

HOUGH END LEISURE CENTRE, MANCHESTER

PHASE 1: PRELIMINARY RISK ASSESSMENT

Job Number: LKC 20 1488
Date: November 2020
Client: ISG



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1 Introduction

LK Consult Ltd (LKC) has been retained to carry out a Phase 1 Preliminary Risk Assessment (PRA) for Hough End Leisure Centre.

In accordance with current guidance (including LMRM¹ and the National Planning Policy Framework (NPPF)²), the PRA will include a site reconnaissance, site history, geology, hydrogeology, hydrology, mineral search and a landfill search. Information gathered from the desk study, site reconnaissance and a previous investigation undertaken by Coffey Geotechnics (Ref: 02108AA_R_003A_RS-FinalGIReport, dated November 2013) will be used to develop a contamination conceptual model for the site.

In addition, the information gathered will be used to identify potential geotechnical constraints associated with the redevelopment of the site.

Based on the findings of this report, an appropriate site investigation can be derived, if required.

Site details are provided in Table 1-1. Figure 1 shows the site location and Figure 2 shows the site boundary. Figure 3 shows the proposed development plan.

Site Location	Hough End Leisure Centre and playing fields, located off Princess Road, South Manchester in Chorlton-cum-Hardy. Centred at approximate National Grid Reference 383520E 393280N.
Approximate Area	30 Ha.
Topography	30-35 metres Above Ordnance Datum (AOD). Site sits higher in the north east in comparison to the west.
Current Site Use	Leisure centre, changing rooms block, associated car park, and playing fields.
Purpose of Report	Pre-planning.
Proposed Development	The construction of a two storey extension to the existing building built in 2013, the demolition of an existing changing block, the extension of the existing car park and the formation of a new over flow carpark formed using a 'grasscrete' type system.

Table 1-1: Summary of site details

¹ Land Contamination Risk Management (LCRM) <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>

² "National Planning Policy Framework." The Ministry of Housing, Communities and Local Government. February 2019.

2 Historical Review

2.1 Historical Map Review

In compiling the site history, LKC consulted Envirocheck historical mapping (Appendix B) and other public domain maps / aerial photography.

Table 2-1 summarises features on site.

Table 2-2 summarises potentially contaminative land uses within approximately 50m and potentially infilled features within approximate 250m.

Site Features	Location on Site	Dates Present		Comments
		From	To	
8no. Field boundaries	Whole site	1848	1923	8no. field boundaries across the site, NE-SW and NW-SE. No longer present by 1934 mapping.
Nursery	N	1848	Only	No longer present by 1894 mapping.
Red Lion Brook and embankment	N	1848	Present	Flowing from the E, presumably joining Chorlton Brook adjacent to the NW corner of the site.
4no. Ponds	Centre, SE	1848	1933	Central 2no. ponds annotated as marsh land by 1894 mapping. Only 2no. ponds in the E present by 1908 mapping. No ponds present by 1934 mapping.
Platt Brook	NW	1894	1933	No longer present by 1651-55 mapping.
Footpath	N	1894	1933	Footpath running north through the site. No longer present by 1951 mapping.
Aerodrome	N	1918	1924	Not present on historical mapping but known to have been present. See Section 2.2.
Cricket and Tennis Ground	W	1923	Only	No longer present by 1934 mapping.
Telephone Call Box	W	1934	1938	No longer present by 1955 mapping.
Houghend Playing Fields	Whole site	1934	Present	First annotated by 1934 mapping.
Housing estate	North section of the site	1951	1966	Associated roads. No longer present by 1975 mapping.
Small rectangular features	SW border	1951	1956	Unknown use.
Pavilion, Framley Road, and Car Park	E	1973	Present	
Sub Station	SE	1973	1992	No longer present on the 2000 aerial photo.
Sports Centre and Car Park	E	2020	Present	

Table 2-1: Summary of site features. Dates based on available historical map editions.

Surrounding Area Features	Distance (m)	Direction	Dates Present		Comments
			From	To	
7no. Ponds	100m, 150m, 120m, 120m, 180m, 200m, 20m,	SE, SE, SW, SW, S, S, E	1848	1923	No longer present by 1934 mapping.
Railway Lines	Adjacent, 95m	N, S	1894	Present	Manchester Central Station Line (north), Manchester South District Line (south). Renamed London and North Eastern Railway (north) and London Midland & Scottish railway (south) by 1938 mapping. South line dismantled by 1973 mapping. North line dismantled by 1993 mapping, presently infilled and replaced as a cycling /walking track. South line now used as metrolink line.
Allotment Gardens	50m	SE	1923	Only	No longer present by 1934 mapping.
Thirlmere Aqueduct	100m	NW	1923	Only	Only annotated on 1923 mapping however the aqueduct is still used today.
Surrounding Roads	Adjacent	N, NW, E	1934	Present	
Allotment Gardens	50m	S / SW	1934	Present	
Sports Ground and Pavilion	20m	SW	1934	1952	No longer present by 1983 mapping.
3no. Refuse Heaps	20m, 50m	W, N	1951	1952	Embankment still present by 1961 mapping. No longer present by 1982 mapping.
Allotment Garden	60m	NW	1951	1952	No longer present by 1961 mapping.
Garage	50m	NW	1999	Present	

Table 2-2: Summary of potentially contaminative features within approximately 50m and potentially infilled features with approximately 250m. Dates are based on available historical map editions.

2.2 Additional Historical Information

Not featured on the historical maps but known to the area was the Alexandra Park Airfield. This airfield was built and opened in May 1918 by the War Department for RAF aircraft built around Manchester, following the closure of the Trafford Park Aerodrome³.

The site was used by the military up until 1919 before being used by civilians. The first civilian flight in the UK after the first world war took place in 1919, taking 3 hours and

³ https://www.geocaching.com/geocache/GC7VZFM_alexandra-park-aerodrome?guid=2c2ebe61-9ffc-4f47-82e2-2031b75c624c

40 minutes and carrying 10 passengers to London. From here, daily internal flights would take place between Manchester and Croydon.

Plate 2-2- shows an aerial photo of the site taken in 1923. The site was then demolished in August 1924. Today, the site is used occasionally by Hough End Model Aircraft Club and Greater Manchester Police Helicopters frequently land on the playing fields.⁴

From the photos provided it appears the airfield was partly on the north of the site, close to Hough End Crescent and Chorlton Brook.

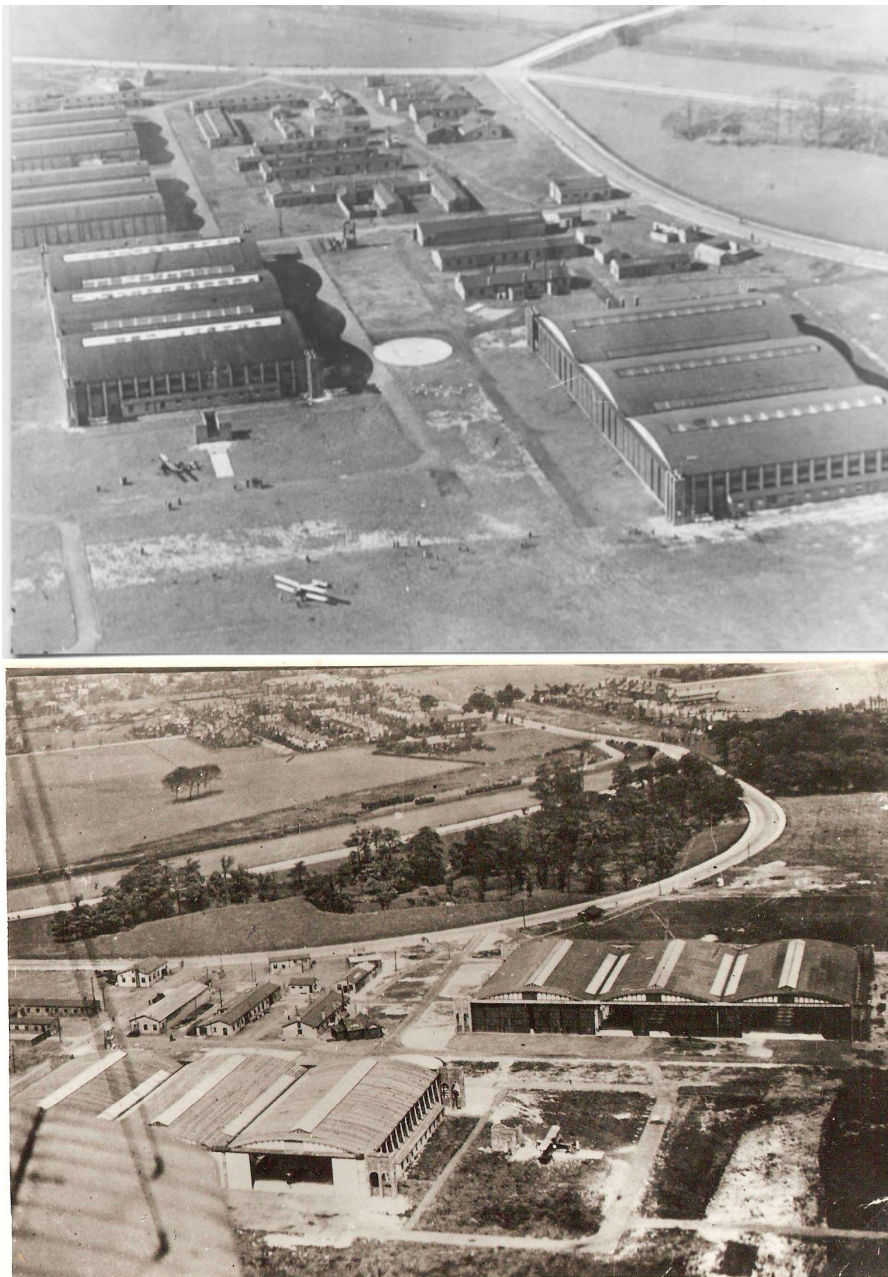


Plate 2-2. Aerial Photos of Alexandra Park Airfield - 1923 (top)⁴ and a personal photo from Nora Templar who lived in Doghouse Farm.⁵

⁴ <https://forgottenairfields.com/airfield-alexandra-park-1024.html>

⁵ <https://chorltonhistory.blogspot.com/2020/05/when-we-had-our-aerodrome.html>

3 Previous Work

A ground investigation report (Ref: 02108AA_R_003A_RS-FinalGIRReport, dated November 2013) has previously been undertaken by Coffey Geotechnics and is summarised below.

3.1 Previous Investigation

An intrusive investigation was carried out between 30th September and 4th October 2013. The investigation included:

- 4no. cable boreholes to depths of 3.10-5.50mbgl.
- 7no. trial pits to depths of 2.40-3.10mbgl.
- Falling head tests in 3no. of the boreholes.
- Soakaway tests in 2no. of the trial pits.
- Plate bearing tests at 0.45mbgl at 4no. trial pit locations.
- Leachate testing.
- Soil and Groundwater sampling.
- Gas Monitoring (4no. visits over 1 month).

Ground conditions comprised:

- Topsoil in landscaped areas to 0.40mbgl.
- Made ground encountered between 0.40 and 0.90mbgl (sandy gravelly clay with ash, clinker, concrete, brick, glass, tarmac, metal and wood). No evidence of gross contamination was observed.
- Glaciofluvial Sheet Deposits between 1.10 and >2.40mbgl (loose-medium dense variably gravelly sand / variably sandy silt).
- Glacial Till between 1.30 and 2.70mbgl (firm to stiff variably sandy / gravelly clay).
- Weathered sandstone at the base of all locations 2.40-5.50mbgl (except 2no. trial pits) recovered as gravelly sand.

Groundwater was encountered at a depth of 1.92-2.83mbgl during monitoring, and 0.70-5.00mbgl during the site investigation.

3.2 Contamination Assessment

Soil results were compared to SGVs, LQM/CEIH, EIS/AGS/CL:AIRE and US EPA screening values. Within the made ground and natural samples, no samples were identified above commercial assessment criteria. Asbestos (chrysotile) was identified in one sample at 0.30m depth.

Slightly elevated chromium and lead was identified in the leachate testing however were below freshwater GACs and therefore not considered to pose a significant risk to controlled waters.

The minimum and maximum pH was between at 6.6 – 8.7 and water-soluble sulphate between <1.5 mg/l and 69 mg/l. Groundwater samples contained soluble sulphate concentrations ranging from 30 to 53 mg/l and pH of 7.3 to 7.4. Sulphate results were classed as DS-1 and AC-1 for the Design Sulphate Class and ACEC Class.

Gas monitoring recorded maximum concentrations of carbon dioxide and methane as 6.3%v/v and 0.1%v/v respectively. Maximum flow was recorded as 2.0l/hr. A worst-

case gas screening value of 0.052/hr was calculated, characterising the site as Characteristic Situation 2 / low risk.

A detailed Unexploded Ordnance (UXO) Assessment was also recommended.

4 Environmental Setting

A summary of environmental settings is presented in Table 3-1, based on a review of available environmental data.

Categories (data sources)		Details
Geology ^{1, 2, 3}	Artificial	- None recorded.
	Superficial	- Glaciofluvial deposits (sand and gravel) across the majority of the site. - Shirdley Hill Sand Formation (sand) is present in the NE of the site. - Alluvium is present in the NW of the site around the Chorlton Brook.
	Bedrock	- Wilmslow Sandstone Formation is present across the whole site,
	BGS Logs (<50m)	- None.
Hydro-geology ¹	Aquifer Designation	- Superficial - Bedrock
	Source Protection Zone (SPZ)	- Secondary A Aquifer. - Principal Aquifer.
	Groundwater Abstractions (100m)	- Site not within an SPZ.
		- None.
Hydrology ¹	Surface Water Courses (100m)	- Red Lion Brook on site (north), flowing NW to Chorlton Brook - River Quality B.
	Flooding risk	- Low risk to the west of the site.
	Surface Water Abstractions (100m)	- None.
	Discharge Consents	- 2no on site – storm sewage overflow of Chorlton Brook. - 1no 57m W – sewage effluent to unnamed receiving groundwater.
	Pollution Incidents	- 2no incidents on site: - Year: 1998. - Pollutant: Other organic chemicals and raw water caused by river works. - Severity: Category 3 Minor Incident. - Receiving water: Chorlton Brook
Minerals & Mining ^{1,4,5}	Coal Mining	- Not within a Coal Reporting Area. - Not within a Development High Risk Area.
	Surface Mineral Extractions (250m)	- None.
	Cheshire Brine Compensation District	- Not within Compensation District. - Not within Consultation Area.
	Non-Coal Mining Area	- Not within an area of conclusive metalliferous mining.
Ground Stability ¹	Collapsible Ground	- No to very low hazard.
	Compressible Ground	- No to moderate hazard. Moderate in N & NW.
	Ground Dissolution	- No hazard.
	Landslide	- Very low hazard.

Table 3-1: Summary of the environmental setting.

Notes: Distance in brackets is the distance from site that features are included. Where no distance given, features relate to on site only.

Data Sources:

1 Envirocheck Report (Appendix A & B).

2 BGS Sheet 86 1:50,000.

3 BGS GeoIndex <http://mapapps2.bgs.ac.uk/geoindex/home.html>

4 The Coal Authority Web Mapping Services (WMS) /

Interactive Map Viewer <http://coal.decc.gov.uk/en/coal/cms/publications/data/map/map.aspx>

5 Cheshire Brine Subsidence Compensation Board Compensation District & Consultation Areas <http://www.cheshirebrine.com/wp-content/uploads/2016/11/NL08134-001-002.pdf>

Categories ^(data sources)		Details
Ground Stability continued ¹	Running Sand	- Very low to low hazard.
	Shrinking / Swelling Clay	- No to very low hazard.
Landfill Sites (250m) ¹	Known / Registered	- None.
	Potentially Infilled Land (non-water and water), based on Envirocheck Report	- 16no. features, all water. - 4no. on site, 12no. offsite: 3m E, 54m N, 75m N, 117m SE, 130m SW, 152m N, 161m S, 173m W, 187m NE, 204m S, 211m NE, 232m NW.
	Potentially infilled sites, based on LKC historical review	- 22no. features: See Table 2-1.
Radon Potential ¹		- <1% of homes above Action Level. No protective measures are necessary in the construction of new dwellings or extensions.
Designated Sites (50m) ¹		- None.
Contemporary Trade Directory (50m) ¹		- 1no. active: - 44-46m N Texaco Petrol Filling station, Active.
Fuel Station Entries (50m) ¹		- 44-46m N Texaco Petrol Station.
Unexploded Bomb Risk (UXO) ⁶		- Moderate. - Pre-Desk Study Assessment recommended Detailed Desk Study for UXO.

Table 3-1 (cont.): Summary of the environmental setting continued.

Notes: Distance in brackets is the distance from site that features are included. Where no distance given, features relate to on site only.

Data Sources:

1 Envirocheck Report (Appendix A & B).

6 Zetica UXO Unexploded Bomb Pre Desk Study Assessment (Appendix C).

5 Site Reconnaissance

A site reconnaissance was carried out on 16 November 2020. Hand dug trial holes were undertaken in accessible areas to confirm the shallow ground conditions.

Relevant features identified on site are summarised below:

- » Site is accessed through a car park off Princess Road. It is open access to members of the public.

5.1 Car Park and Leisure Centre

- » The car park and leisure centre are present in the east of the site. The car park was in good condition with no spillages or leakages seen (tarmac in good condition). The main entrance to the leisure centre was off the car park. The leisure centre was not accessed at the time of the walkover. Services including water and electricity present at the entrance of the building and along the east wall of the building. An electricity substation was present in the north of the car park.
- » An abandoned building was present west of the car park. This was previously used as changing rooms and a chimney like structure was noted, presumably where old water tanks were located. This building was not accessed at the time of the walkover as it has been declared unsafe. Asbestos was anecdotally said to be present within the building.

5.2 Playing Fields

- » The rest of the site comprising an open playing field with some line paint and multiple posts present across the site. An assault course was present in the north of the site fenced off with heras fencing.
- » A mound was present in the centre / north of the site.
- » A change in ground cover was noted in the north of the site, from uniform field grass to rough long grass land, adjacent to Hough End Crescent, in the location of the previous airfield.
- » Embankments were present on the north west border of the site. An electricity substation was also present in the northwest of the site, looking to be in good condition. Flood lights were also present in this area of the field. At the time of the walkover helicopter stunts were taking place in this area.
- » Mature trees were present around the edge of the remainder of the site and in the north west of the site.
- » Red Lion Brook runs through the north of the site and sits approximately 2mbgl with mature trees either side of the banks and 3no. bridges noted to cross over it. No evidence of surface water contamination was observed.
- » The metrolink line is present adjacent to the southwest of the site; in the north west it is at the same level but in the south sits below ground level. Possible Japanese Knotweed noted to be present next to the fence along the line. An electricity sub station is also present which looks in good condition.
- » No evidence of contamination identified.

The surrounding area comprises residential properties, and a metrolink line in the south.

Relevant photographs are provided in Plate 5-1.



Plate 5-1: Site photographs.



Plate 5-1: Site photographs.

Hand dug pits were carried out in 2no. locations and are summarised in Plate 5-2.

HD101	HD102
GL - >0.5m: Topsoil (gravelly silty sand with frequent rootlets).	GL - 0.5m: Made Ground (silty gravelly sand with occasional brick, pottery, clinker).

Plate 5-2: Hand Dug Pit Logs.

6 Preliminary Conceptual Model

6.1 Introduction

The aim of the conceptual model is to provide a preliminary assessment of the likelihood of a pollutant linkage for each potential combination of contaminant, pathway and receptor. A conceptual model can be used to make an informed decision on the contamination risks associated with the site and whether further site investigation work is required.

The Sections below are therefore divided into potential contaminant, potential pathway and potential receptor as described in LMRM⁶, on the premise that, if there is no pollutant linkage, then there will be no risk to the receptor. The final Section provides an assessment of the potential pollutant linkages that may still be present on the site if redevelopment were to occur.

6.2 Potential Contaminants

Potential viable contamination sources are detailed in Table 6-1. These are split into onsite sources, offsite sources and underlying geology.

Potential Source	Contaminants
On Site	
Made Ground below some or all of the site (possibly in the north under demolished housing estate)	- Demolition rubble, ash and clinker: Asbestos, heavy metals, sulphates, PAHs⁷. - Other fill material sources: Unknown organic / inorganic compounds. - If organic / putrescible material: Hazardous gas (principally carbon dioxide and methane).
Agricultural fields, pastoral (sheep, dairy)	- No significant contamination source anticipated within the fields.
Airfield (northwest of the site)	- Metals and semi-metals, inorganic chemicals including cyanide. Main processes: Fuelling of aircraft using aviation kerosene, gasoline, and diesel. De-icing operations chemicals – glycol, urea and acetate-based formulations. Servicing and maintenance. Solvents for cleaning. - Possible substation and transformer on site.
Former changing rooms	- Demolition rubble, ash and clinker: Asbestos, heavy metals, sulphates, PAHs⁸. - Asbestos Containing Material (ACM).
Car park	- Assuming hardwood surface and no signs of spills / leaks on the site surface: No significant contamination source anticipated.
Old electricity substation (pre 1980s)	- Polychlorinated biphenyl (PCBs) and transistor oils.
Surrounding Area	
Adjacent railway line ⁹	- PAH fall out. - Herbicides (unlikely to be a significant source).
Adjacent allotments	- Not considered to be a significant source.
Landfills / offsite potentially infilled features within 250m	- Given size, distance and age of features, there is considered to be a source of hazardous gas (principally carbon dioxide and methane).

Table 6-1: Potential contamination sources.

⁶ Land Contamination Risk Management (LCRM) <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>

⁷ Defra (2002). "Potential Contaminants for the Assessment of Land". R&D Publication CLR 8.

⁸ Defra (2002). "Potential Contaminants for the Assessment of Land". R&D Publication CLR 8.

⁹ Department of the Environment Industry Profile – Railway Land (1995).

6.3 Potential Receptors

Potential receptors are detailed in Table 6-2.

Receptors	
Human Health	- Future site users (including residents, visitors and site workers). - Offsite land users. - As the proposed development is for commercial use, the most sensitive receptors (children) have not been included in this assessment.
Controlled Waters	- Red Lion Brook on site, leading to Chorlton Brook. - Principal (bedrock) and Secondary A Aquifer (superficial).
Buildings and structures.	
Potable water pipes.	
Flora within future gardens and landscaping.	

Table 6-2: Potential receptors.

6.4 Potential Pathways

Potential pathways are detailed in Table 6-3.

Pathways		
Soil	Human Health ¹⁰ (commercial land use with soft landscaping)	- Ingestion of soil. - Ingestion of soil-derived indoor dust. - Dermal contact with soil. - Dermal contact with soil-derived indoor dust. - Inhalation of soil-derived outdoor dust. - Inhalation of soil-derived indoor dust. - Inhalation of vapours outside. - Inhalation of vapours inside.
		- Omitted: ingestion of contaminated vegetables and ingestion of soil attached to vegetables.
		- Windblown dust and fibres to adjacent receptors.
		- Direct contact with receptors (building foundations, services).
Water		- Root uptake.
		- Surface run-off over impermeable surfaces (e.g. car park). - Site is predominantly flat and grassed; therefore, surface run-off will be limited.
		- Infiltration into the ground, through potentially contaminated material (contamination possibly going into solution). - Site is predominantly flat and grassed; therefore, infiltration is likely.
Water and Gas		- Migration through potentially permeable strata and preferential pathways. - Superficial (sand and gravel) is likely to be relatively permeable. - Bedrock (sandstone) likely to be relatively permeable. - Preferential pathways: services.
Gas		- Migration into buildings (e.g. via services) and accumulation of gases in confined spaces (potentially causing explosion if methane is present).

Table 6-3: Potential pathways.

6.5 Preliminary Contamination Conceptual Model

The Preliminary Contamination Conceptual Model is illustrated in Table 6-4 and has identified seven generic potential pollutant linkages.

¹⁰ EA (2008). "Updated Technical Background to the CLEA Model". Science Report – SC050021/SR3.

Each linkage is described along with an assessment of the risk based upon guidance on probabilities and consequences outlined in CIRIA C552¹¹.

In order to assess the potential risk for each pollutant linkage, an assessment of the magnitude of the potential consequence (severity) of the risk occurring and the magnitude of the probability (likelihood) of the risk occurring has been considered and classified. This is based on the guidance provided in CIRIA C552 and further details including a risk matrix is provided in Appendix D.

Where LKC identified a low to very low risk, targeted or low density intrusive investigation work, a watching brief (during construction work) or no investigation work will be recommended. This will be dependent on the nature of the site and the proposed development.

Where the risk falls into the moderate/low risk, LKC will undertake an assessment to establish what category the pollutant linkage will fall into (i.e. moderate or low risk will be chosen).

Where LKC identifies a moderate or higher risk, intrusive investigation work or precautionary remedial measures will be recommended.

It should be noted that there may be risk from short term exposure from contaminated soil to site workers. The Preliminary Contamination Conceptual Model deals with long term exposure to key receptors. Acute risks can be easily mitigated by good environmental management of the site during site works. Standard health and safety precautions (as per HSE guidance¹²) should be adopted by all workers involved with site enabling and construction works. Therefore, this receptor is not considered in the contamination conceptual model.

¹¹ CIRIA (2001). "Contaminated Land Risk Assessment: A Guide to Good Practice". C552.

¹² HSE (1991). "Protection of Workers and the General Public During Development of Contaminated Land". London HMSO.

PL	Pathway	Receptor	Contaminants of Concern (CoC)	Probability	Consequence	Risk	Recommendations
1	- Dermal contact. - Inhalation of soil, fibres and dust. - Ingestion of soils, dust. - Windblown dust.	- Future site users. - Offsite receptors.	- Heavy metals. - PAHs. - Petroleum hydrocarbons. - PCB's - Other inorganic and organic contaminants.	Likely (given site history, site conditions and proposed end use)	Medium	Moderate	Intrusive investigation required. Soil analysis of CoC.
2	- Inhalation of vapours. - Migration via permeable strata and preferential pathways.	- Future site users. - Offsite receptors.	- Volatile contaminants (TPHCWG, SVOC, VOCs).	Low Likelihood (given site history, site conditions and proposed end use)	Medium	Moderate / Low	Intrusive investigation required, to include PID testing. Soil analysis of CoC.
3	- Inhalation of gas. - Migration via permeable strata and preferential pathways. - Explosion in confined spaces. - Exposure to radon.	- Future site users. - Buildings. - Offsite land users.	- Ground / hazardous gas (carbon dioxide, methane).	Likely (given viable gas source and viable pathway)	Severe	High	Gas monitoring required. Monitoring of boreholes from previous investigation.
			- Radon	Unlikely (as <1% of homes above action level)	Medium	Low	(<1%) No protective measures are necessary in the construction of new dwellings or extensions.
4	- Surface run-off. - Migration via permeable strata and preferential pathways. - Perched waters migration.	- Groundwater (Principal Aquifer, Secondary A Aquifer). - Surface water (Red Lion Brook, Chorlton Brook).	- Mobile contaminants such as metals, PAHs, hydrocarbons, volatile compounds.	Likely (mobile contamination anticipated with possible pathway)	Medium	Moderate	Intrusive investigation required. Groundwater sampling. Analysis for CoC.
5	- Sulphate attack on concrete.	- Building structure.	- Sulphate.	Low Likelihood (given site history, site conditions and proposed end use)	Mild	Low	Intrusive investigation required. Soil analysis of CoC. Results of previous investigations indicate an AC-1 and DS-1 classification.
6	- Ingestion of tainted water supply.	- Future site users. - Water pipes.	- Organic contaminants such as petroleum hydrocarbons, naphthalene, volatile compounds.	Low Likelihood (although some contamination may be present, significant contamination not expected at pipeline depth)	Medium	Moderate / Low (low risk assumed given anticipated limited made ground and contamination)	Intrusive investigation required. Soil analysis of CoC.
7	- Direct contact (plant uptake).	- Flora.	- Phytotoxic contaminants such as heavy metals.	Likely (given site history, site conditions and proposed end use)	Minor	Low	Intrusive investigation required. Soil analysis of CoC.

Table 6-4: Preliminary Contamination Conceptual Model.

Notes: PL = Pollutant Linkage. Contaminant of Concern (CoC) - See Table 6-1 for contamination sources. Site conditions based on observations during site reconnaissance.

7 Preliminary Geotechnical Risk Assessment

Table 7-1 summarises the possible geotechnical constraints of the site, based on the site history, environmental settings and site reconnaissance. Investigation work will be required to confirm the risks and provide a detailed geotechnical assessment and foundation design.

Slope Stability	Site is relatively flat. No significant slope stability risk anticipated. No further assessment required.
Envirocheck Ground Stability Hazards	Moderate Risk identified for Compressible Ground. Further action may be required. No to low hazard identified on the majority of the site. No further action required.
Made Ground	Unknown depth and constituent of made ground across the site. Initial information indicates relatively deep made ground. Possible in-ground structures from previous developments.
Field boundaries	Possible former hedges / trees / ditch resulting in increased likelihood of roots, organic material, shallow made ground.
Superficial	Unknown strength of soils for foundation design. Sand anticipated below the site. Strata may be variable giving differential settlement.
Bedrock	Strength and extent of weathering unknown. Unknown depth to bedrock.
Groundwater	Unknown depth and variability of groundwater. Shallow / fluctuating groundwater can affect the strength of the soil, particularly in granular ground. Shallow groundwater can also affect construction works.
Plasticity	Plasticity of clay deposits should be confirmed, particularly where trees are present or proposed, to identify the shrink / swell risk. Clay recorded on site in the previous Coffey Report Ref 02108AA_R_003A_RS-FinalGIReport.
Sulphate	Sulphate mentioned in Coffey Report Ref 02108AA_R_003A_RS-FinalGIReport under section 3-2 and classed as DS-1 and AC-1 for the Design Sulphate Class and ACEC Class.
Road / Pavement Design	CBR values from Coffey Report Ref 02108AA_R_003A_RS-FinalGIReport of 3.9 within the made ground and 2.4-16.8 in the GSD.

Table 7-1: Summary of geotechnical constraints.

8 Summary Conclusions and Recommendations

8.1 Summary Conclusions

Table 8-1 summarises the site details, historical review, environmental settings and site reconnaissance.

Current Site Use	Leisure centre, changing rooms block, associated car park, and playing fields.
Proposed Development	The construction of a two storey extension to the existing building built back in 2013, the demolition of an existing changing block, the extension of the existing car park and the formation of a new over flow carpark formed using a 'grasscrete' type system.
Main Historical Features	Onsite: Path, Ponds, Aerodrome, sports field, brook. Surrounding Area: Train lines, ponds, infilled brook, garage, allotment gardens.
Geology / Hydrogeology	Artificial: No BGS recorded artificial. Superficial: Glaciofluvial deposits, Shirley Sand Formation and alluvium (sand and gravel). Secondary A Aquifer. Bedrock: Wilmslow Sandstone Formation. Principal Aquifer.
Landfills / Infilled ground	No recorded landfills. Potentially infilled ground identified on and off site.
Site Walkover	Majority of the site is playing fields. Car park tarmac in good condition. No obvious contamination identified.

Table 8-1: Summary of site details, historical review, environmental settings and site reconnaissance.

A preliminary contamination conceptual model has been produced by LKC, which is summarised in Table 8-2.

Pollutant Linkage		Risk	Recommendations
PL1: Contaminants posing a risk to future site users via dermal contact, ingestion, and inhalation (of soil, dust, fibres and vegetables).	ACM, heavy metals, PAHs Petroleum hydrocarbons	Moderate	Intrusive investigation required. Soil analysis of CoC.
PL2: Volatile contaminants posing a risk to future site users via the inhalation of vapours.		Moderate / Low	Intrusive investigation required, to include PID testing. Soil analysis of CoC.
PL3: Gas posing a risk to buildings and future site users via the migration of gas into building causing explosion and asphyxiation.	Carbon dioxide & methane	High	Gas monitoring required.
	Radon	Low	(<1%) No protective measures are necessary in the construction of new dwellings or extensions.
PL4: Mobile contamination posing a risk to controlled waters via the migration through permeable strata.		Moderate	Intrusive investigation required. Groundwater sampling. Analysis for CoC.
PL5: Sulphate posing a risk to building via direct contact (sulphate attack).		Low	Intrusive investigation required. Soil analysis of CoC.
PL6: Organic contaminants posing a risk to water pipes.		Moderate / Low	Intrusive investigation required. Soil analysis of CoC.
PL7: Phytotoxic metals posing a risk to flora via root uptake.		Low	Low density intrusive investigation required. Soil analysis of CoC.

Table 8-2: Summary risk table.

Where moderate / low risk had been identified, the assumed risk is shown in bold.

A preliminary geotechnical assessment has been carried out by LKC. Table 8-3 summarises the geotechnical constraints.

Slope Stability	No further assessment is required to confirm the instability risk.
Made Ground	Unknown depth and constituent of made ground across the site.
Superficial	Unknown strength of soils for foundation design.
Bedrock	Unknown depth to bedrock below the site.
Groundwater	Unknown depth and variability of groundwater.
Plasticity	Plasticity of any clay deposits should be confirmed.
Sulphate	Unknown sulphate content of the made ground and natural.
Road / Pavement Design	CBR values from previous investigation Ref:02108AA_R_003A_RS-FinalGIReport between 3.9 within the made ground and 2.4-16.8 in the GSD.

Table 8-3: Summary of geotechnical constraints.

8.2 Recommendations

Recommendations are provided in Table 8-4.

Contamination status	There is sufficient information on the potential contaminative status of the site to allow conditional approval of a planning application, based on the proposed end use detailed in the PRA.
Further assessment recommendations	Phase 2 intrusive investigation required. Phase 2 investigation to be carried out in line with current guidance, including BS10175 ¹³ , BS5930 ¹⁴ CIRIA C665 ¹⁵ , RB17 ¹⁶ and BS8485 ¹⁷ . Either 'exploratory investigation': 1 sample per 25-50m square centres. Or 'detailed investigation': 1 sample per 10-25m square centres. Plus targeted investigation locations in areas of concern (contamination and geotechnical). To be agreed with the local authority.
Type of investigation work	Boreholes and / or trial pits.
PL 1, 2, 5, 6, 7	Intrusive investigation work recommended to confirm ground conditions across the site. Testing of contaminants of concern based on preliminary conceptual model and field observations (PID tests and visual / olfactory evidence).
PL 3	Intrusive investigation to confirm ground conditions. If significant gas source and pathway identified, gas monitoring required. Gas monitoring: monitoring wells to be installed in boreholes, monitoring frequency and period subject to anticipated risk. Precautionary gas protection measures: type of measures to be determined once ground conditions established.
PL 4	Groundwater sampling, subject to ground conditions encountered. Groundwater samples to be collected from monitoring wells and tested for contaminants of concern based on preliminary conceptual model and ground conditions encountered.
Reporting	Information from the above can be used to carry out a contamination and geotechnical assessment and provide a remediation strategy for the site.

Table 8-4: Recommendations.

Further Considerations are summarised in Table 8-5.

¹³ British Standard (2017). "Investigation of Potentially Contaminated Sites – Code of Practice". BS10175:2017.

¹⁴ British Standard (2015). "Code of Practice for Ground Investigations". BS5930:2015.

¹⁵ CIRIA (2007). "Assessing Risks Posed by Hazardous Ground Gases to Buildings". CIRIA C665.

¹⁶ CL:AIRE Research Bulletin RB17 (November 2012) "A Pragmatic Approach to Ground Gas Risk Assessment".

¹⁷ BSI (2015). "Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings". BS8485:2015.

Invasive Species	Japanese Knotweed has been identified on site and can present a risk to future site buildings. The Environment Agency has stressed the importance of preventing the further spread of Japanese Knotweed and insists that these areas be treated properly in accordance with statutory requirements. Under Schedule 9 of the Wildlife and Countryside Act (WCA) 1981, it is an offence to spread Japanese Knotweed. In addition, the Environment Act (EPA) 1990 states that any material contaminated with Japanese Knotweed must be classified as controlled waste, to which the duty of care applies. In other words, an offence under the WCA could face criminal prosecution and an infringement of the EPA could result in enforcement action being taken by the Environment Agency, which subsequently could lead to an unlimited fine. The LK Group have a designated Japanese Knotweed Management Department and would be happy to advise you on the appropriate steps to take in order to suitably treat the knotweed.
Flood Risk / Sustainable Drainage	As the site is in Flood Risk Zone 1, but over 1 hectare a Flood Risk Assessment (FRA) is required. NPPF¹⁸ requires that an FRA is undertaken to assess the impact of the site on the local drainage system and to assess potential for Sustainable Drainage Systems (SuDS) techniques. LKC have a Flood Risk assessor who would be happy to advise on the requirements of the Flood Risk Assessment.
Unexploded Ordnance	A moderate risk from unexploded ordnance (UXO) has been identified. It is recommended that a detailed UXO desk study is carried out to confirm the risk. The detailed desk study will confirm if any special precautions need to be considered before any intrusive work is carried out.

Table 8-5: Further considerations.

¹⁸ DCL (2018) National Planning Policy Framework: Meeting the Challenge of Climate Change, Flooding and Coastal Change. Footnote 50".

Figures

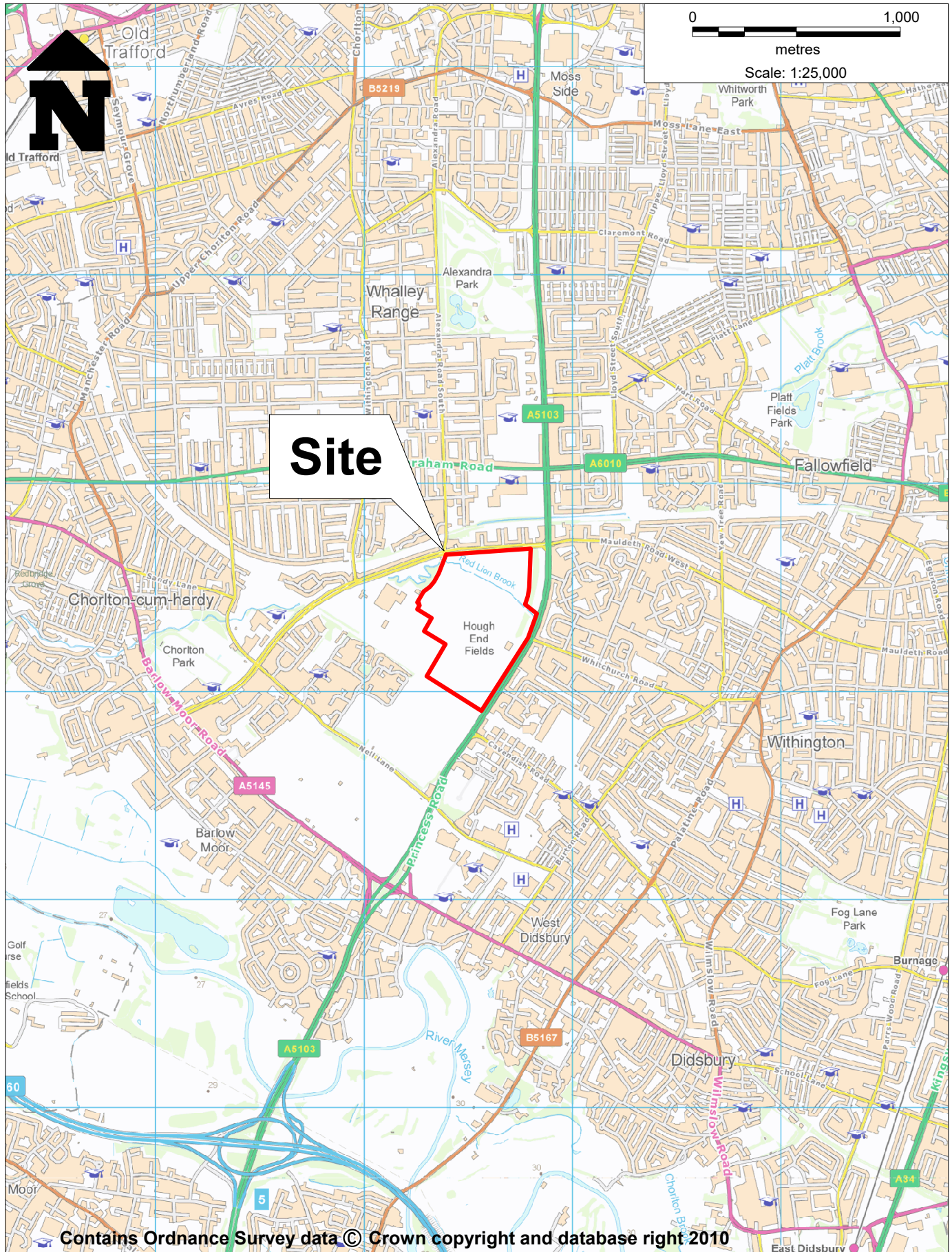


Figure 1: Site Location Plan, Hough End Leisure Centre, Manchester

Drawn: November 2020 Scale: 1:25,000 @ A4 (see scale bar)



KEY

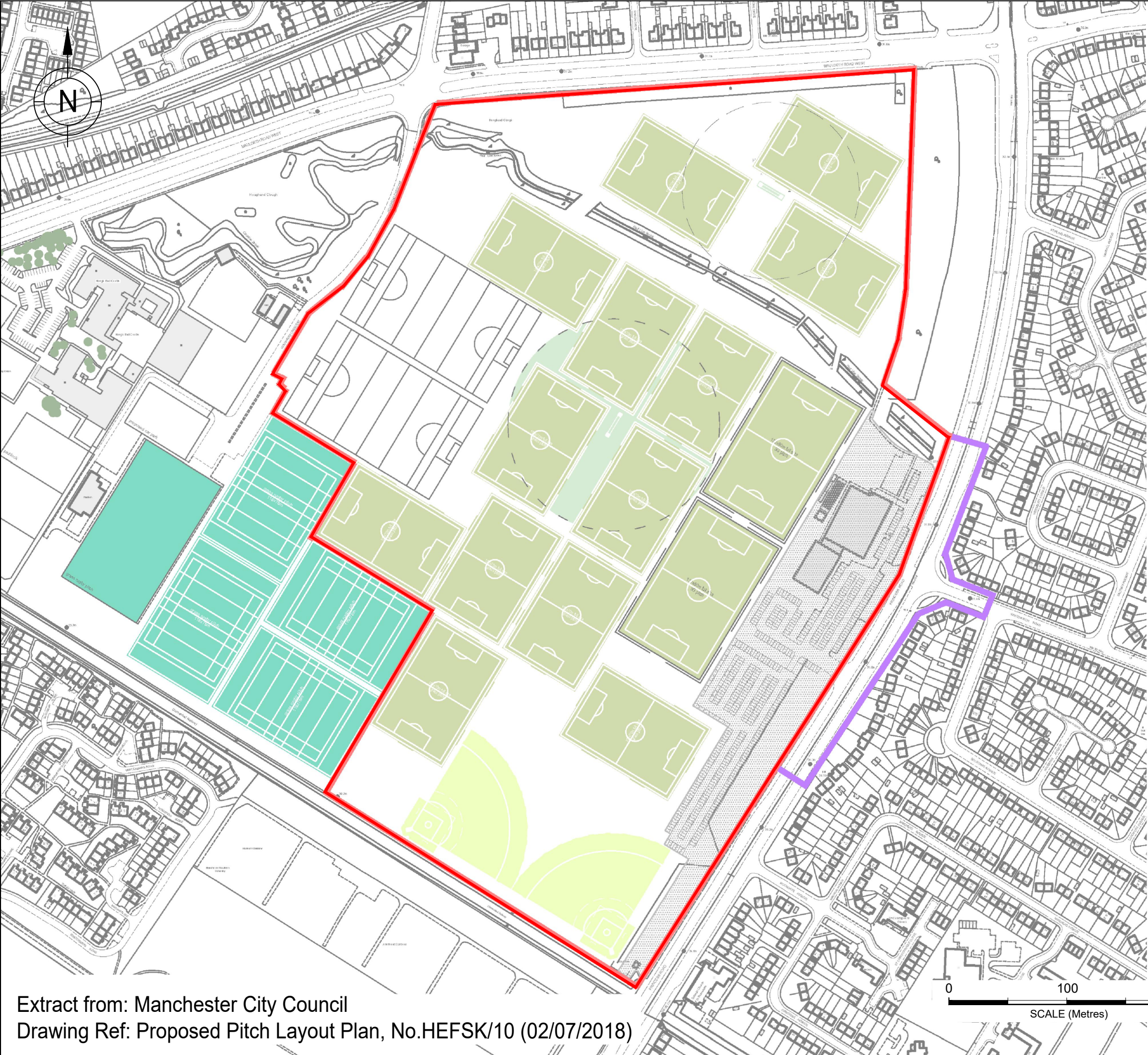
 Site Boundary

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.



