



STAGE 1 GEO-ENVIRONMENTAL DESK STUDY REPORT

ON

BARR STREET
HUDDERSFIELD

ON BEHALF OF

MYERS GROUP LIMITED

ARP GEOTECHNICAL LTD

CHARTERED CONSULTING ENGINEERS

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CLIENT: MYERS GROUP LIMITED

JOB NUMBER: MYE/01

PROJECT: BARR STREET, HUDDERSFIELD

REPORT TYPE: STAGE 1 GEO-ENVIRONMENTAL DESK STUDY

REPORT REFERENCE: MYE/01r1

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ISSUE	DATE	STATUS	COMMENT
1	01 st AUGUST 2024	VERSION 1 FINAL	

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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	Demolition and removal of existing concrete plant and supporting equipment and the supply and installation of a new concrete plant.
Site Description	Mixing tower, cement silos, conveyor belt and infrastructure associated with existing concrete plant. Site fully under hardstanding.
Site History	Largely undeveloped until the 1950s. Existing concrete plant present on site in current configuration since the mid-1970s.
Geology	Alluvial deposits (clay, silt, sand and gravel) overlying undifferentiated solid strata (mudstones, siltstones and minor sandstones) of the Pennine Lower Coal Measures.
Coal Mining	The site is within the likely zone of influence of recorded workings in one seam of coal at an approximate depth of 14m to 19m beneath the site (Halifax Hard Bed Coal). A rock drilling investigation has been commissioned and will be reported separately.
Hazardous Gases	No radon protection measures required. One historical landfill site located in the east/southeast corner of the site. Three further historical landfill sites located within 250m of the site. Shallow coal mining may also be present beneath the site. No new enclosed structure proposed as part of the development.
Likely Ground Conditions	Potential made ground over variable thickness of alluvium. This is likely to be underlain by undifferentiated mudstone, siltstone and minor sandstone.
Contamination	Potential contamination associated with made ground. However, proposed development is to be fully under hard covers.

Foundations	Investigation recommended to confirm possible foundation solutions. If grout treatment of workings is required any foundations will need to be reinforced.
Excavations	Likely to be stable within natural strata, but instability can be expected within any made ground or below the water table. Groundwater potentially present within typical excavation depths.
Road Pavement	New road pavement construction is not understood to be necessary.

2.0 INTRODUCTION

- 2.1 Myers Group Limited is considering constructing a replacement concrete plant at their site off Barr Street, Huddersfield. The proposal includes the demolition and removal of existing concrete plant and supporting equipment including silos, mixing tower and conveyor belt and supply and installation of a new concrete plant with five new silos. 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 Myers Group Limited 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.
- 2.3 A Coal Mining Risk Assessment letter report has been previously produced by ARP (Ref MYE/01/JRjcl1 dated 24th June 2024). Pertinent information from this report has been included within this Stage 1 assessment. The report does not include any intrusive assessment.
- 2.4 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.
- 2.5 Attention is drawn to the requirements of the Construction Design and Management Regulations 2015, and in particular the duties and obligation of the Client.

- 2.6 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 SE 15296 18216, forms a part of the larger Myers Group site at Barr Street, off Leeds Road, Huddersfield. The area being assessed ("The Site") is around 80m x 80m and sits within the northern half of the Myers Group site.
- 3.2 A site location plan and aerial photograph are presented in Appendix A.
- 3.3 A site walkover was undertaken on 18th July 2024. Details obtained from the walkover are discussed below. Photographs taken during the site walkover are presented in Appendix B.

On-Site Features

- 3.4 The site has overall dimensions of approximately 80m (north - south) by 80m (east - west).
- 3.5 The development area comprises a mixer tower, three concrete silos, overhead conveyor belt, a warehouse and other infrastructure associated with the concrete plant. The site is fully under hardstanding as concrete. At the time of the site walkover demolition of the warehouse was underway. Access to the site is off Red Doles Lane to the northeast of the development site.
- 3.6 Several IPC containers were present on site containing unknown clear liquid, possibly water.
- 3.7 The site is generally level sloping from north to south.

Site Boundaries and Surrounding Land Use

- 3.8 The development site is located within a complex of industrial and commercial buildings associated with the clients wider commercial activities. This includes warehouses, skip hire, timber and builders merchants. The wider site is bound to the north, south and east by industrial buildings, to the southwest by a sports field and to the west by Huddersfield Broad Canal.

4.0 SITE HISTORY

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

Map Date	On-Site	Off-Site
1854	The site formed part of several agricultural field parcels with tree lined hedgerows dividing the fields.	The Sire John Ramsden's Canal is located 20m to the northwest of the site. A railway line was located approximately 100m the northwest of the site.
1893	A track was located in the far north of the site leading to buildings identified as Red Doles and Red Doles Bridge located off-site to the north of the site.	Buildings identified as Red Doles and Red Doles Bridge (over the canal) were located adjacent to the northwest of the site. Field Mills (woollen Mill) was located approximately 50m to northeast with tanks located on its northwestern edge. Canal Bank Dye Works was located approximately 250m to the southeast of the site with residential properties approximately 250m to the southeast.
1907	No significant changes.	A cricket ground was located approximately 100m to the southwest. More residential houses have been constructed approximately 150m to the east.
1918	Small watercourse sourcing from the canal on the northern boundary of the site flowing to Field Mills. No other significant changes.	Small watercourse sourcing from the canal on the northern boundary of the site flowing to Field Mills. Reservoir identified within the Field Mill development.
1959-1960	Small, un-named rectangular and square buildings located in the far northwest of the site.	Canal to the northwest now re-named as the Calder and Hebble Navigation Huddersfield Broad Canal. Dye works to the southwest now identified only as a works.
1976-1978	Several buildings are present on the centre and southwest of the site.	A day nursery is located approximately 150m to the southeast of the site.
1993-1995	Several buildings present on site with hopper and conveyor infrastructure.	Red Dole Industrial estate present adjacent to the northeast and east of the site.
2000	No significant changes.	No significant changes.

- 4.2 In summary, up to circa 1959, the site formed part of several agricultural field parcels. Minor development of the site started in the northwest of the site with further expansion south with more infrastructure being development associated with the present concrete works.

5.0 ENVIRONMENTAL SETTING

Geology

- 5.1 Extracts from the British Geological Survey 1:50,000 (Sheet 77 - Huddersfield), Series Geology Maps are included within the Envirocheck Geology Report in Appendix D. The maps show the site to be underlain by undifferentiated solid strata (mudstones, siltstones and minor sandstones) of the Pennine Lower Coal Measures of the Carboniferous Period. The site is on a valley floor position and the solid strata are shown to be covered by alluvial deposits (clay, silt, sand and gravel).
- 5.2 The maps do not indicate any potential for the site to be adversely affected by any faults.

Coal Mining

- 5.3 A CON29M Coal Mining Report was obtained from Terrafirma. A copy of the report is included in Appendix E. A Coal Mining Risk Assessment letter report has been previously produced by ARP (Ref MYE/01/JRjcl1 dated 24th June 2024). Pertinent information from this report is summarised below.
- 5.4 The site is in the likely zone of influence of recorded workings in one seam of coal, at an approximate depth of 14m to 19m beneath the site (this is interpreted to be the Halifax Hard Bed Coal that ARP estimated to be at a depth of around 24m below the site). The last known working date is 1907. The site is not within an area that could be affected by unrecorded shallow underground coal workings.
- 5.5 The site is not affected by any present, or future proposed, underground coal mining. The report refers to reserves in the locality that could be worked at some time in the future. However, given the effective abandonment of the coalfields in this area, any future workings are considered highly unlikely.

- 5.6 There are no recorded mine entries within 20m of the site.
- 5.7 The site is unaffected by any past, present, or future proposed, opencast coal mining.
- 5.8 It is anticipated, therefore, that the recorded workings in the Halifax Hard Bed Coal (& Gannister & Fireclay) pose a risk to ground stability on the site.
- 5.9 The deeper seams are anticipated to be sufficiently deep to prevent any adverse ground stability effects on the site.
- 5.10 Given the potential shallow coal workings, a rock drilling investigation was recommended to check for any evidence of workings in Halifax Hard Bed Coal (& Gannister & Fireclay) and determine the depths, seam thicknesses, and extraction thickness. The workings probably take the form of pillar and stall workings, but the associated extraction of fireclay may have dictated that, for stability reasons, the workings were confined to relatively narrow tunnels of 2m to 3m width with large panels left behind (i.e. a low extraction ratio). The rock drilling investigation has been commissioned and will be reported separately.

Coal Recovery

- 5.11 There are no seams beneath the site at depths which could be worked by open excavation. There will be no significant arisings of coal during proposed development works, and it will not be possible to win any coal from the site before development.

Hydrogeology

- 5.12 The Landmark Envirocheck Report, included in Appendix F, indicates the Bedrock and Superficial Aquifer Designation to be "Secondary A". 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".

- 5.13 There are four active groundwater abstractions within 1km of the site, at 286m to the southwest, 764m to the south, 768m to the southwest and 870m to the south. The nearest is for textiles and leather process water and the furthest for cooling at Syngenta Ltd. Neither are down hydraulic gradient of the site.
- 5.14 The site is not within a groundwater Source Protection Zone.

Hydrology

- 5.15 The general area slopes to the southeast. The nearest downslope surface water is Canker Dike located 9m to the north. The River Colne is located approximately 500m to the southeast.
- 5.16 The site is in an area at extreme 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. BGS data indicates the general area has "potential for groundwater flooding of property situated below ground level" (i.e. basements or similar).
- 5.17 There are four active surface water abstraction within 1km of the site, the nearest being at approximately 286m to the southwest. The abstraction is for cooling but is not down gradient from the site and should be unaffected by any activity on the site.

Other Environmental Data

- 5.18 The Landmark Envirocheck Report, included in Appendix F, contains information on numerous environmental aspects. A summary of the pertinent findings, not already covered, with additional comments, is given below.

5.18.1 There are no Pollution Control Authorisations within 500m of the site.

- 5.18.2 There are five Integrated Pollution Prevention and Control authorisations within 500m of the site. The nearest relates to United Anodisers Limited, 74m to the east of the site.
- 5.18.3 There is one Local Authority Pollution Prevention and Control authorisation relating to the site for PG3/1 Blending, packing, loading and use of bulk cement.
- 5.18.4 There is one discharge consent relating to the site for process water discharge to Canker Dike 89m to the north of the site.
- 5.18.5 There is one historical landfill site located in the east/southeast of the site relating to British Waterways Board, November 1988 to December 1992 for the deposition of waste including industrial waste and liquid sludge. There are three further historical landfill sites located within 250m of the site.
- 5.18.6 There are no closed or currently licenced landfills within 250m of the site.
- 5.18.7 There is one Licensed Waste Management Facility located on site relating to Myers Skip Hire Ltd.
- 5.18.8 No radon protective measures are stated to be necessary for new buildings or extensions on the site., and the site is within a "lower probability radon area".
- 5.18.9 There are several contemporary trade directory entries relating to any activities on the site relating to builders' merchants, express asphalt and concrete pumping services.
- 5.18.10 There is one fuel station entry within 250m of the site (177m to the southeast).

