003.

Mrs. Josephine Potten, with assistance from her son Ray, writes:-

My interest in Windmill Hill Windmill stems from my great grandfather Edward Beeny (1801-1872). According to Messrs Richard & Richard McDermott in their 1978 book *The Standing Windmills of East Sussex* Edward "owned and worked the mill from 1830 until his death in 1872". Certainly the Herstmonceux census returns from 1841 to 1871 show him as a miller, (and later as a farmer), living at Windmill Hill House but his youngest two sons, Samuel Milton and Albert Newton, are also shown as millers in the locality in the 1871 census. According to the McDermotts it was Albert who disposed of the mill to my great uncle Charles Edwin Hammond (1841-1903) only one year after his father's death.

As reiterated by the late Martin Brunnarius in his March 1984 submission to *Remolam* (Issue 17) headed "Mills for Sale" Charles Edwin Hammond, together with his brother (my grandfather) Joseph Hammond (1839-1894), had married into the milling business by virtue of a joint marriage ceremony at Herstmonceux on 17 January 1865, when they wed two of Edward Beeny's daughters, Ann(e) Sarah and Ada Selina respectively. (see Appendix 1 for entry that appeared in the *Sussex Advertiser* dated 25 and 28 January 1865). Family records show that from February 1867, until its dissolution in January 1882, the two brothers were in partnership. They acquired an interest in Clayton Mills in 1867, when the executors of the previous owner James Mitchell announced the sale of their leases by auction (as described in the *Brighton Gazette* dated 8 August 1867, see Appendix 2).

It is unclear as to whether, and if so how, these brothers divided their responsibilities, as owners, working millers and corn dealers, between the two Clayton Mills and Windmill Hill Windmill, following the latter's purchase. Certainly the census returns for 1871 and 1881 show both continuing to live with their respective families in the Clayton and Keymer areas, with those offspring produced in the intervening period being shown as being born in these villages. (The close ties with this area of Sussex of this branch of the Hammond family originated from their father, George Hammond (1782-1862), who farmed at Lodge Farm, Keymer (Fig. 1), which lies approximately half way along the main road between Ditchling and Clayton. On his death George was succeeded as farmer in turn by two of his older sons, firstly William, and then Robert.)

Fig. 1 Lodge Farm, Keymer, farmed by George Hammond, the father of Charles and Joseph Hammond.

Irrespective of whether Charles Edwin or Joseph actually worked the Herstmonceux mill, at some stage a sweep governor, designed and patented by Charles Edwin in 1873, was installed there. This modification, known as "Hammond's patent" is comprehensively described and illustrated, again by Martin Brunnarius, on this occasion in his 1979 book entitled *The Windmills of Sussex*.

There appears to be differences in opinion as to how long Charles Edwin Hammond retained an interest in Windmill Hill. In their book, the McDermotts imply his interest ceased in 1879, when "it was taken over by James Harmer". They also narrow down the introduction of the sweep governor to "some period between 1873 and 1876". On the other hand in *The Windmills of Sussex* Martin Brunnarius stated that "the Hammond brothers took the mill in 1878 and owned it for 14 years. James Harmer actually worked the business from 1878 until 1887; Mr. Hammond was overseer during this time." Both sources agree that Henry Harmer took possession of the mill in 1892, and that he was responsible for the sweeps being removed, and for the installation of steam power. As family records show that the Hammond brothers partnership was dissolved in 1882 I believe only Charles Edwin would have had any interest in the Windmill Hill after this split. Unfortunately I have no information confirming when his interest in the mill ceased, nor any confirmation as to exactly when the sweep governor was installed.

As regards Clayton Mills Charles Edwin Hammond held the copyhold lease there until his death in 1903, at which stage the Hammond family interest in the mills ceased with the sale of the lease by auction to one William Wood. It is also known that during his tenure his patented sweep governor was fitted in the cap of Jack Mill, although again only the date of the patent, 1873, is a clue to when this mechanism was introduced. As is also well recorded in accounts of Clayton Mills, the pulpit in Clayton Church is dedicated to the memory of Charles Edwin (Fig. 2).

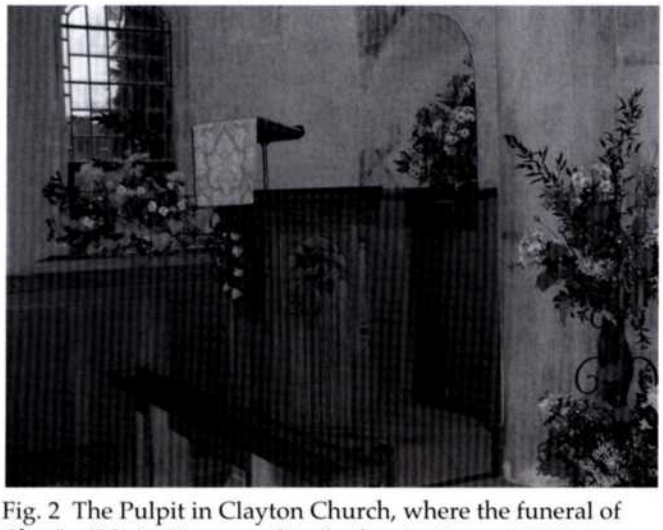


Fig. 2 The Pulpit in Clayton Church, where the funeral of Charles Edwin Hammond took place in August 1903. A brass plate on the rear of the pulpit, seen below the flower arrangement, is inscribed with the words 'To the Glory of God and in memory of a good Father and Mother, Charles Edwin Hammond died August 14th 1904, and Ann Sarah Hammond died July 25th 1891'. The date of 1904 is incorrect.

Fig. 3 Spitalford Bridge, Hassocks. Located over a stream in Keymer Road. This bridge east of the United Reformed Church has a stone tablet in the brickwork reading 'This Bridge rebuilt September 1877. William Wood, Surveyor of Clayton. Joseph Hammond, Surveyor of Keymer.

With regards to his brother Joseph, following the break-up of their partnership, in 1882 he left to take over the brewery in Newick. An advert in 1886 refers to him as a brewer, maltster, and as a corn, cake, seed and coal merchant. Joseph Hammond had left Newick Brewery early in 1891 and is not recorded there in the census of that year. He died at Ashington Mill three years later in 1894. An entry in Kelly's directory, albeit after his death, suggests that he had been working the mill there. (As with Charles Edwin, but on a more modest scale, there is also a legacy of Joseph's time in Mid-Sussex – an engraved stone on Spitalford Bridge, Hassocks (Fig. 3) commemorates his involvement, as surveyor for Keymer, in the rebuilding of the bridge in 1877.)

Deterred by the declining viability of mills, and especially windmills, at the end of the nineteenth century, to my knowledge the only son of either of the Hammond brothers to continue working in milling was my father, Joseph's son Francis Joseph (1873-1952). As a "journeyman" miller Frank, as he was known, did not enjoy the security of tenure familiar to his forebears, but rather had to move from mill to mill to find suitable employment. Just as farm workers lived in "tied" cottages, Frank was dependant on his employers for accommodation. Hence changing employment usually also entailed moving his family and possessions at short notice, another noticeable contrast to his predecessors.

In the late 1930s, when he was working at Fletching Mill, he was interviewed by a Rev. A.A. Evans who was researching his 1939 book *By Weald and Down* (Fig. 4). In this book the Rev. Mr. Evans writes "I went into the mill at Fletching and had a most useful lesson from Hammond the miller in the art and mystery of his craft". He concludes by lamenting the passing of water

and windmills, and the passing "of the real miller, who knows the secrets of the 'threft' and 'mill bill' and how to furrow a stone and stitch it" (see Appendix 3).

Fig. 4 Frank Hammond standing in the doorway of Fletching Mill. The other gentleman is possibly the Rev. A.A. Evans who interviewed him in 1938 when preparing his book *By Weald & Down*. See Appendix C.

He also recorded Frank Hammond as saying "come Christmas I shall have been forty-eight years at milling". I know my father left Fletching Mill for Dean's Mill, Lindfield (Fig. 5) in 1938, as after a recent change of ownership of the mill, he was not impressed when the new owner announced that when Frank qualified for his state pension at age 65, his wages would be reduced by the amount of his pension! Given that Frank could have been interviewed no later than 1938, he must have started in milling no later than 1890, when he reached 17.

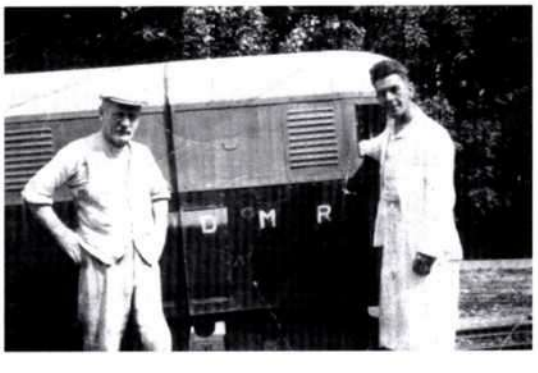


Fig. 5 Frank Hammond, left, with the baker standing in front of the Deans Mill Railway Locomotive in the mid 1940s.

Not recorded in the interview is my father's claim to have worked in over 30 mills. Of these, to date, I have only been successful in identifying 15 mills. I know he undertook his apprenticeship with the water millers Jenner & Higgs, and during this time I understand he worked at Bridger's Mill, Haywards Heath. I also know he worked for his uncle Charles Edwin at Clayton Mills, at some time before 1903.

I have recently discovered that in the 1901 census he was living and working as a corn miller in Albury, near Guildford. By the time of his first marriage in 1905 he was milling at Isfield, whilst my half-sisters Doris and Ivy were born when he was at Cockhaise Mill, Lindfield (1906-7). My third half-sister Catherine was born in 1911 when he was working Coltsford Mill, Oxted, whilst at the time of his second marriage (1918), and my birth (1921), he was at Leigh Mill, Godstone.

My earliest memories are in my pre-school years when my father was working at Uckfield Mill, where he was employed primarily as a stone-dresser. Around 1926 he moved to Fletching (Fig. 6) where he settled until his final move in 1938 to Dean's Mill, where he worked until his retirement. Incidentally this last employment did not come with "tied" accommodation, and hence I recall my parents had to find and rent alternative housing as a matter of urgency when he tendered his notice at Fletching.

Fig. 6 Frank Hammond dressing a millstone at Fletching Mill in either 1933 or 1934.

Whilst unable to provide dates, within the family it is known that at some stage he also worked at Hempstead Mill, Uckfield, Oxted Mill, (as opposed to Coltsford Mill), Abbey Mill, Bishops Waltham and Oldlands Mill.

Miss E. Mary S. Hammond writes:-

I read with interest my cousin Josie Potten's letter her late husband prepared on the history of the Hammond and Beeny families. I am also the granddaughter of Joseph Hammond who once owned the mills with my great uncle Edwin.