Client:		ISG	
Site:		Hough End Leisure Centre, Manchester	
Title:		Site Boundary Plan	
Job No.:	LKC 20 1488	Scale (See Scale Bar):	See Scale Bar
Drawn By:	AC	Checked By:	RC
		Drawn:	Nov 2020
		Figure:	2
		Revision:	

Extract from: Google Earth
Drawing Ref: Hough End, Manchester, M20 1HP



Extract from: Manchester City Council
Drawing Ref: Proposed Pitch Layout Plan, No.HEFSK/10 (02/07/2018)

KEY

Site Boundary

Topographical survey and phase 1 site investigation ecology and tree survey extent

Subscan / CCTV drainage extent (grey hatched)

Separate cost for topographical and subscan

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Client:

ISG

Site:

Hough End Leisure Centre, Manchester

Title:

Proposed Development Plan

Job No.:

LKC 20 1488

Scale (See Scale Bar):

See Scale Bar

Figure:

3

Revision:

Drawn By:

AC

Checked By:

RC

Drawn:

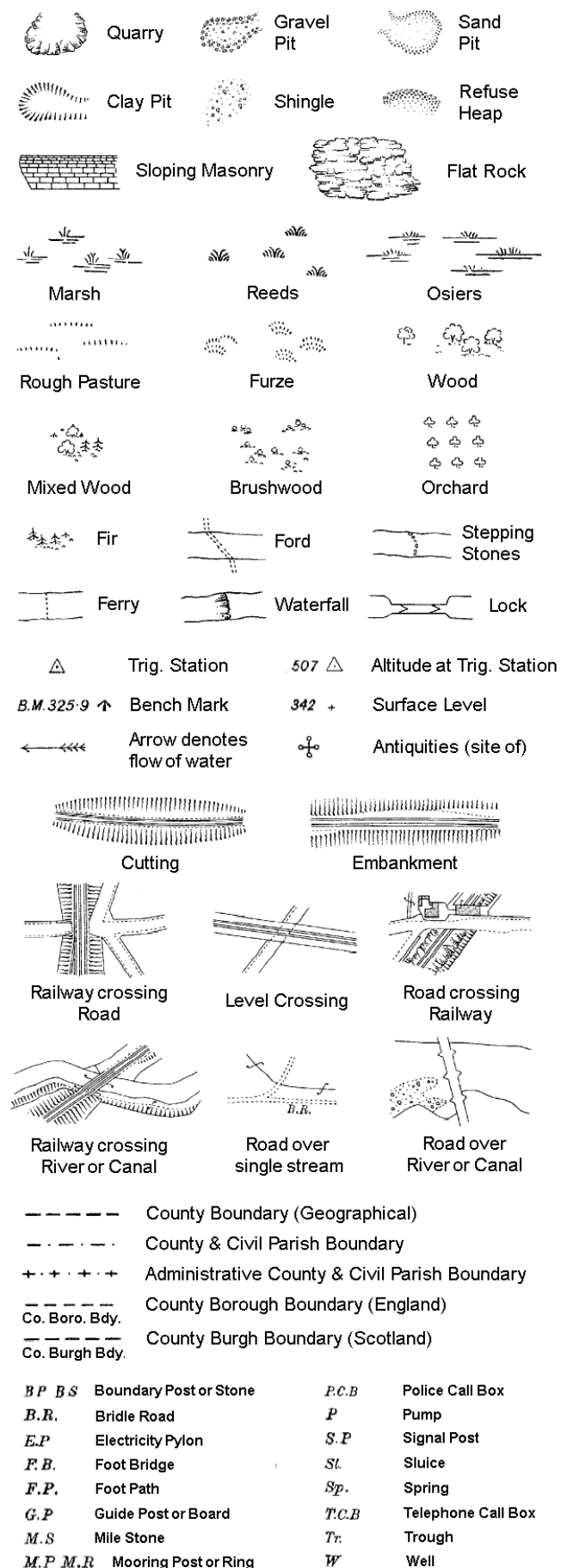
Nov 2020

Appendix A

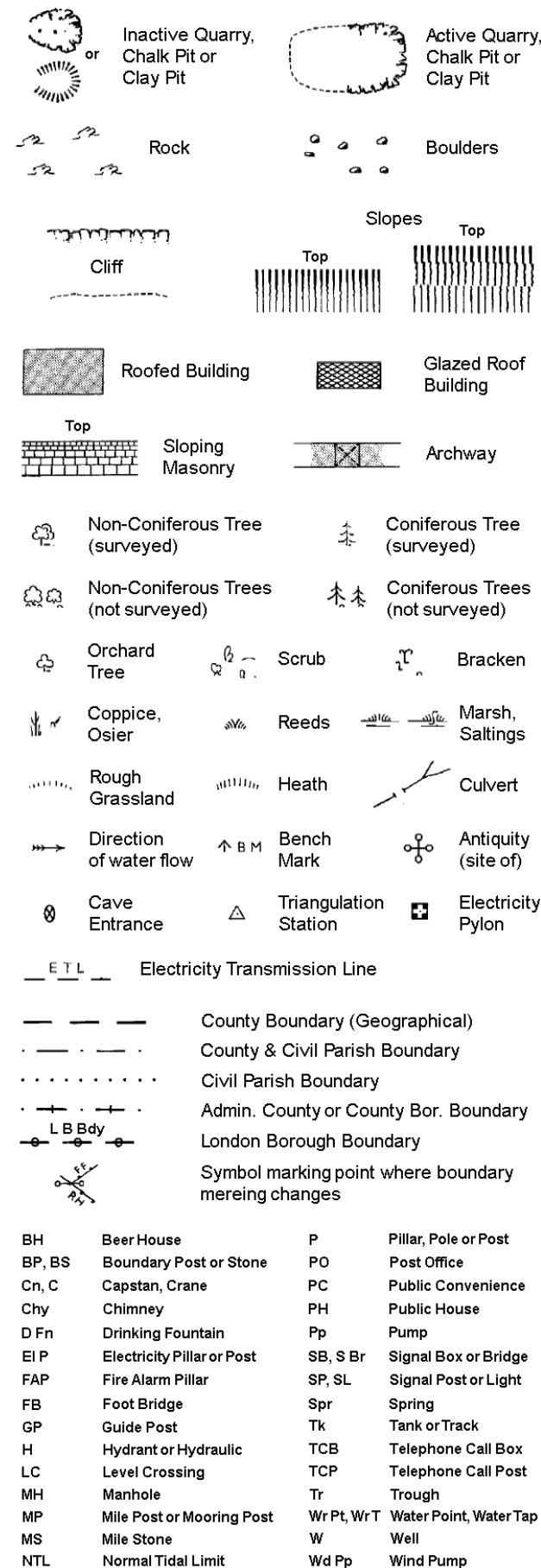
Historical Maps

Historical Mapping Legends

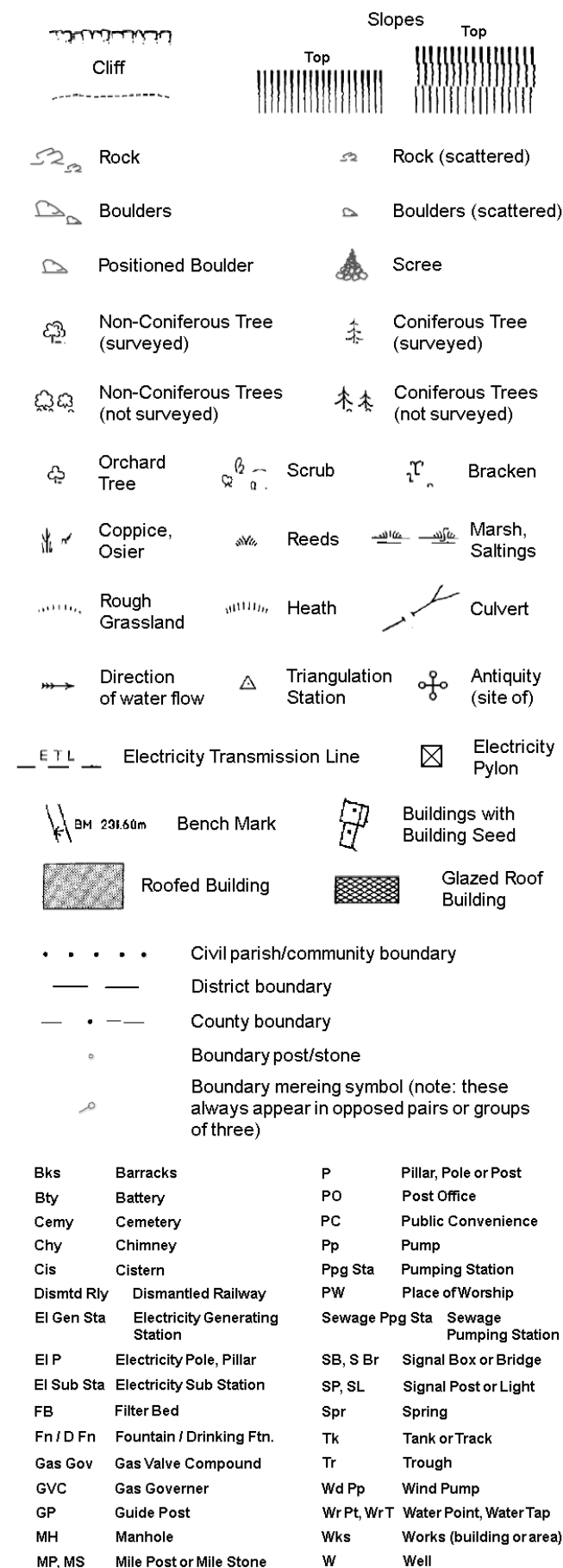
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



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



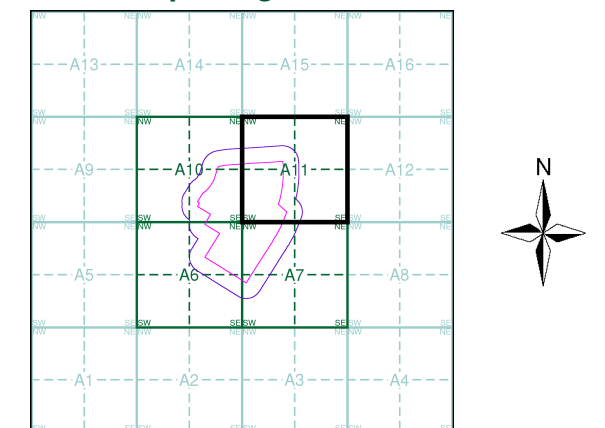
Large-Scale National Grid Data 1:2,500 and 1:1,250



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:2,500	1894	2
Lancashire And Furness	1:2,500	1907	3
Lancashire And Furness	1:2,500	1933	4
Ordnance Survey Plan	1:1,250	1951 - 1958	5
Ordnance Survey Plan	1:2,500	1952 - 1958	6
Ordnance Survey Plan	1:1,250	1973	7
Supply of Unpublished Survey Information	1:1,250	1976	8
Supply of Unpublished Survey Information	1:1,250	1977	9
Additional SIMs	1:1,250	1977 - 1986	10
Additional SIMs	1:1,250	1977	11
Additional SIMs	1:1,250	1983	12
Additional SIMs	1:1,250	1986	13
Large-Scale National Grid Data	1:1,250	1992	14
Historical Aerial Photography	1:2,500	2000	15

Historical Map - Segment A11



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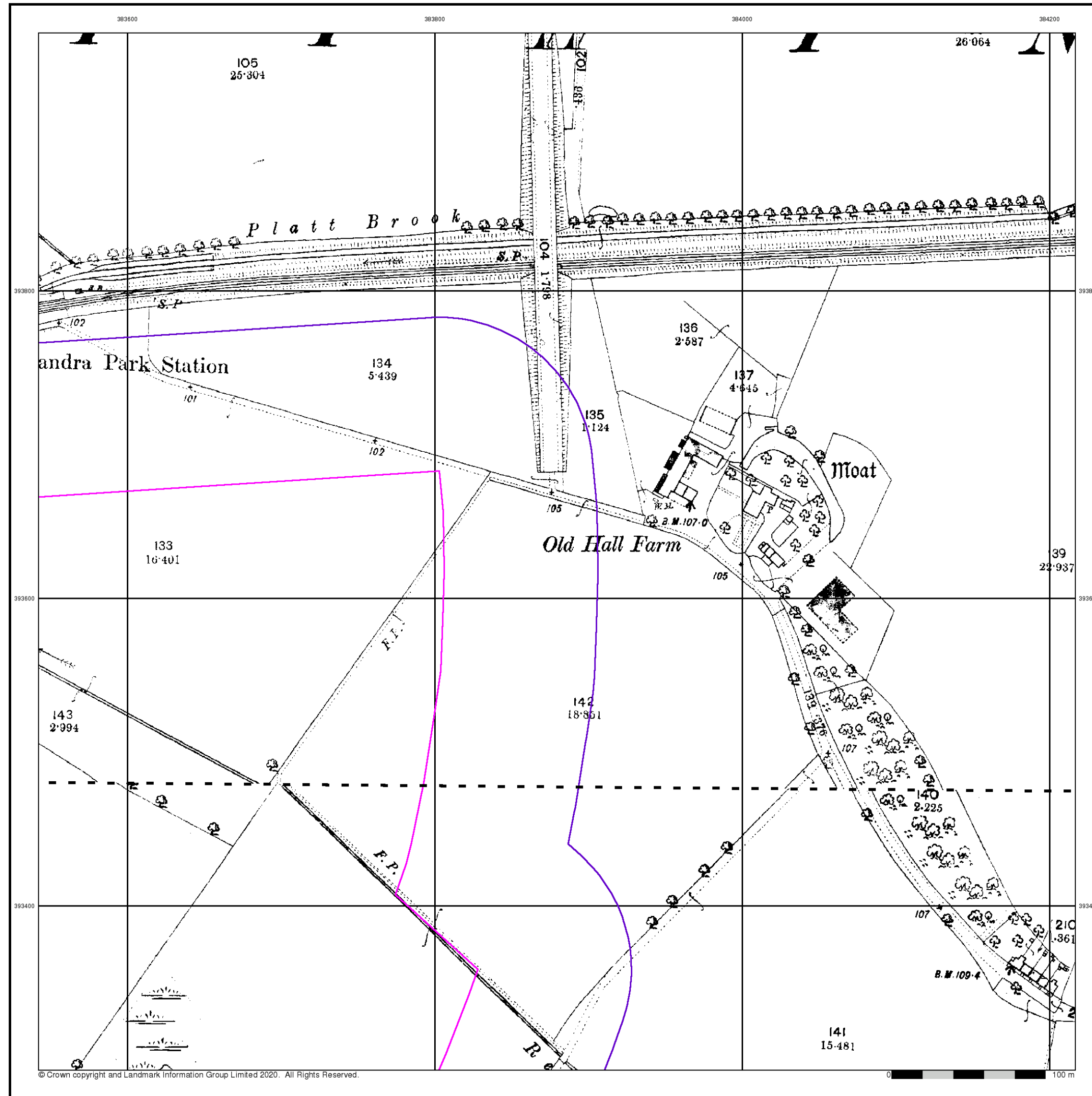
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Site Details

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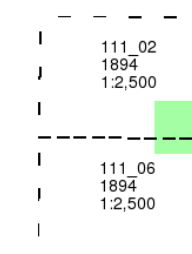
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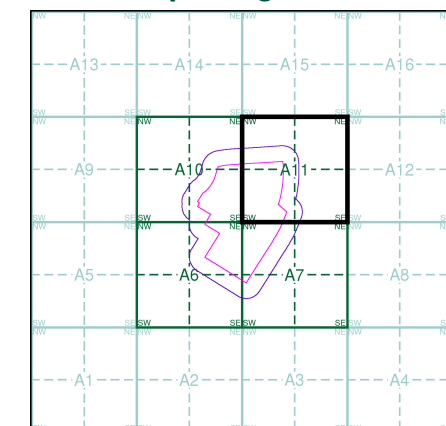
LK
GROUP
Lancashire And Furness
Published 1894
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



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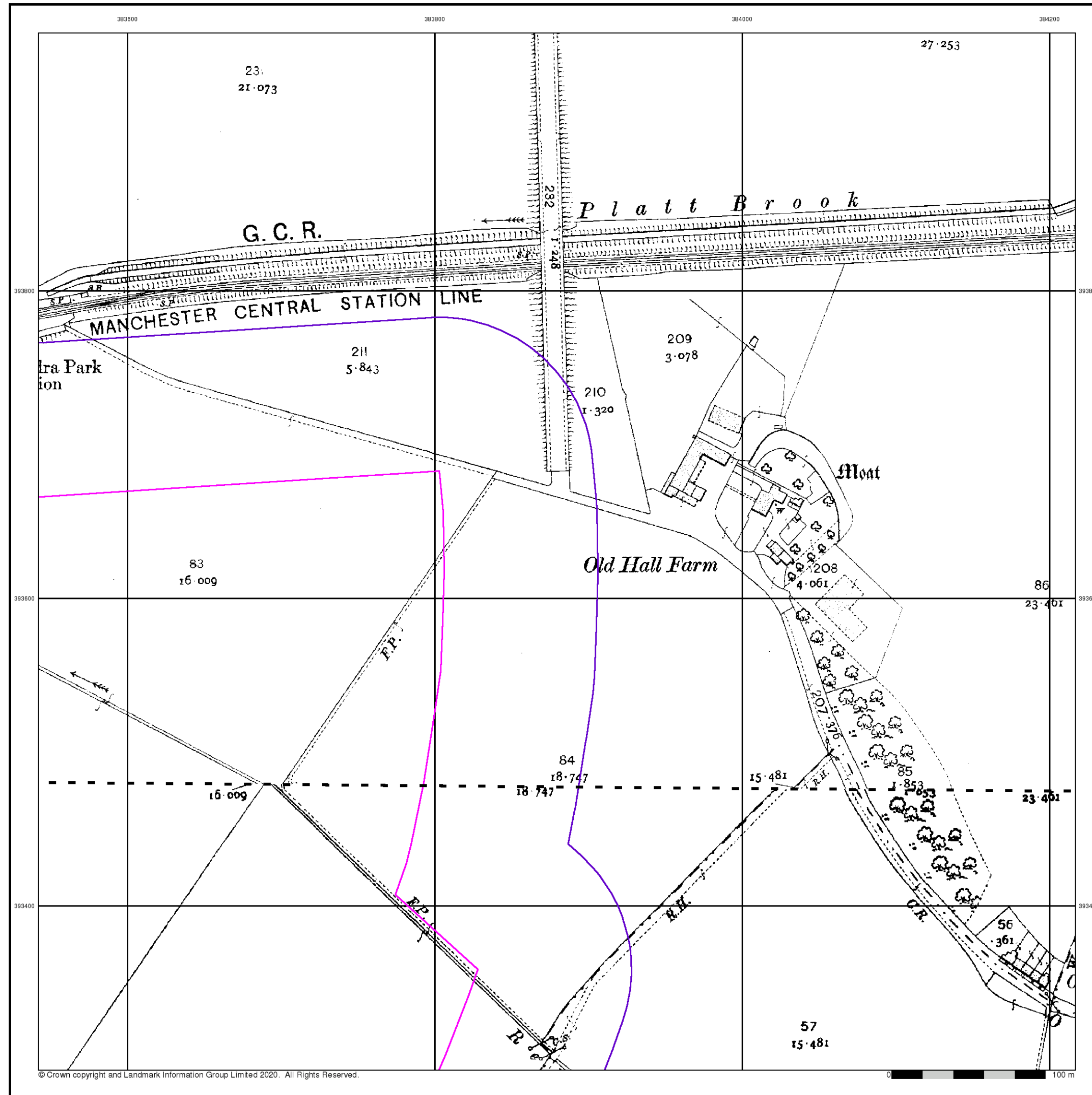
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Published 1907

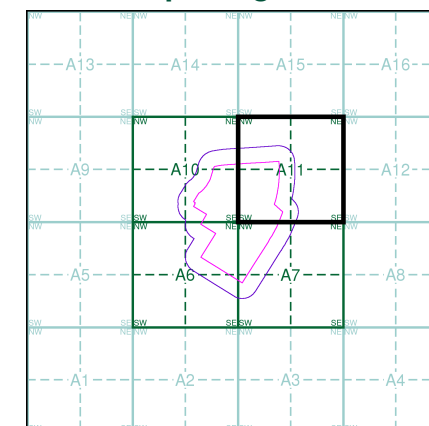
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Map Name(s) and Date(s)

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1:2,500
111_06
1907
1:2,500

Historical Map - Segment A11

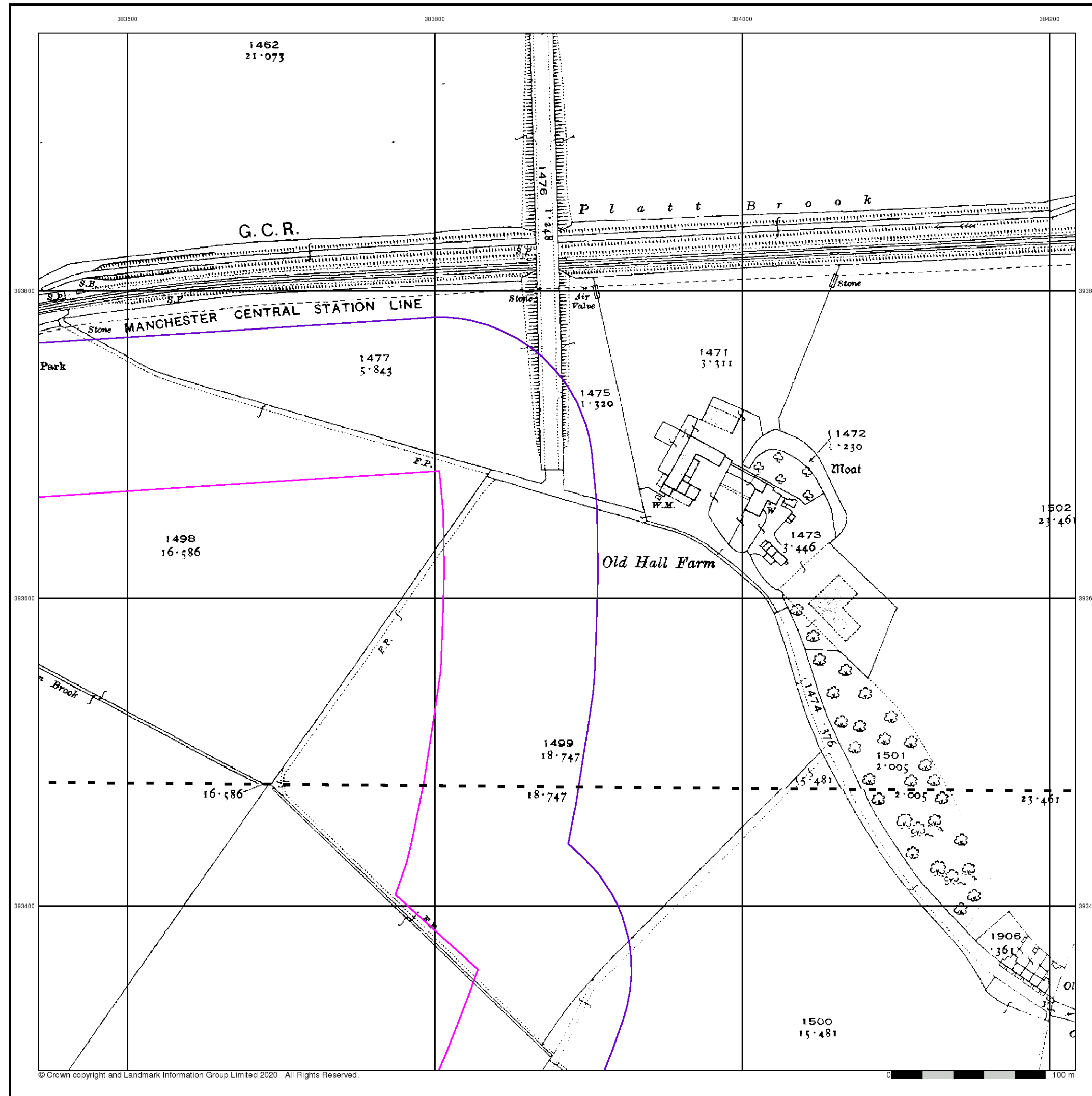


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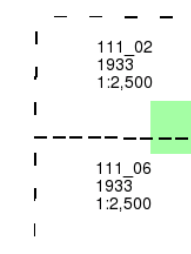
Lancashire And Furness

Published 1933

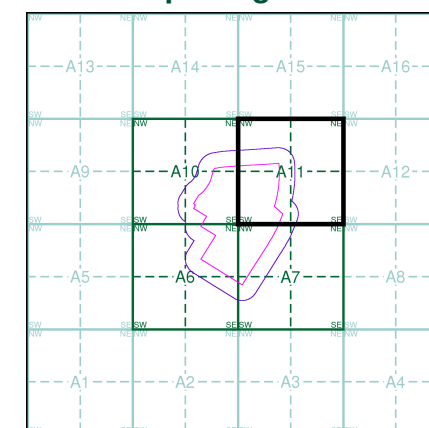
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Map Name(s) and Date(s)



Historical Map - Segment A11



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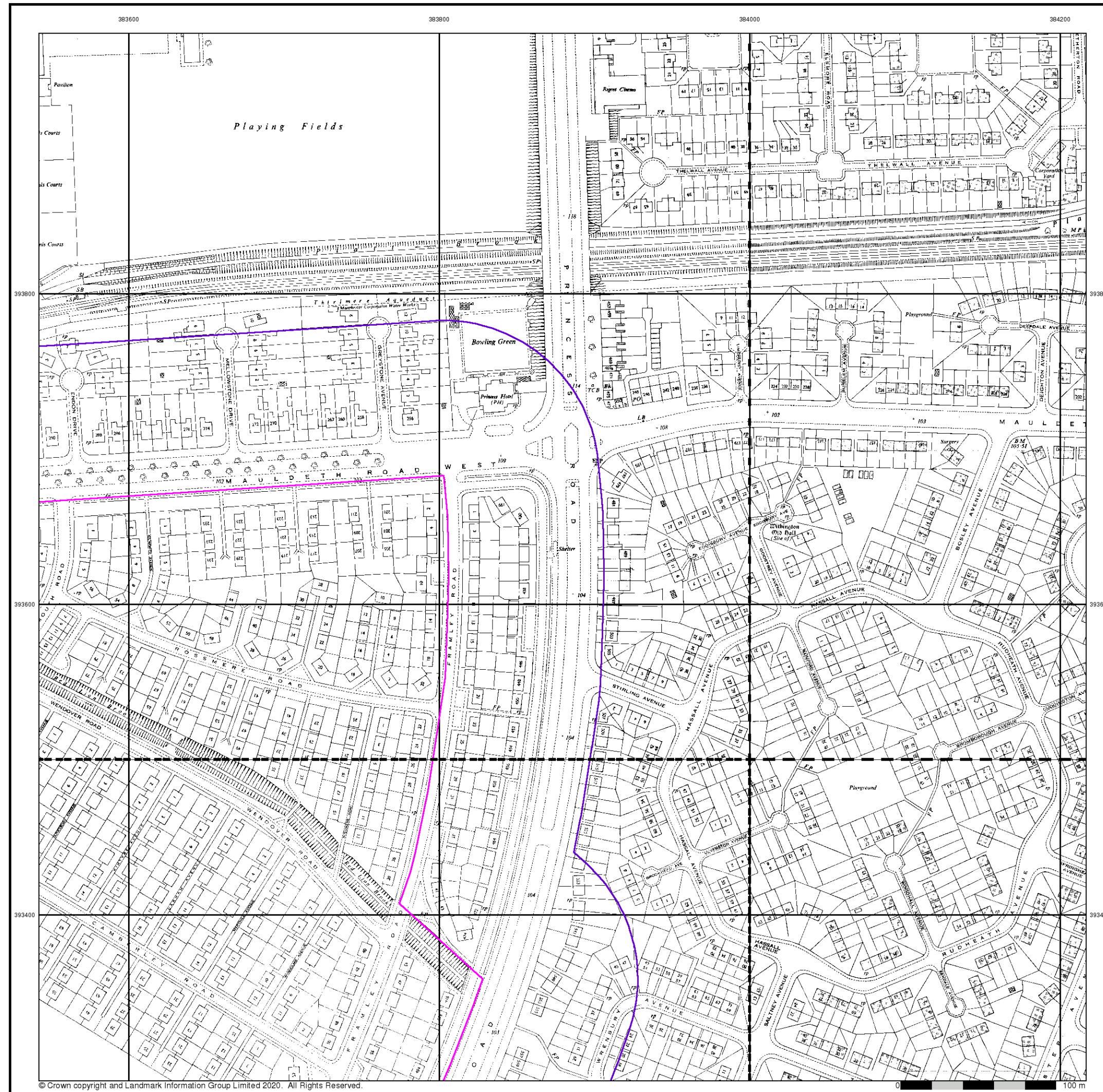
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Ordnance Survey Plan

Published 1951 - 1958

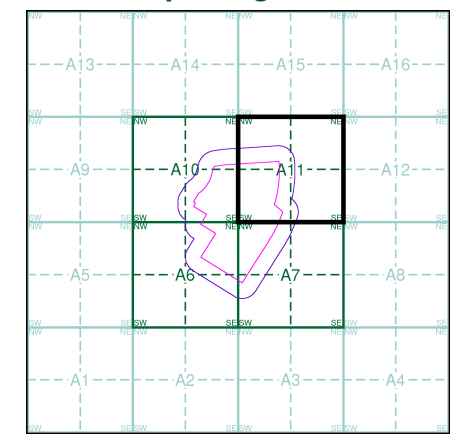
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Map Name(s) and Date(s)

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1:1,250	1:1,250
SJ8393SE	SJ8493SW
1951	1958
1:1,250	1:1,250

Historical Map - Segment A11



Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
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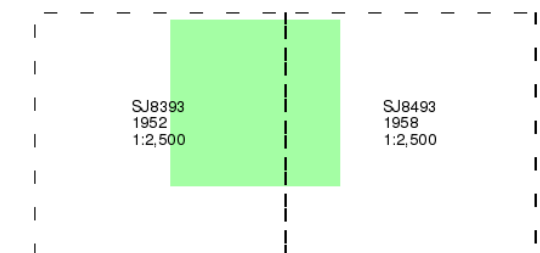
Ordnance Survey Plan

Published 1952 - 1958

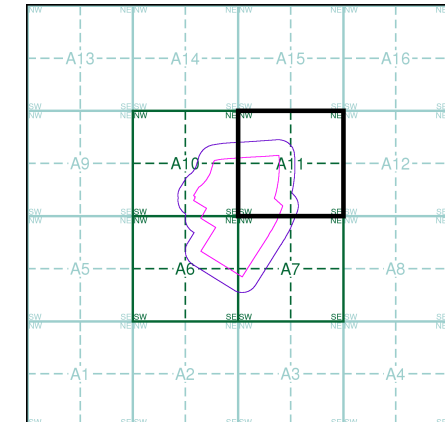
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Map Name(s) and Date(s)



Historical Map - Segment A11



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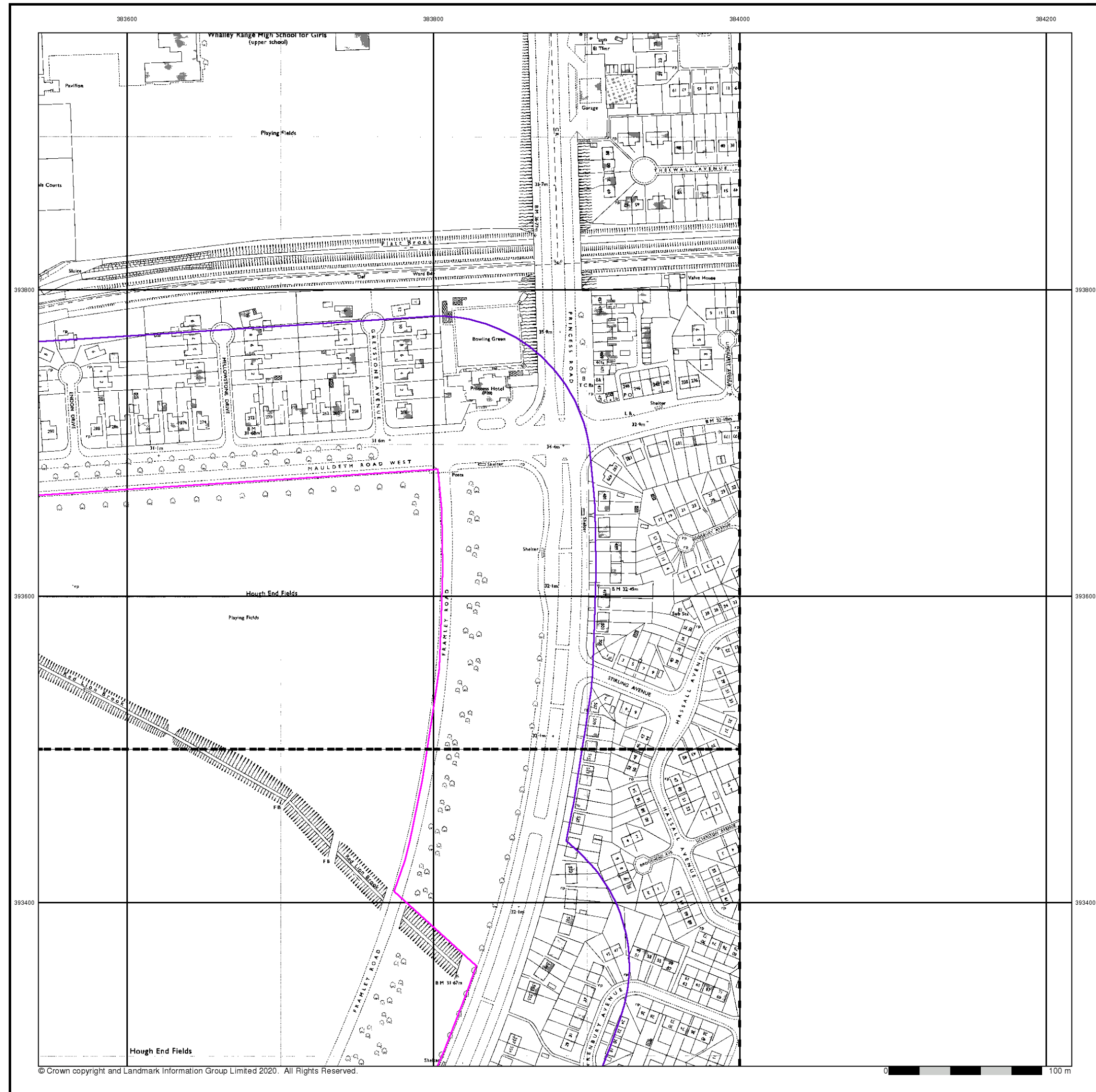
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Ordnance Survey Plan

Published 1973

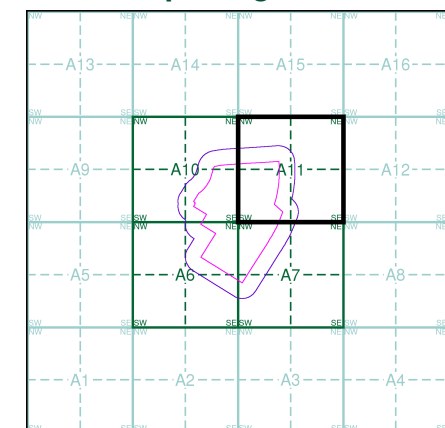
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Map Name(s) and Date(s)

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SJ8393SE
1973
1:1,250

Historical Map - Segment A11



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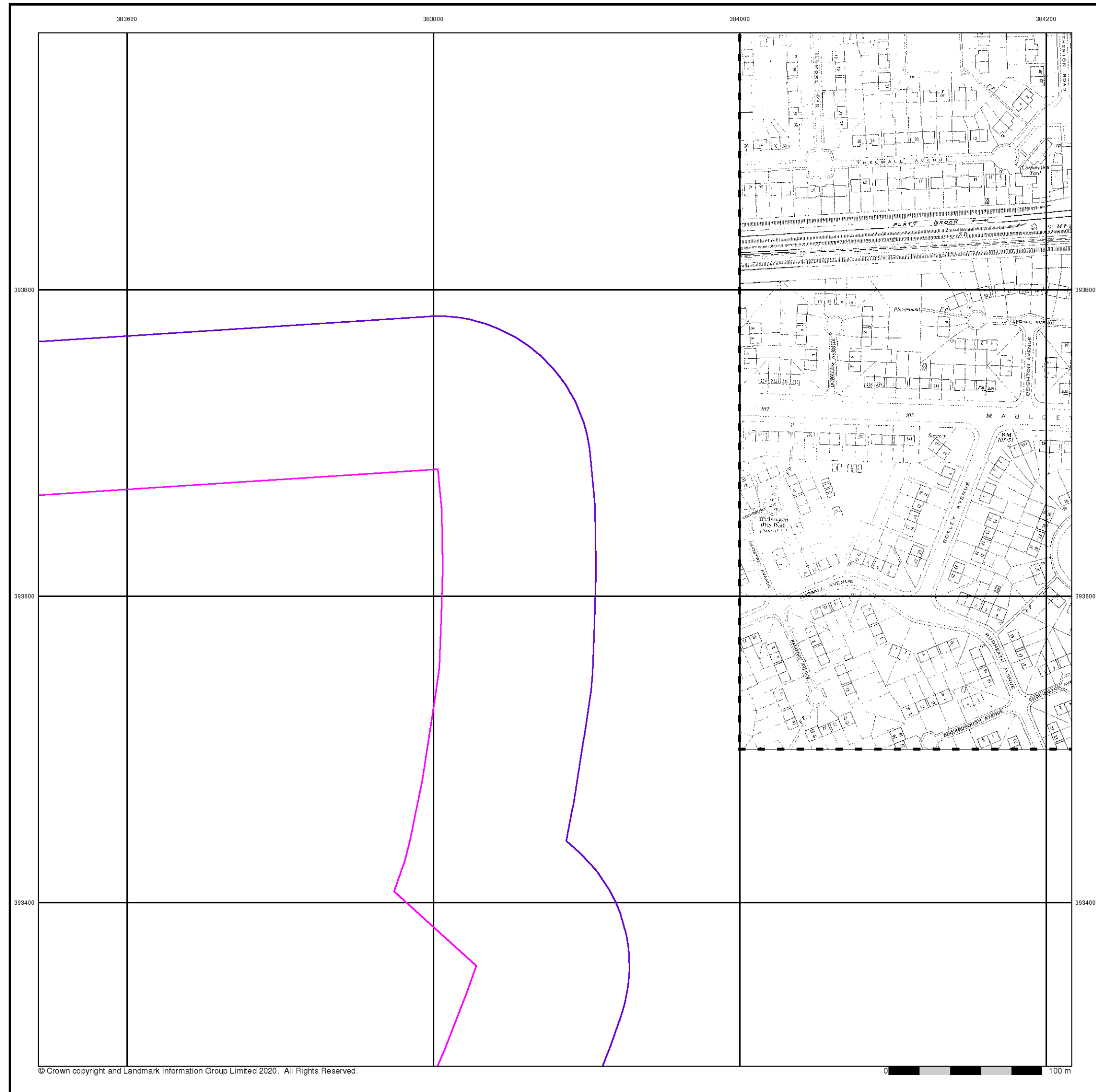
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Supply of Unpublished Survey Information

Published 1976

Source map scale - 1:1,250

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Map Name(s) and Date(s)

SJ8493NW

1976

1:1,250

Historical Map - Segment A11

A13

A14

A15

A16

A9

A10

A11

A12

A5

A6

A7

A8

A1

A2

A3

A4

Order Details

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383550, 393340

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Site Area (Ha):

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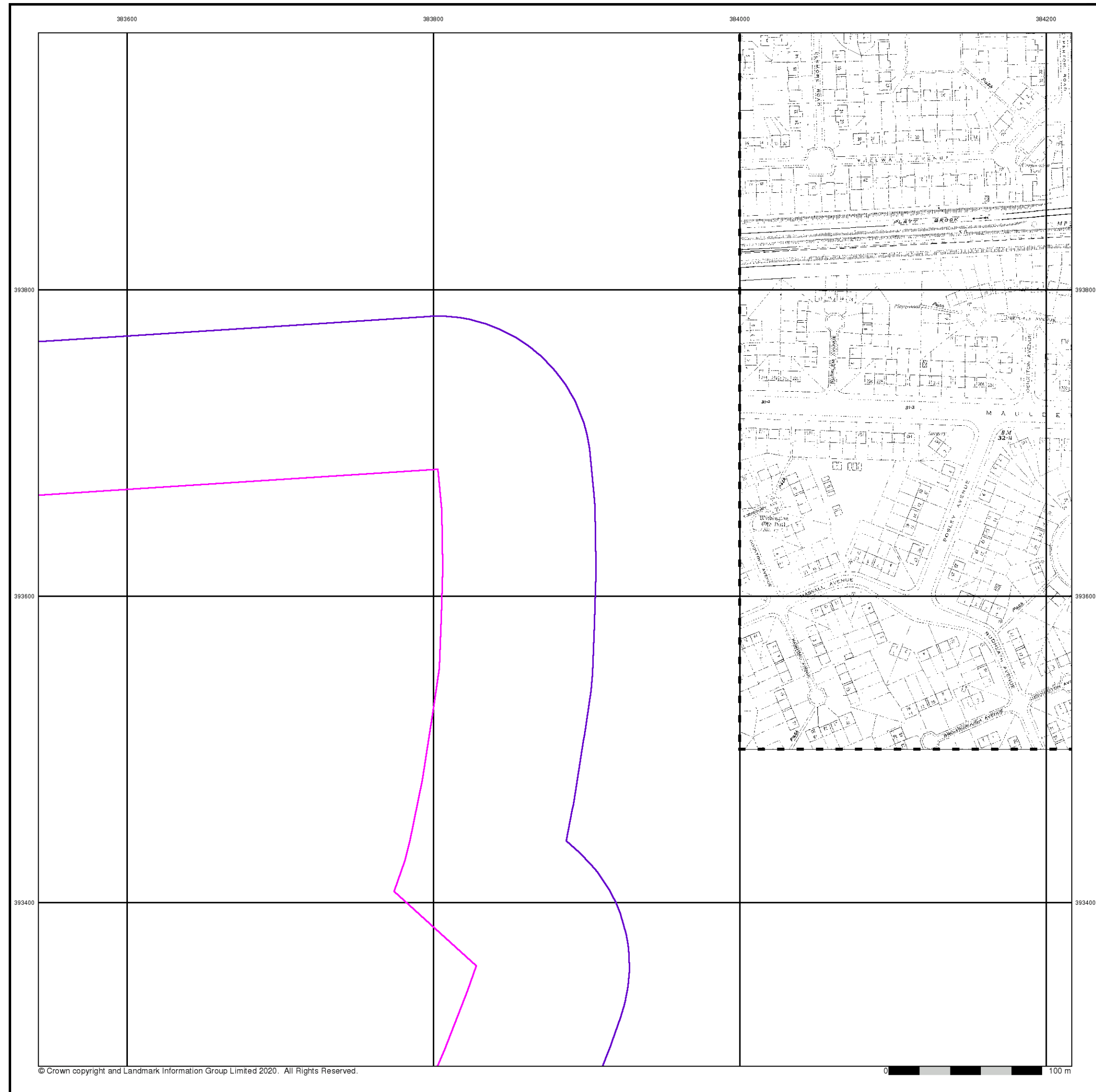
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Site Details

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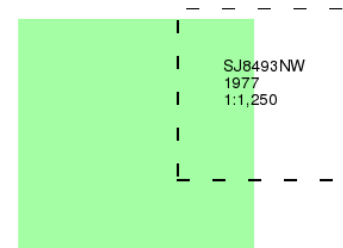
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Published 1977

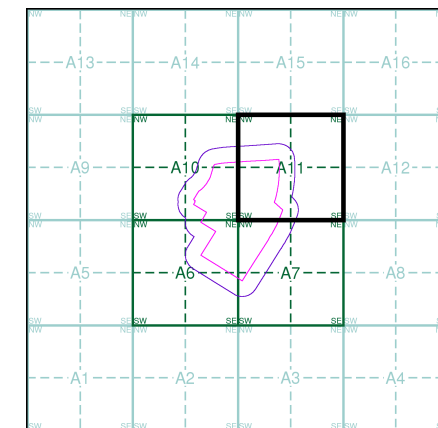
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Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

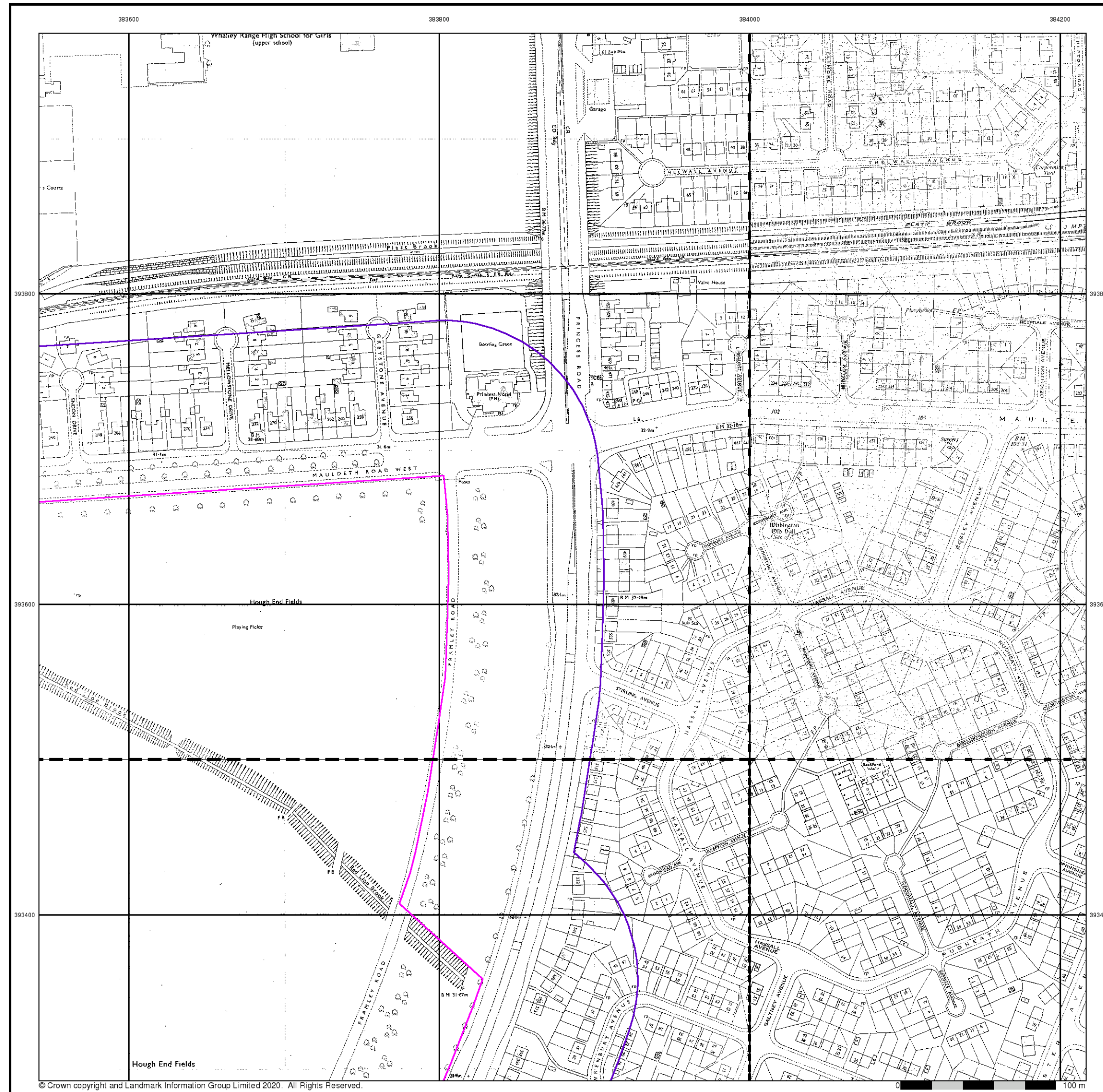
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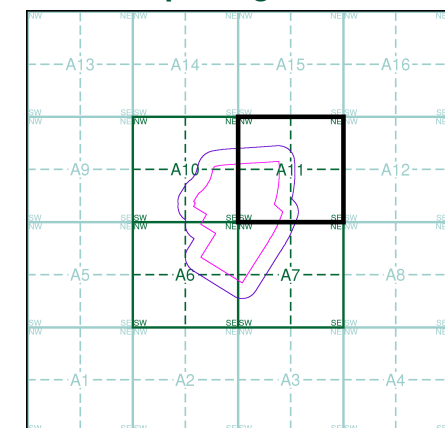
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The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information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

Map Name(s) and Date(s)

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Historical Map - Segment A11



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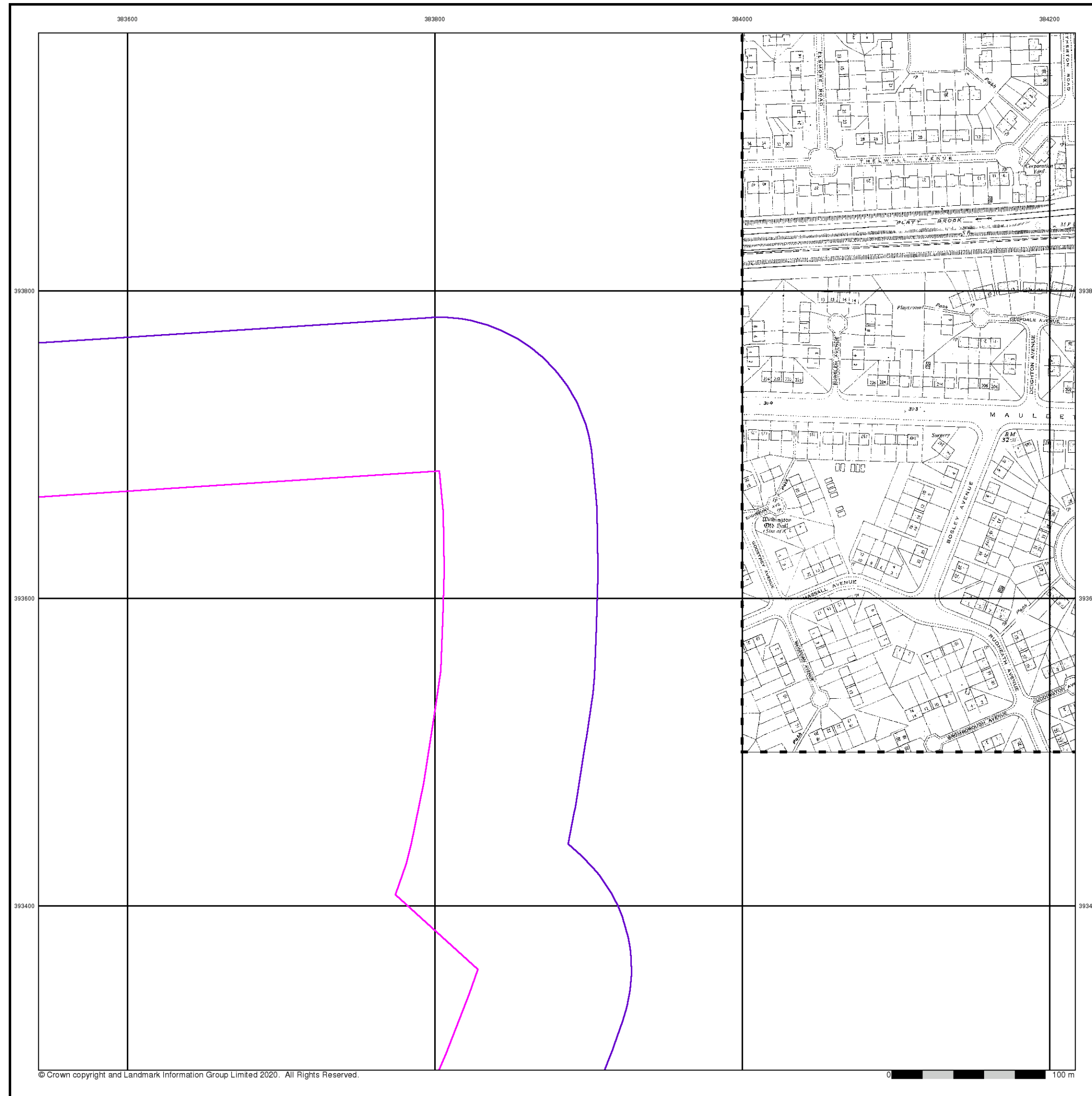
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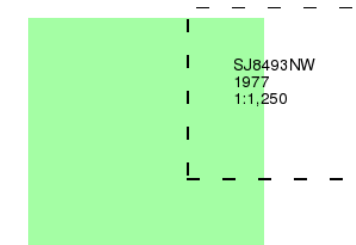