6.0 PRELIMINARY CONTAMINATION RISK ASSESSMENT AND CONCEPTUAL MODEL

6.1 Part II A of the Environmental Protection Act (EPA) 1990 became effective from 1st 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.

6.2 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 1st 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.

6.3 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.

- 6.4 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.
- 6.5 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.
- 6.6 The Environment Agency has published guidance on contaminated land, in the form of online documents referred to as LCRM "Land Contamination Risk Management". The documents are intended to provide the technical framework for structured decision making about land contamination, and to assist all those involved in "managing" the land, in particular landowners, developers, financial service providers, planners and regulators. As the documents currently provide the framework for best practice, the general principles are, therefore, followed in conducting the assessment below.
- 6.7 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 G.

Conceptual Site Model

- 6.8 It is known that the development on site is to comprise the demolition of an existing concrete plant and associated infrastructure and replaced with a new concrete plant. The proposed development will be fully under hard covers. An indicative proposed site layout is included in Appendix H. The site is shown to be underlain by undifferentiated solid strata

(mudstones, siltstones and minor sandstones) of the Pennine Lower Coal Measures of the Carboniferous Period. The solid strata are shown to be covered by alluvial deposits (clay, silt, sand and gravel). The solid strata beneath the site are designated a Secondary A Aquifer, and the overlying superficial alluvial deposits are designated a Secondary A aquifer. The nearest groundwater abstraction is located 286m to the southwest of the site. The nearest surface water is Canker Dike located 9m to the north of the site. The nearest surface water abstraction is located 69m north of the site.

6.9 The site has been occupied by a concrete plant. The most likely contamination sources are considered to be:

6.9.1 Possible made ground: – metals inorganics, total petroleum hydrocarbons (TPH), polyaromatic hydrocarbons (PAH), phenol and asbestos.

6.9.2 Possible asbestos within existing buildings.

6.9.3 Possible harmful gases from coal/workings and/or landfills within 250m: - methane, carbon dioxide.

6.10 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	Inhalation, ingestion and dermal contact with soil and dust	Humans: - - Future occupants - Maintenance workers - Adjacent residents and general public	Negligible		
	- Vapour inhalation outdoor (Pathway not viable – site to be fully under hardstanding). - Vapour inhalation indoor (Pathway not viable – no enclosed buildings are proposed)	Humans (as above)	Negligible		
	Migration in surface water (site will be entirely under hard cover)	Surface water (nearest downslope is 9m to north. Nearest abstraction 286m to the southwest)	Negligible		
	Migration in groundwater (site will be entirely under hard cover)	Groundwater (Secondary A Aquifer. Nearest abstraction 286m to the southwest)	Negligible		
	Migration	Services/Utilities: - Potable water supply	Medium	Low Likelihood	Moderate/Low
Landfills within 250m/coal: - methane and carbon dioxide	- Asphyxiation - Explosive risk (Pathway not viable as no enclosed buildings are proposed).	- Construction/de-molition workers - Future occupants - Buildings	Negligible		
Possible asbestos within existing buildings and possible made ground	Inhalation	- Future occupants - Maintenance workers - Adjacent residents and general public	Severe	Low Likelihood	Moderate

6.11 The above matrix indicates that the only potential source – pathway – receptor linkages applicable to the proposed development are for any potential water supply pipes (if required) and potential presence of asbestos within existing building and infrastructure.

7.0 GEOTECHNICAL ASSESSMENT

Coal Mining

- 7.1 The Coal Mining Report and ARP Coal Mining Risk Assessment indicates there is a risk of shallow underground coal workings that could adversely affect ground stability on the site. A rotary borehole investigation has been commissioned and the findings of the investigation will be reported separately.
- 7.2 There will be no significant arisings of coal during proposed development works.

Foundations

- 7.3 A site investigation is recommended to confirm potential foundation options. If shallow coal workings are present within influencing depth of the surface of the site, then grout injection via a grid of borehole is likely to be required. Such treatment is commonplace and a recognised technique for treatment. Following the grouting, strip foundations, will need to be at least 300mm thick and reinforced with two layers of B503 mesh.

Gas Protection

- 7.4 No radon protective measures are required for properties constructed on the site.
- 7.5 There is a historical landfill located on site in the southwest and sub-surface coal mine workings. The proposed development is for new concrete plant infrastructure and no new enclosed buildings are proposed. Therefore, there is no viable receptor for this source.

Behaviour of Excavations

- 7.6 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.

7.7 The groundwater regime can only be confirmed by an intrusive investigation. However, it is considered unlikely that shallow groundwater is present, from the information available within the desk study appraisal.

7.8 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 made ground.

Road Pavement Construction

7.9 Only minor alterations are likely to be undertaken for access to the batching plant. As such, new road pavement construction is not understood to be necessary.

Flooding and Soakaways

7.10 The site is within an area at risk from river flooding. It would be prudent to consult with the Environment Agency with regard to proposed finished floor levels on the site, and a specialist flood risk assessment report may be required.

7.11 BGS data indicates the general area has the "potential for groundwater flooding of property situated below ground level" (i.e. basements or similar).

7.12 The disposal of surface water using soakaways is unlikely to be practical on the site, given the presence of deep low permeability strata on the site.

8.0 RECOMMENDED FURTHER WORK

Geotechnical

- 8.1 A rotary borehole investigation should also be carried out, to determine the depth and thickness of any coal seams and workings, and their potential impact on the proposed development. This has been commissioned and will be reported separately.
- 8.2 It is recommended that a ground investigation for geotechnical/engineering purposes is undertaken to confirm the ground conditions beneath the site. This would provide geotechnical information for engineering aspects, such as foundations and slab construction.

Contamination

- 8.3 Although, the presence of contamination within the made ground on site cannot be discounted the proposed development will be fully under hardcovers, therefore no viable pathway existing for future site users. Therefore, no further investigation for contamination purposes is considered to be necessary. However, appropriate risk assessment and PPE should be utilised as part of the construction works.
- 8.4 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.

A P P E N D I X A

S I T E L O C A T I O N P L A N A N D A E R I A L P H O T O G R A P H



0m 600m

Approximate Scale



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Project **BARR STREET
HUDDERSFIELD - PROPOSED
NEW CONCRETE PLANT**

Client
MYERS GROUP LTD

Title
SITE LOCATION PLAN

Date
JULY 2024

Drawn MH	Scale AS SHOWN
--------------------	--------------------------

Job No.
MYE/01



0m 50m

Approximate Scale



ARP GEOTECHNICAL LTD
CHARTERED CONSULTING ENGINEERS

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Project **BARR STREET**
HUDDERSFIELD - PROPOSED
NEW CONCRETE PLANT

Client
MYERS GROUP LTD

Title
AERIAL PHOTOGRAPH

Date
JUNE 2024

Drawn JR	Scale AS SHOWN
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Job No. MYE/01

APPENDIX B

SITE WALKOVER PHOTOGRAPHS



Photograph 1: Entrance off Red Doles Lane to the northeast of the development boundary.



Photograph 2: Two storey building at northern boundary of the site.



Photograph 3: Disused building in northwestern corner of the site, facing southwest.



Photograph 4: Infrastructure associated with the former concrete plant at the centre of the site.



Photograph 5: Overhead conveyor belts towards the southern end of the development site.



Photograph 6: Mixing tower associated with the former concrete plant at northern end of the site.



Photograph 7: Concrete silos at northeastern end of the site, facing northeast.



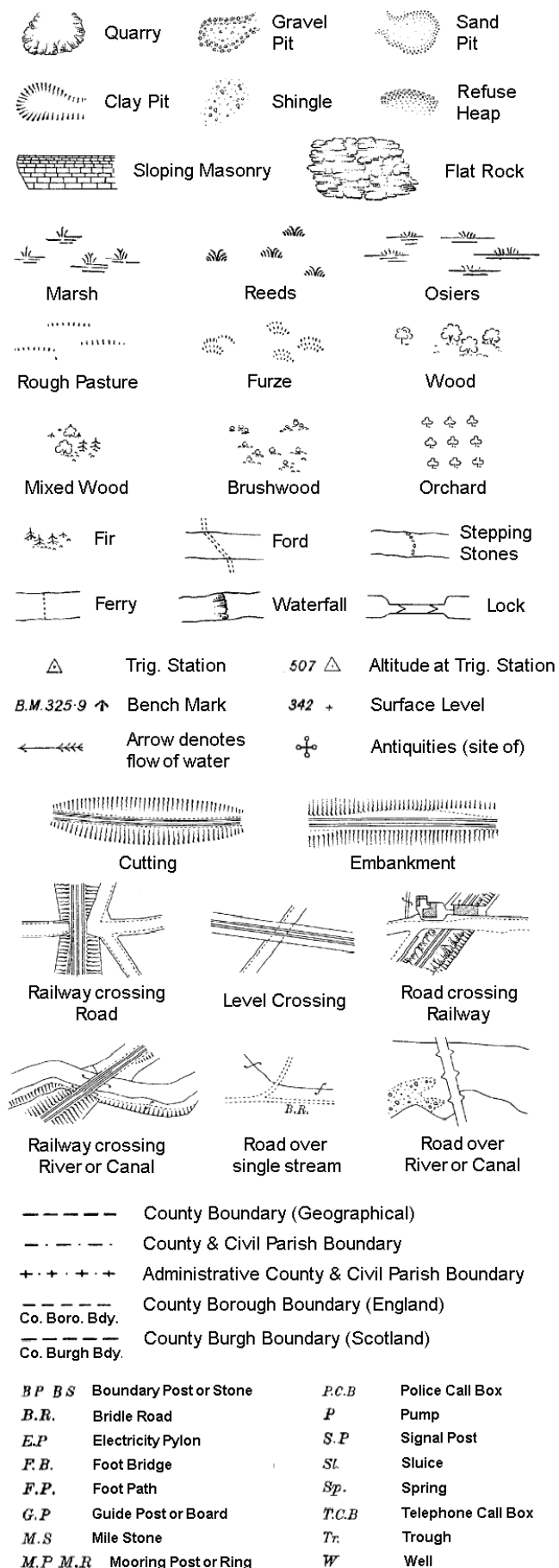
Photograph 8: IPC at centre of the site.

