Phase I Geoenvironmental Site Assessment
Woodcock Estate, Leyland, Preston
Reference:14-866-R1-RevA
Date: March 2022

PHASE I GEOENVIRONMENTAL SITE ASSESSMENT

Woodcock Estate
Stanifield Lane
Lostock Hall
Leyland
Preston
PR5 5XT

Prepared for:
Eric Wright Construction

Report Ref: 14-866-R1-RevA
Date Issued: March 2022

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EXECUTIVE SUMMARY

Site Address	Land off Stanifield Lane, Woodcock Estate, Lostock Hall, Preston PR5 5XT.	
Grid Reference	E 354770, N 424660.	
Site Area	13.7Ha Development Area - 33.18Ha Study Area	
Proposed Development	The proposed development is to comprise a Cricket Facility comprising 2No. cricket ovals and associated pavilion building and spectator seating, covered cricket nets, access, parking, landscaping and associated works (including temporary event overlay facilities on ticketed match days).	
Current Site Use	The site comprises an undeveloped parcel of agricultural land located to the west of Stanifield Lane. The site is split by hedgerow and occasional mature tree into seven fields. Occasionally the hedgerows are supplemented by a drainage ditch particularly in the north and west of the site. The site features an overhead power cable in the north with a pylon within the north eastern area. A farm is located in the north east corner of the site comprising a brick built structure and several steel framed out buildings/storage sheds. Several residential properties are located around the south east and west of the site.	
Site History	A review of pertinent historical maps suggests that the site has remained largely undeveloped agricultural grazing land, with the addition of several residential properties and associated outbuildings and road infrastructure with Woodcock Hall Farm present in the north eastern corner of the site.	
Environmental Setting	**Drift Geology**	Devensian Till, SAND, GRAVEL and CLAY
	Bedrock Geology	Singleton Mudstone Member– MUDSTONE
	Faults	There are no faults recorded within close proximity to the site.
	Hydrogeology	Secondary B bedrock aquifer with superficial secondary undifferentiated aquifer recorded. There are no groundwater abstraction points recorded within 500m of the site.
	Hydrology	The River Lostock is located 73m North of the subject site.
	Flood Risk	Flood Risk Zone 2.
Utility Locations	A formal drainage survey has not been completed, however, raised manholes were noted across the site. Additionally, there are overhead cables in the north of the site crossing east-west with a pylon situated adjacent to the north-eastern boundary.	
Landfill Sites and Ground Gases	No landfill sites (current or historic) are recorded within 250 m of the site. The site has undergone some historic development and ground working, Made Ground associated with the historic development may produce hazardous ground gases such as methane and carbon dioxide.	
Radon	Between 1-3% of houses above the 'Action Level' – no special precautions required in the construction of new dwellings or structures at the site.	

Coal Mining/Land Stability	The site is not located in a coal mining reporting area.
Hazardous Installations	Overhead power cables pose a significant risk of contact or arching in the north of the site and will require consideration in the detailed design. No further hazardous installations that could potentially prejudice the proposed construction have been identified within influencing distance of the subject site.
Initial Conceptual Site Model	The Initial Conceptual Site Model has identified very limited potential sources of contaminants at the subject site. The most significant areas of concern are the existing farm yard/storage area to the north of the site, infilled ponds/ditches/former hedgerows through the site and peat/alluvium deposits noted on bgs mapping to the north of the site. Made Ground has the potential to contain Heavy Metals, PAHs, Asbestos fibres and volatile hydrocarbons, through spills/leaks, building fabric, burning of materials that may have occurred on site or have been imported from external sources. The notable contaminants of concern have a risk to end users, construction workers and third party users through dermal contact, ingestion of soils, inhalation of fibres/volatile compounds/dust and collection of volatile compounds within internal airspaces (explosive risk). The risk of contaminants migrating to controlled waters is considered limited in the presence of predominantly cohesive superficial deposits offering a level of protection to the underlying aquifers and surrounding surface waters. The risk to human health is limited in the absence of a complete pollutant pathway with no potable groundwater abstractions within influencing distance of the site.
Conclusion	The subject site is primarily undeveloped with the exception of several low-rise residential properties, farm buildings associated with Woodcock Hall Farm in the northeast corner of the site and electricity pylon/cables in the north. These developments may be a source of Made Ground deposits within the site boundary. Evidence collected from LiDAR imaging, historical maps and the initial site walkover indicate potentially infilled ponds. These infilled ponds may be a source of ground gas generation and made ground within the site boundary. Overall the site poses a low risk to human health and controlled waters especially in consideration of the proposed development. A phase 2 intrusive investigation will be required to confirm the level of risk from the site.
Recommendations	It is recommended that an intrusive Phase II investigation is completed to confirm ground conditions, presence/nature of any contaminants and identify the site constraints. It is expected that the investigation would include; a series of excavations including chemical and geotechnical sampling, laboratory analysis, ground gas monitoring, groundwater sampling to confirm the risks posed by the site.

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DRAWING LIST

14-866-001-Site Location Plan
14-866-002- Proposed Development Plan
14-866-003- Site Features Plan
14-866-004- Historical Features Plan

1. INTRODUCTION

1.1. BACKGROUND

E3P Ltd has been commissioned by Eric Wright Construction on behalf of their client to undertake a Phase I Geoenvironmental Site Assessment at land off Stanifield Lane, Woodcock Estate, Lostock Hall PR5 5XT.

This report is required to determine potential contaminated land liabilities and geotechnical constraints as part of the proposed site development.

1.2. PROPOSED DEVELOPMENT

The proposed development will include a Cricket Facility comprising 2No. cricket ovals and associated pavilion building and spectator seating, covered cricket nets, access, parking, landscaping and associated works (including temporary event overlay facilities on ticketed match days).

Drawing 14-866-002 (Appendix III) identifies the proposed development layout.

A snapshot of the proposed development layout is indicated in Figure 1.1.

FIGURE 1.1 SNAPSHOT OF PROPOSED DEVELOPMENT

1.3. OBJECTIVES

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

1.4. SOURCES OF INFORMATION

Background information was sought from the following sources:

- Envirocheck Search;
- Historical mapping dated 1848 to 2021. A selection of historical maps are reproduced in Appendix V;
- On-line planning records held by South Ribble Borough Council;
- Magic Map Groundwater Vulnerability Map;
- Radon: Guidance on protective measures for new buildings (BRE Document BR 211, 2007);
- British Geological Survey Map;
- Groundsure OI
- https://zeticauxo.com/downloads-and-resources/risk-maps/; and,
- https://flood-map-for-planning.service.gov.uk.

1.5. LIMITATIONS

The limitations of this report are presented in Appendix I.

1.6. CONFIDENTIALITY

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

2. SITE SETTING

2.1. SITE DETAILS

Site Address	Land off Stanifield Lane, Woodcock Estate, Lostock Hall, Preston PR5 5XT.
National Grid Reference	E 354770, N 424660.
Site Area	13.7Ha Development Area - 33.18Ha Study Area

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

A site location map is presented in Appendix III as Drawing 14-866-001.

2.2. CURRENT SITE USE

E3P has undertaken a site walkover of the entire site and a description of the key findings is summarised in Table 2.1.

TABLE 2.1 SITE DESCRIPTION

Occupancy/Use	The site comprises a largely undeveloped parcel of land off Stanifield Lane to the east and Farrington road to the north. The site appears to be used primarily for agricultural grazing of cattle. There are several public footpaths running through the site. The site is split into seven compartmented fields by hedgerow with occasional ditches and mature trees. There are several agricultural buildings in the north east corner of the site comprising brick-built farm buildings with several large agricultural steel framed barn units with associated hardstanding areas with evidence of storage of aggregates and timber. An overhead power line runs through the northern sector of the site with a pylon in the north eastern field. There are 8no. low rise residential dwellings and associated out buildings within the site boundary.	
Surface Cover (%)	**Buildings**	5%
	Hardstand	5%
	Soft Cover	90%
Structures	The site is predominantly agricultural land with Woodcock Hall Farm located in the north east corner of the site. There are 8no. low rise residential dwellings with associated out buildings within the site boundary bordering the proposed development. 1no. electricity pylon is present in the northern sector of the site.	
Access	Vehicular and pedestrian access can be gained through a gate at to the northeast of the site off Stanifield Lane. Pedestrian access can be gained through multiple public footpath gateways throughout the site.	

Slope	The site gently slopes to the west with gentle localised undulation. Towards the south and south west of the proposed development there are 2no. small depressions in the topography.
Retaining Structures	No retaining structures were noted during the initial site walkover.
Vegetation/Ecology	Grass cover is present across the site, the majority of the grass is short due to livestock grazing. A series of sporadic semi-mature and mature trees are present along fence lines across the site along with mature hedgerows. A habitat survey will likely be required to support the planning application.
Hazardous Material Storage	No above-ground storage tanks (ASTs) or underground storage tanks (USTs) were observed at the site during the preliminary site walkover. It is possible that tanks may be present within areas of the site currently occupied by agricultural structures.
Asbestos-Containing Material (ACM)	No evidence of ACM was noted across the majority of the site during the site walkover. Access was not granted to the residential houses surrounding the area of proposed development; however, The farm buildings located at the north eastern corner of the site may contain ACM given the age of the structures. The large barn roof is considered likely to be asbestos sheeting. A pre-demolition asbestos survey will be required within all existing buildings within the site boundary.
Polychlorinated Biphenyls (PCBs)	There is no equipment identified that may contain PCBs within the site boundary.
Waste Storage	Evidence of stockpiling of timber and aggregates was noted within the farm complex in the north east of the site.
Drainage	A formal drainage survey has not been completed; however, a review of online records held by United Utilities indicates the presence of several surface water drains running through the site in alignment with existing fence lines.

2.3. SURROUNDING AREA

The surrounding area land uses are summarised in Table 2.2.

TABLE 2.2 SURROUNDING LAND USES

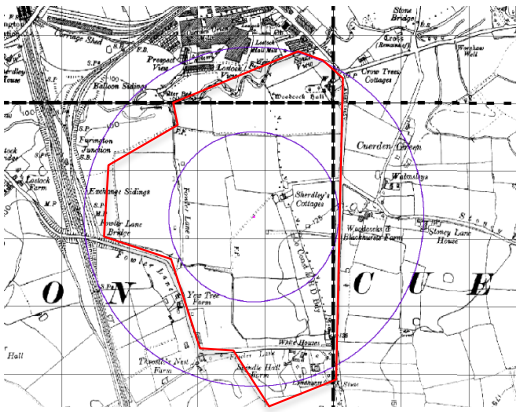
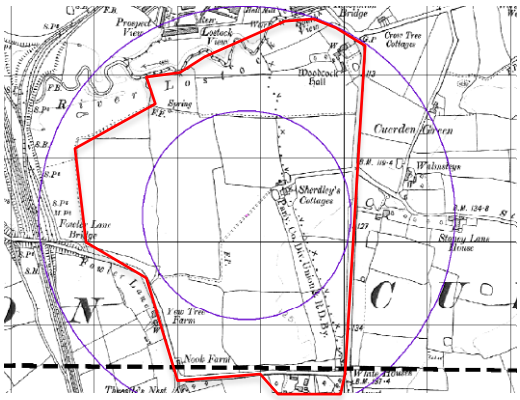
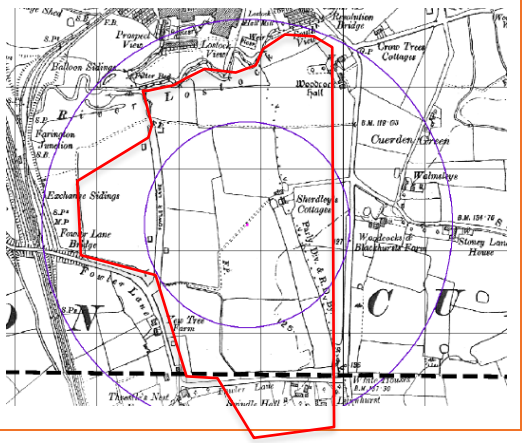
DIRECTION	LAND USE
North	A582 and agricultural land.
East	Stanfield Lane and agricultural land.
South	Agricultural land and residential dwellings.
West	Residential dwellings and industrial estate.

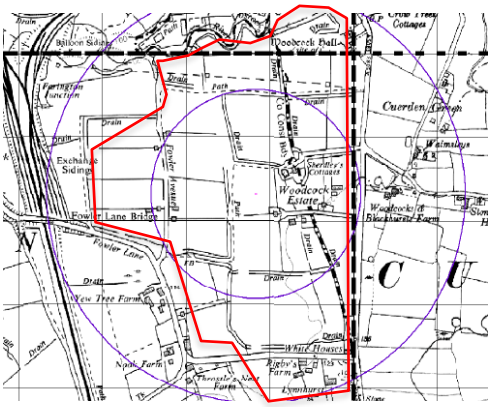
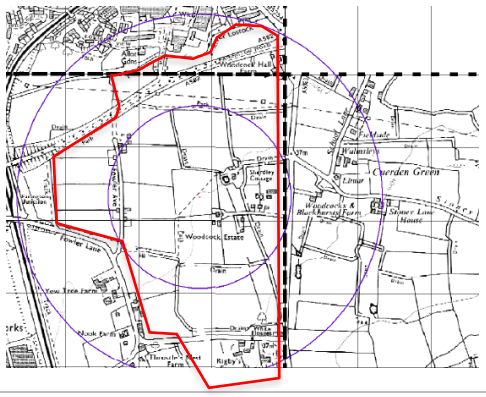
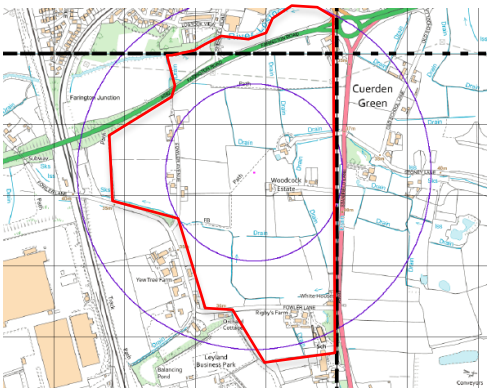
3. SITE HISTORY

3.1. ON-SITE HISTORICAL DEVELOPMENT

A review of historical mapping and historical aerial imagery pertinent to the site is summarised in Table 3.1. In addition, historical site features are presented on Drawing No 14-866-003 in Appendix III.

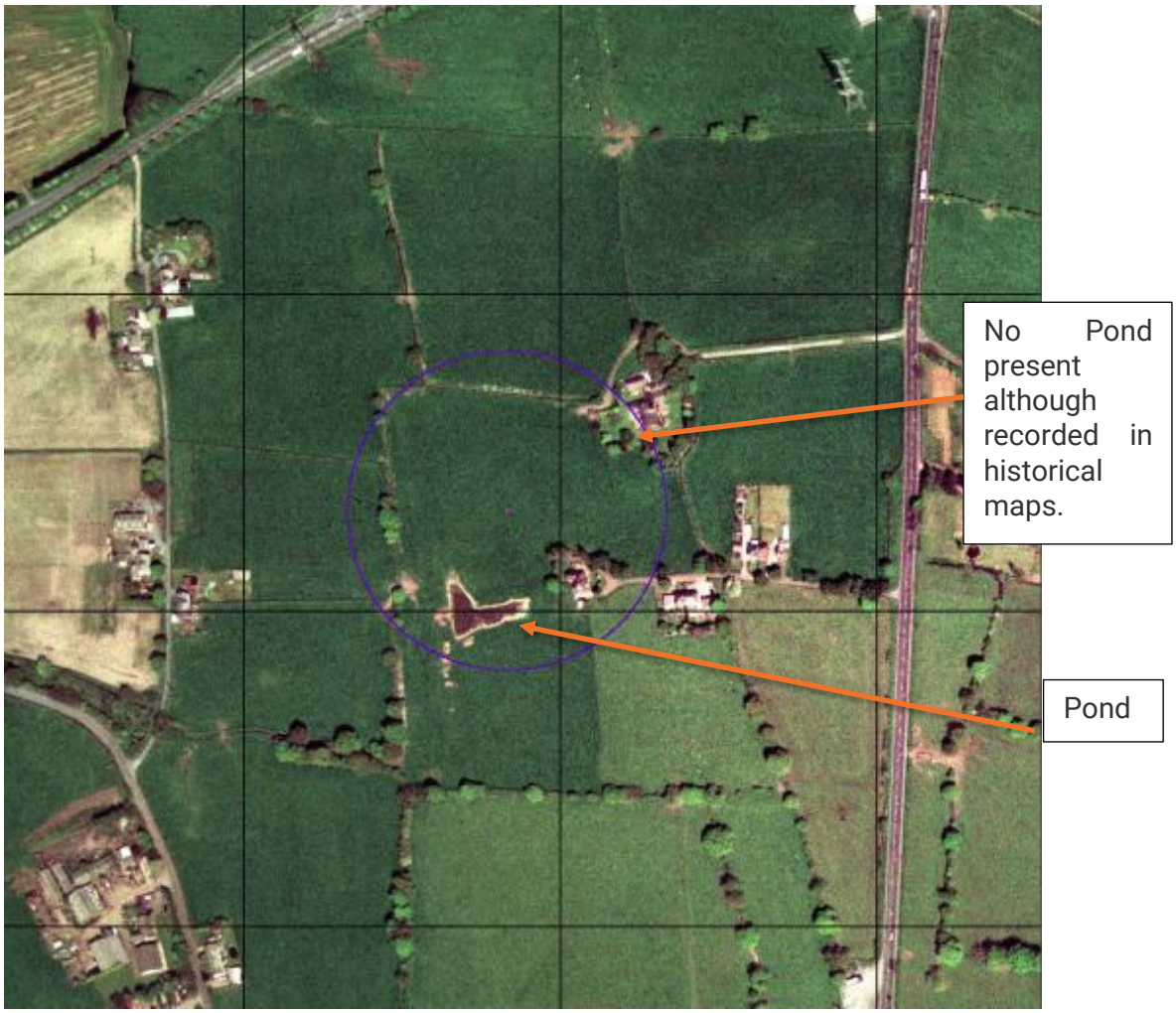
TABLE 3.1 HISTORICAL DEVELOPMENT

MAP EDITION	HISTORICAL LAND USE	HISTORICAL MAP EXCERPT
Pre 1883 – Pre 1912 **1:10,560**	The site is largely undeveloped. Mature trees are sporadically present throughout the site and along fence lines. The site is divided into multiple agricultural fields. Several footpaths are shown to extend across the site and around the site boundary. A track is recorded midway on the eastern boundary leading to Sherldley's Cottages. An unnamed feature is also present adjacent to Sherdley's Cottage. Woodcock Hall is recorded in the north east corner of the site and appears to comprise 4no. buildings.	
Pre 1912 – Pre 1938 **1:10,560**	A spring is recorded on the northern boundary. Woodcock Hall appears to have been refigured/extended. Agricultural fields appear to have been reconfigured.	
Pre 1938 – Pre 1962 **1:10,560**	Fowler lane now extends north - south in the western section of the site.	