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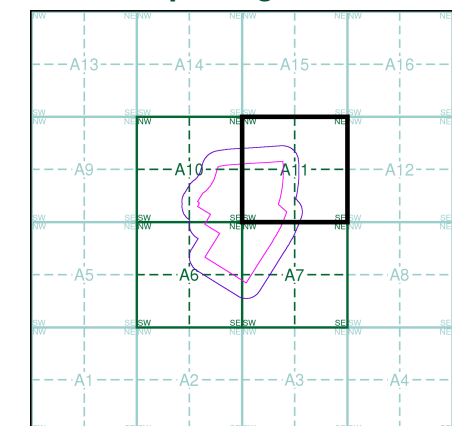


The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps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

Map Name(s) and Date(s)



Historical Map - Segment A11

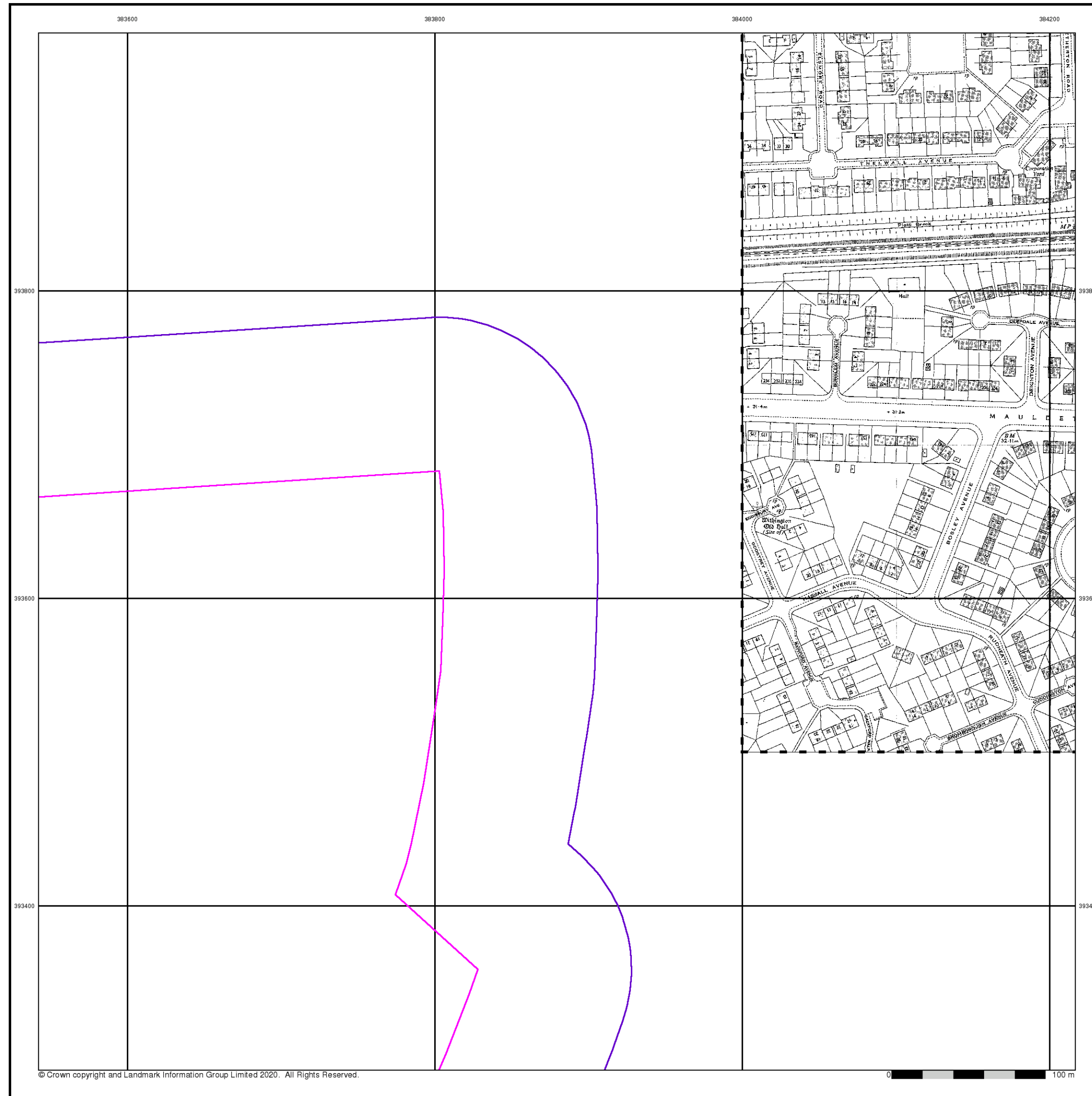


Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



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0 100 m

LK GROUP

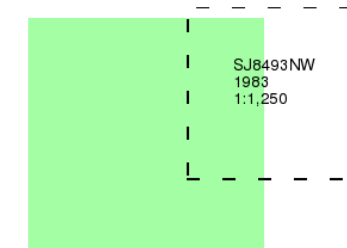
Additional SIMs

Published 1983

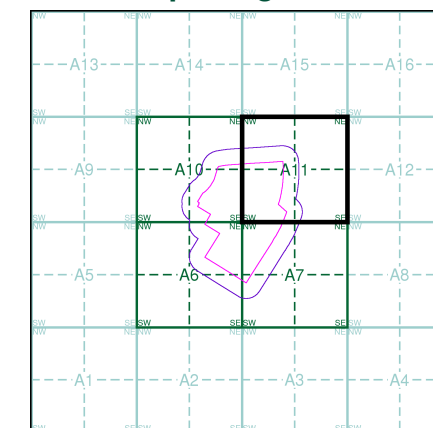
Source map scale - 1:1,250

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 A11



Order Details

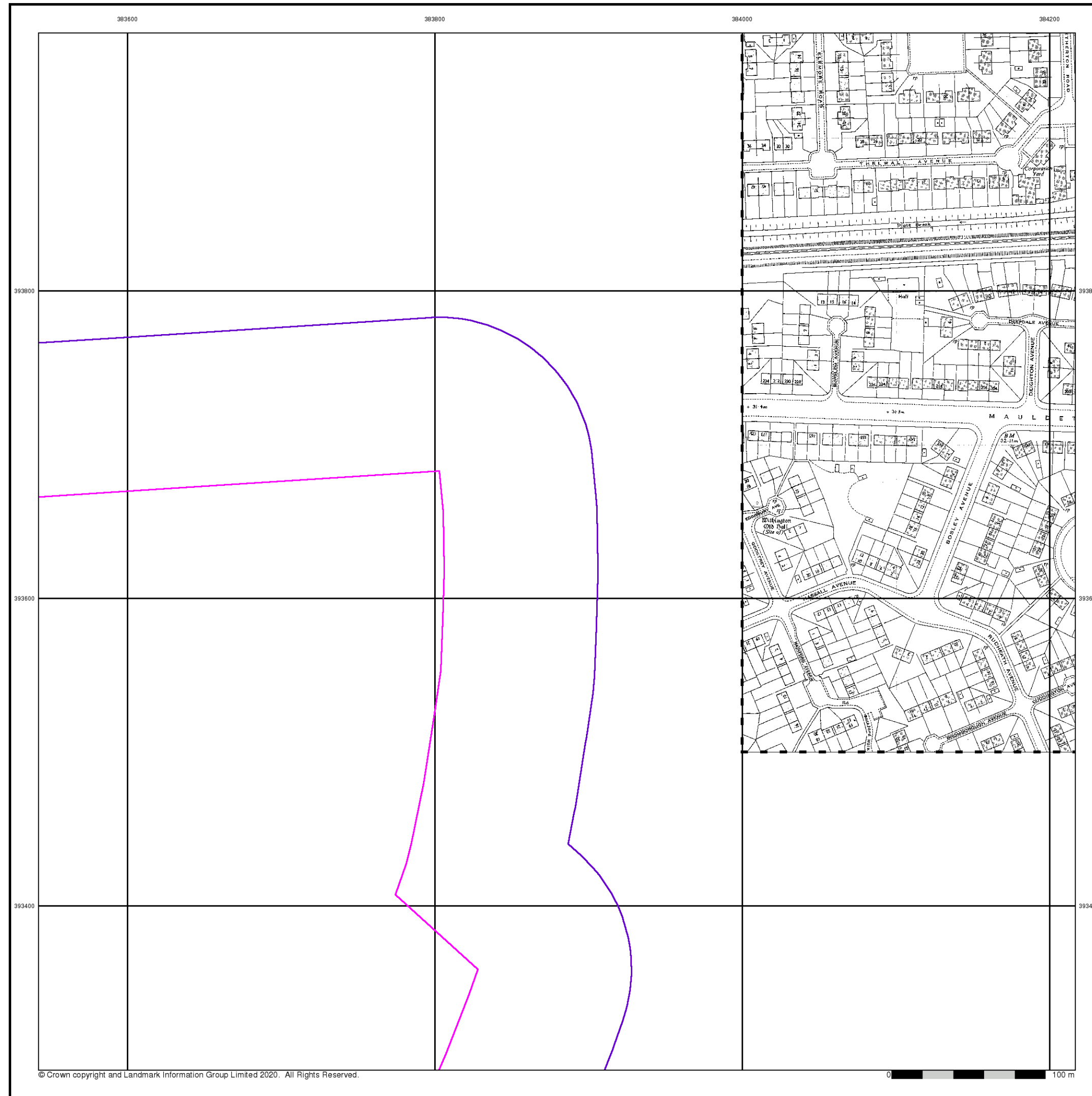
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

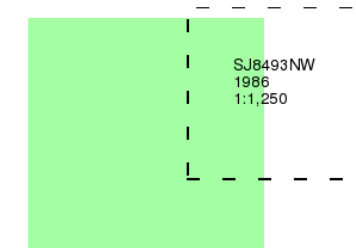
Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA

Landmark
INFORMATION GROUP

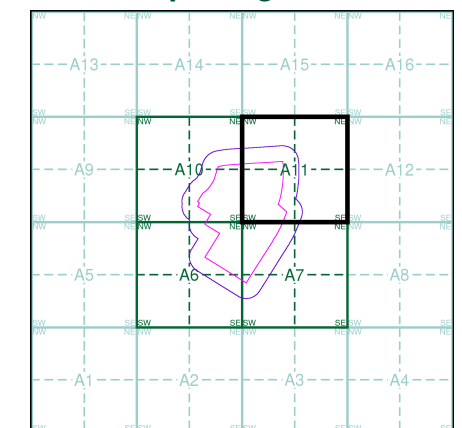
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



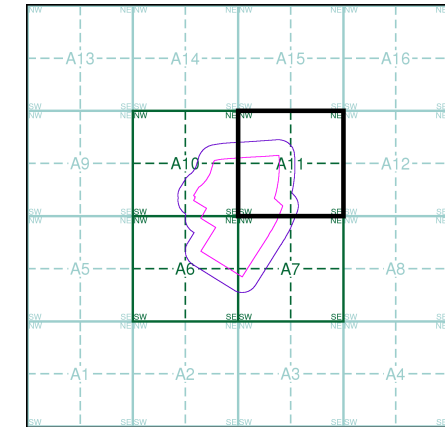
LK GROUP

Historical Aerial Photography

Published 2000

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

Historical Aerial Photography - Segment A11



Order Details
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details
Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA

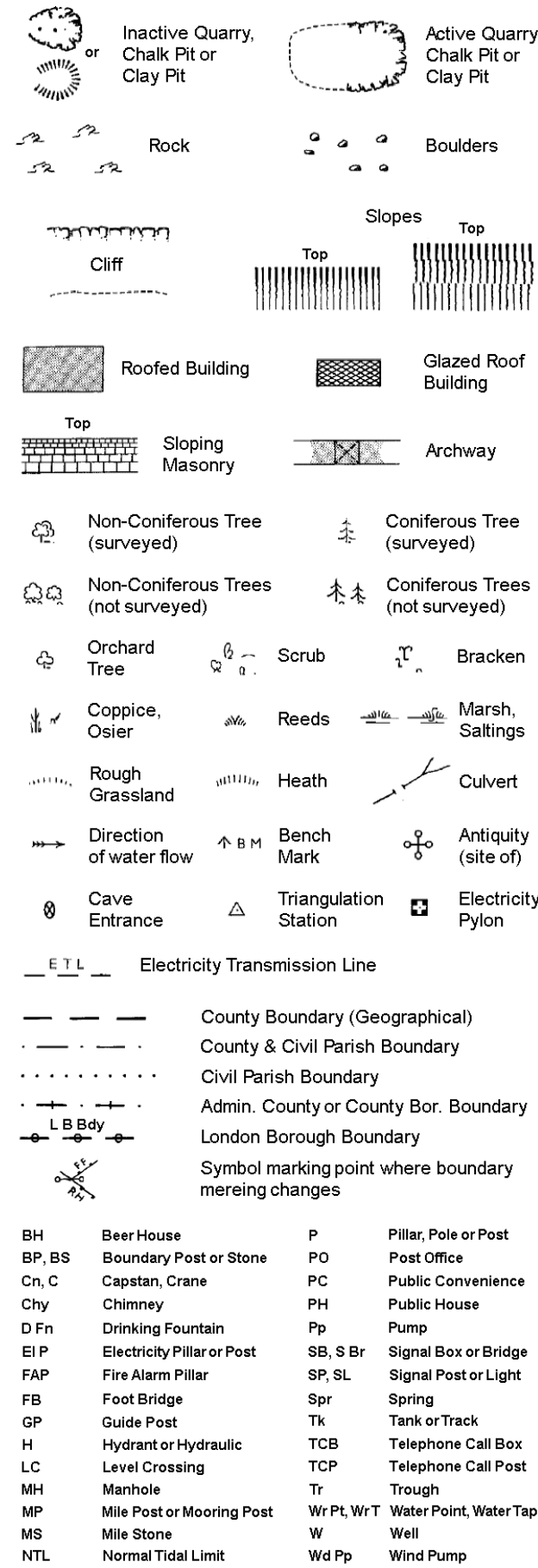
Landmark
INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Historical Mapping Legends

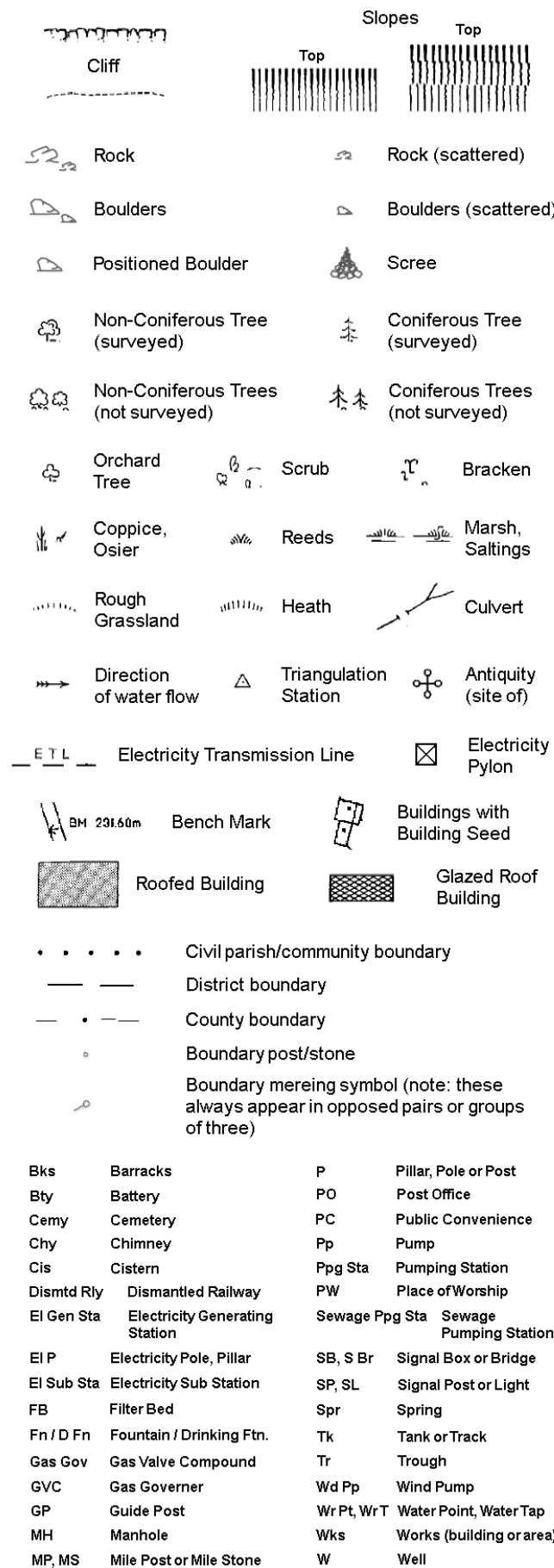
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



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

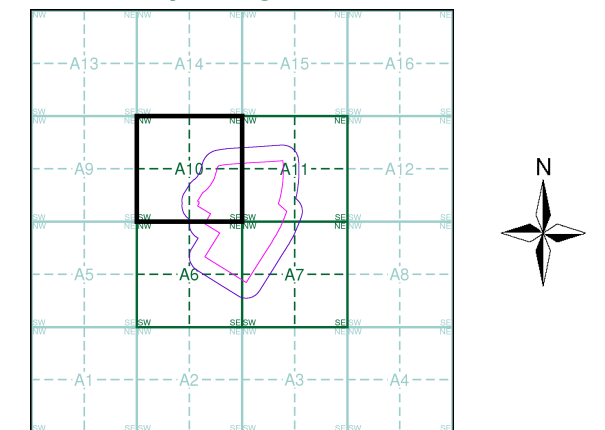


GROUP

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:2,500	1894	2
Lancashire And Furness	1:2,500	1907	3
Lancashire And Furness	1:2,500	1933	4
Ordnance Survey Plan	1:1,250	1951 - 1955	5
Additional SIMs	1:1,250	1951 - 1983	6
Ordnance Survey Plan	1:2,500	1952 - 1955	7
Ordnance Survey Plan	1:1,250	1961 - 1983	8
Additional SIMs	1:1,250	1978 - 1983	9
Additional SIMs	1:1,250	1980	10
Additional SIMs	1:1,250	1981	11
Ordnance Survey Plan	1:1,250	1986	12
Large-Scale National Grid Data	1:1,250	1992	13
Large-Scale National Grid Data	1:1,250	1993	14
Large-Scale National Grid Data	1:1,250	1994	15
Historical Aerial Photography	1:2,500	2000	16

Historical Map - Segment A10



Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



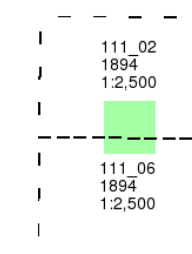
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Published 1894

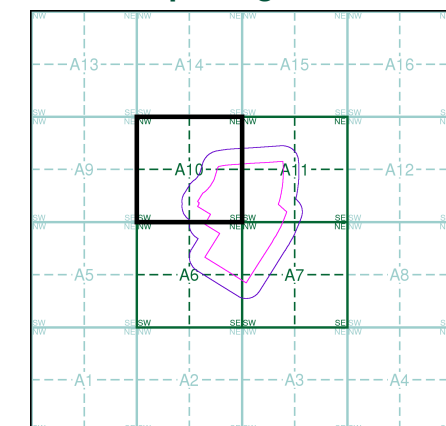
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A10

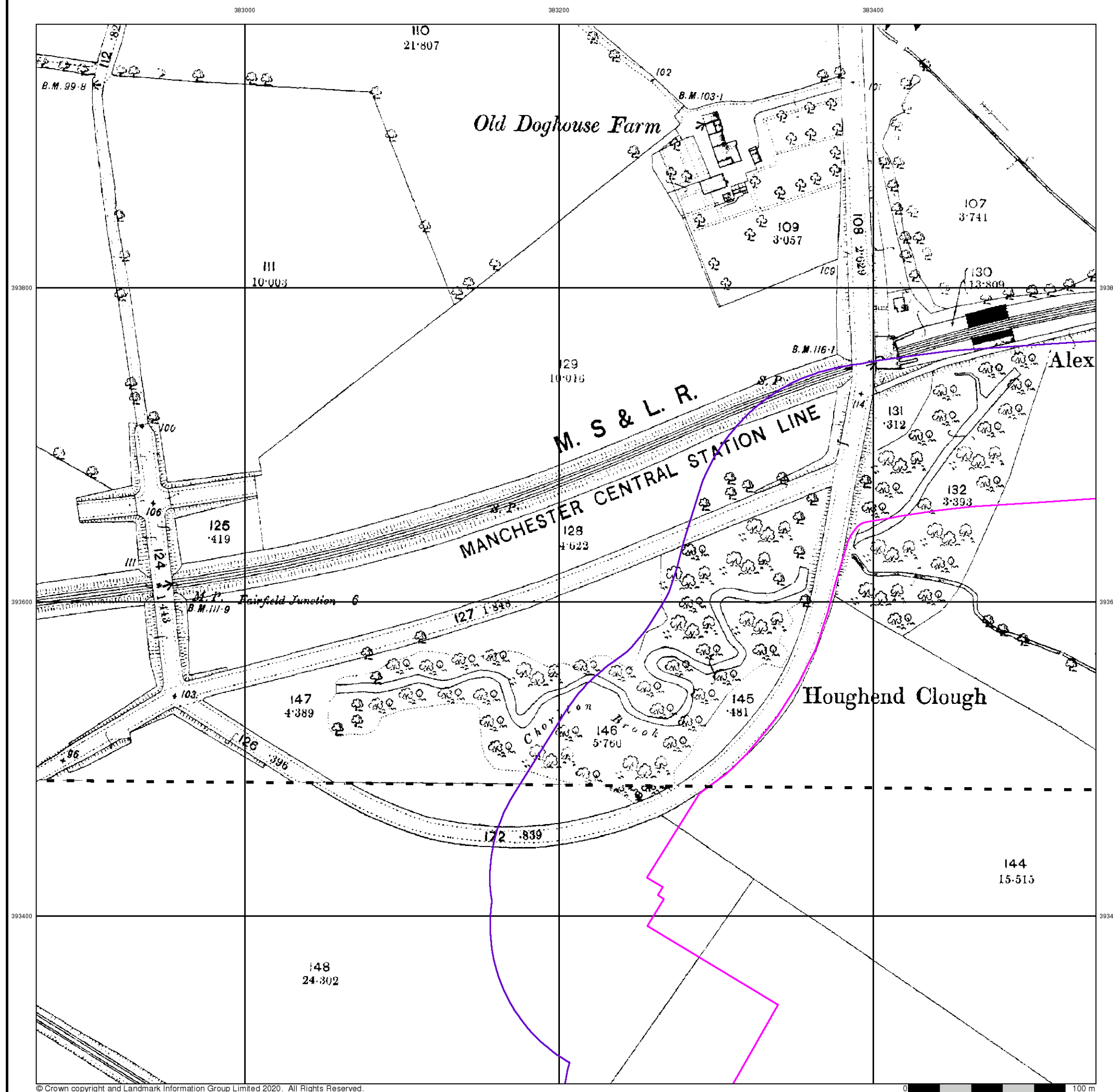


Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



Published 1907

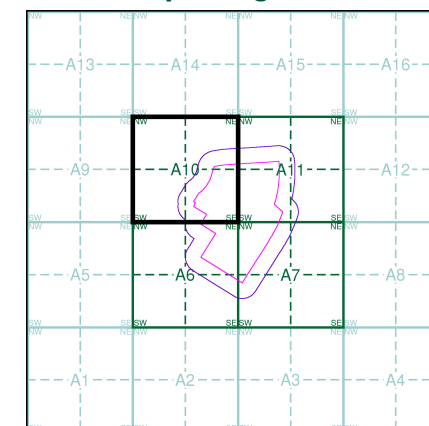
Source map scale - 1:2,500

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)

111_02
1907
1:2,500
111_06
1907
1:2,500

Historical Map - Segment A10

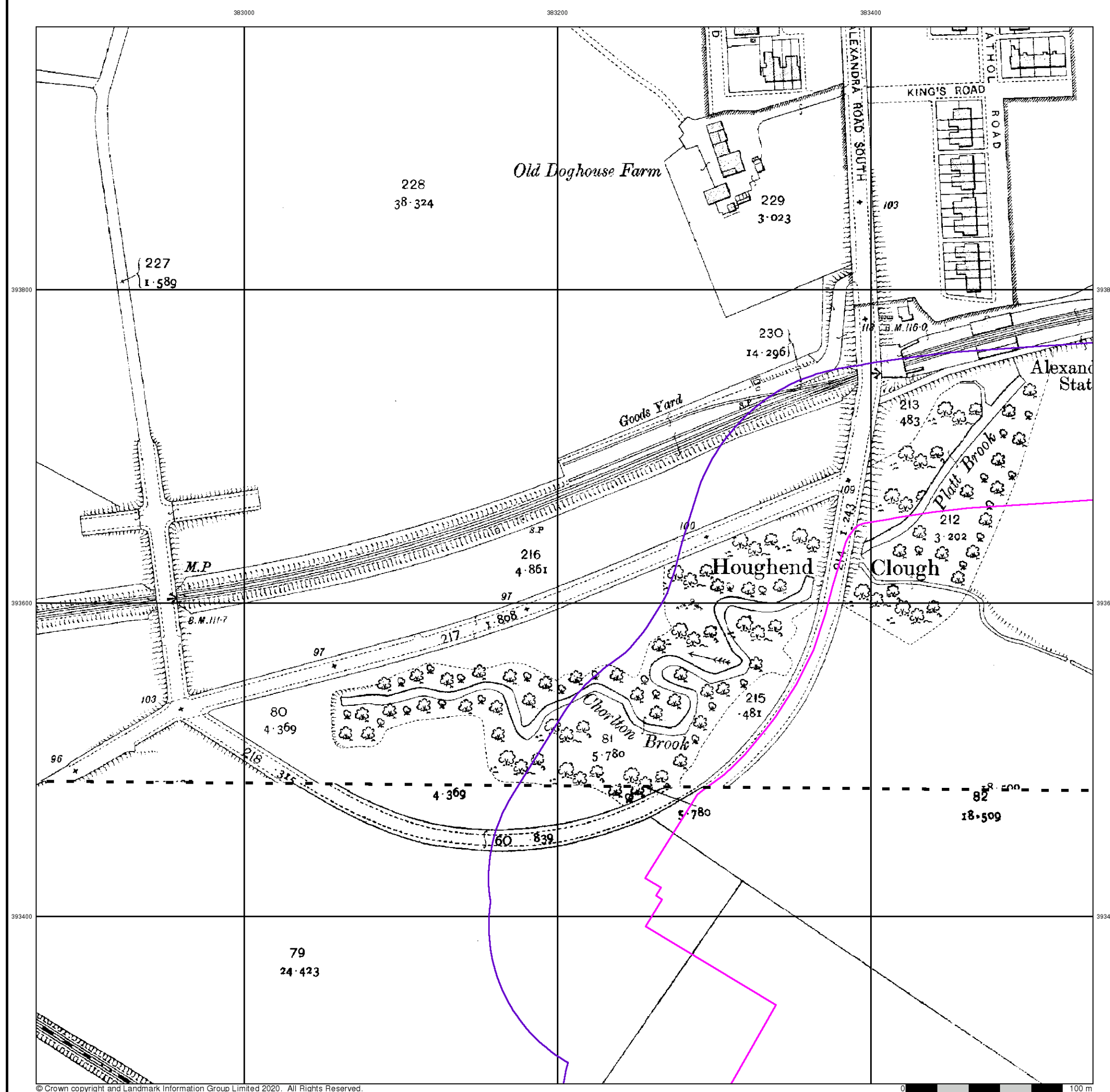


Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



Published 1933

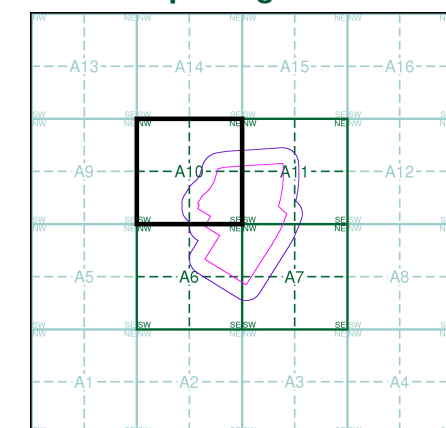
Source map scale - 1:2,500

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

Map Name(s) and Date(s)

111_02
1933
1:2,500
111_06
1933
1:2,500

Historical Map - Segment A10

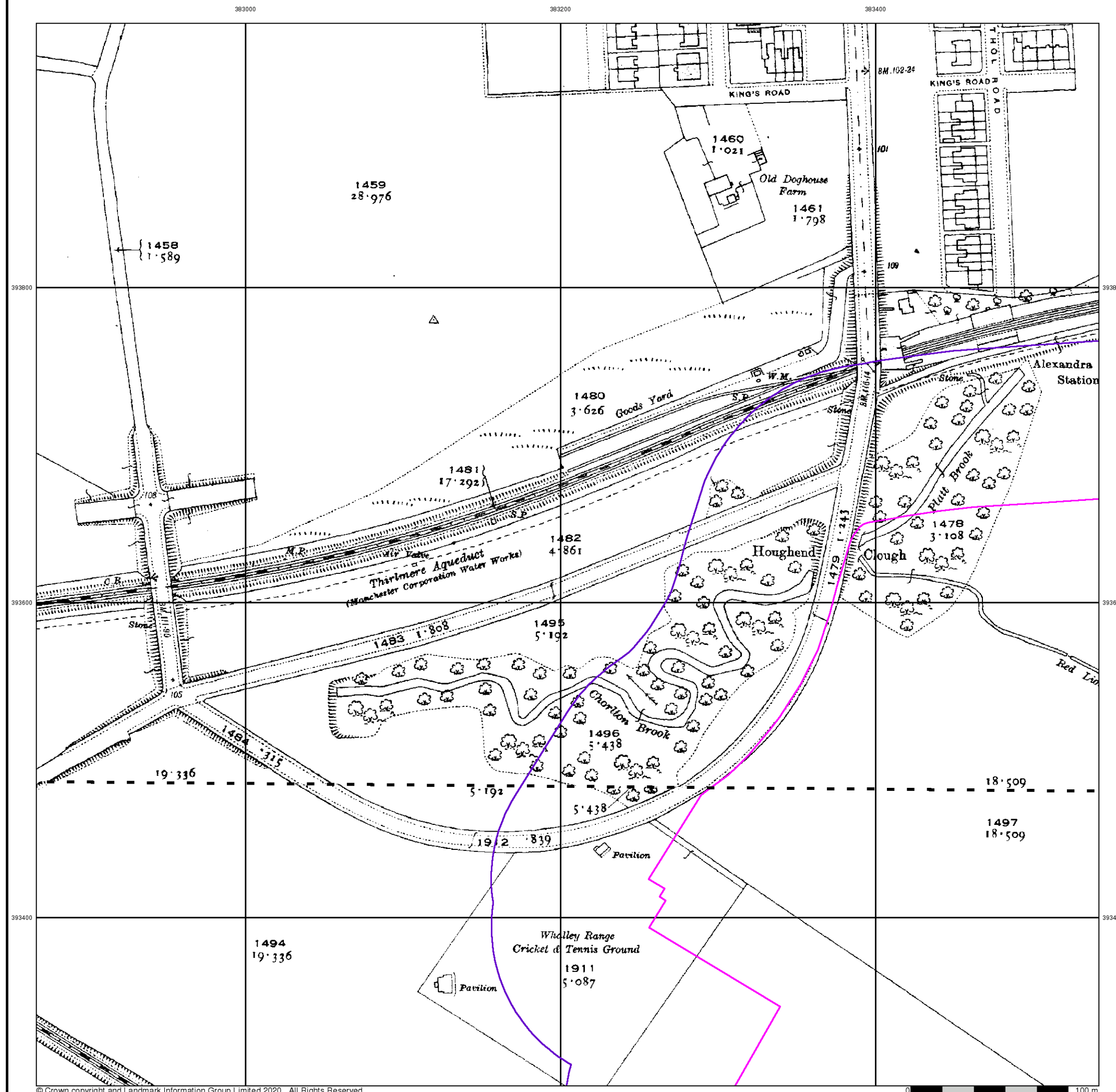


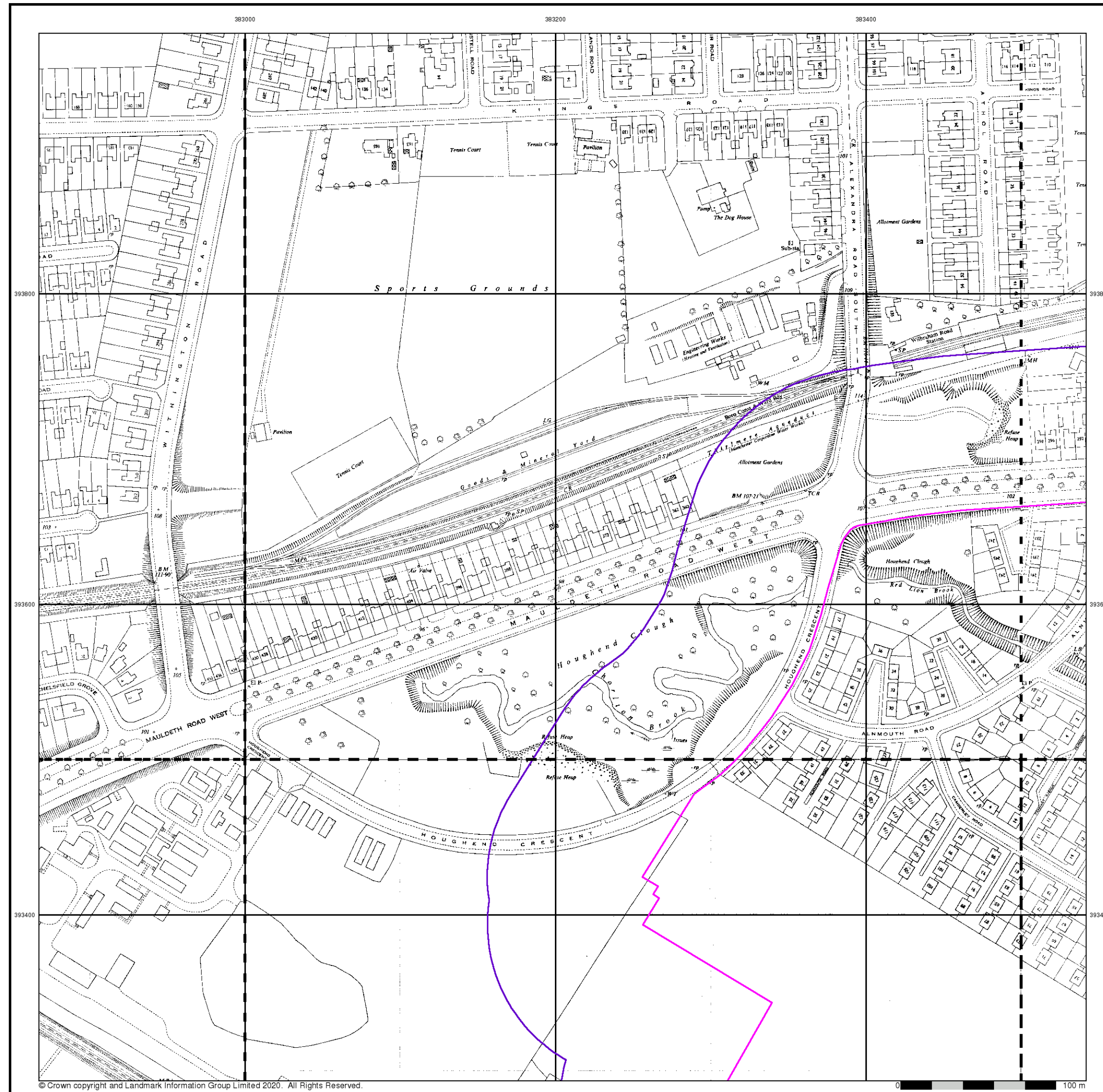
Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

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0 100 m



Ordnance Survey Plan

Published 1951 - 1955

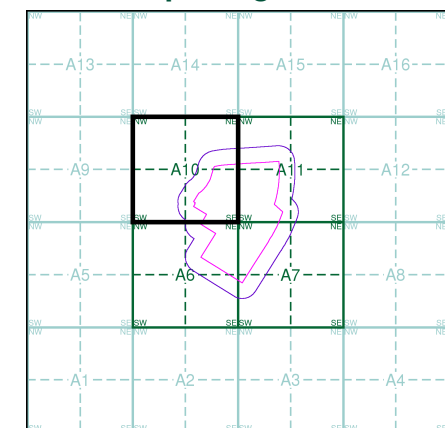
Source map scale - 1:1,250

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)

SJ8293NE 1955 1:1,250	SJ8393NW 1951 1:1,250	SJ8393NE 1951 1:1,250
SJ8293SE 1955 1:1,250	SJ8393SW 1951 1:1,250	SJ8393SE 1951 1:1,250

Historical Map - Segment A10



Order Details

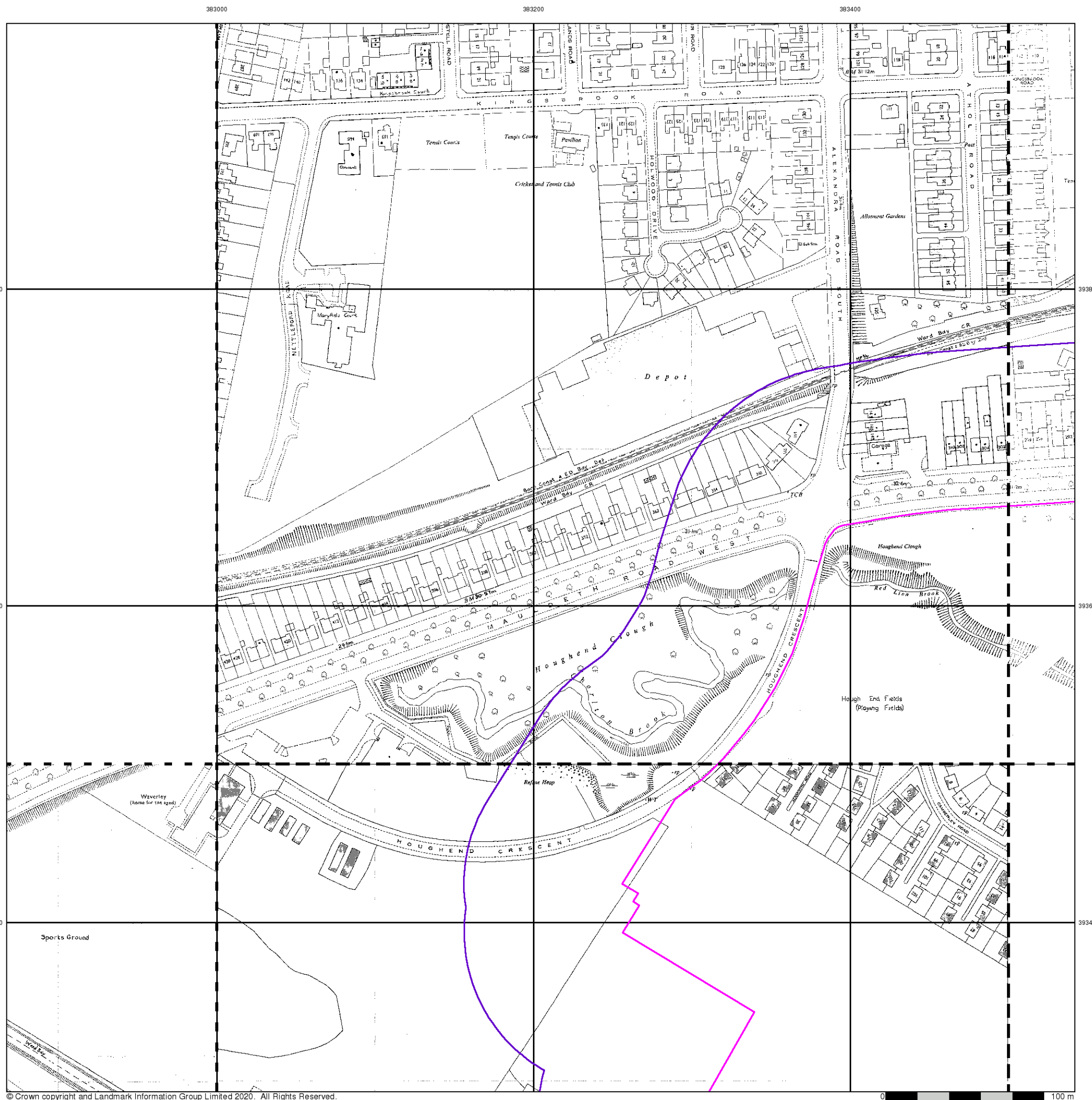
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

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GROUP

Additional SIMs

Published 1951 - 1983

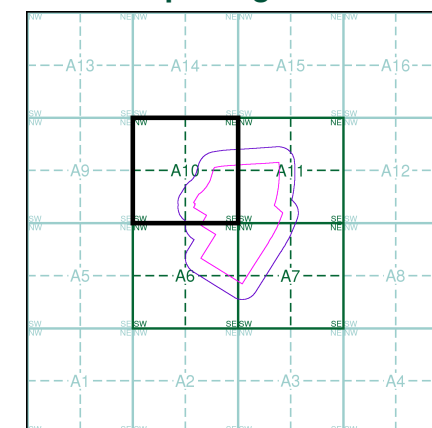
Source map scale - 1:1,250

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)

SJ8393NW	SJ8393NE
1982	1983
1:1,250	1:1,250
SJ8293SE	SJ8393SW
1978	1951
1:1,250	1:1,250
	SJ8393SE
	1983
	1:1,250

Historical Map - Segment A10



Order Details

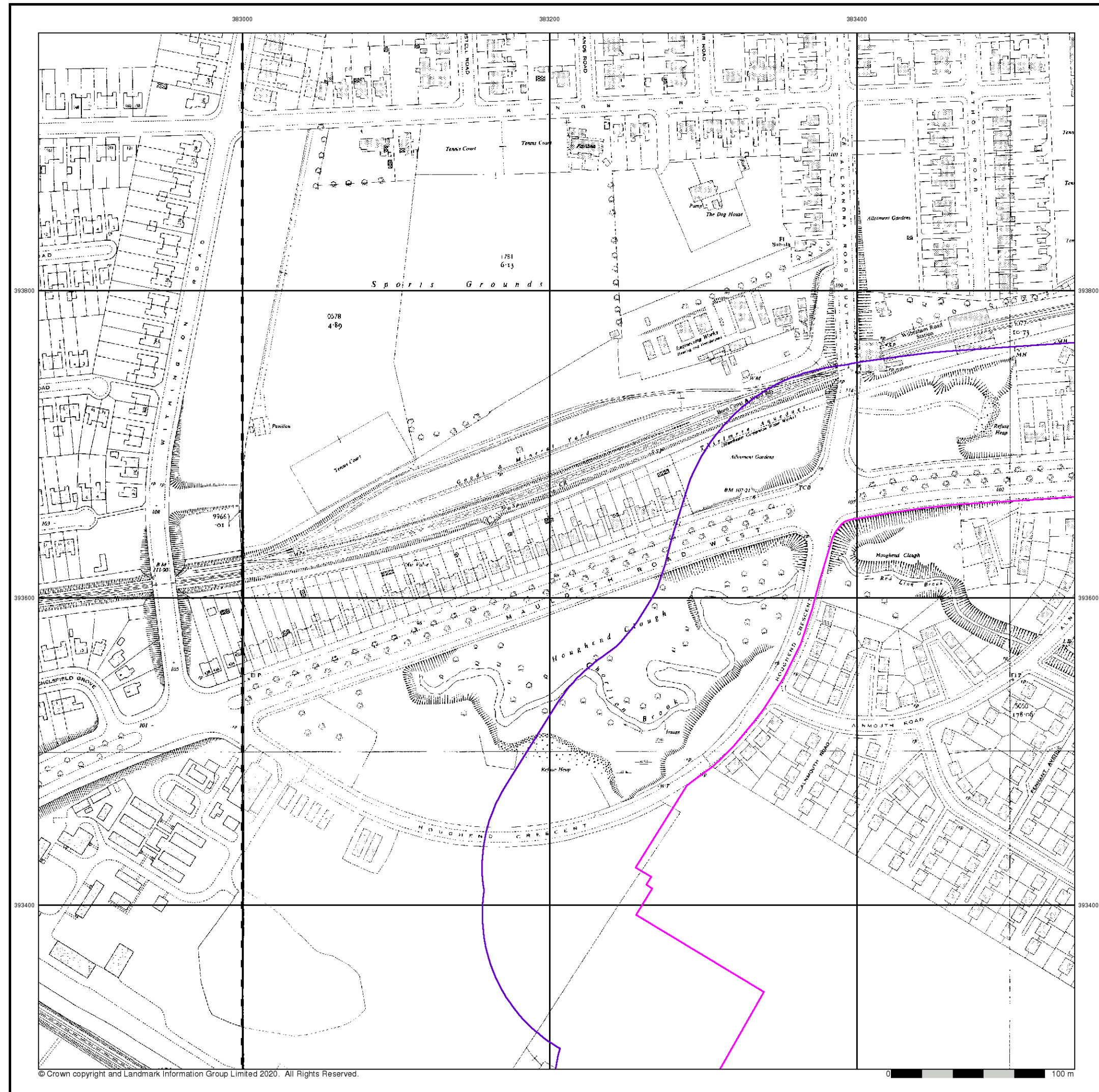
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road,
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LK

GROUP

Ordnance Survey Plan

Published 1952 - 1955

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)

SJ8293

1955

1:2,500

SJ8393

1952

1:2,500

Historical Map - Segment A10

N

Order Details

Order Number:

266502671_1_1

Customer Ref:

LKC 20 1488

National Grid Reference:

383550, 393340

Slice:

A

Site Area (Ha):

29.81

Search Buffer (m):

100

Site Details

Hough End Leisure Centre, 480, Princess Road,

MANCHESTER, M20 1NA

Landmark

INFORMATION GROUP

Tel:

0844 844 9952

Fax:

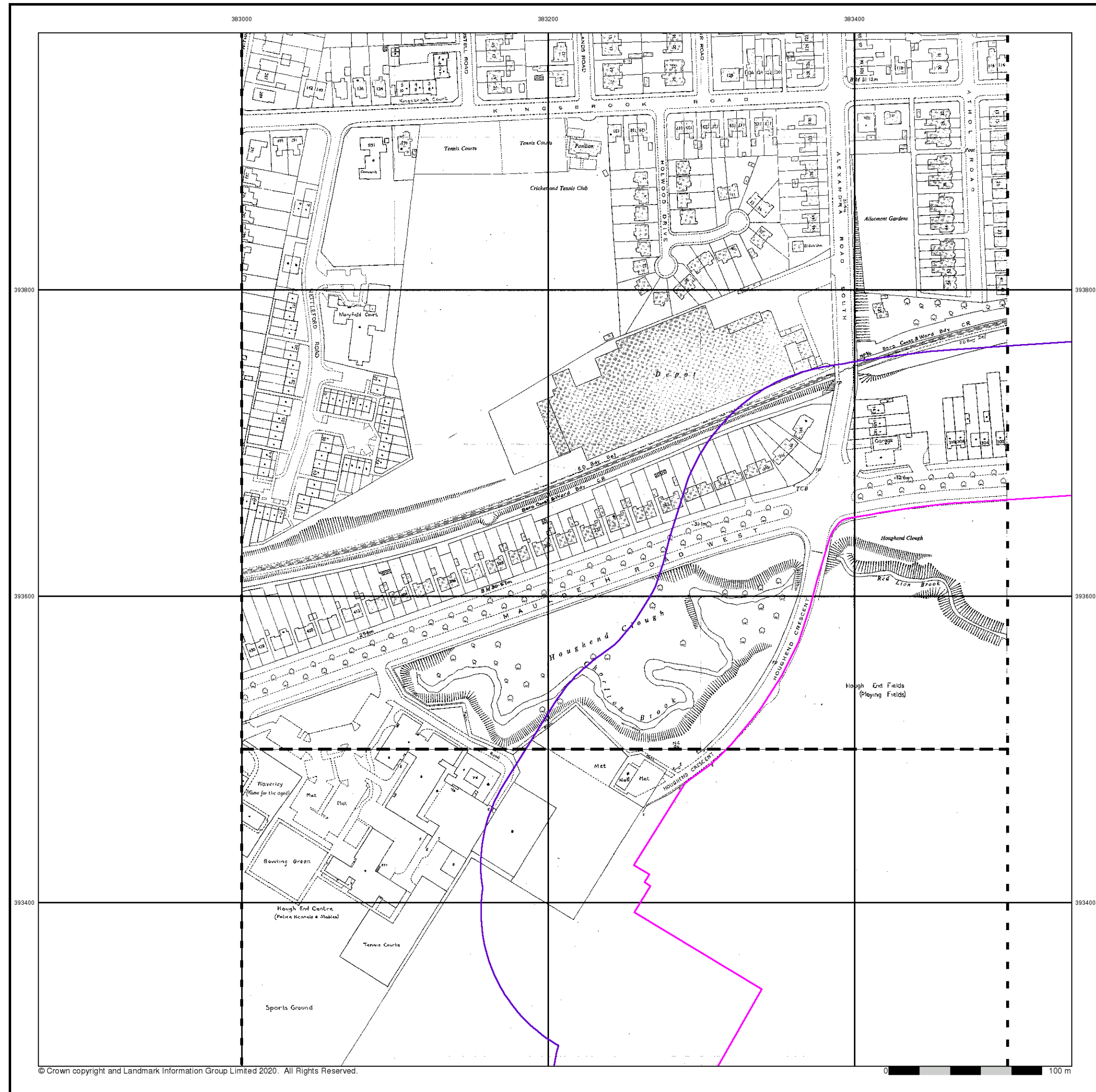
0844 844 9951

Web:

www.envirocheck.co.uk

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Page 7 of 16



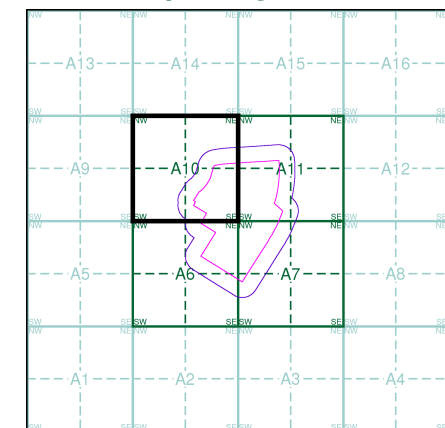
Published 1978 - 1983
Source map scale - 1:1,250

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)

SJ8393NW
1983
1:1,250
SJ8393SW
1978
1:1,250

Historical Map - Segment A10

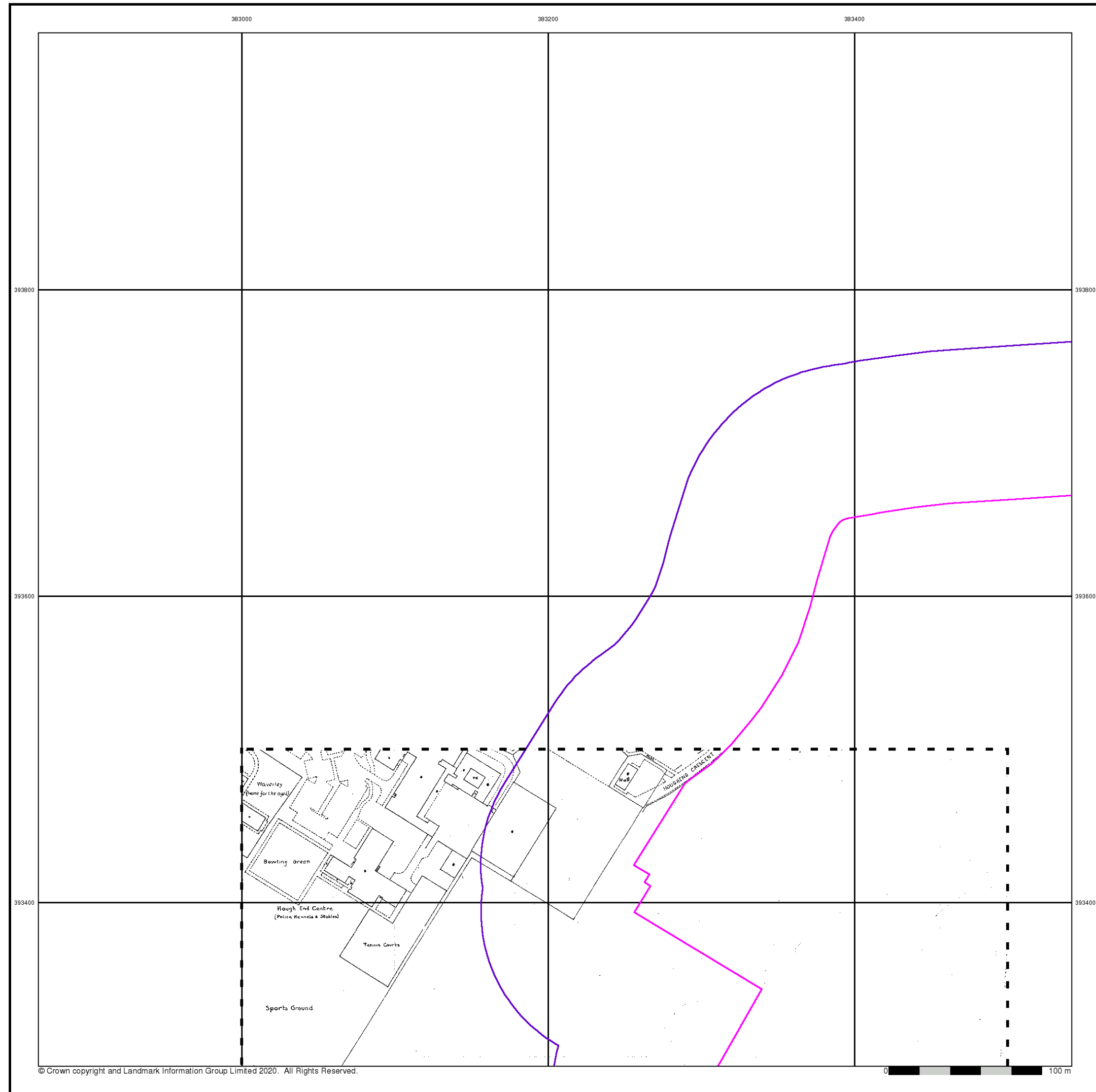


Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

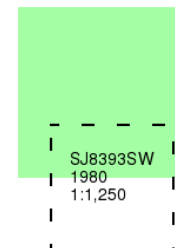
Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA

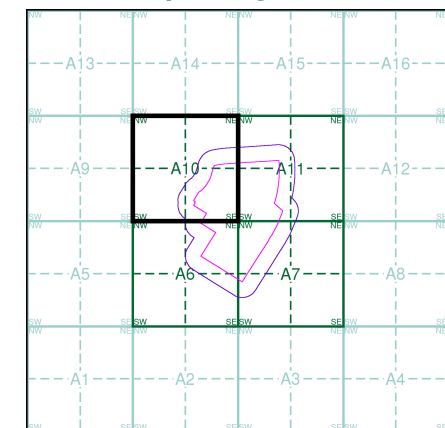


The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps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

Map Name(s) and Date(s)



Historical Map - Segment A10

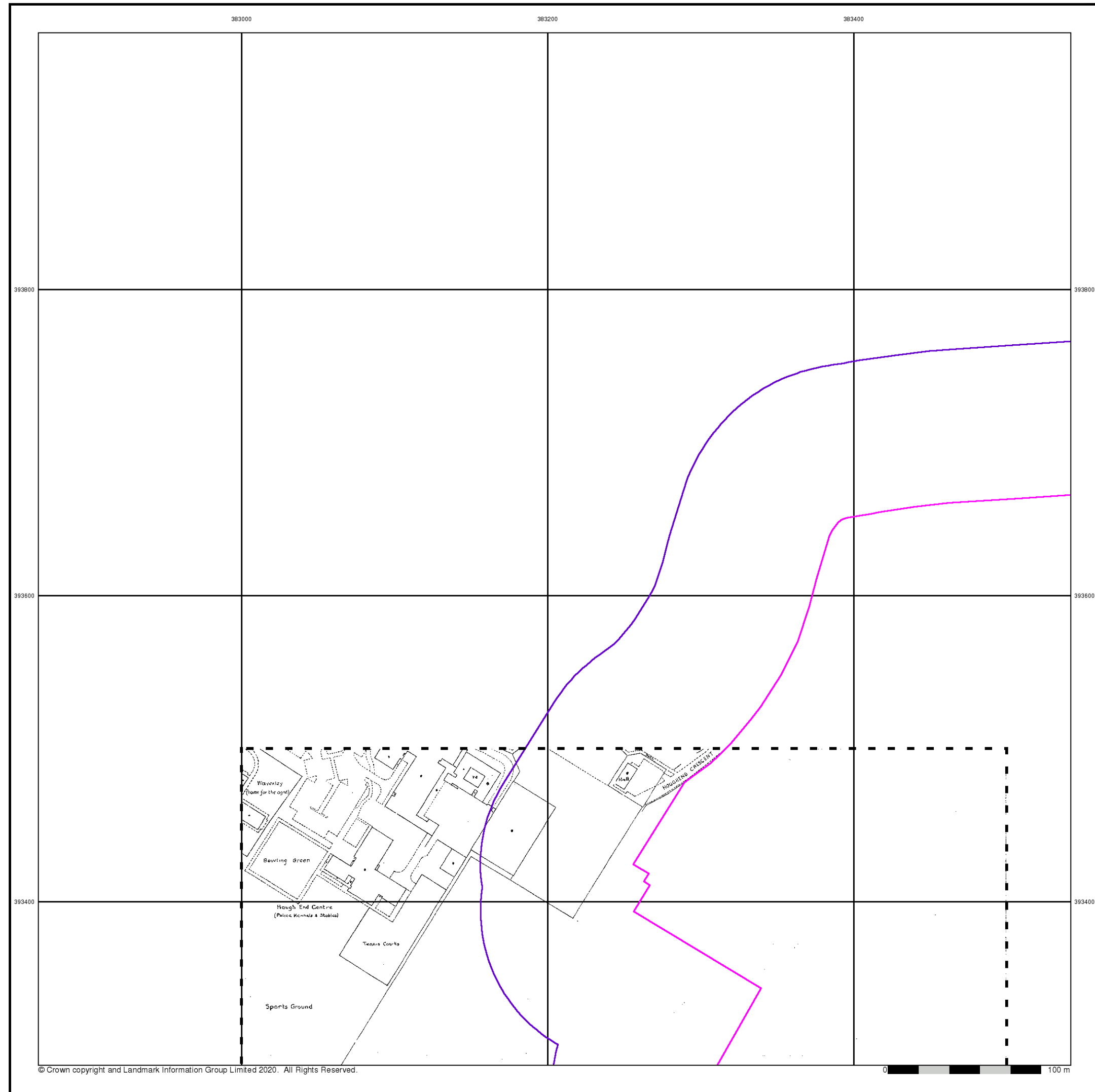


Order Details

Order Number:	266502671_1_1
Customer Ref:	LKC 20 1488
National Grid Reference:	383550, 393340
Slice:	A
Site Area (Ha):	29.81
Search Buffer (m):	100

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA

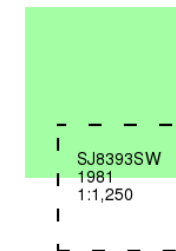


Published 1981

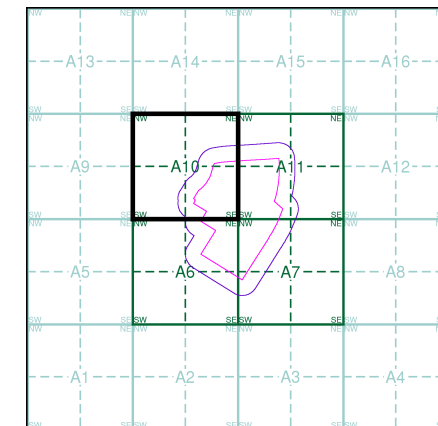
Source map scale - 1:1,250

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 A10

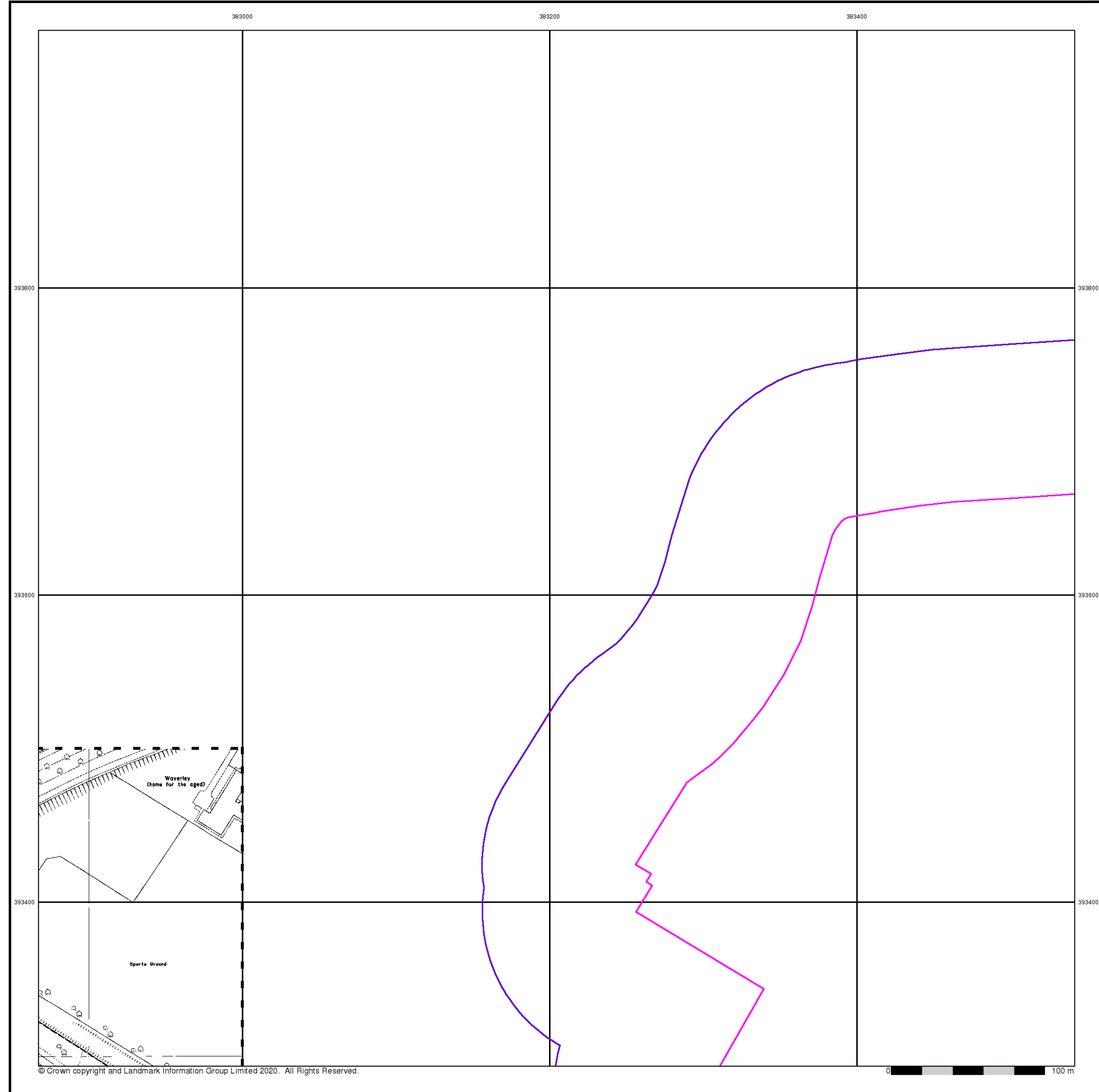


Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

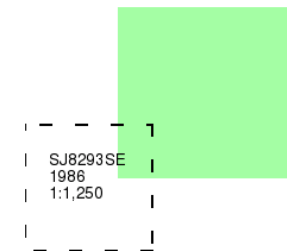
Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



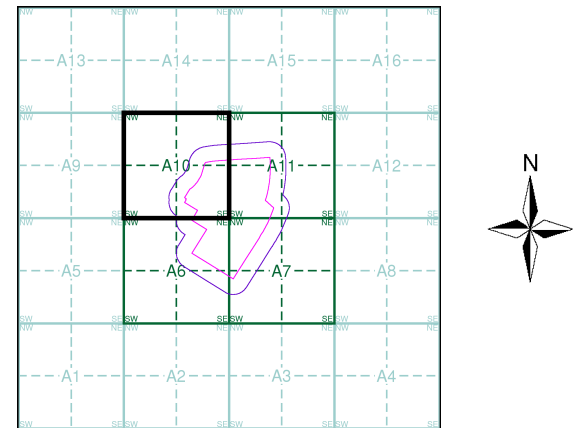
LK
GROUP
Ordnance Survey Plan
Published 1986
Source map scale - 1:1,250

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)

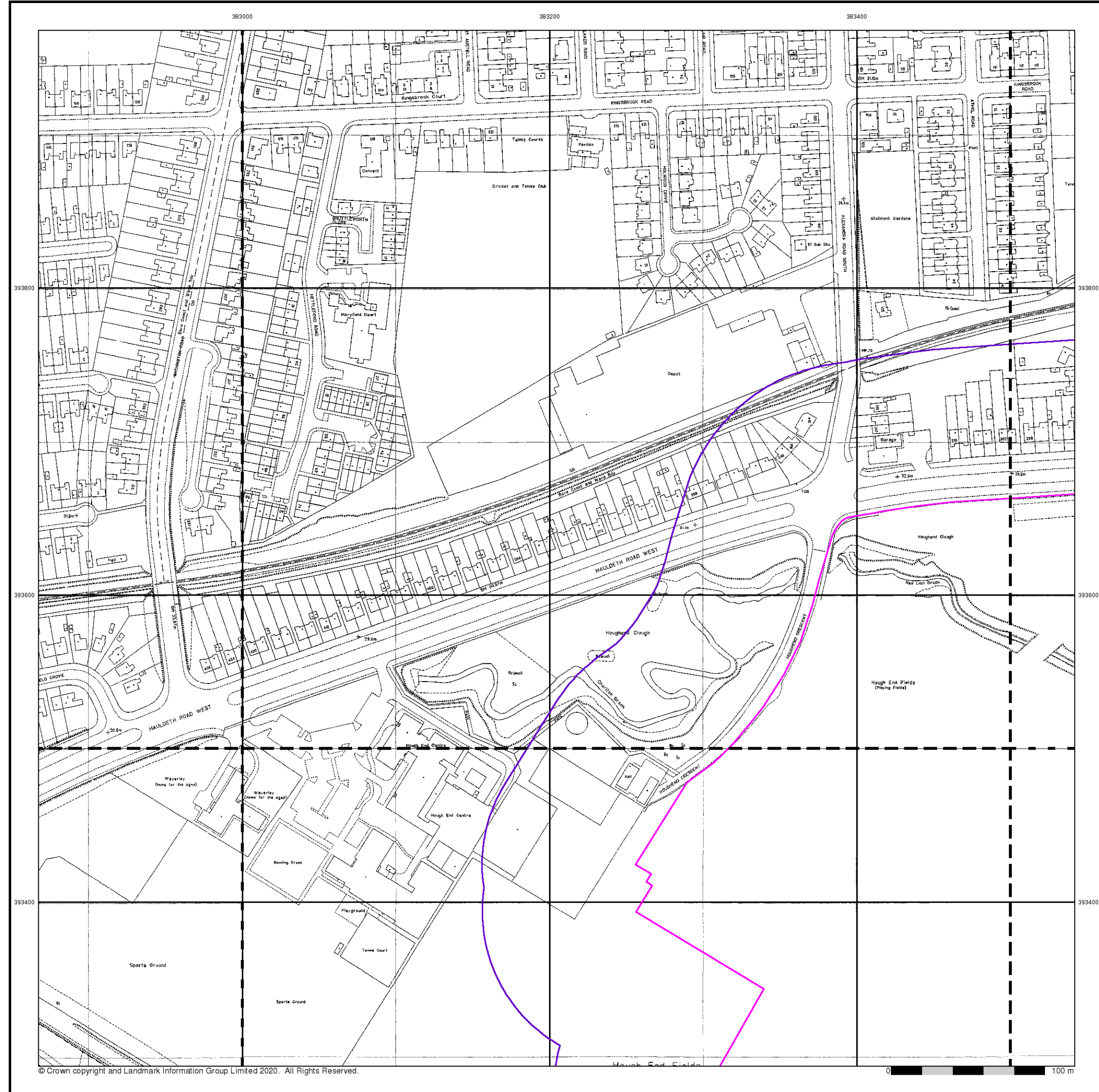


Historical Map - Segment A10



Order Details
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details
Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



LK

GROUP

Large-Scale National Grid Data

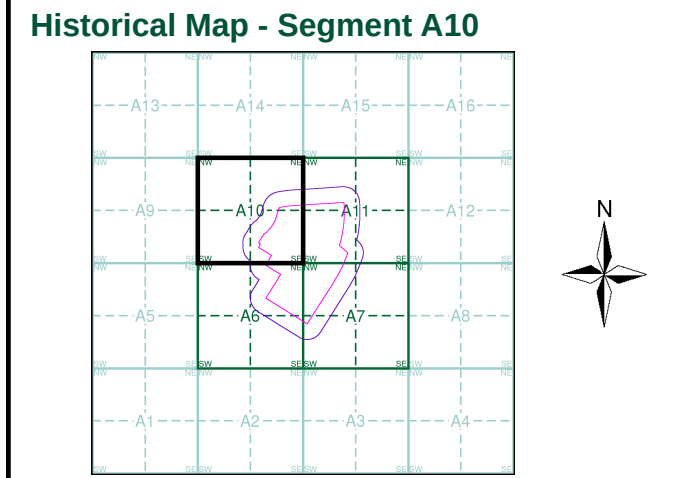
Published 1992

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)

SJ8293NE	SJ8393NW	SJ8393NE
1992	1992	1992
1:1,250	1:1,250	1:1,250
SJ8293SE	SJ8393SW	SJ8393SE
1992	1992	1992
1:1,250	1:1,250	1:1,250



Order Details

Order Number: 266502671_1_1

Customer Ref: LKC 20 1488

National Grid Reference: 383550, 393340

Slice: A

Site Area (Ha): 29.81

Search Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road, MANCHESTER, M20 1NA

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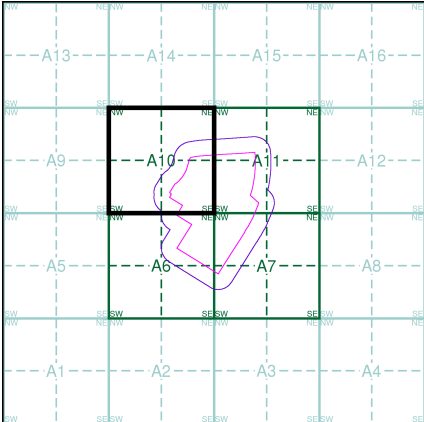
GROUP
Large-Scale National Grid Data
Published 1993
Source map scale - 1:1,250

'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)

SJ8393NW
1993
1:1,250

Historical Map - Segment A10



Order Details

Order Number:	266502671_1_1
Customer Ref:	LKC 20 1488
National Grid Reference:	383550, 393340
Slice:	A
Site Area (Ha):	29.81
Search Buffer (m):	100

Site Details
Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



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GROUP

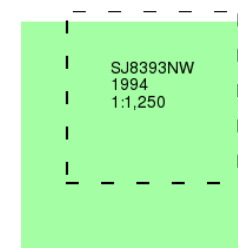
Large-Scale National Grid Data

Published 1994

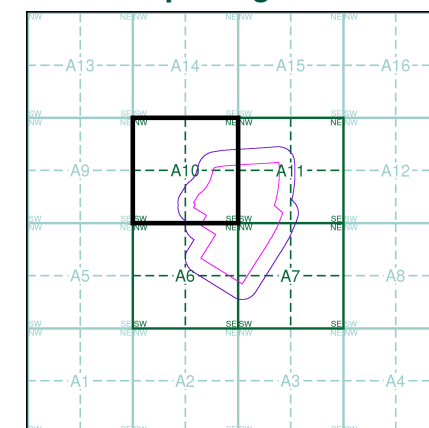
Source map scale - 1:1,250

'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 A10



Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



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

383000

383200

383400



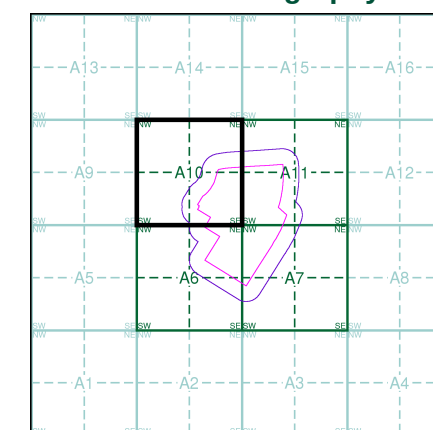
G R O U P

Historical Aerial Photography

Published 2000

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

Historical Aerial Photography - Segment A10



Order Details

Order Number: 266502671_1_1
 Customer Ref: LKC 20 1488
 National Grid Reference: 383550, 393340
 Slice: A
 Site Area (Ha): 29.81
 Search Buffer (m): 100

Site Details

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 MANCHESTER, M20 1NA

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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

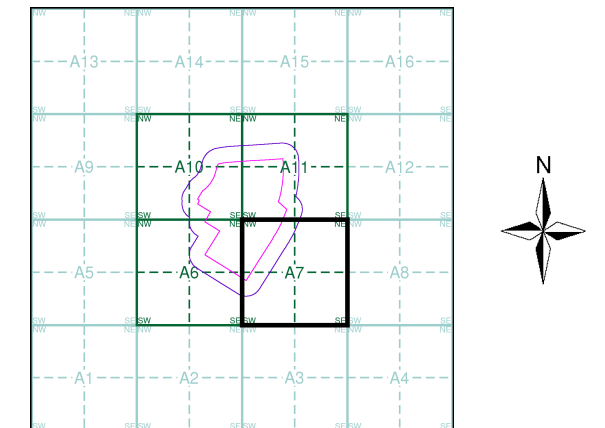


GROUP

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Cheshire	1:2,500	1872	2
Lancashire And Furness	1:2,500	1894	3
Cheshire	1:2,500	1898	4
Lancashire And Furness	1:2,500	1907	5
Cheshire	1:2,500	1910	6
Lancashire And Furness	1:2,500	1933	7
Ordnance Survey Plan	1:1,250	1951 - 1958	8
Ordnance Survey Plan	1:2,500	1952 - 1958	9
Ordnance Survey Plan	1:1,250	1973 - 1974	10
Additional SIMs	1:1,250	1980 - 1986	11
Additional SIMs	1:1,250	1989	12
Large-Scale National Grid Data	1:1,250	1992	13
Historical Aerial Photography	1:2,500	2000	14

Historical Map - Segment A7



Order Details

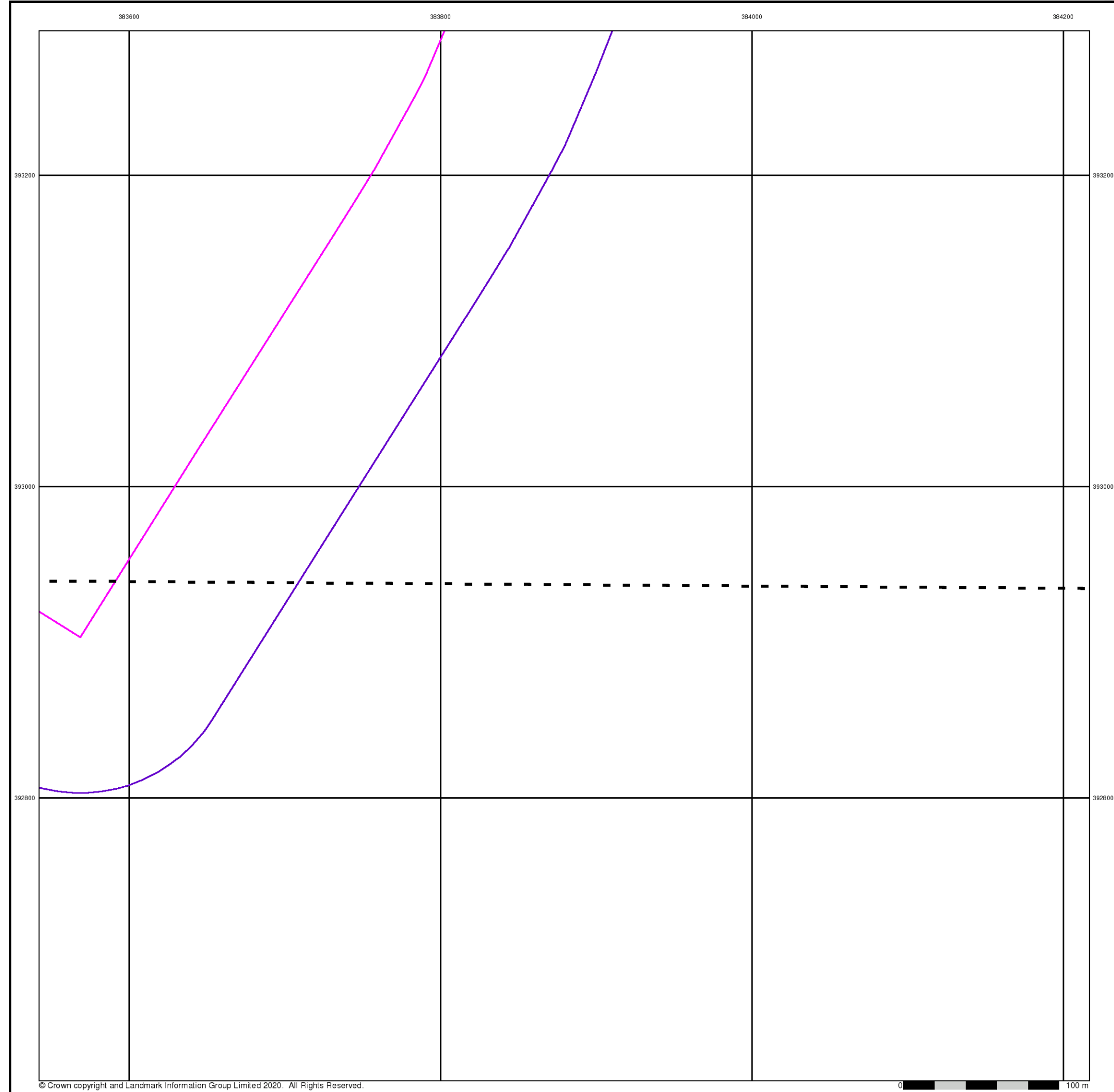
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road,
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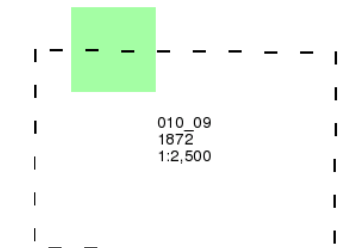
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Fax: 0844 844 9951
Web: www.envirocheck.co.uk



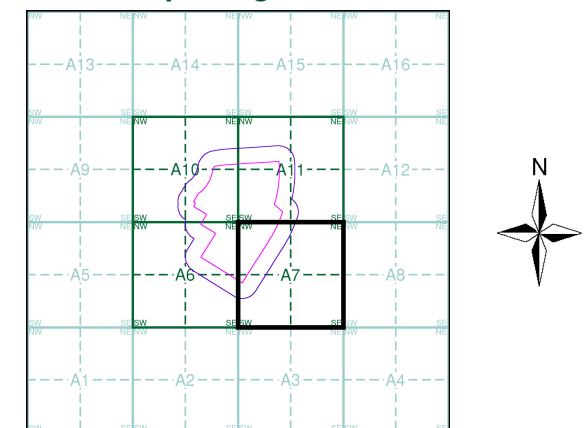
Published 1872
Source map scale - 1:2,500

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)

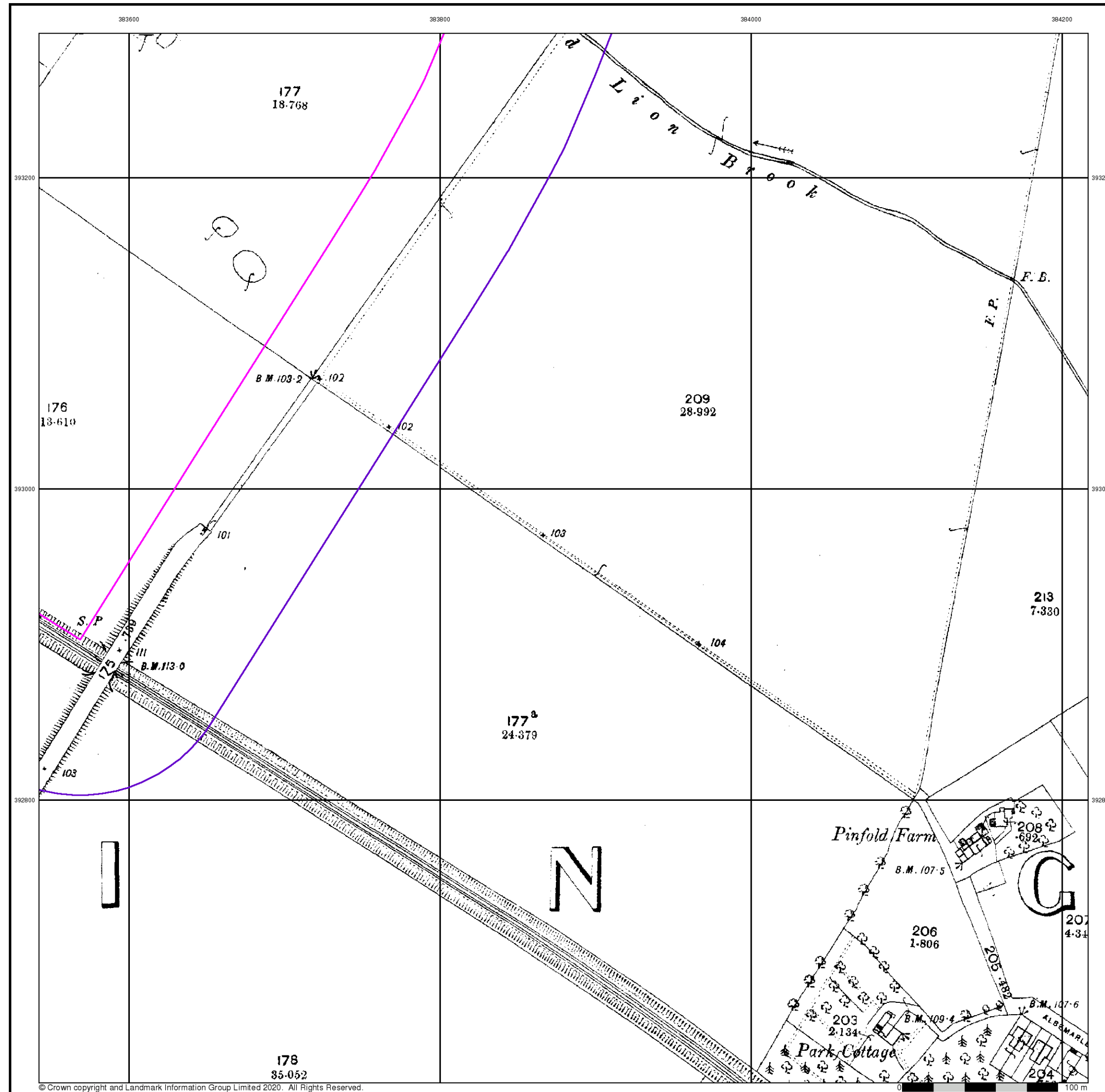


Historical Map - Segment A7



Order Details
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details
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LK GROUP

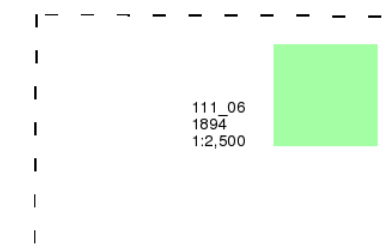
Lancashire And Furness

Published 1894

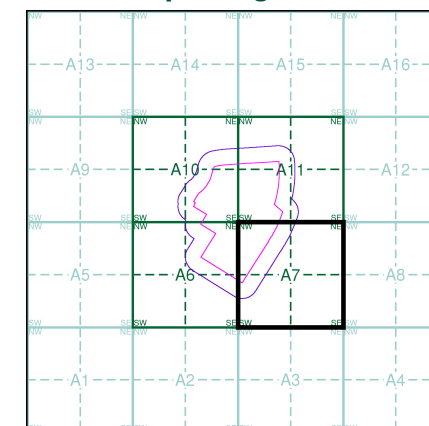
Source map scale - 1:2,500

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 A7



Order Details

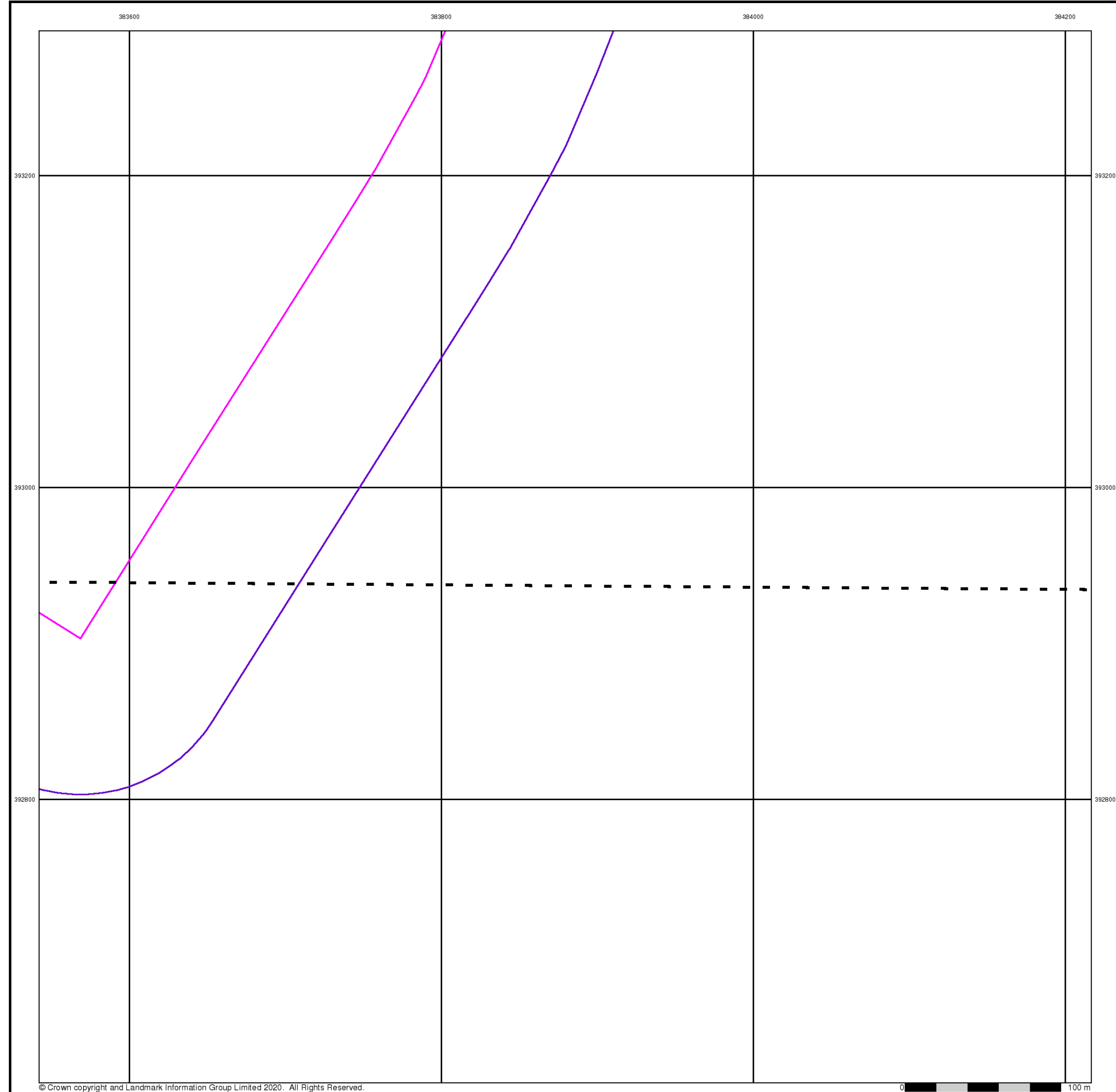
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA

Landmark
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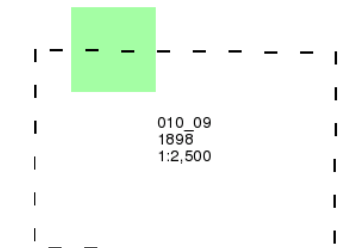


Published 1898

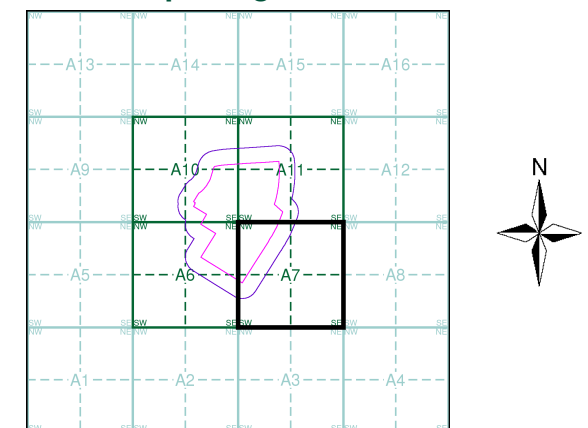
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A7

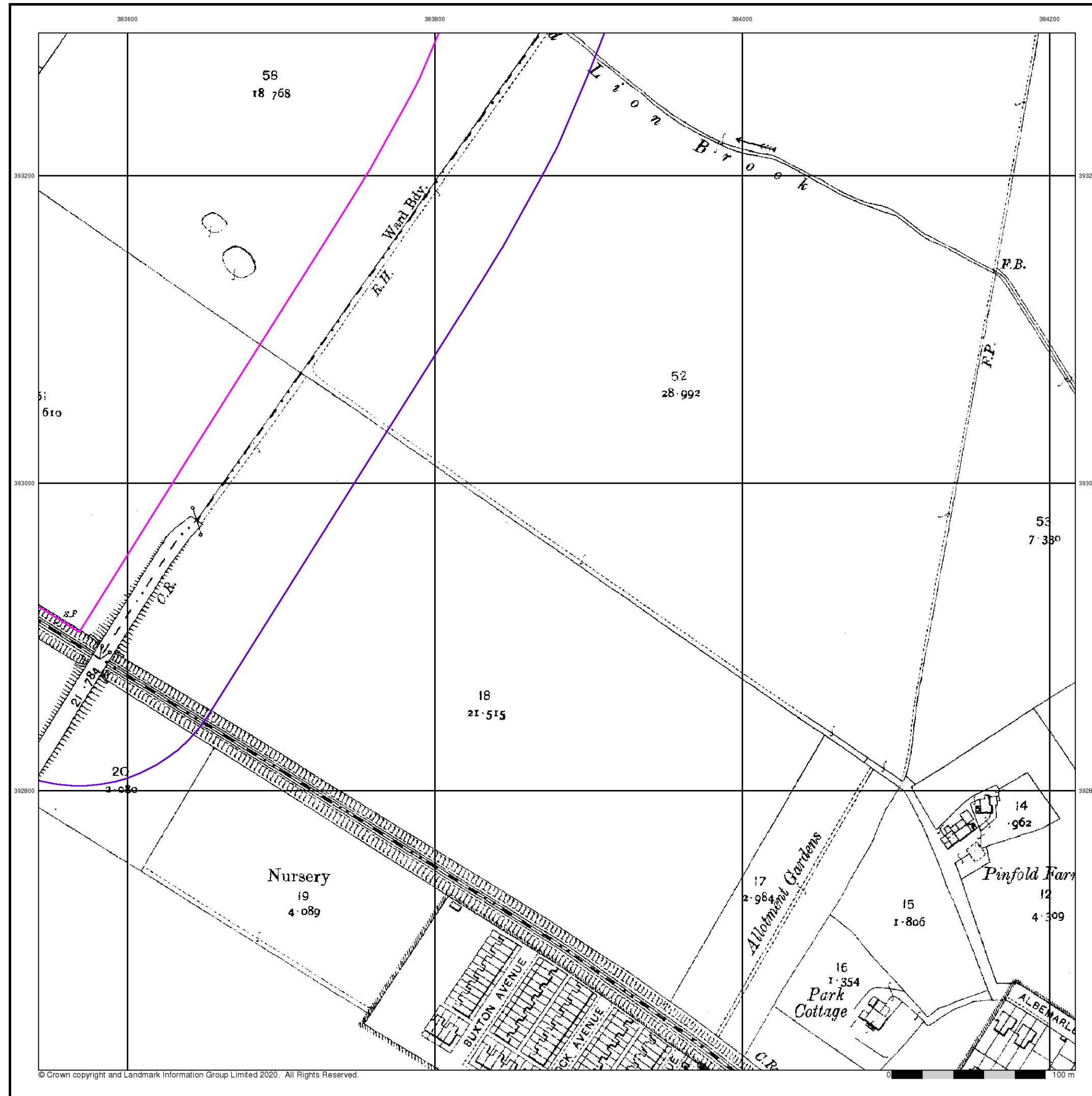


Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

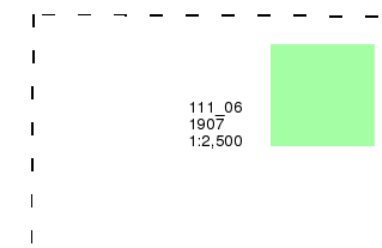
Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



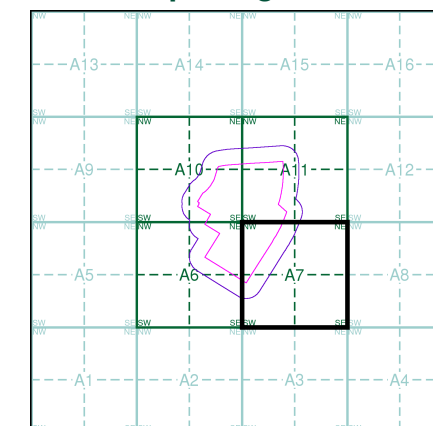
LK
GROUP
Lancashire And Furness
Published 1907
Source map scale - 1:2,500

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 A7



Order Details

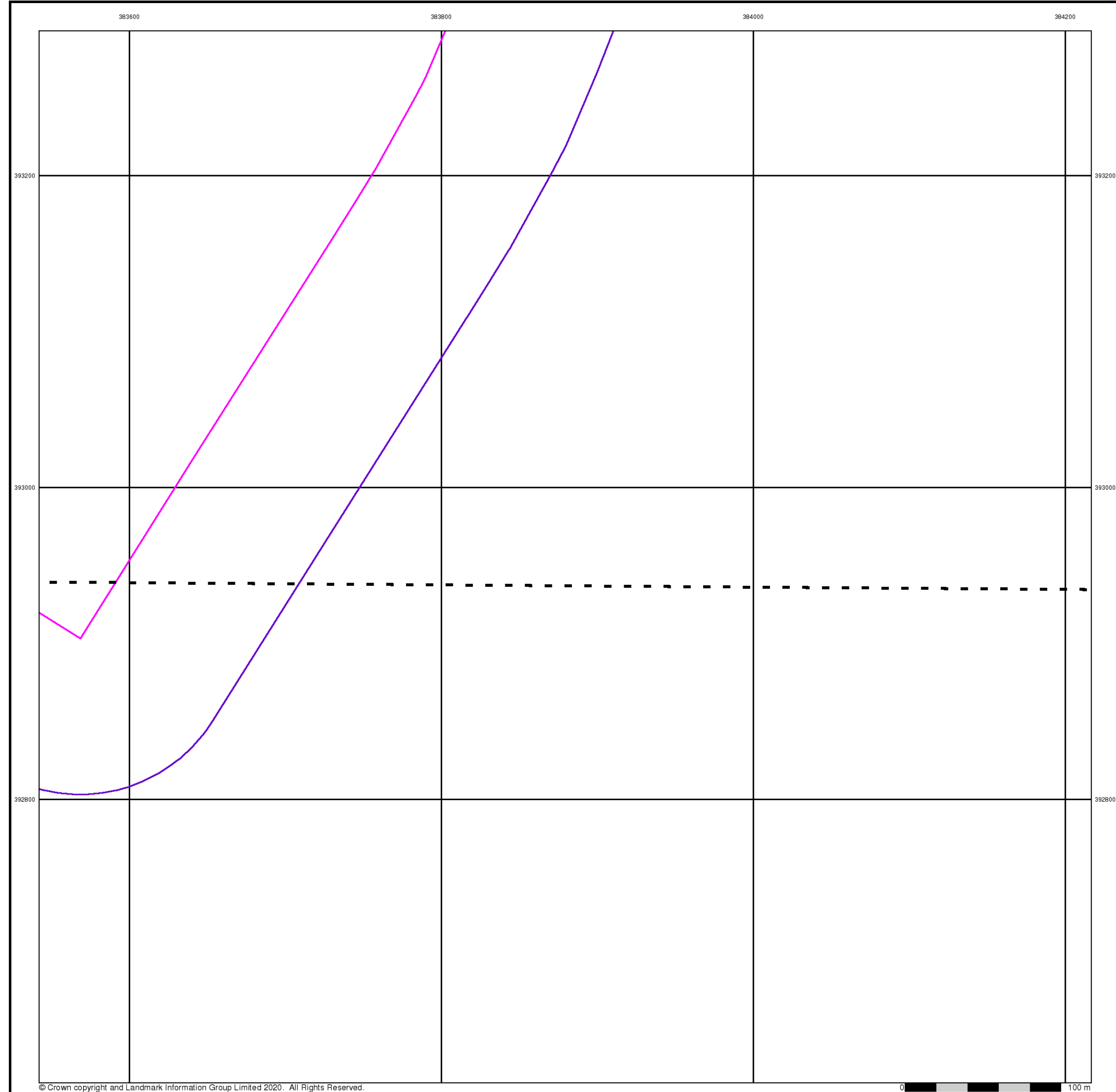
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

