



## **STAGE 1 DESK STUDY REPORT**

**ON**

**HART ROAD  
THUNDERSLEY  
ESSEX**

**ON BEHALF OF**

**LEGAL AND GENERAL  
MODULAR HOMES**



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CLIENT: LEGAL AND GENERAL MODULAR HOMES  
JOB NUMBER: LEG/03  
PROJECT: HART ROAD, THUNDERSLEY, ESSEX  
REPORT TYPE: STAGE 1 DESK STUDY  
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## 1.0 EXECUTIVE SUMMARY

The pertinent conclusions of the report are tabulated below. However, the information below is not exhaustive, and it is recommended the report is read in its entirety.

Proposed Development	Residential dwellings with private gardens.
Site Description	Occupied by residential properties and an equestrian ménage in the north of the site. Remaining site is undeveloped.
Site History	Small buildings present in the north of the site from 1923, later replaced by the current residential property and ménage.
Geology	Superficial head deposits, overlying Bagshot Formation (Sand).
Coal Mining	Not within a coal mining area.
Hazardous Gases	No radon protection measures required. Infilled pond in southeast of the site. Gas wells will need to be installed and monitored.
Ground Conditions	Possible made ground, overlying cohesive or granular superficial head deposits, over sands of the Bagshot Formation.
Contamination	Potentially, from possible made ground, most likely on the north and in the former pond. Site investigation required.
Foundations	Strip or trench fill foundations may be acceptable, but this is not certain - subject to confirmation by ground investigation.
Excavations	Likely to be stable within natural strata, but instability can be expected within any made ground. Shallow groundwater may be present, particularly in the south of the site.
Soakaways	The disposal of surface water using soakaways will depend on the findings of the ground investigation, which is programmed for the near future. If shallow groundwater is detected or significant cohesive deposits, soakaways are unlikely to be viable.
Road Pavement	A design CBR value of at least 2% is usually applicable on natural strata.



## **2.0 TERMS OF REFERENCE**

- 2.1 Legal and General Modular Homes is considering developing the site at Hart Road, Thundersley in Essex, with residential properties. It was considered appropriate to implement a desk study to provide information to aid the planning process, viability assessment, and design of any subsequent development.
- 2.2 ARP Geotechnical Ltd was appointed by Legal and General Modular Homes to implement the report, which involved a desk study assessment of the geological and coal mining aspects, site history, potential contamination sources and receptors, and other environmental aspects including radon gas and indicative flood risk. An Envirocheck Report from Landmark Information Group was obtained to facilitate the study.
- 2.3 This report is intended to cover a wide scope of geotechnical issues, along with a Stage 1 risk appraisal of potential contaminant source - pathway - receptor linkages.
- 2.4 The report does not include any intrusive assessment, or a site walkover survey. However, these are programmed for the near future.
- 2.5 The report has been prepared for the use and reliance of the Client only. The report shall not be relied upon or transferred to any other parties without the written agreement of ARP Geotechnical Ltd. For the avoidance of any doubt, where ARP Geotechnical Ltd enters into a letter of reliance for the benefit of a third party, that third party will be permitted to rely on the report. No responsibility will be accepted where this report is used, either in its entirety or in part, by any other party without ARP Geotechnical Ltd.'s consent.
- 2.6 Attention is drawn to the requirements of the Construction Design and Management Regulations 2015, and in particular the duties and obligation of the Client.

- 2.7 The report refers to, and includes, a copy of an indicative proposed layout. This is only for the purposes of generating a conceptual site model for the contamination risk assessment. Unless the proposed layout changes significantly, such that the conceptual model and risk assessment is affected, there is no requirement to re-issue this report when the layout is revised.

### **3.0 SITE DESCRIPTION**

#### Site Location

- 3.1 The site, which is centred on Ordnance Survey Grid Reference 579700, 188600, is located off Hart Road, Thundersley, in Essex.
- 3.2 A site location plan and aerial photograph are presented in Appendix A.
- 3.3 Plans and publicly available aerial and street view images have been used to provide information on the status of the site. These are discussed below.

#### On – Site Features

- 3.4 The site is an irregular shaped piece of land extending to an area of approximately 1.67 hectares, with overall dimensions of 180m (north - south) by 90m (east - west).
- 3.5 The site is shown to be occupied by a residential property in the north of the site, which fronts onto Hart Road. Concrete hardstanding is also present in the north of the site, leading to a building in the southwest of the site and an equestrian ménage along the northern boundary of the site. The remaining site is undeveloped grassland, separated by wooden fences. In the southeast of the site is a wooden fence that separates a former pond from the undeveloped site to the north.
- 3.6 The site slopes down gently to the southeast.

#### Site Boundaries and Surrounding Land Use

- 3.7 The site is bounded to the north by Hart Road and residential properties, beyond which are further residential properties. Cedar Hall School abuts the western boundary of the site, which includes buildings, playing fields and car parking. To the south and east of the site is undeveloped grassland, with residential properties beyond.

## Site History

- 3.8 Ordnance Survey archive maps were obtained for the site. Copies of the maps are included in Appendix B, and a summary of the findings is given below.

<b>Map Date</b>	<b>On-Site</b>	<b>Off-Site</b>
1876	The site is part of a larger field. A field boundary crosses the north of the site.	Surrounded by fields. Hart Road is present to the north of the site. The existing southern site boundary is in place.
1896	No significant changes.	Buildings, probably residential, shown just outside the northwestern corner of the site.
1923	Small buildings shown in the north of the site. A wooded boundary with vegetation/trees shown along the western and southern boundaries of the site.	No significant changes.
1956	Small buildings no longer present in the north of the site. One building present in the northwestern corner of the site.	No significant changes.
1962	Small building in northwestern corner no longer shown. Residential dwelling shown in the north of the site, fronting Hart Road. A small enclosed area is present in the northwest.	Residential development adjacent to the north and northeast.
1971	Three buildings (one a greenhouse) shown to the south of the existing residential dwelling in the north of the site. Small structure also shown in the northeastern corner of the site.	Cedar Hall School now present to the west of the site.
Later maps	No significant changes.	No significant changes.
2006 Google Earth Aerial Photography	Residential property in the north and buildings in the northwest of the site with hardstanding present. A horse menage is present in the north of the site. A large pond is shown in the southeastern corner of the site.	No significant changes.
2017 Google Earth Aerial Photography	Pond is no longer present in the southeastern corner of the site, presumably infilled.	No significant changes.



3.9 In summary, the site was part of a larger agricultural field from at least 1876 to some time before 1923. From 1923, small buildings were shown to be present on the north. By 1962, a large residential dwelling is shown to be present on the north, and additional buildings on the northwest of the site. Google Earth aerial photography shows a large pond to be present in the southeastern corner of the site, which was presumably infilled by 2017. From at least 1971, Cedar Hall School is present beyond the western boundary of the site and the surrounding areas to the north and northeast have seen gradual residential development.

## **4.0 ENVIRONMENTAL SETTING**

### Geology

- 4.1 Extracts from the British Geological Survey 1:50,000 Series Geology Maps are included within the Envirocheck Geology Report in Appendix C. The maps show the site to be underlain by superficial head deposits, comprising clay, silt, sand and gravel. The underlying bedrock geology comprises sand of the Bagshot Formation.
- 4.2 The maps do not indicate any potential for the site to be affected by any faults.

### Coal Mining

- 4.3 The site is not within a Coal Mining Reporting Area and is therefore considered stable in this regard.

### Hydrogeology

- 4.4 The Landmark Envirocheck Report, included in Appendix D, indicates the Bedrock Aquifer Designation to be "Secondary A" Aquifer. These Aquifers comprise "permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers". The overlying superficial head deposits are designated "Unproductive Strata". These aquifers "have 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".
- 4.5 There are no groundwater abstractions within 1km of the site.

- 4.6 The site is not within a groundwater Source Protection Zone.

#### Hydrology

- 4.7 The general area slopes to the southeast. The nearest downslope surface water is an unnamed stream or open drain, flowing eastwards along the southern boundary of the site.
- 4.8 The site is not in an area at risk from river flooding. The risks of flooding from other causes such as adverse topography or insufficient surface water drainage, are not considered here. If such risk needs to be quantified, a separate specialist Flood Risk and Drainage Report should be commissioned, if not already available.
- 4.9 There are two sensitive surface water abstractions within 1km of the site, at approximately 739m and 963m to the northeast and both abstractions are for direct spray irrigation. However, the abstractions are not down hydraulic gradient of the site.

#### Other Environmental Data

- 4.10 The Landmark Envirocheck Report, included in Appendix D, contains information on numerous environmental aspects. A summary of the pertinent findings, not already covered, with additional comments, is given below.
- 4.10.1 There is one Pollution Control Authorisation within 250m of the site, relating to waste oil burners at a car servicing garage 219m to the northeast.
- 4.10.2 There are no active discharge consents relating to, or adjacent to, the site.
- 4.10.3 There are no closed or currently licenced landfills within 250m of the site.

- 4.10.4 No radon protective measures are stated to be necessary for new dwellings or extensions on the site, and the site is within a “lower probability radon area”.
- 4.10.5 There are no contemporary trade directory entries relating to any activities which could have significant impact on the site.
- 4.10.6 There are no fuel station entries within 250m of the site.



## 5.0 PRELIMINARY RISK ASSESSMENT AND CONCEPTUAL MODEL

5.1 Part II A of the Environmental Protection Act (EPA) 1990 became effective from 1<sup>st</sup> April 2000. The Regime was introduced by the Contaminated Land (England) Regulations 2000 (SI 2000, No. 227) along with the associated DEFRA Circular February 2000.

5.2 Section 78A (2) of the Act defines "Contaminated land is any land ..... in such a condition, by reason of substances in, on or under that land that –

(a) significant harm is being caused or there is a significant possibility of such harm being caused; or

(b) pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused".

From S78A (4) "Harm" : means harm to the health of living organisms or other interference with the ecological systems of which they form part and, in the case of man, includes harm to his property.

Controlled waters are defined as "...the waters in any relevant lake or pond, or of so much of any relevant river or watercourse as is above the freshwater limit, and ground waters, that is to say, any waters contained in underground strata". From the 1<sup>st</sup> October 2004, the definition of groundwater in relation to Part IIA was amended, by the Second Water Act Commencement Order SI 2004 No 2528. This makes clear that "ground waters" does not include waters above the saturation zone, i.e. does not include any soil water and pore water present in the unsaturated zone.

5.3 The objectives of the regime are to ensure that risks associated with contaminated land are reduced to an acceptable level, having regard to the costs of doing so. The costs should be proportionate, manageable and economically sustainable.

- 5.4 In assessing risk, it is necessary to consider the probability, or frequency, of occurrence of the hazard and the magnitude/seriousness of the consequences. Consequently, for land to be classified as contaminated, it must have, or be very likely to have, a detrimental effect on humans or the environment before it can be classified as contaminated land.
- 5.5 In establishing risk, the concept of the pollutant source/pathway/receptor linkage model, based on current and proposed site use, is to be considered. Therefore for a site to be deemed contaminated under the Regime, all three linkages must be in place i.e. the site must not only contain harmful substances, but the substances must have a pathway by which to leak out and cause significant harm to a receptor.
- 5.6 In September 2004, the Environment Agency published the Contaminated Land Report (CLR) 11, "Model Procedures for the Management of Land Contamination". The document is intended to provide the technical framework for structured decision making about land contamination, and is intended to assist all those involved in "managing" the land, in particular landowners, developers, financial service providers, planners and regulators. As the document currently provides the framework for best practice, the general principles are, therefore, followed in conducting the assessment below.
- 5.7 The categorisations of risk adopted in this report are adapted from CIRIA Report C552 (Contaminated Land Risk Assessment: A Guide to Good Practice, 2001). This approach assesses the potential severity of any pollution event and the probability of the event occurring, to arrive at a risk category, for the various potential source - pathway - receptor linkages. The relevant tables used, with the definitions, are presented in Appendix E.

#### Conceptual Site Model

- 5.8 It is known that the site is proposed for residential dwellings. An indicative proposed site layout is included in Appendix F. The site is shown to be underlain by head deposits (clay, silt, sand and gravel, over sand of the Bagshot Formation. The solid strata beneath the site

are designated a Secondary A Aquifer, and the overlying superficial head deposits are designated a Secondary Undifferentiated aquifer. There are no groundwater abstractions within 1km of the site. The nearest surface water is an unnamed stream or open drain which flows eastwards along the southern boundary of the site. There are no sensitive surface water abstractions within 1km downstream of the site.

- 5.9 The site has been occupied by residential properties and an equestrian menage in the north of the site and the remaining site has been undeveloped. A pond is known to have been present in the southeast, now no longer shown (probably infilled). The most likely contamination sources are considered to be:

5.9.1 Possible made ground (most likely in the north, and in the area of the former pond): – metals inorganics, total petroleum hydrocarbons (TPH), polyaromatic hydrocarbons (PAH), phenol, asbestos.

5.9.2 Possible asbestos within existing buildings.

5.9.3 Possible harmful gases from infilled pond in southeast of the site: - methane, carbon dioxide.

- 5.10 The conceptual model needs to consider sources of contamination, pathways along which contaminants could migrate and the receptors, which may become exposed. Guidance published by the Environment Agency has been consulted with regard to pathways and receptors. The potential sources, pathways, and receptors, applicable to the proposed development are identified on the table below. Any pathways in italics are deemed not to be viable, and the reason given.

### Potential Source - Pathway - Receptor Matrix (Finished Development)

Contamination Sources	Pathways	Receptors	Severity of Consequence	Probability of Event	Risk
Possible made ground: - metals, inorganics, TPH, PAH, phenol	<ul style="list-style-type: none"> <li>Inhalation, ingestion and dermal contact with soil and dust</li> <li>Fruit and vegetable intake, with soil</li> <li>Vapour inhalation outdoor</li> <li>Vapour inhalation indoor</li> </ul>	<b>Humans:-</b> <ul style="list-style-type: none"> <li>Future occupants</li> <li>Maintenance workers</li> <li>Adjacent residents and general public</li> </ul>	Medium	Low Likelihood	Moderate/Low
	<ul style="list-style-type: none"> <li>Migration in surface water</li> </ul>	<ul style="list-style-type: none"> <li>Surface water (nearest downslope is along southern boundary. There are no sensitive abstractions within 1km downstream)</li> </ul>	Mild	Unlikely	Very Low
	<ul style="list-style-type: none"> <li>Migration in groundwater</li> </ul>	<ul style="list-style-type: none"> <li>Groundwater (Secondary A Aquifer, no abstractions within 1km)</li> </ul>	Mild	Unlikely	Very Low
	<ul style="list-style-type: none"> <li>Root uptake</li> </ul>	<b>Vegetation:-</b> <ul style="list-style-type: none"> <li>Landscape areas</li> <li>Private gardens</li> </ul>	Medium	Low Likelihood	Moderate/Low
	<ul style="list-style-type: none"> <li>Migration</li> </ul>	<b>Services/Utilities:-</b> <ul style="list-style-type: none"> <li>Potable water supply</li> </ul>	Medium	Low Likelihood	Moderate/Low
Infilled pond in the southeast of the site:- methane and carbon dioxide	<ul style="list-style-type: none"> <li>Asphyxiation</li> <li>Explosive risk</li> </ul>	<ul style="list-style-type: none"> <li>Construction/de-molition workers</li> <li>Future occupants</li> <li>Buildings</li> </ul>	Severe	Low Likelihood	Moderate
Possible asbestos within existing buildings and possible made ground	<ul style="list-style-type: none"> <li>Inhalation</li> </ul>	<ul style="list-style-type: none"> <li>Future occupants</li> <li>Maintenance workers</li> <li>Adjacent residents and general public</li> </ul>	Severe	Low Likelihood	Moderate

5.11 The above matrix indicates there are potential source – pathway – receptor linkages applicable to the proposed development, ranging from moderate to very low risk.

#### Further Investigation

5.12 The existence of the possible contamination sources is not yet known, and it is recommended that, preferably once demolition of any buildings on the site is completed,



a ground investigation on a grid system is implemented, together with sampling and testing of the materials encountered for the potential contaminants of concern to assess this possibility. The investigation should be implemented in accordance with BS10175 : 2011 + A2 : 2017 "Investigation of potentially contaminated sites - Code of practice", and any targeted sampling should also be implemented. This will enable refinement of the conceptual model and a full assessment of the risks to be made, enabling any remedial strategy to be determined.

- 5.13 Samples of any made ground and topsoil should be issued for testing to a UKAS accredited laboratory for a broad suite of determinands including metals, inorganics, asbestos, phenols, speciated PAH, and TPH. Speciated assessment of TPH will be required for any elevated levels.
- 5.14 Leachability testing should be undertaken where contamination levels are above the designated screening values.
- 5.15 Gas monitoring wells should be installed, and monitored. The number of visits required depends on the sensitivity of the proposed development and the generation potential of the source, as per the table provided below, adapted from CIRIA C665 "Assessing risks posed by hazardous ground gases to buildings".

		<b>Generation Potential of Source</b>				
		<b>Very Low</b>	<b>Low</b>	<b>Moderate</b>	<b>High</b>	<b>Very High</b>
<b>Sensitivity of Development</b>	<b>Low (Commercial)</b>	<b>4</b>	<b>6</b>	<b>6</b>	<b>12</b>	<b>12</b>
	<b>Moderate (Flats)</b>	<b>6</b>	<b>6</b>	<b>9</b>	<b>12</b>	<b>24</b>
	<b>High (Residential)</b>	<b>6</b>	<b>9</b>	<b>12</b>	<b>24</b>	<b>24</b>

- 5.16 The visits above are typically on a fortnightly basis. The distance to the source and the likelihood of a pathway being present should also be taken into account. Therefore, it is recommended that the wells should be monitored on six fortnightly occasions initially,

with at least two visits occurring during periods of low and falling pressure to comply with current guidance. If gas readings are significant, the monitoring period should be extended to nine visits, on the basis that the generation potential is considered to be low and the sensitivity high. In order for visits to occur during periods of low and falling pressure, flexibility is required with regard to monitoring intervals and, this can, therefore, affect the total duration of the monitoring period.

- 5.17 Unless one is already available, an asbestos survey should be carried out on the existing buildings prior to any demolition works, and any asbestos removed prior to demolition. If any asbestos is detected and removed, the regulators will expect to see soil sampling to demonstrate the asbestos has not contaminated the underlying soil. Therefore, it may be preferable for the main site investigation to take place after demolition, to avoid visiting the site for sampling twice.