Pre-1962 – Pre-1983 **1:10,560**	Exchange sidings are now present within the western sector or the site. There are now 6no. buildings along Fowler Lane to the west. There are several drains extending in north south and east west orientations throughout the site. Woodcock Hall is now one building, and Woodcock Estate is now shown in the centre of the eastern boundary and comprises an access road and 5no. buildings. Overhead cables with associated pylons are present in the northern section of the site. The feature adjacent to Sherdley's Cottage is now noted as a pond.	
Pre-1983- Pre 2001 **1:10,560**	Fowler Lane is now identified as Fowler Avenue. There are now 10no. buildings part of Woodcock Estate and associated access road.	
Pre 2001- Pre 2021 **1:10,000**	Woodstock Hall farm is now labelled in the north eastern corner of the site and comprises 2no. buildings. Woodcock Estate now consists of 6no. buildings.	

A historic photo (Figure 3.1) dated 2001 indicates the presence of a pond in the centre of the subject site which is not indicated on any historical maps obtained. The pond appears to have since dried up and has left a depression in the land. The photograph also indicates that the pond present on the historic maps is redundant at this time.

FIGURE 3.1 HISTORIC PHOTOGRAPH OF THE SUBJECT SITE DATED 2001



3.2. OFF-SITE HISTORICAL DEVELOPMENT

A review of potentially contaminative uses identified on historical Ordnance Survey maps within a 250 m radius of the site boundary is summarised in Table 3.2.

TABLE 3.2 SURROUNDING HISTORICAL DEVELOPMENT

SURROUNDING FEATURE	DISTANCE	DATES	DIRECTION
Walton Factory Then: Cuerden Green Mills Then: Mill Then: Cuerden Green Mills Then: Unrecorded	250 m	Pre 1848–Pre 1894 Pre 1894–1958 Pre 1958 – Pre 2021 Pre 2021	North
London and North Western Railway Then: London Midland and Scottish Railway	100 m	Pre 1848–Pre 1931 Pre 1931–Present	West
Reservoir Then: Weir Then: Unrecorded	240 m	Pre 1894–Pre 1938 Pre 1938– Pre 1973 Pre 1973	North
Exchange sidings Then: Unrecorded	50m	Pre 1938–Pre 1990	West
Works Then: Unrecorded	200m	Pre 2001 – Pre 2021	North

3.3. PLANNING HISTORY

E3P has undertaken a review of online planning records held by South Ribble Borough Council and no relevant environmentally pertinent information has been obtained for the site.

4. ENVIRONMENTAL SETTING

4.1. GEOLOGY AND HYDROGEOLOGY

The British Geological Survey (BGS) map (Sheet 75) for the site, (1:50,000, Solid and Drift editions) and online records indicate the site is underlain by the geological sequence presented in Table 4.1.

TABLE 4.1 SUMMARY OF UNDERLYING GEOLOGY

GEOLOGICAL UNIT	CLASSIFICATION	DESCRIPTION	AQUIFER CLASSIFICATION
Drift	Devensian Till Alluvium Peat	SAND, CLAY and GRAVEL	Secondary Undifferentiated Aquifer
Solid	Singleton Mudstone Member	MUDSTONE	Secondary B aquifer

TABLE 4.2 SUMMARY OF BGS BOREHOLE RECORDS

LOCATION	DEPTH	MADE GROUND	DRIFT	SOLID
On site	7 m	Not encountered	CLAY, SILT and GRAVEL >7m	Not encountered
On site	2m	Not encountered	CLAY and SAND >2.0m	Not encountered
On Site	7m	Black Ash Fill <2.40m	CLAY and SAND >7.30m	Not encountered
On Site	17m	Black Ash Fill and Clay <3.40	SAND, CLAY and GRAVEL >17.00m	Not encountered
On Site	8m	Black Ash Fill and Clay <3.40	CLAY and SAND >8.00m	Not encountered
On Site	12m	Black Ash Fill and Clay <3.00	CLAY, GRAVEL and SAND >12.00m	Not encountered
10m N	6m	Not encountered	CLAY and SAND >6m	Not encountered

The Groundsure report indicates that the site is not located within a groundwater source protection zone. Furthermore, there are 6no. groundwater abstractions within 1 km of the site. Abstractions are 806-945m to the south of the subject site. Use of abstraction is generally for boiler feed and general cooling with one abstraction point used for mineral washing (887m SE).

Following a review of the historical and present-day mapping, a number ponds and drainage ditches are located within the site boundary and in close proximity to the site.

Based on the local topography, the presence of several drainage ditches and streams within the site boundary, it is considered likely that shallow groundwater, if present, will flow in a westerly direction, following the topographical gradient.

4.2. NATURAL LANDFORM AND GEOMORPHOLOGY

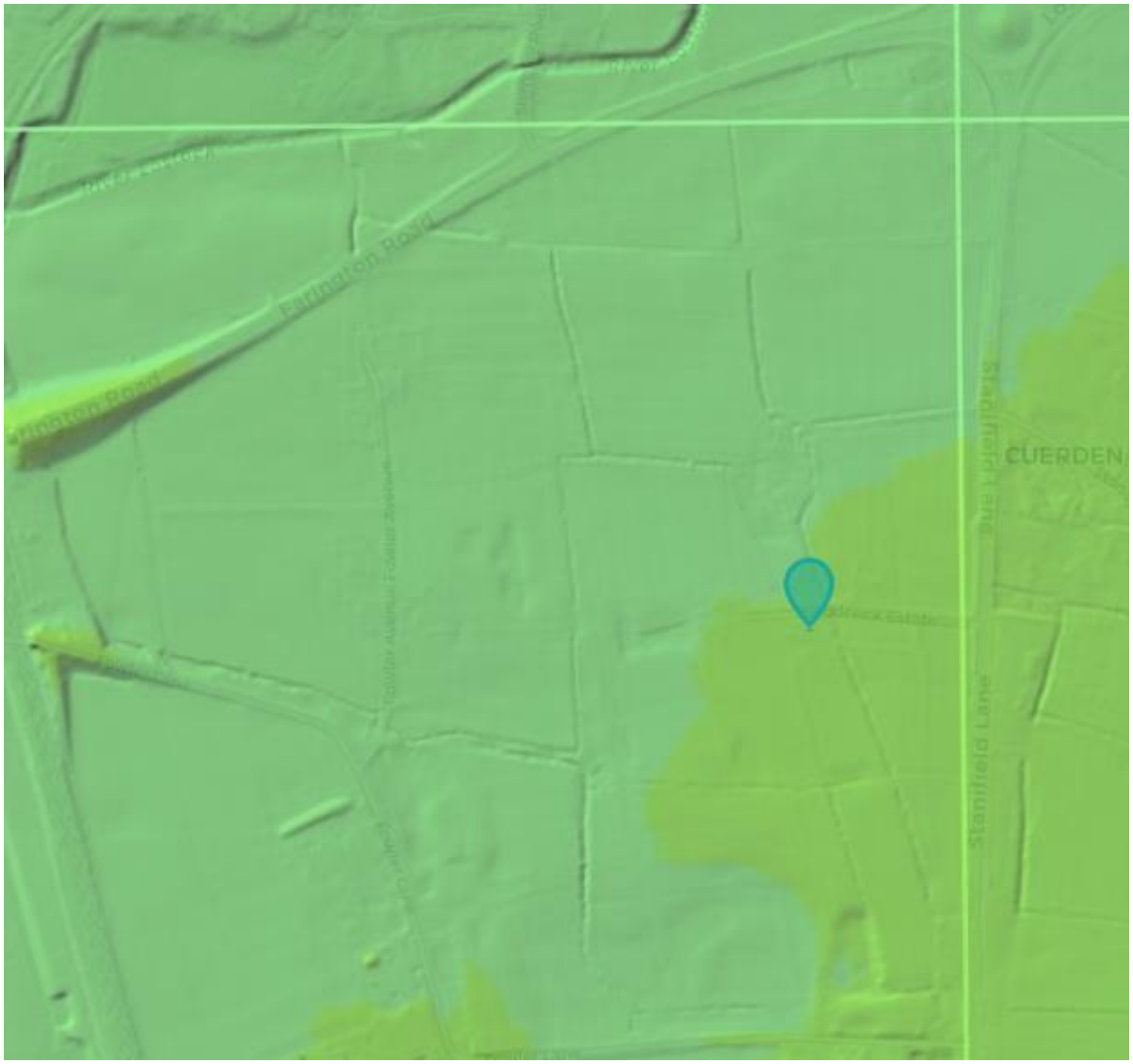
Based on the initial geological assessment, a review of available topographic data and pertinent mapping, E3P has undertaken a preliminary geomorphological assessment of the landform and its possible mechanism for formation.

The subject site is underlain by Devensian till. The underlying rock formations are associated with the Singleton Mudstone Member.

The River Lostock is present to the north and LiDAR data in Figure 4.1 indicates that the river may have once flowed across the northern sector of the site prior to development and road infrastructure.

Note the depressions in the landscape which may indicate historic ponds as no active ponds were noted during the initial site walkover.

FIGURE 4.1 SURFACE LIDAR DATA (GROUNDSURE IO)



4.3. GEOTECHNICAL DATA

Geotechnical data presented within a commercially available environmental database is summarised in Table 4.3.

TABLE 4.3 SUMMARY OF GEOTECHNICAL DATA

HAZARD	DESIGNATION
Shrink-Swell Clay	Very low risk
Landslides	Very low risk
Ground Dissolution	No hazard
Compressible Ground	No hazard
Collapsible Deposits	Very low risk
Running Sand	Very low risk

4.4.RADON RISK POTENTIAL

The Groundsure report indicates the site is situated in an area where less than 1% of homes are above the "Action Level" and that the BGS reports that full radon protective measures are not necessary in the construction of new dwellings or extensions.

4.5. PRELIMINARY GEOTECHNICAL ASSESSMENT

Based on the desk-study information, the following geotechnical assessment has been made:

- Given the predominantly undeveloped nature of the site, it is likely there will be limited Made Ground fill deposits and obstructions across the majority of the site however, should development be proposed within the areas currently occupied by the existing buildings, these will require demolition, with all relict foundations grubbing out, prior to the construction of the proposed development.

- A potentially historically infilled ponds and former drainage ditches/field boundaries are present within the site boundary, which are potential sources of alluvial deposits, silts and possible organic peat deposits in addition to potential shallow depths of Made Ground. Investigation will be required in order to assess these and undertake in-situ geotechnical testing to determine the ground conditions within in these areas.

4.6. HYDROLOGY

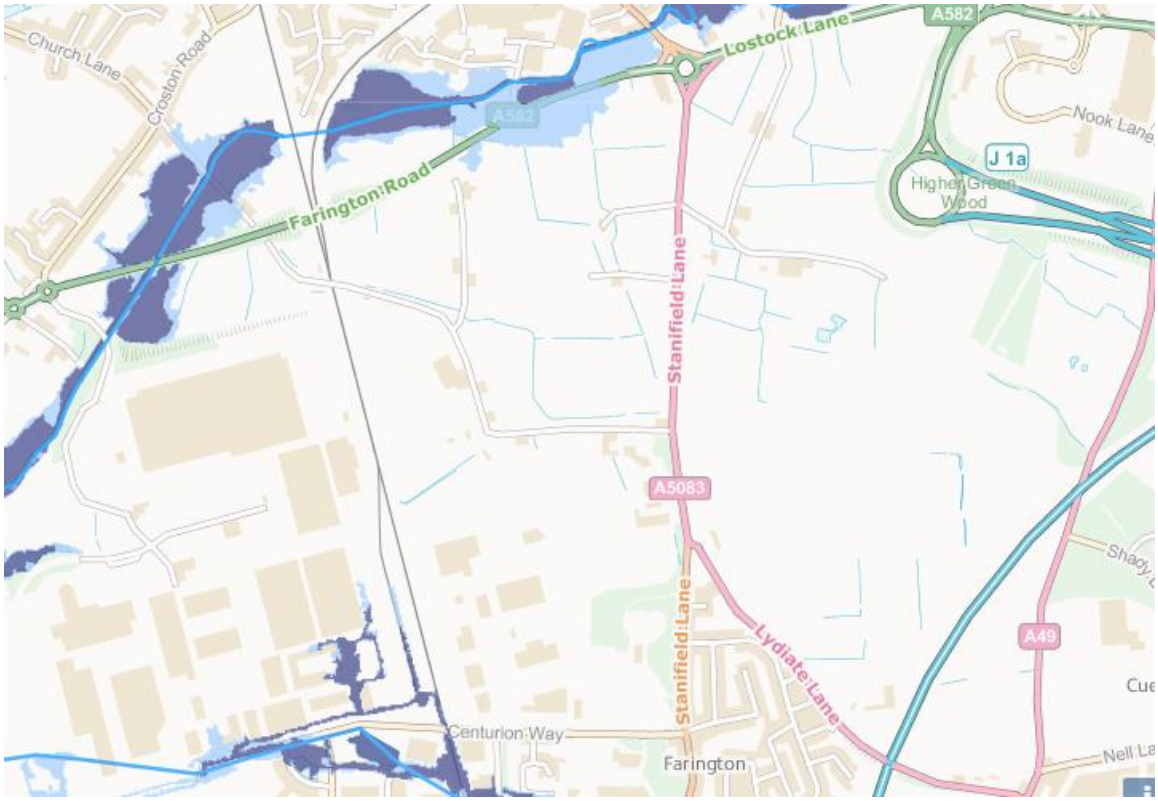
Surface water features within 250 m of the subject site are summarised in Table 4.4.

TABLE 4.4 SURFACE WATER FEATURES

SURFACE WATER FEATURE	QUALITY	DISTANCE (m)	DIRECTION
River Lostock	Very Good	73 m	North

The site is predominantly outside of the flood risk zone. However, along the north eastern boundary there is a small area designated as being within a "Flood Risk Zone 2", defined as land assessed as having a 1 on 100 to 1 in 1,000 annual probability of river or sea flooding (< 0.1% - 1%). In addition, the Envirocheck report states there is a potential for groundwater flooding to occur at the site. The Environment Agency (EA) Flood Risk Map for the site is presented as Figure 4.2.

FIGURE 4.2 EA FLOOD RISK MAP



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

4.7. INDUSTRIAL LAND USES

The site is located within a predominantly agricultural and residential area, therefore there are no entries within the trade directory for industrial land uses within 250m of the subject site.

4.8. SENSITIVE LAND USES

The site is located within an area of Adopted Green Belt land.

4.9. SITE SENSITIVITY ASSESSMENT

The site is assessed to be located within a "Low/Moderate" sensitivity setting as discussed within Table 4.5.

TABLE 4.5 SITE SENSITIVITY ASSESSMENT

SENSITIVITY PROFILE	DISCUSSION	RATING
Groundwater Source Protection Zone or Drinking Water Safeguard Zone	N/A	**LOW**
Distance to the Closest Groundwater Abstraction Point	806m South, reservoir at Centurion Way for general cooling.	**LOW**
Aquifer Classification in Superficial Drift Deposits	Secondary Undifferentiated	**LOW**
Aquifer Classification in Bedrock	Secondary B	**LOW**
Is the Site Underlain by Low-Permeability Drift to Depths in Excess of 10 m?	The underlying superficial deposits are likely to comprise sand gravel and clays in excess of 17m, which may reduce the potential for mobile phase contaminants to migrate towards the bedrock aquifer or adjacent watercourses	**LOW**
Is the Site Located Within 50 m of a Surface Watercourse?	The risk of surface water is negligible given the absence of a viable receptor within influencing distance of the site	**LOW**
Sensitive Land Uses	The site is located within an area of Adopted Green Belt land.	**MODERATE**
OVERALL SITE ENVIRONMENTAL SENSITIVITY		**LOW/MODERATE**

5. CONSULTATIONS

5.1. LANDFILL SITES AND WASTE TREATMENT SITES

There are no landfills recorded within 250m of the subject site.