My father lost his builders business in 1916. The Lodge Farm at Keymer, where my great uncle Robert Hammond lived was my second home, although I was at school in Bedfordshire. As a molinologist, I have recorded windmills in many counties, including my home county, Sussex. The internet site www.mill.archives are going through my photographs. As a member of Jack & Jill and Windmill Hill societies, I visit when possible. My old photograph of Windmill Hill, also in Brunnarius' book *The Windmills of Sussex*, I understand included Joseph Hammond in the doorway. He and Charles Edwin married E. Beeny's daughters. The brother fell out and grandfather left to become a brewer. He retired to a watermill at Ashington where he died. The Mill House is now a hotel, and I could not find water or any remains of the mill, which I believe was burnt down. The restoration of Windmill Hill is important as I think the only one of its type to be restored is in Suffolk.

I thought you might be interested that a Hammond still existed!! My father was apprenticed to Longleys and his first job was Dartmouth Naval College – The Longleys were related by marriage.

Yours sincerely,
E. Mary S. Hammond

P.S. Alas still in "exile" from the county I love – born at Loxwood.

Appendix 1

This notice appeared in two editions of the *Sussex Advertiser* dated 25 & 28 January 1865

Double Marriage (at Herstmonceux)

On Tuesday last the two Misses Beeny, daughters of the respected parishioner Mr. E. Beeny, Miller, were married to two brothers Messrs. Hammond of Ditchling

– Charles Edwin Hammond to Ann Sarah Beeny and Joseph Hammond to Ada Selina Beeny. The brides being the last two daughters of Edward Beeny Miller Hx. and the bridegrooms, sons of the late Mr. Hammond, farmer of Ditchling.

Appendix 2

This notice appeared in the *Brighton Gazette* dated 8th August 1867.

THIS DAY,

THE CLAYTON MILLS, SUSSEX

To Millers, Corn Merchants and others

MR. KENSETT is instructed by the Executors of the late Mr. James Mitchell, to Sell by Auction, at the King and Queen Inn, Brighton, on Thursday (THIS DAY), August 8th, 1867, at Two for Three o'clock in the afternoon, in one lot, all those TWO EXCELLENT WIND CORN MILLS, Drying Kiln, Store Houses with underground communication, Stable, Cart Lodge, two Cottages with Gardens, and other Buildings, situate on CLAYTON HILL, with possession, comprising a newly-erected brick-built commodious TOWER WIND CORN MILL, having four floors and top stage, with cap, patent fan, and sails, driving three pair of French stones (with space sufficient for the addition of another pair), Flour Dressing Machine (by Walworth and Co. Bradford), Smut Machine as fitted with elevators; the whole built within the last two years in the most substantial manner. This Mill, with cart lodge, a granary, the top floor fitted with seven bins, bottom floor used as a meal room and fodder store, drying kiln, old Round House now used as a store room, and 5 rods of land every way from the centre of the Round House, is held for a term of 99 years from 25th March 1865, at the annual rent of £5.

A subterraneous passage communicates with the New Mill, and leads therefrom to the kiln and Store House and the Old Round House.

Also, a well-constructed POST WIND CORN MILL, removable by the tenant, having two floors in round house, two floors in mill, and store bins fitted at top; has patent fan and sails, driving one pair of French stones, one pair of peak stones, Flour Dressing Machine and Smut Machine with fans and it is conveniently placed near the Tower Mill; and this mill, with one acre of land, whereon are two Cottages, Workshop, and Stable; is held for a term of 21 years from 25th March, 1863 at the annual rent of £5.

The Running Gear in both mills will be included in the purchase. The Implements of Trade are to be taken by the purchaser at a valuation.

Particulars and Conditions may be had of Messrs. Black and Freeman, Solicitors, Ship Street, Brighton; at the Inns in the neighbourhood; or of the Auctioneer, Ditchling, near Hurstpierpoint; and the Property may be viewed at any time.

Appendix 3

An Extract from Rev. A.A. Evans, *By Weald and Down*, (1939).

Chapter Two

Roundabout Fletching

A grey cat sat at the door of the mill, looking out on the world with vast contentment. He was fat and well favoured. I have a respect for cats who earn their living, just as I have for human kind who earn their bread before they eat it. This cat did not eat bread, or not much of it, although in a sense he was in the bread business: he ate mice. The miller tells me that wherever there is flour-meal, there are mice, and in a mill where grain is being ground mice are in abundance; so I learned that Grim was a useful assistant to Hammond, and, for a good reason, was a fat and happy cat.

Fletching Water Mill is at the bottom of a hill below the village. One expects to find a water mill at the bottom of a hill, where the river flows, but I know of water mills in Sussex which are at the tops of hills. There is one, there used to be two, on the hilltop of the remote little hamlet of Little Bognor, a name which has no connection or a distant historical one, with another Bognor miles away on the coast, and which, now that it sprawls so much, deserves to be called Big Bognor.

I went into the mill at Fletching and had a most useful lesson from Hammond the miller in the art and mystery of his craft. When I came out into the sunlight I hardly recognized myself, for instead of being a black-garbed, sedate parson I was floured from head to foot, and looked as grey as a miller should look. Nevertheless, I had gained knowledge. I called at a happy hour, when Hammond was dressing the stones and was free to talk and explain the deep things of his calling. I learned what a 'threft' is and a 'mill-bill' – singular-looking tools, which through all the centuries have been used in the highly delicate work of 'furrowing' the radiating lines of the great stones, and for 'stitching' the surface.

These mighty stones, when dressed by a miller who knows his job, are balanced to a nicety that I had not dreamed possible. In their horizontal position they rotate at a touch, and so perfectly and evenly that a bit of common thread inserted between hinders the freedom of their motion. Hammond showed the pride in these triturating stones which the maker of a tiny watch might feel in the delicate strength of its wheels.

'How much meal can the stone grind in an hour?' I asked.

'She varies', replied the miller. (Here let me explain that a working mill-stone is 'she'.) 'She averages, I might say, two hundredweight of oatmeal an hour, but when she is newly dressed, or when there is a flood on the stream, she will go up to as much as four hundredweight and hour.'

'Do you ever grind wheat?'

'Not now,' he replied, 'but in my time; and come Christmas I shall have been forty-eight years at milling. I have ground hundreds and hundreds of sacks of wheat flour, and helped to make the best bread a man could eat. Though I say it, there's no bread which tastes as sweet and builds up bone and muscle as that of English-grown and stone-milled flour. It's one of the lovely things of the world.'

'Then why don't you go on grinding it?'

'For two good reasons. One is that bakers don't care to use it; it doesn't suck up enough water for them. Imported flour is more paying. It may fatten the children, but it doesn't fatten the baker.'

'And what about the other reason?' I asked.

'Oh, it's the womenfolk; they don't like the trouble, or I should say many of them don't. You see, home-milled flour needs more teasing, as we call it, in working it up, or it gets puddingy. But then folks don't take the trouble over these things as the old ones did. They want everything done easily and quickly.'

Now, for myself, I am not able to give any opinion on such weighty matters. I pass on what I heard, amid the rumble and roar of the wheels.

I have been looking into the Domesday Inquest of 1086, and see that in Fletching, but as part of the then Sheffield (Sifelle) estate, was a water mill worth 40 pence annually, a good rent at that distant time; also, it paid to its lord, as part of the rent, 500 eels. I wonder whether this mill is the Domesday one.

It is likely, however, that the Domesday mill may refer to another site bordering Fletching Park. The meadow rising above my mill, just described, is marked on the large Ordnance map as Forge Field, and this suggests that the mill had its beginning, not as a flour mill but as a furnace, and where in the sixteenth century the thumps of tilt hammers would be heard and the deep breathings of mighty bellows. Moreover cinders exist about the mill-pond.

But its life is threatened. This commercially minded age has little use for water mills, or, either for wind mills. Flour of the kind that bakers love, and some working women, of grain grown in other lands, this can be ground swiftly and cheaply, very fine and very white, by steel rollers driven by steam, and in mills which do not look like mills, but huge factories. Every water mill and every wind mill in our land is quickly passing, and the miller, the real miller, who knows the secrets of the 'threft' and 'mill-bill' and how to furrow a stone and stitch it, is passing with it. These things have added beauty to rural life, given skilled employment to local men and wider interest to the village, but they have the fatal drawback of not making money as quickly as does the town mill, so they must go.

Appendix 4

HAMMOND'S PATENT SWEEP GOVERNOR (Fig. 7)
On 7 May 1873 Charles Edwin Hammond took out a patent on a novel centrifugal governing mechanism designed to control the speed of a windmill. (Patent No. 1654].

Fig. 7 Jill Windmill, Clayton.
Hammond's Patent Sweep Governor showing the upper 9" diameter cone. As the speed changes the cone moves up and down the vertical shaft assisted by the compression spring, as the balls swing out guided by the two ears. The lower part shows the friction clutch mechanism, described in Appendix 4. A pulley connected to the end of the horizontal shaft on the left is chain driven to Cubitt's weight wheel. A belt from the rear of the windshaft connects to a pulley on the right hand end of the horizontal shaft in the lower right. This provides drive to the Governor, via the bevel gears.

The first of these was fitted into the cap of Jack tower mill at Clayton, and the second in the rear of the bin floor at Herstmonceux post mill in which the Hammonds had an interest. This is basically a large centrifugal governor similar in action to the type used to control the tentering of millstones. A belt from the windshaft drove a cone friction clutch system, which conveyed its action to the existing striking gear.

This could only be applied to Cubitt's patent sweep control and was intended as an additional refinement to be readily incorporated. Cubitt's method controlled the sweeps by relying on a counterweight load operating the shutters in response to a change in wind pressure via a series of levers and rods. The drawback with this was that power was lost unnecessarily when a sudden gust of wind occurred causing the sweep speed to vary, or if the work load within the mill changed. In this latter case the miller would be required to alter the weight setting to compensate.

Hammond's governor was intended to override the Cubitt gear whenever the sweep speed varied from a predetermined norm, whatever the wind or load conditions. Two opposed iron cones were fitted to a keyed sleeve. These were, according to sweep speed, raised or lowered by centrifugal weight levers. In turn the small cones drove a larger iron cone backwards or forwards which, via a light shackle chain and pulley, immediately pulled the Cubitt's weight wheel into the "open" or "closed" shutter position. The existing weight and chain were retained, acting in a second groove in the rim of the weight wheel. This was used to provide the initial setting and controlled the mill entirely at the idle position in the governor's action. A torque limiter was provided to prevent the existing striking gear being strained as the sweep speed increased.

Mr. Hammond's unique mechanism was used in both mills for a considerable time and was in working order at Herstmonceux mill when milling by wind ceased there in 1892. The concept seems very sound as the speed at which the windmill worked was quite critical especially if, as in the case of Jack, rolling equipment was installed. The wind however, never blows to order and the sort of conditions required to keep the sweep governor usefully employed would only have occurred for limited times. Periods of near still air often prevail even on the Downs.

This Governor was renovated and installed in a working configuration by volunteers from the Jack and Jill Windmills Society. It was loaned by Mr. R. Buckmaster on the understanding that it would be returned to Herstmonceux post mill when the restoration of that mill reached an appropriate juncture.