A P P E N D I X C

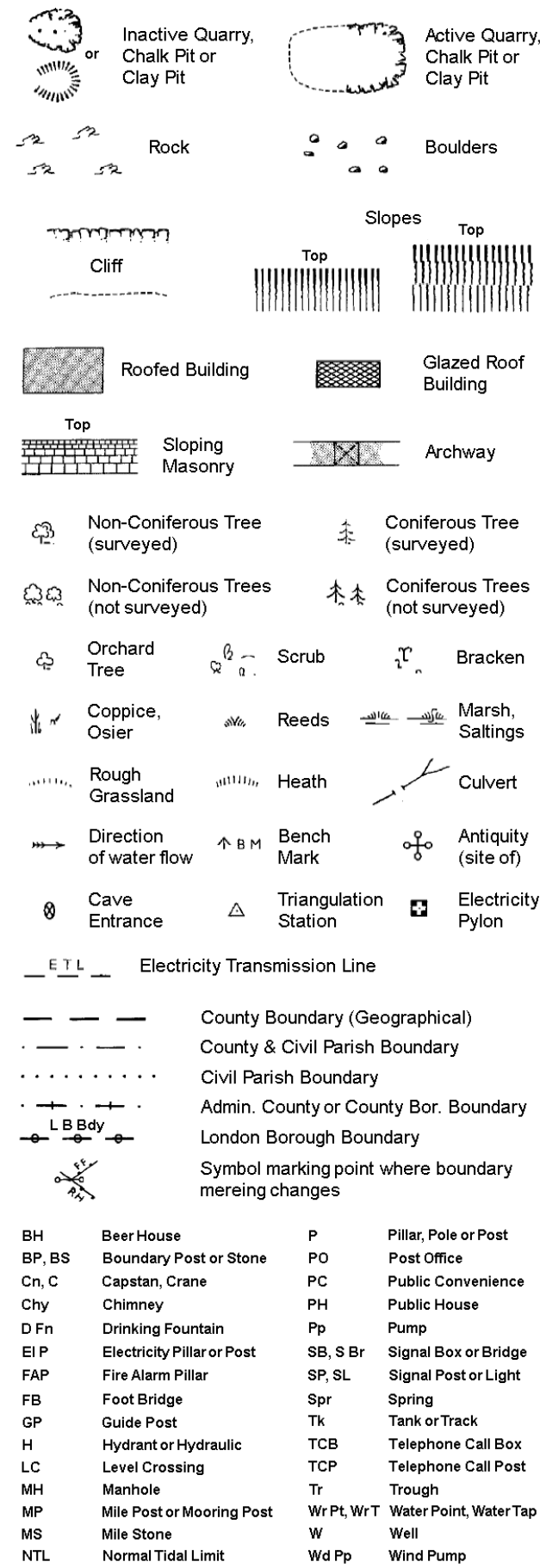
ORDNANCE SURVEY ARCHIVE MAPS

Historical Mapping Legends

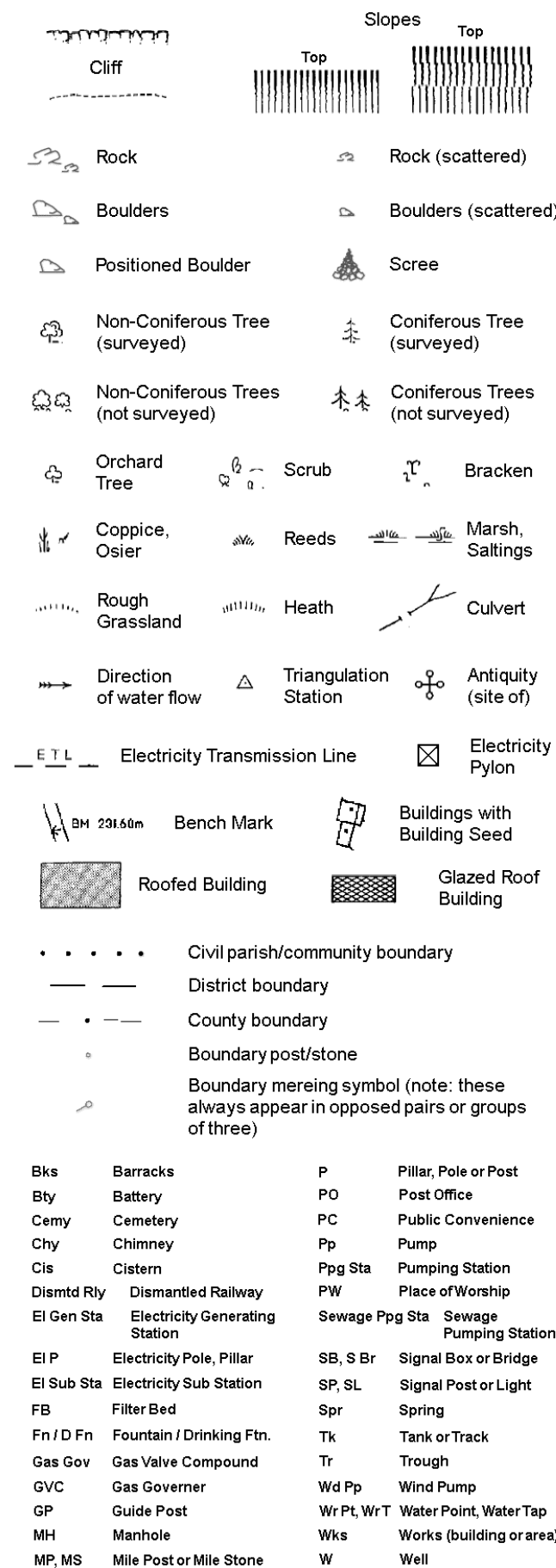
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



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



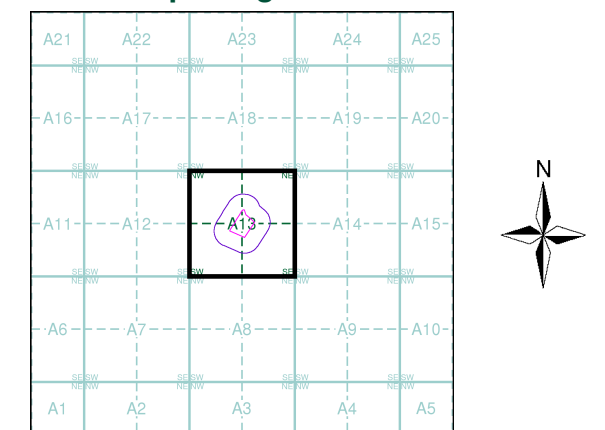
Large-Scale National Grid Data 1:2,500 and 1:1,250



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Yorkshire	1:2,500	1893	2
Yorkshire	1:2,500	1907	3
Yorkshire	1:2,500	1918	4
Ordnance Survey Plan	1:1,250	1959	5
Additional SIMs	1:1,250	1959 - 1992	6
Ordnance Survey Plan	1:2,500	1960	7
Ordnance Survey Plan	1:1,250	1969 - 1989	8
Additional SIMs	1:1,250	1979 - 1992	9
Additional SIMs	1:1,250	1982 - 1992	10
Large-Scale National Grid Data	1:1,250	1993	11
Large-Scale National Grid Data	1:1,250	1993 - 1995	12
Large-Scale National Grid Data	1:1,250	1995	13
Large-Scale National Grid Data	1:1,250	1995	14

Historical Map - Segment A13



Order Details

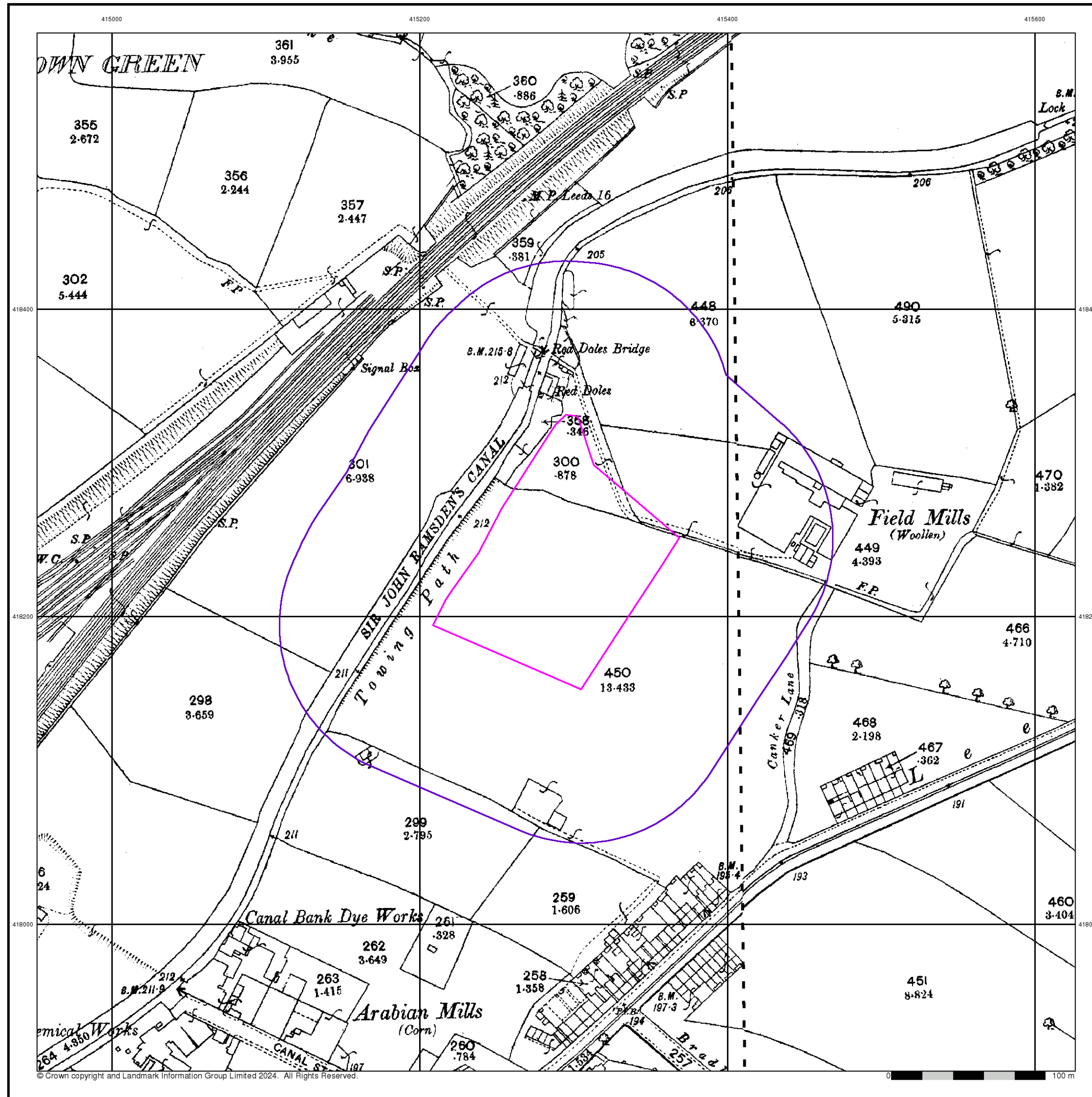
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Customer Ref: MYE/01
National Grid Reference: 415290, 418240
Slice: A
Site Area (Ha): 1.45
Search Buffer (m): 100