5.2. REGULATORY DATABASE

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

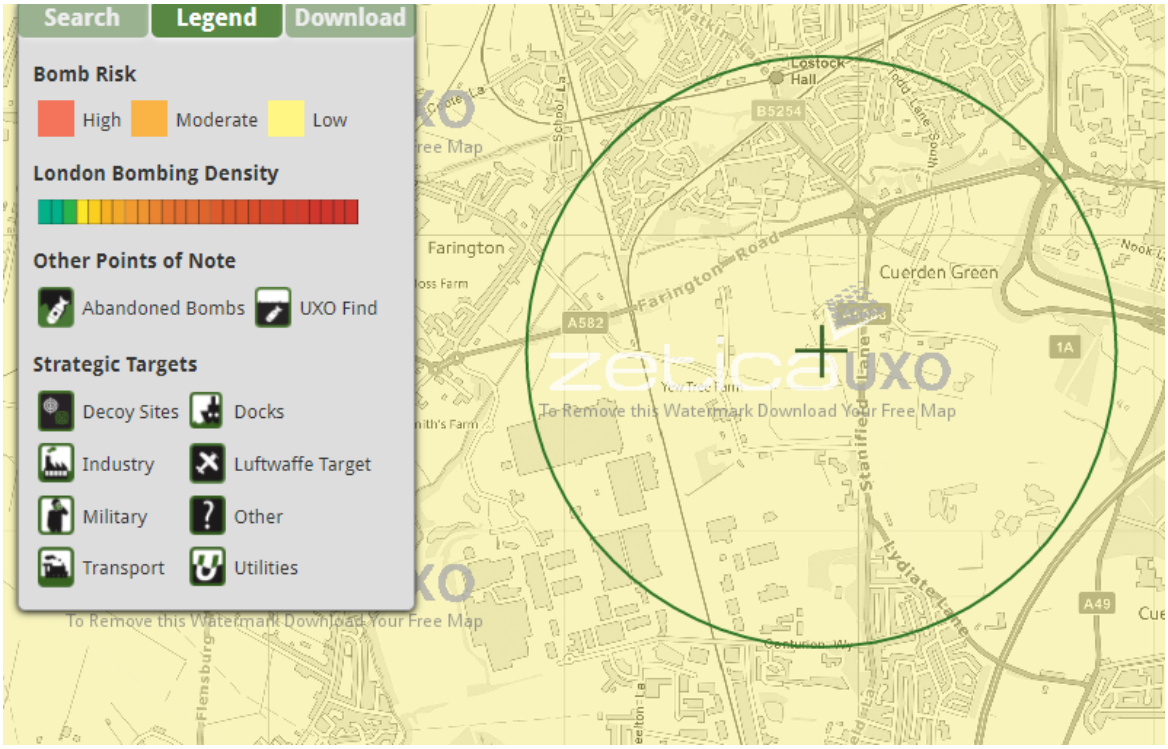
TABLE 5.1 SUMMARY OF ENVIRONMENTAL DATA

RECORD	ENTRIES WITHIN 250 m	DETAILS
Contaminated Land Register Entries and Notices	0	None Identified
Authorised Industrial Processes (IPC/IPPC/LAPPC)	0	None Identified
Fuel Stations Entries	0	None Identified
Licensed Radioactive Substances	0	None Identified
Enforcements, Prohibitions or Prosecutions	0	None Identified
Discharge Consents	0	None Identified
Pollution Incidents	0	None Identified
Consents Issued Under the Planning (Hazardous Substances) Act 1990	0	None Identified
Control of Major Accident Hazard (COMAH) Sites	0	None Identified

5.1. UNEXPLODED ORDNANCE

The regional unexploded bomb risk map from Zetica (2014) indicates that the site is in an area at low risk from possible unexploded ordnance (UXO) resulting from the Second World War. The Zeticia UXO Risk Map is presented as Figure 5.1.

FIGURE 5.1 ZETICA UXO RISK MAP



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

6. INITIAL CONCEPTUAL SITE MODEL

In accordance with EA LCRM (2019) and BSI 10175 (Code of Practice for Investigation of Potentially Contaminated Land), E3P has developed an initial conceptual site model (CSM) to identify potential contamination sources, migration pathways and receptors within the study area. This is summarised within Table 6.1.

ON-SITE SOURCES OF CONTAMINATION

The following potential on-site sources of contamination have been identified:

- Made Ground (associated with areas of farmyard structures/gate inlets)
- Made Ground (associated with Infilled Ponds/Drainage Ditches)
- Existing structures
- Fuel spills/leaks
- Alluvium (potential ground gas risk)

OFF-SITE SOURCES OF CONTAMINATION

The following potential off-site source of contamination have been identified:

- Mills to the north
- Railway to the west
- Unspecified works to the north
- Reservoir to the north
- Industrial estate to the west

6.1. CONCEPTUAL SITE MODEL

Following the completion of the intrusive site investigation, chemical analysis and risk assessment, the conceptual model shown in Table 6.1 has been prepared for the site.

TABLE 6.1 CONCEPTUAL MODEL

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
PL1 PL2	Heavy Metals, non-volatile PAH (Made Ground)	Dermal contact. Dermal contact and ingestion.	Future site users. Construction workers Off-site receptors.	Unlikely	Low	LOW
Discussion: Made Ground is apparent from the walk over, put down in areas of farm gate inlets (to firm up the soils) and is also expected beneath developed areas of the site particularly in the north. Imported Made Ground has the potential to be impacted by (albeit likely low level) Heavy Metals and PAHs determined by the materials source. Where these materials are exposed, there is a risk to construction workers and end users through dermal contact and ingestion of these impacted soils. **Recommendation:** Construction workers should continue works with appropriate PPE and welfare facility. During enabling works these soils should be segregated from the predominantly natural soils across the remainder of the site. It is not currently considered practicable to provide a surface clean cover capping for the entire site based on the proposed area of soft standing and localised areas of potential impact highlighted currently.						
PL3	ACM in Made Ground	Inhalation of dust.	Future site users. Construction workers Third party land users.	Unlikely	Low	LOW
Assessment: As with the above, imported materials have the potential to have contained ACMs within the matrix. In addition to this elements of the existing building fabric may contain ACMs. Structures currently on site have been noted to be constructed of materials that are potential asbestos containing. Should asbestos fibres be released these contain a risk to construction workers and end users through the inhalation of free fibres. **Recommendation:** Construction works are to be completed with PPE and provision of welfare. The management of potentially impacted soils should be carefully completed with appropriate damping down facility and air monitoring as appropriate. It is expected that any impacted soils will be segregated from the bulk, clean naturally occurring soils within the site.						

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
PL4	Volatile Contaminants such as hydrocarbons, solvents, lubricants, oils (Made Ground, mechanical and vehicle use through the site)	Inhalation of vapours. Migration through permeable strata and preferential pathways.	Future site users. Off-site receptors.	Unlikely	Low	LOW
Assessment: Very low likelihood of significant contamination in this manner. Storage of fuels/liquids and use of plant on site will be in low volume and spills will be minor and localised. The risk of volatile compounds are the inhalation of vapours collected within indoor airspace. In significant cases a risk of explosion can be associated. **Recommendation:** It will be necessary to confirm the presence of any potentially volatile compounds within the soils through sampling and analysis in a phase 2 intrusive survey. It is likely and localised exceedances will be delineated, excavated and the impacted materials placed in a low sensitivity area or removed from site.						
PL4	Methane, carbon dioxide (Made Ground, peat potentially on and within 250 m of the site)	Inhalation of gas. Migration through permeable strata and preferential pathways. Explosion in confined spaces.	Future site users. Buildings. Off-site land users.	Low likelihood	Low	LOW
Assessment: Low likelihood due to the generally undeveloped nature of the site and low likelihood of significant Made Ground. The BGS notes the potential presence of Alluvium deposits in the north of the site that have a potential to contain elements of decaying matter. In light of the proposed development containing a single pavilion type structure (non residential) there is considered to be a low risk **Recommendation:** A phase of Ground gas monitoring should be completed as part of the intrusive investigation to determine the level of risk associated with the site.						

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
PL5	Mobile contaminants such as metals, PAHs, hydrocarbons, volatile compounds (Made Ground, agricultural processes/machinery)	Surface runoff. Migration through permeable strata and preferential pathways. Perched waters migration.	Groundwater (secondary B aquifer). Surface water (River Lostock).	Low	Low	LOW
Assessment: Low likelihood on the wider site, with potential in the areas of the former farm buildings/barns associated with previous use. Glacial Till across the site would likely reduce downward migration into the underlying bedrock aquifer. A potential risk of lateral migration to drainage ditches/stream network is considered possible but as the ditches are not considered in hydraulic continuity with a significant surface water body a low risk is maintained. **Recommendation:** An intrusive investigation will be required to determine the level of contaminants within the surface soils. Along site soils sampling, groundwater sampling and leachate analysis should be completed to understand the groundwater regime and the level of contamination present.						
PL6	Sulphate (potential ash within Made Ground)	Sulphate attack on concrete.	Building structure.	Unlikely	Low	LOW
Assessment: Significant ash or high sulphate contaminants are not considered likely at the site. A level of materials burning may have occurred and so there is potential in isolated areas of the site. **Recommendation:** It is recommended that the chemical analysis of soils, completed during intrusive investigation, includes testing for sulphates in order for the likely concrete classification to be determined.						

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
PL7	Organic contaminants such as hydrocarbons, solvents (Made Ground/spills/leaks)	Ingestion of tainted water supply.	Future site users. Water pipes.	Unlikely	Low	LOW
Assessment: Significant contamination is not considered likely and so with respect to the specific pipeline selection for the site it is expected that PE pipeline will be suitable. **Recommendation:** Intrusive investigation required and risks to be confirmed as part of a UKWIR assessment.						
PL8	Phytotoxic contaminants (Made Ground)	Direct Contact (plant uptake).	Flora.	Unlikely	Low	LOW
Assessment: Significant contamination is not expected to be present at the site. Furthermore, given the commercial nature of the proposed development there is unlikely to be an onward risk to human health. **Recommendation:** The level of contaminants will be determined as part of the intrusive investigation works. Where impacted soils are encountered it will be possible to place a 300mm clean topsoil growing medium in the locations of landscape planting in order to mitigate the risk to flora.						

Main exposure pathways:
PL1 = soil ingestion, PL2 = dermal contact and ingestion, PL3 = dust inhalation; PL4 = Vapour/Gas Inhalation; PL5 = Vertical / Lateral Migration; PL6 = Corrosion of concrete; PL7=Tainting of water supply; PL8 = Uptake by plants;

7. CONCLUSIONS AND RECOMMENDATIONS

7.1. SITE SUMMARY

Current Site Use	The site comprises a largely undeveloped parcel of land off Stanifield lane to the east and Farrington road to the north. The site appears to be used primarily for agricultural grazing of cattle. There are several public footpaths running through the site. The site is split into seven compartmented fields by hedgerow with occasional ditches and mature trees. There are several agricultural buildings in the north east corner of the site comprising brick-built farm buildings with several large agricultural steel framed barn units with associated hardstanding areas with evidence of storage of aggregates and timber. An overhead power line runs through the northern sector of the site with a pylon in the north eastern field. There are 8no. Low rise residential dwellings and associated out buildings within the site boundary.
Historical Site Use	A review of pertinent historical maps suggests that the site has remained largely undeveloped agricultural grazing land, with the addition of several residential properties and associated outbuildings and road infrastructure with Woodcock Hall Farm present in the north eastern corner of the site.
Site Sensitivity	The site is part of an Adopted Green Belt area.

7.2. CONTAMINATED LAND ASSESSMENT

Human Health	Due to the largely undeveloped nature of the site, there are limited potential sources of contamination identified. However, localised areas have been identified as being potentially impacted by heavy metals, SVOCs, VOCs and hydrocarbon compounds, such as the northern sector in the likely location of Made Ground/agricultural plant/materials store. Furthermore, localised areas of Made Ground may be present in the infilled ponds and possibly in the historic locality of field boundaries. During the walk over the existing farm buildings to the north of the site included the use of materials that have the potential to contain asbestos fibres in their matrix. Imported Made Ground also have the potential to contain asbestos fibres given the likely age. The anticipated risks to human health are dermal contact, ingestion of soils, inhalation of free fibres and inhalation of volatile compounds. All of which currently are considered low risk in consideration of the proposed development. An intrusive investigation is recommended to confirm the presence of impacted soils, their location within the site and the measures required to mitigate within the proposed development.

Controlled Waters	The presence of significant potentially mobile contaminants is considered unlikely at this stage in the absence of any notable source. The underlying soils at the site are predominantly cohesive which will also extend an element of protection limiting vertical and lateral migration. Furthermore, a complete pollutant linkage cannot be confirmed in the absence of potable groundwater abstractions within 250m of the site and with limited surface water features in hydraulic continuity to sensitive receptors. The potential risk to controlled waters will be assessed and confirmed following a phase of intrusive investigation at the site.
Ground Gas	Possible Made Ground and/or organic soils/peat underlying the site may represent a potentially significant source of gas generation. Ground gas can migrate through permeable strata, foundation structures and/or service ducting and accumulate within confined spaces where they may pose a risk to residential end users. Ground gas monitoring should be undertaken to determine the level of risk at the site.
Potable Water	Based on existing information and limited sources of contamination, it is considered the site will be suitable for PE water supply pipework subject to a UKWIR assessment and confirmation from UU.

7.3. GEOTECHNICAL ASSESSMENT

Geological	Clay, sands and potential organic and alluvial deposits from infilled ponds, drainage ditches and the geological meander of the River Lostock through the site. The volumetric instability of cohesive deposits in the location of the water demand of trees will require consideration when selecting a suitable foundation solution for the proposed structures. The geotechnical suitability of any alluvium/peat deposits identified at the site should also be considered in the detailed design. Any reengineering of materials at the site should be carefully considered. Due to the likely predominantly cohesive materials an engineering performance specification may be required.
Civil and Structural	Depending upon the final development layout, existing buildings may need to be demolished to allow development of the site. Overhead cables present extending east – west in the northern section of the site, with a pylon located near the northern boundary should be considered. Where sand, gravel and alluvial deposits are encountered to significant depth the side walls of any excavation may require support during works to form footings/pipelines.
Abnormal Foundations	BGS logs indicate clays, sands and gravels. Several mature trees are present on the site which may impact the depth/type of foundations. Furthermore, and particularly to the north of the site, the BGS report alluvium and throughout the site former ponds may have naturally silted up. As such a deeper structural engineering foundation design may be required for structures in these areas.

END OF REPORT

APPENDIX I
LIMITATIONS

1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between E3P and the client as indicated in Section 1.3.

2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information it has been assumed it is correct. No attempt has been made to verify the information.

3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination which are enforced by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.

4. During the site walkover, reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover, no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not been made known or accessible.

5. Access considerations, the presence of services and the activities being carried out on the site limited the locations where sampling locations could be installed and the techniques that could be used.

6. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.

7. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials, this is for indicative purposes only and do not constitute or replace full and proper surveys.

8. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.

9. E3P cannot be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. The copyright in this report and other plans and documents prepared by E3P is owned by them and no such plans or documents may be reproduced, published or adapted without written consent. Complete copies of this may, however, be made and distributed by the client as is expected in dealing with matters related to its commission. Should the client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by E3P in this connection without their explicit written agreement there to by E3P.

10. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.