Appendix 5

The report on the funeral of the late
Mr. C.E. Hammond
Mid Sussex Times dated August 25 1903.

"A numerous gathering at Clayton:- In the peaceful old churchyard at Clayton, quite close to the famous Downs, the internment took place of Mr. C. E. Hammond's body on Wednesday and in that beautiful August afternoon, when the earth was bright with sunshine and fair with golden corn, people from miles around gathered in the little village to finally mark their regretful sense of loss of one they had greatly respected and appreciated.

Like his windmills on the steep hill yonder, the deceased was known far beyond the confines of his own locality, and although during his lengthy residence at Clayton he has well acted in public capacities for the parish, it was chiefly his business as a miller and corn merchant which brought him into agreeable contact with so many persons, Haywards Heath Market being among the places to which he was a frequent visitor.

The deceased, who was 62 years of age, had been confined to his bed for some months past with kidney disease and he passed away on the previous Friday at his house called Mill Land.

To the small, ancient and interesting church, the coffin was carried on a bier by employees of the deceased. It was followed by a large company of mournful relatives and friends and the building was filled to overflowing.

[The mourners included many members of the Hammond family, with sons Edwin Lincoln, Charles Frederick and William Robert and daughters Annie, Norah and Mary Hammond being joined by other family members, including Henry Longley Senior from Selsfield Place. Others present at the funeral were notable people from the surrounding area.]

Impressive was the service, which was conducted by the Rev. Prebendary Shand (Rector), and the singing of 'Now the labourer's task is O'er' was accompanied on the organ by Mrs. Shand, who also played the 'Dead March' as the congregation, sombre looking, left the church.

The grave was tastefully lined with white flowers and foliage by the deceased's workmen, an act shewing regard for their departed master and as the sorrowing ones gathered round the opening, the words of the well known hymn seemed to be resounding 'Father in thy gracious keeping, leave we now thy servant sleeping'.

On the coffin, which was of polished elm, with brass fittings, was a raised plate bearing the inscription :-

Charles Edwin Hammond. Born June 11th, 1841
Died August 14th, 1903"

Exquisite floral tributes were sent by the children of the deceased, a magnificent cross being one example. Other floral tributes were sent from the many mourners who attended.

Mr. F. Wood of Ditchling was the undertaker."

ACKNOWLEDGEMENTS

The author would like to thank two cousins Mrs. Josephine Potten (nee Hammond) and Mary Hammond for all their help, and for the family photographs provided (Figs. 4 to 6 and 8). In addition, with specific regard to the family history content, credit is also due to another first cousin, the late Mrs. Betty Davis, and to Mrs. Potten's late husband Charles (Johnny), for the extensive research they undertook during the 1980s.

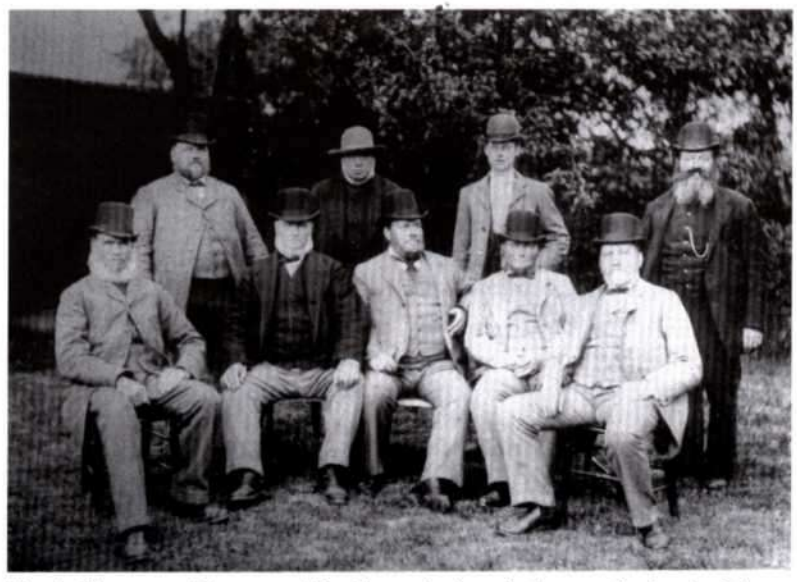


Fig. 8 The seven Hammond Brothers. An inscription on the back of the photograph states their combined age as being 404 years and this would date the photograph to June 1889. Charles Edwin is standing on the left, with Joseph standing on the right. The five remaining brothers are seated. (Photograph by courtesy of Mary Selina Hammond)

THE HISTORY OF SHOREHAM CEMENT WORKS

Ron Martin

INTRODUCTION

Located in the Adur Valley at TQ 200086, are the remains of the Shoreham Cement Works. Although mainly within the parish of Upper Beeding, successive owners have always referred to the site as "Shoreham". It was built on both sides of the A283 road at the east side of the River Adur and the 1861 Shoreham to Horsham railway line. The existing works was built between 1946 and 1952 as a *state of the art* design and was finally closed in 1991.

Lime – early uses

Prior to the introduction of Portland cement the normal method of bedding masonry was by the use of lime mortar. Lime is derived from calcium carbonate, which is normally found in the form of limestone, or in Sussex as chalk, and is heated in a kiln at a temperature of 900°C. The effect is to drive off carbon dioxide, leaving calcium oxide, which, when mixed with water, reacts violently; hence its name "quick-lime". When gauged with sand, this creates a dry hydrate and this is the way lime mortar was mixed in the massive building programmes of the Georgian period.[1] It was also realised that some limes that were derived from impure calcium carbonate produced a hydraulic lime which would set under water. The Romans had intermixed pozzalanas, derived from volcanic rocks containing silica and alumina, the ingredients of clay, to create a hydraulic lime. John Smeaton, when constructing the Eddystone Light-house in 1756, realised that a hydraulic lime mortar was essential and used lias lime and imported pozzolanas from Italy. Later, in 1796, James Parker manufactured the cement named after him and also called "Roman" cement, which was derived from nodules of limestone in clay beds in the Isle of Sheppey and were burnt to a temperature higher than that for lime but not high enough for vitrification.[2] Parker's cement was used extensively during the nineteenth century being very strong and having good adhesive properties.[3]

Origins of Portland Cement [4]

In 1824, Joseph Aspdin, a Wakefield bricklayer, was granted a patent, No. 5022, for Artificial Stone which he called "Portland Cement" because of its resemblance to Portland stone. His patent was imprecise about the proportions of materials and also required the limestone to be slaked before being mixed with the clay. The temperature of burning of the mixture was specifically aimed at avoiding vitrification. His son, William, developed the manufacture and moved to the Medway area. The first cement kilns were bottle kilns similar to limekilns but with the top raised as a chimney to increase the draught and raise the temperature (Fig. 1). By the 1840s, Portland cement was on the whole a highly successful product, although its quality was variable and experiments were carried out by various manufacturers to improve the material. To incorporate the clay and chalk the materials were mixed in wash mills and the water settled out in "drying flats".[5]

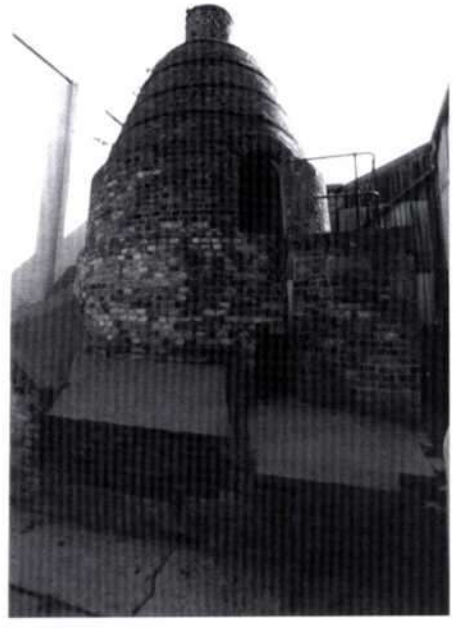


Fig. 1 Aspdin's cement kiln at Northfleet

Isaac C. Johnson, with a chemical background, in 1845, further developed the scientific background to the technology. He was the manager of White's cement works in Swanscombe and carried out a series of experiments to more accurately gauge the materials. By chance, a batch of cement became overburnt and when the resulting clinker was ground to a powder it was found to be much better that the earlier cement produced by the Aspdins. This was truly the beginning of Portland cement as we know it today and the only claim that the Aspdins could make was to conceive the name. The other innovation that Johnson introduced was the invention of the chamber kiln with a horizontal drying floor supported on arched chambers at the end of a bottle kiln, in which the slurry was dried to produce a cake. These chamber kilns were built in batteries of six or more.

In 1877, Thomas Crampton was granted patent No. 2438 for rotary kilns (Fig. 2) and these were further developed, in 1885, by an American, Frederick Ransome. They consisted of long iron tubes, set at a slight angle, rotated slowly so that the slurry passed down through the tubes while the fuel was blown in from the bottom. Although, in America, rotary kilns were further developed, in Europe vertical shaft kilns were favoured, including Schneider kilns and Dietsch kilns. An unsuccessful experimental shaft kiln was also erected at Beddingham in Sussex, in 1928, using the flotation principle.[6]

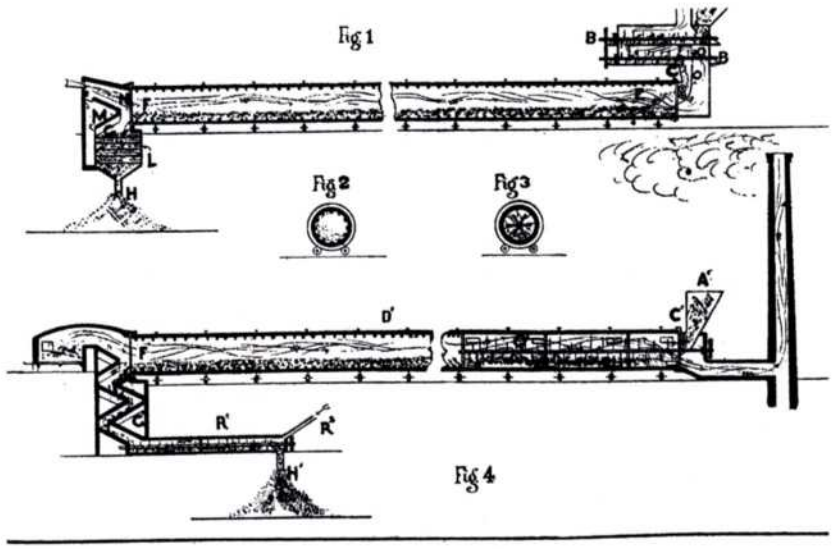


Fig. 2 Thomas Crampton's rotary kiln of 1877

Early days at Shoreham

The site at Shoreham is located in the Beeding Chalk Pit and limekilns[7] were there, probably from early in the nineteenth century, using water to transport the materials.[8] The Steel Bank and Lime and Cement Co. owned the site in the 1850s but there is no evidence of any cement production at this time.[9] The first sign of manufacture at the site was on the 1872 OS map[10] which showed two limekilns, one on the west side of the road and one, described as "Old Lime Kiln", on the east side of the road. In 1878, the Beeding Cement Co. was created by Richard Ballard with six Johnson chamber kilns and this works was shown on the 1898 OS map to the west side of the road.[11] This showed a tramway crossing the road taking the chalk from the pit but at some time between 1898 and 1902 the ground level of the pit at the east side of the road was lowered and a, still extant, tramway tunnel was built under the road. Apart from the remains of the old limekiln, there were no buildings shown on the east side of the road. In addition to the kilns the other major building on the site housed the grinding mills and packing plant. Clay was obtained from the Medway area and transported in the sailing barge *Abner*. There was no indication on the map of any rail access at this date so it must be assumed that all other materials – coal and gypsum and the final cement product – were transported by water. The output of cement was 100 tons per week.