Site Details

Readymix, Red Doles Lane, HUDDERSFIELD, HD2 1YD



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



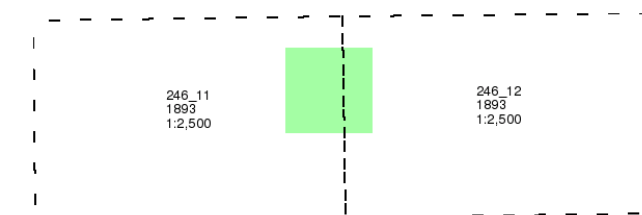
Yorkshire

Published 1893

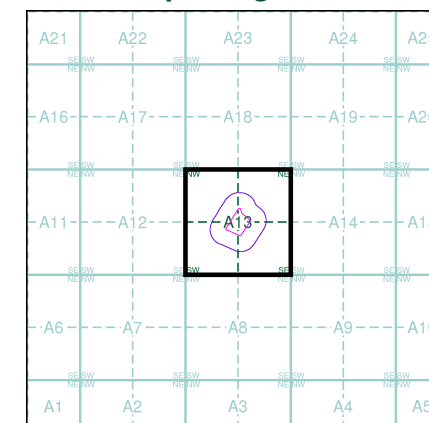
Source map scale - 1:2,500

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

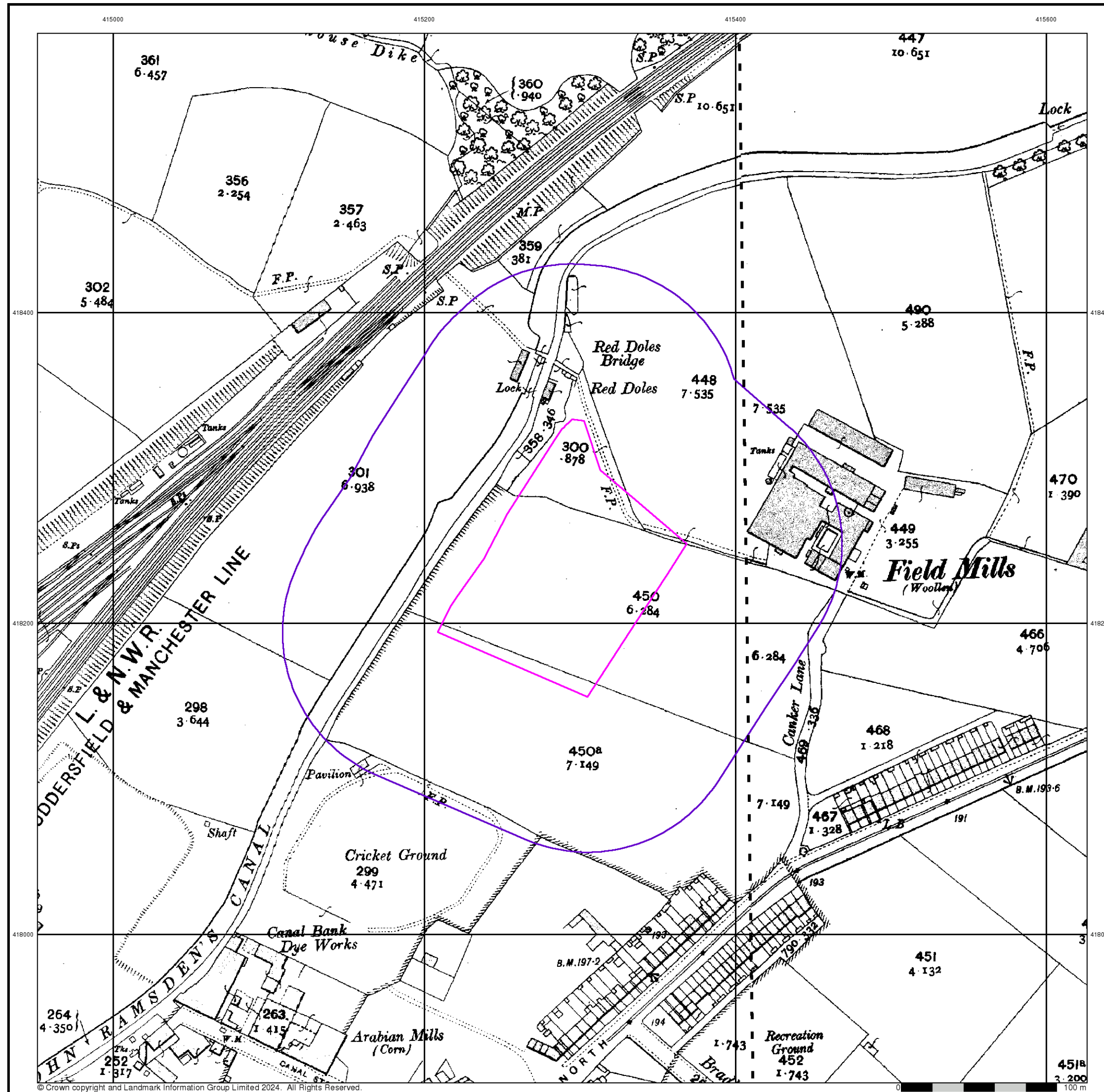


Order Details

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Customer Ref: MYE/01
National Grid Reference: 415290, 418240
Slice: A
Site Area (Ha): 1.45
Search Buffer (m): 100

Site Details

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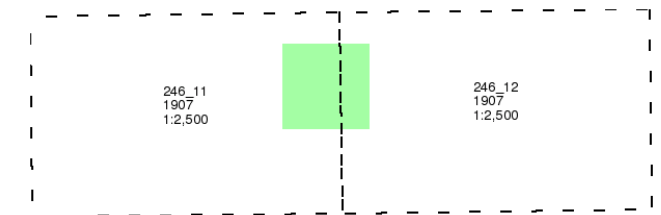
Yorkshire

Published 1907

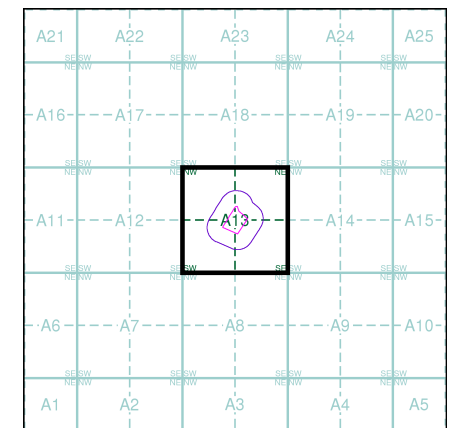
Source map scale - 1:2,500

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

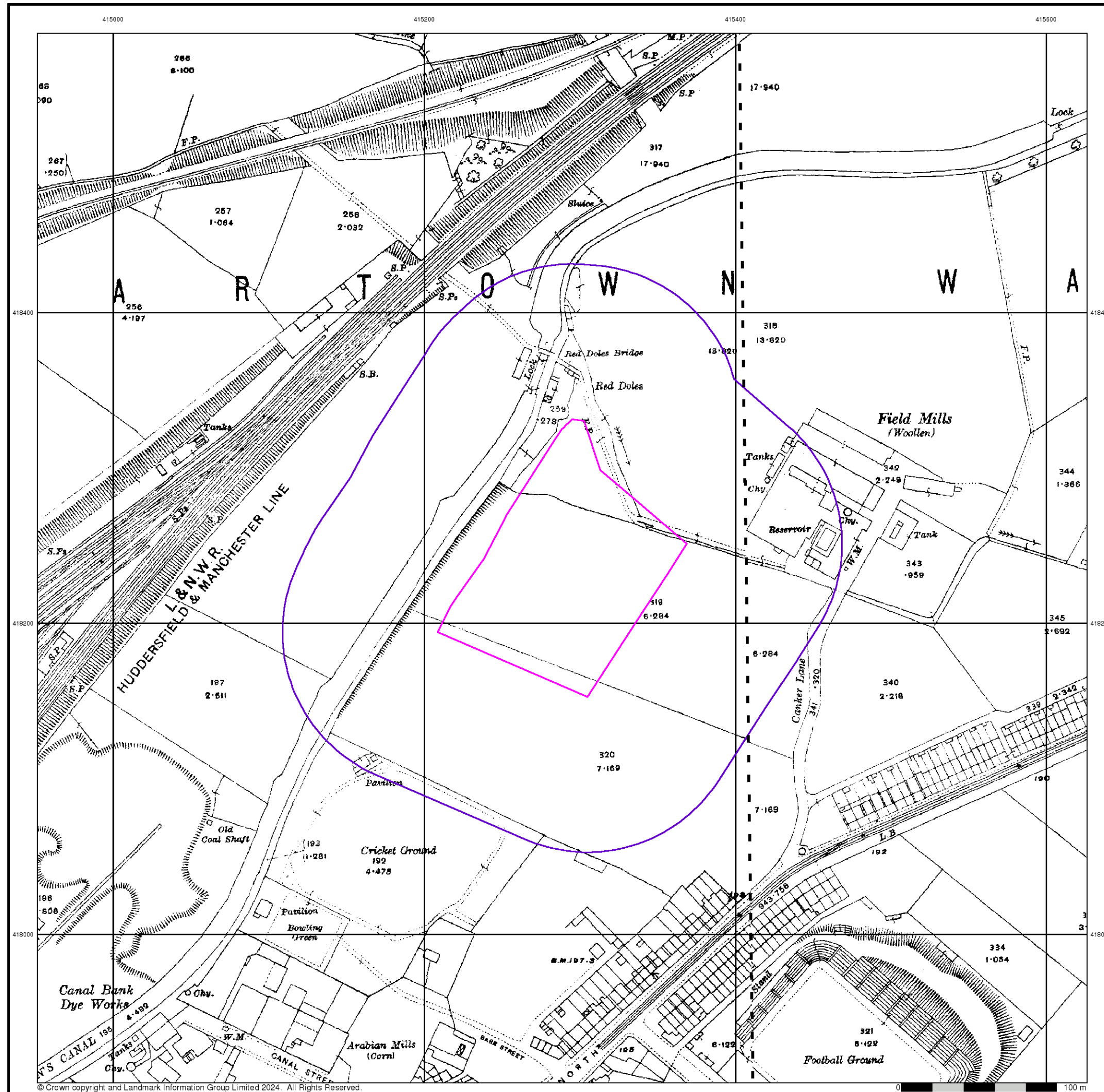
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Slice: A
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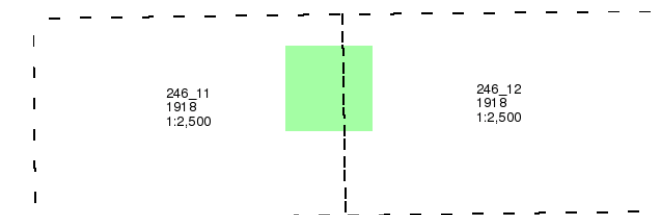
Yorkshire