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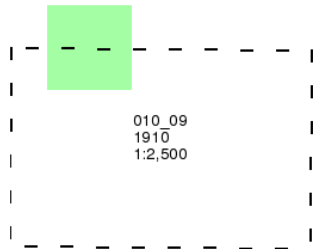


Published 1910

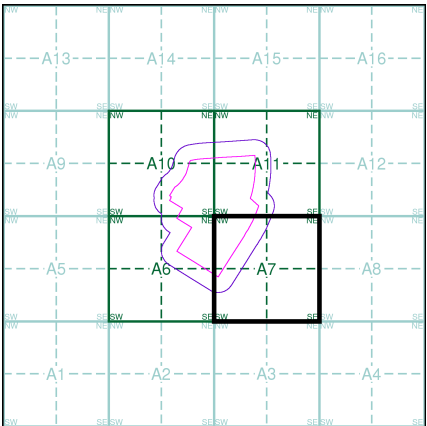
Source map scale - 1:2,500

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 A7



Order Details

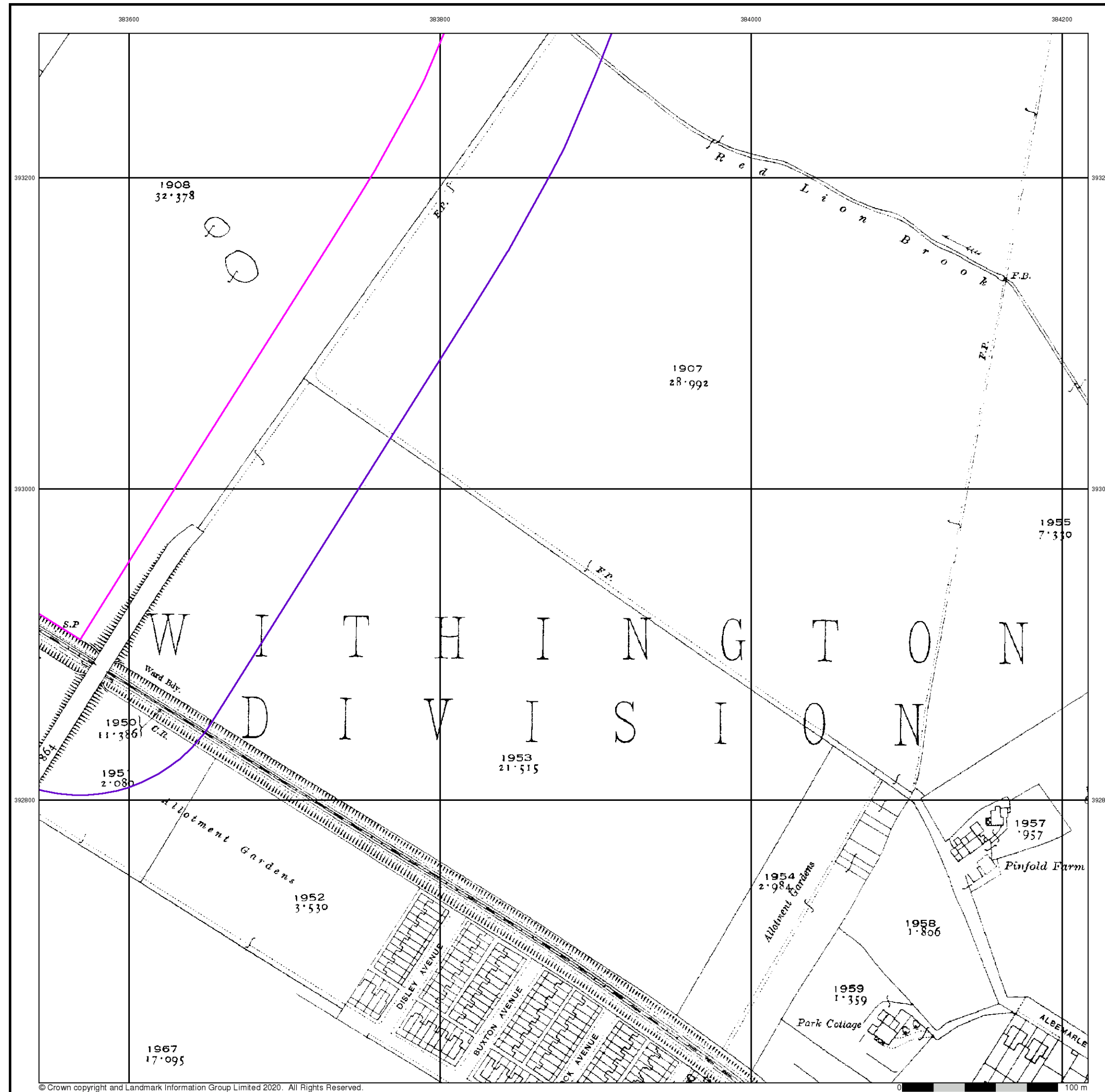
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
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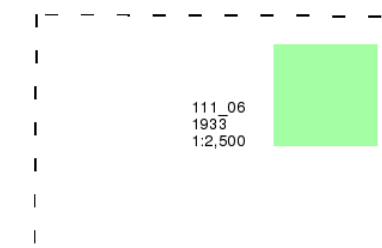
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



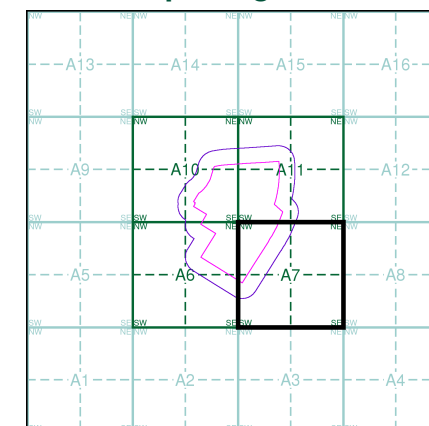
LK
GROUP
Lancashire And Furness
Published 1933
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A7



Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

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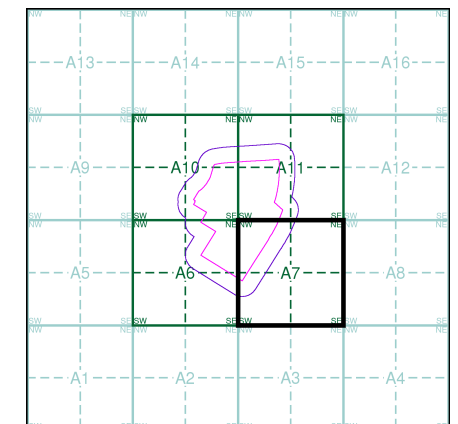


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. 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)

SJ8393SE 1951 1:1,250	SJ8493SW 1958 1:1,250
SJ8392NE 1956 1:1,250	SJ8492NW 1958 1:1,250

Historical Map - Segment A7



Order Details

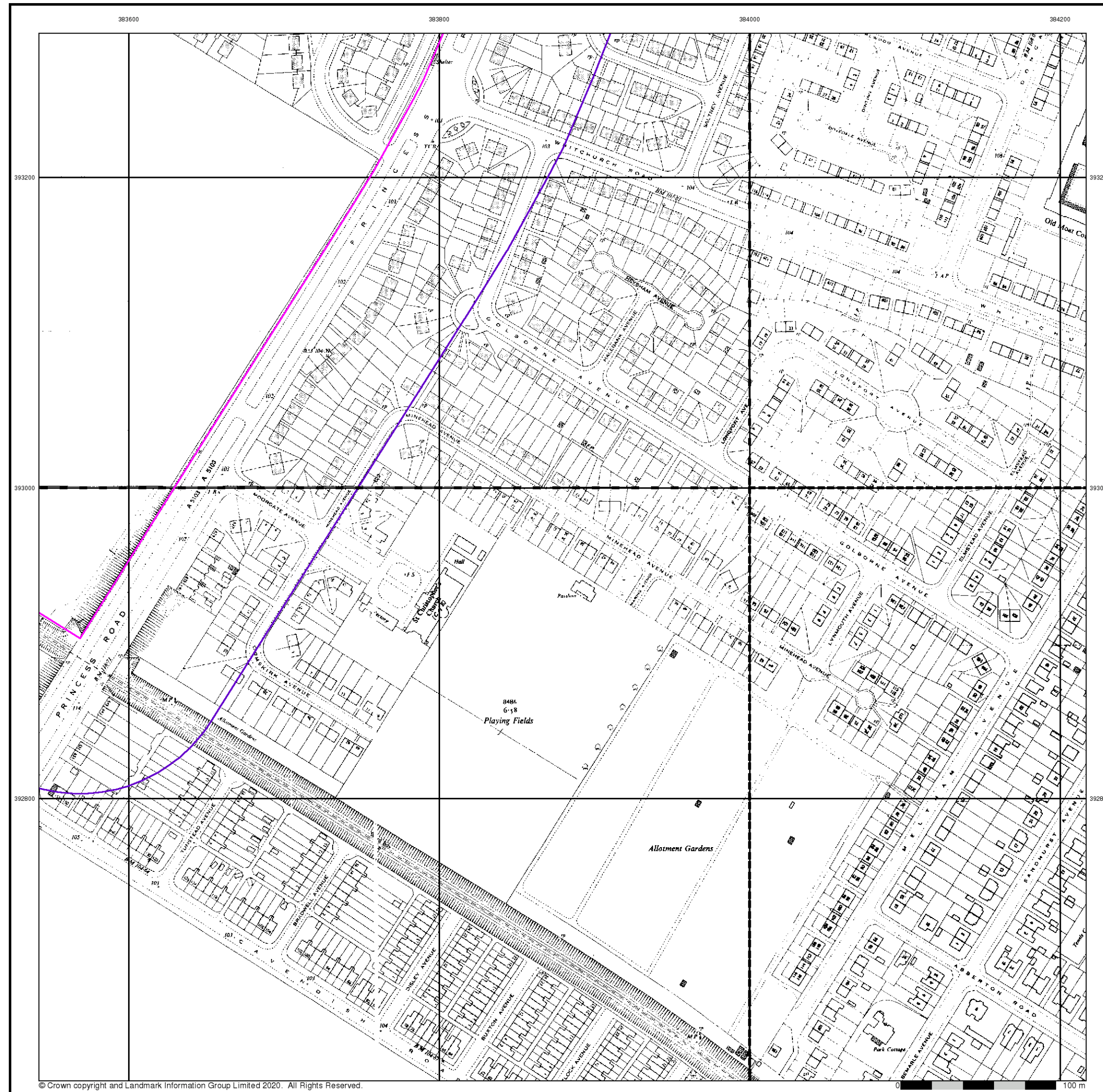
Order Number:	266502671_1_1
Customer Ref:	LKC 20 1488
National Grid Reference:	383550, 393340
Slice:	A
Site Area (Ha):	29.81
Search Buffer (m):	100

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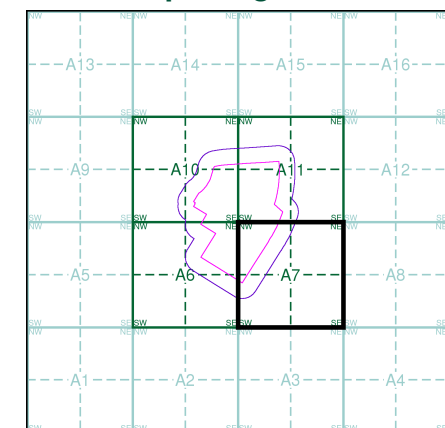
Ordnance Survey Plan
Published 1952 - 1958
Source map scale - 1:2,500

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)

SJ8393	SJ8493
1952	1958
12,500	12,500
SJ8392	SJ8492
1956	1958
12,500	12,500

Historical Map - Segment A7



Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
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GROUP

Ordnance Survey Plan

Published 1973 - 1974

Source map scale - 1:1,250

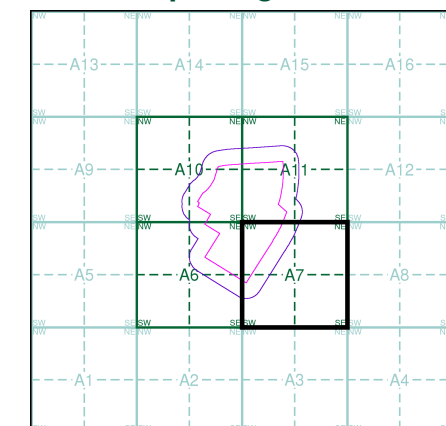
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. 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)

SJ8393SE
1973
1:1,250

SJ8392NE
1974
1:1,250

Historical Map - Segment A7



Order Details

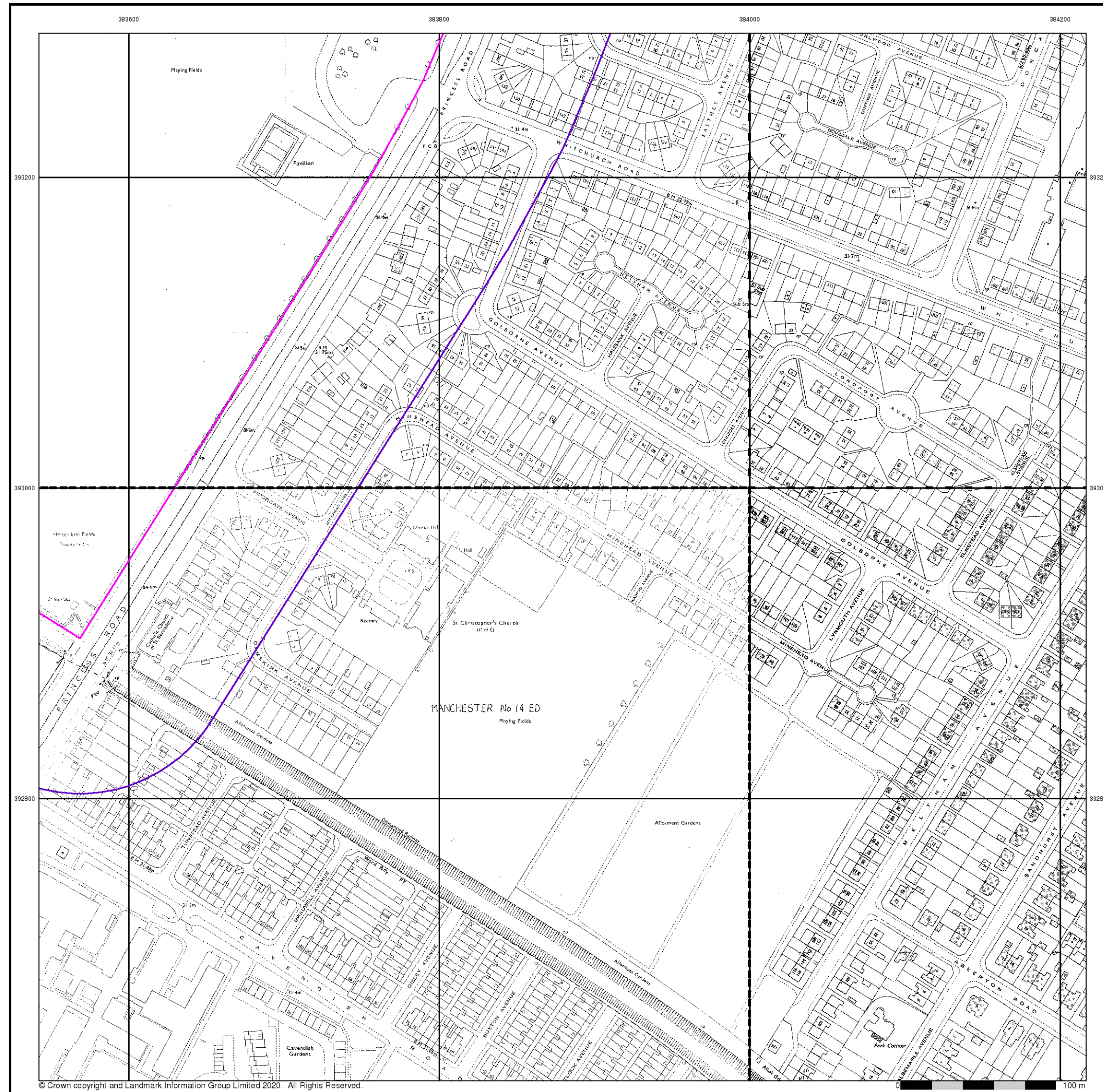
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
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Additional SIMs

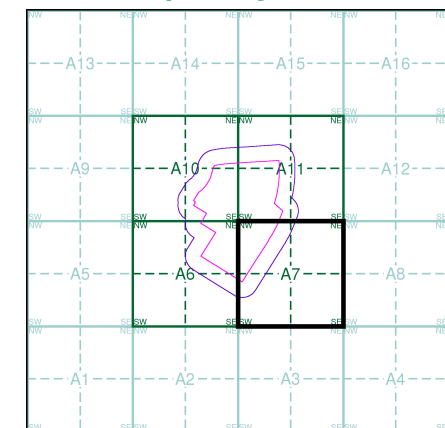
Published 1980 - 1986
Source map scale - 1:1,250

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)

SJ8393SE 1983 1:1,250	SJ8493SW 1986 1:1,250
SJ8392NE 1983 1:1,250	SJ8492NW 1980 1:1,250

Historical Map - Segment A7



Order Details

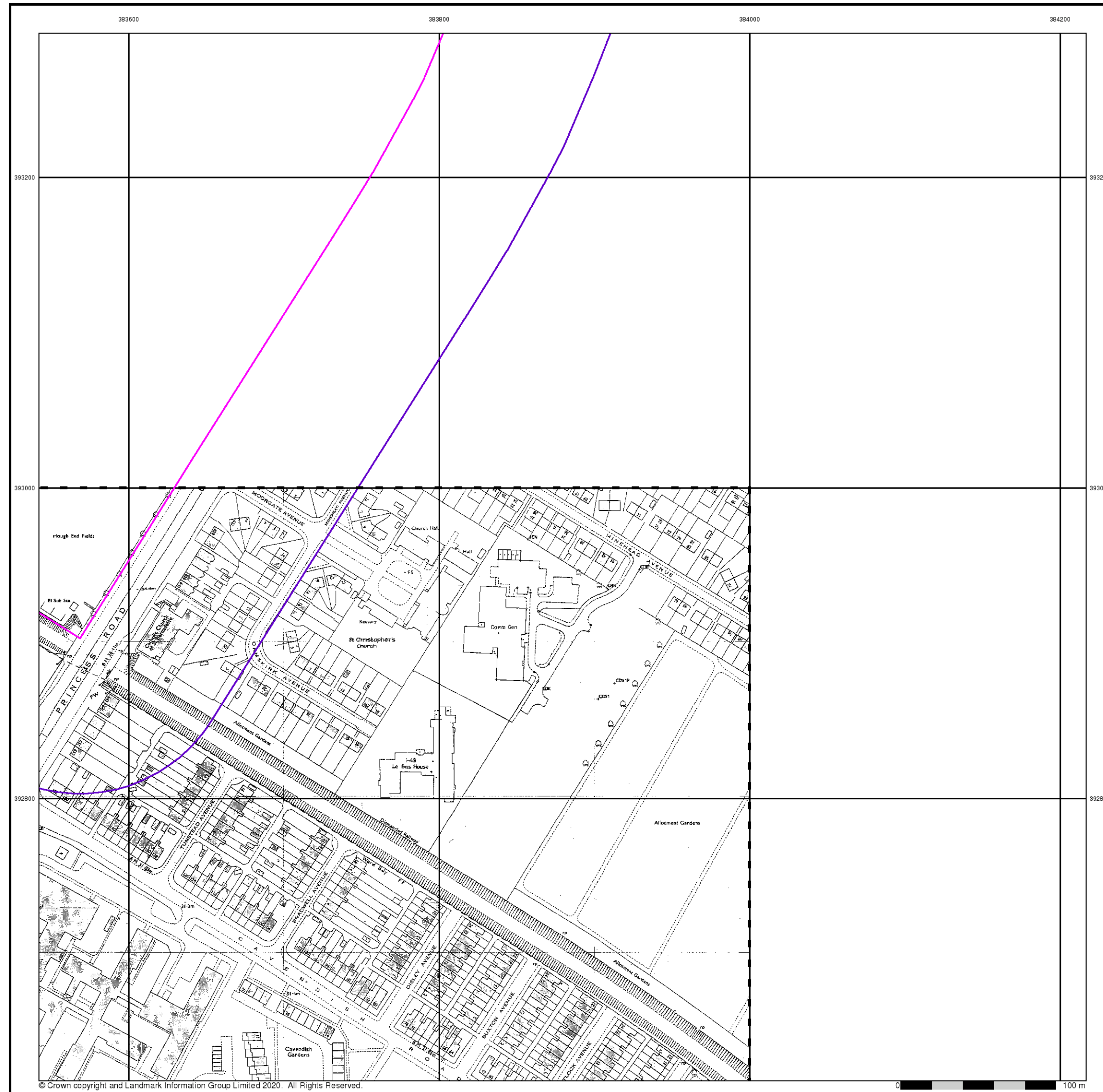
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
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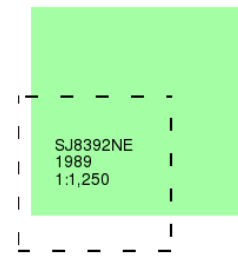


Published 1989

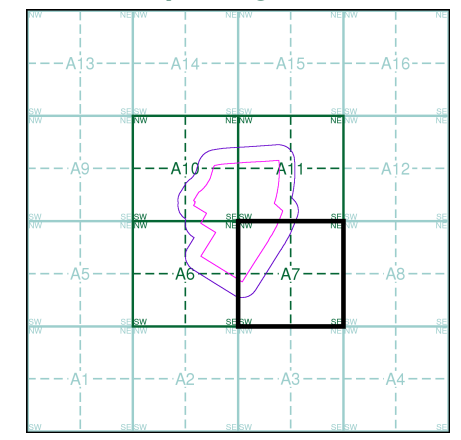
Source map scale - 1:1,250

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 A7

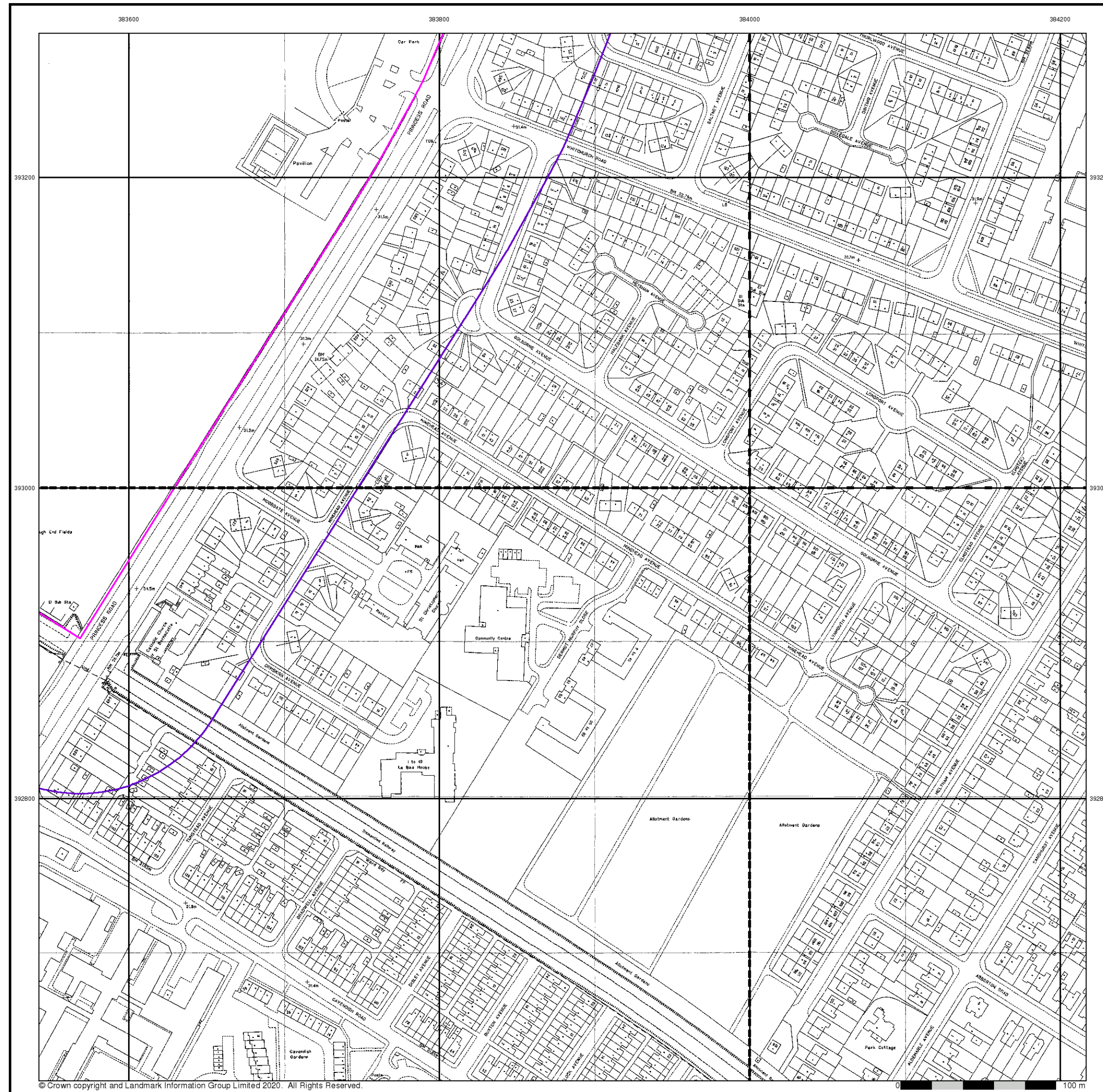


Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

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Large-Scale National Grid Data

Published 1992

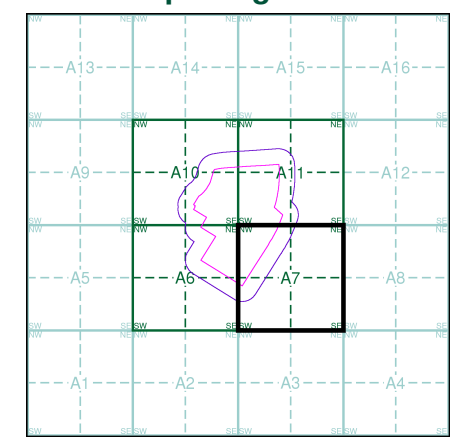
Source map scale - 1:1,250

'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)

SJ8393SE	SJ8493SW
1992	1992
1:1,250	1:1,250
SJ8392NE	SJ8492NW
1992	1992
1:1,250	1:1,250

Historical Map - Segment A7



Order Details
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details
Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



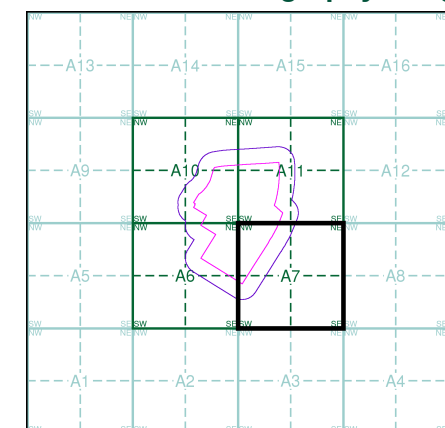
LK GROUP

Historical Aerial Photography

Published 2000

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

Historical Aerial Photography - Segment A7



Order Details
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

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Web: www.envirocheck.co.uk

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



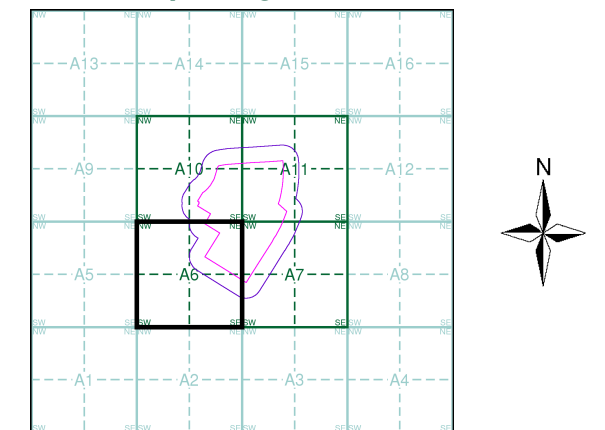
Large-Scale National Grid Data 1:2,500 and 1:1,250



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Cheshire	1:2,500	1872 - 1877	2
Lancashire And Furness	1:2,500	1894	3
Cheshire	1:2,500	1898	4
Lancashire And Furness	1:2,500	1907	5
Cheshire	1:2,500	1910	6
Lancashire And Furness	1:2,500	1933	7
Ordnance Survey Plan	1:1,250	1951 - 1956	8
Additional SIMs	1:1,250	1951 - 1983	9
Ordnance Survey Plan	1:2,500	1952 - 1956	10
Ordnance Survey Plan	1:1,250	1972 - 1983	11
Additional SIMs	1:1,250	1978 - 1989	12
Additional SIMs	1:1,250	1980	13
Additional SIMs	1:1,250	1981	14
Ordnance Survey Plan	1:1,250	1986	15
Large-Scale National Grid Data	1:1,250	1992	16
Historical Aerial Photography	1:2,500	2000	17

Historical Map - Segment A6



Order Details

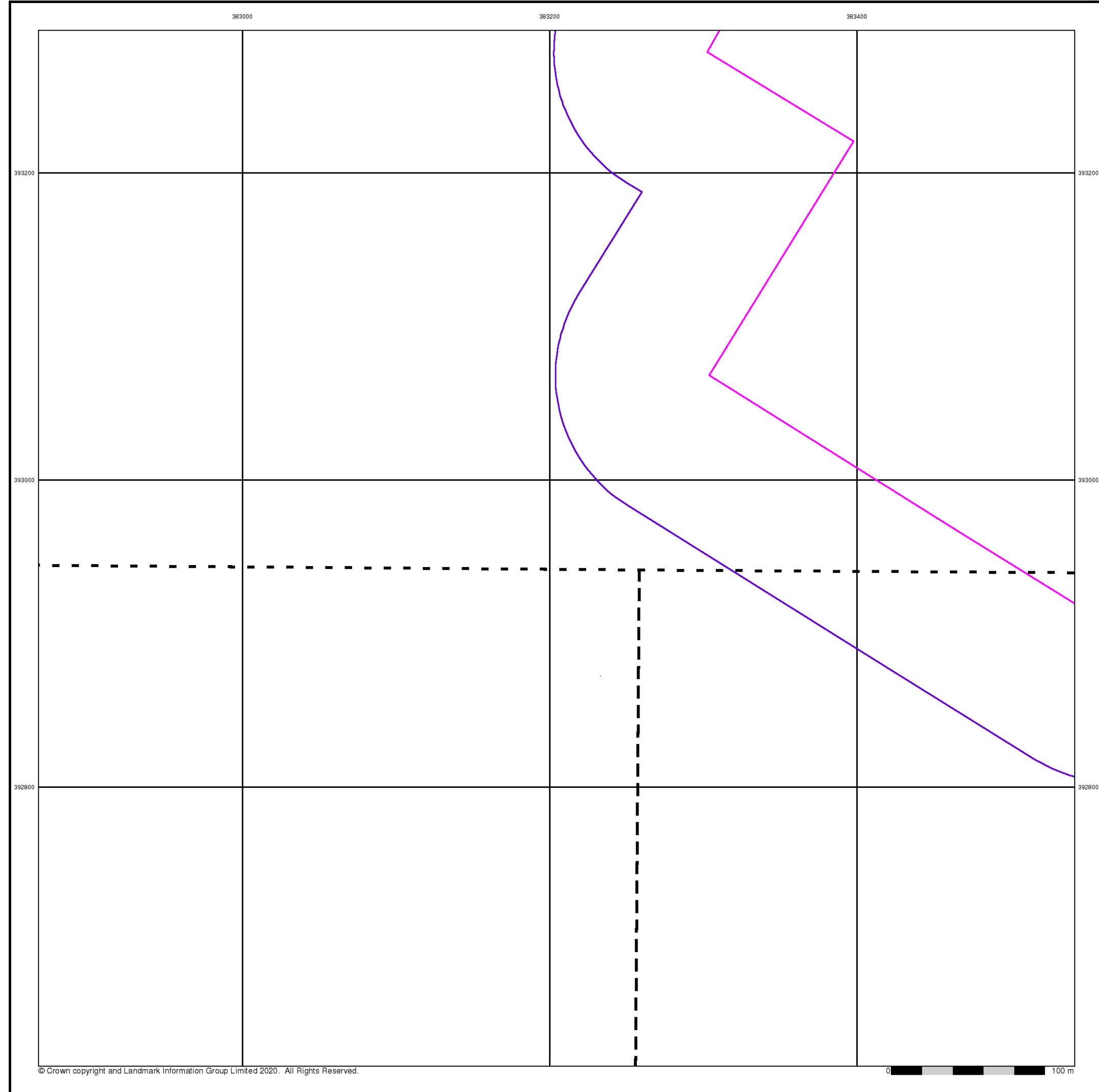
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

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





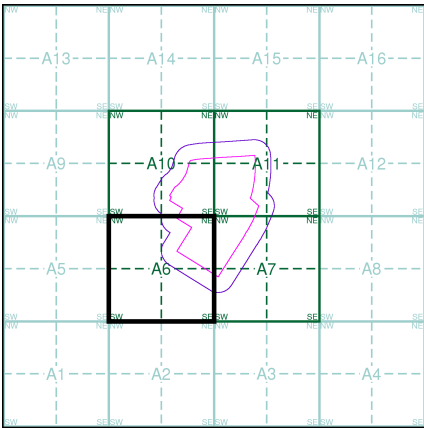
Published 1872 - 1877
Source map scale - 1:2,500

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)

009_12 1877 1:2,500	010_09 1872 1:2,500
---------------------------	---------------------------

Historical Map - Segment A6



Order Details

Order Number:	266502671_1_1
Customer Ref:	LKC 20 1488
National Grid Reference:	383550, 393340
Slice:	A
Site Area (Ha):	29.81
Search Buffer (m):	100

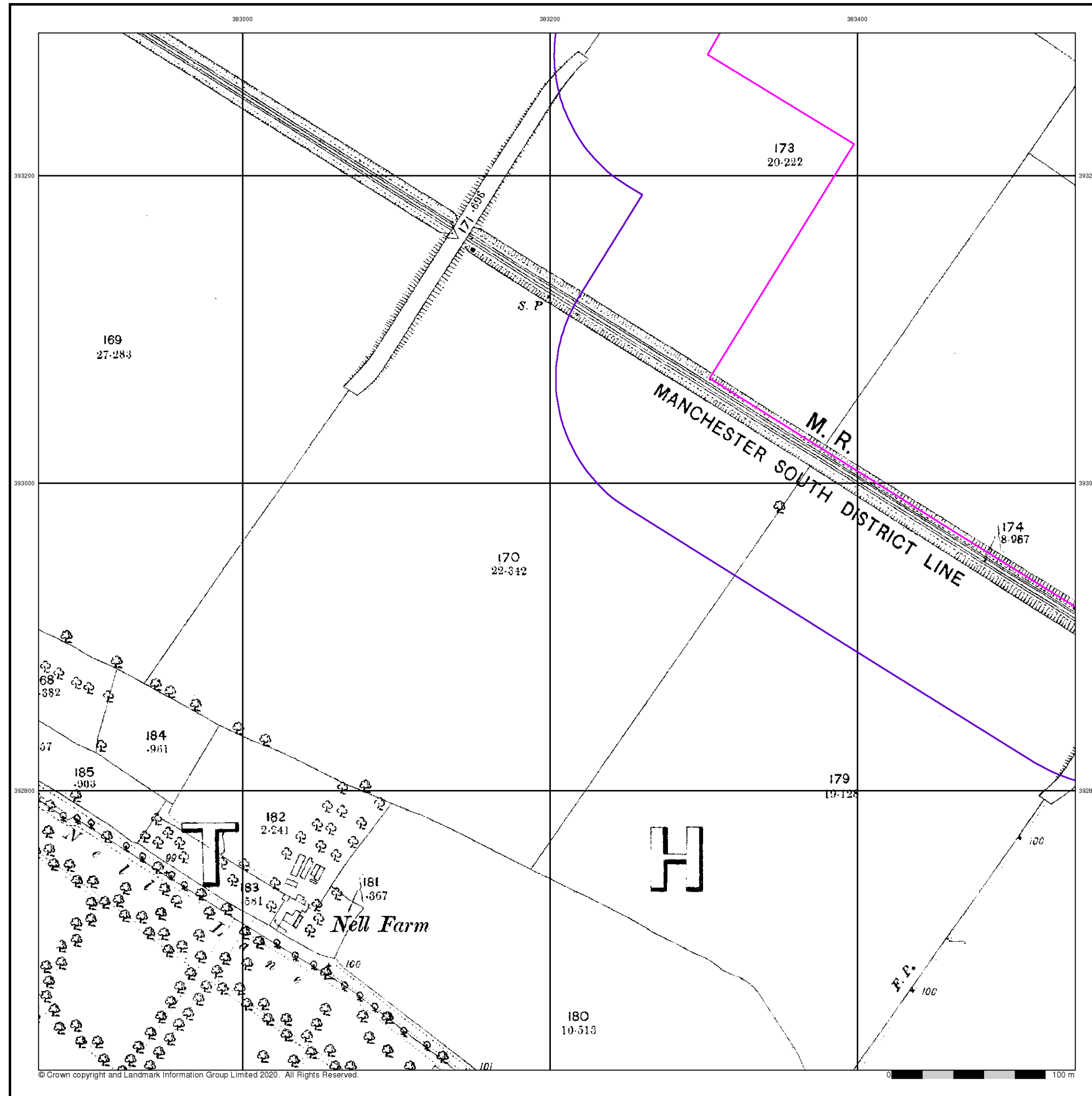
Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



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

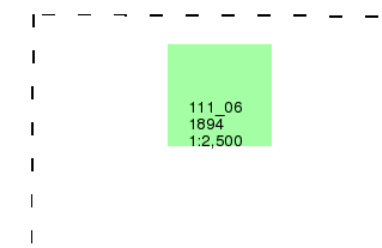
A Landmark Information Group Service v50.0 10-Nov-2020 Page 2 of 17



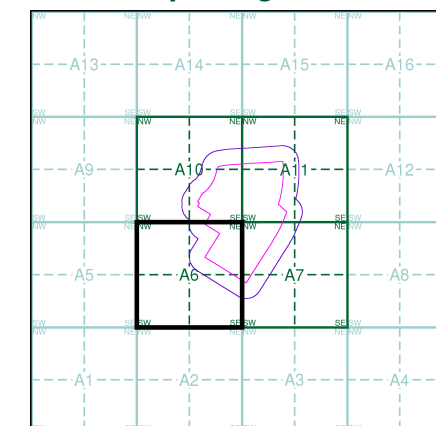
LK
GROUP
Lancashire And Furness
Published 1894
Source map scale - 1:2,500

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 A6



Order Details

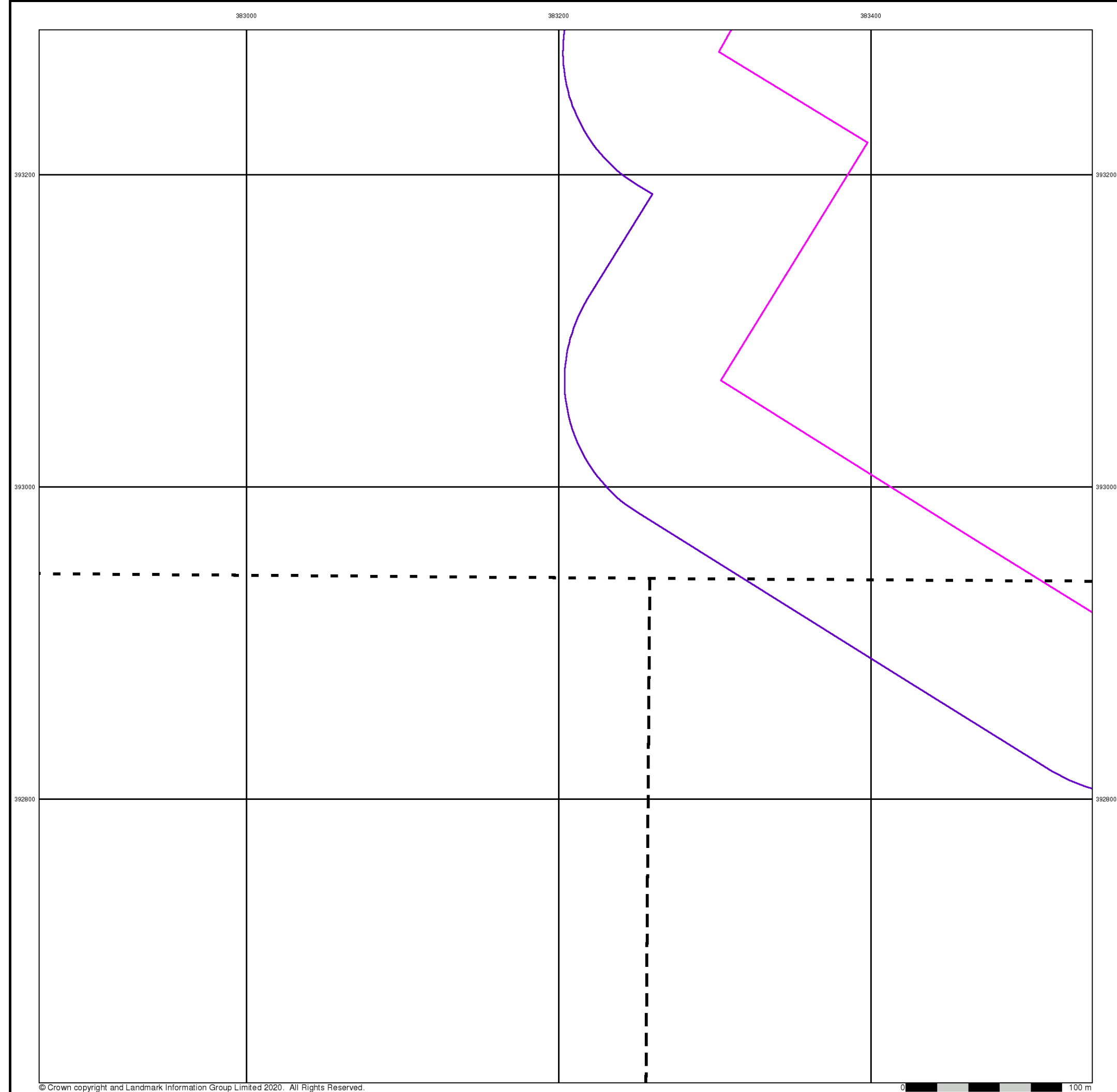
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Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

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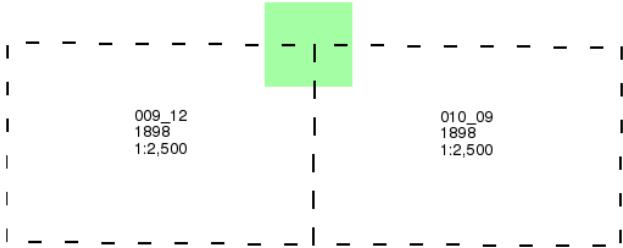


Published 1898

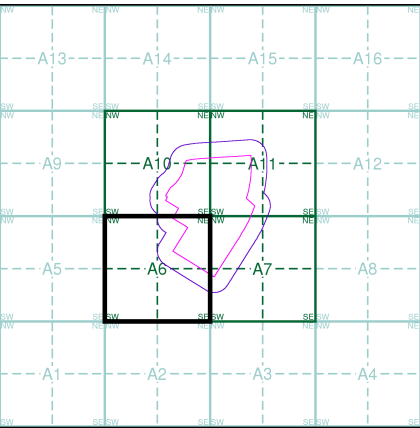
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A6



Order Details

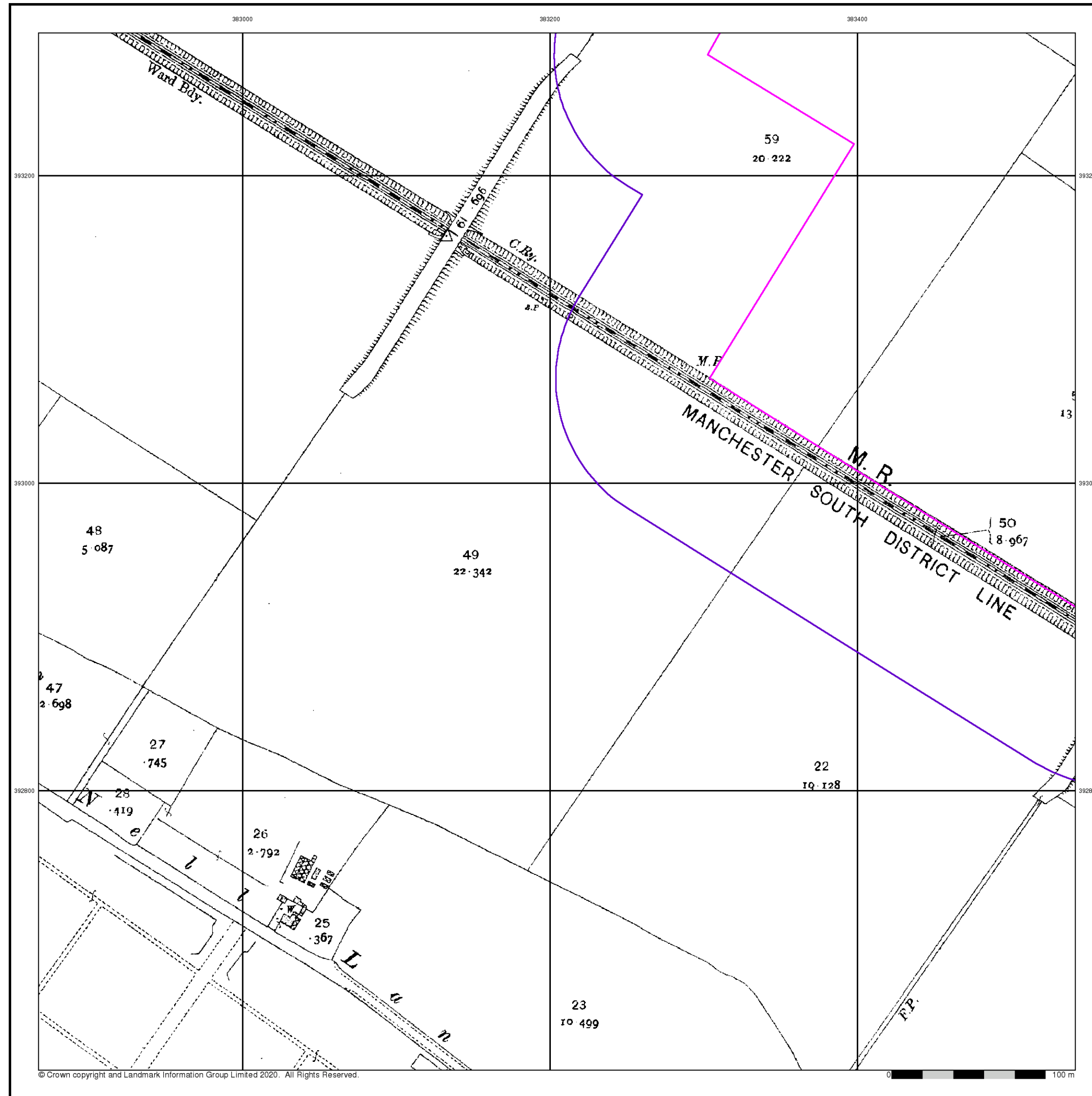
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