APPENDIX II
GLOSSARY

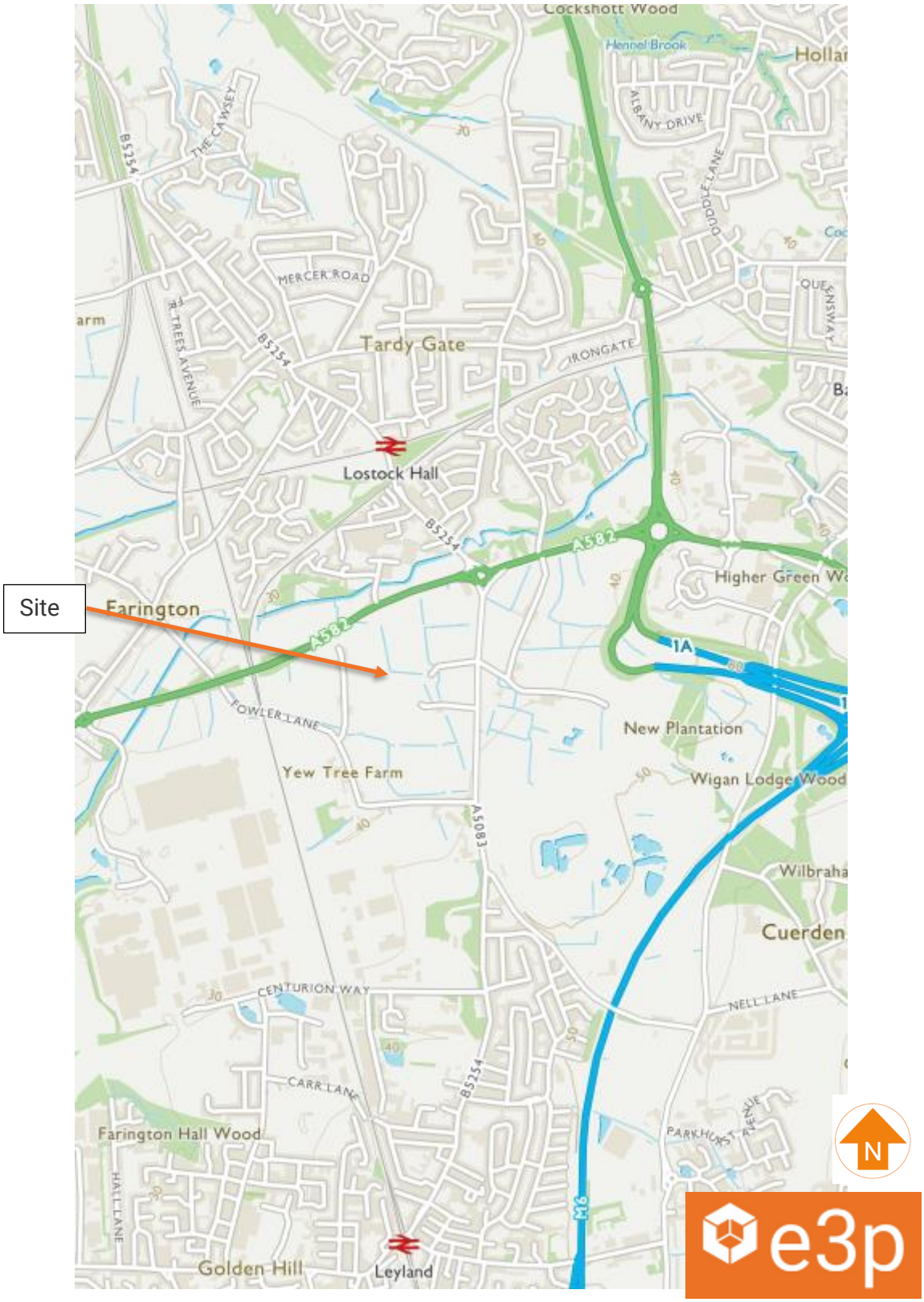
TERMS

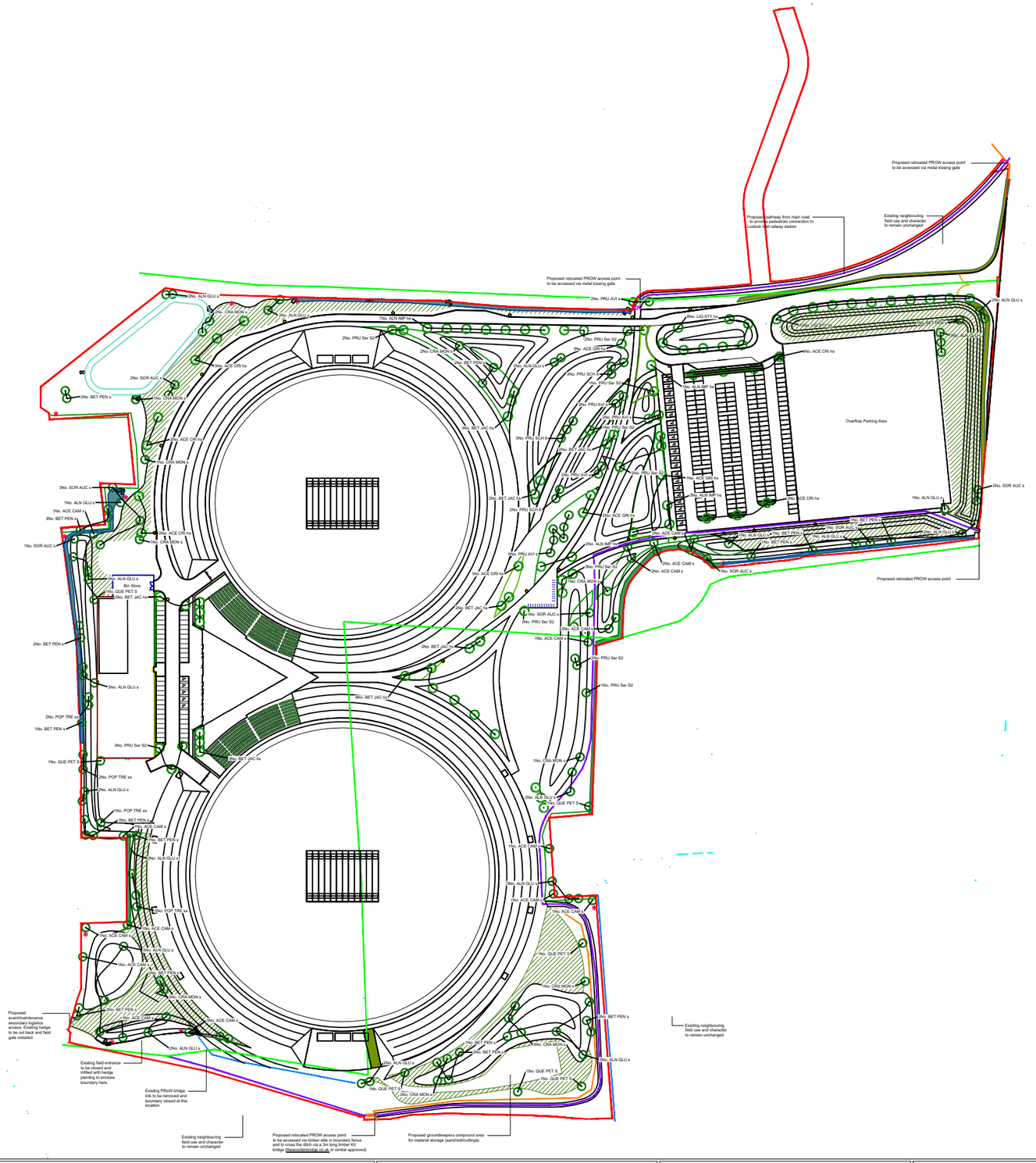
ACM	Asbestos-containing material	**MMP**	Materials management plan
ADS	Acoustic design statement	**ND**	Not detected
AST	Above-ground storage tank	**NDP**	Nuclear density probe
BGS	British Geological Survey	**NMP**	Noise management plan
BSI	British Standards Institute	**NPSE**	Noise policy statement for England
BTEX	Benzene, toluene, ethylbenzene, xylenes	**NR**	Not recorded
CA	Coal Authority	**PAH**	Polycyclic aromatic hydrocarbon
CBR	California bearing ratio	**PCB**	Polychlorinated biphenyl
CIEH	Chartered Institute of Environmental Health	**PI**	Plasticity index
CIRIA	Construction Industry Research Association	**PID**	Photo ionisation detector
CLEA	Contaminated land exposure assessment	**POS**	Public open space
CML	Council of Mortgage Lenders	**PPE**	Personnel protective equipment
CoC	Contaminants of concern	**ProPG**	Professional practice guidance
CSM	Conceptual site model	**QA**	Quality assurance
DNAPL	Dense non-aqueous phase liquid (chlorinated solvents, PCB)	**SGV**	Soil guideline value
DWS	Drinking water standard	**SPH**	Separate-phase hydrocarbon
EA	Environment Agency	**SPT**	Standard penetration test
EQS	Environmental quality standard	**SVOC**	Semi-volatile organic compound
FFL	Finished floor level	**TPH**	Total and speciated petroleum hydrocarbon
GAC	General assessment criteria	**TPH CWG**	Total Petroleum Hydrocarbon (Criteria Working Group)
GL	Ground level	**UKWIR**	United Kingdom Water Infrastructure Risk
GSV	Gas screening value	**UST**	Underground storage tank
HCV	Health criteria value	**VCC**	Vibro-concrete column
ICSM	Initial conceptual site model	**VOC**	Volatile organic compound
LEL	Lower explosive limit	**VRSC**	Vibro-replacement stone columns
LMRL	Lower method reporting limit	**VSC**	Vibro-stone columns
LNAPL	Light non-aqueous phase liquid (petrol, diesel, kerosene)	**WHO**	World Health Organisation
MCV	Moisture condition value	**WRAP**	Waste and Resources Action Programme
MIBK	Methyl isobutyl ketone	**WTE**	Water table elevation

m	Metres	**ppm**	Parts per million
km	Kilometres	**mg/m^3**	Milligram per metre cubed
% v/v	Percent volume in air	**m bgl bgl**	Metres below ground level
mb	Millibars (atmospheric pressure)	**m bcl**	Metre below cover level
l/hr	Litres per hour	**mAOD**	Metres above ordnance datum (sea level)
µg/l	Micrograms per litre (parts per billion)	**kN/m^2**	Kilonewtons per metre squared
ppb	Parts per billion	**µm**	Micrometre
mg/kg	Milligrams per kilogram (parts per million)	**SSRT**	Site Specific Remediation Target
PSD	Particle Size Distribution	**DD**	Dry Density
CL:AIRE	Contaminated Land: Applications in Real Environments	**Mc**	Moisture Content
ρ	Bulk Density	**GPR**	Ground Penetrating Radar
NDP	Nuclear Density Probe	**FFL**	Finished Floor Level
LEL	Lower Explosive Limit	**UKWIR**	UK Water Industry Research
CIRIA	Construction Industry Research and Information Association	**LOD**	Limit of Detection

APPENDIX III
DRAWINGS

DRAWING 14-866-001 – SITE LOCATION PLAN





P1	REVE	25.07.2022	CB	RJW
P1	REVD	08.04.2022	HM	RJW
P1	REVC	21.02.2022	LM	RJW
P1	REVB	23.07.2021	CB	RJW
P1	REVA	19.05.2021	EB	NS
Phase	Issue	Date	Drawn	Checked

Notes:

Client:
Eric Wright Construction

Job No: 14-886

Date: 25.07.2022

Drawing No: 002

Scale: NTS @ A3

Job Title:
Woodcock Leisure Centre

Drawing Title:
Proposed Development Plan

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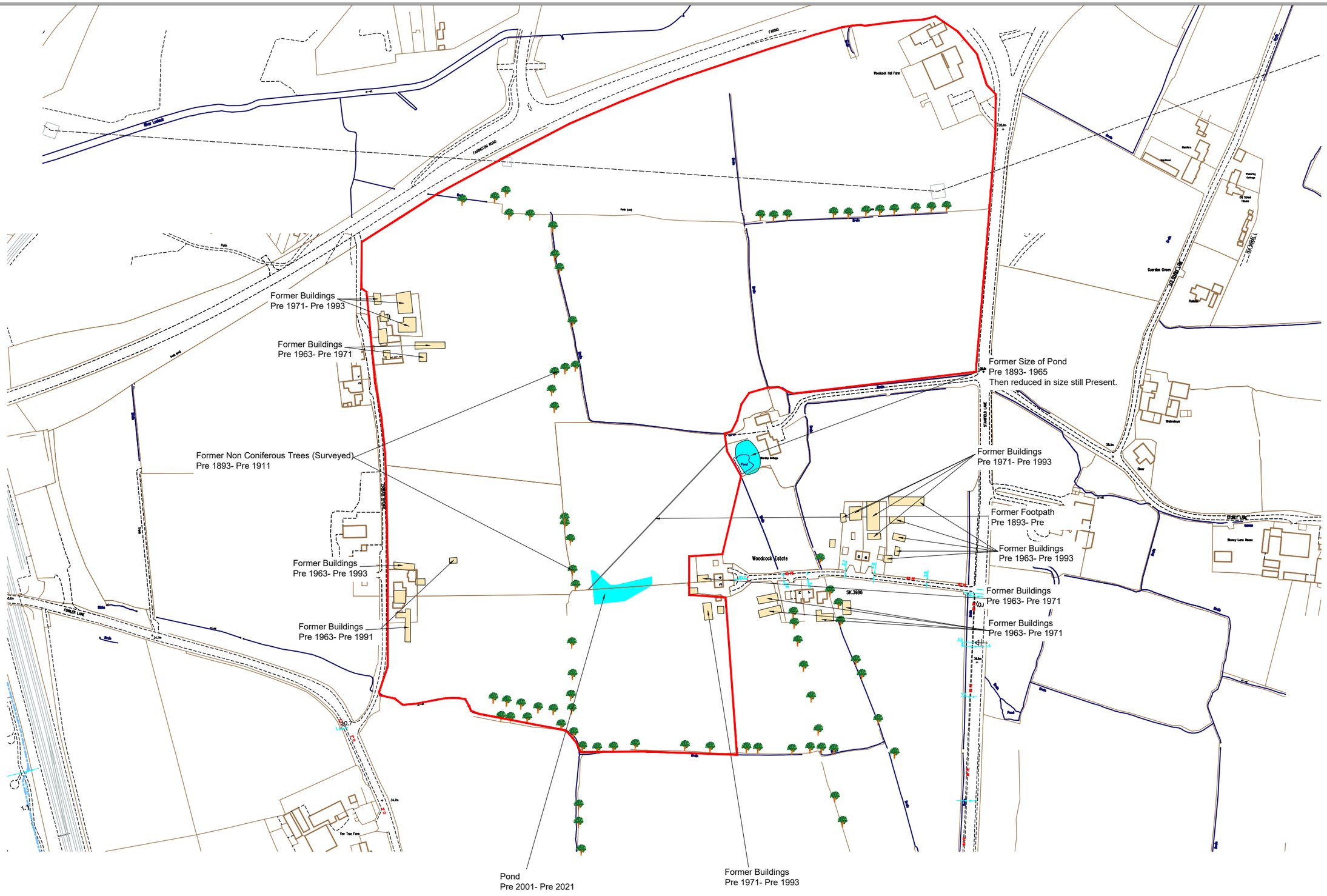

Historical Features

- Former Residential Buildings (Pre 1963 - Pre 1993)
- Pond (Pre 1893 - Present)
- Former Non-Coniferous Trees (Surveyed) (Pre 1893 - Pre 1911)

Notes:

Phase	Issue	Date	Drawn	Checked
P1	REVC	23.07.2021	CB	RJW
P1	REVB	27.05.2021	CB	NS
P1	REVA	19.05.2021	EB	NS

Client: Eric Wright Construction

Job No: 14-886

Date: 23.07.2021

Drawing No: 003

Scale: NTS@ A3

Job Title: Woodcock Leisure Centre

Drawing Title: Historical features Plan

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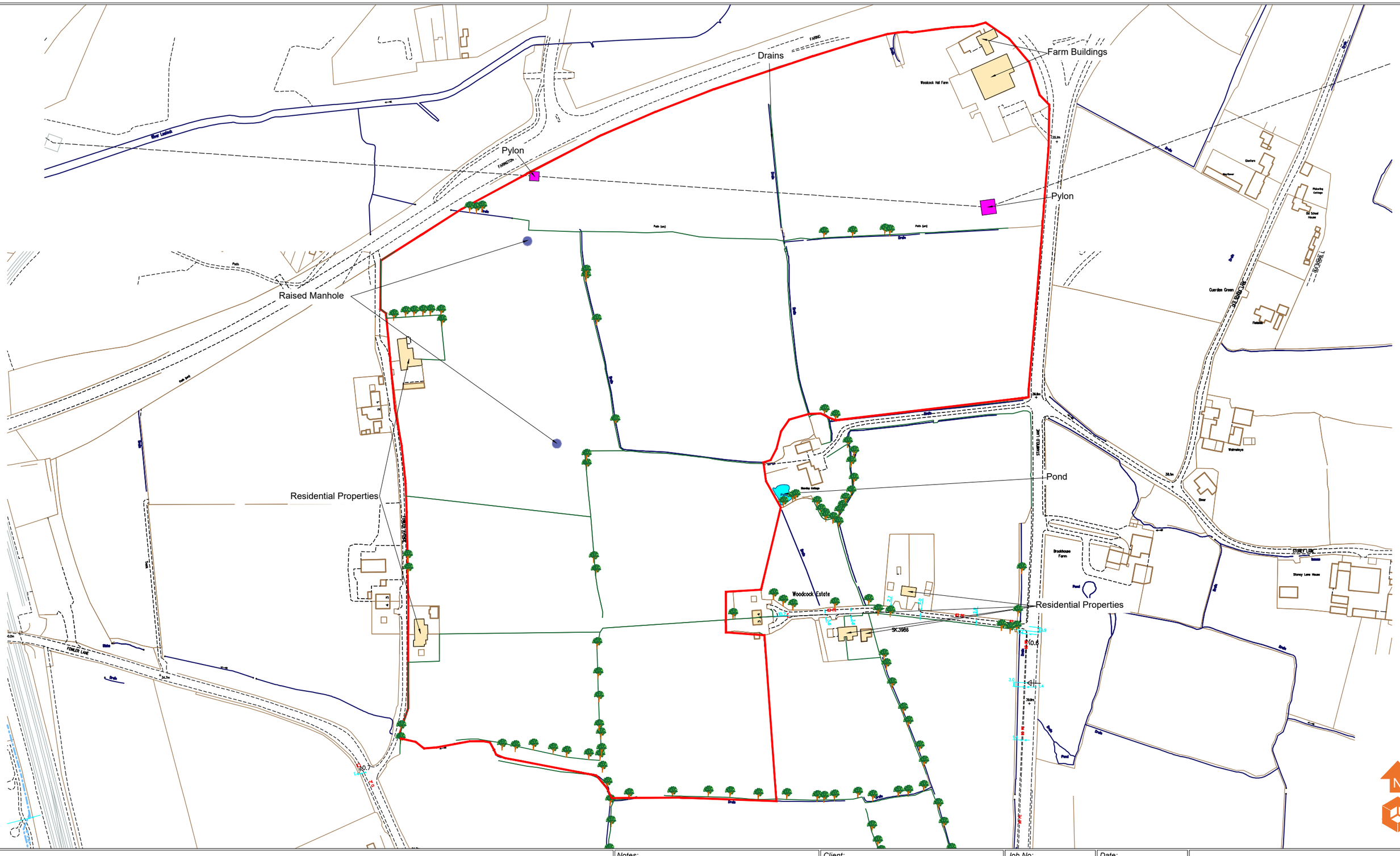