Published 1918

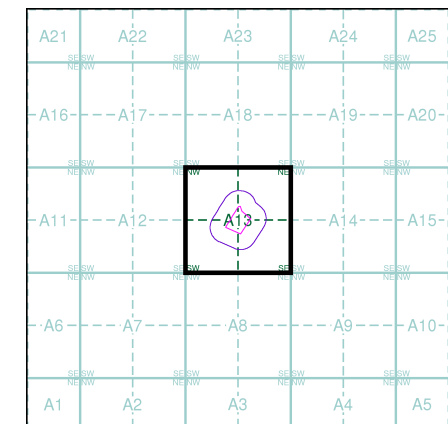
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered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

Map Name(s) and Date(s)



Historical Map - Segment A13

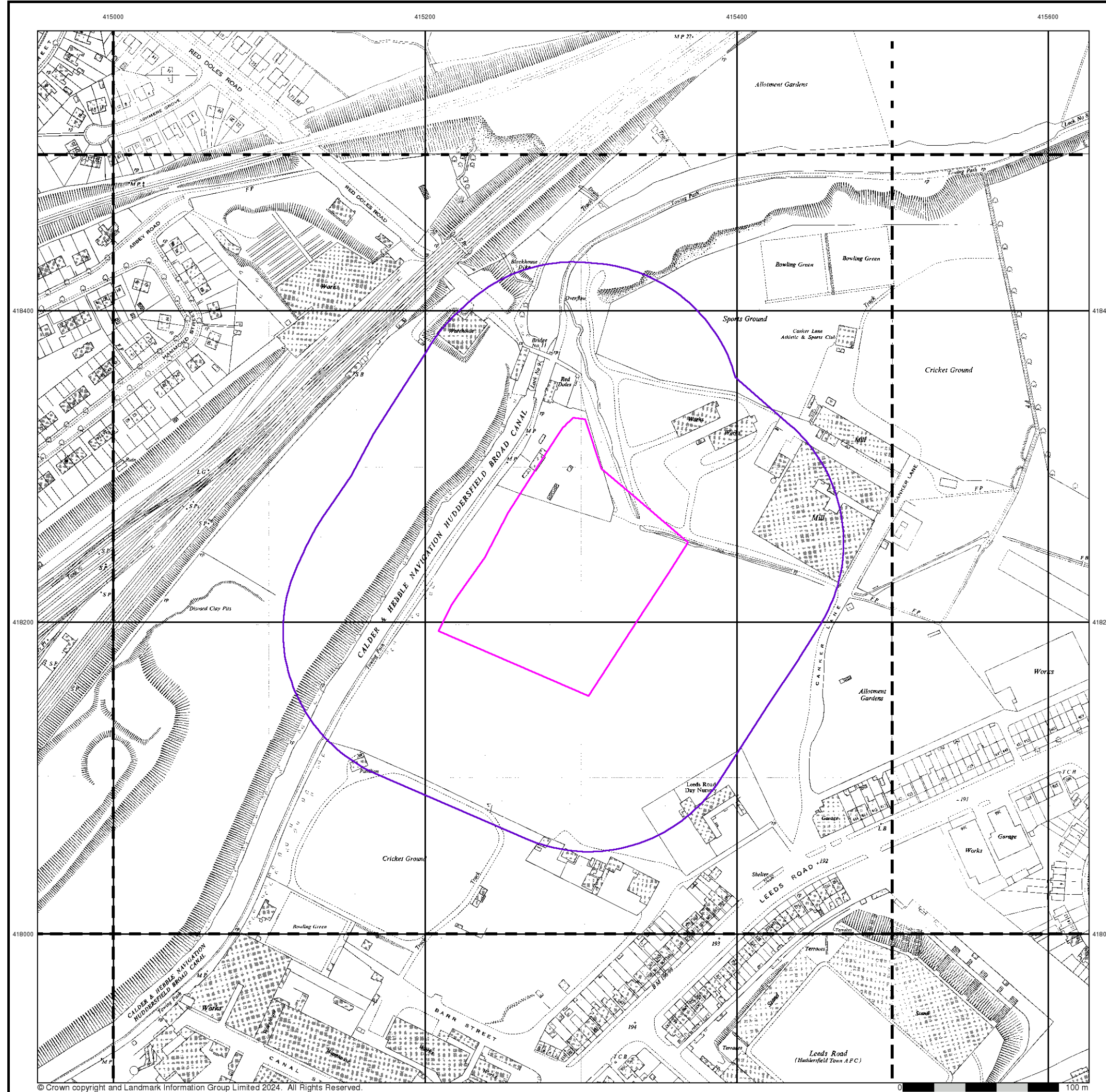


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Ordnance Survey Plan

Published 1959

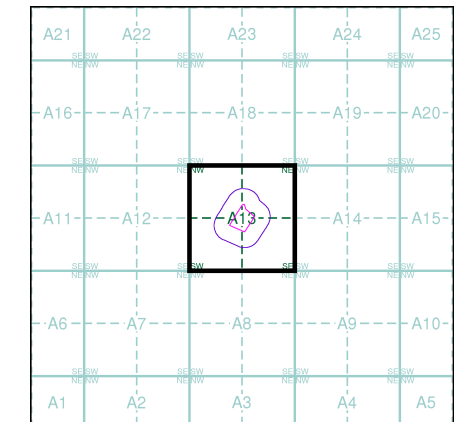
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

SE 1418 NE	SE 1518 NW	SE 1518 NE
1959	1959	1959
1:1,250	1:1,250	1:1,250
SE 1418 SE	SE 1518 SW	SE 1518 SE
1959	1959	1959
1:1,250	1:1,250	1:1,250
SE 1417 NE	SE 1517 NW	SE 1517 NE
1959	1959	1959
1:1,250	1:1,250	1:1,250

Historical Map - Segment A13



Order Details

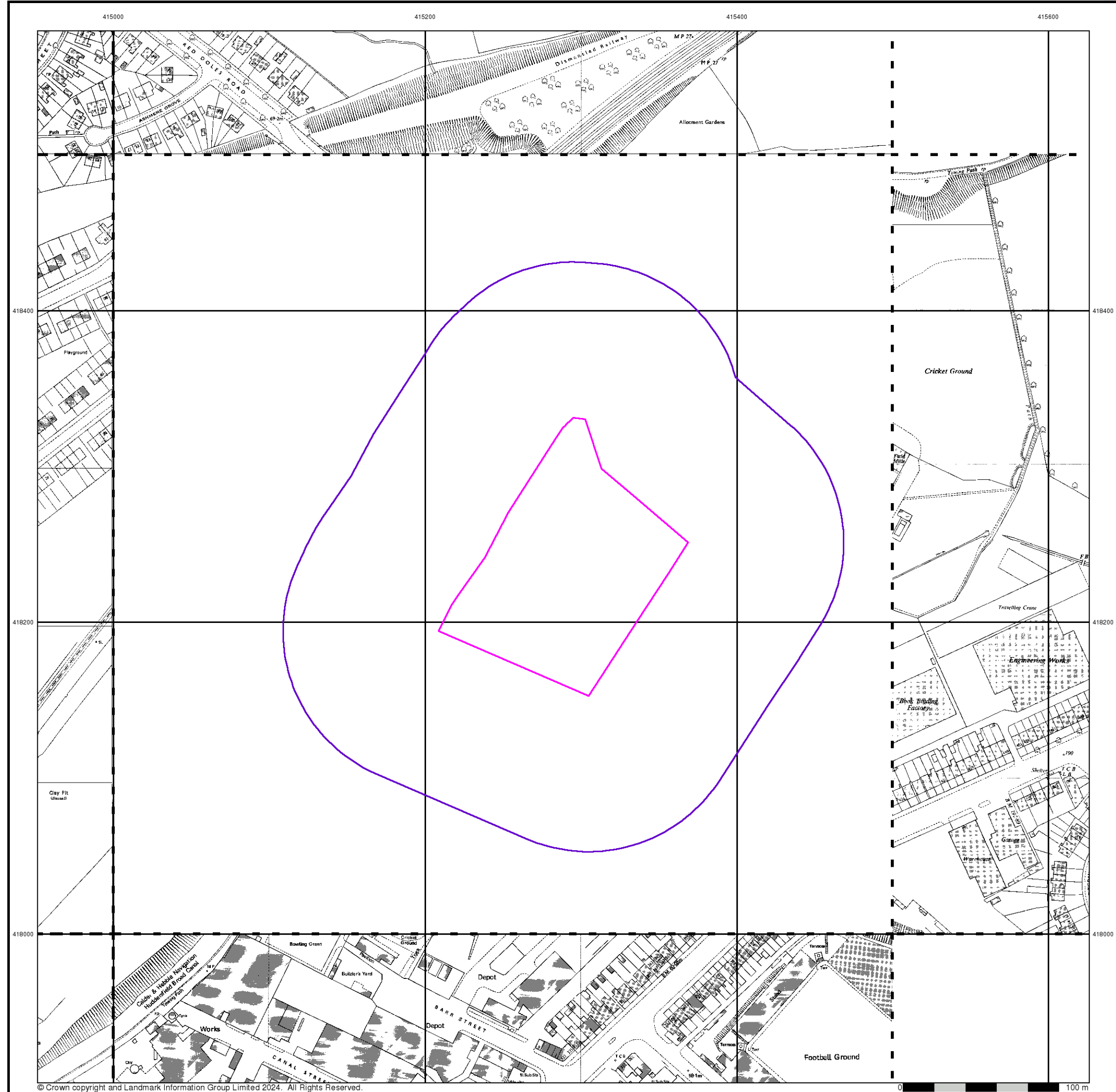
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Customer Ref: MYE/01
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Ordnance Survey Plan

Published 1969 - 1989

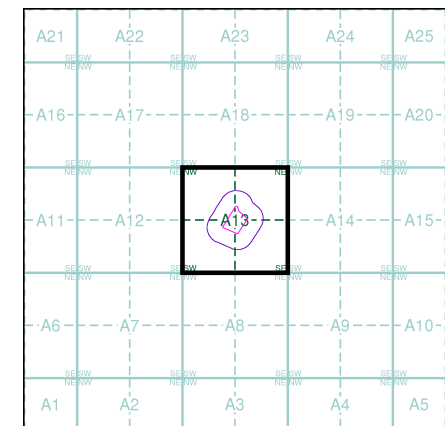
Source map scale - 1:1,250

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)