The Sussex Portland Cement Company

In 1884, the Sussex Portland Cement Company (SPCC) was set up by A.E. Carey and they built the Newhaven Works in the parish of South Heighton at TQ 448033. The clay was obtained from a pit at Glynde to the east of Decoy Wood at TQ 468 098. This was transported to Glynde Station on an overhead telpher[12] and hence by rail to the works. SPCC acquired the Beeding Cement Company at the close of 1897 and started to develop the Shoreham site extensively.

1902 REBUILDING [13]

Most of this work was carried out by SPCC in 1902 and the output of cement from the site increased to some 800 tons per week. The works was shown on the 1912 OS map[14] and this included the erection of eight Bachelor chamber kilns, two Schneider vertical shaft kilns and two rotary kilns, 18.3 m (60 ft.) long and 1.52 m (5 ft.) diameter, manufactured by F.L. Smidth. There were some buildings, possibly chalk wash mills, on the east side of the road. Rail access had now been established with an extensive rail network all over the site and access between the two halves of the site was enhanced by the construction, in 1902, of a rail tunnel under the road parallel to and close to the tramway tunnel.[15] This was built of brick 3.35 m (11 ft.) wide with a semi-circular vault over. The cement grinding mills and motor room had been extended and a new cement bagging plant erected. Also on the site was shown a hydraulic ram which seems odd as there does not appear to be any running water on the site to power the ram. The cement company also built, in 1903, Dacre Gardens: two-storey workers' houses with two terraces of 12 and one of 18 houses, with an unexplained 33 m gap between two of the terraces over which later ran an overhead power line, which was not extant in 1902. During WWII there was a reinforced concrete gun shelter erected in this gap to match the one still extant on the west side of the river.[16] To the south of Dacre Gardens are two semi-detached houses, Dacre Villas, presumably for the occupation of foremen and further south still, and overlooking the site is Cliff House, the manager's house.

The other alteration made in 1902 was to abandon the supplying of clay from Glynde and to open up a clay pit at Horton at TQ 205123, some three miles upstream from the works. Clay was transported by barges towed by a steam tug.[17] Some distance above Beeding Bridge at TQ 189113, a timber footbridge, which had a central pier, was rebuilt in steel by arrangement with the River Adur Trustees and paid for by SPCC.[18] However, this method of transport was replaced in 1904 and the clay was then brought down to the site by Sentinel steam wagons, the clay mill being located on the east side of the road just north of the tunnel.

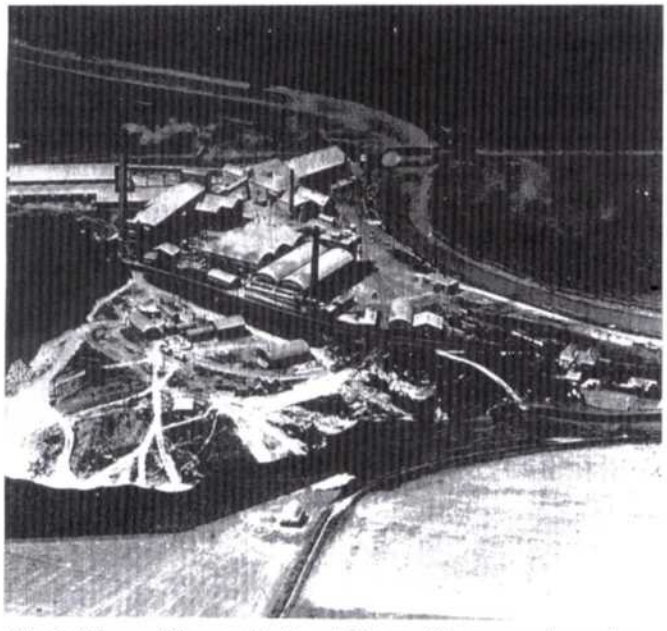


Fig. 3 View of Sussex Portland Cement Company's works at Shoreham in 1919

In 1910, a third rotary kiln 49 m (160 ft.) long and 2.39 m (7 ft. 10 in.) diameter was supplied by Krupps and in 1912 the company was taken over by British Portland Cement Manufactures, Ltd (BPCM), which later became The Associated Portland Cement Manufacturers, Ltd. (APCM) An APCM drawing[19] of 1931 showed ten chamber kilns (numbered 5 - 11), the two Schneider shaft kilns and the one large rotary kiln. On the east side of the site was the complex of four wash mills, one screening mill and four mixers with the necessary motors. Adjacent to the rotary kiln were the slurry mixers, the clinker store and two cement mills. In another building were the boiler house, engine room and generator house with two tube mills and two ball mills in an adjacent building. Conveyors transported the clinker from the kilns to the mills and more conveyors carried the cement to the cement store and packing plant.[20] The rotary kiln was replaced in 1933 by an identical second-hand unit from another site[21] and this was retained on the site until c.1964. The site, shown in Fig. 5, closed down during WWII and reopened in 1946.

THE 1946 REBUILDING [22]

In 1946 the decision was made by APCM to rebuild the cement works and a completely new plant was erected. This was built using the wet process, to the designs of the consulting Engineers Oscar Faber and Partners, Ltd. and Bierrum and Partners, Ltd. This system was adopted as is was considered that a more consistent product was produced. The production part of the works was all located in the chalk pit at the east side of the road and comprised a chalk crushing plant, wash mills, mixing plant, rotary kilns, coal, gypsum and clinker store, crushing mills and cement storage silos with a large workshop and store building. On the west side of the road were the office block, packing plant, railway sidings and motor workshops, the earlier tunnel under the road connecting the two parts of the site also being rebuilt in reinforced concrete (Fig. 6).

Clay supply

Fig. 4 Clay slurry tank – disused in 1982

At Horton, the works were rebuilt by the contractors J.L. Keir & Co. The clay was excavated using a multi-bucket excavator, loaded onto a 0.61 m (24 in.) belt conveyor and transported to the 7.62 m (25 ft.) diameter wash mill which converted the clay to a slurry with water pumped from the lake beside the clay pits, which was replenished with water pumped from the Shoreham site. The clay slurry was stored in a 15.8 m (52 ft.) diameter storage tank which agitated the slurry with rotating paddles. Three-throw reciprocating pumps pumped the slurry through two 200 mm (8 in.) diameter pipes laid underground through Upper Beeding village and into the Shoreham works to discharge into a 20 m (66 ft.) diameter concrete clay slurry tank agitated with compressed air. Periodically the pipes were flushed through to keep the pipes clear. The slurry flowed from the clay slurry tank by gravity to a breakhead tank and was then pumped to a spoon feeder for discharge into the rough mills.[23]