## 6.0 COMMENTS AND CONCLUSIONS

### Site Description

- 6.1 Plans, and publicly available aerial and street view photography, indicate the site is currently occupied by a residential property in the north of the site, which fronts onto Hart Road. Concrete hardstanding is also present in the north of the site, leading to a building in the southwest of the site and an equestrian ménage along the northern boundary of the site. The remaining site is undeveloped grassland, separated by wooden fences. In the southeast of the site is a wooden fence that separates a former pond from the undeveloped site to the north.
- 6.2 The site is bounded to the north by Hart Road and residential properties, beyond which are further residential properties. Cedar Hall School abuts the western boundary of the site, which includes buildings, playing fields and car parking. To the south and east of the site is undeveloped grassland with residential properties beyond. The site slopes down gently to the southeast.

### Site History

- 6.3 Ordnance Survey archive maps show the site was part of a larger agricultural field from at least 1876 to some time before 1923. From 1923, small buildings were shown to be present on the north. By 1962, a large residential dwelling is shown to be present on the north, and additional buildings on the northwest of the site. Google Earth aerial photography shows a large pond to be present in the southeastern corner of the site, which was presumably infilled by 2017. From at least 1971, Cedar Hall School is present beyond the western boundary of the site and the surrounding areas to the north and northeast have seen gradual residential development.

## Geology

- 6.4 The geological map shows the site to be underlain by superficial head deposits, comprising clay, silt, sand and gravel. The underlying bedrock geology comprises sand of the Bagshot Formation. The maps do not indicate any potential for the site to be affected by any faults.

## Coal Mining and Coal Recovery

- 6.5 The site is not within a Coal Mining Reporting Area and is therefore considered stable in this regard.

## Environmental Data

- 6.6 The solid strata beneath the site are classed as a Secondary A Aquifer and the overlying superficial head deposits are classed as a Secondary Unproductive Aquifer. There are no groundwater abstractions within 1km of the site.
- 6.7 The nearest downslope surface water is an unnamed stream or open drain which flows eastwards along the southern boundary of the site. There are no sensitive surface water abstractions within 1km downstream of the site.
- 6.8 No radon protective measures are required for properties constructed on the site.
- 6.9 There are no landfills within 250m of the site. However, a former pond is present in the southeast of the site which has likely been infilled. Therefore, it is recommended that gas wells should be installed and monitored, on six fortnightly occasions initially, with at least two visits occurring during periods of low and falling pressure. If gas readings are significant, the monitoring period should be extended to nine visits. In order for visits to occur during periods of low and falling pressure, flexibility is required with regard to monitoring intervals and, this can, therefore, affect the total duration of the monitoring period.

- 6.10 The site is not at risk from river flooding. The risks of flooding from other causes such as adverse topography or insufficient surface water drainage, are not considered here. If such risk needs to be quantified, a separate specialist Flood Risk and Drainage Report should be commissioned, if not already available.

#### Likely Ground Conditions and Behaviour of Excavations

- 6.11 The subsoils beneath the site are likely to comprise possible made ground in the north of the site, overlying cohesive or granular (clay, silt, sand and gravel) superficial head deposits, dependent on the nature of the strata. Underlying the superficial deposits, sands of the Bagshot Formation are likely to be present.
- 6.12 It is likely that excavations into the natural strata will remain stable in the short term, requiring minimal trench support, in accordance with the prevailing statutory guidance. However, instability may be anticipated within any made ground present on the site (for example the possible pond backfill).
- 6.13 The groundwater regime can only be confirmed by an intrusive investigation. However, it is considered possible that shallow groundwater could present, from the information available within the desk study appraisal, particularly in the south of the site.
- 6.14 Excavations into the natural subsoils will probably be readily achieved using conventional hydraulic plant. However, a breaker may be required for any buried foundations, structures or obstructions in the previously developed areas on the north.

#### Contamination Assessment

- 6.15 The desk study has identified the following potential contamination sources:

- 6.15.1 Possible made ground (most likely in the north, and in the area of the former pond): – metals, inorganics, TPH, PAH, phenol, asbestos.
- 6.15.2 Possible asbestos within existing buildings.
- 6.15.3 Possible harmful gases from infilled pond in southeast of the site: - methane, carbon dioxide.
- 6.16 There is a possibility of source - pathway - receptor linkages if the site is redeveloped with the proposed residential dwellings, although the existence of the contamination sources is not known. It is, therefore, recommended that a ground investigation is implemented, involving sampling on a grid system, along with any targeted sampling and testing, preferably after demolition of any buildings. This will enable a refinement of the conceptual model, a full assessment of risks to be undertaken, and allow any remediation strategy to be determined.
- 6.17 Unless one is already available, an asbestos survey should be carried out on the existing buildings prior to any demolition works, and any asbestos removed prior to demolition. If any asbestos is detected and removed, the regulators will expect to see soil sampling to demonstrate the asbestos has not contaminated the underlying soil. Therefore, it may be preferable for the main site investigation to take place after demolition, to avoid visiting the site for sampling twice.

#### Foundations

- 6.18 It is possible that strip or trench fill foundations may be acceptable for the site, subject to the thickness of existing fill material and proposed loading. However, this is not certain, and will need to be confirmed by an intrusive investigation. It is possible that the head deposits may have poor bearing capacity.

- 6.19 Clays are likely to be present on the site, in combination with trees. If not already available, a tree survey may be required to enable a foundation schedule to be prepared. The tree survey will need to include mature trees on third party properties within a 30m radius.
- 6.20 The foundations will need to be taken below any existing made ground, including cellars and foundations, to bear onto the natural strata. There will also be a legacy of buried services.

#### Road Pavement Construction

- 6.21 For any areas of road pavement, including car parking areas, the design California Bearing Ratio (CBR) will depend upon the exact nature of the formation. On natural subsoils, design CBR of at least 2% is usually applicable.

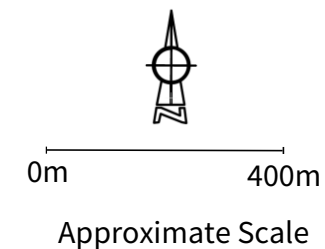
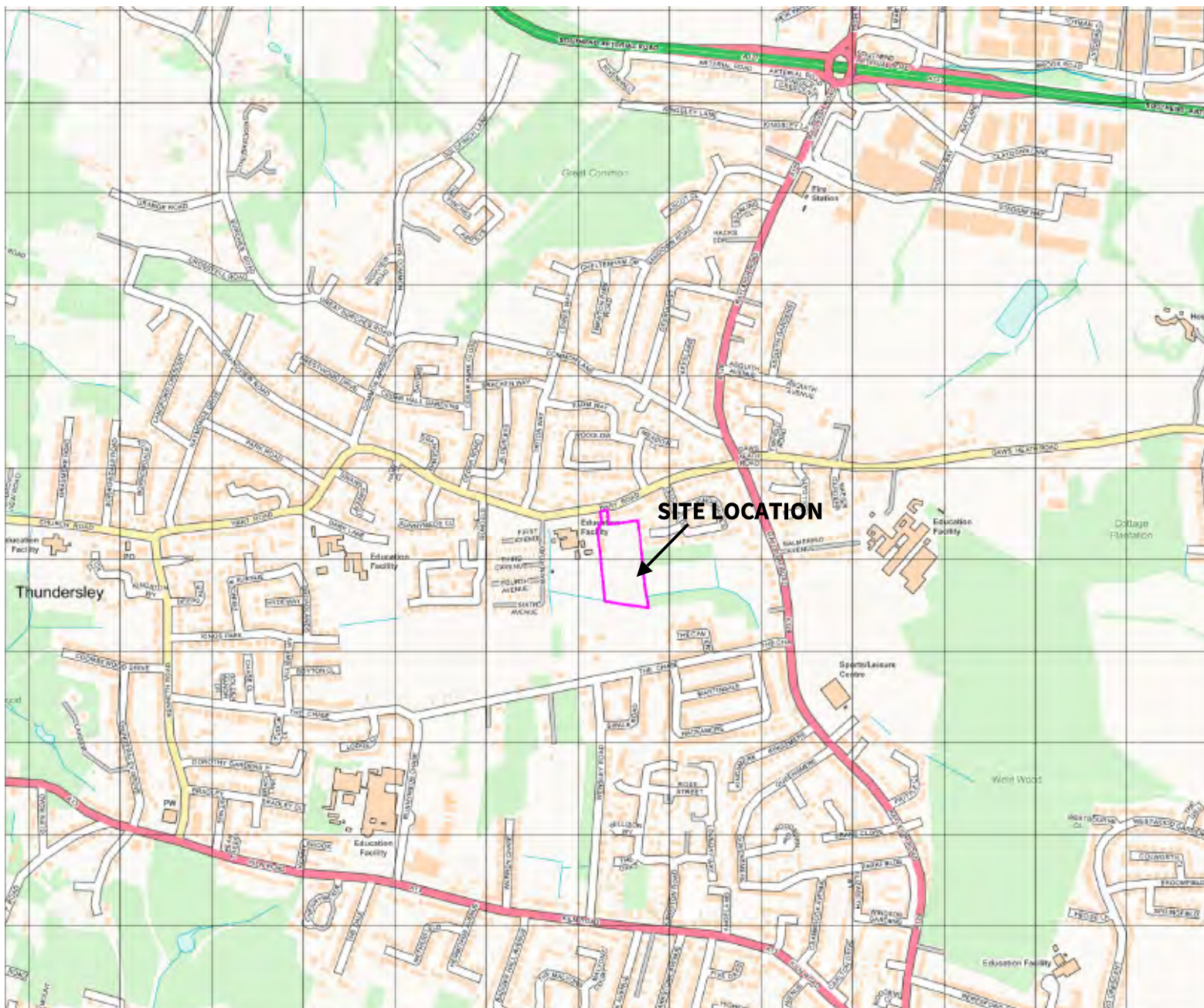
#### Soakaways

- 6.22 The disposal of surface water using soakaways will depend on the findings of the ground investigation, which is programmed for the near future. If shallow groundwater is detected or significant cohesive deposits, soakaways are unlikely to be viable.

## **APPENDIX A**

### **SITE LOCATION PLAN AND AERIAL PHOTOGRAPH**





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Client	LEGAL AND GENERAL MODULAR HOMES	
Title	SITE LOCATION PLAN	
Date	SEPTEMBER 2020	
Drawn	DMB	Scale NTS
Job No.	LEG/03	





0m 56m

Approximate Scale



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Project **HART ROAD**  
**THUNDERSLEY**  
**ESSEX**

Client  
**LEGAL AND GENERAL**  
**MODULAR HOMES**

Title  
**AERIAL PHOTOGRAPH**

Date  
**SEPTEMBER 2020**

Drawn <b>DMB</b>	Scale <b>NTS</b>
---------------------	---------------------

Job No.  
**LEG/03**

## **A P P E N D I X   B**

### **ORDNANCE SURVEY ARCHIVE MAPS**



# Historical Mapping Legends

## Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Osiers		Reeds		Marsh
	Mixed Wood		Deciduous		Brushwood
	Fir		Furze		Rough Pasture
	Arrow denotes flow of water		Trigonometrical Station		Bench Mark
	Site of Antiquities		Well, Spring, Boundary Post		
	•285 Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		Minor Roads		
	Sunken Road		Raised Road		
	Road over Railway		Railway over River		
	Railway over Road		Level Crossing		
	Road over River or Canal		Road over Stream		
	Road over Stream				
	County Boundary (Geographical)				
	County & Civil Parish Boundary				
	Administrative County & Civil Parish Boundary				
	County Borough Boundary (England)				
	County Burgh Boundary (Scotland)				
	Rural District Boundary				
	Civil Parish Boundary				

## Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Bracken		Heath
	Marsh		Reeds
	Building		Glasshouse
	Sloping Masonry		Pylon
	Cutting		Embankment
	Road Under		Road Over
	Level Crossing		Foot Bridge
	Standard Gauge Multiple Track		Standard Gauge Single Track
	Siding, Tramway or Mineral Line		Narrow Gauge
	Geographical County		Administrative County, County Borough or County of City
	Municipal Borough, Urban or Rural District, Burgh or District Council		Borough, Burgh or County Constituency
	Civil Parish		
	BP, BS Boundary Post or Stone		Police Station
	Church		Post Office
	Club House		Public Convenience
	Fire Engine Station		Public House
	Foot Bridge		Signal Box
	Fountain		Spring
	Guide Post		Telephone Call Box
	Mile Post		Telephone Call Post
	Mile Stone		Well

## 1:10,000 Raster Mapping

	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, parish or community boundary
	District, Unitary, Metropolitan, London Borough boundary		Constituency boundary
	Area of wooded vegetation		Non-coniferous trees
	Non-coniferous trees (scattered)		Coniferous trees
	Coniferous trees (scattered)		Positioned tree
	Orchard		Coppice or Osiers
	Rough Grassland		Heath
	Scrub		Marsh, Salt Marsh or Reeds
	Water feature		Flow arrows
	Mean high water (springs)		Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	Bench mark (where shown)		Triangulation station
	Point feature (e.g. Guide Post or Mile Stone)		Pylon, flare stack or lighting tower
	Site of (antiquity)		Glasshouse
	General Building		Important Building

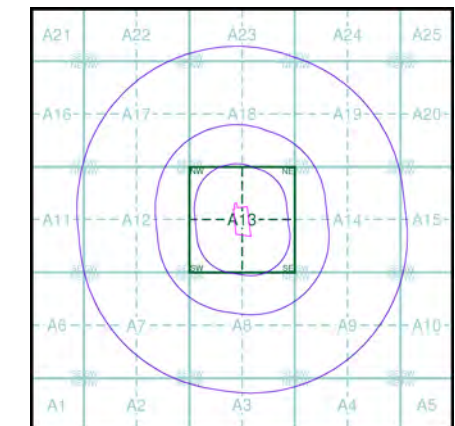


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## Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Essex	1:10,560	1876 - 1880	2
Essex	1:10,560	1898	3
Essex	1:10,560	1923	4
Essex	1:10,560	1938	5
Ordnance Survey Plan	1:10,000	1960	6
Ordnance Survey Plan	1:10,000	1967 - 1968	7
Ordnance Survey Plan	1:10,000	1974 - 1975	8
Ordnance Survey Plan	1:10,000	1981 - 1989	9
10K Raster Mapping	1:10,000	1999	10
Street View	Variable		11

## Historical Map - Slice A



## Order Details

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 1000

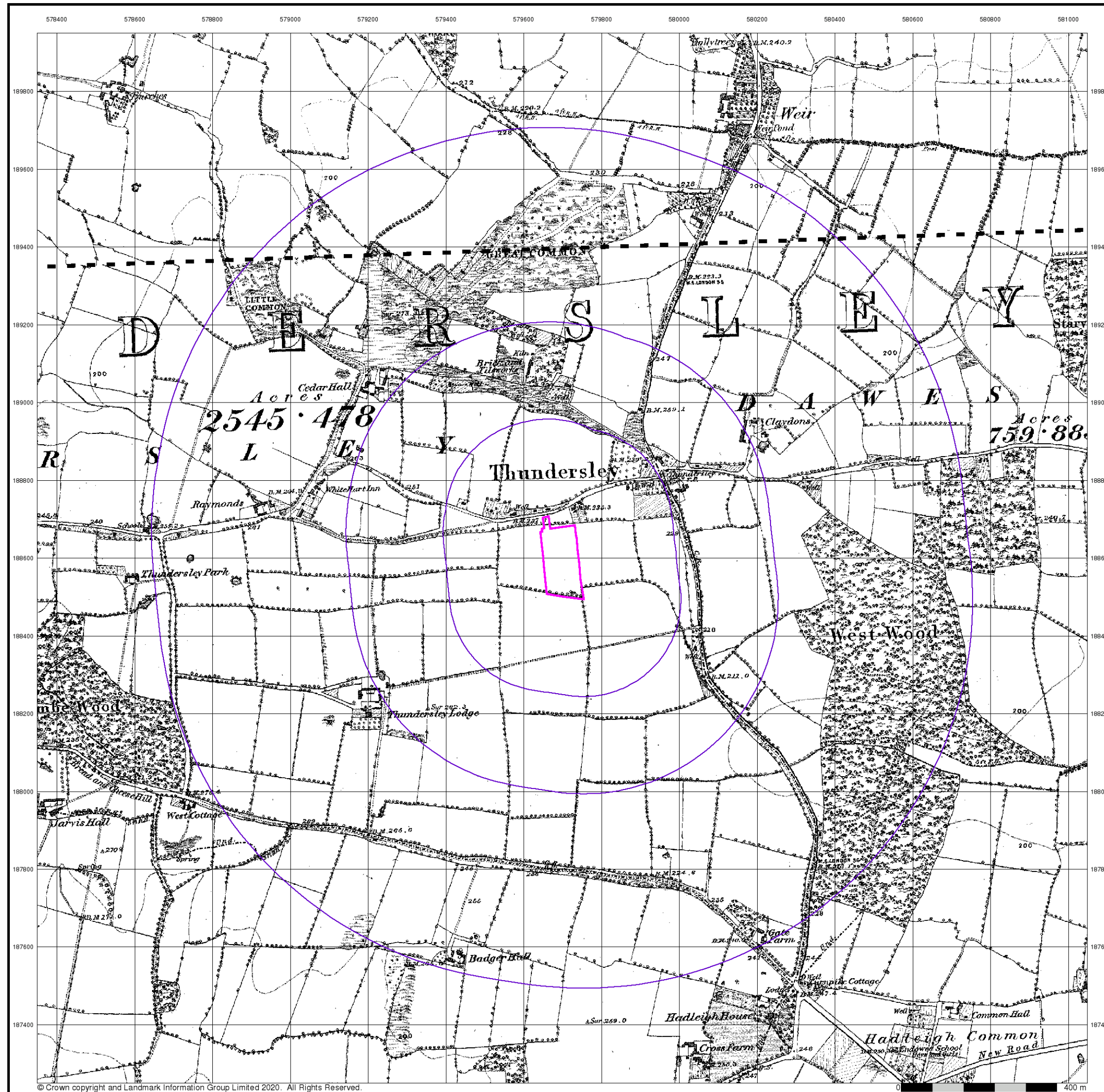
## Site Details

Hart Road, Thundersley, Essex



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## Essex

### Published 1876 - 1880

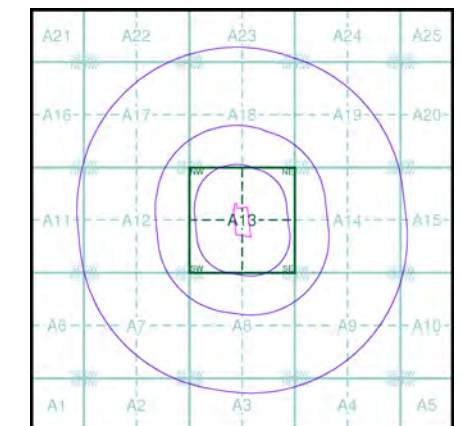
### Source map scale - 1:10,560

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)