SE1418NE	SE1518NW
1973	1970
1:1,250	1:1,250
SE1418SE	SE1518SE
1989	1969
1:1,250	1:1,250
SE1417NE	SE1517NW
1982	1984
1:1,250	1:1,250

Historical Map - Segment A13



Order Details

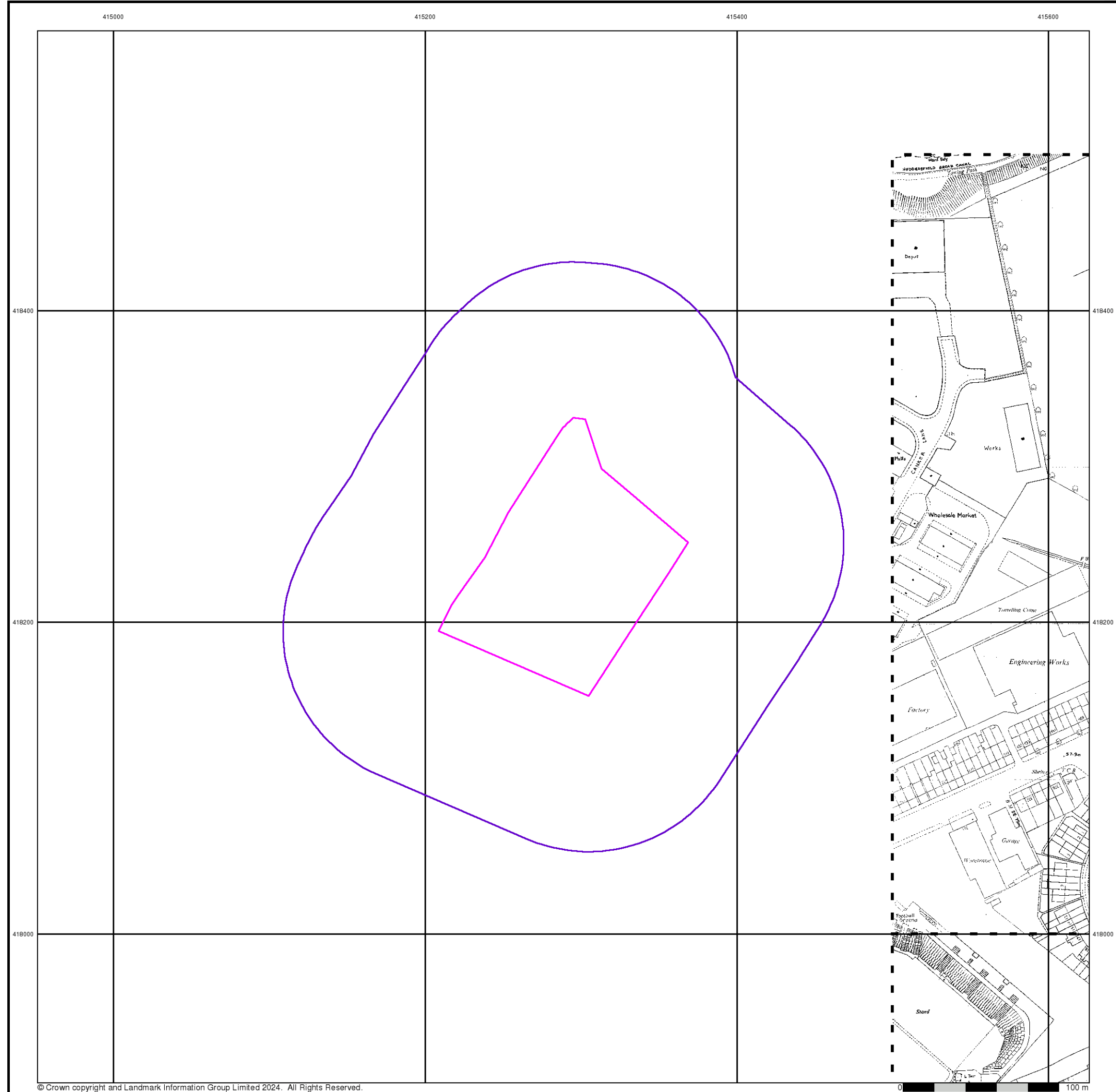
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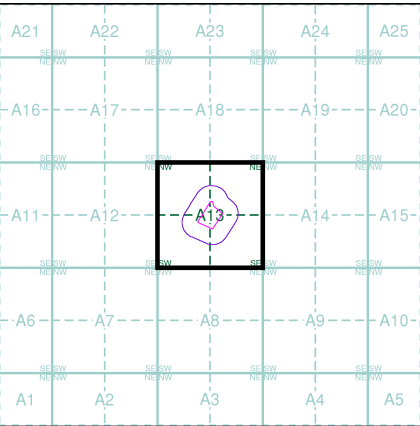
Additional SIMs
Published 1982 - 1992
Source map scale - 1:1,250

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.

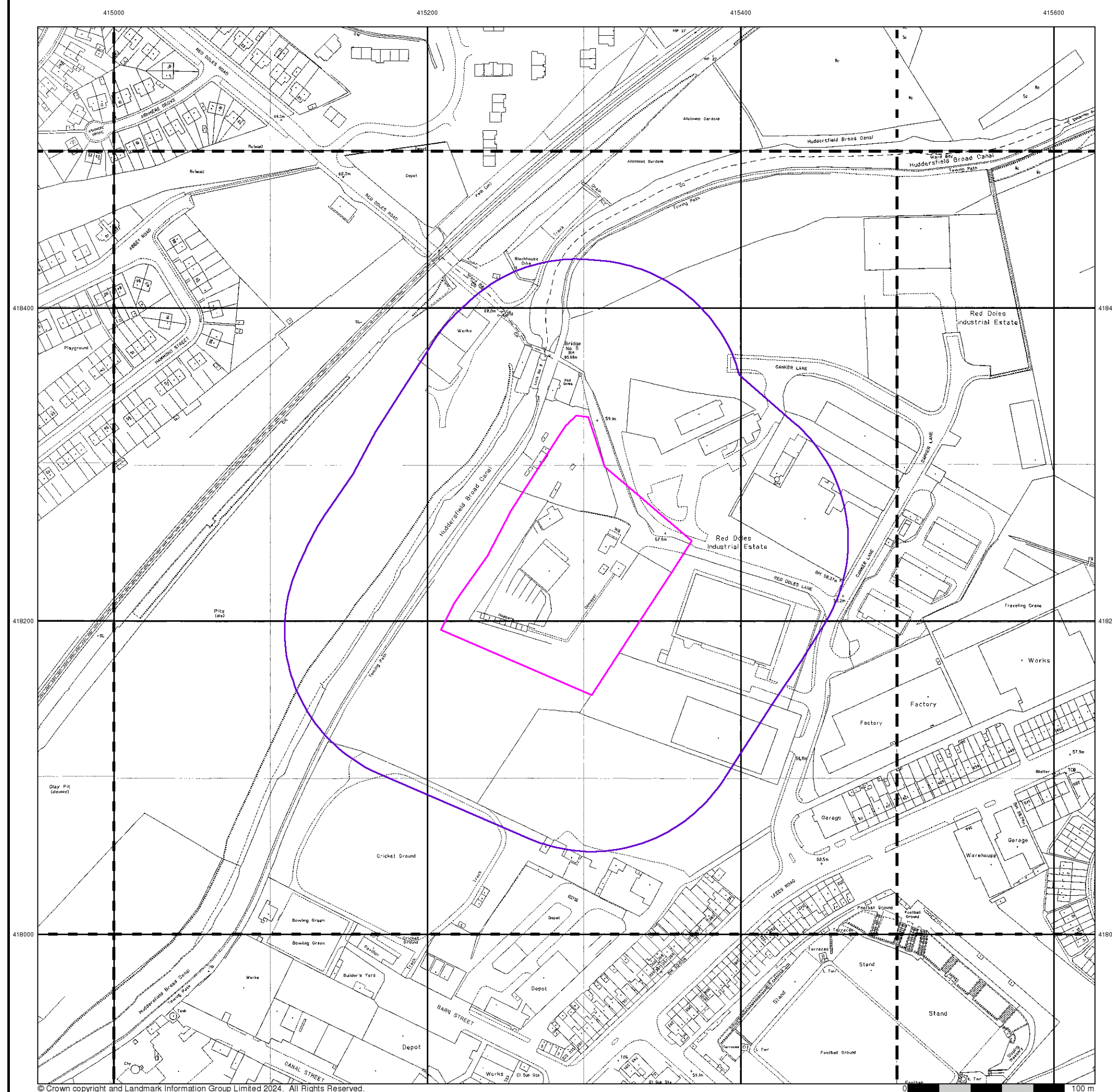
Map Name(s) and Date(s)

SE 1518SE
1992
1:1,250
SE 1517NE
1982
1:1,250

Historical Map - Segment A13



Order Details
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Slice: A
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Site Details
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Large-Scale National Grid Data