Site Features

- Pond
- Pylons
- Buildings
- Trees
- Drains
- Field Boundaries
- Raised Manhole

Notes:

P1	REVB	23.07.2021	CB	RJW
P1	REVA	19.05.2021	EB	NS
Phase	Issue	Date	Drawn	Checked

Client: Eric Wright Construction

Job No: 14-886

Date: 23.07.2021

Drawing No: 004

Scale: NTS@ A3

Job Title: Woodcock Leisure Centre

Drawing Title: Site Features Plan

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APPENDIX IV
PHOTOGRAPHS

PLATE 1 VIEW SOUTHEAST THROUGH NORTHERN FIELD SHOWING PYLON

PLATE 2 EXAMPLE OF EXISTING DITCH

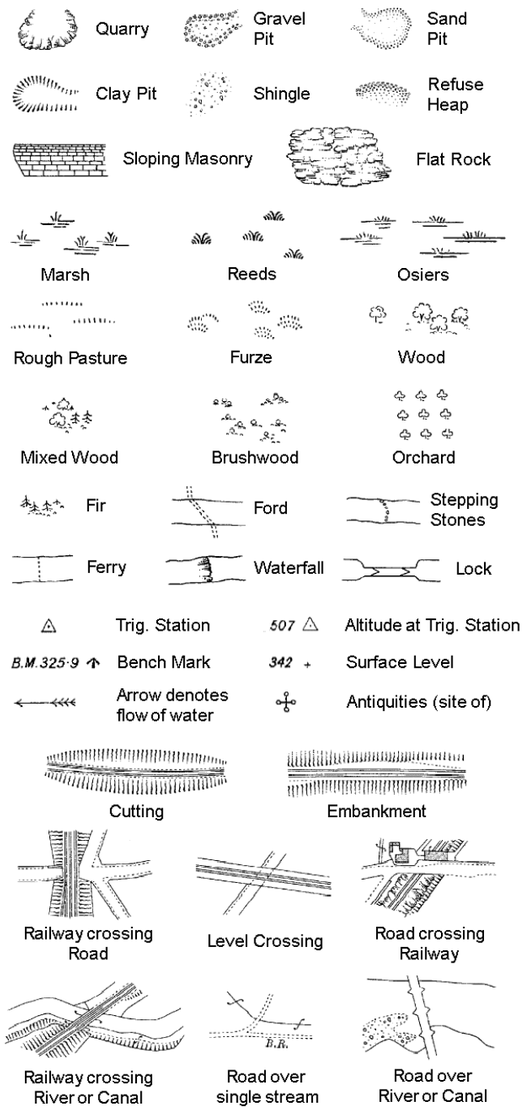
PLATE 3 VIEW OF EXISTING FARM BUILDINGS IN NORTHEAST

PLATE 4 VIEW OF MANHOLES IDENTIFIED THROUGH WESTERN AREA OF SITE.

APPENDIX V
HISTORICAL MAPS

Historical Mapping Legends

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



County Boundary (Geographical)

County & Civil Parish Boundary

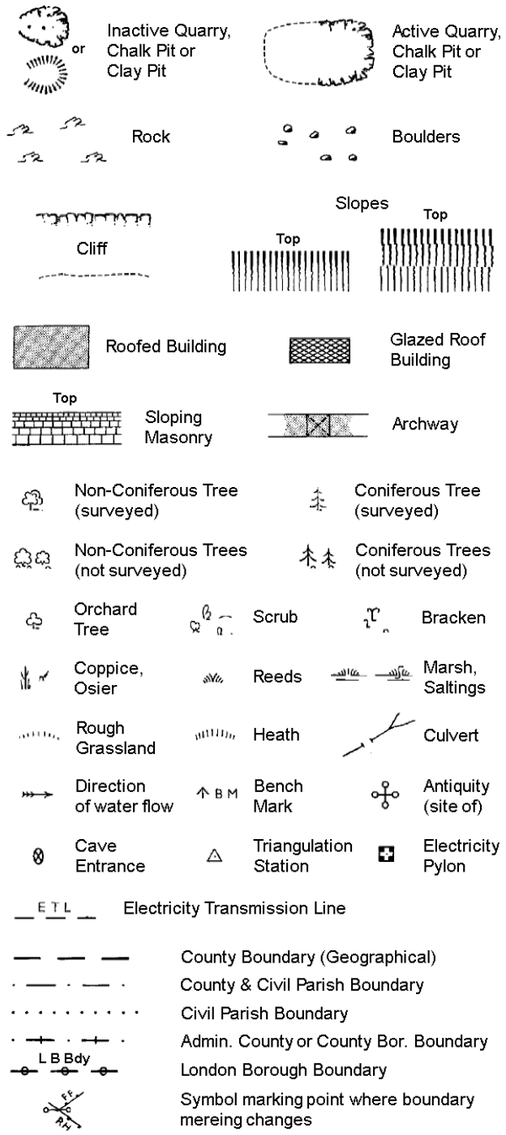
Administrative County & Civil Parish Boundary

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

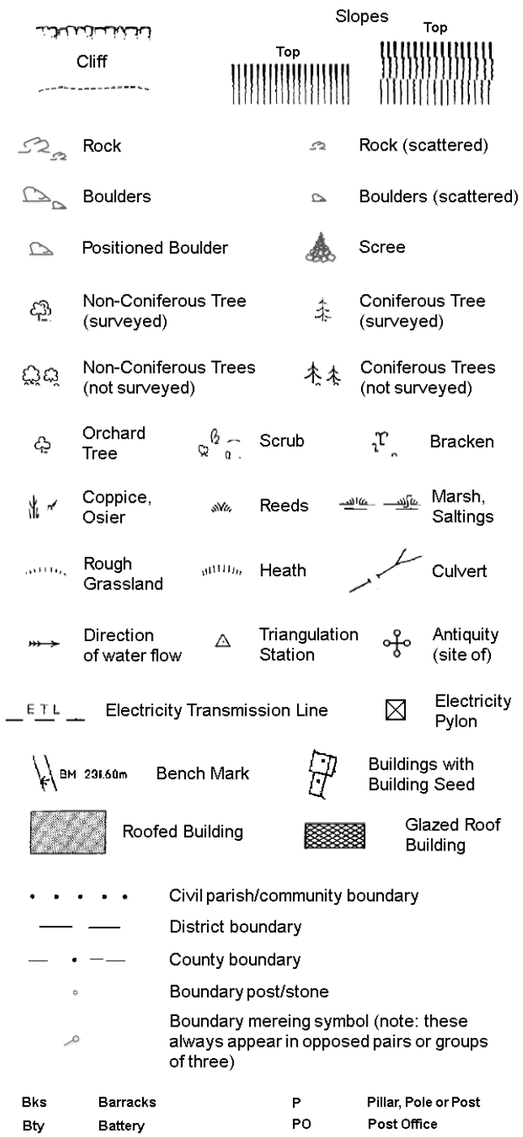
Admin. County or County Bor. Boundary

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)

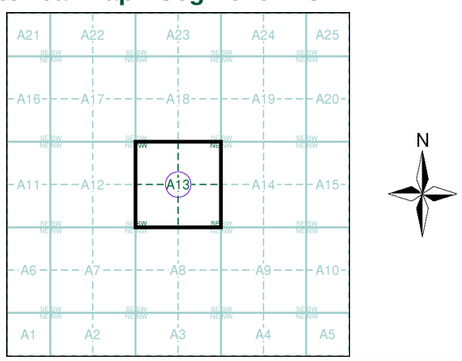
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity 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

e3p

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:2,500	1893	2
Lancashire And Furness	1:2,500	1911	3
Lancashire And Furness	1:2,500	1931	4
Ordnance Survey Plan	1:1,250	1963 - 1964	5
Additional SIMs	1:1,250	1963 - 1984	6
Ordnance Survey Plan	1:2,500	1965	7
Ordnance Survey Plan	1:1,250	1971 - 1991	8
Additional SIMs	1:1,250	1980 - 1987	9
Additional SIMs	1:1,250	1984 - 1989	10
Ordnance Survey Plan	1:1,250	1988 - 1991	11
Additional SIMs	1:1,250	1988	12
Large-Scale National Grid Data	1:1,250	1993	13
Large-Scale National Grid Data	1:1,250	1995	14
Historical Aerial Photography	1:2,500	2001	15

Historical Map - Segment A13



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National Grid Reference:	354770, 424660
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

1, Fowler Avenue, Farington Moss, LEYLAND, PR26 6RL

Landmark® INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
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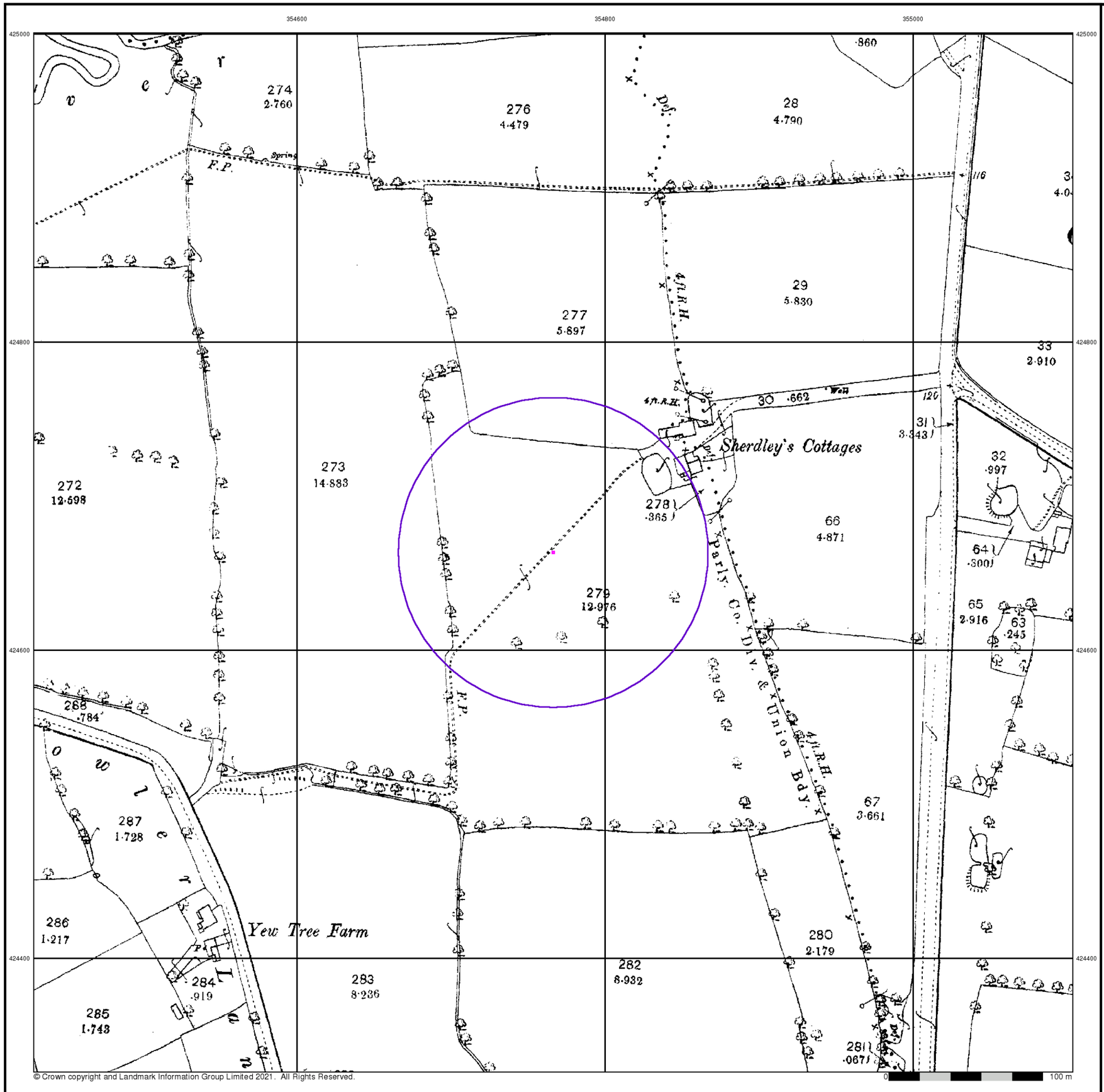


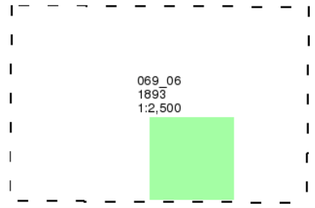
Lancashire And Furness

Published 1893

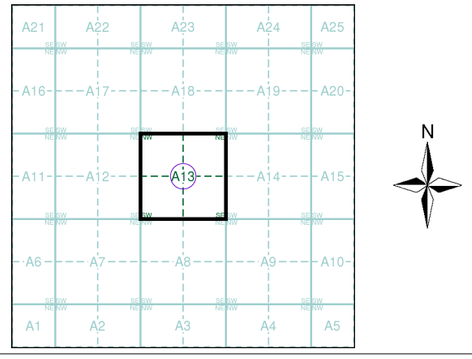
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	276119520_1_1
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Site Area (Ha):	0.01
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Fax: 0844 844 9951
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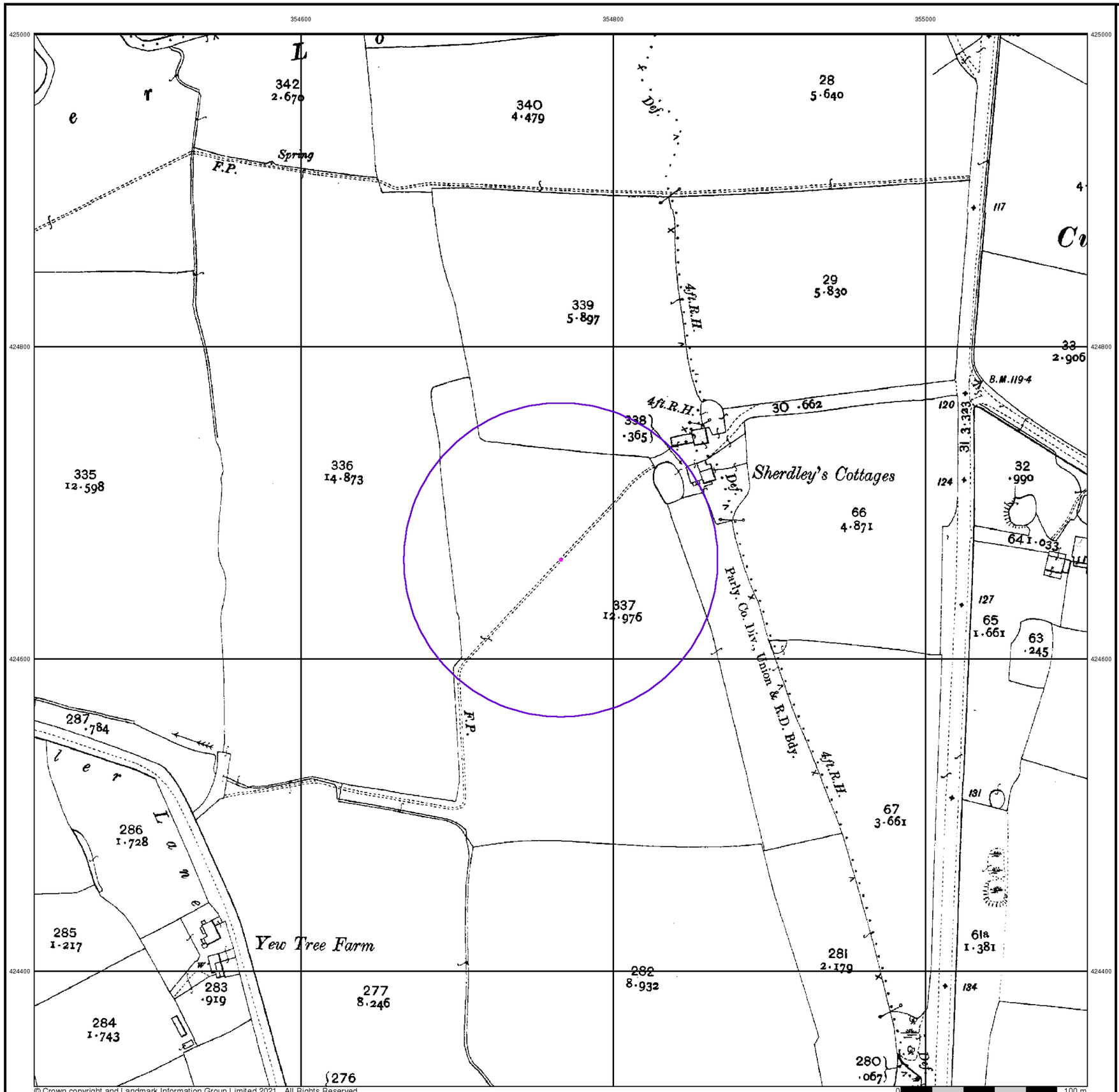


e3p

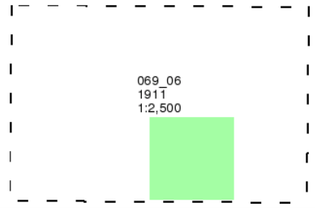
Lancashire And Furness

Published 1911

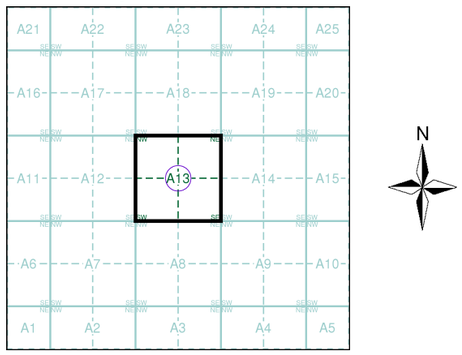
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	276119520_1_1
Customer Ref:	14886
National Grid Reference:	354770, 424660
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