06900
1880
1:10,560
07700
1876
1:10,560

### Historical Map - Slice A



### Order Details

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 1000

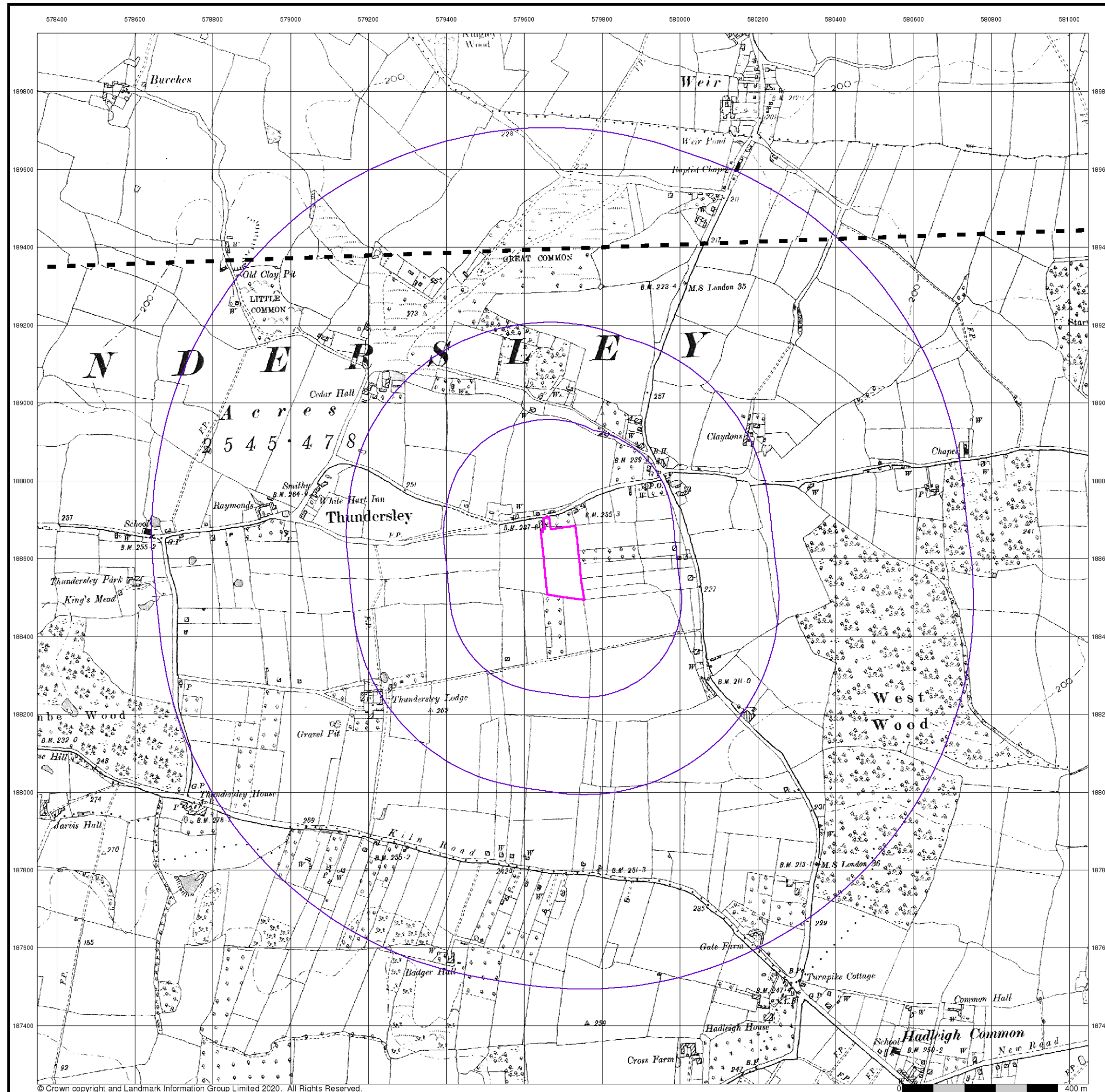
### Site Details

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## Essex

Published 1898

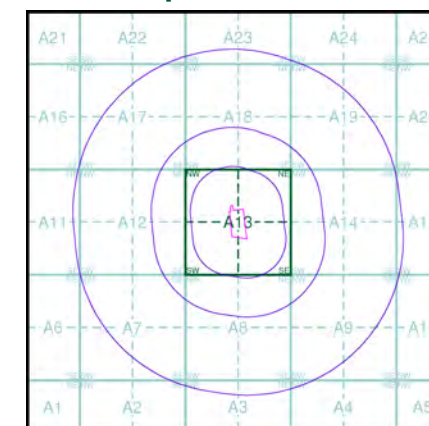
Source map scale - 1:10,560

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)

069SE
1898
1:10,560
077NE
1898
1:10,560

## Historical Map - Slice A



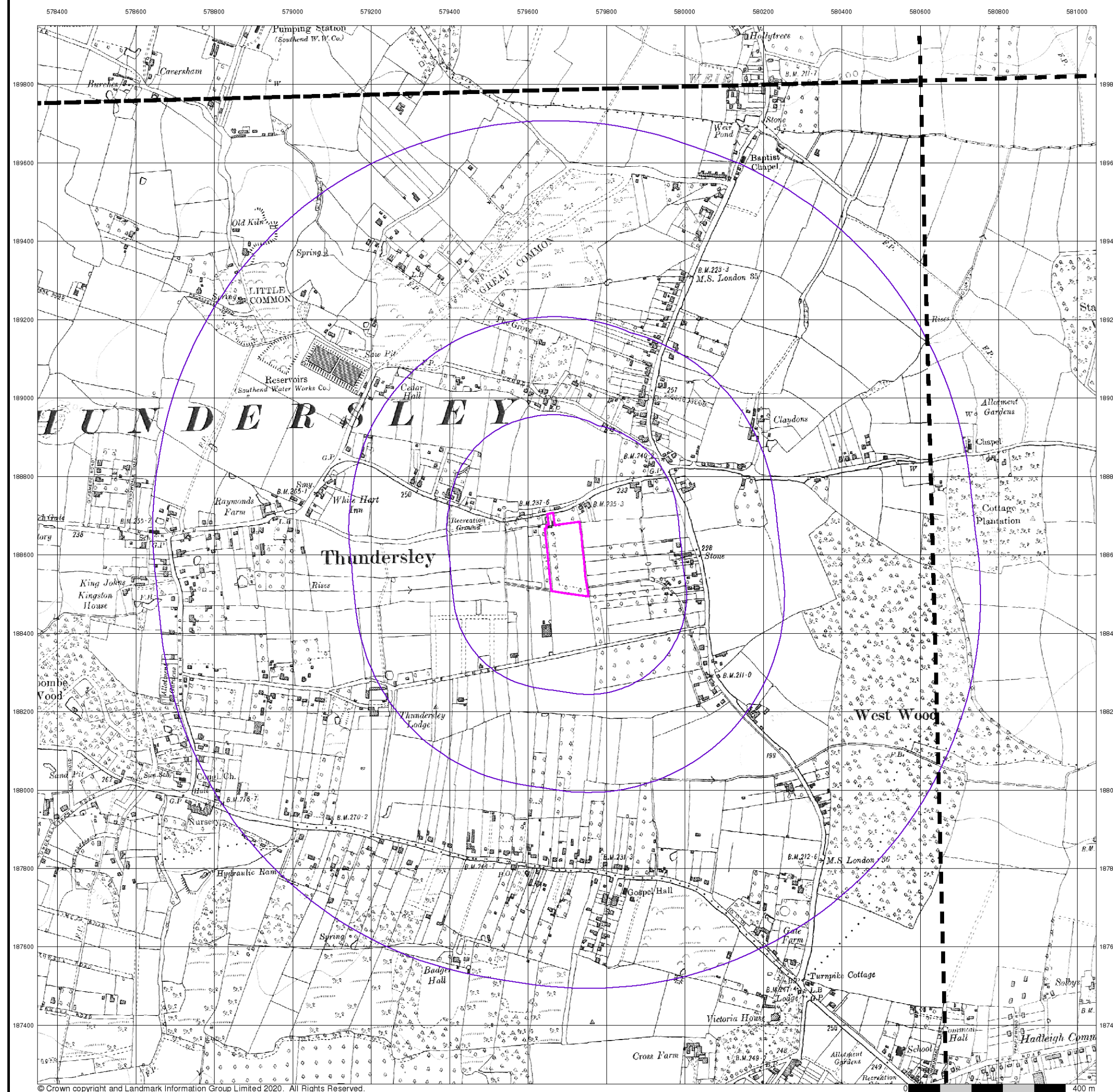
## Order Details

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 1000

## Site Details

Hart Road, Thundersley, Essex





## Essex

**Published 1923**

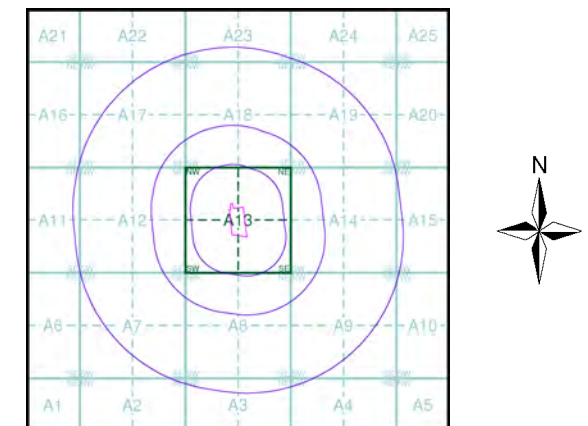
**Source map scale - 1:10,560**

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)

082NW 1923 1:10,560	082NE 1923 1:10,560
082SW 1923 1:10,560	082SE 1923 1:10,560

### Historical Map - Slice A



## Order Details

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 1000

## Site Details

Hart Road, Thundersley, Essex

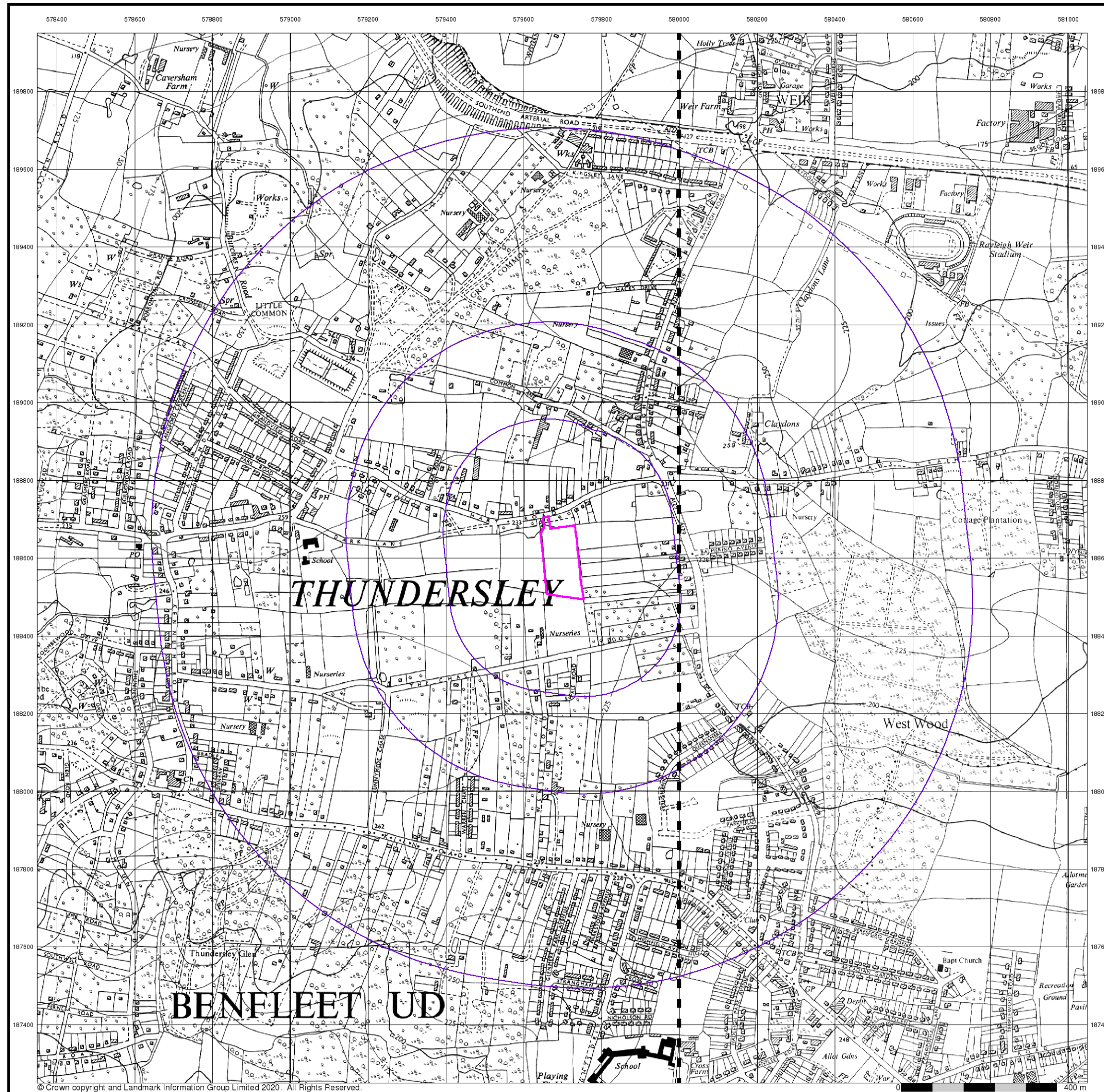


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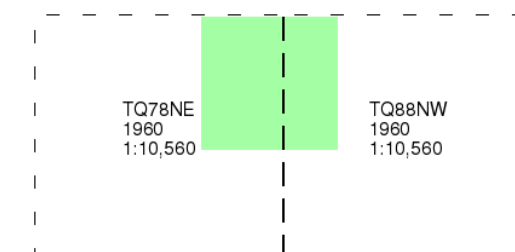
## Ordnance Survey Plan

### Published 1960

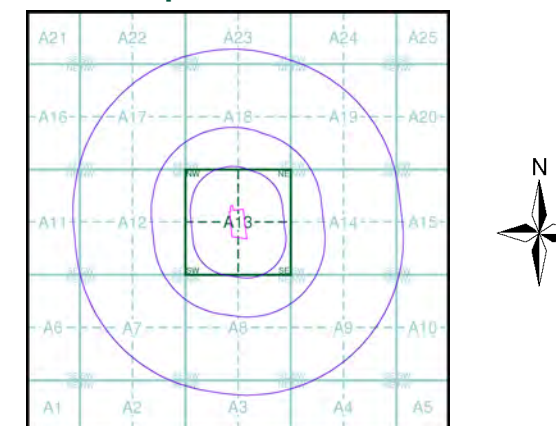
### Source map scale - 1:10,000

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

### Map Name(s) and Date(s)



### Historical Map - Slice A



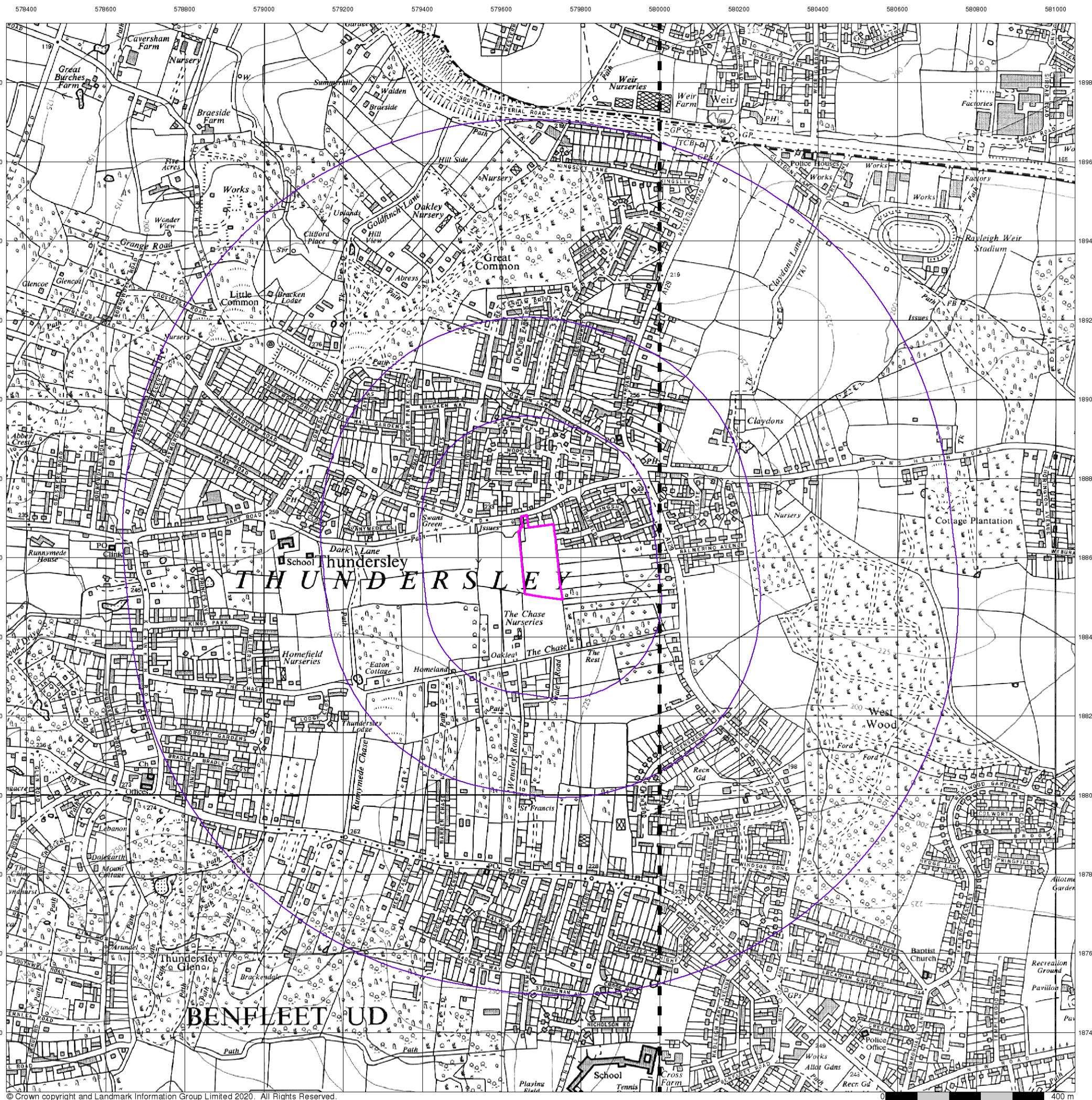
### Order Details

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 1000

### Site Details

Hart Road, Thundersley, Essex





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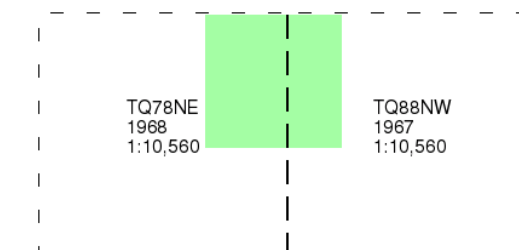
## Ordnance Survey Plan