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LK GROUP

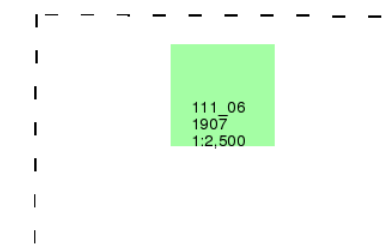
Lancashire And Furness

Published 1907

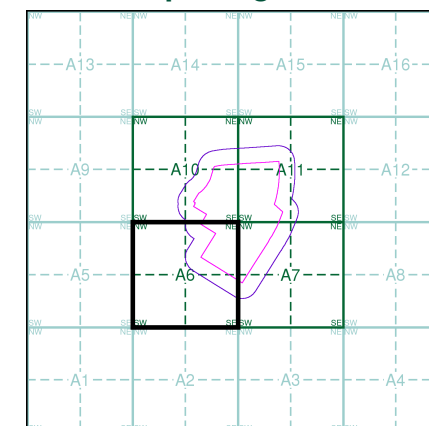
Source map scale - 1:2,500

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 A6



Order Details

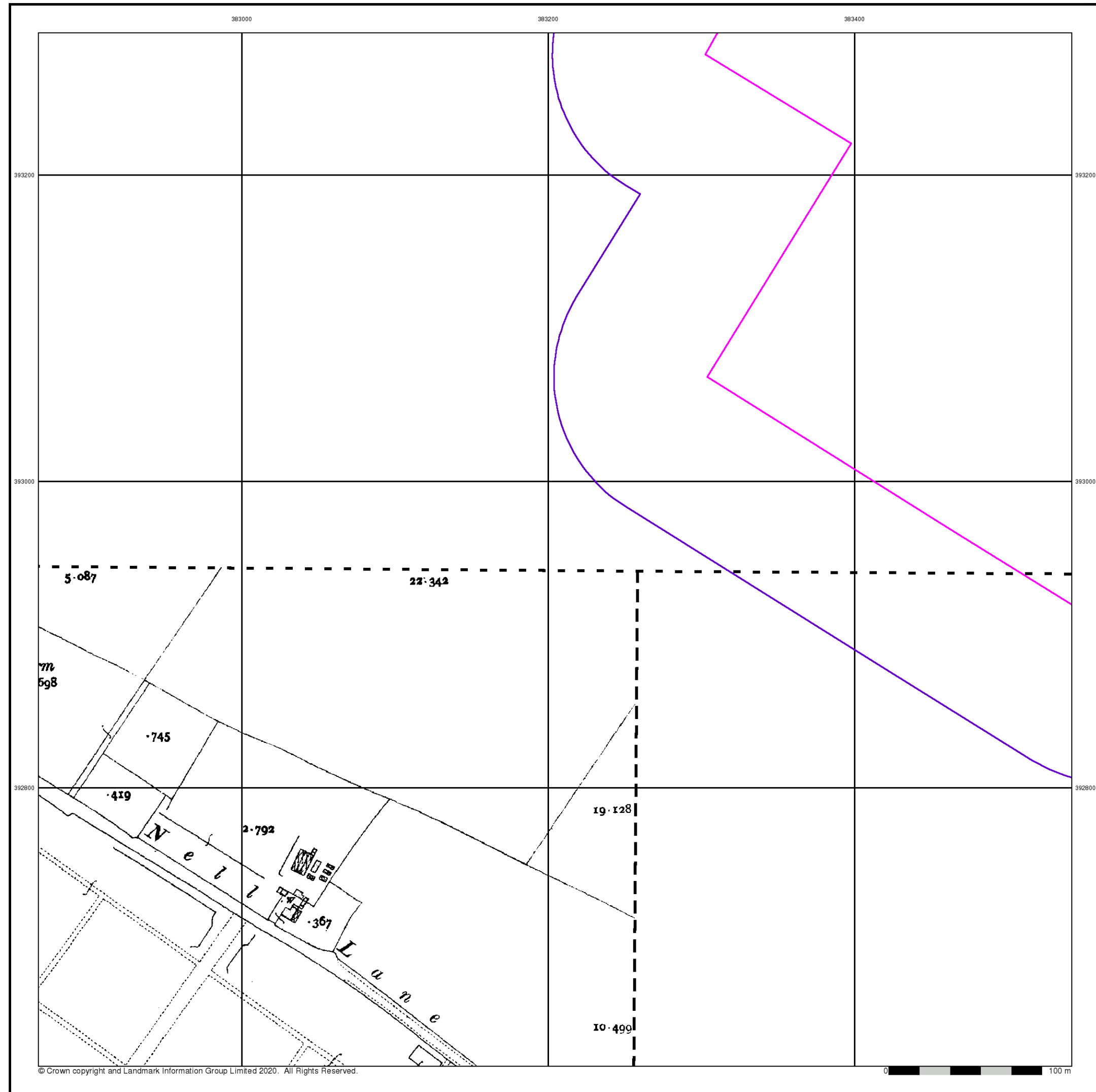
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
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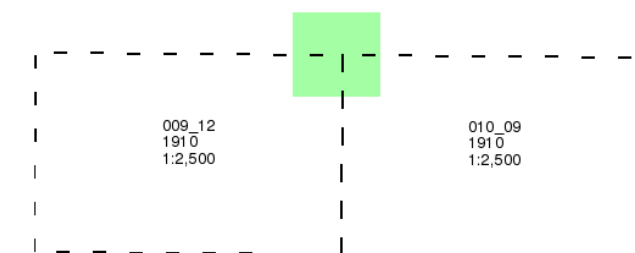


Published 1910

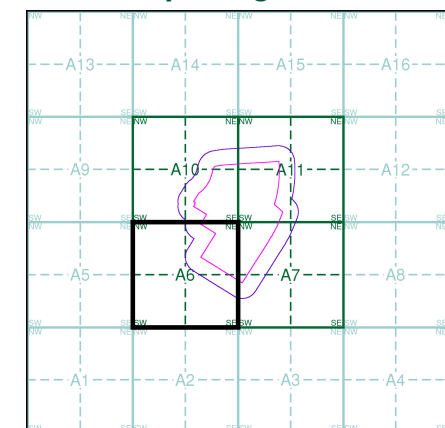
Source map scale - 1:2,500

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 A6

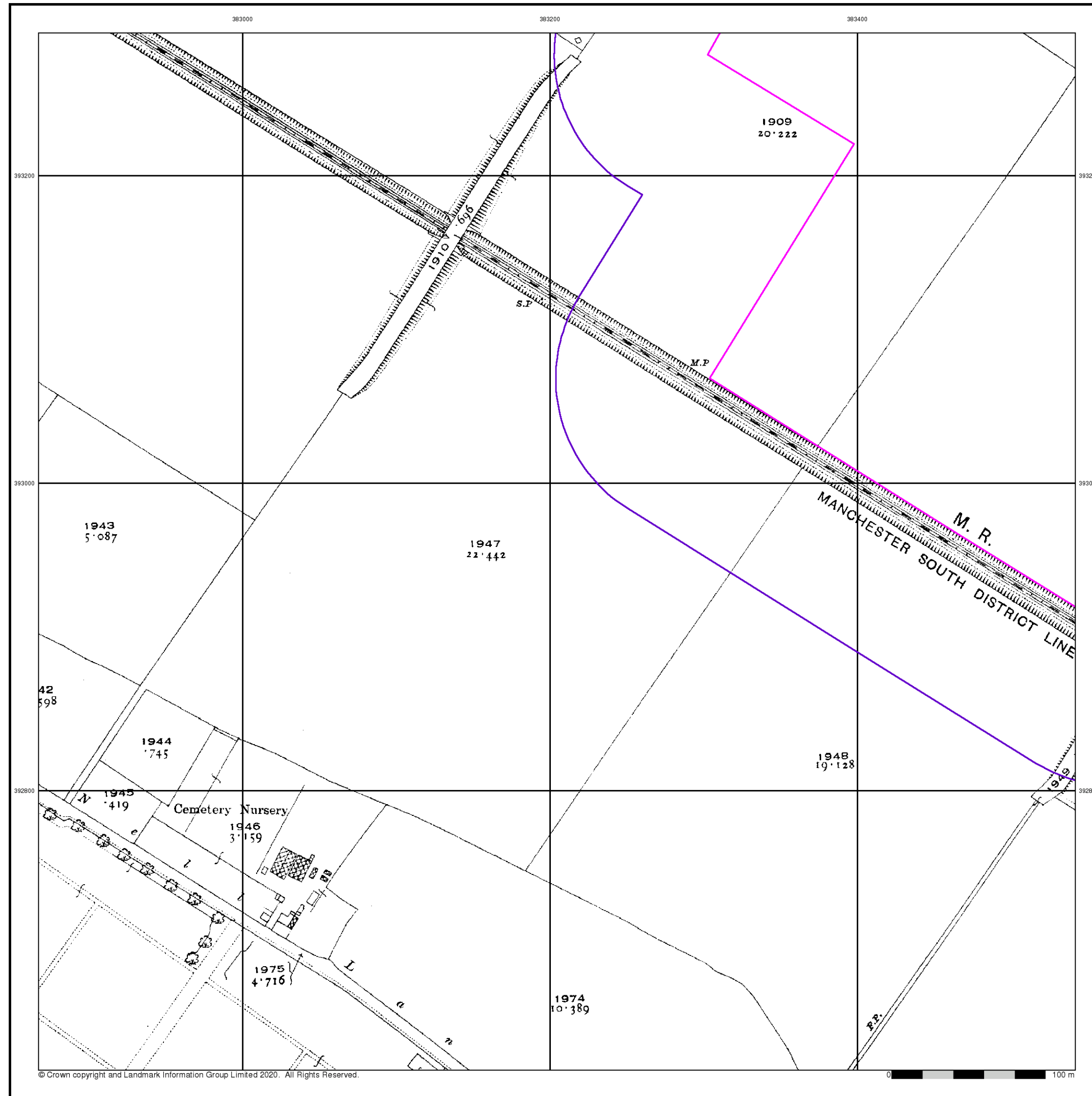


Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

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LK GROUP

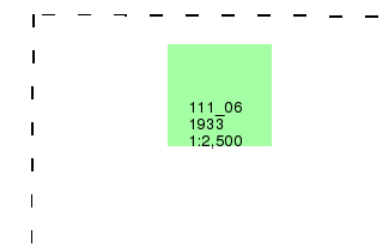
Lancashire And Furness

Published 1933

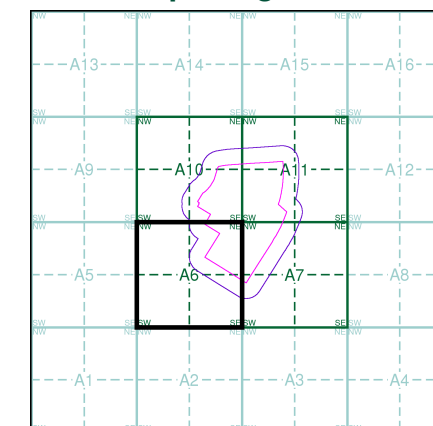
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A6



Order Details

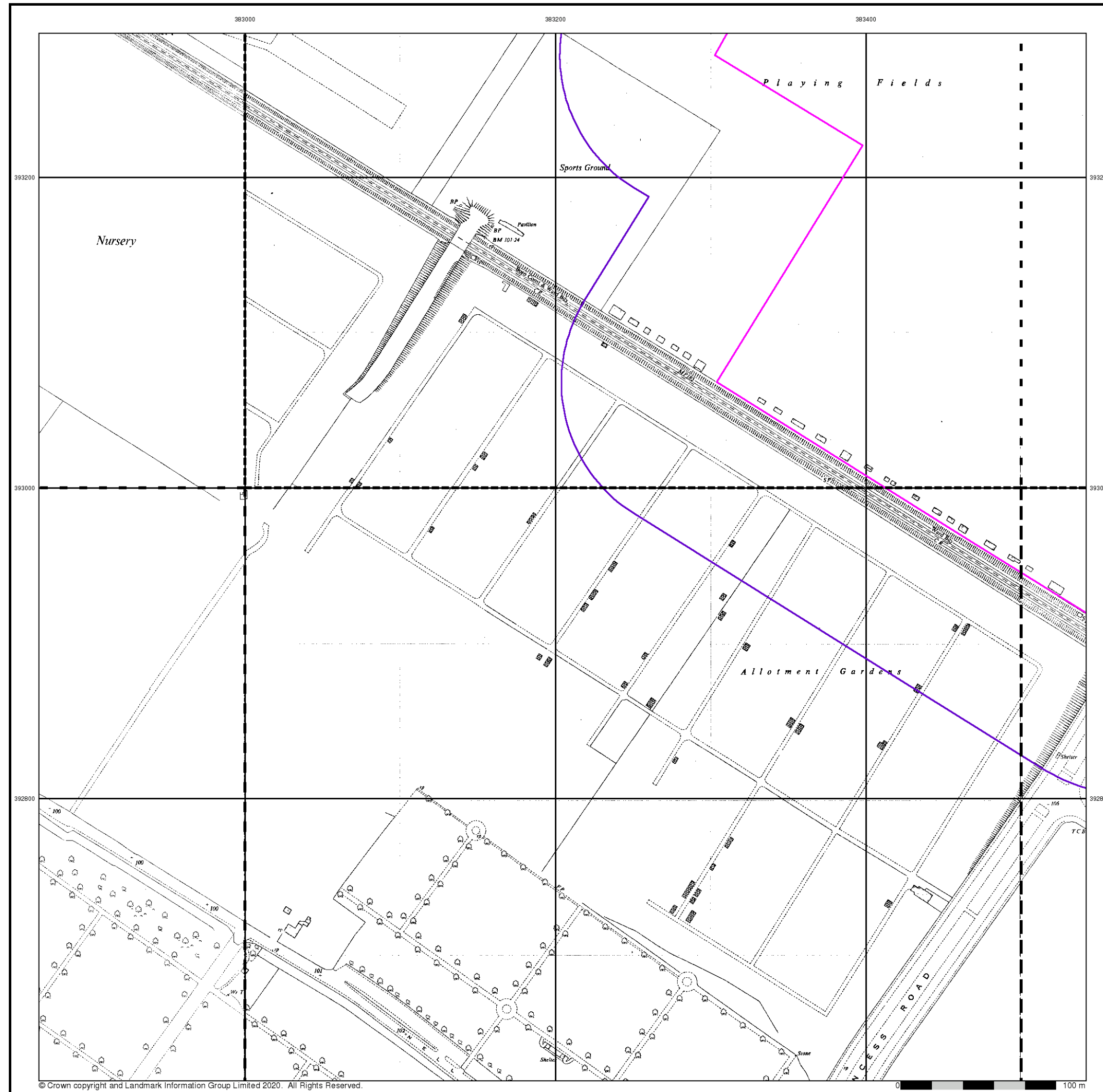
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Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

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GROUP

Ordnance Survey Plan

Published 1951 - 1956

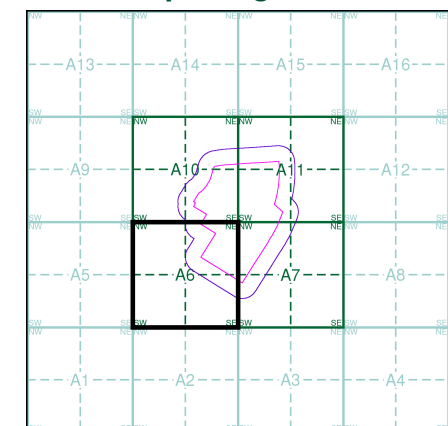
Source map scale - 1:1,250

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)

SJ8293SE 1955 1:1,250	SJ8393SW 1951 1:1,250	SJ8393SE 1951 1:1,250
SJ8292NE 1956 1:1,250	SJ8392NW 1956 1:1,250	SJ8392NE 1956 1:1,250

Historical Map - Segment A6



Order Details

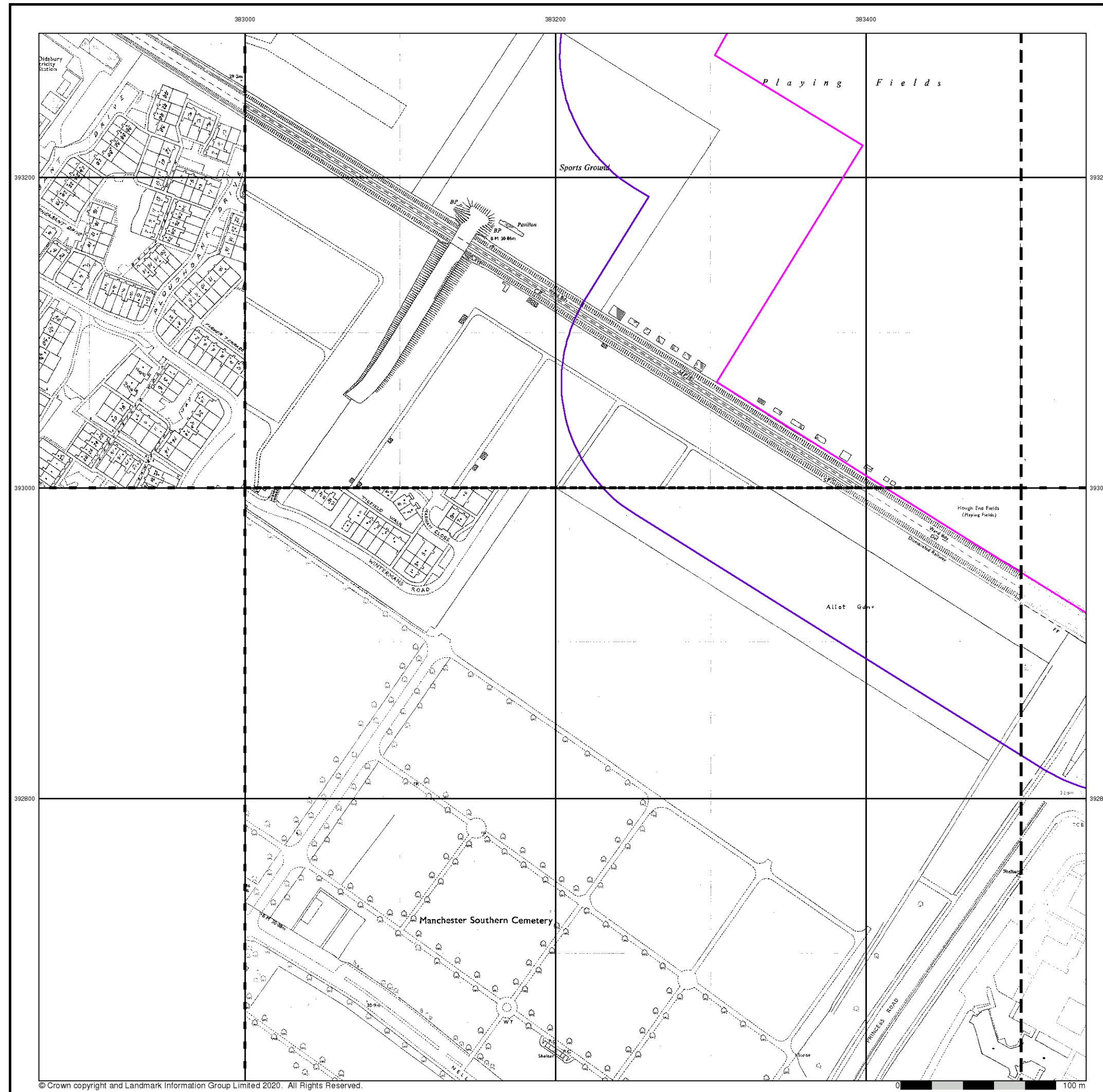
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

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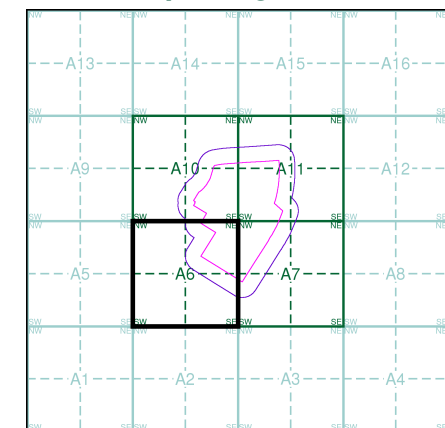
Published 1951 - 1983
Source map scale - 1:1,250

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)

SJ8293SE 1978 1:1,250	SJ8393SW 1951 1:1,250	SJ8393SE 1983 1:1,250
	SJ8392NW 1982 1:1,250	SJ8392NE 1983 1:1,250

Historical Map - Segment A6

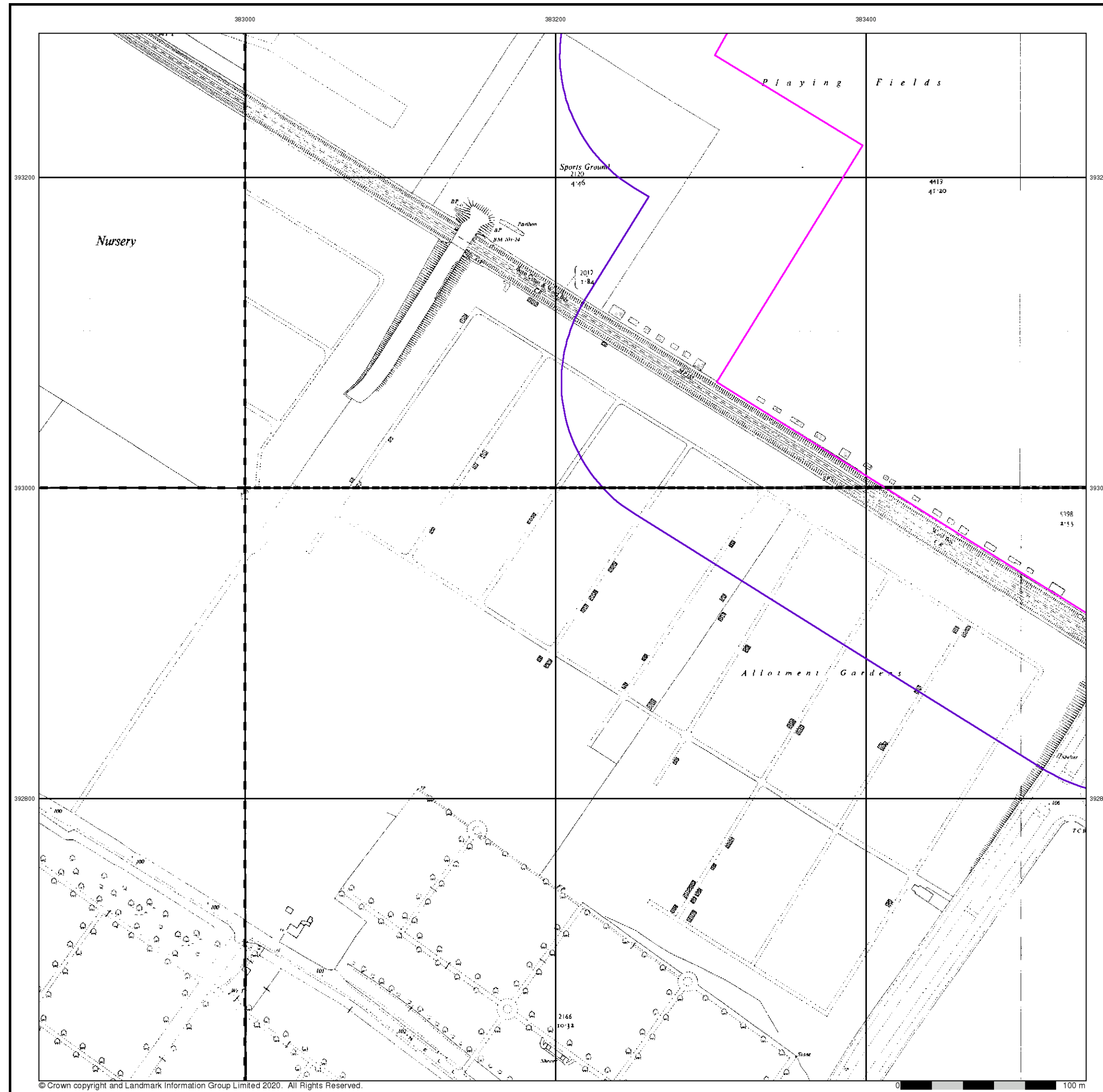


Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

Site Details

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GROUP

Ordnance Survey Plan

Published 1952 - 1956

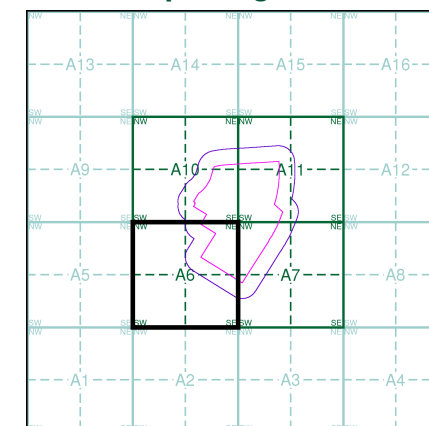
Source map scale - 1:2,500

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)

SJ8293	SJ8393
1955	1952
12,500	12,500
SJ8292	SJ8392
1956	1956
12,500	12,500

Historical Map - Segment A6



Order Details

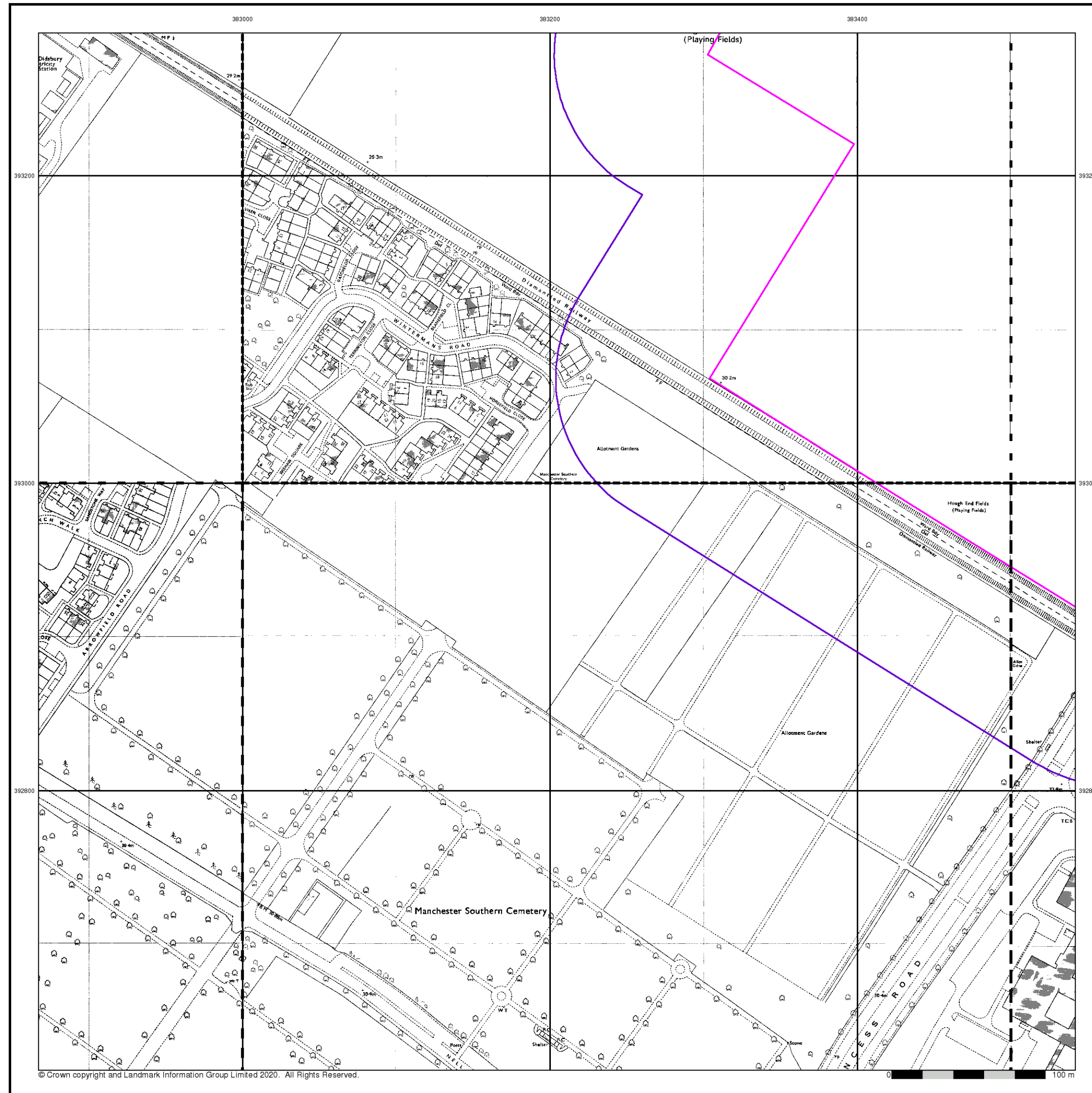
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

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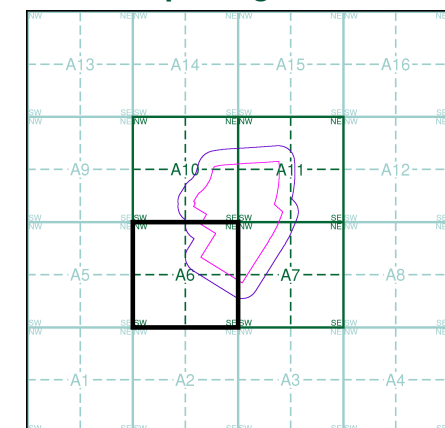
LK
GROUP
Ordnance Survey Plan
Published 1972 - 1983
Source map scale - 1:1,250

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.

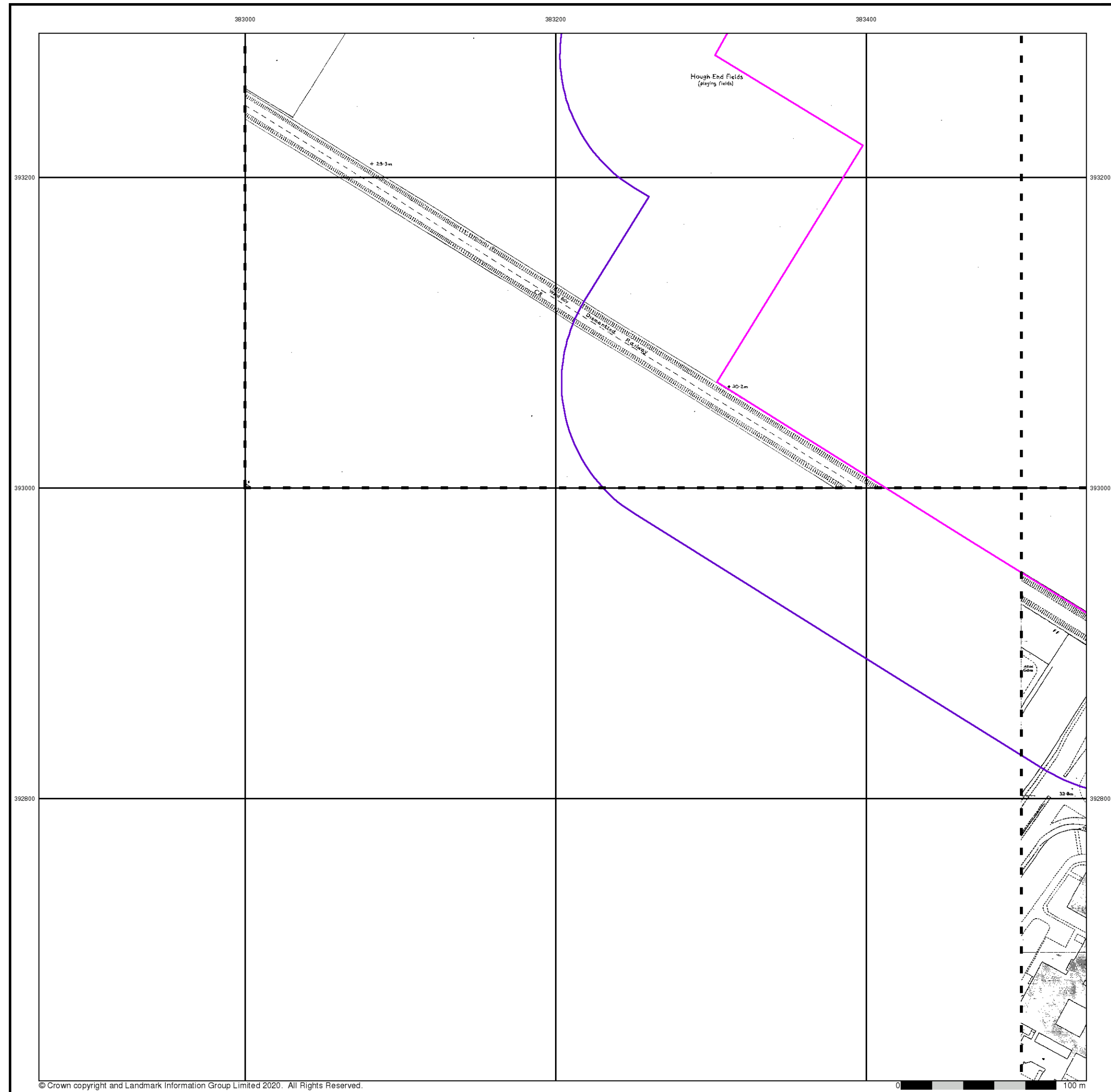
Map Name(s) and Date(s)

SJ8293SE 1972 1:1,250	SJ8393SW 1983 1:1,250	SJ8393SE 1973 1:1,250
SJ8292NE 1980 1:1,250	SJ8392NW 1975 1:1,250	SJ8392NE 1974 1:1,250

Historical Map - Segment A6



Order Details
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100
Site Details
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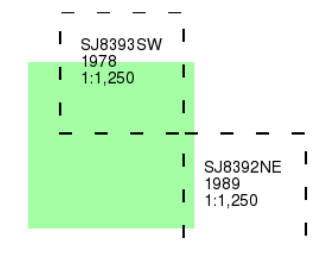


Published 1978 - 1989

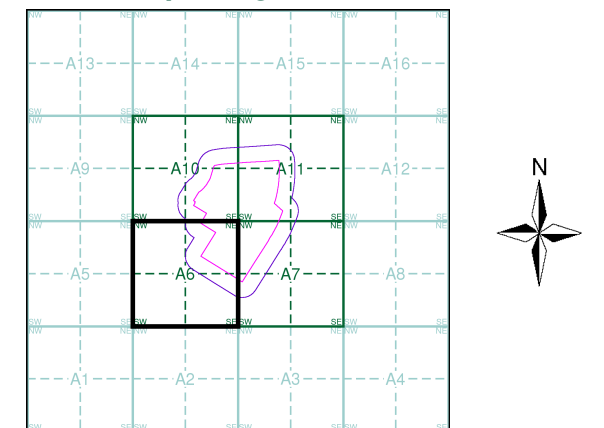
Source map scale - 1:1,250

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 A6



Order Details

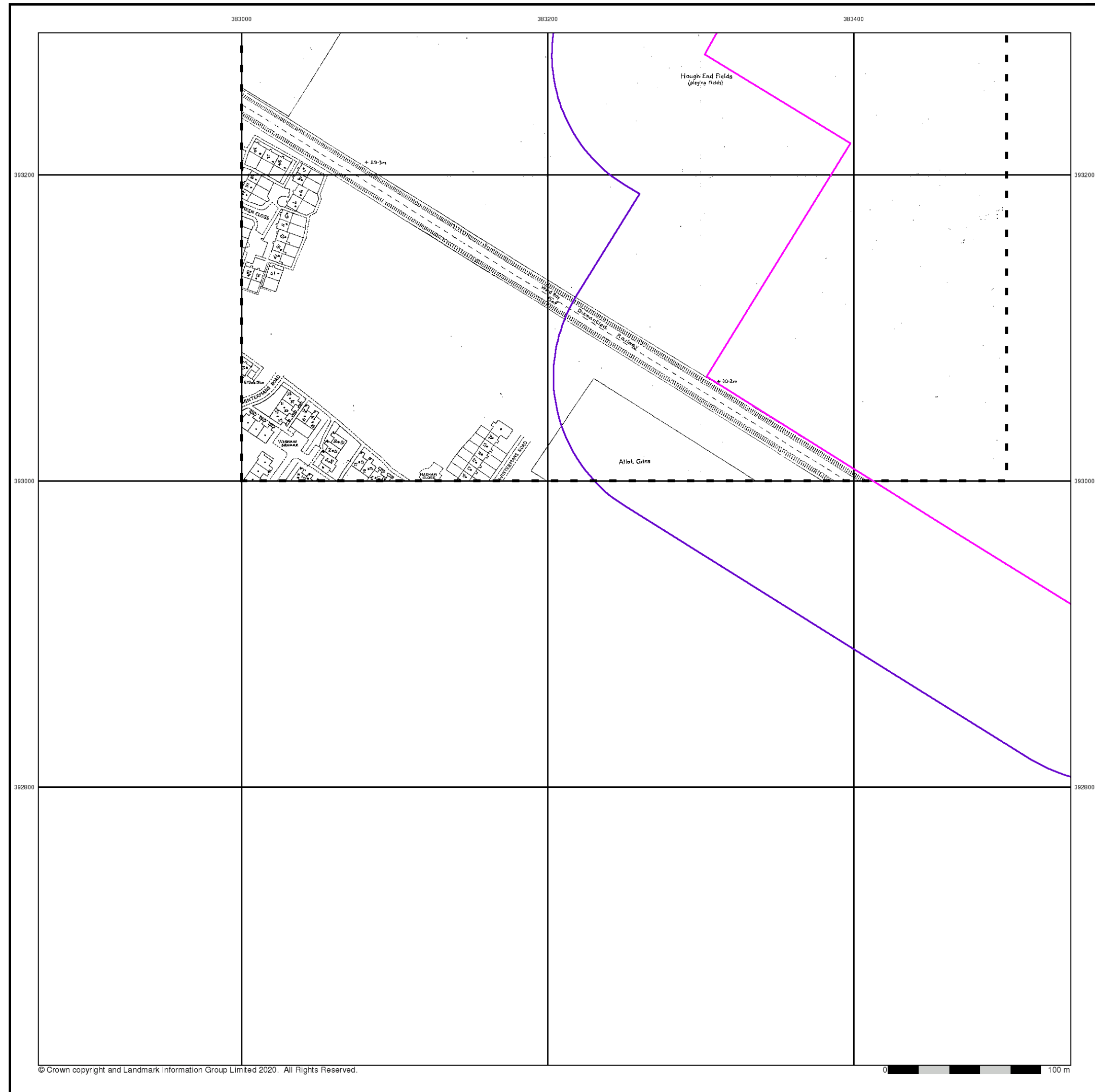
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Site Details

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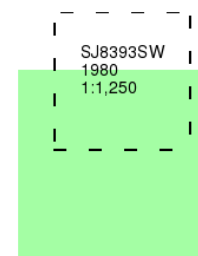


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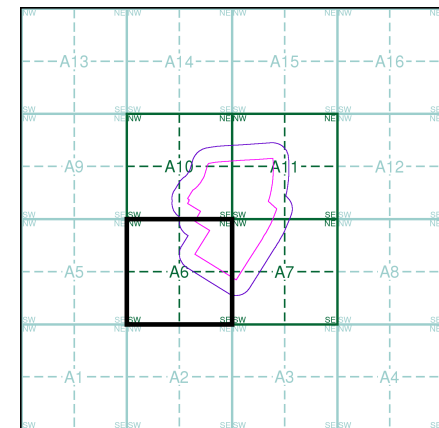


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Map Name(s) and Date(s)

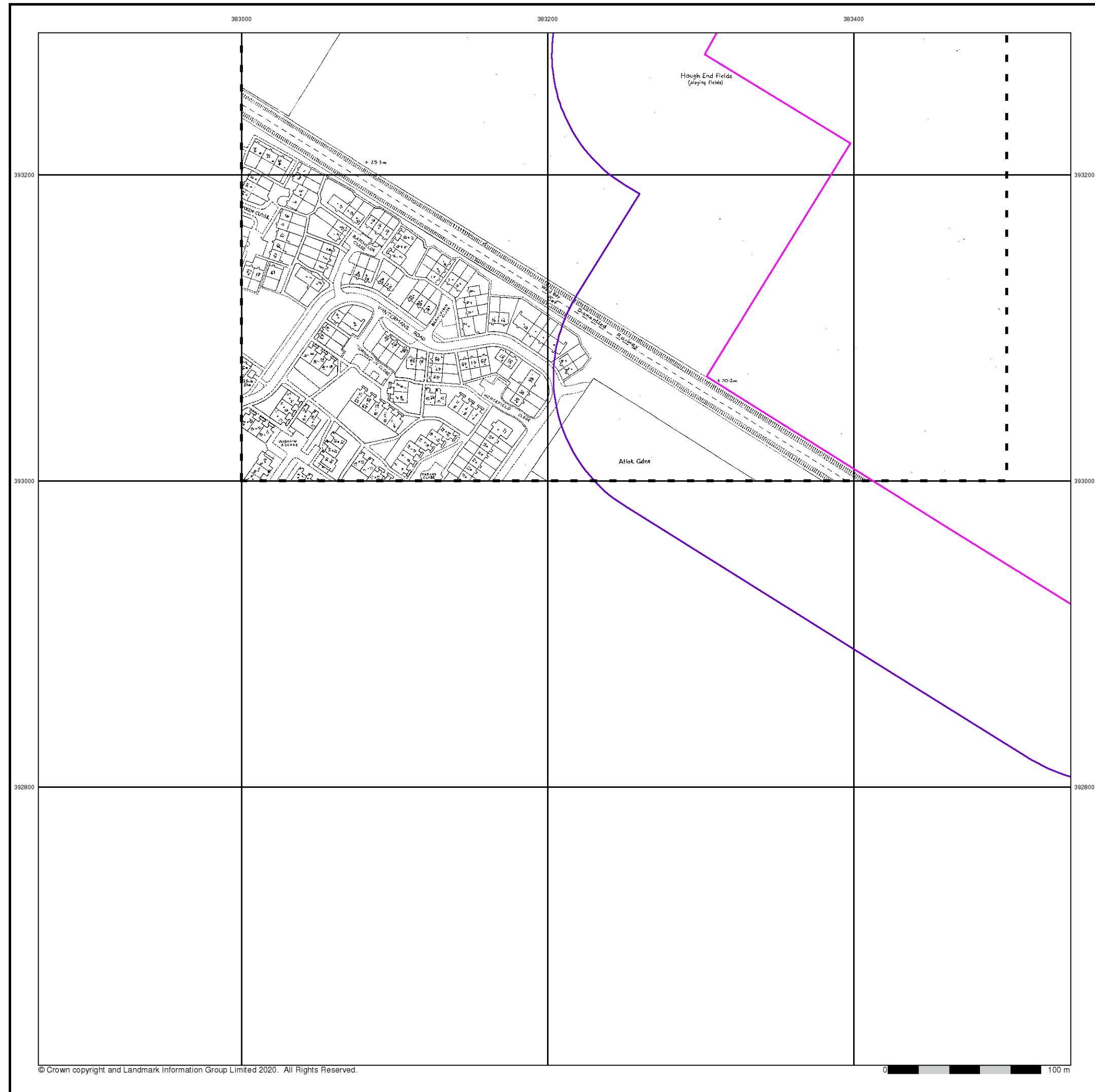


Historical Map - Segment A6



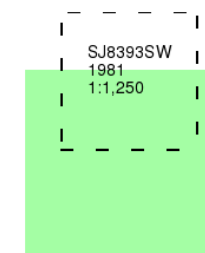
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Customer Ref: LKC 20 1488
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Site Details
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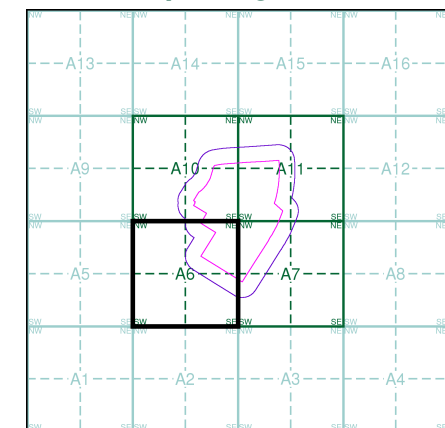


The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps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

Map Name(s) and Date(s)



Historical Map - Segment A6

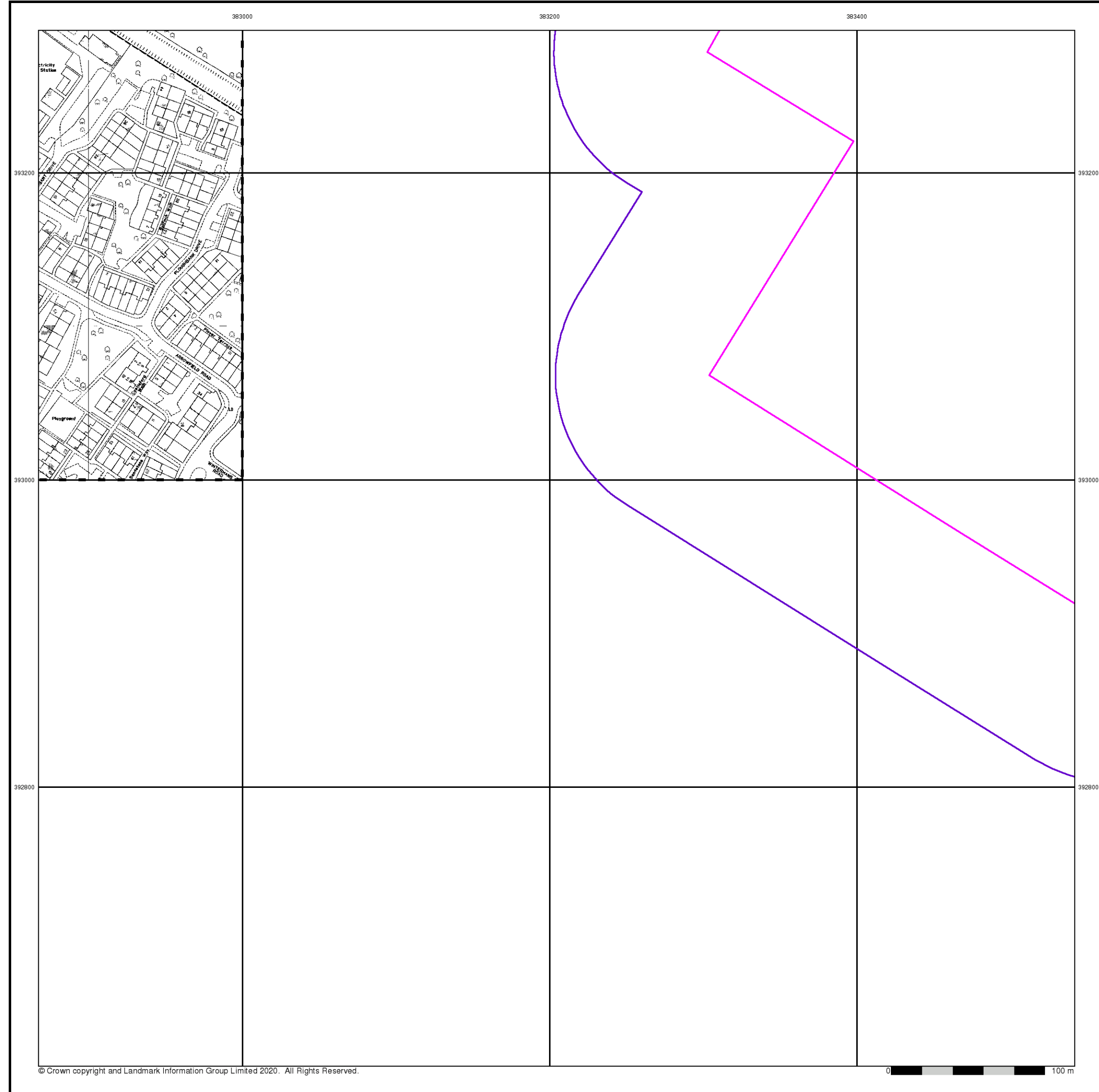


Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 100

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ORDNANCE SURVEY PLAN

Published 1986

Source map scale - 1:1,250

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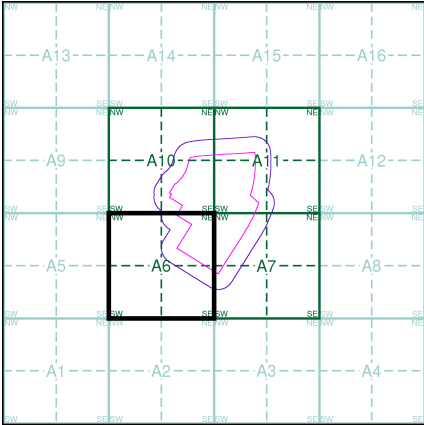
Map Name(s) and Date(s)