1, Fowler Avenue, Farington Moss, LEYLAND, PR26 6RL

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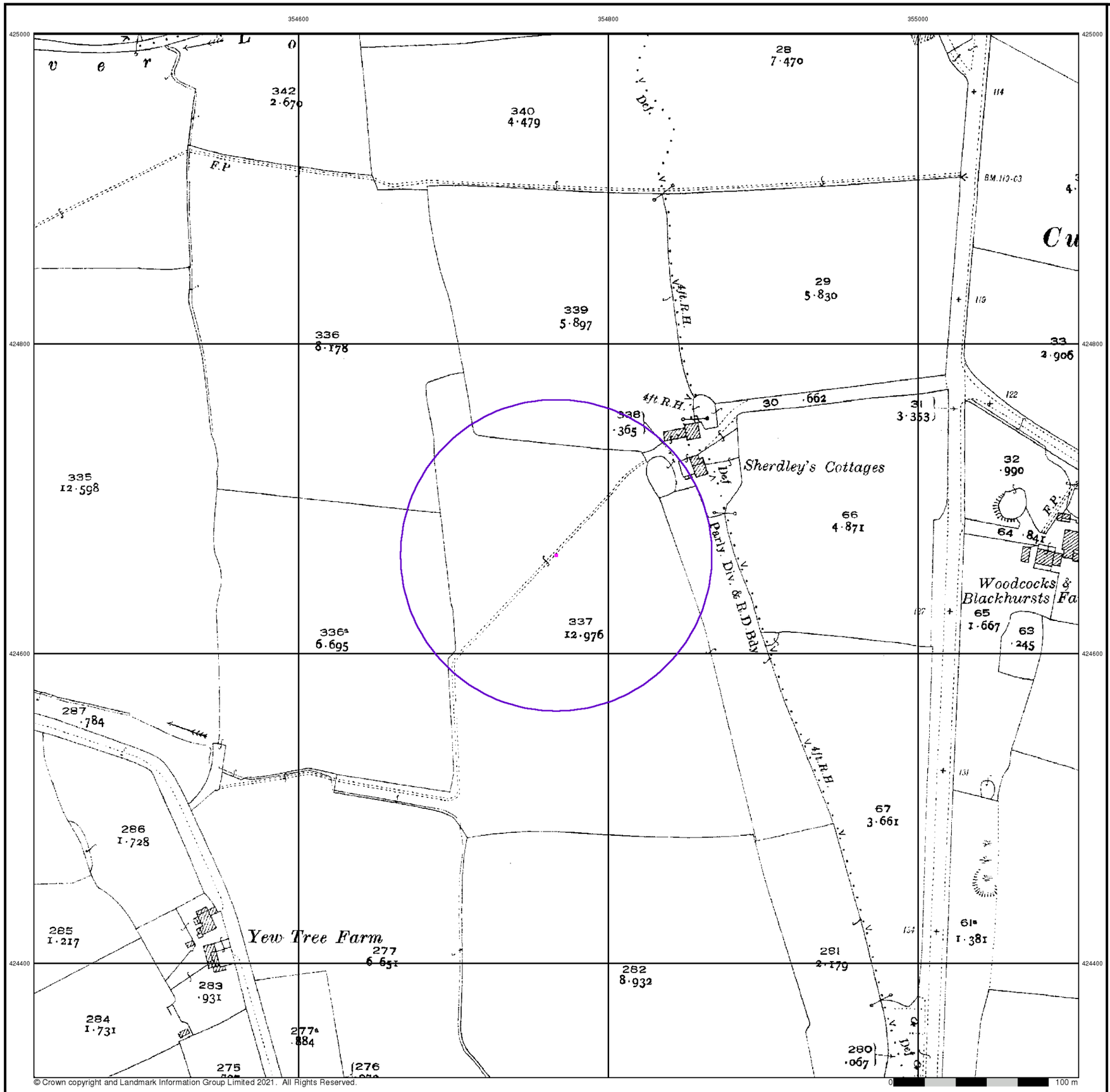


e3p

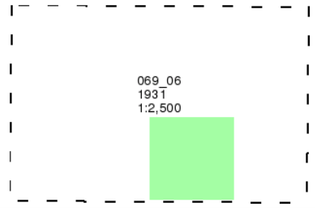
Lancashire And Furness

Published 1931

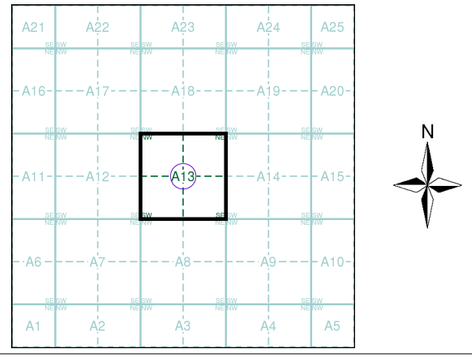
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



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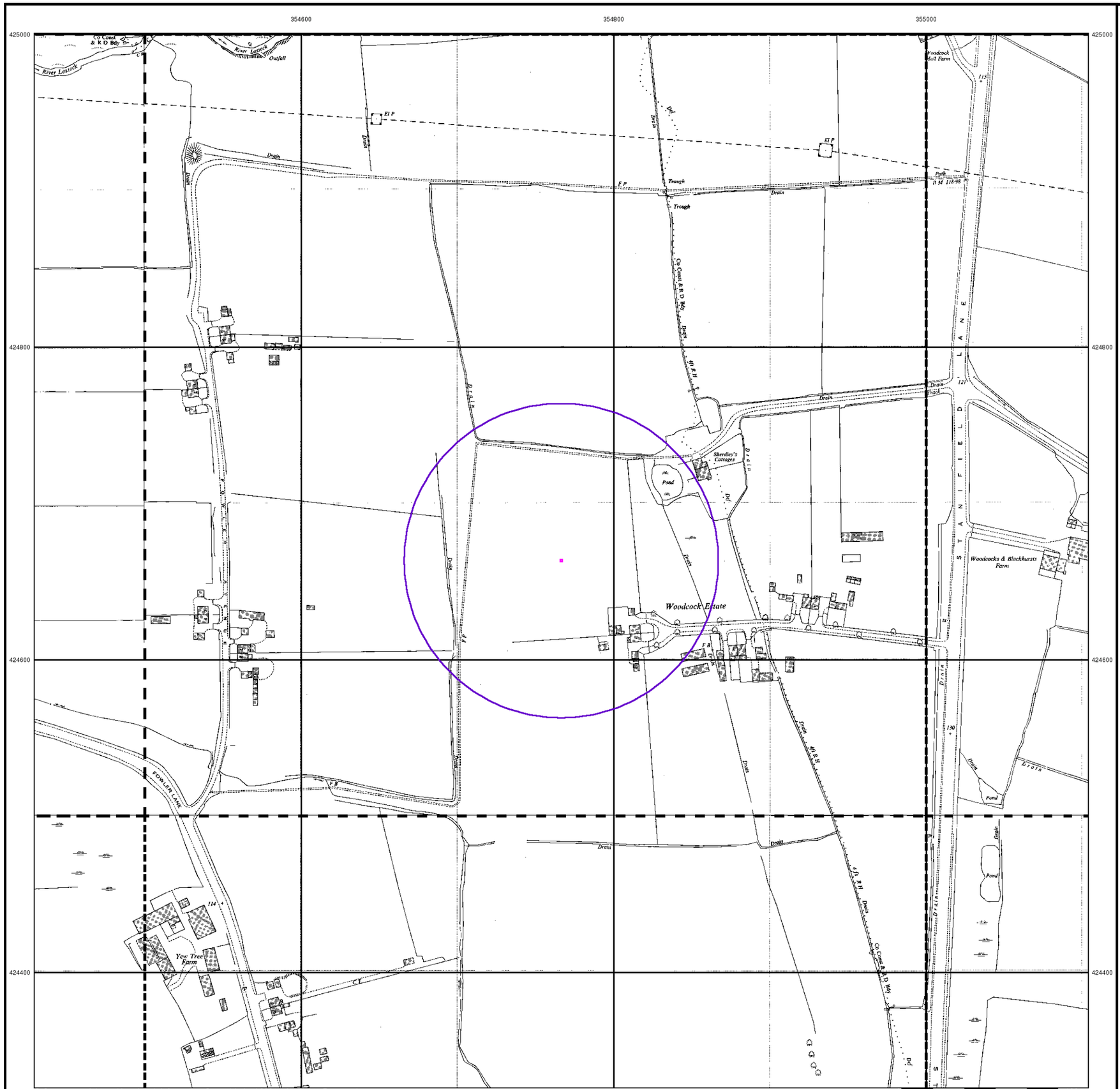


e3p

Ordnance Survey Plan

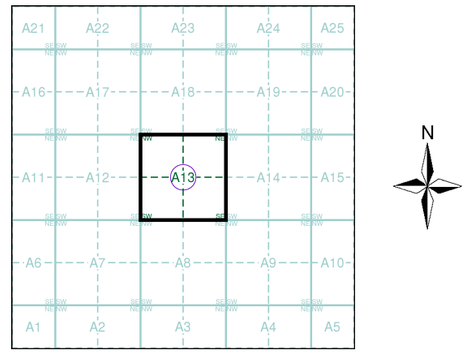
Published 1963 - 1964

Source map scale - 1:1,250

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

Map Name(s) and Date(s)

Historical Map - Segment A13



Order Details

Order Number:	276119520_1_1
Customer Ref:	14886
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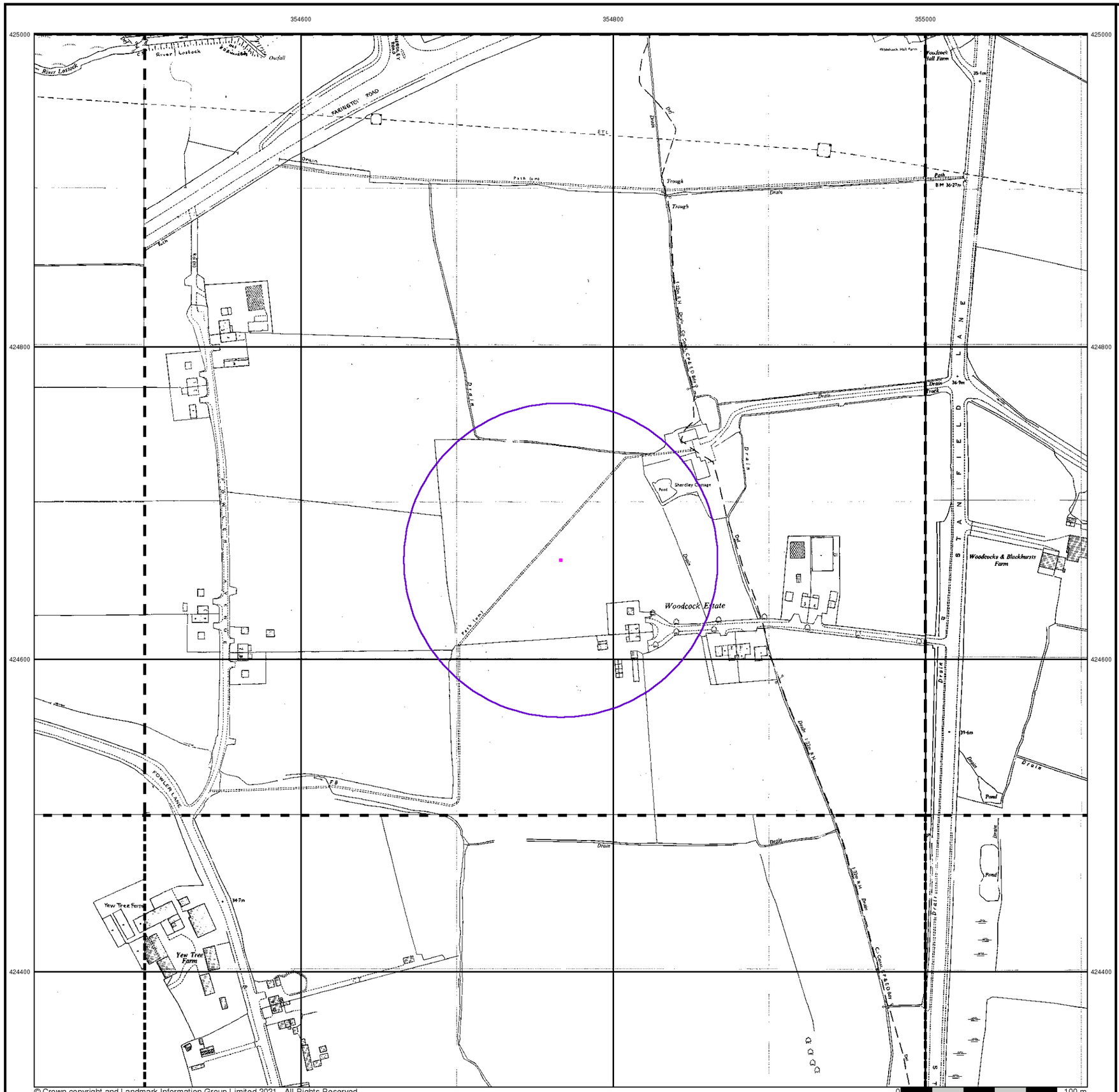


e3p

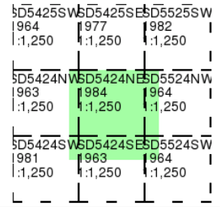
Additional SIMs

Published 1963 - 1984

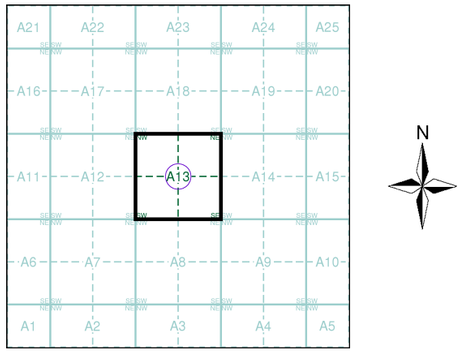
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



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Search Buffer (m):	100

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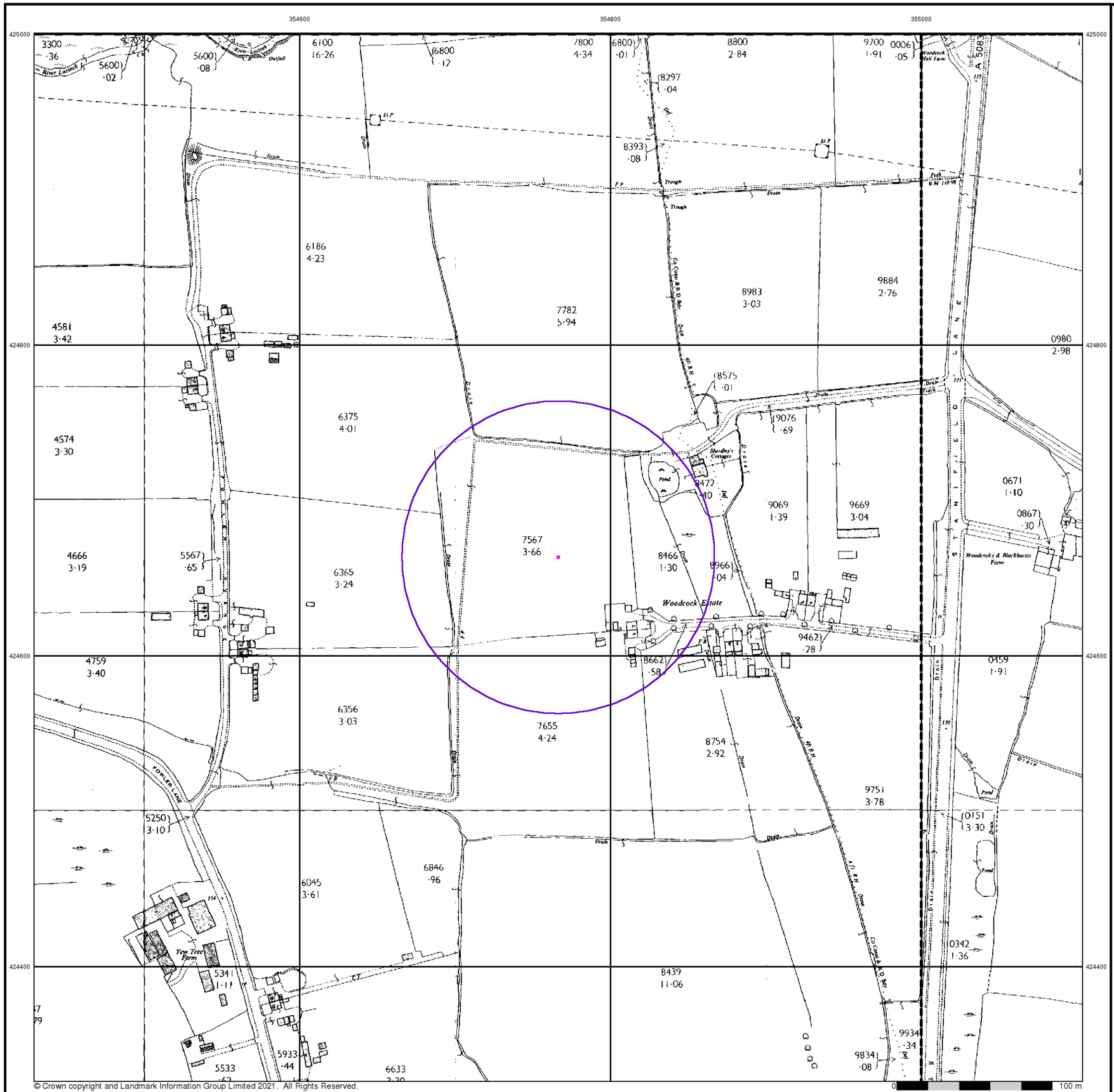


e3p

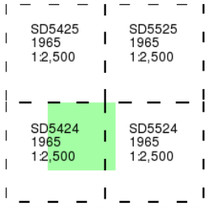
Ordnance Survey Plan

Published 1965

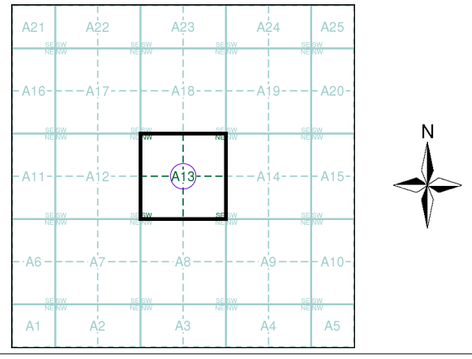
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