Published 1967 - 1968

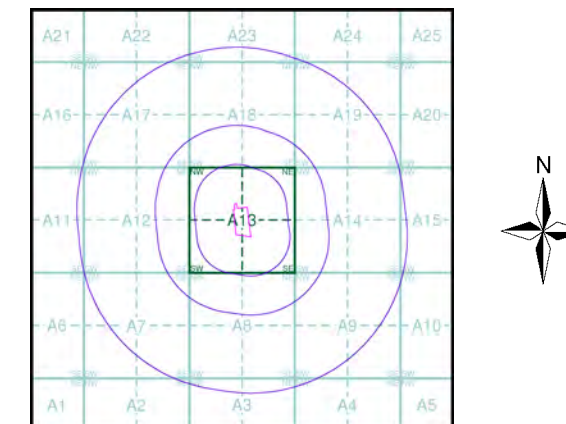
Source map scale - 1:10,000

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 A



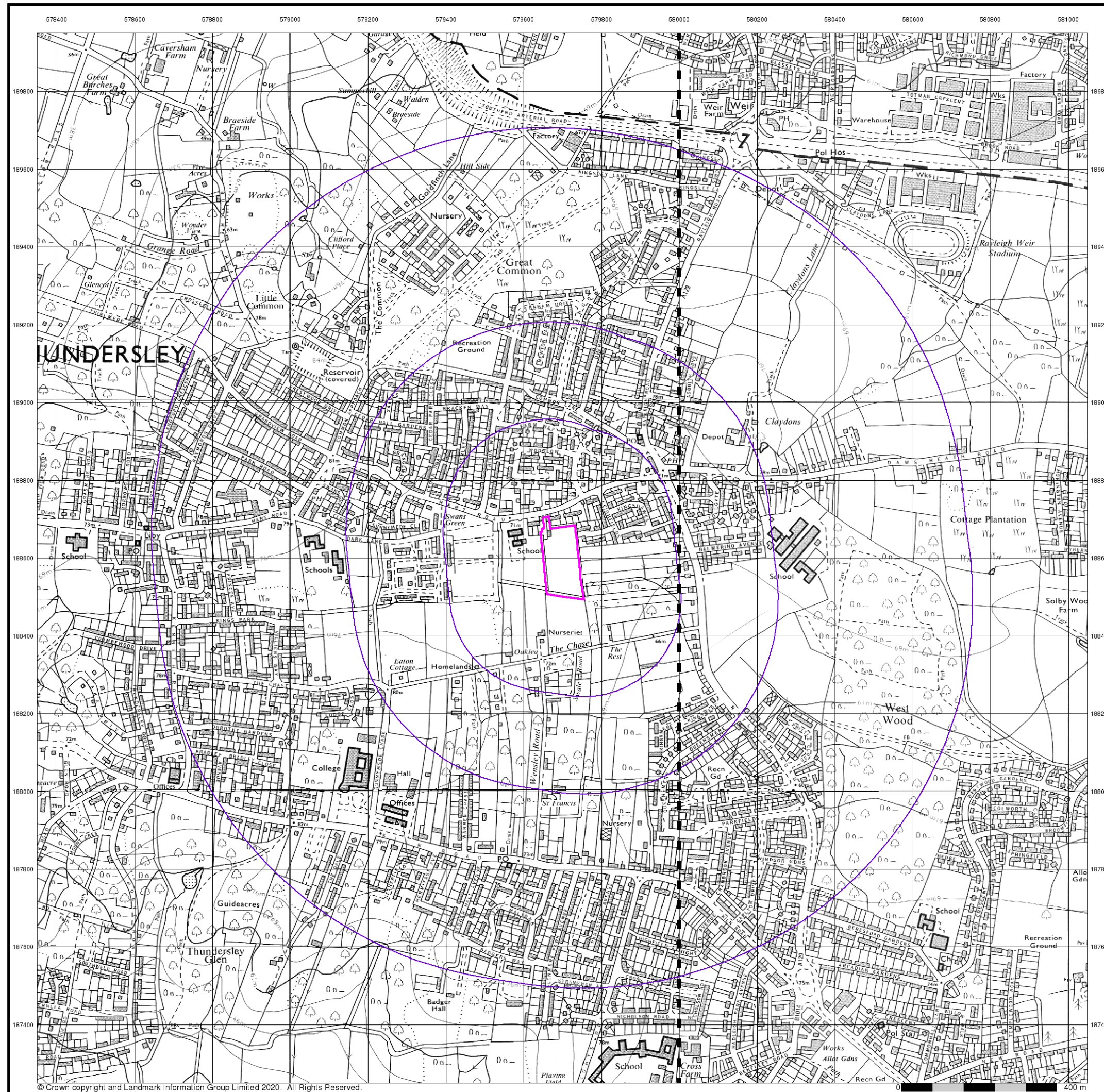
### Order Details

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 1000

### Site Details

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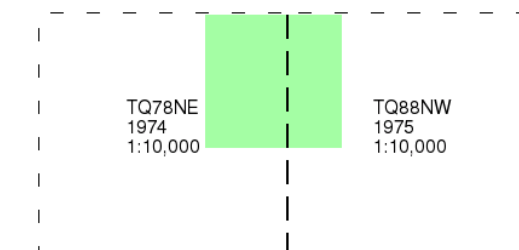
## Ordnance Survey Plan

### Published 1974 - 1975

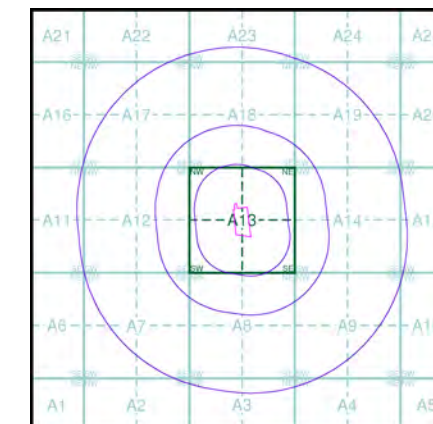
### Source map scale - 1:10,000

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.

### Map Name(s) and Date(s)



### Historical Map - Slice A



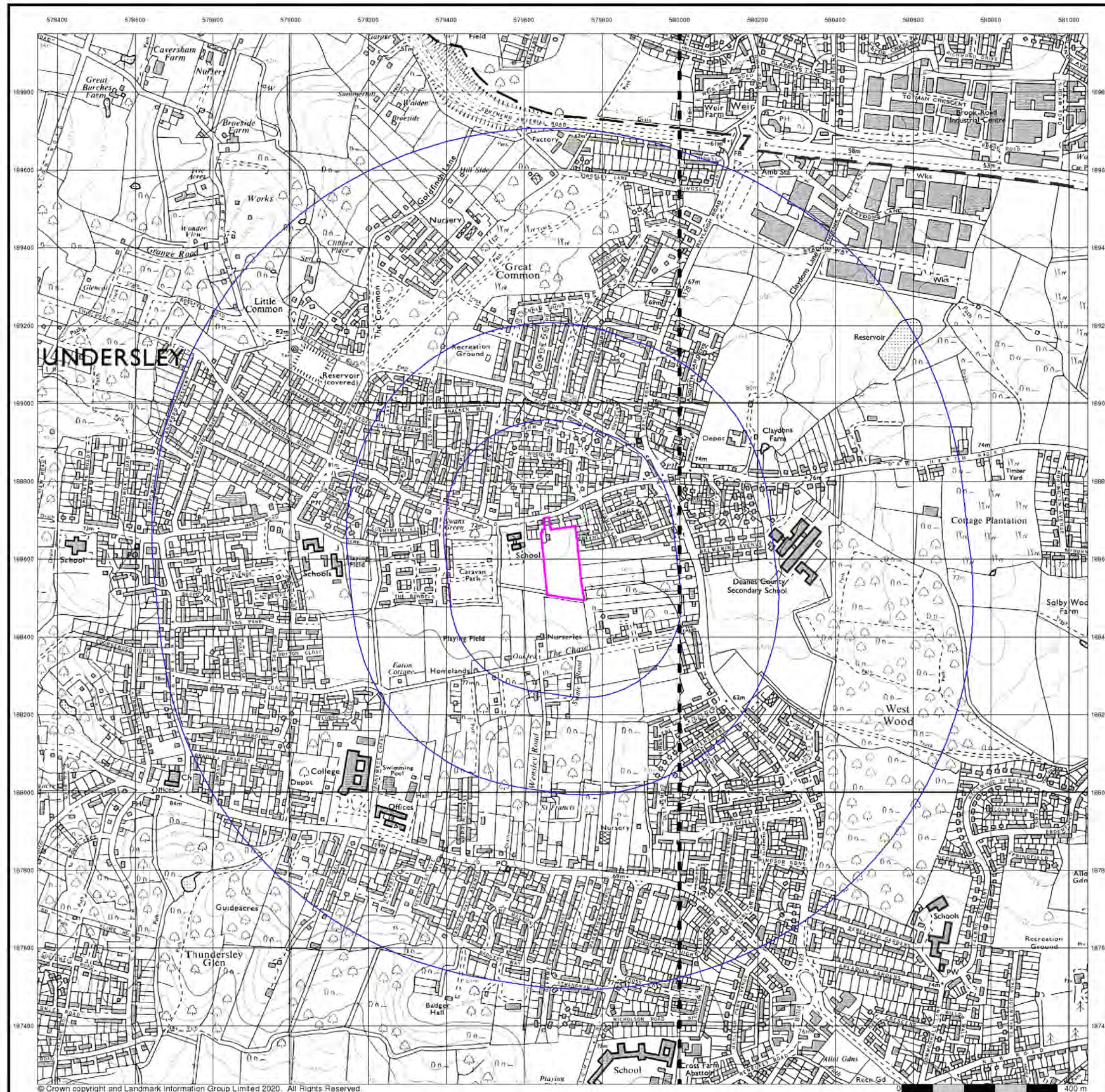
### Order Details

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 1000

### Site Details

Hart Road, Thundersley, Essex





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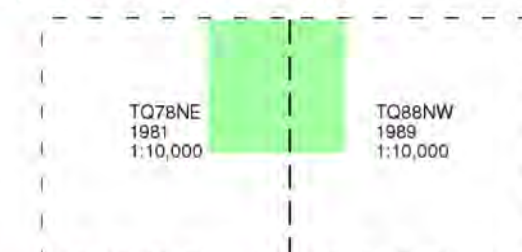
## Ordnance Survey Plan

Published 1981 - 1989

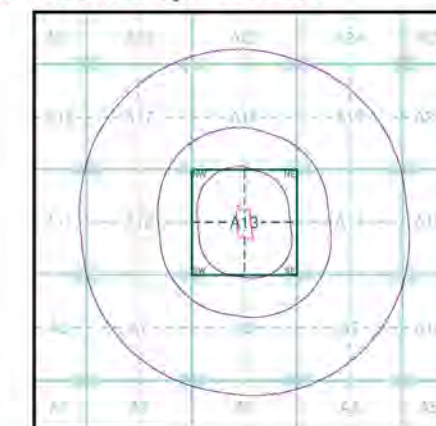
Source map scale - 1:10,000

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

### Map Name(s) and Date(s)



### Historical Map - Slice A



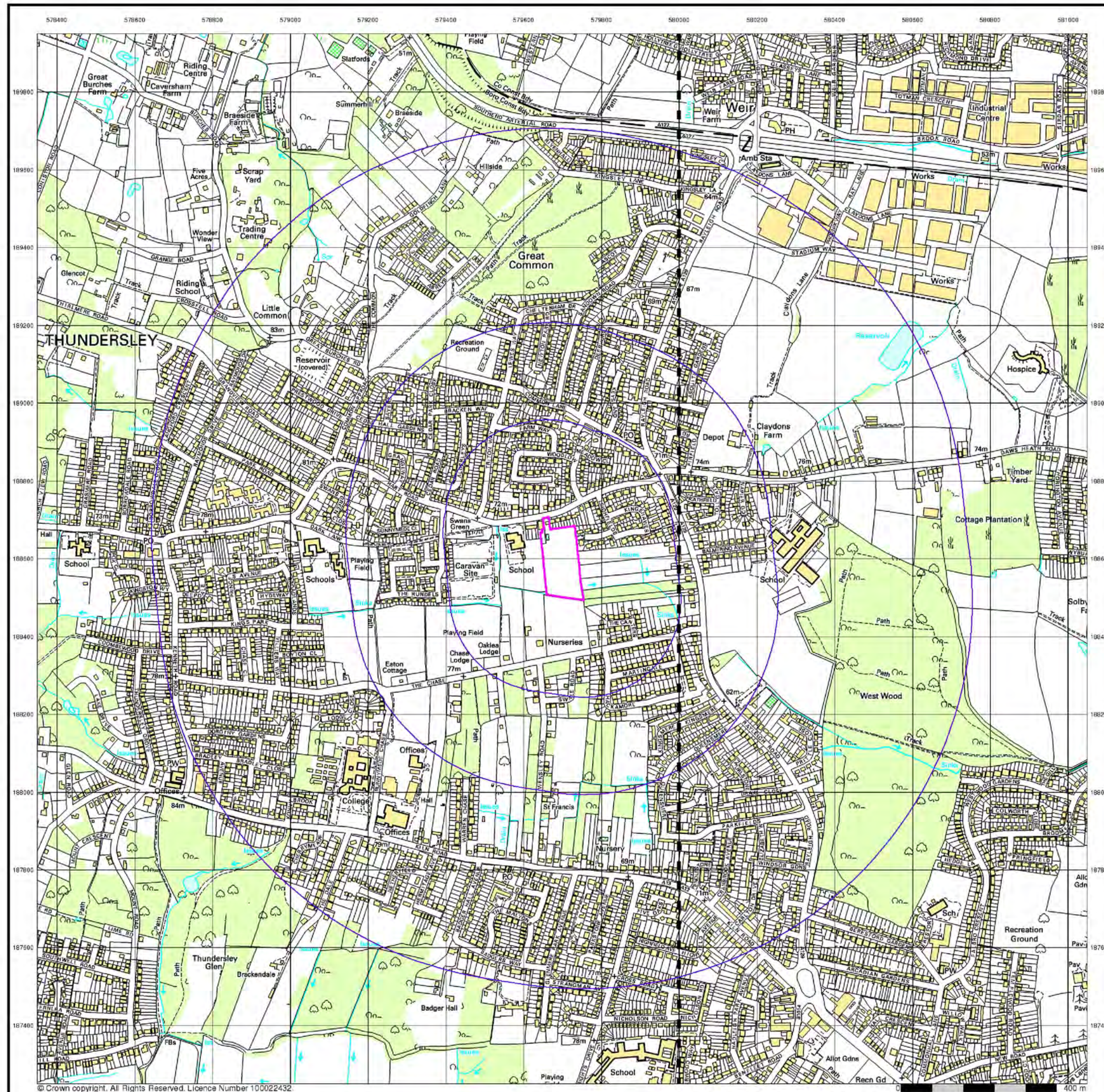
### Order Details

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 1000

### Site Details

Hart Road, Thundersley, Essex





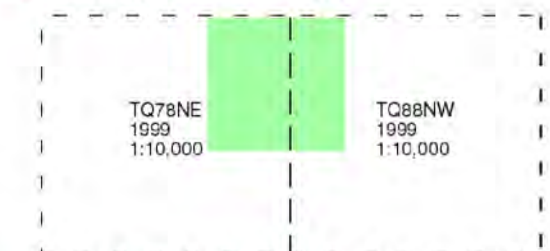
## 10k Raster Mapping

Published 1999

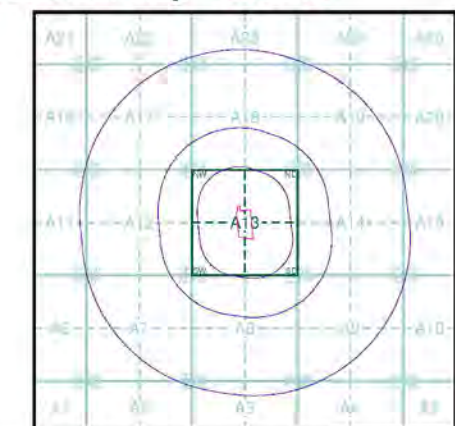
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