SJ8293SE

1986

1:1,250

Historical Map - Segment A6



Order Details

Order Number:	266502671_1_1
Customer Ref:	LKC 20 1488
National Grid Reference:	383550, 393340
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Site Area (Ha):	29.81
Search Buffer (m):	100

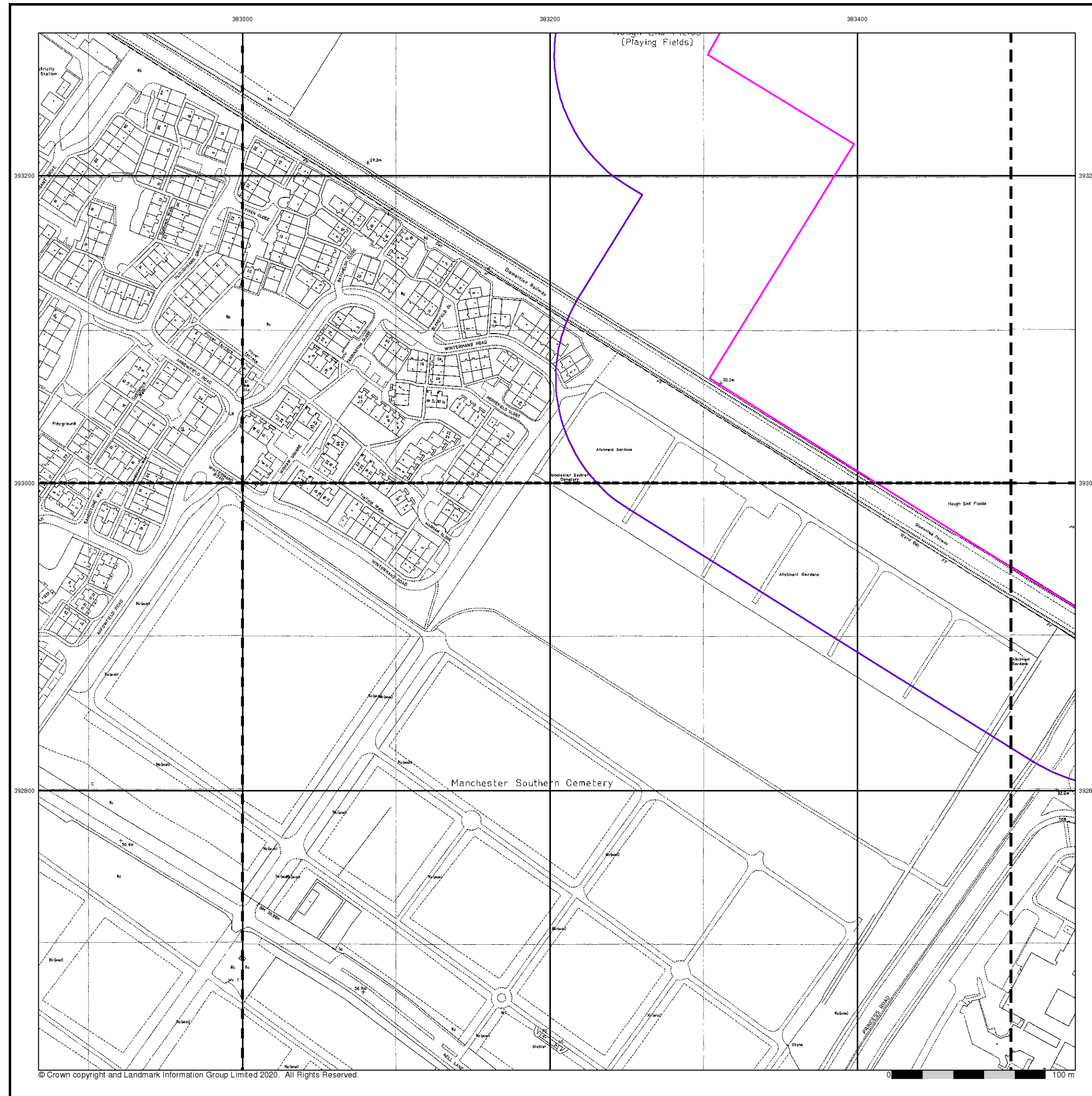
Site Details

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LK

GROUP

Large-Scale National Grid Data

Published 1992

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)

SJ8293SE	SJ8393SW	SJ8393SE
1992	1992	1992
1:1,250	1:1,250	1:1,250
SJ8292NE	SJ8392NW	SJ8392NE
1992	1992	1992
1:1,250	1:1,250	1:1,250

Historical Map - Segment A6

Order Details

Order Number:

266502671_1_1

Customer Ref:

LKC 20 1488

National Grid Reference:

383550, 393340

Slice:

A

Site Area (Ha):

29.81

Search Buffer (m):

100

Site Details

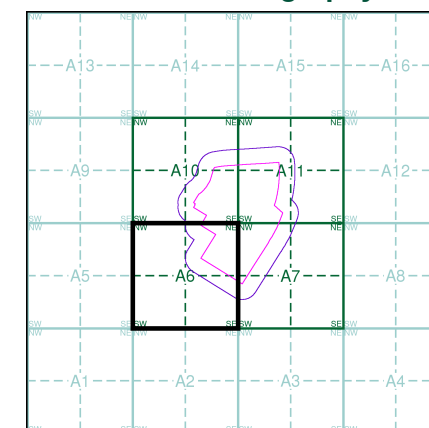
Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



LK
GROUP
Historical Aerial Photography
Published 2000

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

Historical Aerial Photography - Segment A6



Order 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

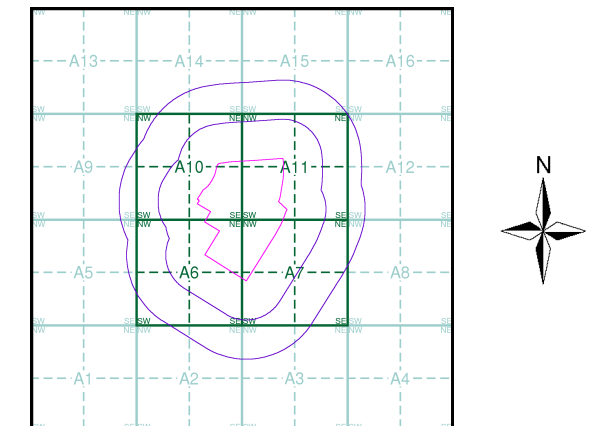


GROUP

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:10,560	1848	3
Cheshire	1:10,560	1882	4
Lancashire And Furness	1:10,560	1894	5
Cheshire	1:10,560	1899	6
Lancashire And Furness	1:10,560	1908	7
Cheshire	1:10,560	1911	8
Cheshire	1:10,560	1911	9
Lancashire And Furness	1:10,560	1923	10
Lancashire And Furness	1:10,560	1934	11
Lancashire And Furness	1:10,560	1938	12
Cheshire	1:10,560	1938	13
Ordnance Survey Plan	1:10,000	1955	14
Ordnance Survey Plan	1:10,000	1966	15
Manchester	1:25,000	1975	16
Ordnance Survey Plan	1:10,000	1981	17
Ordnance Survey Plan	1:10,000	1989	18
10K Raster Mapping	1:10,000	1999	19
10K Raster Mapping	1:10,000	2006	20
VectorMap Local	1:10,000	2020	21

Historical Map - Slice A



Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 500

Site Details

Hough End Leisure Centre, 480, Princess Road,
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Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

Government and Administrative Buildings Military and Industrial Buildings

Military and Communication Areas Subway Entrance

Fireproof Building Prominent Fireproof Building

Non-fireproof Building Non-fireproof Building (non-dwelling)

Factory, mill, and flour mill, with chimneys Factory, mill, and flour mill, without chimneys

Power Station, drawn to scale Hydroelectric Power Station

Radio Station, drawn to scale Telephone Station, drawn to scale

Abandoned Open-pit Mine or Quarry Open-pit Salt Mine

Pit Oil Deposit or Well Oil Seepage

Tailings Pile Fuel Storage Tanks Natural Gas Tank

Bench Mark Drill Hole Burial Mound Triangulation Point on Burial Mound

Single-track Railroad Double-track Railroad and Station Building

Coniferous Forest Deciduous Forest Mixed Forest

Lawns Citrus Orchard Wet Ground Scattered Vegetation

243.8 Values for prominent elevations

186.0 Numbers for spot elevations, depth soundings, contour lines, etc.

0.2 Velocity of the current, width of river bed, depth of river

180/12 Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

А а (A)	З з (Z)	П п (P)	Ч ч (CH)
Б б (B)	И и (I)	Р р (R)	Ш ш (SH)
В в (V)	Й й (Y)	С с (S)	Щ щ (SHCH)
Г г (G)	К к (K)	Т т (T)	Ъ (-)
Д д (D)	Л л (L)	У у (U)	Ы (Y)
Е е (E)	М м (M)	Ф ф (F)	Ь (')
Ё ё (YO)	Н н (N)	Х х (KH)	Э э (E)
Ж ж (ZH)	О о (O)	Ц ц (TS)	Ю ю (YU or IU)
			Я я (YA or IA)

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

Government and Administrative Buildings Military and Industrial Buildings

Military and Communication Areas Subway Entrance

Partly Demolished Buildings Demolished Buildings

Built-Up Area with Fireproof Buildings Predominant Built-Up Area with Non-Fireproof Buildings Predominant

Individual Fireproof Building Prominent Industrial Building

Individual Dwelling, Fireproof Ruins of an Individual Dwelling

Factory or Mill Chimney Factory or Mill with Chimney Factory or Mill without Chimney Mine or Open Pit Mine

Operating Shaft or Mine Non-Operating Shaft or Mine Salt Mine Tailings Pile

Pit Stone Quarry Gas Pump or Service Station Fuel Storage or Natural Gas Tank

Oil or Natural Gas Derrick Small Hydroelectric Power Station Power Station Transformer Station

Cemetery Burial Mound (height in metres) Triangulation Point on Burial Mound Triangulation Point

Bench Mark Bench Mark (monumented) Telegraph Office Telephone Station

Radio Station Radio Tower Airfield or Seaplane Base Landing Strip

Telegraph/Telephone Lines Main Highway Highway under Construction Improved Dirt Road (former truck road)

Double-track Railroad with First Class Station Dismantled Railroad Railroad Under Construction

Shore Embankment River or Ditch with Embankment Direction and velocity of current Water Gauge Water Level Mark

Well Water Reservoir or Rain Water Pit Spring Isobath with value

Heavy (Index) Contour Line Contour Line and Value Half Contour Line Spot Elevation Value

Coniferous Deciduous Mixed Scrub

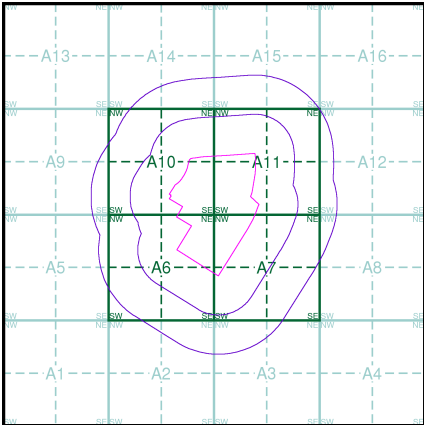
Key to Numbers on Mapping



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10K Raster Mapping	1:10,000	1999	19
10K Raster Mapping	1:10,000	2006	20
VectorMap Local	1:10,000	2020	21

Russian Map - Slice A



Order Details

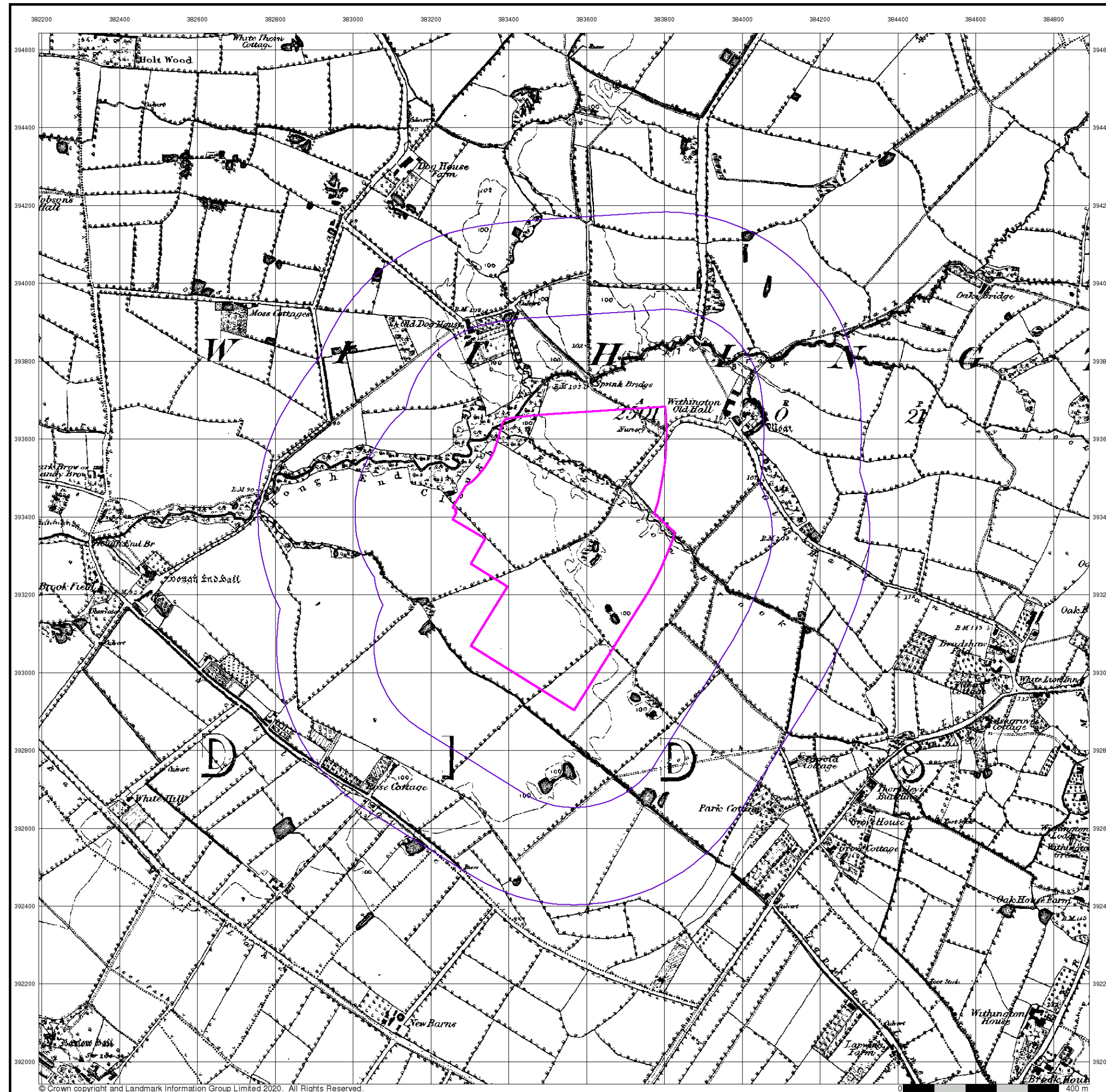
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Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
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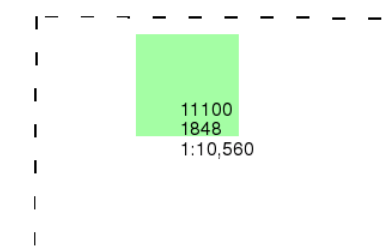


Published 1848

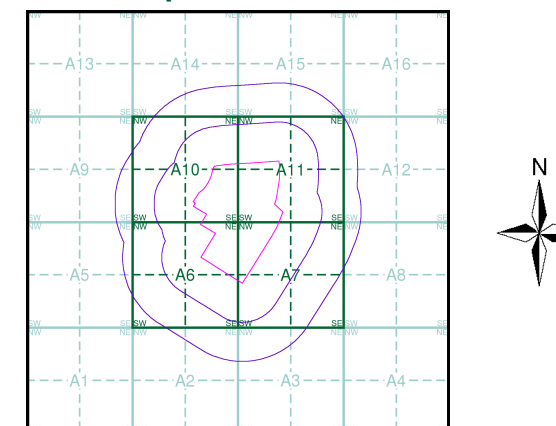
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

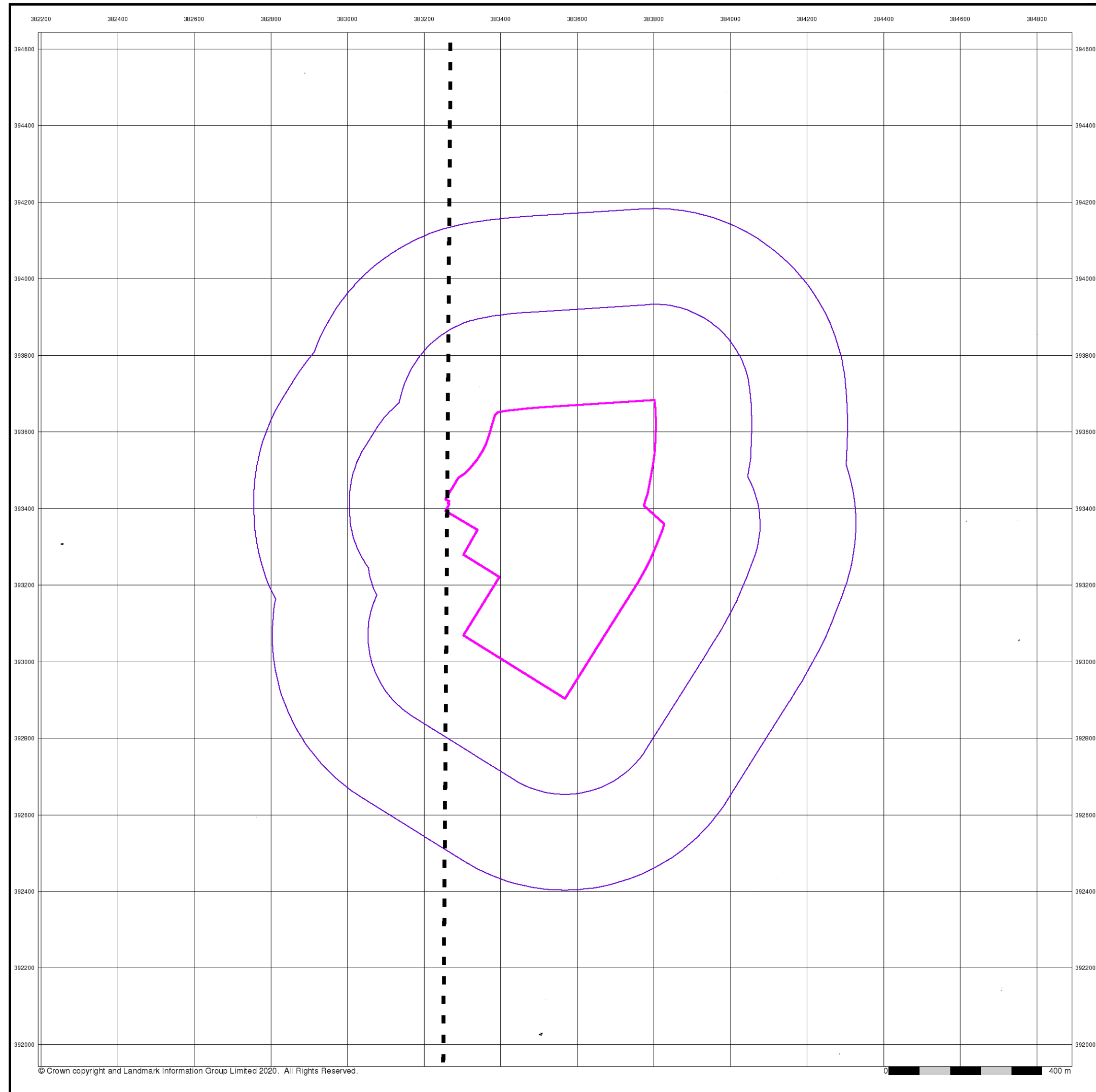
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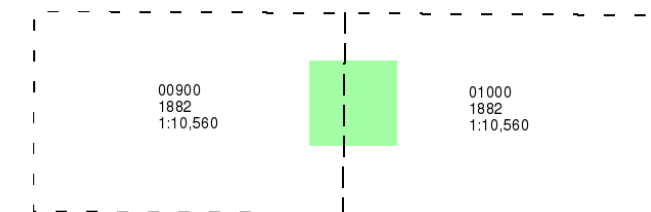


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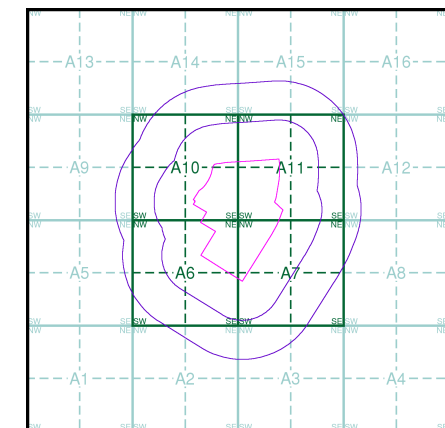
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Map Name(s) and Date(s)



Historical Map - Slice A



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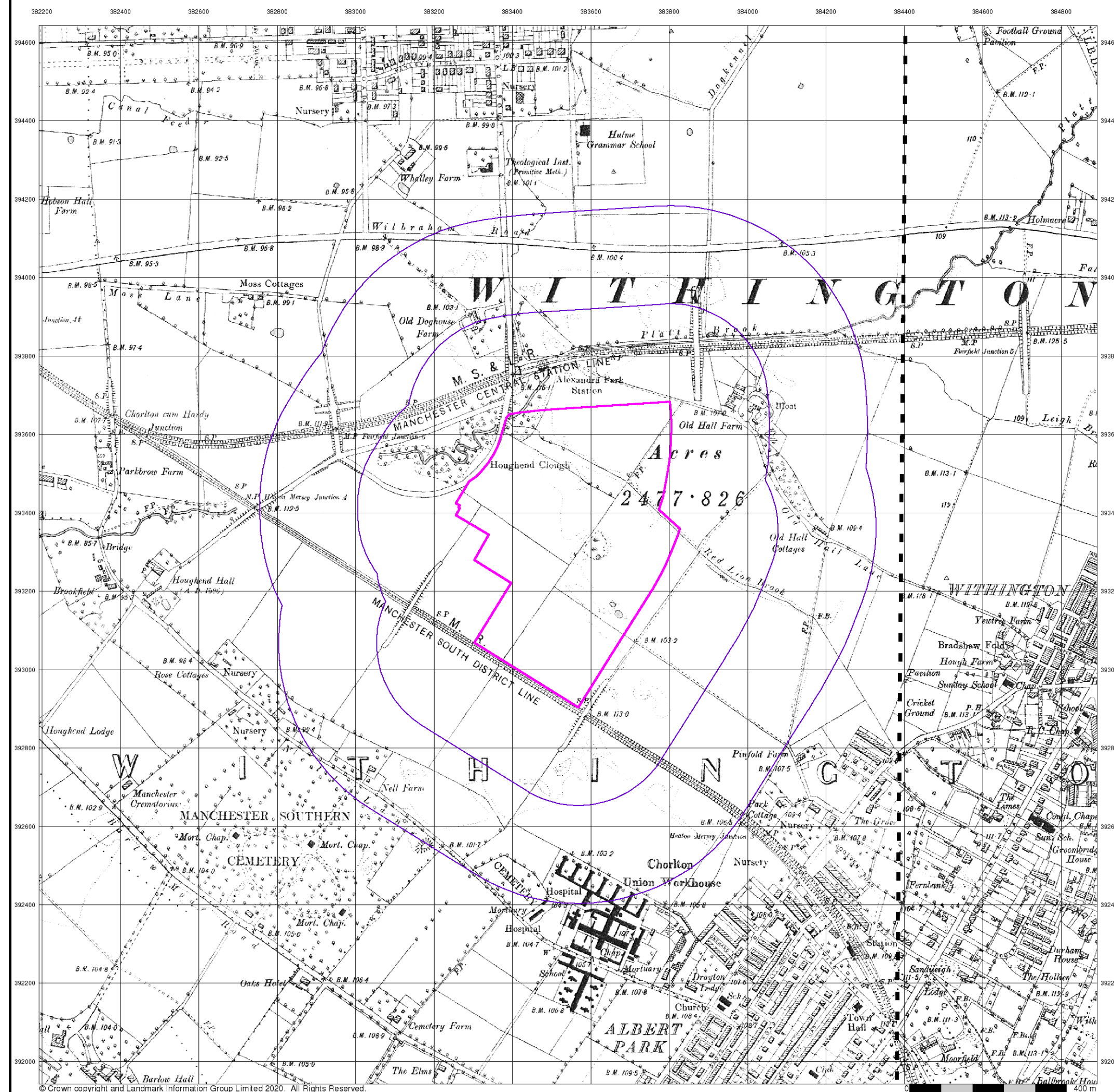
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Search Buffer (m): 500

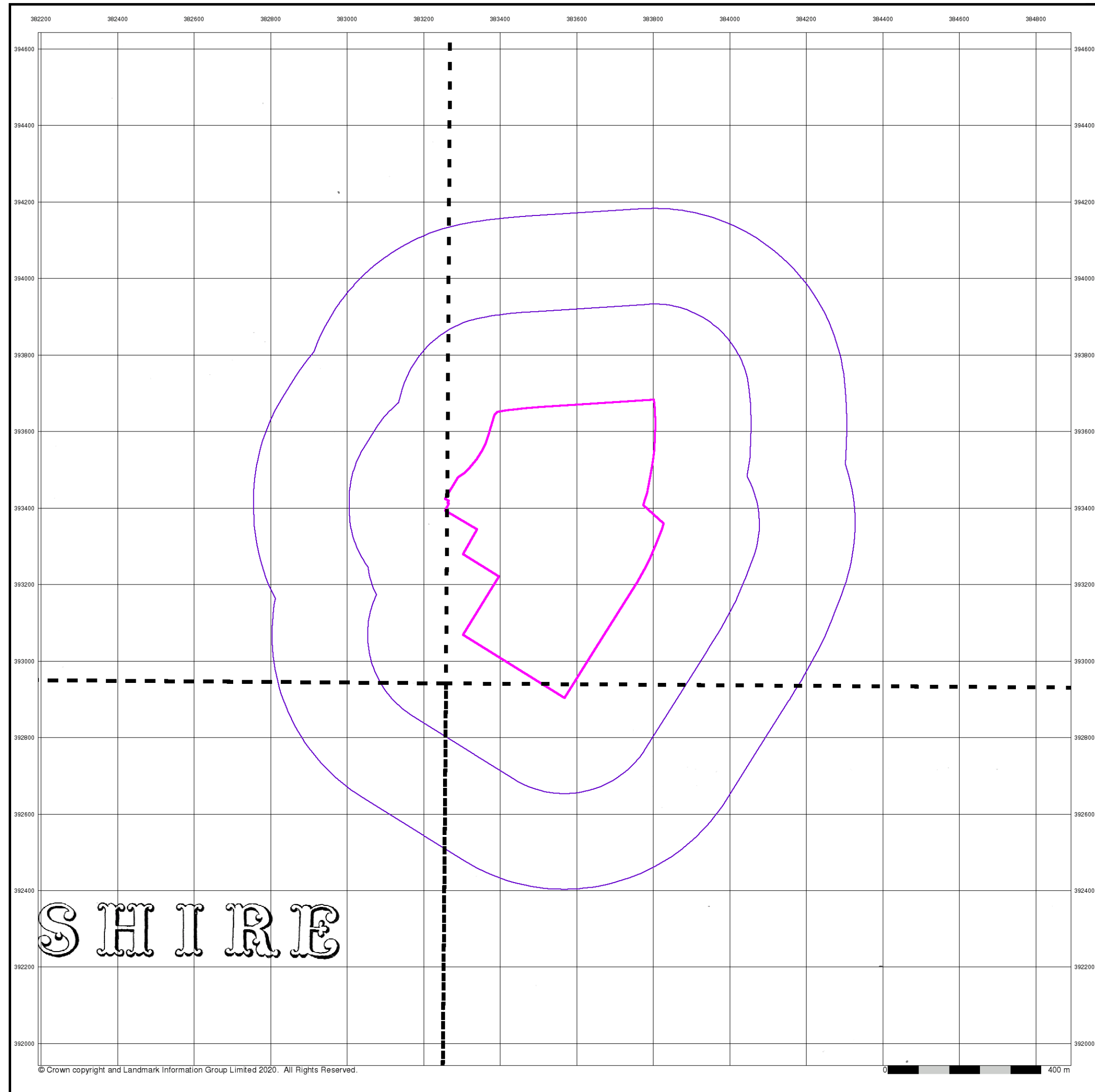
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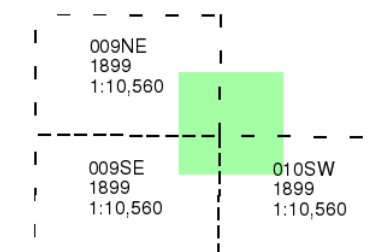


Published 1899

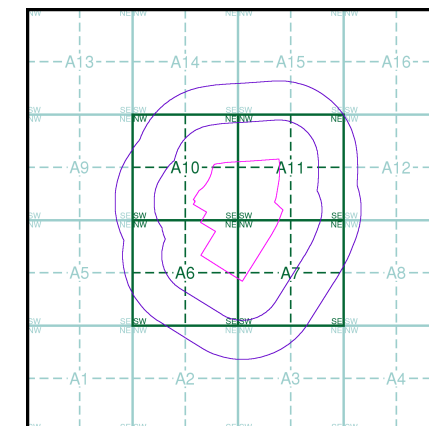
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice A

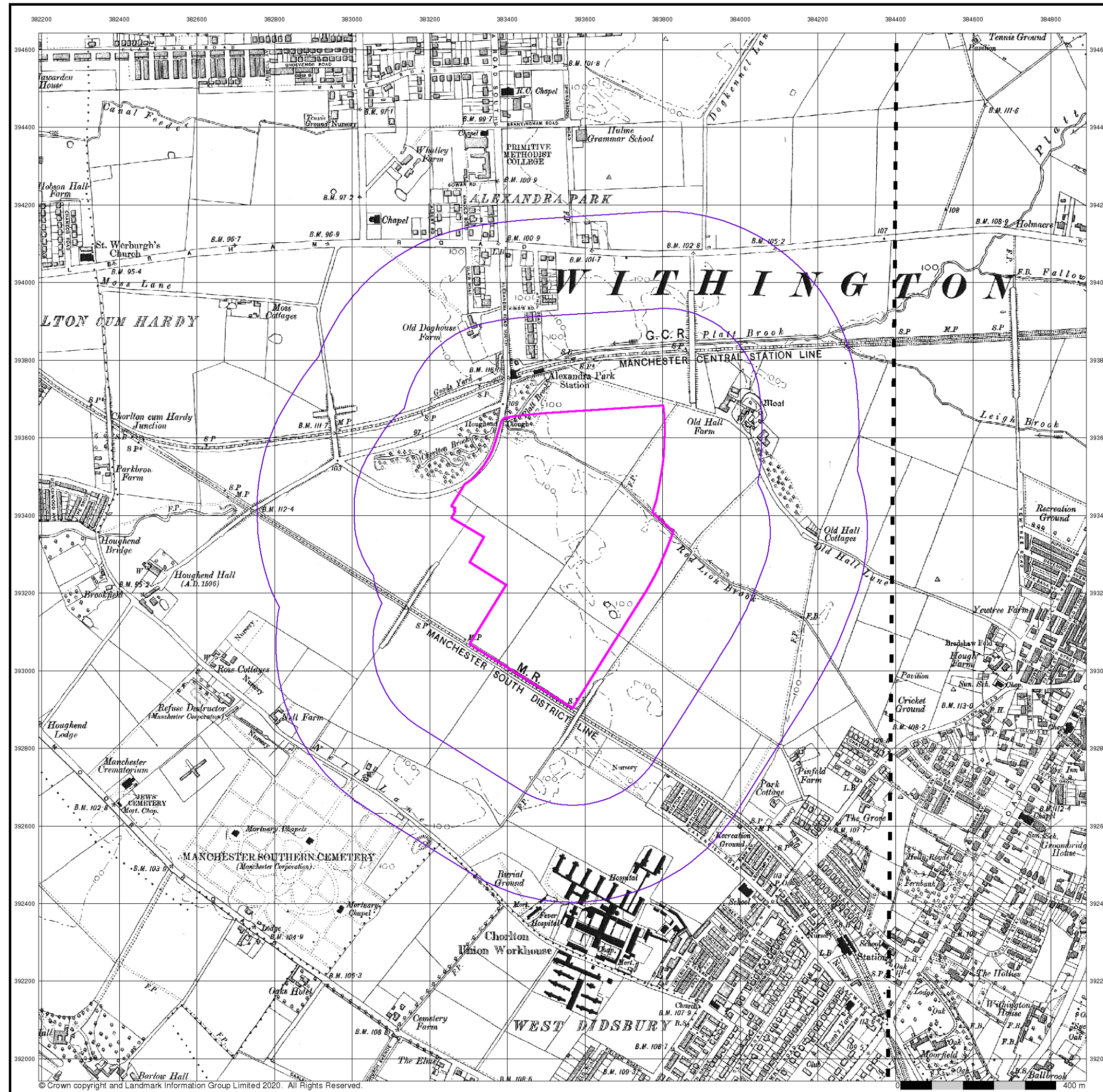


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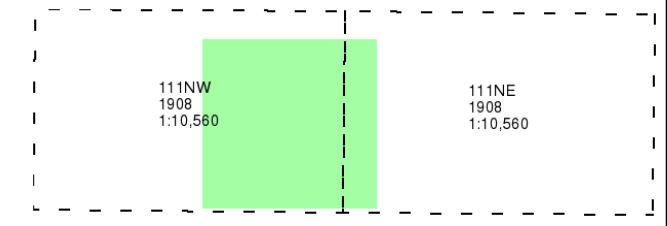
Lancashire And Furness

Published 1908

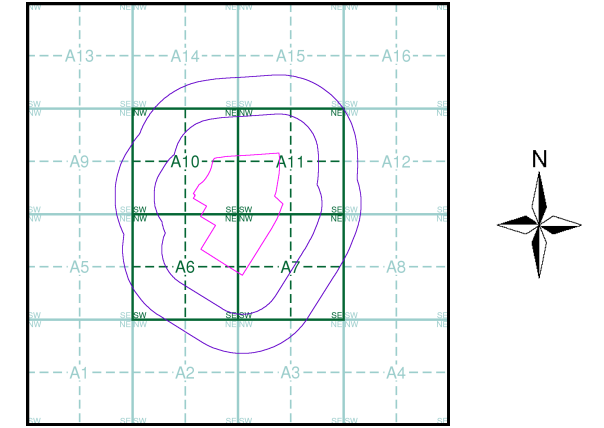
Source map scale - 1:10,560

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

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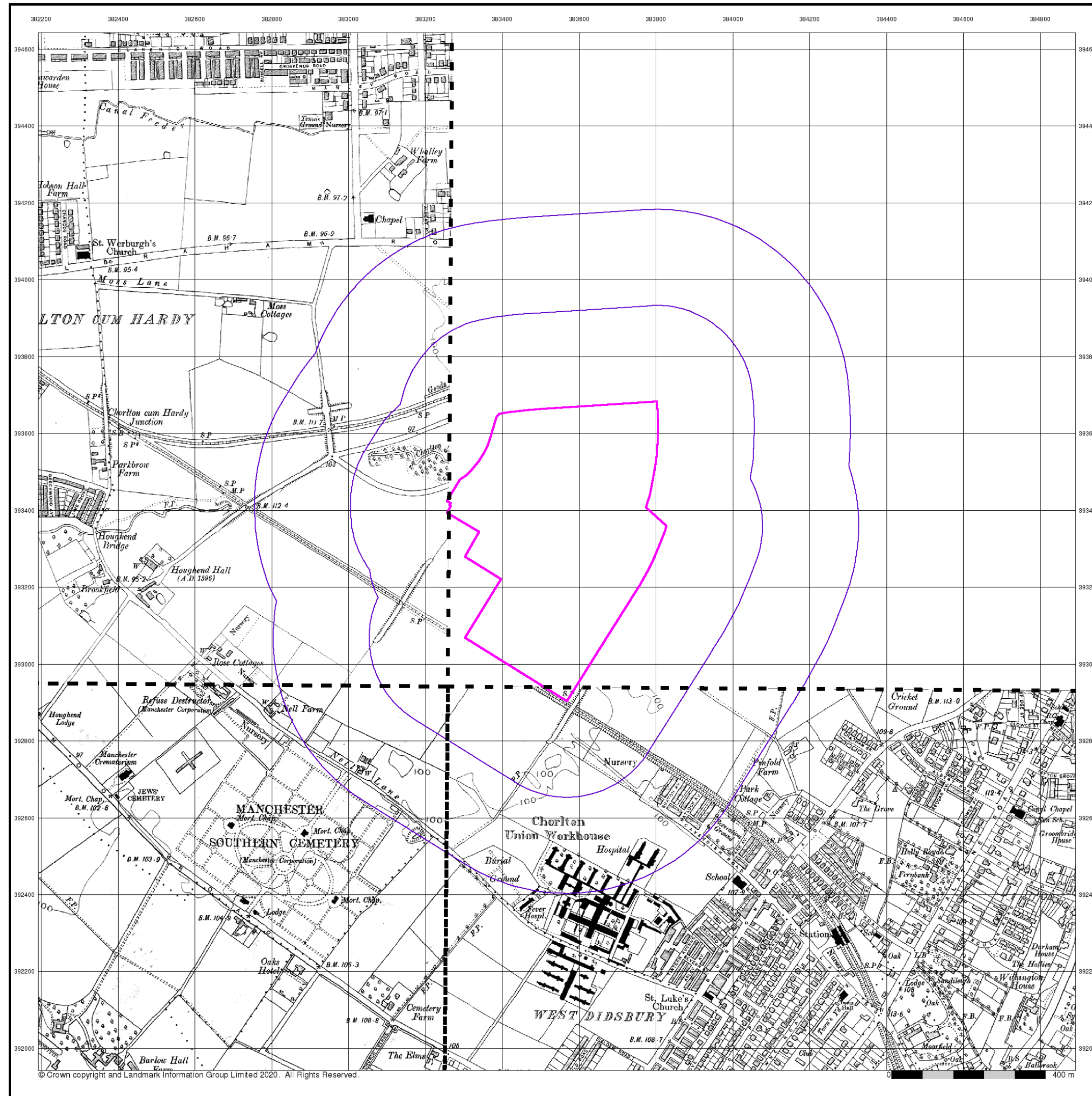
Historical Map - Slice A



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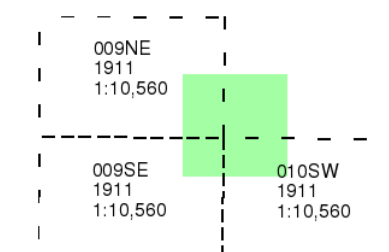
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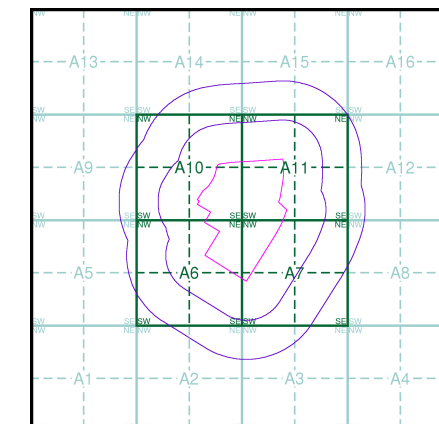


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Historical Map - Slice A

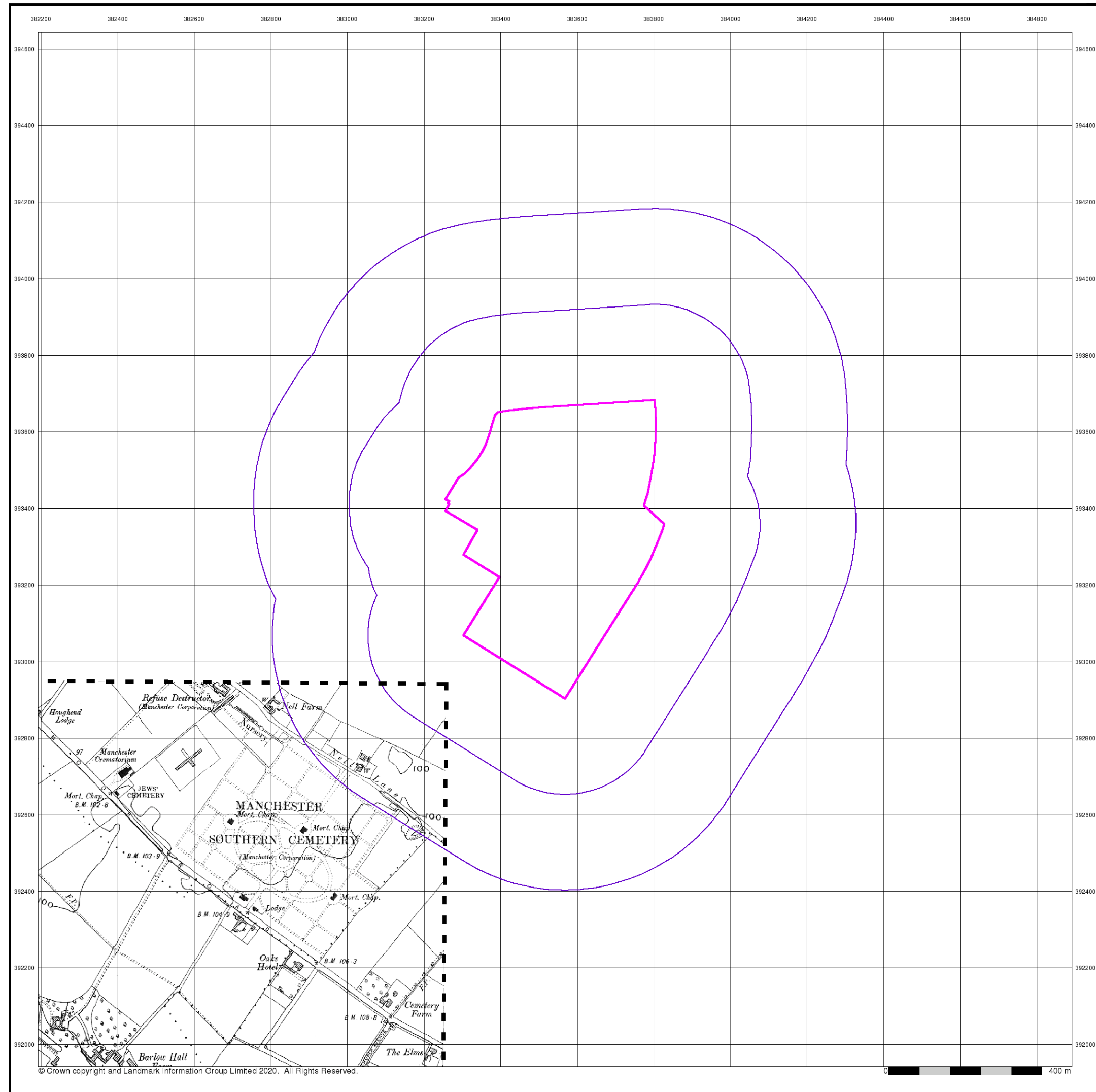


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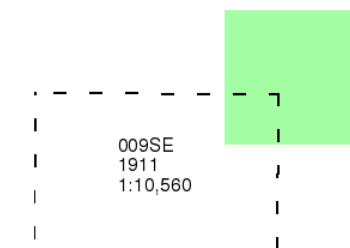
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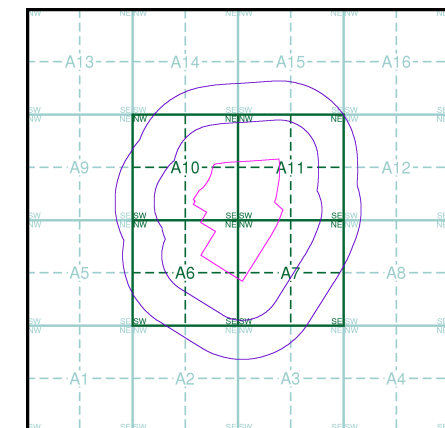
Published 1911
Source map scale - 1:10,560

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)

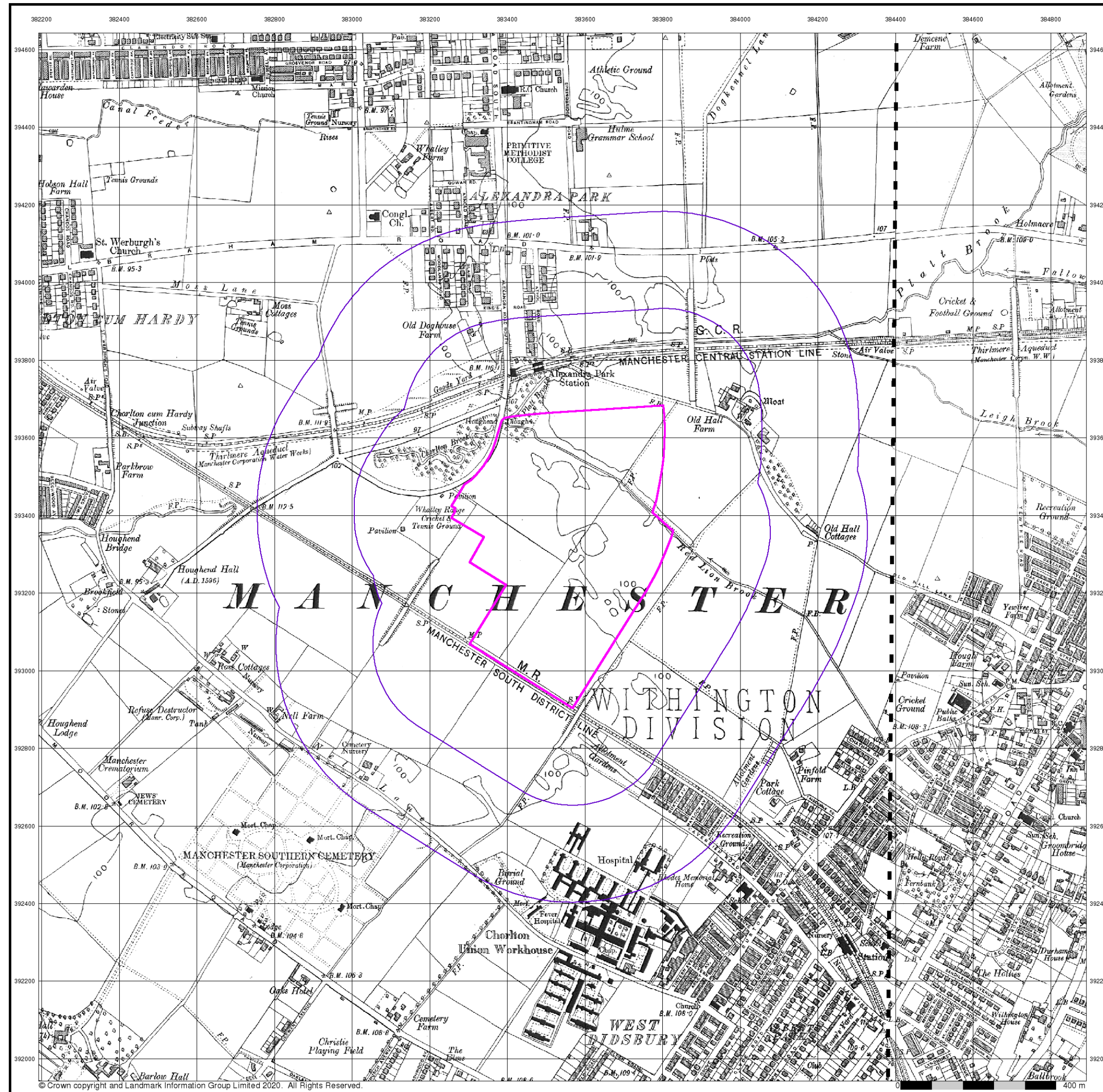


Historical Map - Slice A



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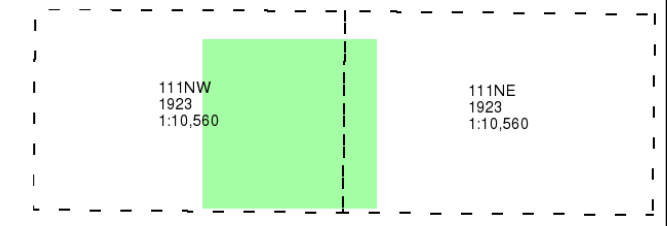
Lancashire And Furness