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Order Number:	276119520_1_1
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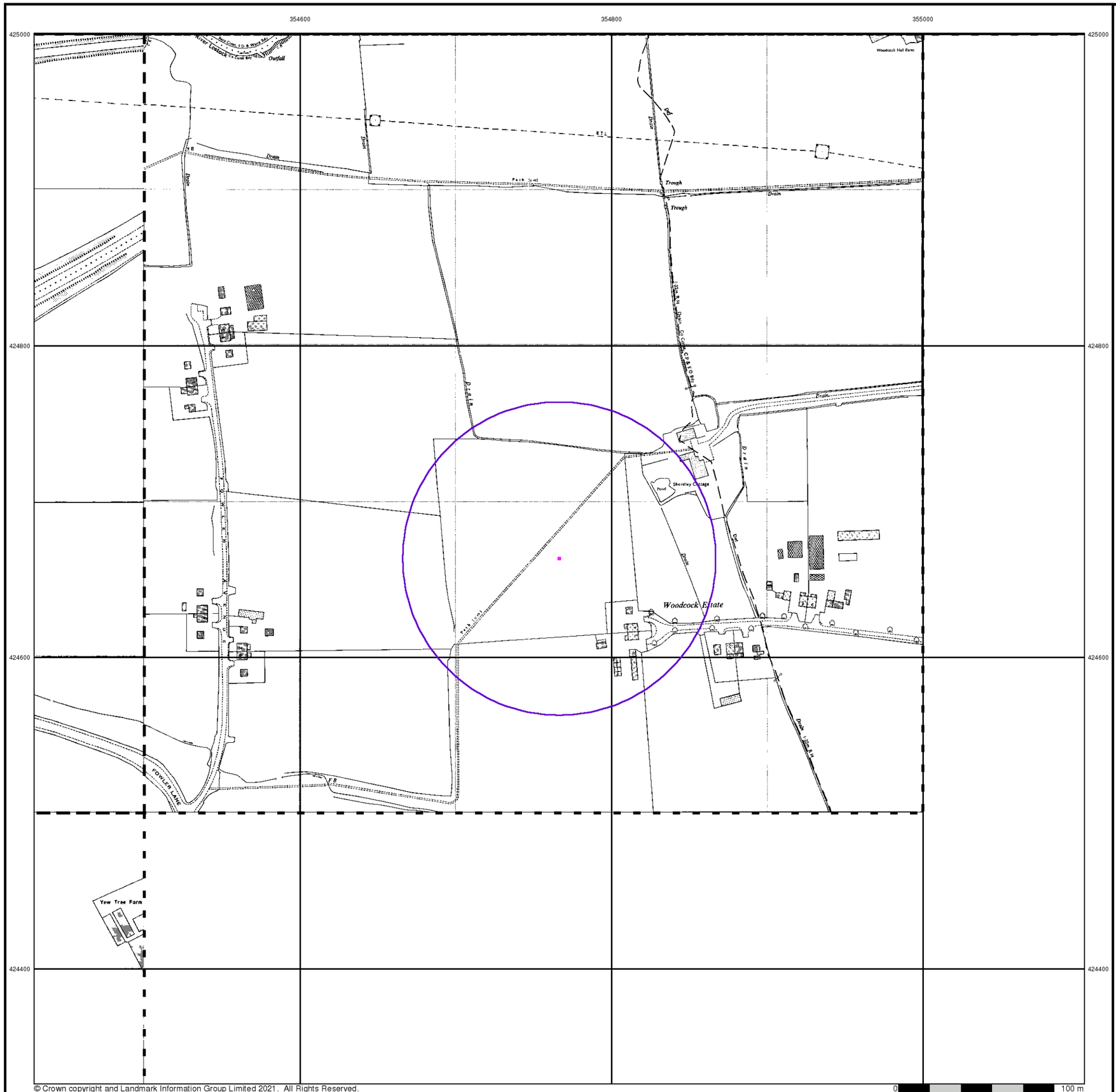


0 100 m

e3p

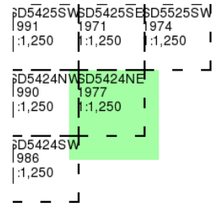
Ordnance Survey Plan

Published 1971 - 1991

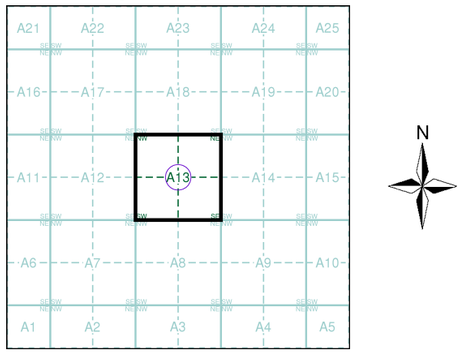
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	276119520_1_1
Customer Ref:	14886
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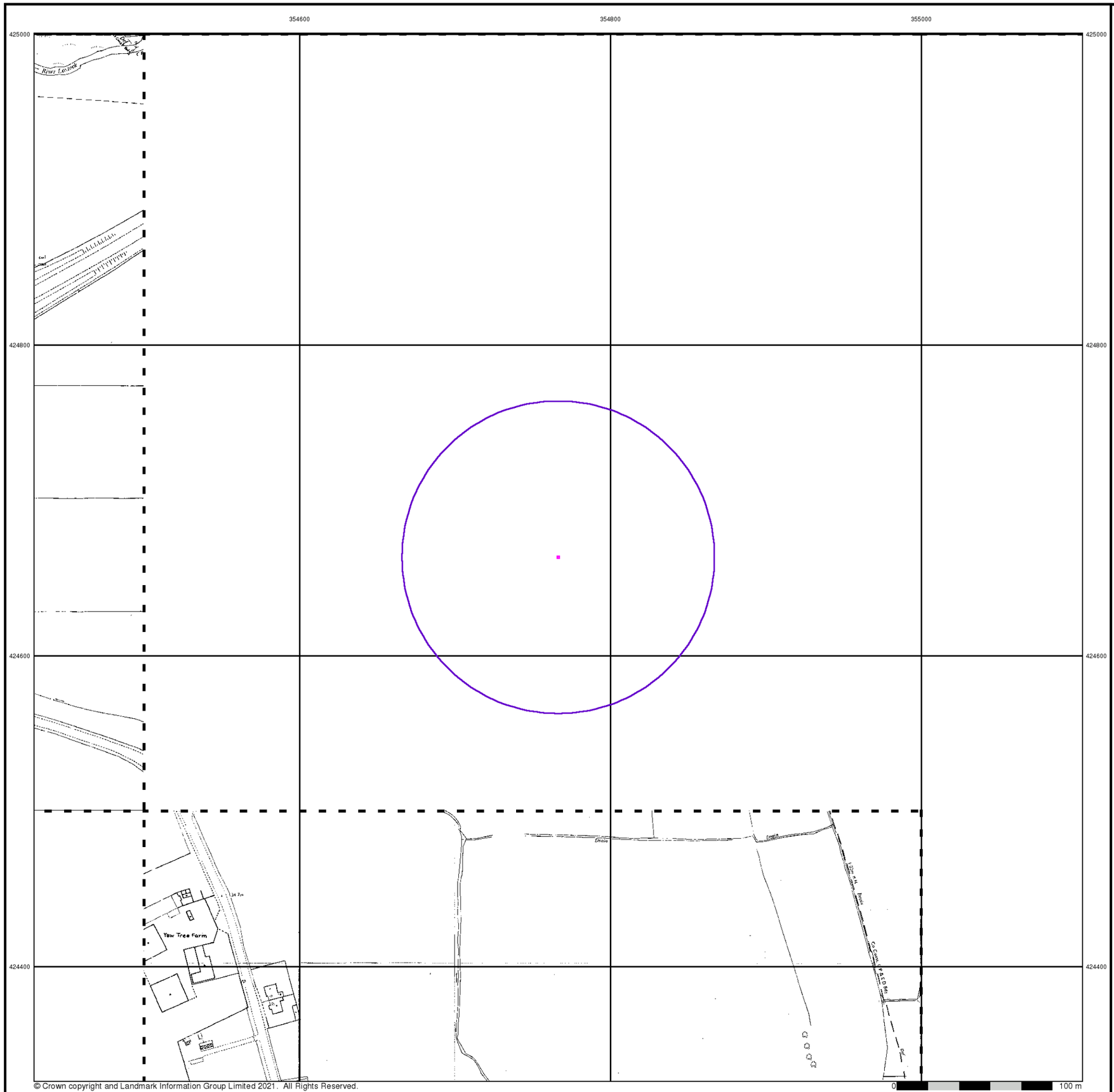


e3p

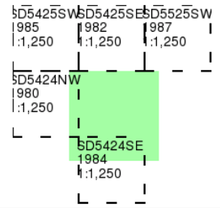
Additional SIMs

Published 1980 - 1987

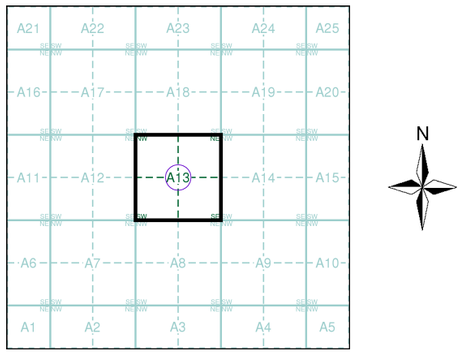
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



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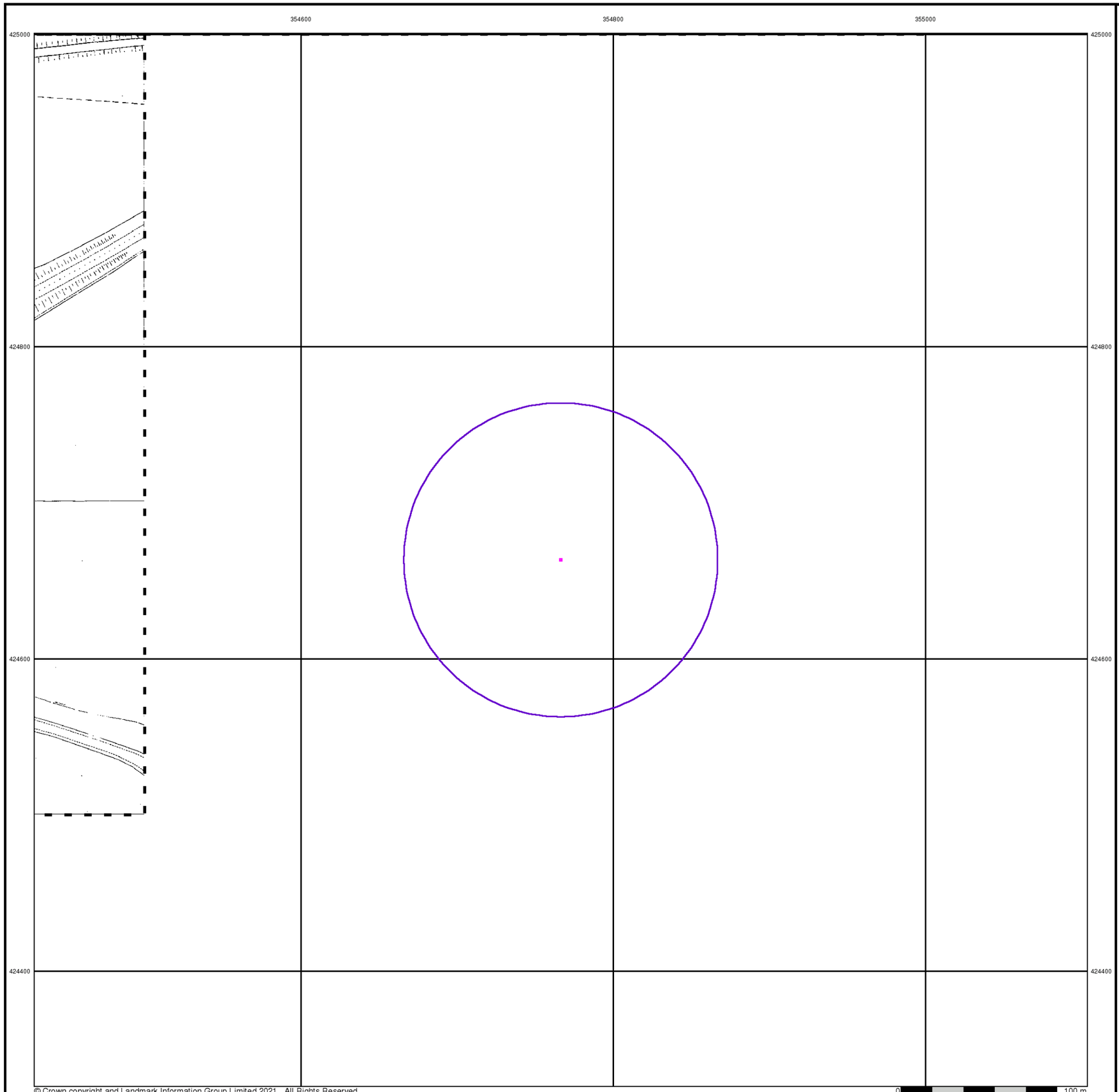

e3p

Additional SIMs

Published 1984 - 1989

Source map scale - 1:1,250

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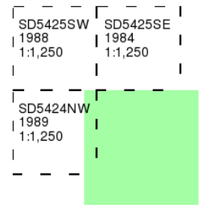
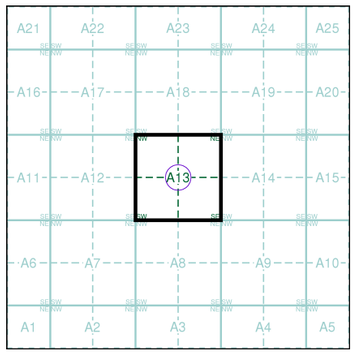
Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