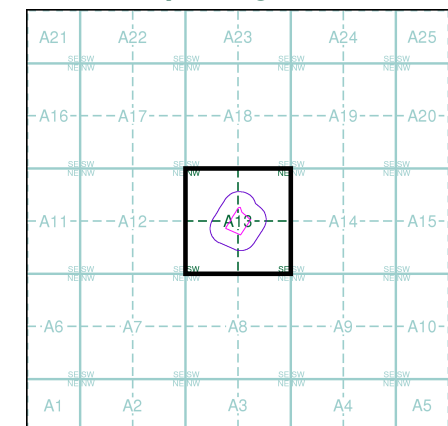
Published 1993

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

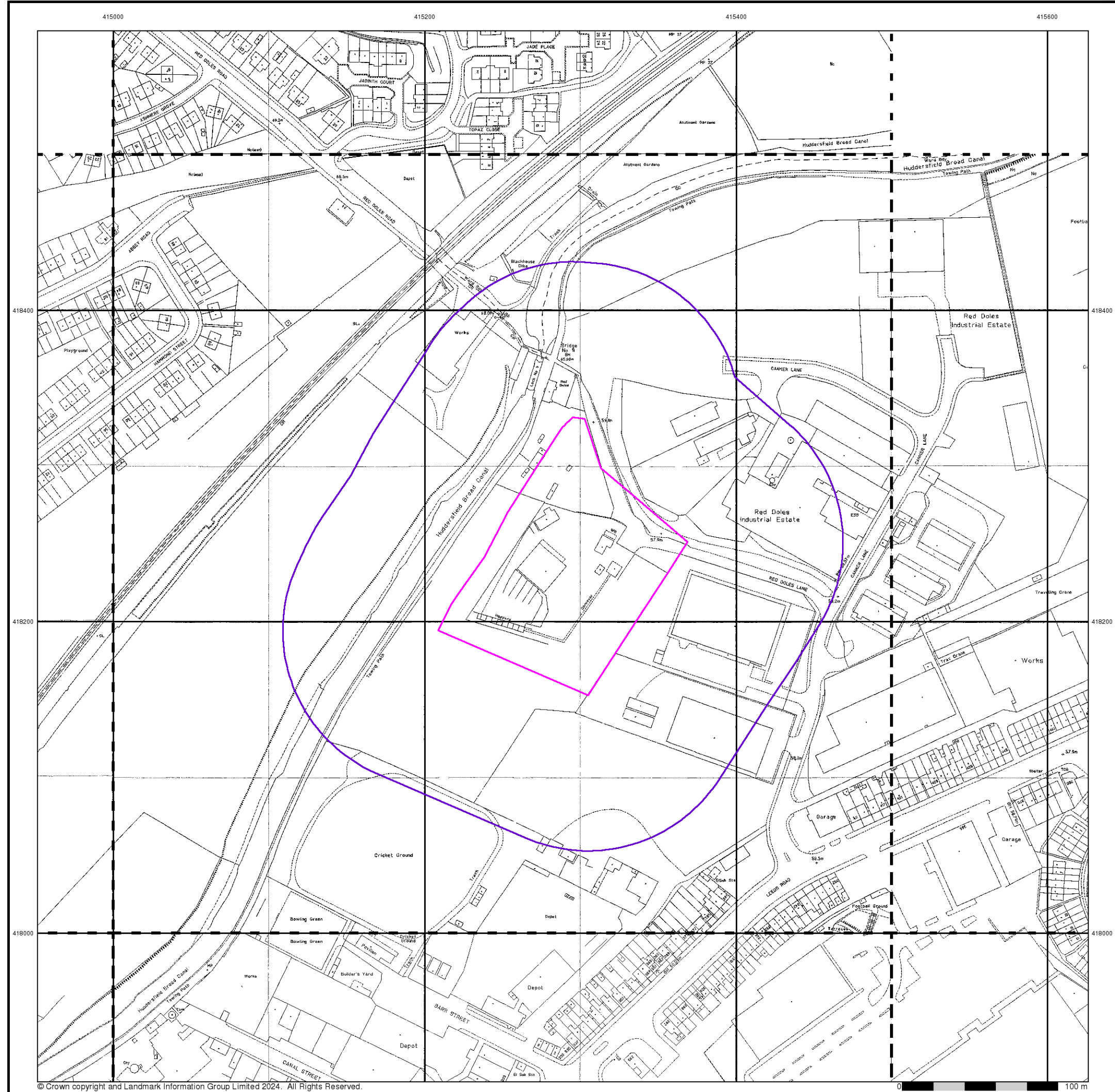
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National Grid Reference: 415290, 418240
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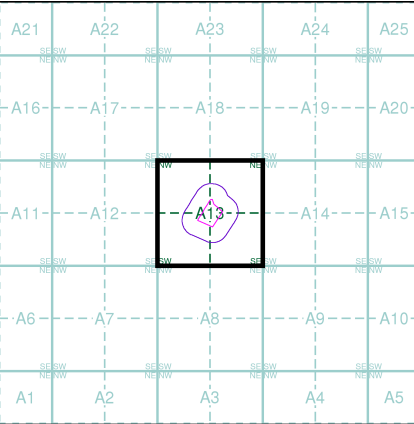
Large-Scale National Grid Data
Published 1993 - 1995
Source map scale - 1:1,250

'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)

SE1518NW	1993	1:1,250
SE1418SE	1993	1:1,250
SE1518SW	1993	1:1,250
SE1518SE	1995	1:1,250
SE1417NE	1993	1:1,250
SE1517NW	1995	1:1,250
SE1517NE	1995	1:1,250

Historical Map - Segment A13



Order Details

Order Number: 352939026_1_1
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Site Details

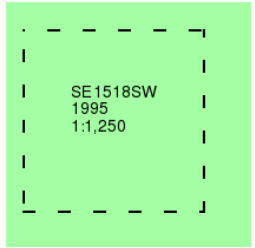
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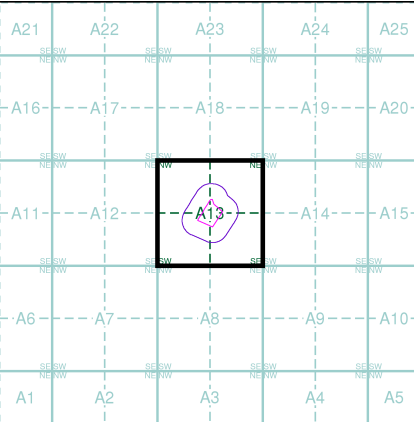
Large-Scale National Grid Data
Published 1995
Source map scale - 1:1,250

'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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Site Details

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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Osiers		Reeds		Marsh
	Mixed Wood		Deciduous		Brushwood
	Fir		Furze		Rough Pasture
	Arrow denotes flow of water		Trigonometrical Station		
	Site of Antiquities		Bench Mark		
	Pump, Guide Post, Signal Post		Well, Spring, Boundary Post		
	•285 Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		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

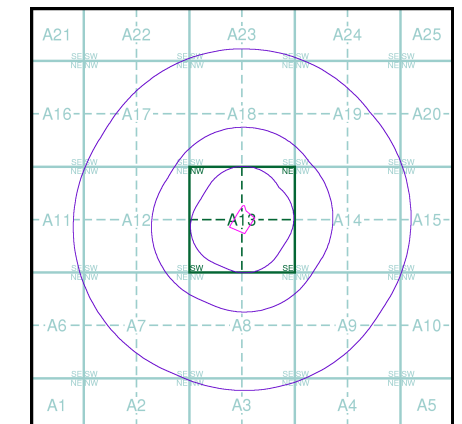


ARP GEOTECHNICAL LTD

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Yorkshire	1:10,560	1854	2
Yorkshire	1:10,560	1894	3
Yorkshire	1:10,560	1908	4
Yorkshire	1:10,560	1930	5
Yorkshire	1:10,560	1938	6
Yorkshire	1:10,560	1948	7
Ordnance Survey Plan	1:10,000	1956	8
Ordnance Survey Plan	1:10,000	1965 - 1966	9
Ordnance Survey Plan	1:10,000	1976 - 1978	10
Ordnance Survey Plan	1:10,000	1987 - 1989	11
10K Raster Mapping	1:10,000	2000	12
Street View	Variable		13

Historical Map - Slice A



Order Details

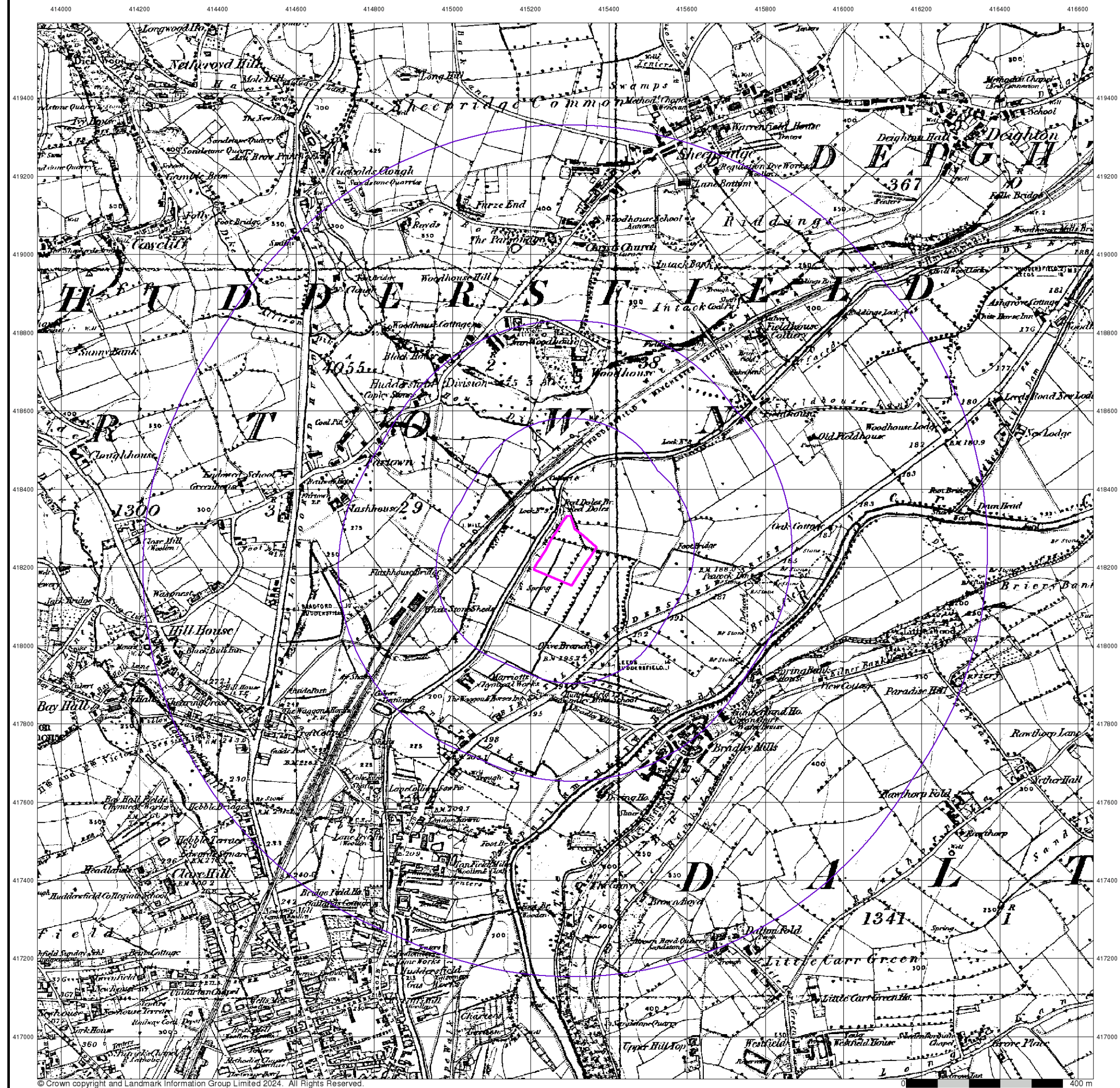
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Slice: A
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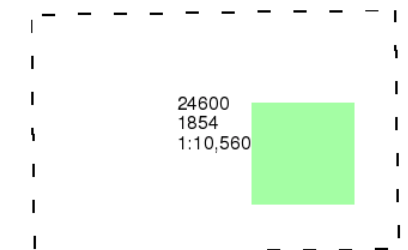
Yorkshire