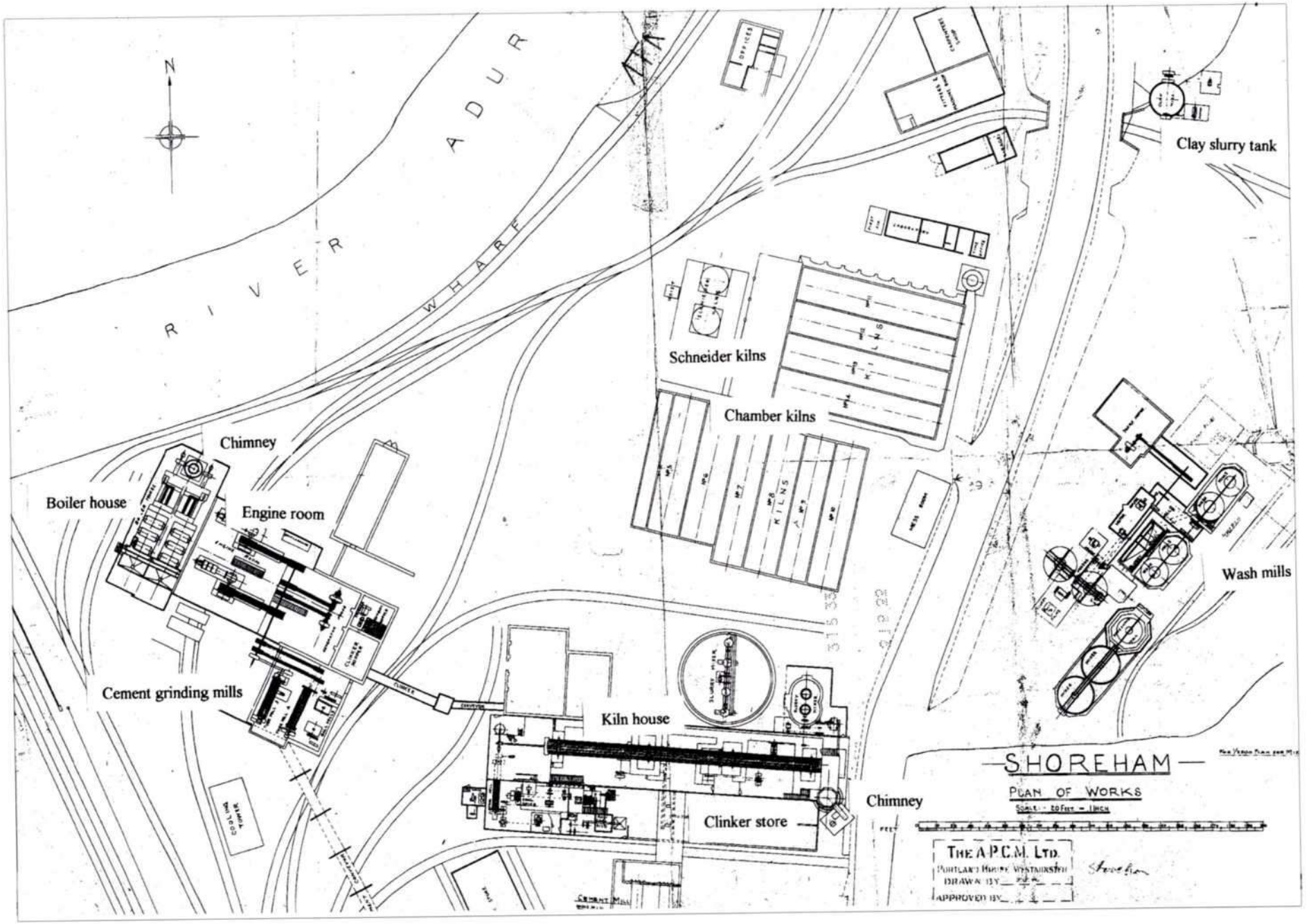


Fig. 4 Site plan at 1939

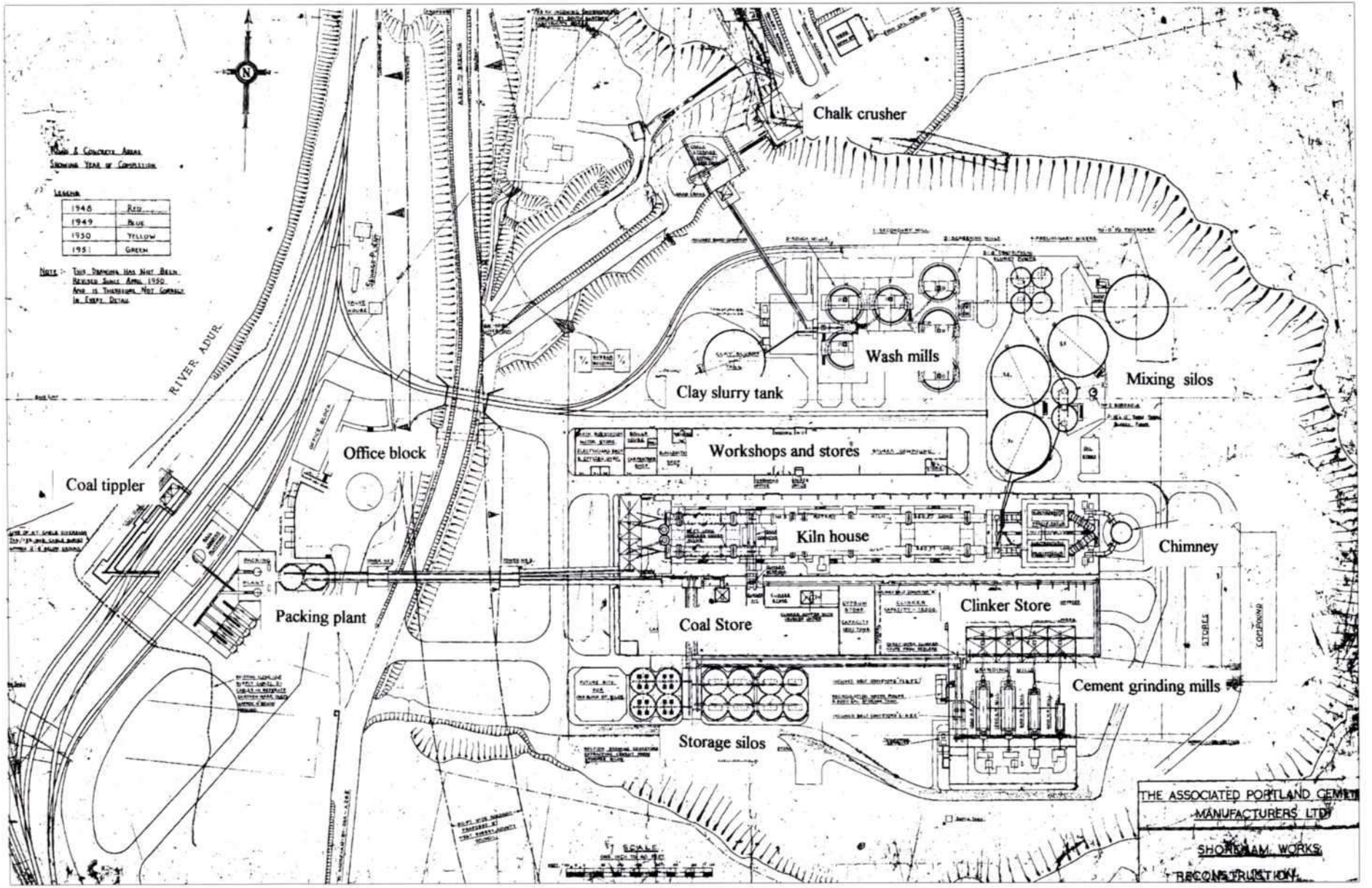


Fig. 5 Plan of rebuilt site at 1946-1951

Chalk supply

Previously the chalk was excavated as a single face, but the new system was benched, using electric-powered navvies which deposited the chalk into 9 cu.yd. dumpers. These carried the chalk to the chalk crusher house located at TQ 1999 0876 at the edge of the north side of the pit. Here the chalk was reduced by a twin-roll claw crusher to a 250 mm (10 in.) gauge and discharged down a gravity chute to a chalk stockpile.[24] An electric swivelling jib crane with a 5½ ton grab then transferred the chalk onto a conveyor which carried it up to the wash mills.

Wash mills (Fig. 7)

The wash mills were located at TQ 2002 0870 and comprised two rough mills (Fig. 8), one secondary mill and three screening mills, arranged in descending "levels", each fed by gravity from the higher mill. A measured quantity of clay slurry and chalk was introduced into the rough mills. The wash mills were all 10.7 m (35 ft.) diameter reinforced concrete cylindrical tanks within which was a revolving steel structure carrying harrows revolving at 10 r.p.m. around a fixed king post supported on a concrete dumpling. The slurry was forced through vertical gratings into an annular trough. The openings in the gratings varied from slots 25 mm (1 in.) wide in the rough mills and 1.5 mm wide in the secondary mill, with a woven wire screen in the screening mills. Flint extraction doors were located in the bottom of the rough mills, through which the flints were discharged periodically, which were then transferred to rotary washers and screened to separate out flints over 50 mm (2 in.) gauge. These were loaded into rail wagons, for despatch for use in the pottery industry. Smaller flints and grit was taken to a storage dump. Overhead hand-operated travelling cranes were provided over the rough and secondary mills for maintenance.[25]

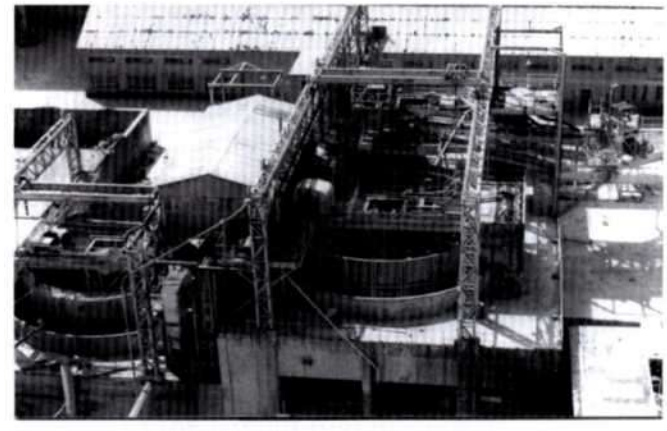
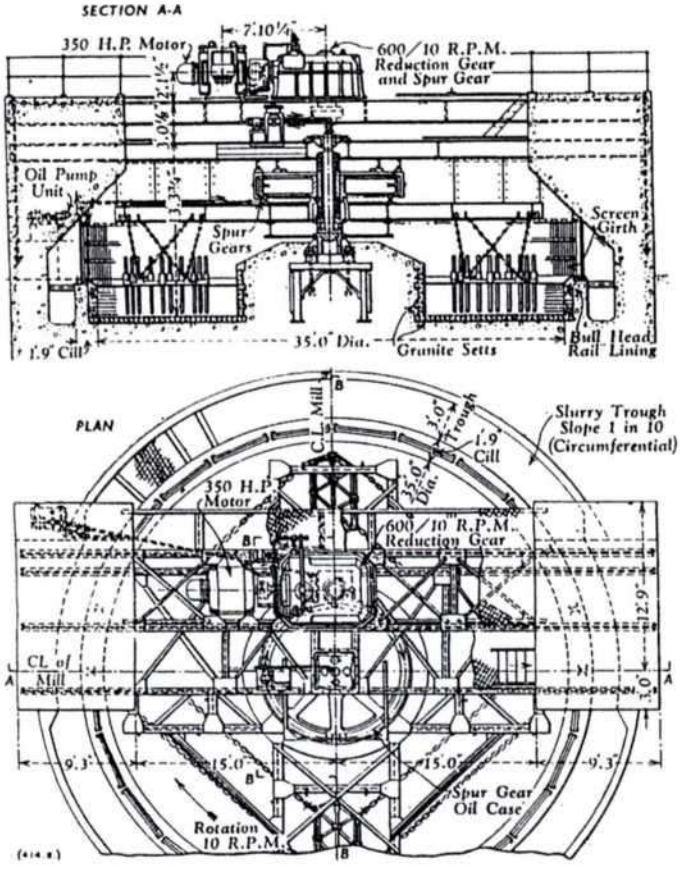


Fig. 7 Wash mills



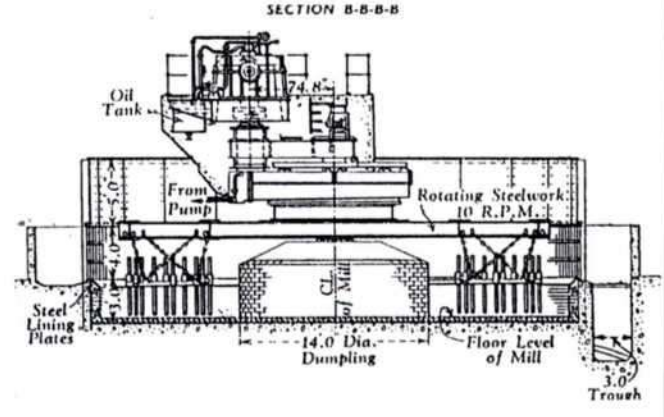


Fig. 8 Rough mills plan and sections

Mixing silos (Fig. 9)

Fig. 9 Mixing tanks

From the screening mills, the slurry was pumped from a sump into one of four reinforced concrete cylindrical preliminary mixing tanks 16.6 m (54 ft. 6 in.) high and 7.19 m (23 ft. 7 in.) in diameter at TQ 2009 0872 where the proportion of clay and chalk was carefully analysed and further blending was carried out to adjust the proportions. Still further mixing was then carried out in the final mixing tanks and the slurry was pumped up and then stored in the two 20 m (66 ft.) diameter storage tanks before being pumped up and deposited into the kilns using spoon feeders.[26]