## Map Name(s) and Date(s)



## Historical Map - Slice A



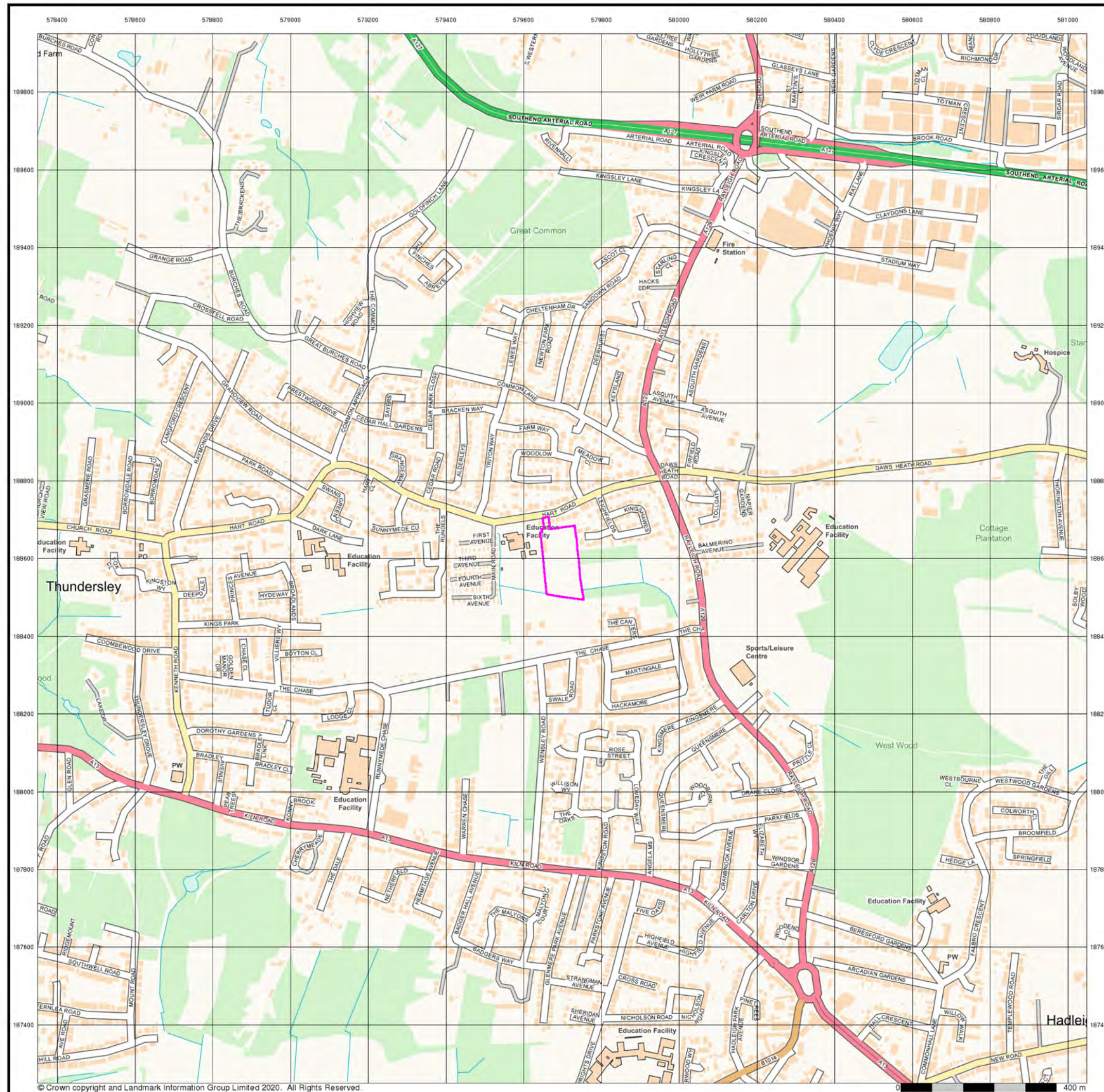
## Order Details

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 1000

## Site Details

Hart Road, Thundersley, Essex





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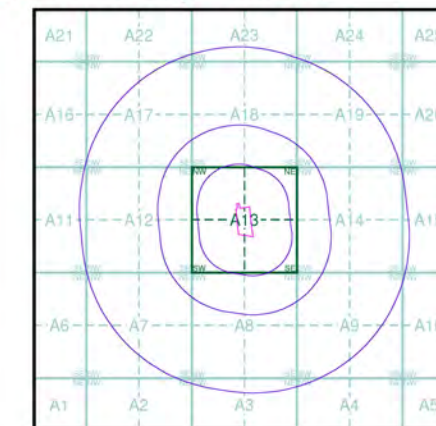
Street View  
Published 2020  
Source map scale - 1:10,000

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: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 1000

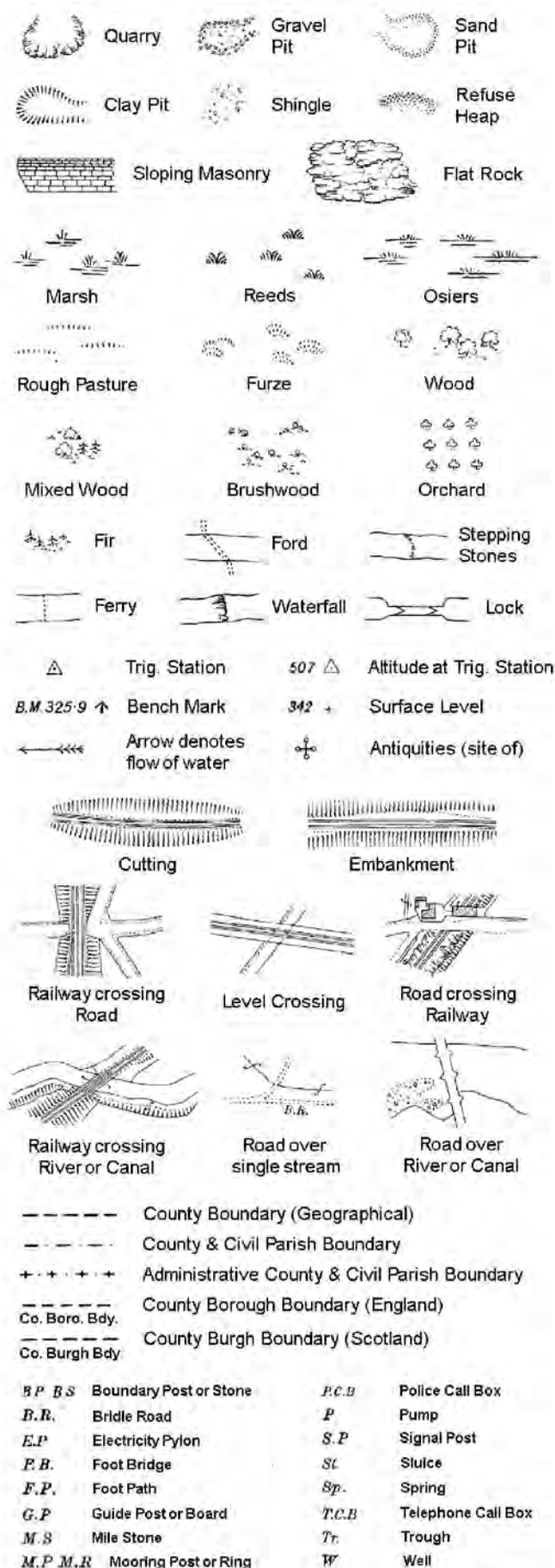
Site Details

Hart Road, Thundersley, Essex

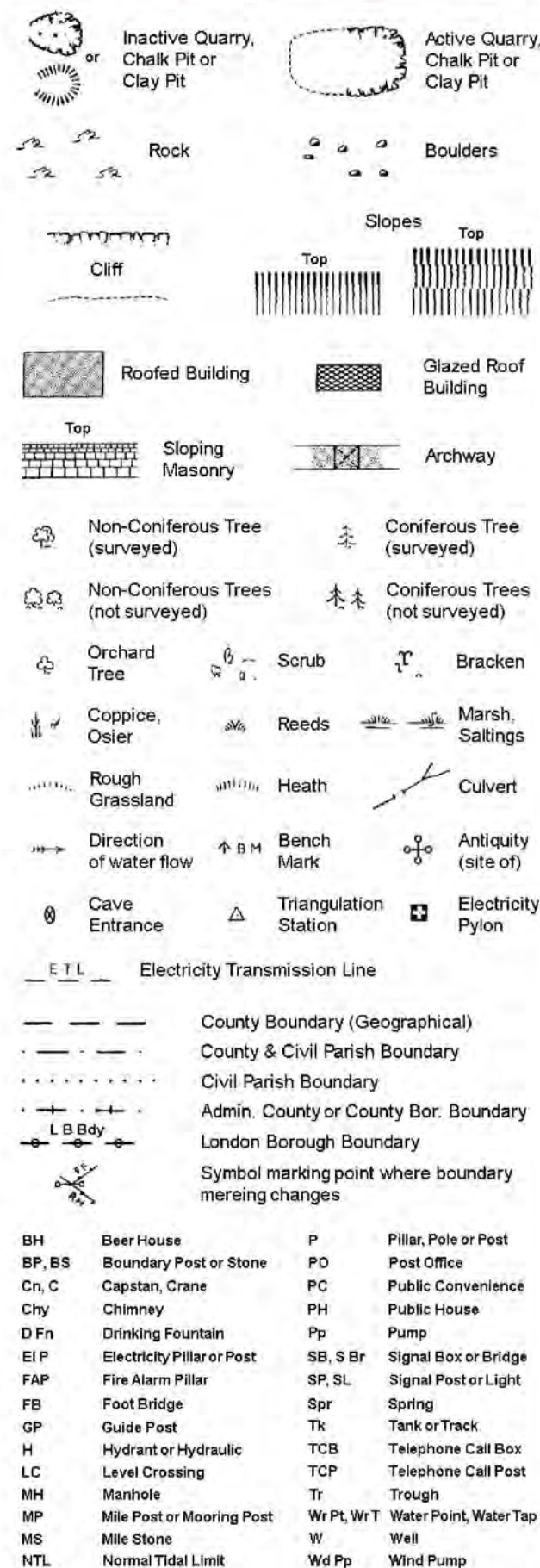


# Historical Mapping Legends

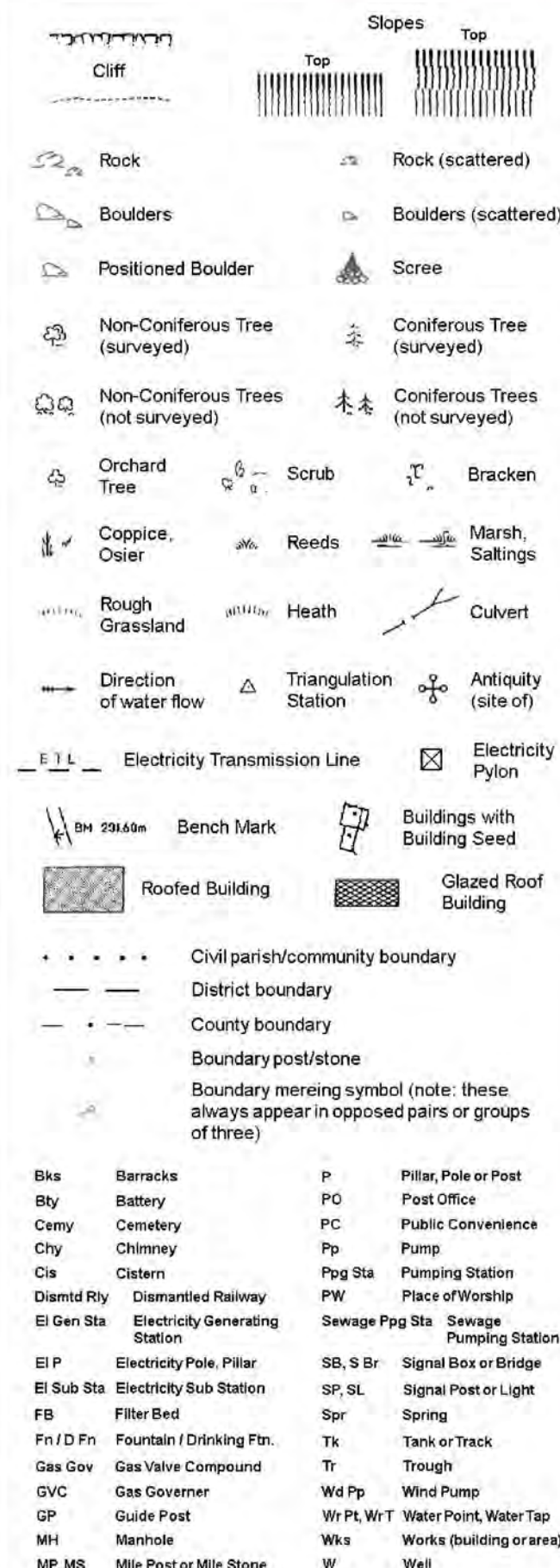
## Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



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



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

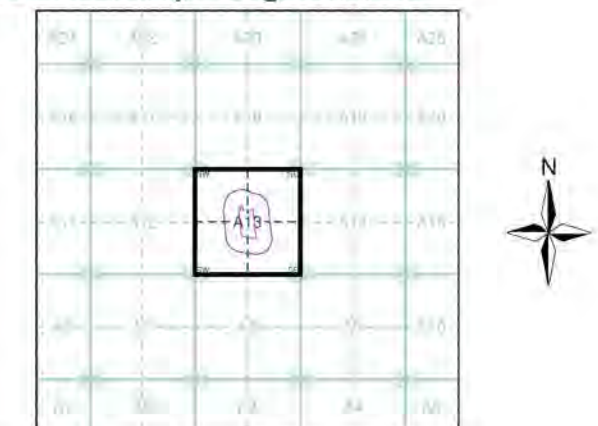


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## Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Essex	1:2,500	1868	2
Essex	1:2,500	1896	3
Essex	1:2,500	1923	4
Essex	1:2,500	1938	5
Ordnance Survey Plan	1:2,500	1955 - 1956	6
Ordnance Survey Plan	1:2,500	1962	7
Ordnance Survey Plan	1:1,250	1971	8
Ordnance Survey Plan	1:2,500	1972	9
Ordnance Survey Plan	1:1,250	1975	10
Additional SIMs	1:1,250	1978 - 1986	11
Additional SIMs	1:1,250	1992	12
Large-Scale National Grid Data	1:1,250	1993	13
Large-Scale National Grid Data	1:1,250	1996	14

## Historical Map - Segment A13



## Order Details

Order Number: 258580487\_1\_1  
 Customer Ref: LEG/03  
 National Grid Reference: 579700, 188600  
 Slice: A  
 Site Area (Ha): 1.67  
 Search Buffer (m): 100

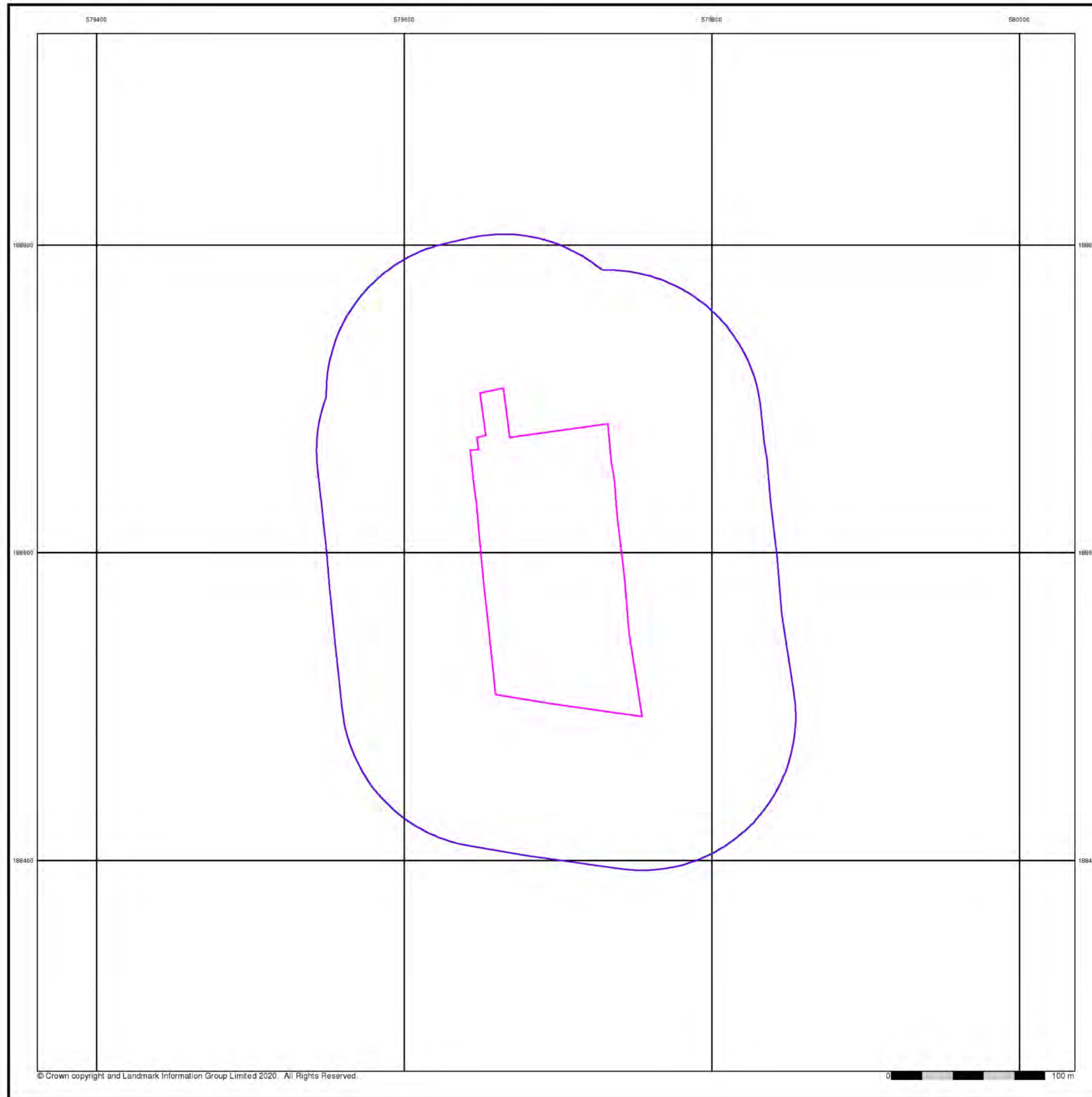
## Site Details

Hart Road, Thundersley, Essex



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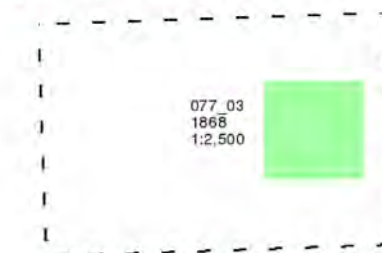




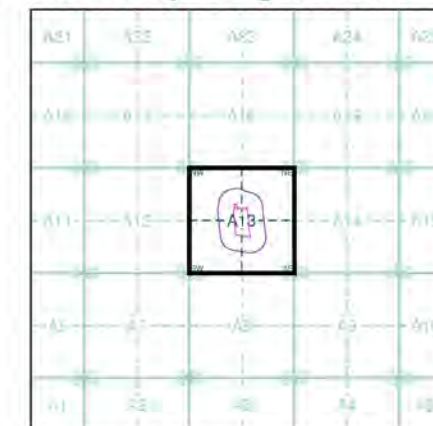
**Essex**  
**Published 1868**  
**Source map scale - 1:2,500**