Published 1854

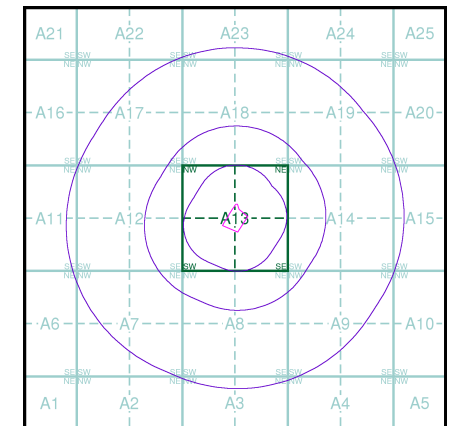
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A

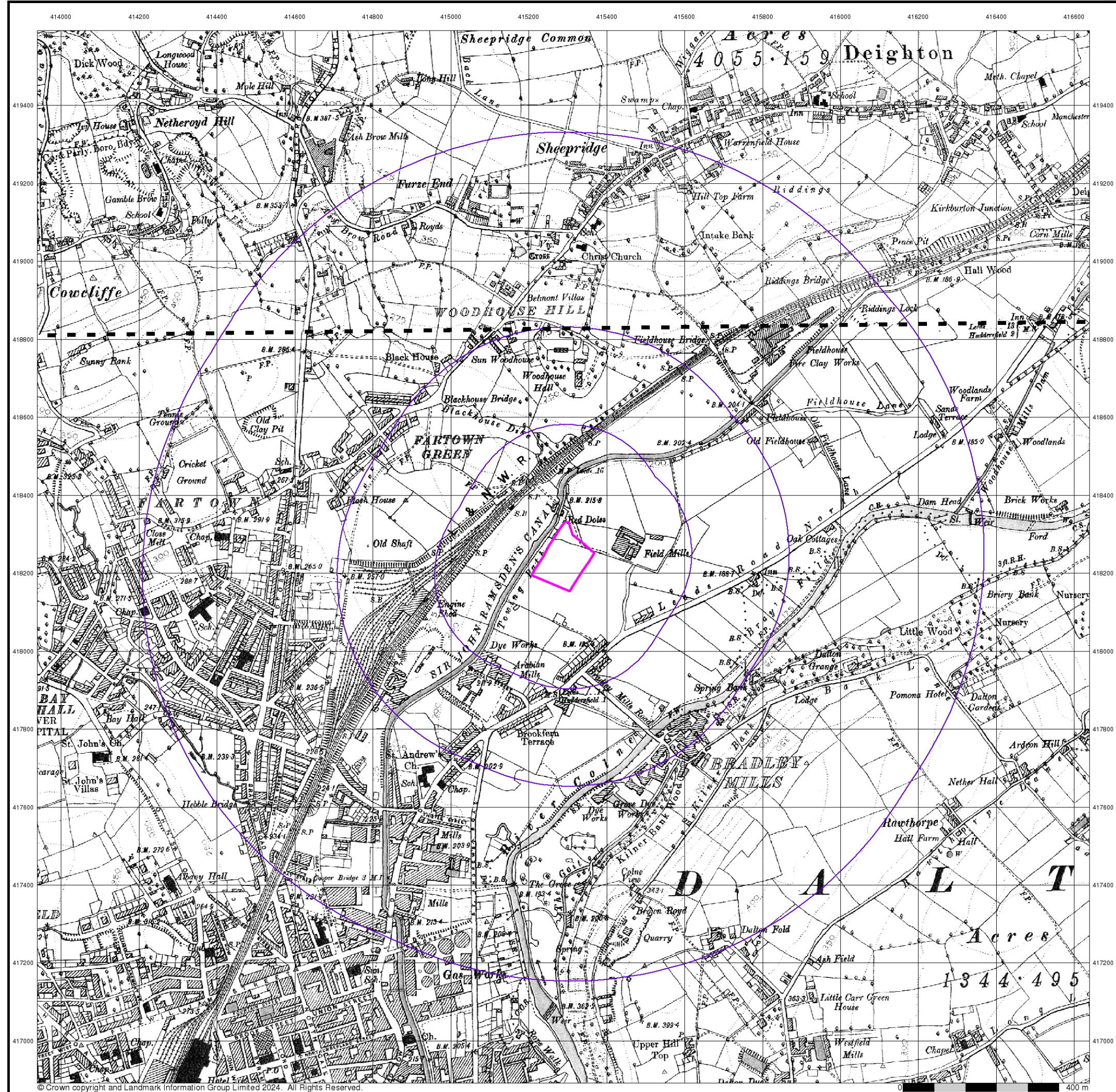


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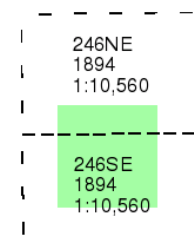
Yorkshire

Published 1894

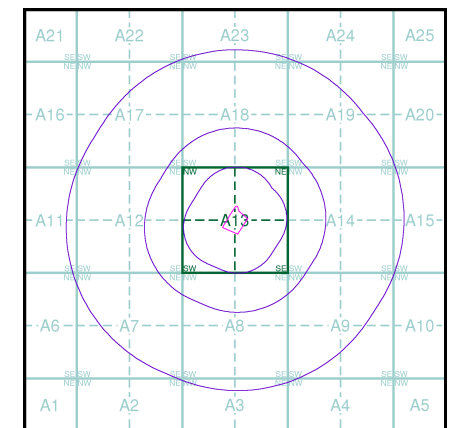
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

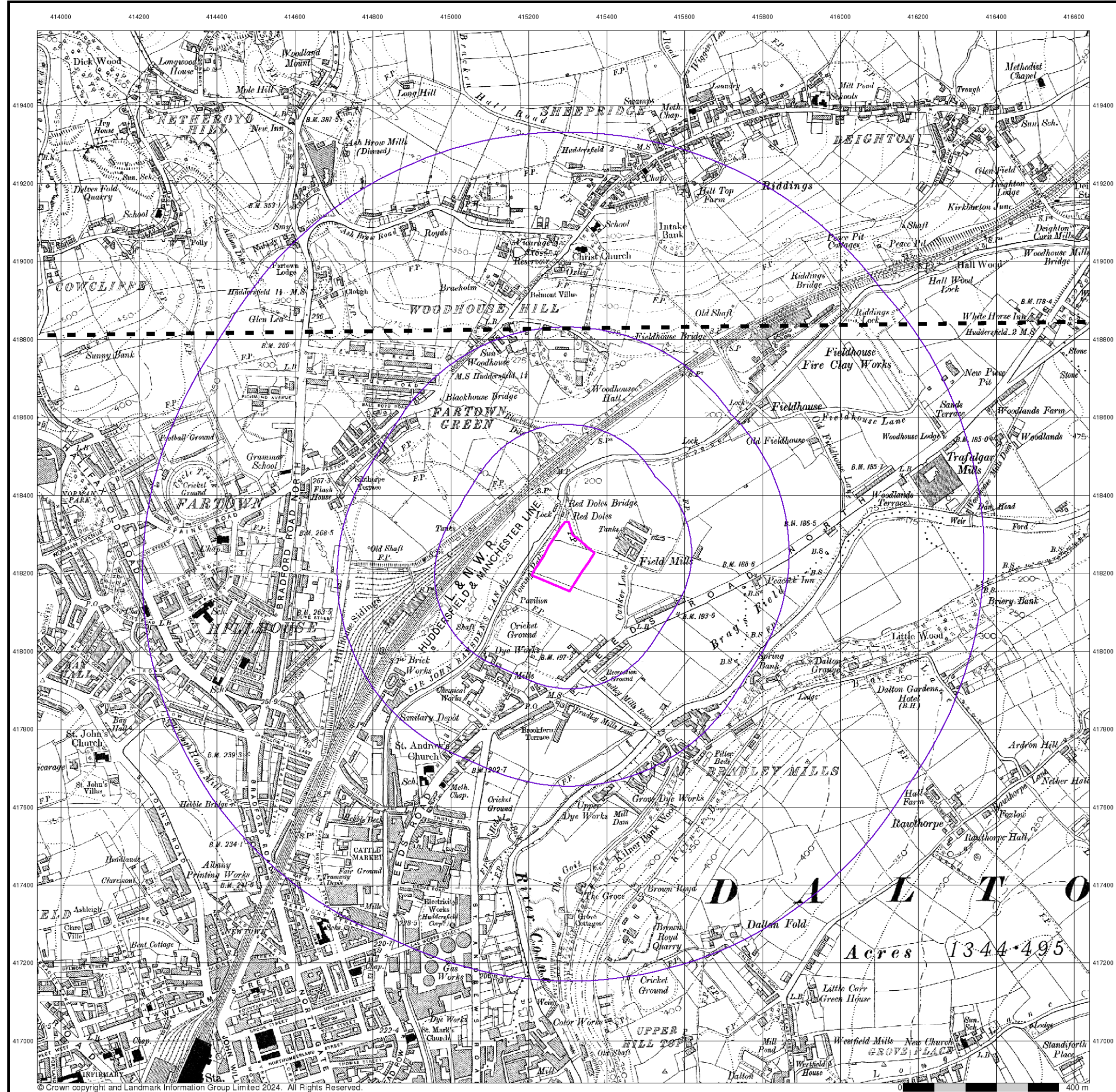
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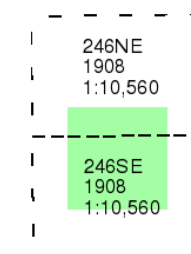
Yorkshire

Published 1908

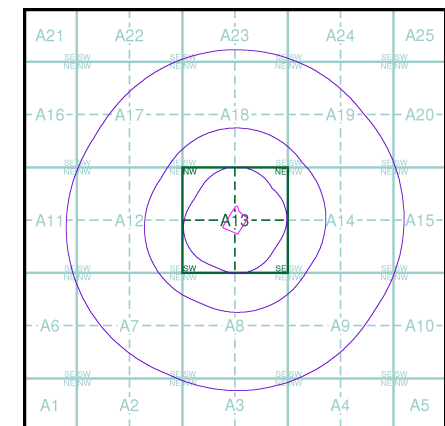
Source map scale - 1:10,560

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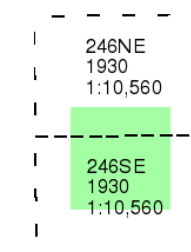
Yorkshire

Published 1930

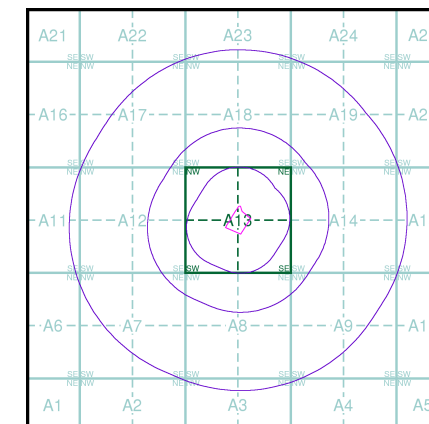
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