Coal and gypsum

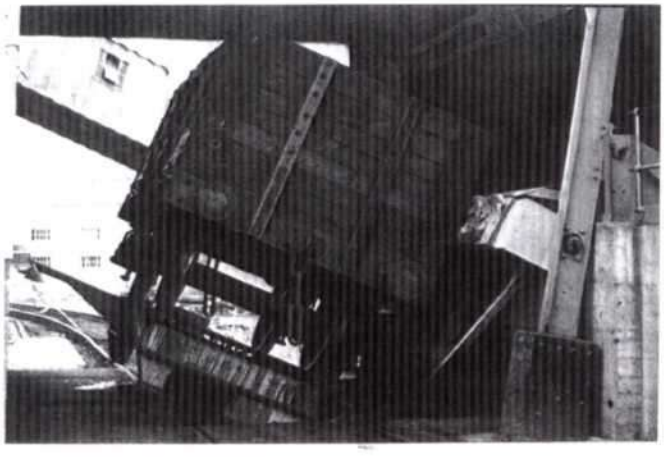


Fig. 10 Tippler for coal and gypsum – disused in 1970

The coal and gypsum were delivered to the site by rail, weighed at a weigh bridge and unloaded by a tippler (Fig. 10).[27] Conveyor belts carried the material over the top of the packing silos and over the main road on a gantry. Some of the coal was taken directly to four bunkers at the top of the kiln house but the bulk of the coal and the gypsum were taken to the store which is located in the building south of the kiln house. Two overhead traveller cranes handled the material in the store building. The coal from the bunkers was ground to a fine dust in four Atritor pulverising mills and then blown into the bottom end of the kilns.[28]

Nos. 1 and 2 rotary kilns

Fig. 11 Rotary kilns

The kiln house and the adjacent coal, gypsum and clinker store is located in a steel framed structure 152 m (500 ft.) long and 20.4 m (67 ft.) wide and 20 m (65 ft.) high located at TQ 2003 0863. The two kilns (Fig. 11) are in the northern part of the structure and were manufactured by Vickers Armstrong. Each is 107 m (350 ft.) long and 3 m (10 ft.) diameter set at a slope of 1 in 24 and is constructed mostly of 25 mm (1 in.) steel plate and lined with high alumina bricks. In most of the length of the kilns curtain chains acted as heat exchangers. The kilns are supported on six concrete piers, one of which supports the 150 h.p. driving motors (Fig. 12) which drove the kilns through reduction gearing to the girth gears. The rate of rotation was between 0.67 and 1.33 r.p.m. The bottom end of the kilns is encased in a kiln hood which is mounted on tracked wheels. This

Fig. 12 Rotary kiln drive motor
[Jacob Purchese]

accommodated the expansion and contraction of the kiln shell which amounts to 270 mm (10¾"), but the kiln hood was also arranged to be rolled back when access to the kilns was required for maintenance.[29]

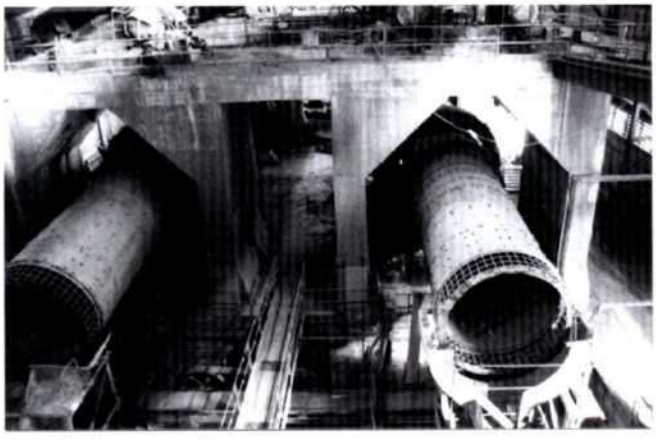


Fig. 13 Rotary coolers

The slurry flowed slowly down the kilns and achieved a maximum temperature of 1,350°C. The clinker dropped from the bottom end of the kilns into the two rotary coolers (Fig. 13) located under the kilns which are 90 ft long and 9 ft diameter and slope at 1 in 20. They are partially lined with firebrick, lifters being arranged so the clinker may be cascaded through a cold draught of air. The clinker fell out from the bottom of the coolers onto shaker conveyors which carried the clinker into hoppers located in the coal store or onto conveyor belts in the annexe. (see later) The gases from the combustion passed through electrostatic-precipitators to remove dangerous particles before passing through two centrifugal induced draught fans and being discharged up the 91.4 m (300 ft.) high chimney (Fig. 14), built of reinforced concrete and lined with brickwork.

Fig. 14 300 foot high chimney

Cement grinding mills

The annexe is a 3 m (10 ft.) wide space between the kiln house and the coal, gypsum and clinker store. The clinker and gypsum were lifted up and transported by conveyor belt and deposited into the clinker and gypsum stores. From here overhead cranes lifted the material into hoppers where weighed quantities were transferred into the cement mills. There are four grinding mills; two 1200 h.p. by Vickers Armstrong and one 800 h.p. and one 400 h.p. by Newell. The mills contain steel balls and rotated at 20.5 r.p.m being driven by electric motors in a separate room.[30] The cement was discharged onto a sloping conveyor system running along the outside of the store building and was stored in twelve concrete storage silos.[31] The cement was drawn from the bottom of the silos as required and is conveyed in a tunnel under the coal store and then up sloping conveyors, across the gantry crossing the road to the two packing silos on the west side of the road (Fig. 15).

Fig. 15 West elevation of kiln house and coal store with overhead conveyors (demolished in 1995) *[Jacob Purchese]*

Packing plant

From the packing silos, the cement was discharged onto two screw conveyors and was then lifted by a bucket elevator for feeding the *Fluxo* packing plant, where the cement was filled into paper sacks. Conveyor belts carried the filled bags to the top of three chutes for loading onto lorries. Another conveyor belt system carried the filled bags to a turntable located between two railway lines which ran through the packing plant and the bags were hand loaded onto the trucks.[32]

Other buildings

The cement works was a self sufficient organisation and there was a comprehensive range of service buildings on the site, viz.:

The 3 kV South Eastern Electricity Board sub-station and transformer compounds, located at TQ 1994 0868 was the main electrical intake for the site[33] with additional transformers for the wash mills, grinding mills, the chalk pit, the Horton clay plant and packing plant.

The workshop and store building located at TQ 2002 0865, to the north of the kiln house, contained, at its west end, the electrical transformers for the kiln house and electrical workshops, the rest of the building being occupied by mechanical workshops and stores.[34]

The office block, located at TQ 1986 0866, a three storey reinforced concrete framed building of two wings, contained offices, drawing offices, canteen, toilet facilities and laboratories.[35]

Motor transport workshops located at TQ 1983 0844[36] and vehicle washing plant.[37]

Locomotive shed, located at TQ 1974 0856.

Miniature rifle range, located at TQ 1981 0866.

Social club building, located at TQ 1996 0870, became central shift locker facility in 1989.[38]

A single storey despatch and timekeeper's office, located at TQ 1978 0848.39.

LATER DEVELOPMENTS

APCM was renamed Blue Circle Industries Limited (BCI) in the late 1970s.

The method of processing the slurry was altered in the 1980s from the wet process to the semi-wet process to improve efficiency and also other improvements were made to the site, viz.:

Filter press house and cake store (Fig. 16)[40]
These two buildings were built in the 1980s and were located to the east of the kiln house. One housed the filter presses, which squeezed the water out of the slurry in two presses, reducing the slurry to a cake. This was then conveyed by 2 m wide conveyors into the cake store where the cake was ground to a size suitable for feeding into the kilns.

Primary chalk crusher[41]
The delivery of chalk from the primary chalk crusher by a chute onto the stockpile was altered in the 1980s and the chalk was taken out on a conveyor belt supported by a gantry before being dropped onto the stock pile. The jib crane was also replaced by movable bulldozers.

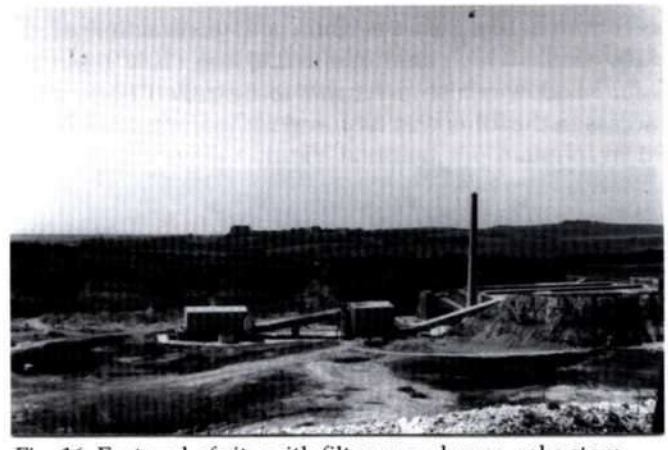


Fig. 16 East end of site with filter press house, cake store and chimney

Clay delivery
The processing plant at Horton and the pipe lines to the site were abandoned in the 1980s and all plant on the Horton site was demolished. Two of the screening mills at Shoreham were demolished and the third was modified to accept clay which was delivered to the site from Horton by lorry. The wash mills were modified to included a tank and hydro-cyclone to complete the work previously done by the screening mill.[42]

Cement packing
The delivery of bags of cement by lorry was modified and an *Autopac* system was installed in the 1980s in a new building to the south of the packing building and connected to it by a bridge. The *Autopac* system was designed to pack the cement bags onto pallets.[43]

Bulk delivery by road
Two plants were installed for bulk loading by lorry: one was installed in the 1960s, at the south side of the packing silos which took cement from the top of the packing silo building and after screening discharged it directly into lorries.[44] A weigh bridge was also located here. The other one was installed in the 1980s between the main silos and the coal store for the delivery of Ferrocrete.[45]

Coal and gypsum delivery
The tippler system for delivery of coal and gypsum by rail was abandoned, although for a time this were modified to take road deliveries. The coal and gypsum stores were altered and deliveries were then made directly into the stores by lorries.[46]

Coal crushers
The four *Atritor* coal crushers were replaced by two vertical spindle roller mills, with separate forced draught fans.[47]

No. 3 rotary kiln
The last surviving rotary kiln, then known as No.3 kiln on the west side of the site was used during the 1950s

for experimentation with the semi-west process prior to its introduction in the main plant and there were also several new buildings and equipment and a new steel chimney erected.[48] All the production plant on the west side of the site were demolished in c.1964.

THE FINAL PHASE

Production at the site ceased in 1991 and since then the west side of the site has been used for storage and for the repair of motor vehicles. The gantry crossing the road was demolished in 1995. Various planning applications have been made to develop the site but as yet none have been approved. In December 2003, the wash mills and mixing silos were demolished.

ACKNOWLEDGEMENTS

I am indebted to Messrs. Hargreaves for permission to visit the site and to Ian Dewar, who was the Mechanical Services' Manager for the last ten years of the production of cement on the site, for his invaluable help and advice in preparing this article. I would also like to thank Mrs. Pat Nightingale, the archivist of the Beeding and Bramber Local History Society and Chris Todd, the Curator of the Steyning Museum for their help.

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48. There are APCM drawings of work carried in the 1950s on the west side of the site, too numerous to detail.