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**



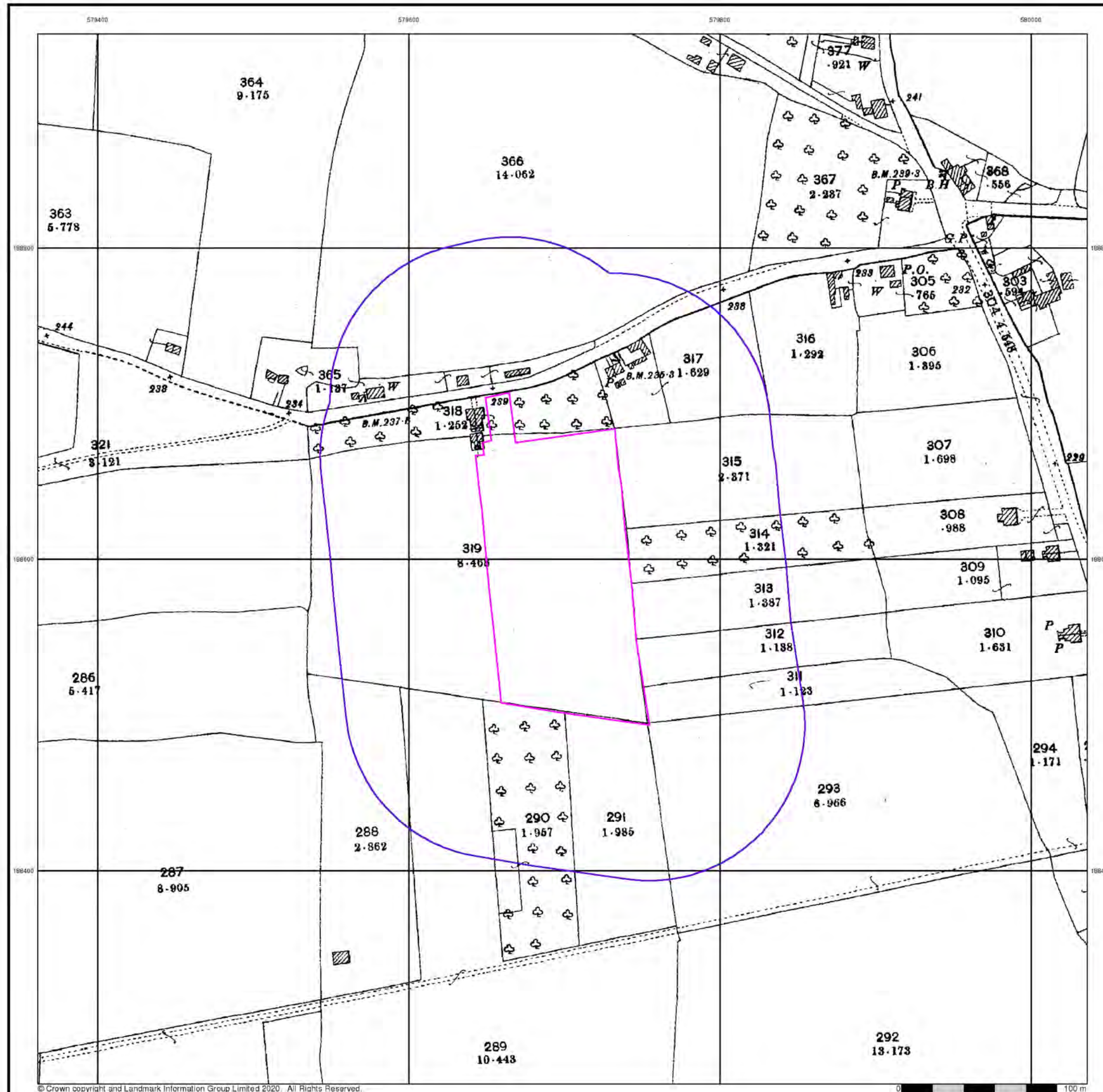
**Order Details**

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 100

**Site Details**

Hart Road, Thundersley, Essex





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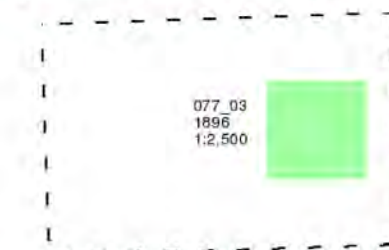
## Essex

**Published 1896**

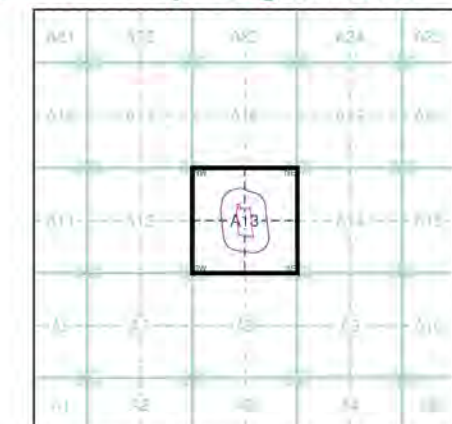
**Source map scale - 1:2,500**

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: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 100

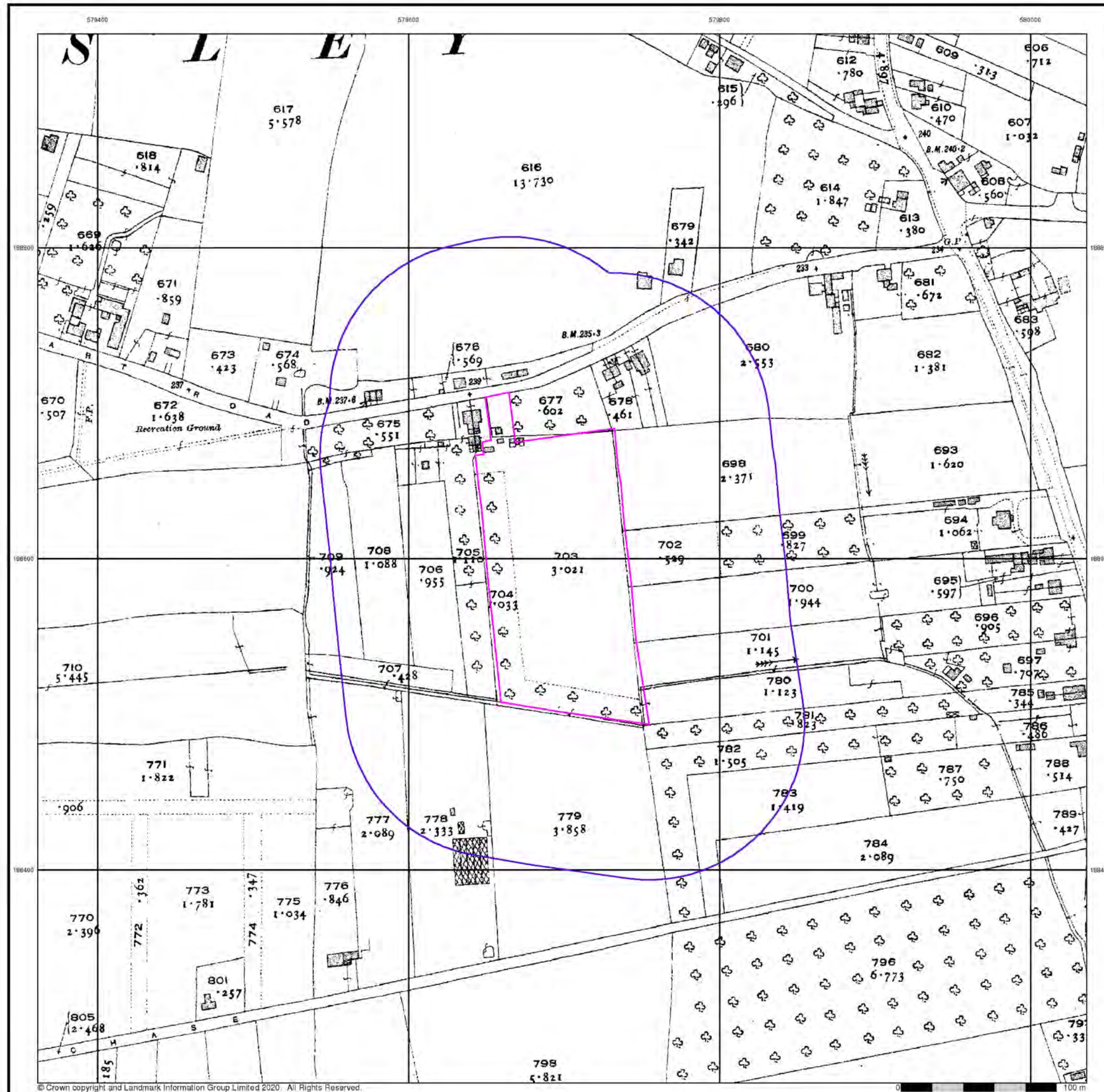
### Site Details

Hart Road, Thundersley, Essex

**Landmark**  
INFORMATION GROUP

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Fax: 0844 844 9951  
Web: [www.envirocheck.co.uk](http://www.envirocheck.co.uk)

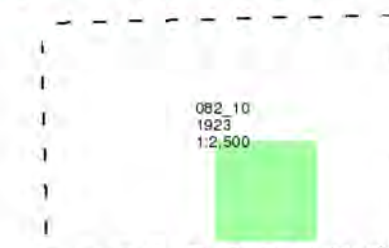




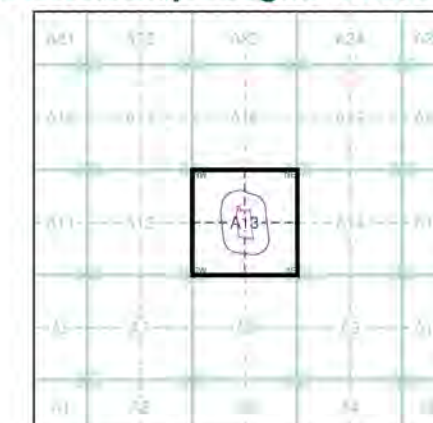
**Essex**  
**Published 1923**  
**Source map scale - 1:2,500**