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Customer Ref:	14886
National Grid Reference:	354770, 424660
Slice:	A
Site Area (Ha):	0.01
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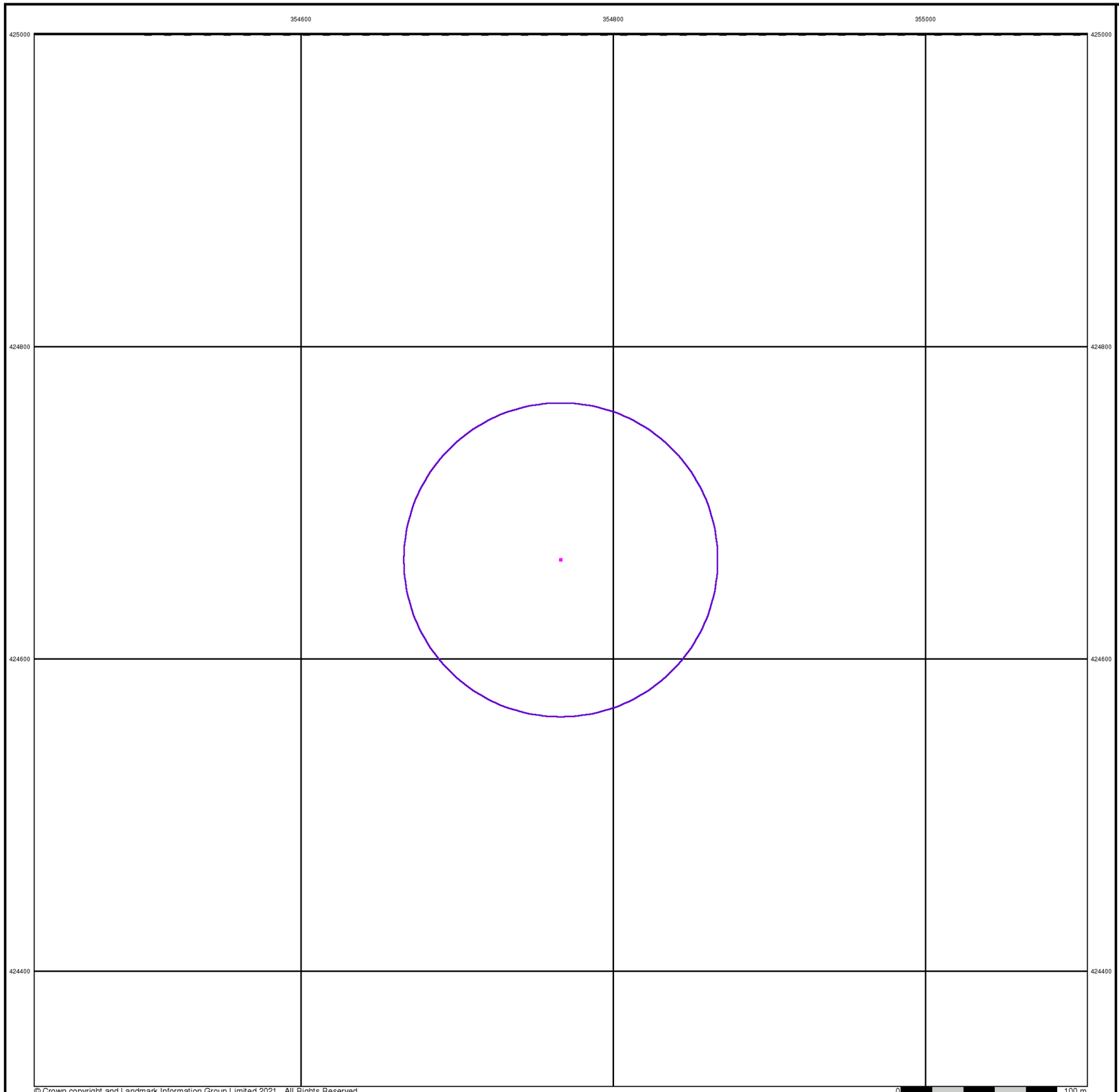


e3p

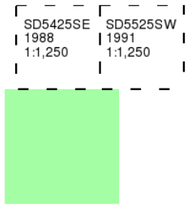
Ordnance Survey Plan

Published 1988 - 1991

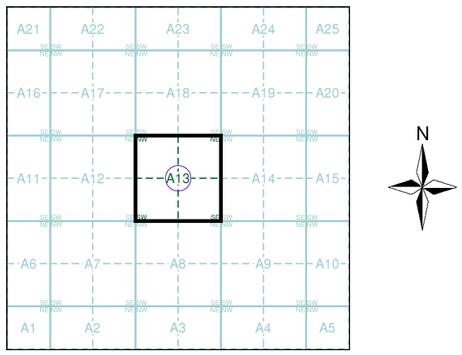
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	276119520_1_1
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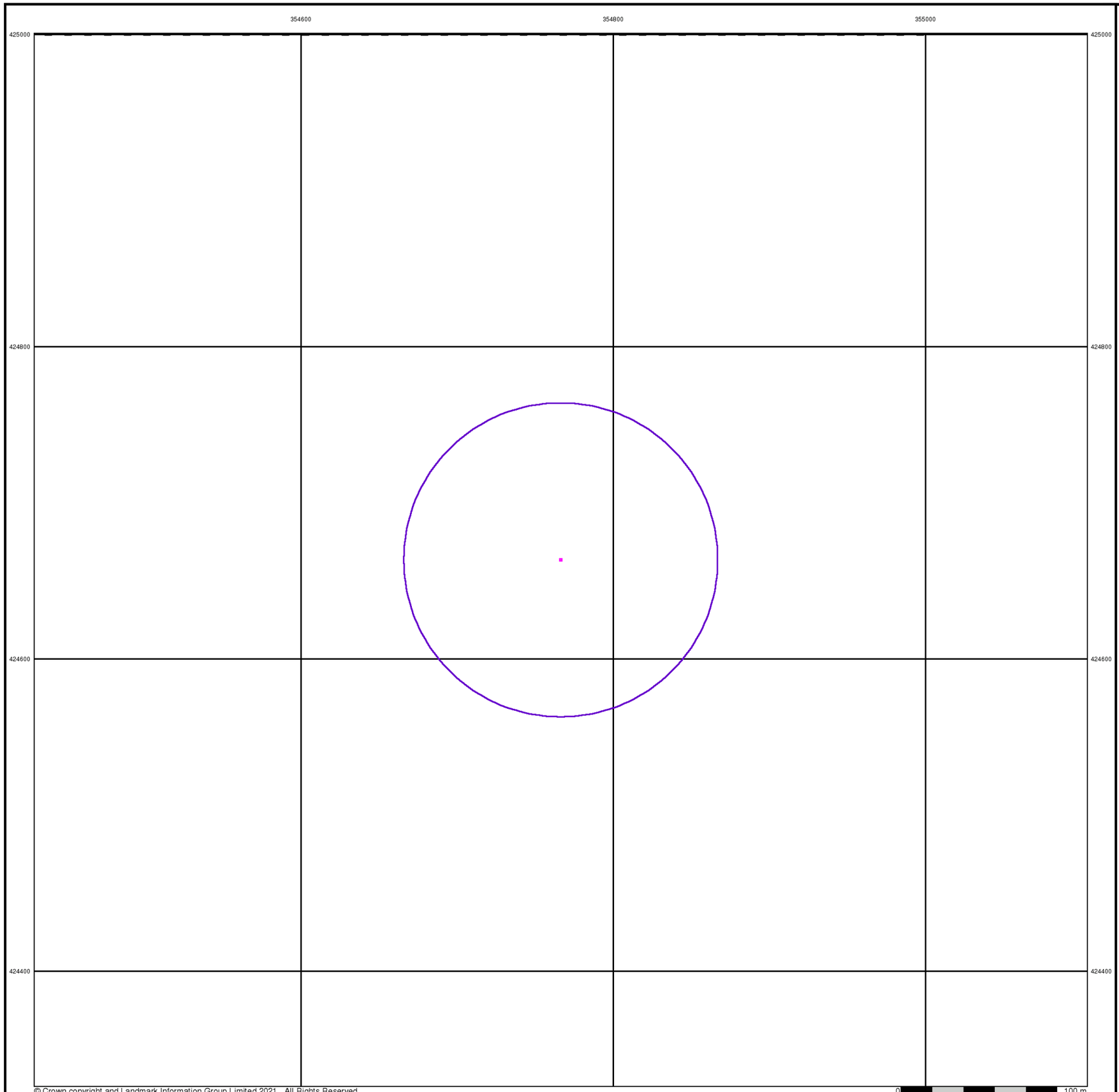

e3p

Additional SIMs

Published 1988

Source map scale - 1:1,250

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

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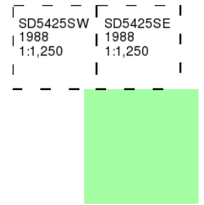
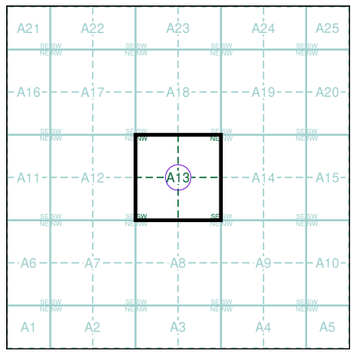


Historical Map - Segment A13



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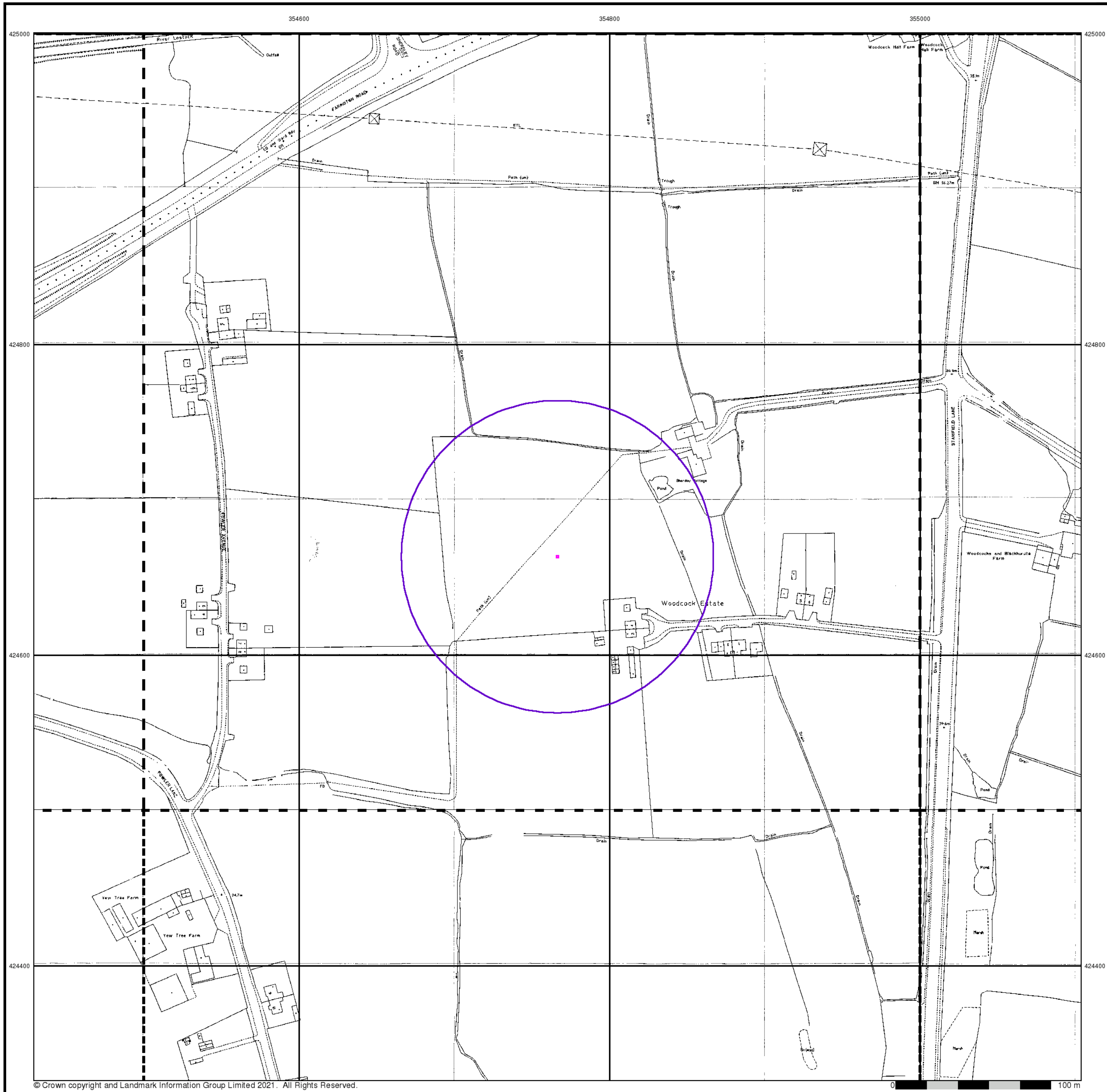


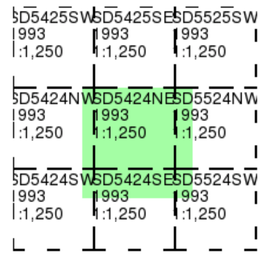
Large-Scale National Grid Data

Published 1993

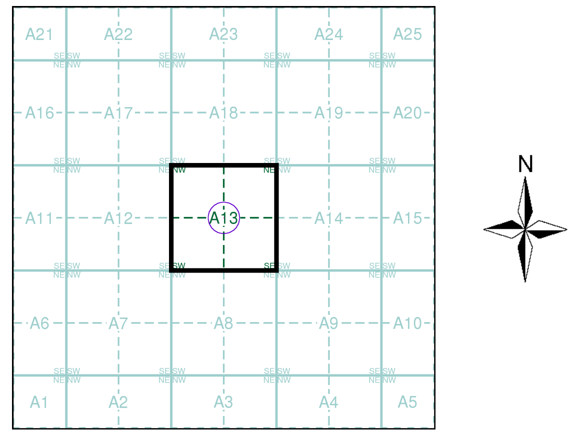
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

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Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 100

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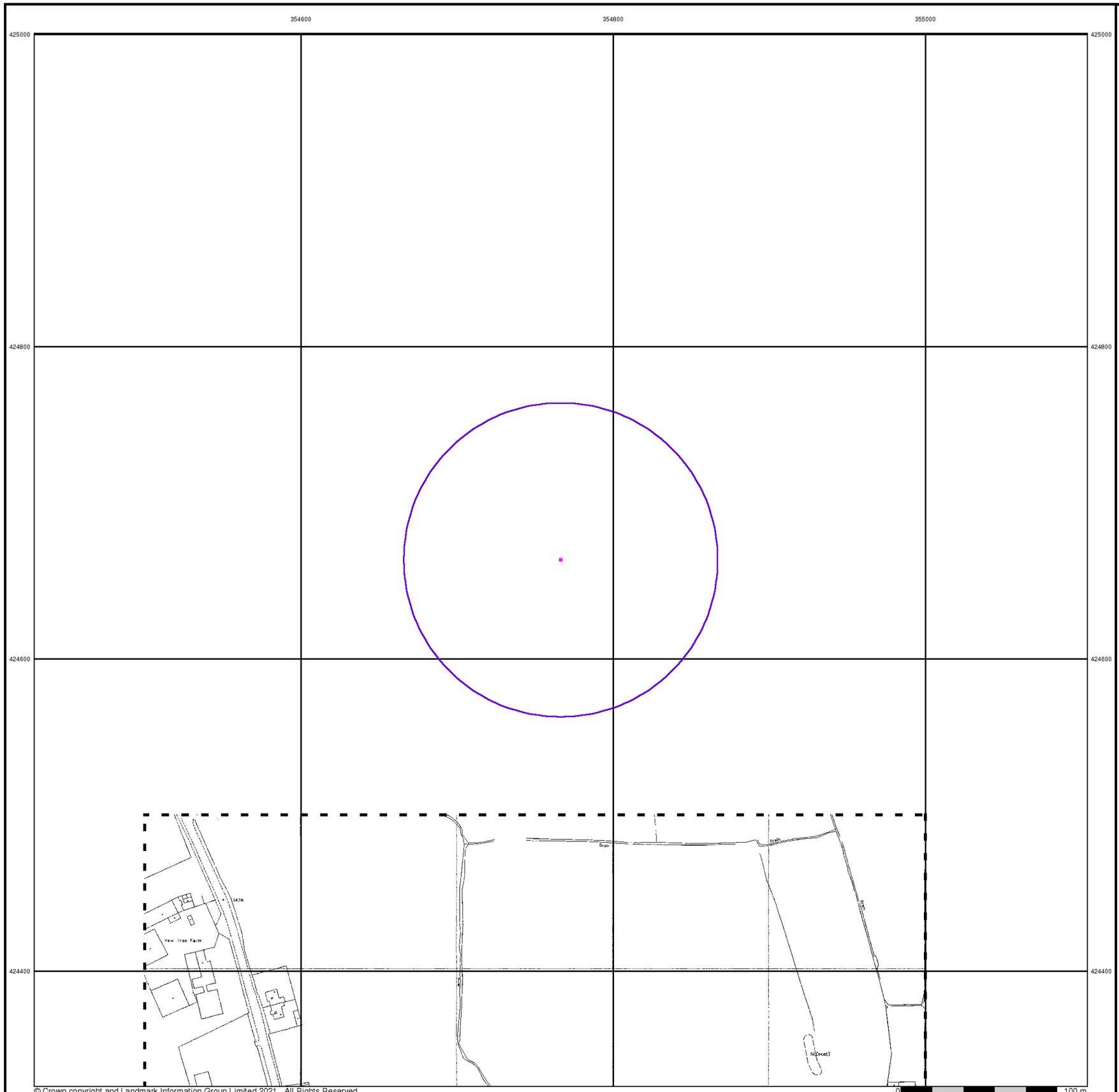


e3p

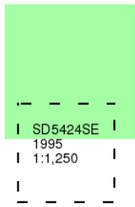
Large-Scale National Grid Data

Published 1995

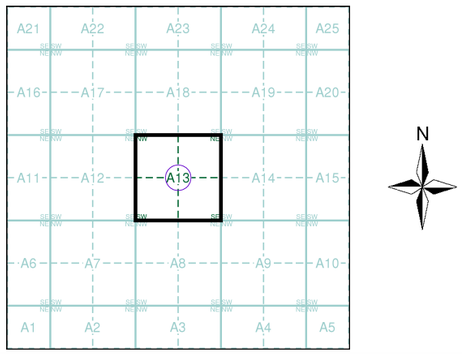
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



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