(Note all original drawings are currently in the possession of the author and will eventually be deposited at the West Sussex Record Office)

COLIN PULLINGER'S REGISTERED DESIGNS

David Drummond

Some ten years ago I wrote about Colin Pullinger of Selsey and two of his mouse trap designs, his unsuccessful Automaton Mouse Trap and his commercially successful Perpetual Mouse Trap[1]. In this article I wrote "A point should be made at this stage about the word 'Registered'. There is no evidence that Colin Pullinger registered either of his mouse traps, or for that matter any of his other inventions, as patents or designs. It seems likely that his wholesaler inserted the word in his advertisements as a ploy to deter potential competitors from copying the design. In this as we shall see later he seems to have been largely unsuccessful". Quite recently however my attention has been drawn by Stephen van Dulken to the appearance of Colin Pullinger's name in a list held in the British Library[2] of registered non-ornamental designs. Further research has revealed that not only did Colin Pullinger register his two mouse trap designs, but also a few others. Thus the purpose of the present article is partly to eat humble pie and to indicate the nature of Colin's registered designs, but perhaps most importantly first of all to reveal the existence of an important body of unpublished information that may be largely unknown to other amateur would-be historians of inventions.

REGISTERED DESIGNS

The Designs Office was originally set up to administer the Designs Act of 1787 that allowed designers to register and thus protect their designs of patterns for fabrics. A further Act in 1839 extended the protection of designs to non-fabrics, including models and engravings and to the shape or configuration of any article of manufacture. Thus far the legislation applied only to ornamental designs, but an Act of 1843 (6 & 7 Victoriae Cap. 6) enabled useful or non-ornamental designs of any article of manufacture also to be registered. To identify these designs the Designs Office introduced a new series of numbers that started from No. 1 on September 1, 1843 and continued to No. 6740 on June 30, 1884. It is within this series that all of Colin Pullinger's Registered Designs occur. In 1875 the Designs Office was transferred from the Board of Trade to the Commissioners of Patents and a new Act of 1883 introduced a new classification system and a single numerical sequence.

Each of the 6740 useful or non-ornamental Registered Designs is in effect nothing more than a simplified form of patent composed of a title, one or more figures and a brief text concerned mainly with clarifying the nature of the figures. To further illustrate their nature I have provided in full Colin Pullinger's Registered Design No. 4004 of 1857 (Fig. 1), but it departs from the original in that the text is printed and not hand written and the figure and the Designs Office stamp have been redrawn. These Registered Designs were never published, but can be viewed at the National Archives at Kew.[3]

COLIN PULLINGER'S REGISTERED USEFUL DESIGNS

Colin Pullinger registered six of his inventions as useful designs. The number and date of registration was stamped on each document by the Designs Office (as in Fig. 1). I chose to present his design No. 4004 in Figure 1 as an example of what a registered design looked like because it was entirely different from his other designs, two of which (Nos. 4158 and 4373) have already been described and figured elsewhere[1] and it is almost certainly the design for 'A Rat Trap on a peculiar Construction' that he took care to emphasise on his Trade Card. Furthermore, while I do not know of any surviving examples of this trap, it certainly looks like a clever design that would surely work, especially if his elastic substance that draws the two halves of the sprung trap together was replaced by two strong springs.

The titles of two other designs (Nos. 3717 and 4158) seemed to indicate that they could be used to catch rats, but both were fairly complex arrangements of see-saws and one-way doors and would have turned out to be very large expensive arrangements to be used as rat traps. In fact only the second was made and advertised as a mouse trap, but was rapidly replaced by Colin Pullinger's fourth design (No. 4373) that was manufactured as his Perpetual Mouse Trap and turned out to be a great commercial success. His two last registered designs were variations on the same theme but seem not to have been made. In contrast he continued to make various other changes to his successful design that he effectively incorporated into its manufacture without concerning himself with registering them.

Copies of all six of Colin Pullinger's Registered Designs have been lodged in the West Sussex Public Record Office in Chichester and are listed below in numerical and chronological order.

No. 3717 May 15, 1855
Design for a Self-setting Trap for catching rats and mice.

No. 4004 July 8, 1857
Design for a Trap for Rats, Birds, &c.

No. 4158 March 16, 1859
Design for an Automaton Mouse and Rat Trap.

No. 4373 May 25, 1861
Design for a Perpetual Vermin Trap

No. 4603 December 7, 1863
Design for an Improved Vermin Trap.

No. 4764 January 13, 1866
Design for a Perpetual Mouse Trap.

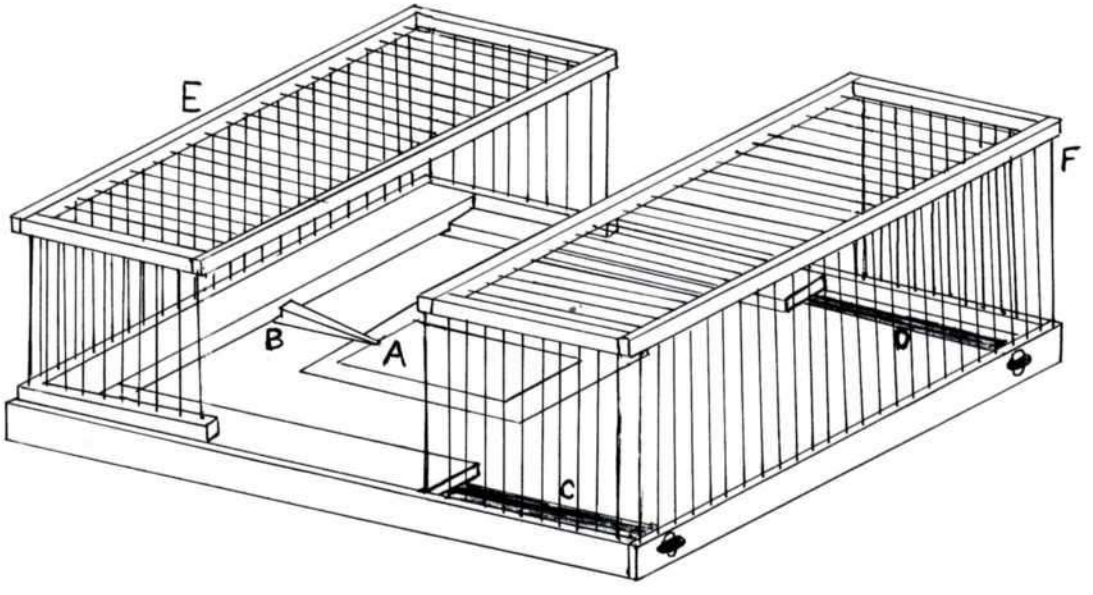
ACKNOWLEDGMENTS

I am indebted to Stephen van Dulken, Curator of the Patents Information Service of the British Library, not only for drawing my attention to the existence of Colin Pullinger's Registered Useful Designs, but also for providing me with general information about the history of such designs.

REFERENCES & NOTES

1. Drummond, D. (1994) Colin Pullinger and his Perpetual Mouse Trap. *Sussex Industrial History* 24, pp.2-9.
2. *Designs Office Reports 1839-55 and List of Useful Designs 1843-83.*
3. The National Archives, Kew, Richmond, Surrey, TW9 4DU, holds the Representations and Registers of Designs from 1839-1964 and its 5-page guide to readers warns that these documents are often very large, unwieldy and very dusty and that they have fairly complicated reference systems.

Design for a Trap for Rats, Birds, &c.
Registered by Colin Pullinger of Selsey in the County of Sussex



The Purpose of Utility to which the shape or configuration has reference is to make a Trap which shall be easily thrown and not present any obstruction to the view of the Animal or Bird passing into it.

Description. The design is drawn to a geometrical scale and shews a perspective view of the trap when set. The Bait is placed upon the stage **A**, which is in connection with the catch **B**, which catch prevents the trap closing from the effects of the contraction of the elastic substance **CD**, while the stage **A** remains in an elevated position or level with the floor of the trap; but when any pressure or weight is applied to the stage **A**, it sinks, and liberates the catch **B**, and the moveable portion **E** of the trap, which is instantly drawn up to the fixed portion **F** and effectually closes the trap.

The Novelty for which protection is claimed consists in the general configuration resulting from the shape and disposition of all the various parts represented in the drawing.

Fig.1 Colin Pullinger's Registered Useful Design No. 4004 of July 8, 1857.

BALCOMBE ROAD FORGE, CRAWLEY

Ron Martin

The forge was located on the east side of Balcombe Road, Crawley at TQ 2979 3675 and was an L-shaped building, the short leg being at the rear of the site, orientated north to south. and this has been referred to this as the "original forge" with the more recent extension running east to west toward the road.

History

The forge was probably located on the site of an earlier structure of unknown use.

The short leg of the building was the site of the forge built in 1827 by John Alcorn according to the date stone. At the same time the adjacent house was built, where there was also a similarly dated stone.[1]

The extension was built sometime after 1916 as sale particulars of that date specifically refer to "a rectangular building containing two hearths"[2], so at that date the extension had not yet been built.

The Alcorns married into the Steeles and the forge was occupied by various members of both these families. The Frank's family bought it in the early 1970s[3] and operated it as a wheelwright's shop and latterly as a general blacksmith, diversifying into the manufacture of other products in recent years. John Franks moved to new premises in 2004 and the building was later demolished.

Description of original Forge Building

The original forge building was 8 x 4.9 m. (26'3 x 16'1"). The east and north walls were of massive sandstone rubble and the south and west walls were of coursed sandstone rubble with an average course height of 200 mm (8"). The face of the stonework was neatly dressed with joints of about 15 mm (½"), backed up with brickwork. Part of the west wall adjoining the later extension had been demolished.

In the east wall there were two recently inserted standard steel casements recessed internally. In the north, south and west walls were timber casements. The one in the south wall had a cambered arch over with the keystone higher than the voussoirs and massive skew-back stones backed up with a breeze concrete lintel. The window in the west wall had a transom and a top opening light and was divided into small panes. In the south wall was a single door opening with sandstone lintel, which was cut into the skew-back of the window.

There was a forge hearth with flue and chimney stack. There was also evidence of a second hearth as the roof members had been trimmed around a demolished stack.

There was a flue in the east side between the two windows where there was probably, originally, some form of heating stove.

The roof was gabled at the south end and hipped at the north end. The 150 x 175 mm (6" x 7") ties and 175 x 125 mm (7" x 5") wall plates were probably original and the 50 x 100 mm (2" x 4") softwood rafters and 75 x 100 mm (3" x 4") softwood purlins and struts were of later construction. The north and west sides of the roof were covered with clay plain tiles but the east side had been covered recently with concrete interlocking tiles. There was originally a panel of glass tiles in the west slope, but these had been replaced with clay tiles.[4] There were clay half-round tiles to the hip and ridge. The eaves were projecting with fascias and the gable end had timber barge boards, the ends of the plates and purlins projecting through the wall.

The floor of the north part of the forge was laid with brick-on-edge paving and the south part was concrete, apparently overlying stone flags.