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**



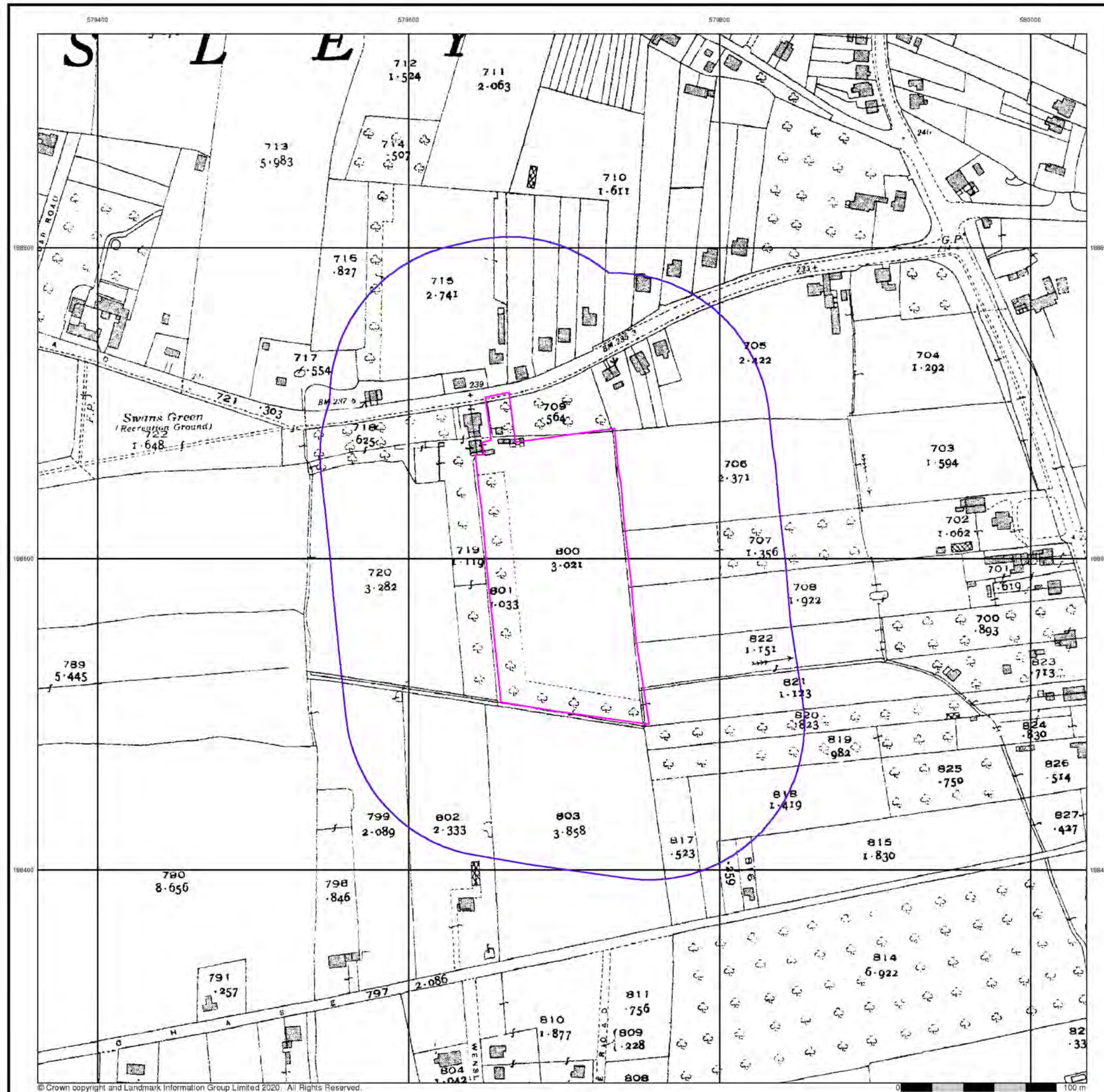
**Order Details**

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 100

**Site Details**

Hart Road, Thundersley, Essex





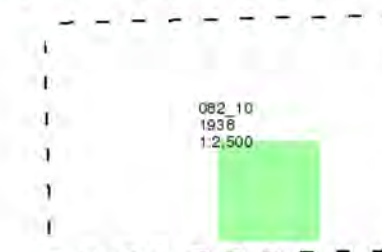
## Essex

Published 1938

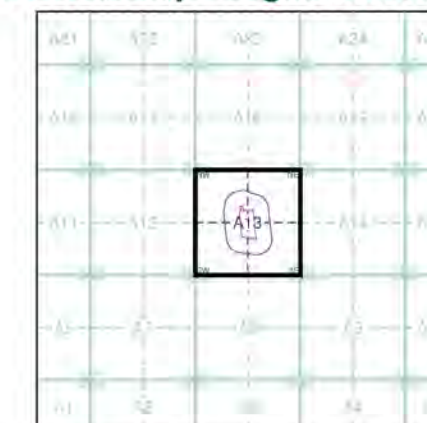
Source map scale - 1:2,500

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



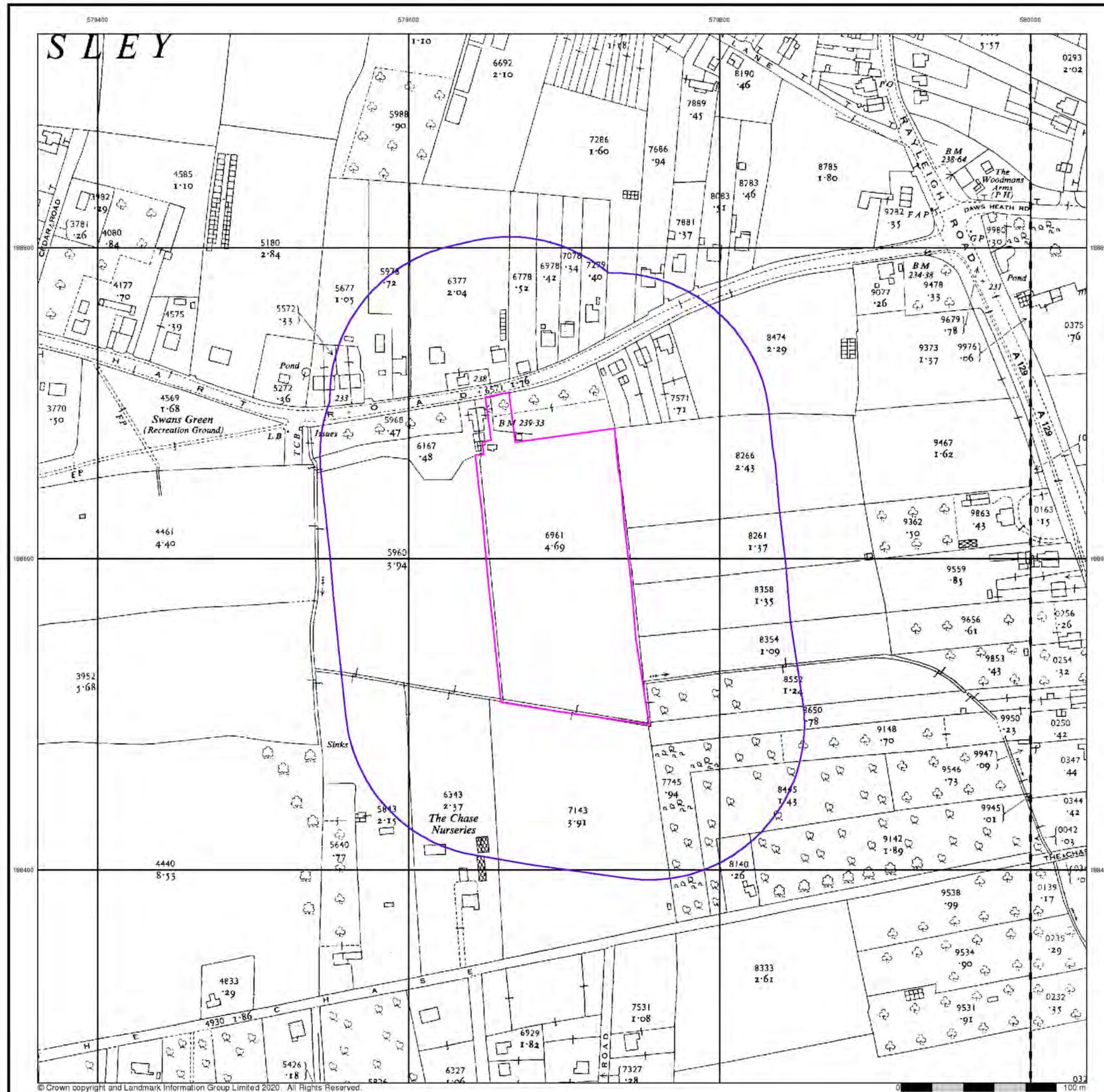
## Order Details

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 100

## Site Details

Hart Road, Thundersley, Essex





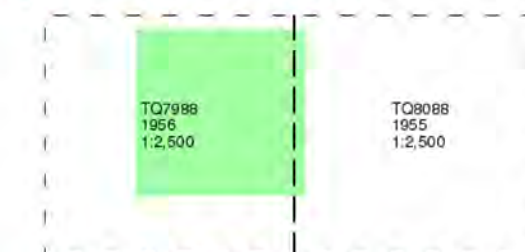
## Ordnance Survey Plan

Published 1955 - 1956

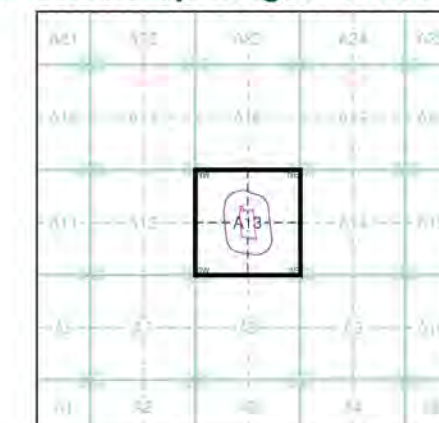
Source map scale - 1:2,500

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



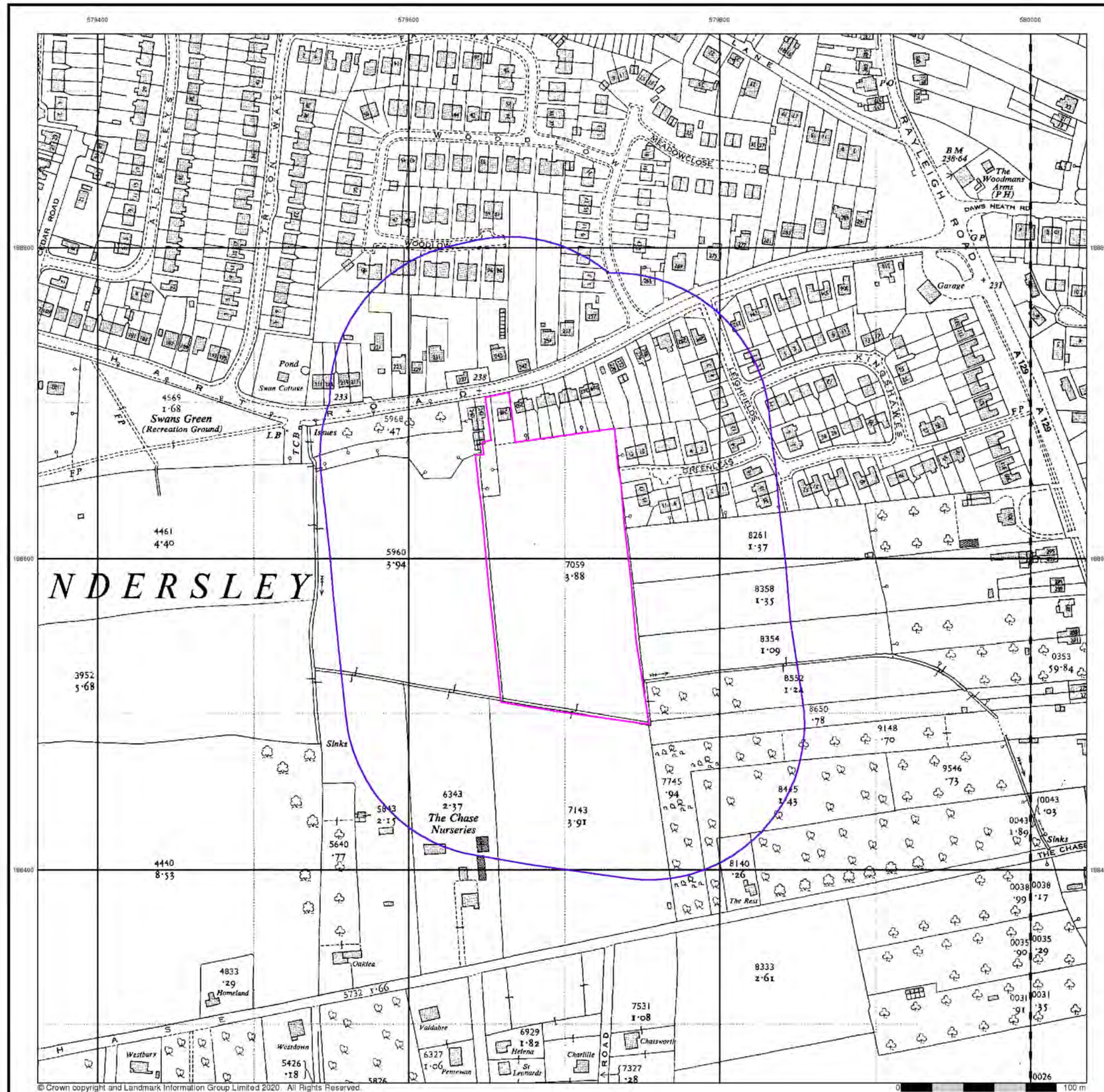
## Order Details

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 100

## Site Details

Hart Road, Thundersley, Essex





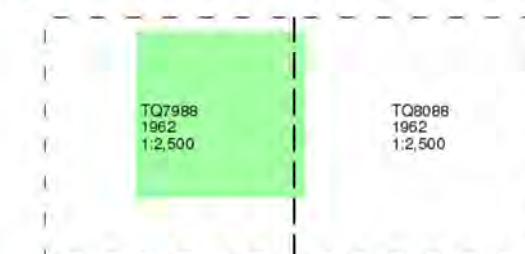
## Ordnance Survey Plan

Published 1962

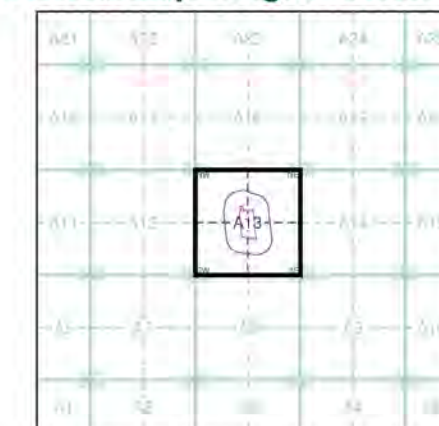
Source map scale - 1:2,500

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



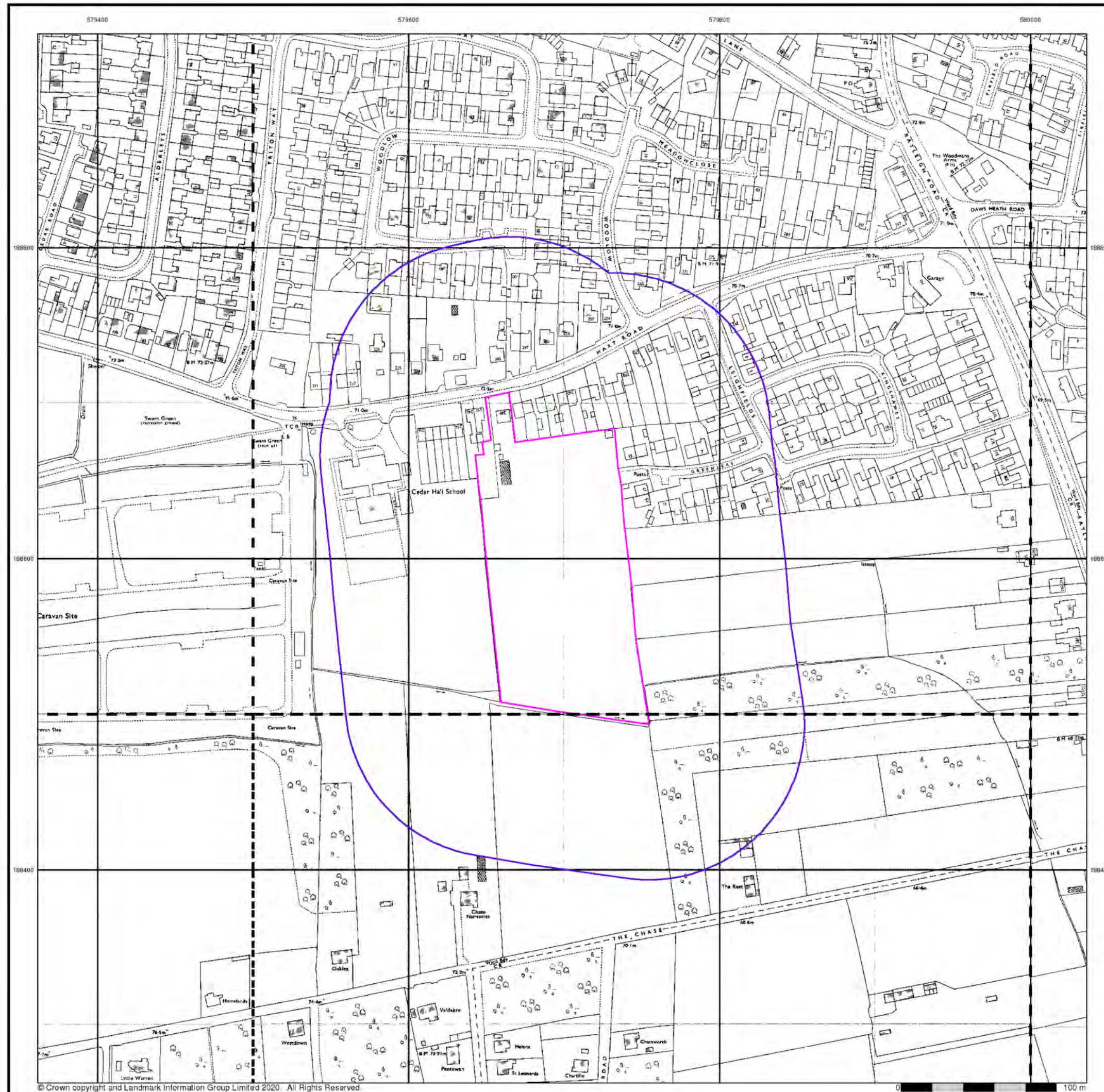
## Order Details

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 100

## Site Details

Hart Road, Thundersley, Essex





## Ordnance Survey Plan

Published 1971

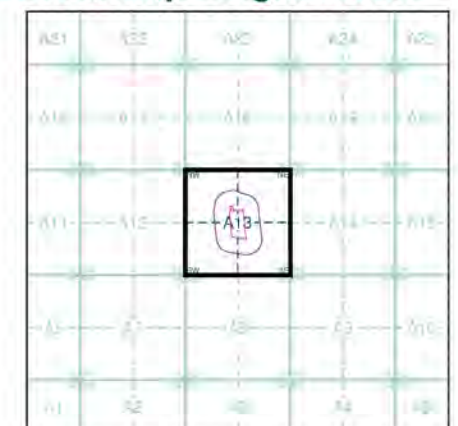
Source map scale - 1:1,250

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)

TQ7988NW 1971 1:1,250	TQ7988NE 1971 1:1,250	TQ8088NW 1971 1:1,250
TQ7988SW 1971 1:1,250	TQ7988SE 1971 1:1,250	TQ8088SW 1971 1:1,250

### Historical Map - Segment A13



### Order Details

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 100

### Site Details

Hart Road, Thundersley, Essex



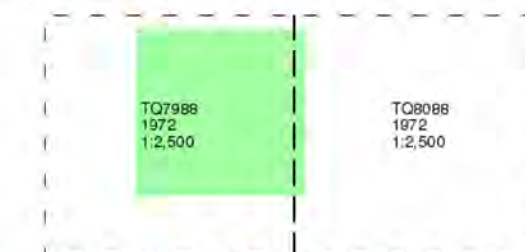
## Ordnance Survey Plan

Published 1972

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

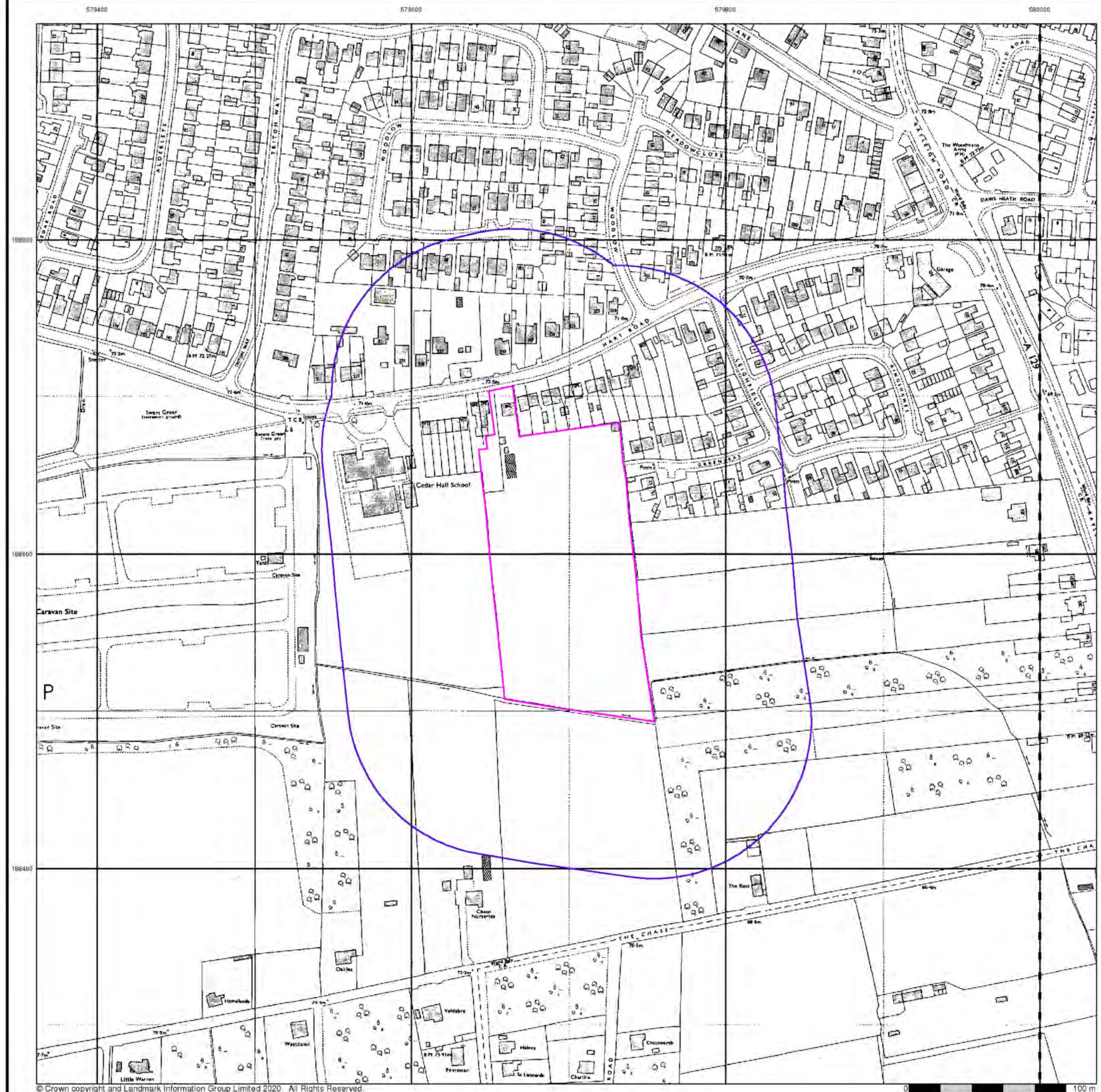


## Order Details

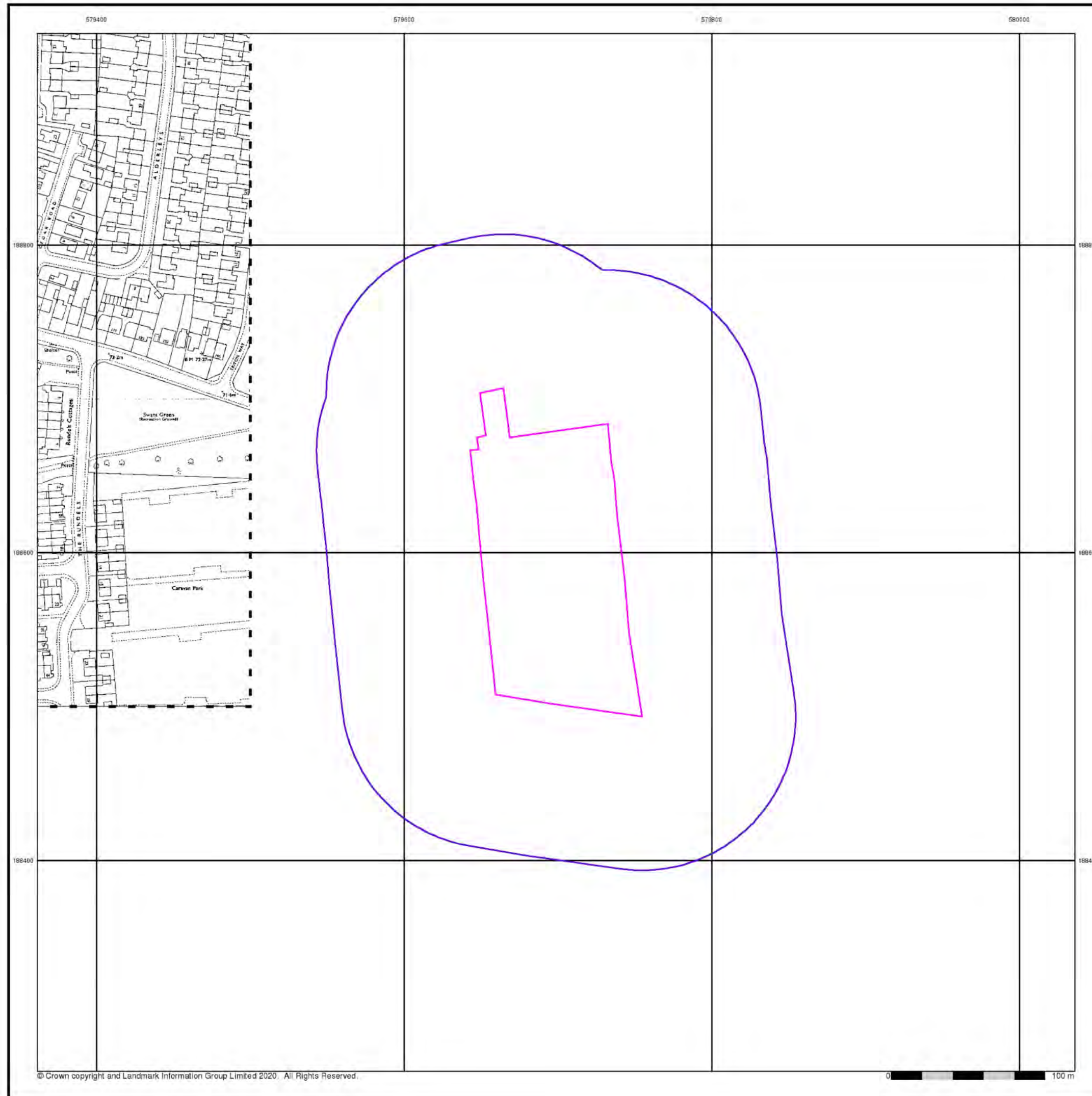
Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 100

## Site Details

Hart Road, Thundersley, Essex







ARP GEOTECHNICAL LTD

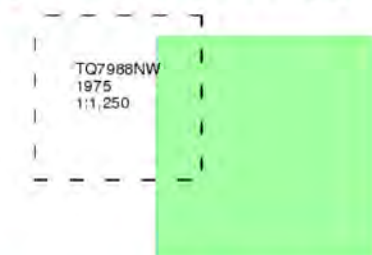
## Ordnance Survey Plan

Published 1975

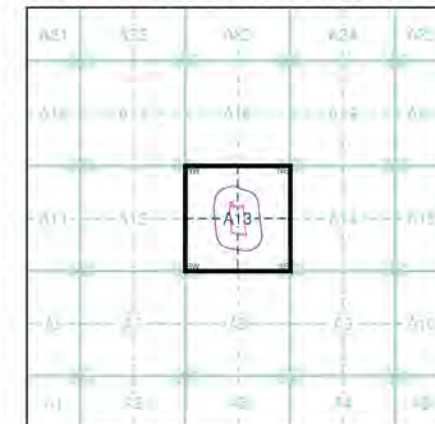
Source map scale - 1:1,250

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: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 100

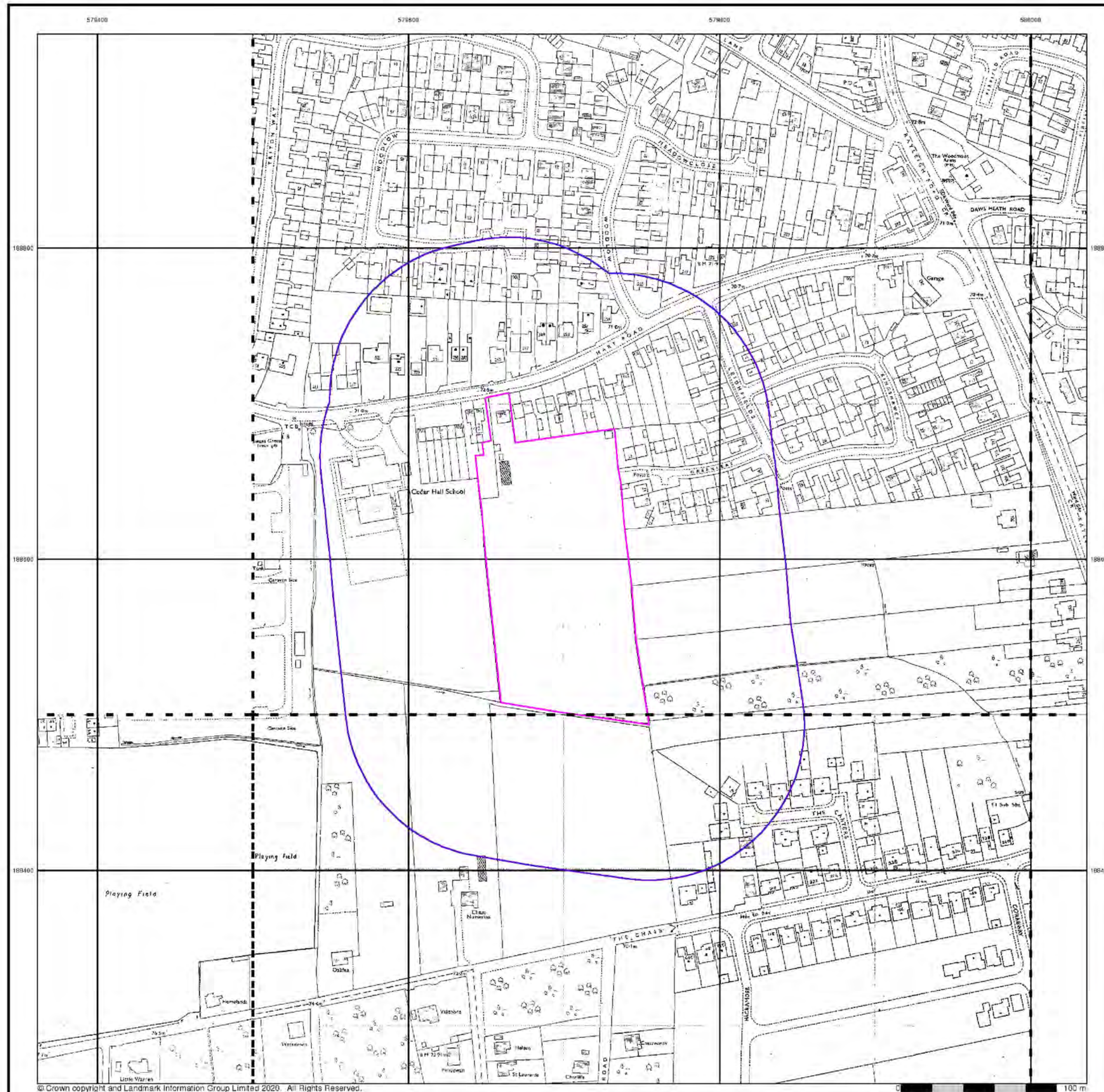
### Site Details

Hart Road, Thundersley, Essex



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





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## Additional SIMs

Published 1978 - 1986

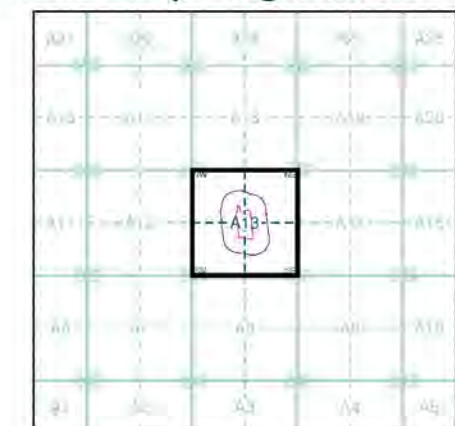
Source map scale - 1:1,250

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)

TQ7988NE	TQ8088NW
1986	1978
1:1,250	1:1,250
TQ7988SW	TQ7988SE
1978	1983
1:1,250	1:1,250

## Historical Map - Segment A13



## Order Details

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 100

## Site Details

Hart Road, Thundersley, Essex





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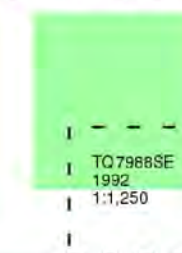
### Additional SIMs

Published 1992

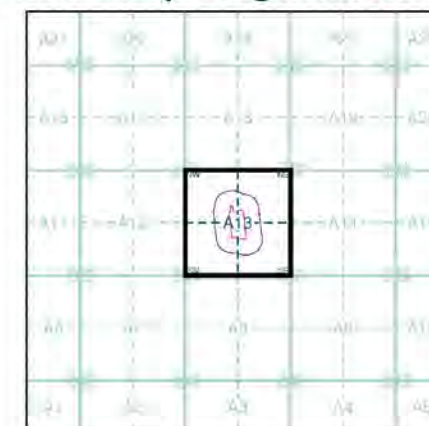
Source map scale - 1:1,250

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

### Map Name(s) and Date(s)



### Historical Map - Segment A13



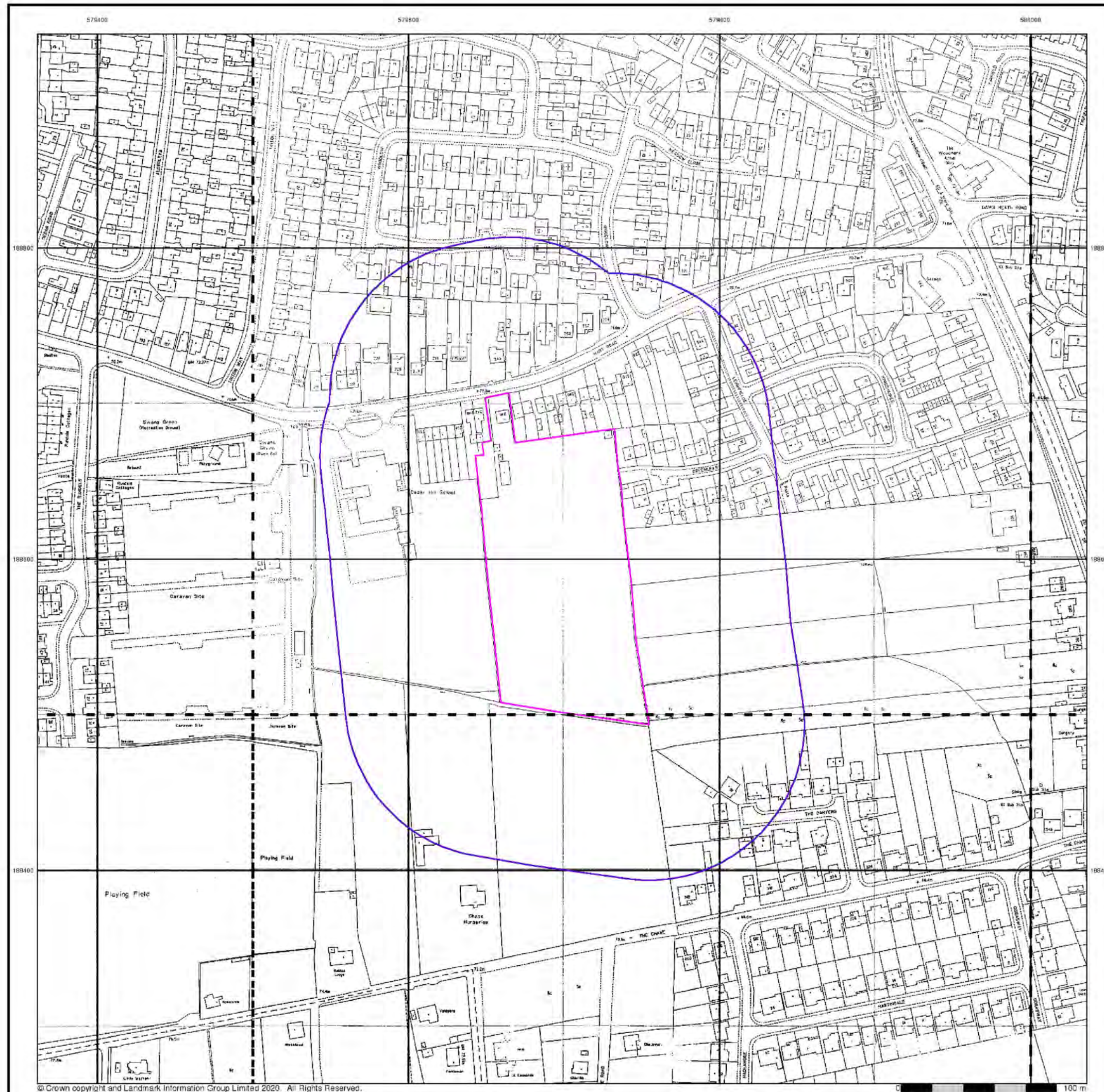
### Order Details

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 100

### Site Details

Hart Road, Thundersley, Essex





## Large-Scale National Grid Data

Published 1993

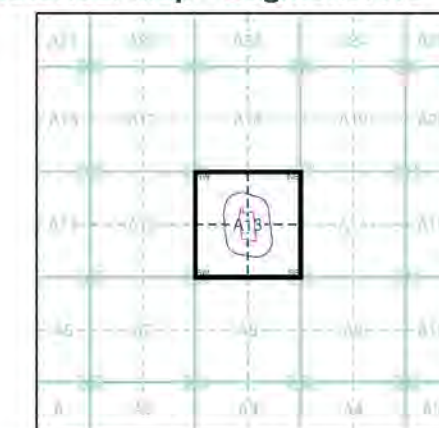
Source map scale - 1:1,250

'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)

TQ7988NW 1993 1:1,250	TQ7988NE 1993 1:1,250	TQ8088NW 1993 1:1,250
TQ7988SW 1993 1:1,250	TQ7988SE 1993 1:1,250	TQ8088SW 1993 1:1,250

### Historical Map - Segment A13



### Order Details

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 100

### Site Details

Hart Road, Thundersley, Essex



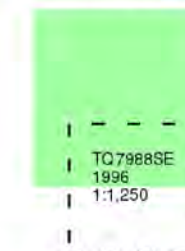
## Large-Scale National Grid Data

Published 1996

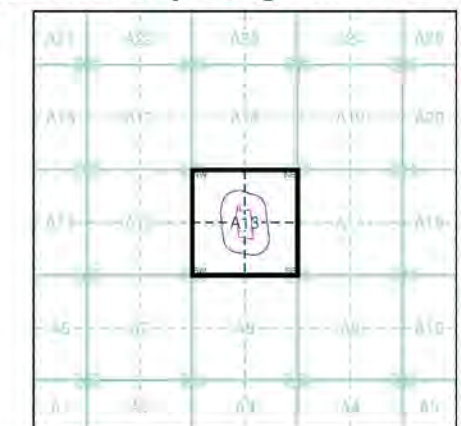
Source map scale - 1:1,250

'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

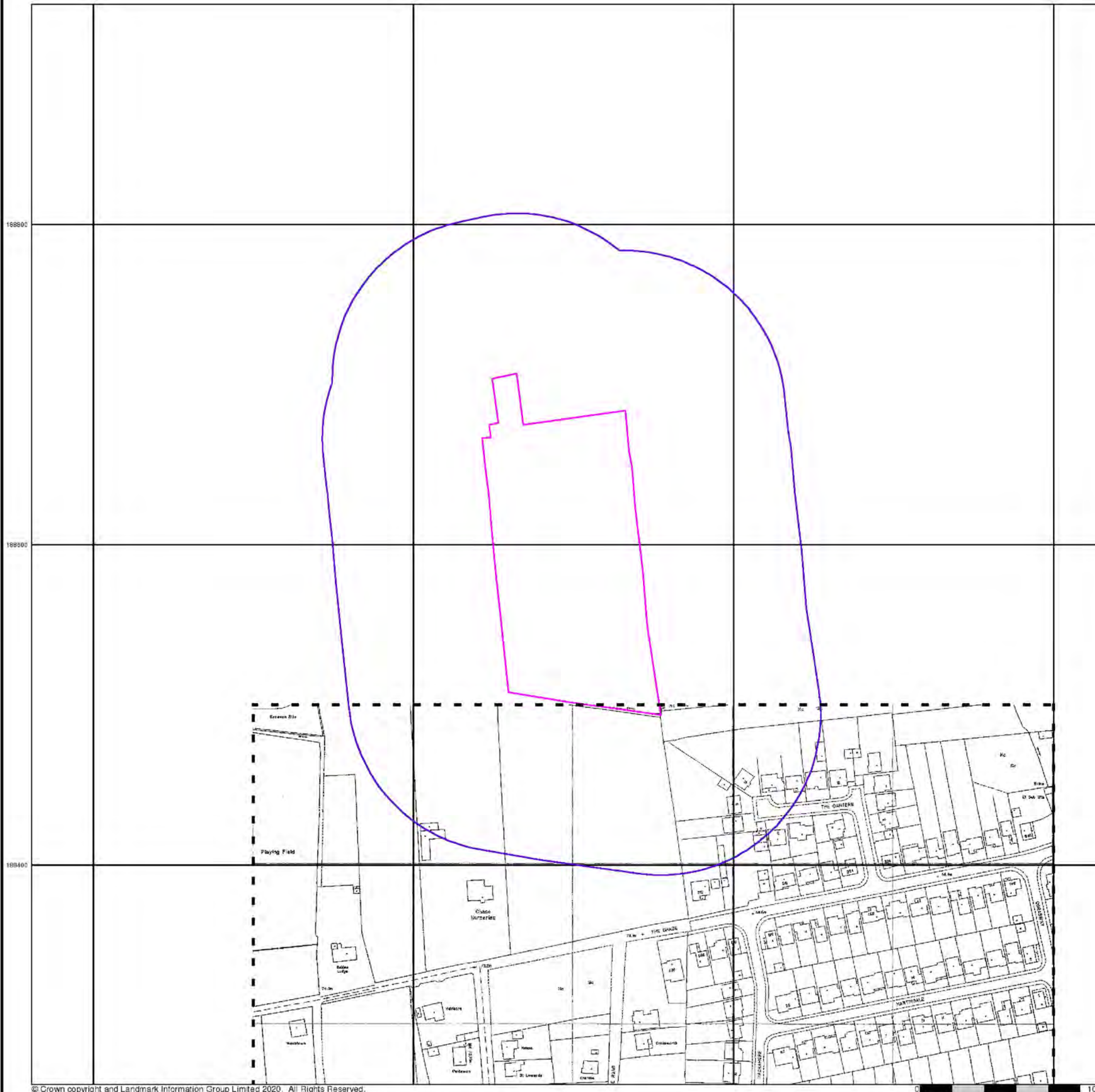


### Order Details

Order Number: 258580487\_1\_1  
Customer Ref: LEG/03  
National Grid Reference: 579700, 188600  
Slice: A  
Site Area (Ha): 1.67  
Search Buffer (m): 100

### Site Details

Hart Road, Thundersley, Essex



## **APPENDIX C**

### **LANDMARK GEOLOGY MAPS**

## Geology 1:50,000 Maps Legends

### Artificial Ground and Landslip

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

### Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	GFDMP	Glaciofluvial Deposits, Mid Pleistocene	Sand and Gravel	Not Supplied - Cromerian
	HEAD	Head	Clay, Silt, Sand and Gravel	Not Supplied - Quaternary
	SUPD	Superficial Deposits	Sand and Gravel	Not Supplied - Quaternary

### Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	BGS	Bagshot Formation	Sand	Not Supplied - Ypresian
	CLGB	Claygate Member	Clay, Silt and Sand	Not Supplied - Ypresian
	LC	London Clay Formation	Clay, Silt and Sand	Not Supplied - Ypresian

### Geology 1:50,000 Maps

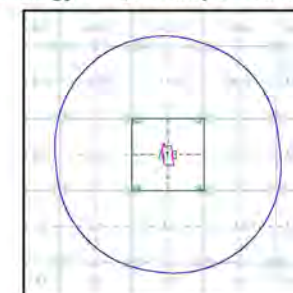
This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published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

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

### Geology 1:50,000 Maps Coverage

Map ID:	1
Map Sheet No:	258
Map Name:	Southend and F.
Map Date:	1975
Bedrock Geology:	Available
Superficial Geology:	Available
Artificial Geology:	Available
Faults:	Not Supplied
Landslip:	Available
Rock Segments:	Not Supplied

### Geology 1:50,000 Maps - Slice A



### Order Details:

Order Number:	258580487_1_1
Customer Reference:	LEG/03
National Grid Reference:	579700, 188600
Slice:	A
Site Area (Ha):	1.67
Search Buffer (m):	1000

### Site Details:

Hart Road, Thundersley, Essex