Description of West Extension

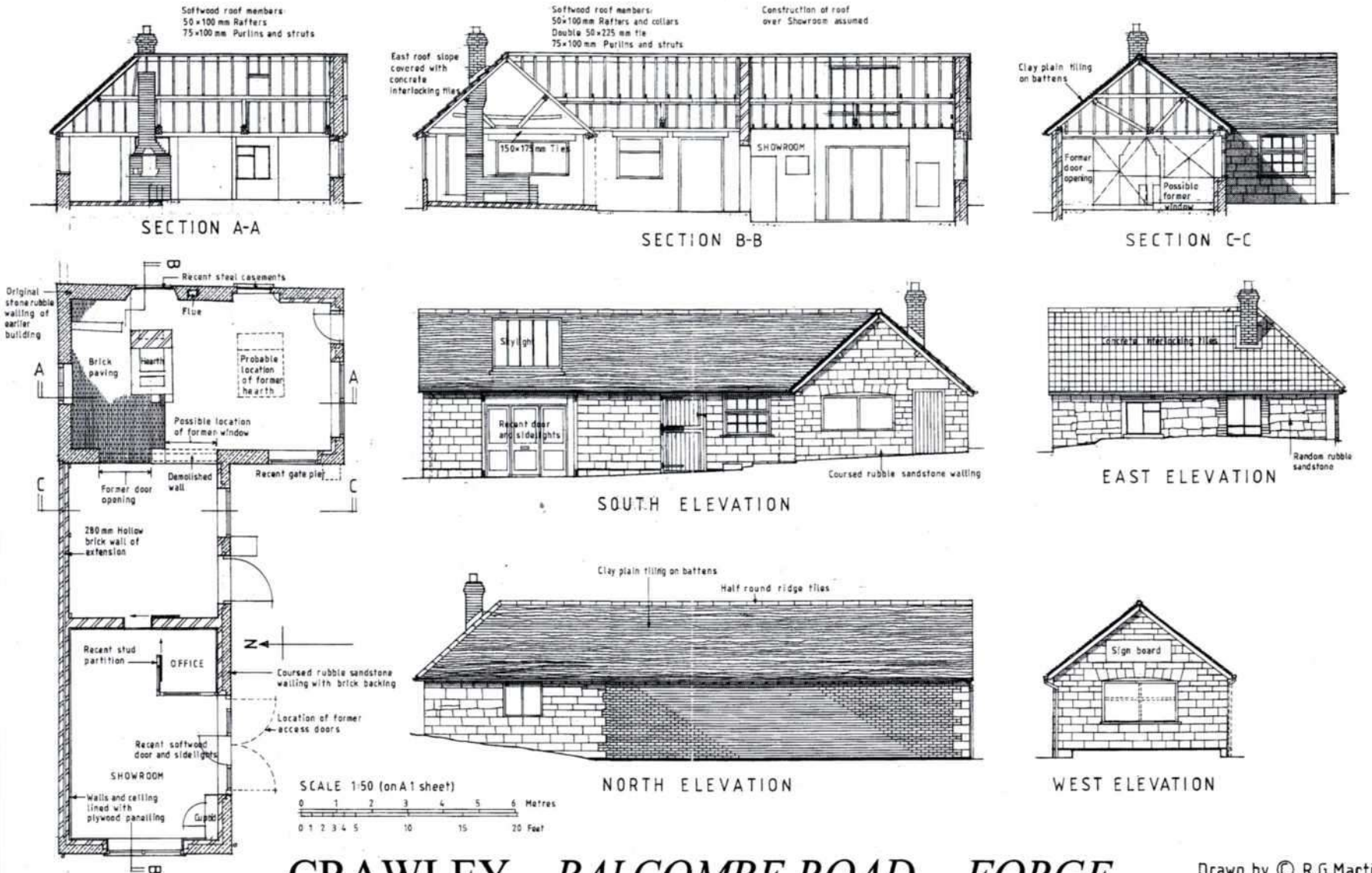
The west extension was 4.9 x 10.6 m (16'1" x 34'9"), gabled at the west end. It was divided into two rooms by a 215 mm (9") brick wall, the western one been used, latterly, as a showroom.

The north wall was hollow, 280 mm (11") thick of brick, faced externally in local facing bricks in stretcher bond.

The south and west sides had walls of coursed sandstone rubble of similar appearance to that of the original forge building but with an average course height of 225 mm (9"). Where this met the stone work of the original forge, it did not course and bond. The stonework was backed up with brickwork.

In the south and west walls there were timber casements. The one in the south wall was identical to the one in the west side of the original forge building with a breeze concrete lintel over. The one in the west wall had a cambered stone arch over of identical appearance to that in the south end of the original forge building.

There was one original single door in the south side with stable doors hung on tee hinges, with a breeze concrete lintel over.



CRAWLEY *BALCOMBE ROAD FORGE*

Drawn by © R.G.Martin
June 2004

The original double doors in the west end the south wall had been replaced by a glazed softwood door with two sidelights, although the original door frame was still extant.

The roof was of softwood with 50 x 100 mm (2" x 4") rafters and collars to every other rafter, 75 x 100 mm (3" x 4") purlins and struts and double 50 x 225 mm (2" x 9") ties. The roof was covered with clay plain tiles with half round ridge tiles. The eaves were projecting with a fascia along the south side and the gable end had timber barge boards.

There was a timber skylight in the south slope of the roof over the showroom which had been boarded over.

The walls of the showroom had been lined with decorative plywood panelling on battens and the ceiling was also covered with similar material. An office had been constructed in the south east corner with studding and had two borrowed lights and one opening with a sliding door.

Conclusion

The forge that John Alcorn built in 1827, probably on the site of an earlier structure, consisted of a rectangular building with a double door and two windows in the west side and a single door in the south side. The forge had two hearths.[5] At the same time he built the adjoining house.[6]

Some time later, and certainly after 1916, the west extension was built and the wall between the two was mostly demolished. One of the windows from the west side was probably relocated in the south side of the new wall. At the same time a new window was inserted in the south end of the original forge building to match the new window in the west end of the new extension. The extension had one double and one single door in the south wall. It is strange that the stonework of the two wings although similar, has different course heights.

The roofs had been largely rebuilt, although it would seem that the roof over the extension was not of the same date as that over the original forge building.

REFERENCES

1. Doreen Franks, personal comment.
2. Sale particulars (1916) for Montefiore estate for sale of Worth Park estate (Crawley Library).
3. Doreen Franks, personal comment.
4. Shown on a photograph at Crawley Museum, dated c.1920.
5. Sale catalogue (1916)
6. Doreen Franks, personal comment.

H. A. WALLER & SONS of WHITECROSS STREET, BRIGHTON

In *Sussex Industrial History* 33 (2003) appeared an article on the history of H.A. Waller & Sons which contained an illustration (Fig. 7) of a petrol-driven drill produced for British Railways. This was stated to be a product of H.A. Waller. A member, Michael M. Chapman, has supplied additional information and a correction. He was apprenticed to an Eastbourne company Howard Engineering of Fort Road and remembers this firm producing "the power unit, the saw, the flexigrinder and the drill and coach screw driving attachment shown in the photograph". He also names the two people shown in the photograph as Ray West (on the left) and the department head Bert Keys (right). He recalls that "hundreds of these twin cylinder horizontally opposed two strokes were manufactured in the late 1940s and 1950s not only for British but for overseas railways systems". He thinks that the photograph was taken "at the sidings which included the Engine Sheds at Eastbourne".

John Redfern, who wrote the Waller article took up the points raised with John Waller who supplied much of the material. John Waller recalls that only the petrol tanks were produced by H.A. Waller & Sons for Howard Engineering. As a result of this investigation and the contacts made, John Redfern hopes at a later date to write a full article on the history and products of Howard Engineering.

PUBLICATIONS

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F Land Use Classification

Use Class	Definition
A1 Shops	Shops, retail warehouses, hairdressers, undertakers, travel and ticket agencies, post offices, pet shops, sandwich bars, showrooms, domestic hire shops, dry cleaners, funeral directors and internet cafes.
A2 Financial and professional services	Financial services such as banks and building societies, professional services (other than health and medical services) and including estate and employment agencies. It does not include betting offices or pay day loan shops - these are classed as "sui generis" uses (see footnote).
A3 Restaurants and cafes	For the sale of food and drink for consumption on the premises - restaurants, snack bars and cafes.
A4 drinking establishments	Public houses, wine bars or other drinking establishments (but not night clubs) including drinking establishments with expanded food provision.
A5 Hot food takeaways	For the sale of hot food for consumption off the premises.
B1 Business	Offices (other than those that fall within A2), research and development of products and processes, light industry appropriate in a residential area.
B2 General industrial	Use for industrial process other than one falling within class B1 (excluding incineration purposes, chemical treatment or landfill or hazardous waste).
B8 Storage or distribution	This class includes open air storage.
C1 Hotels	Hotels, boarding and guest houses where no significant element of care is provided (excludes hostels).
C2 Residential institutions	Residential care homes, hospitals, nursing homes, boarding schools, residential colleges and training centres.
C2A Secure Residential institution	Use for a provision of secure residential accommodation, including use as a prison, young offenders' institution, detention centre, secure training centre, custody centre, short term holding centre, secure hospital, secure local authority accommodation or use as a military barracks.
C3 Dwelling houses	This class is formed of 3 parts: -C3(a) covers use by a single person or a family (a couple whether married or not, a person related to one another with members of the family of one of the couple to be treated as members of the family of the other), an employer and certain domestic employees (such as an au pair, nanny, nurse, governess, servant, chauffeur, gardener, secretary and personal assistant), a carer and the person receiving the care and a foster parent and foster child. -C3(b): up to six people living together as a single household and receiving care e.g. supported housing schemes such as those for people with learning disabilities or mental health problems. -C3(c) allows for groups of people (up to six) living together as a single household. This allows for those groupings that do not fall within the C4 HMO definition, but which fell within the previous C3 use class, to be provided for i.e. a small religious community may fall into this section as could a homeowner who is living with a lodger.
C4 Houses in multiple	Small shared houses occupied by between three and six unrelated individuals, as their only or main residence, who share basic amenities

occupation	such as a kitchen or bathroom.
D1 Non-residential institutions	Clinics, health centres, crèches, day nurseries, day centres, schools, art galleries (other than for sale or hire), museums, libraries, halls, places of worship, church halls, law court. Non-residential education and training centres.
D2 Assembly and leisure	Cinemas, music and concert halls, bingo and dance halls (but not night clubs), swimming baths, skating rinks, gymnasiums or area for indoor or outdoor sports and recreations (except for motor sports, or where firearms are used).
Notes Certain uses do not fall within any use class and are considered 'sui generis'. Such uses include: betting offices/shops, pay day loan shops, theatres, larger houses in multiple occupation, hostels providing no significant element of care, scrap yards. Petrol filling stations and shops selling and/or displaying motor vehicles. Retail warehouse clubs, nightclubs, launderettes, taxi businesses and casinos.	

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