Published 1923

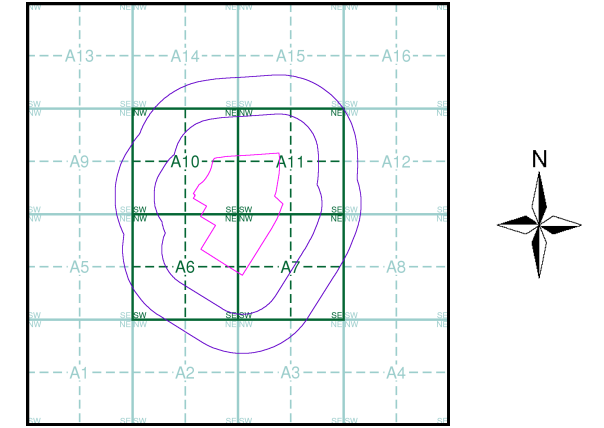
Source map scale - 1:10,560

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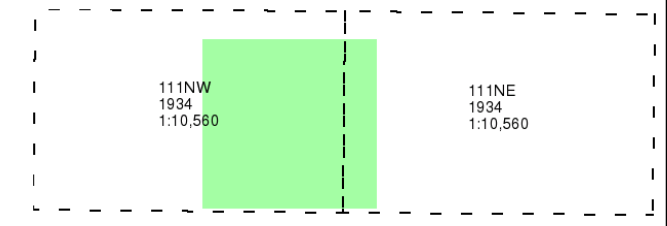
Lancashire And Furness

Published 1934

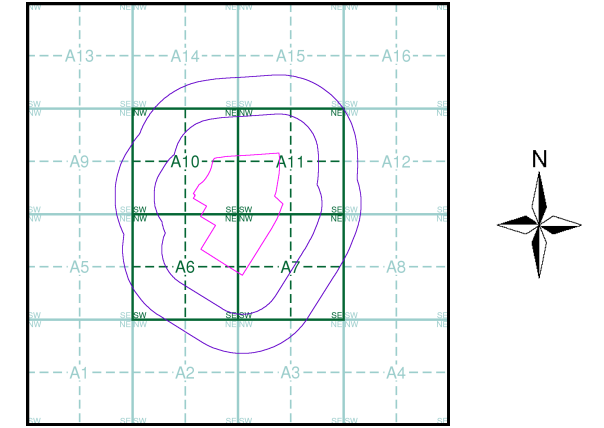
Source map scale - 1:10,560

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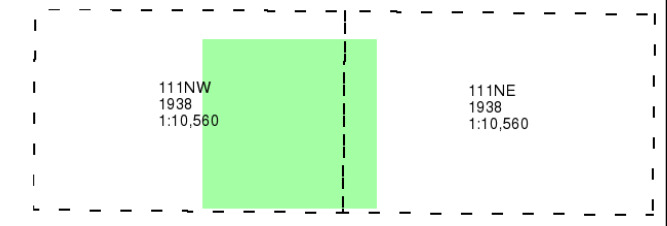
Lancashire And Furness

Published 1938

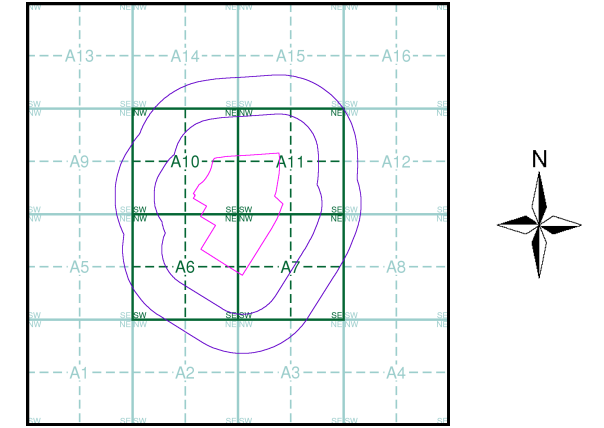
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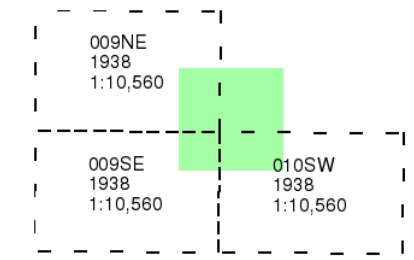


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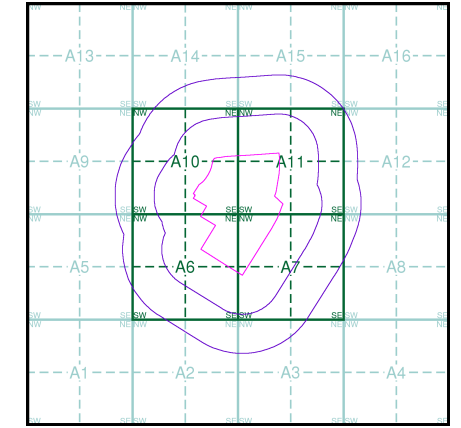
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

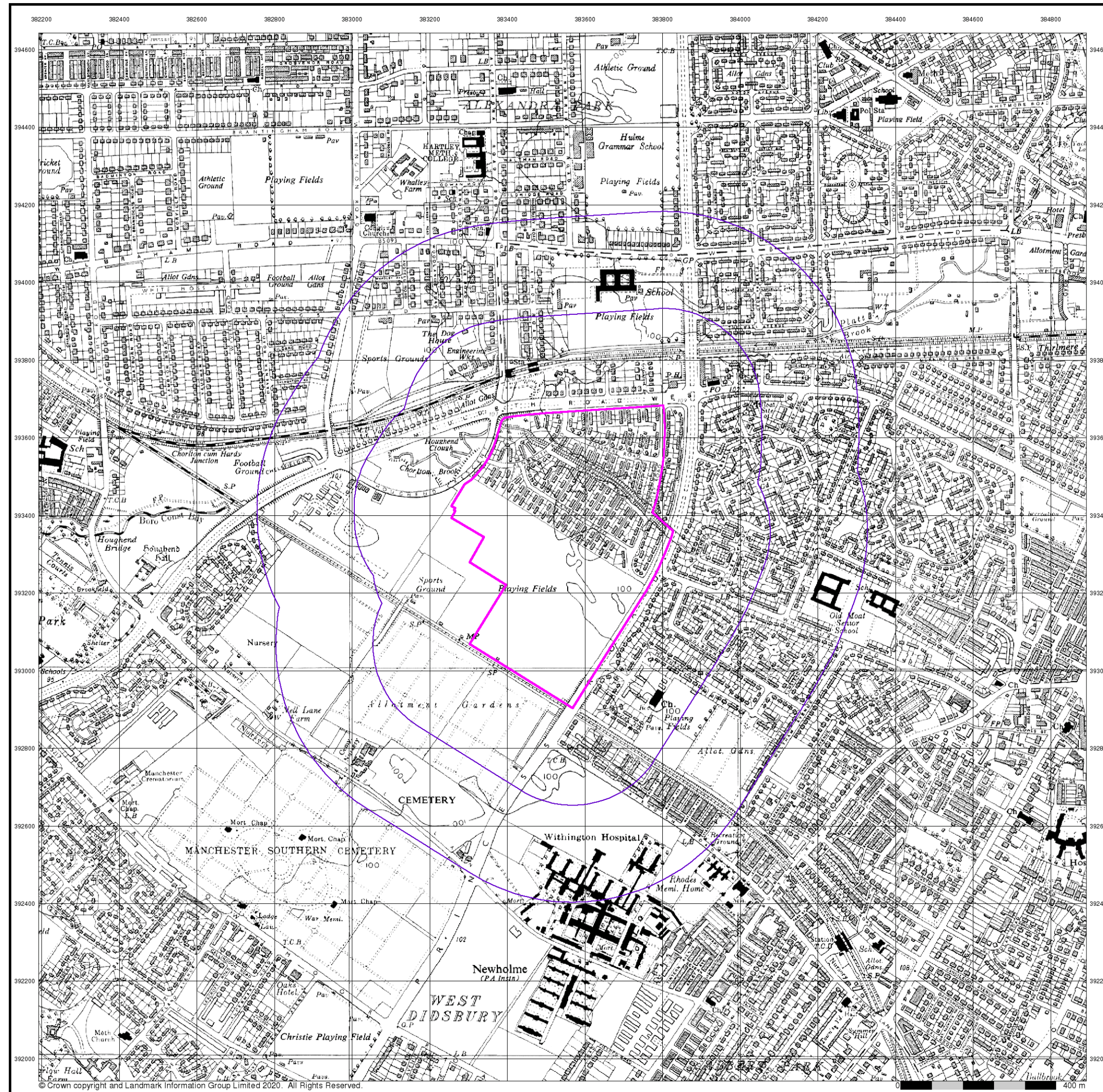
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 500

Site Details

Hough End Leisure Centre, 480, Princess Road, MANCHESTER, M20 1NA



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Fax: 0844 844 9951
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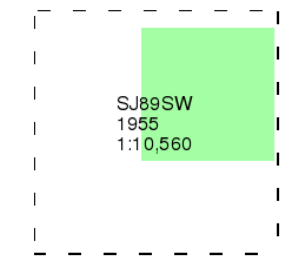
ORDNANCE SURVEY PLAN

Published 1955

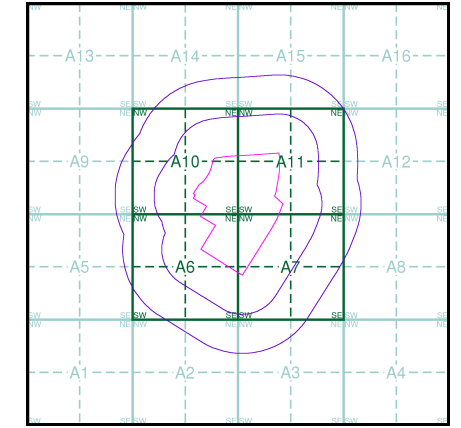
Source map scale - 1:10,000

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

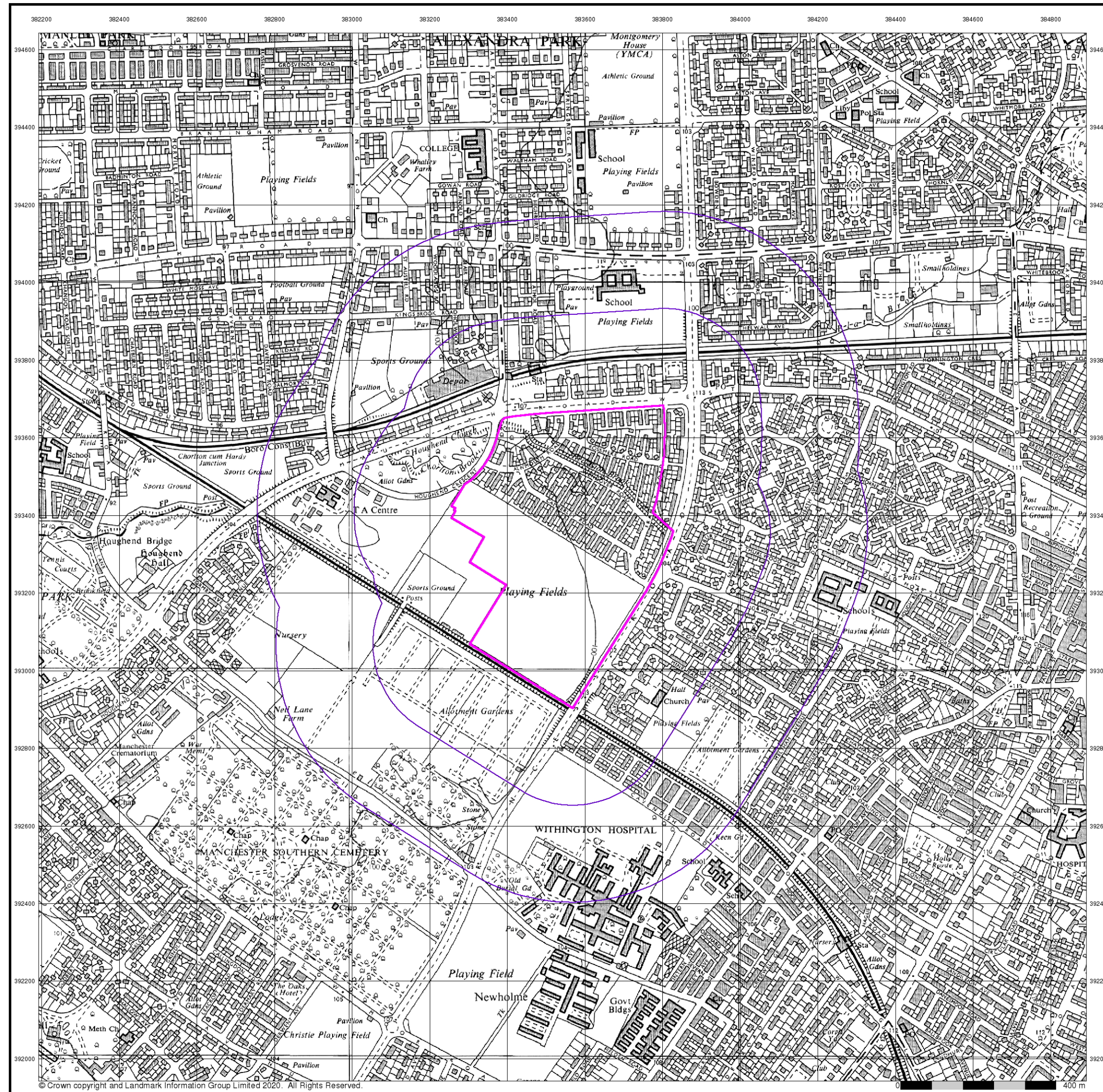
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
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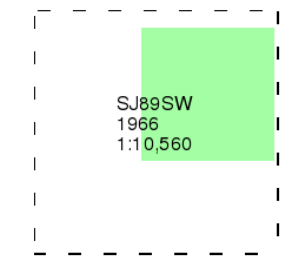
Ordnance Survey Plan

Published 1966

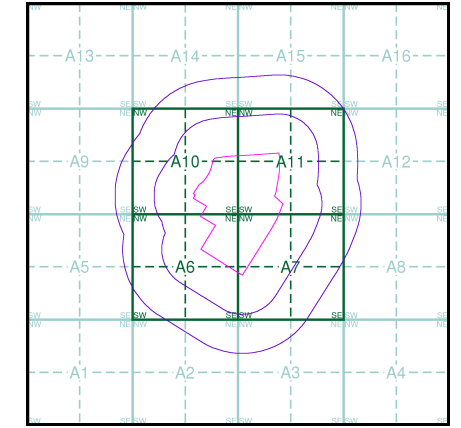
Source map scale - 1:10,000

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: 266502671_1_1
Customer Ref: LKC 20 1488
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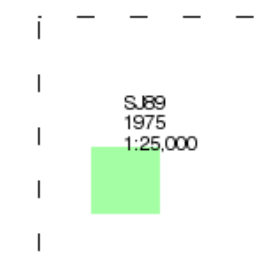


Published 1975

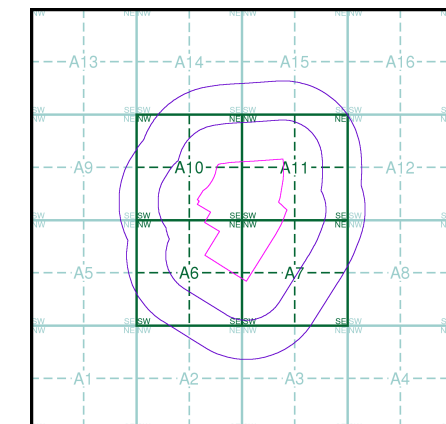
Source map scale - 1:25,000

These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use. They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)



Russian Map - Slice A



Order Details

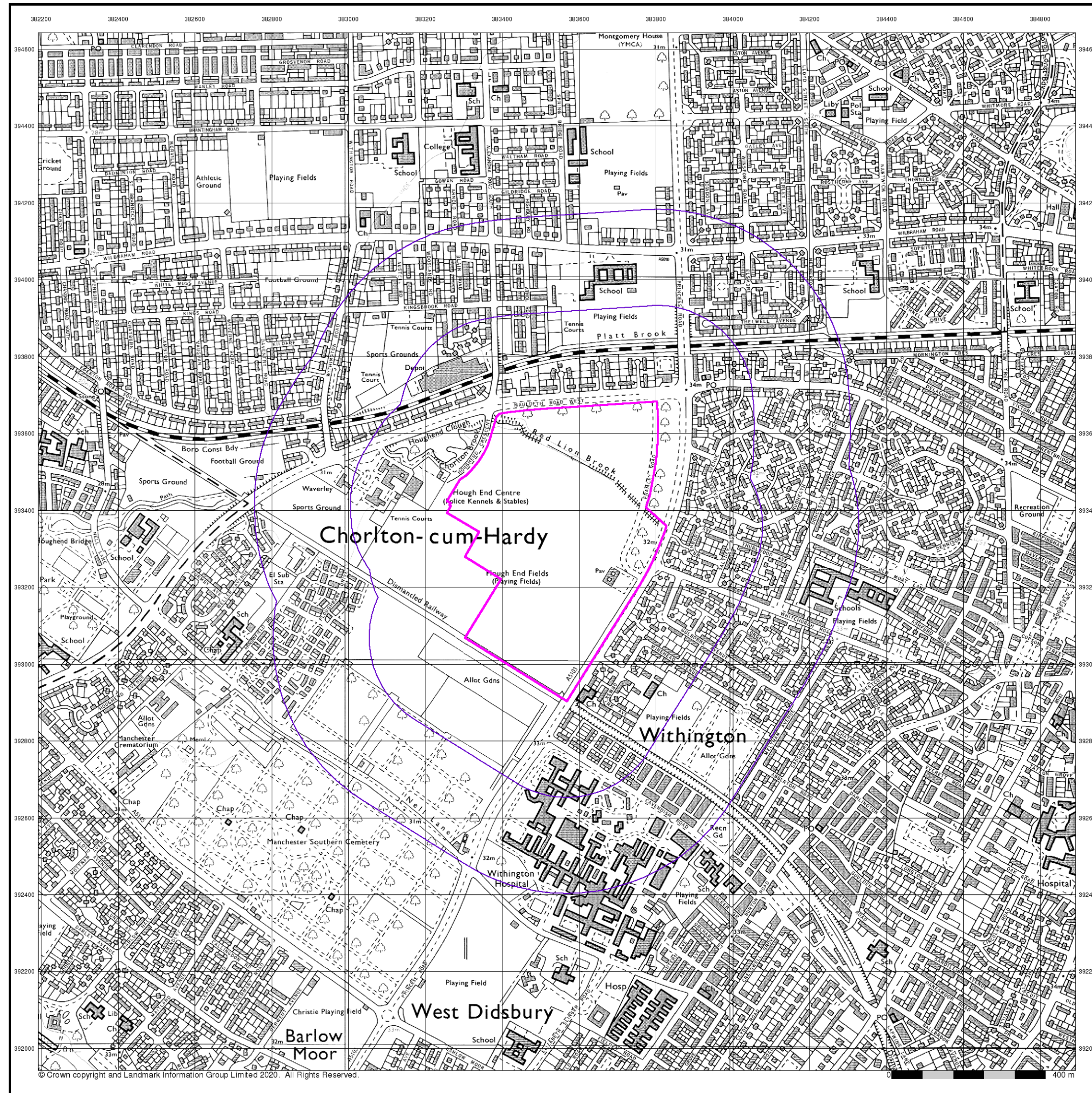
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Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 500

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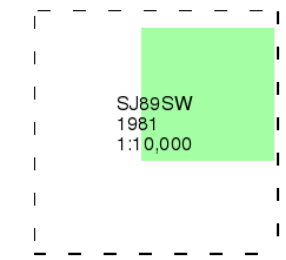
ORDNANCE SURVEY PLAN

Published 1981

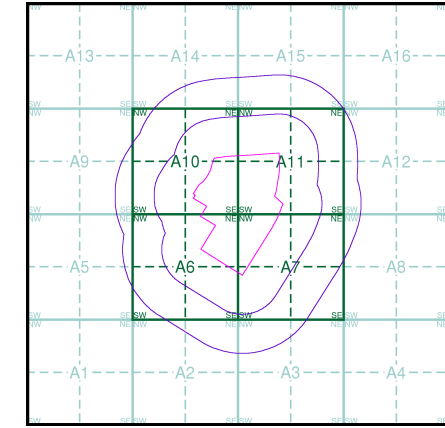
Source map scale - 1:10,000

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

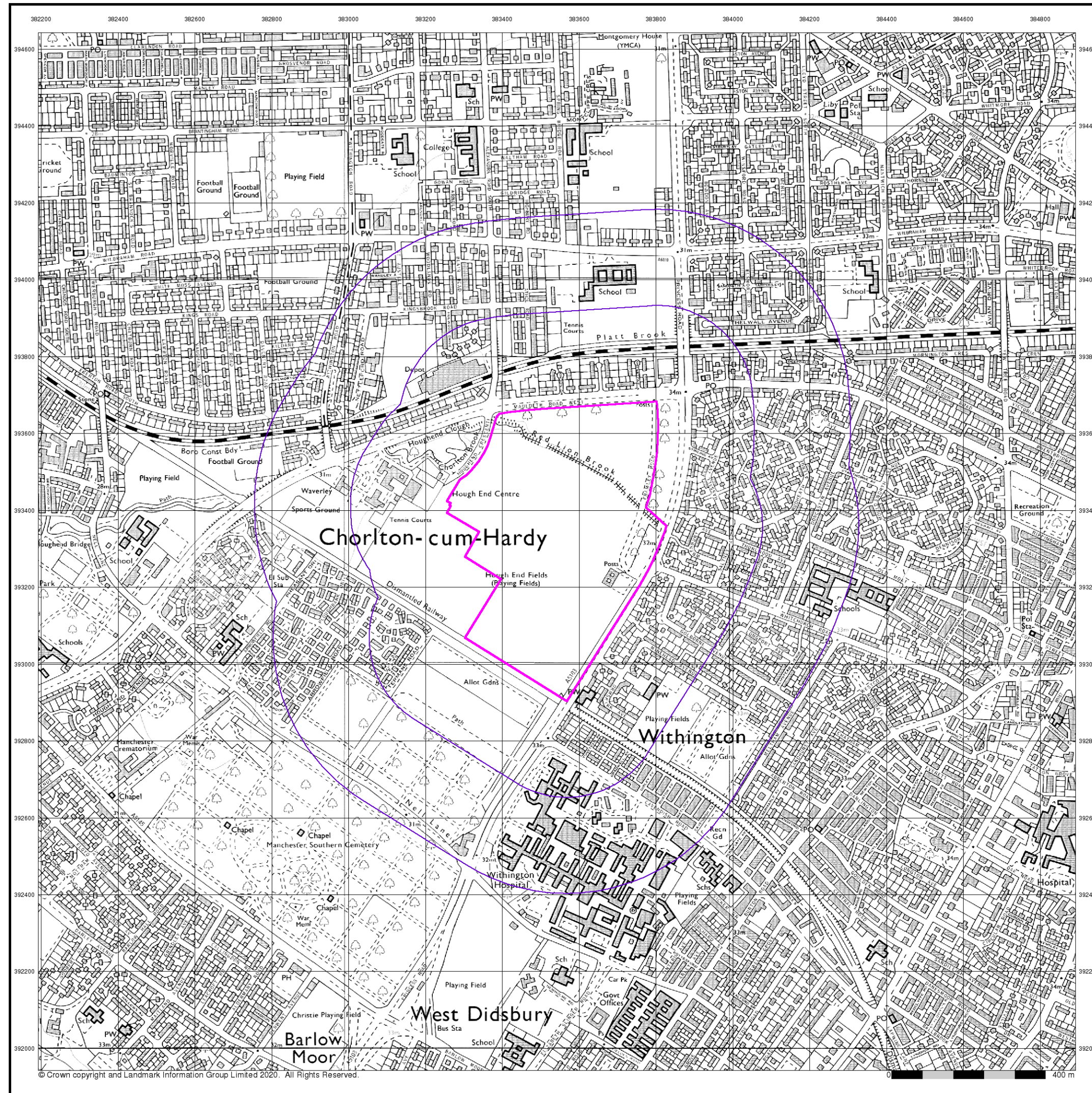
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
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Site Area (Ha): 29.81
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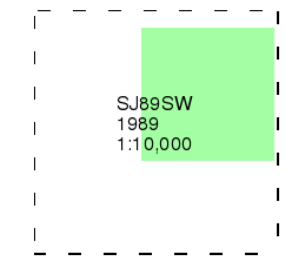
Ordnance Survey Plan

Published 1989

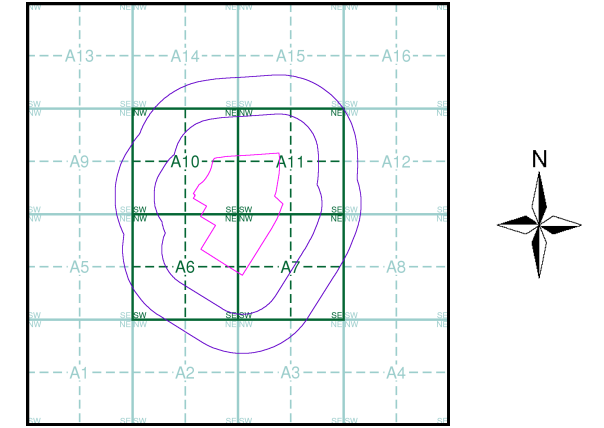
Source map scale - 1:10,000

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

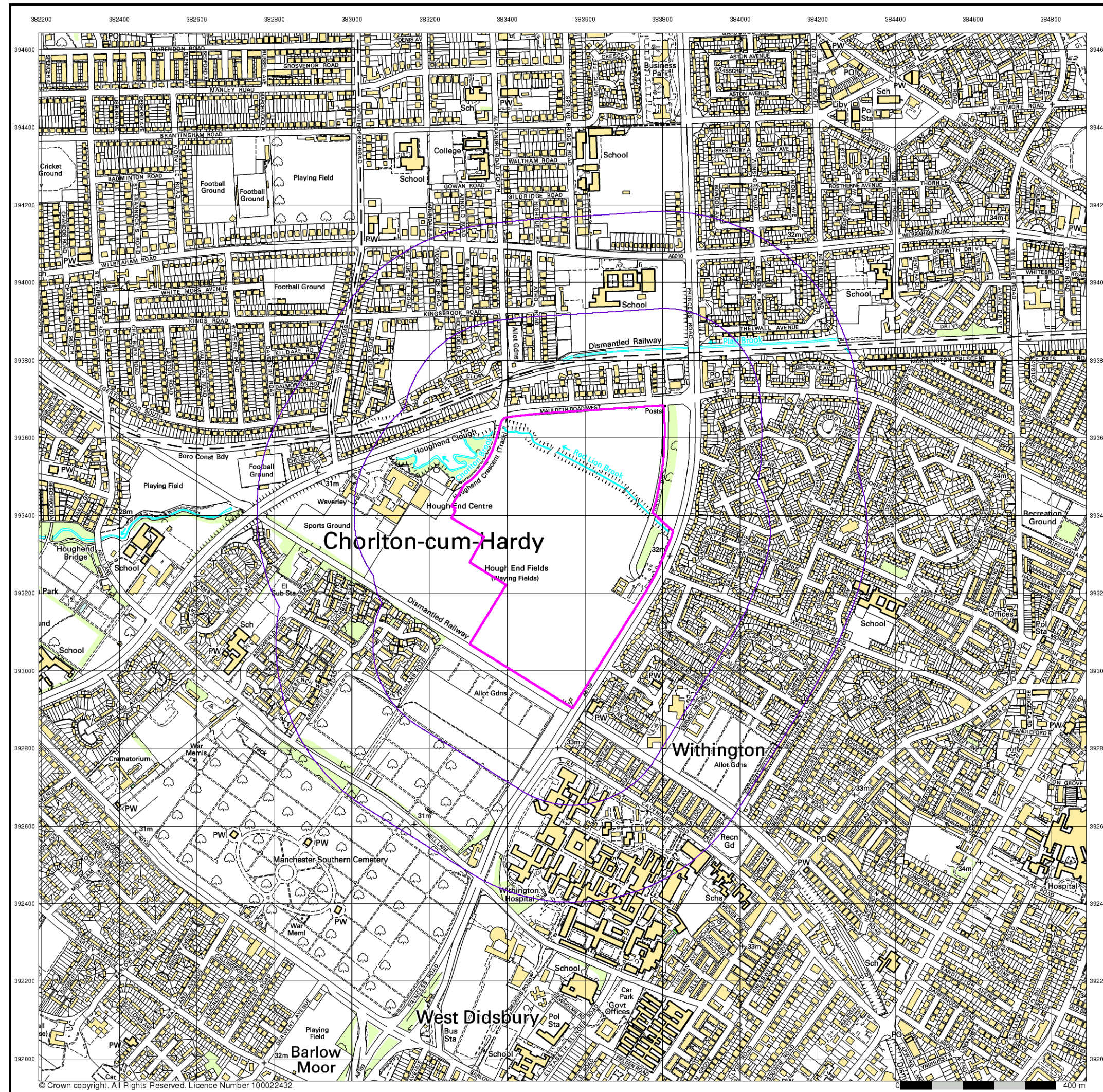
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
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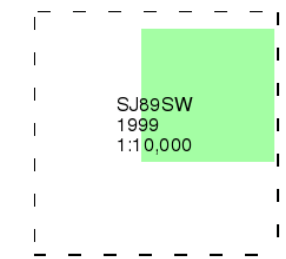
10k Raster Mapping

Published 1999

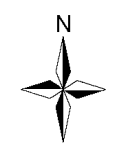
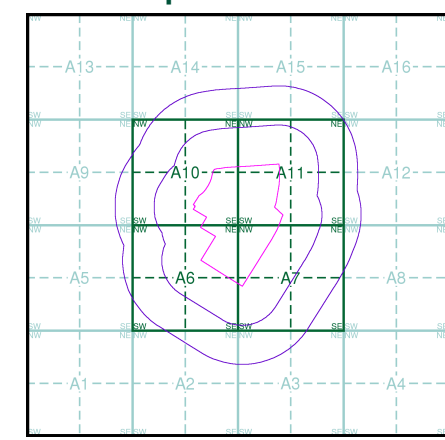
Source map scale - 1:10,000

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)

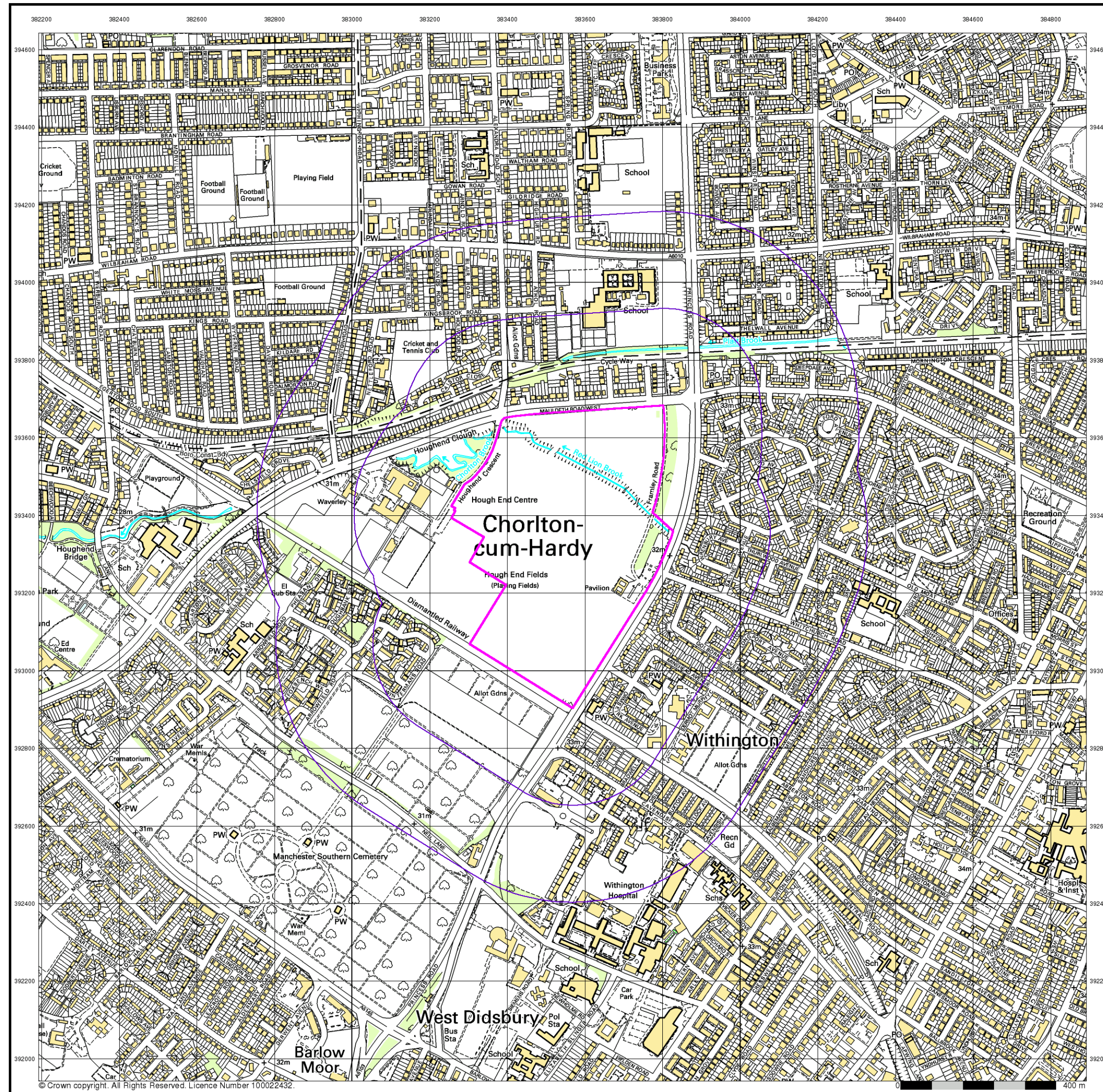


Historical Map - Slice A



Order Details	
Order Number:	266502671_1_1
Customer Ref:	LKC 20 1488
National Grid Reference:	383550, 393340
Slice:	A
Site Area (Ha):	29.81
Search Buffer (m):	500

Site Details
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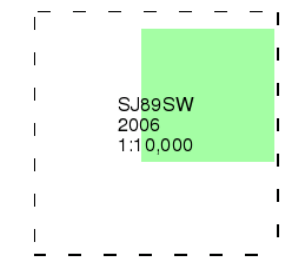
10k Raster Mapping

Published 2006

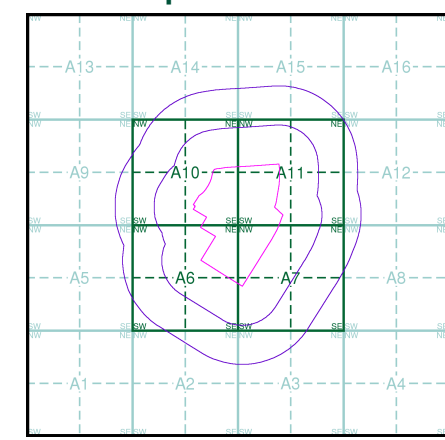
Source map scale - 1:10,000

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)

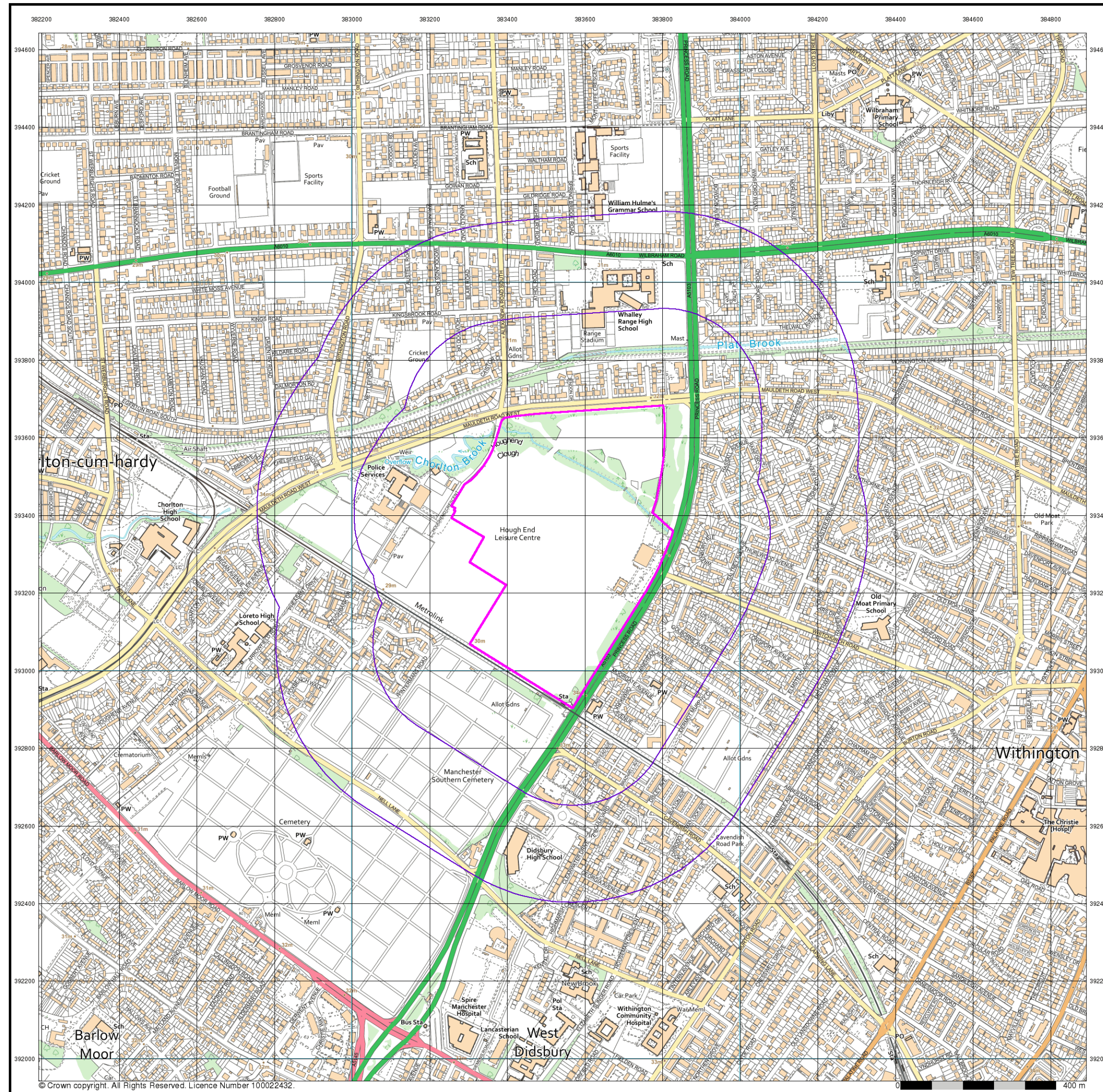


Historical Map - Slice A



Order Details	
Order Number:	266502671_1_1
Customer Ref:	LKC 20 1488
National Grid Reference:	383550, 393340
Slice:	A
Site Area (Ha):	29.81
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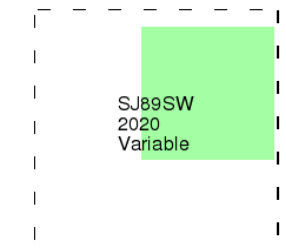
VectorMap Local

Published 2020

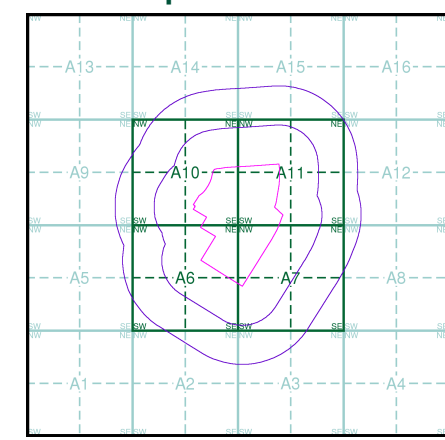
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
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Site Details

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Appendix B

Envirocheck Report

Envirocheck[®] Report:

Mining and Ground Stability Datasheet

Order Details:

Order Number:

266502671_1_1

Customer Reference:

LKC 20 1488

National Grid Reference:

383550, 393340

Slice:

A

Site Area (Ha):

29.81

Search Buffer (m):

500

Site Details:

Hough End Leisure Centre, 480
Princess Road
MANCHESTER
M20 1NA

Client Details:

L Consult
LK Consult Ltd
Unit 29 Eton Business Park
Eton Hill Road
Radcliffe
Greater Manchester
M26 2ZS

Report Section and Details	Page Number
Summary	-
The Summary section provides an overview of the data contained within the report, detailing the number of data set features or the existence of a data set in relation to the buffer selected. For ease of reference, the report is broken down into 4 sections of data; Mining and Natural Cavities Data, Historical Land Use Information (1:2,500), Historical Land Use Information (1:10,000) and Ground Stability Data (1:50,000).	
Mining and Natural Cavities Data	-
The Mining and Natural Cavities Data section features data sets related to the existence of mining areas and their potential hazards; and details of naturally formed cavities. Data sets within this section are not plotted, with the exception of BGS Recorded Mineral Sites and Potential Mining Areas which feature on the Historical Land Use Information (1:10,000) map.	
Historical Land Use Information (1:2,500)	1
The Historical Land Use Information (1:2,500) section contains data captured from analysis carried out by Landmark of 1:1,250 and 1:2,500 scale historical Ordnance Survey mapping, identifying areas where, historically, the land uses were potentially contaminative. For the purpose of this Envirocheck module, only historical data relating to mining and ground stability has been included and plotted on the corresponding Historical Land Use Information (1:2,500) map. This section also includes the Subterranean Features data set, which details various man-made and man-used underground spaces obtained from the Subterranea Britannica society.	
Historical Land Use Information (1:10,000)	2
The Historical Land Use (1:10,000) section covers data captured from the systematic analysis carried out by Landmark of 1:10, 560 and 1:10,000 scale historical Ordnance Survey mapping dating back to the mid-19th century, identifying potentially contaminative past industrial land uses. For the purpose of this Envirocheck module, only data relating to mining and ground stability has been included and plotted on the accompanying Historical Land Use Information (1:10,000) map.	
Ground Stability Data (1:50,000)	4
The Ground Stability (1:50,000) section includes the BGS Geosure data suite, reporting features to 250m and plotted onto 3 separate maps. Also reported is brine subsidence, brine mining and salt mining data sets, of which Brine Pumping and Salt Mining Related Features are plotted, and subsidence insurance claims and insurance investigations data, which is not plotted.	
Historical Map List	5
The Historical Map List section details the historical mapping that has been analysed for your site, in relation to the Historical Land Use Information sections.	
Data Currency	6
Data Suppliers	7
Useful Contacts	8

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The brine subsidence data relating to the Droitwich area as provided in this report is derived from JPB studies and physical monitoring undertaken annually over more than 35 years. For more detailed interpretation contact enquiries@jpb.co.uk. JPB retain the copyright and intellectual rights to this data and accept no liability for any loss or damage, including in direct or consequential loss, arising from the use of this data.

The Mining Instability data was obtained on licence from Ove Arup & Partners Limited (for further information, contact mining.review@arup.com). No reproduction or further use of such Data is to be made without the prior written consent of Ove Arup & Partners Limited. The supplied Mining Instability data is derived from publicly available records and other third party sources and neither Ove Arup & Partners nor Landmark warrant the accuracy or completeness of such information or data.

Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m
Mining and Natural Cavities Data				
BGS Recorded Mineral Sites				
Coal Mining Affected Areas			n/a	n/a
Man Made Mining Cavities				
Mining Instability			n/a	n/a
Natural Cavities				
Non Coal Mining Areas of Great Britain				n/a
Potential Mining Areas				
Historical Land Use Information (1:2,500)				
Extractive Industries or Potential Excavations from 1855-1909 (100m)				n/a
Extractive Industries or Potential Excavations from 1893-1915 (100m)				n/a
Extractive Industries or Potential Excavations from 1906-1937 (100m)				n/a
Extractive Industries or Potential Excavations from 1924-1949 (100m)				n/a
Extractive Industries or Potential Excavations from 1950-1980 (100m)	pg 1	1	3	n/a
Subterranean Features (100m)				n/a
Historical Land Use Information (1:10,000)				
Air Shafts				
Disturbed Ground				
General Quarrying				
Heap, unknown constituents				
Mineral Railway				
Mining & quarrying general				
Mining of coal & lignite				
Quarrying of sand & clay, operation of sand & gravel pits				
Former Marshes	pg 2			1
Potentially Infilled Land (Non-Water)				
Potentially Infilled Land (Water)	pg 2	4	12	15
Ground Stability Data (1:50,000)				
CBSCB Compensation District			n/a	n/a
Brine Pumping Related Features				
Brine Subsidence Solution Area				
Potential for Collapsible Ground Stability Hazards	pg 4	Yes	Yes	n/a
Potential for Compressible Ground Stability Hazards	pg 4	Yes	Yes	n/a
Potential for Ground Dissolution Stability Hazards	pg 4	Yes		n/a
Potential for Landslide Ground Stability Hazards	pg 4	Yes		n/a
Potential for Running Sand Ground Stability Hazards	pg 4	Yes	Yes	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 4	Yes		n/a
Salt Mining Related Features				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	Extractive Industries or Potential Excavations from 1950-1980 Use: Railway Cutting First Map Published 1951 Date: Last Map Published 1958 Date:	A6NE (SW)	0	-	383361 393031
2	Extractive Industries or Potential Excavations from 1950-1980 Use: Refuse Heap First Map Published 1951 Date: Last Map Published N/A Date:	A10NE (N)	39	-	383472 393699
3	Extractive Industries or Potential Excavations from 1950-1980 Use: Refuse Heap First Map Published 1951 Date: Last Map Published 1951 Date:	A10SE (NW)	42	-	383243 393482
4	Extractive Industries or Potential Excavations from 1950-1980 Use: Thirlmere Aqueduct (Manchester Corporation Water Works) First Map Published 1951 Date: Last Map Published 1951 Date:	A10NE (N)	77	-	383440 393744

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	Former Marshes Use: Former Marsh Date of Mapping: 1848	A15SE (NE)	314	-	383929 393969
6	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1908	A10NE (NW)	0	-	383402 393642
7	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1894	A7NW (SE)	0	-	383671 393140
8	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1894	A7NW (SE)	0	-	383656 393166
9	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A11SW (E)	0	-	383634 393309
10	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1908	A11SW (E)	3	-	383829 393353
11	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A10NE (N)	54	-	383458 393714
12	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A11NW (N)	75	-	383592 393744
13	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A7SW (SE)	117	-	383726 392934
14	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A6NW (SW)	130	-	383182 393113
15	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1894	A11NW (N)	152	-	383562 393819
16	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A7SW (S)	161	-	383553 392743
17	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A6NW (W)	173	-	383155 393188
18	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A11NE (NE)	187	-	383992 393644
19	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A6SE (S)	204	-	383498 392712
20	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1908	A11NE (NE)	211	-	384014 393694
21	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A10SW (NW)	232	-	383056 393542
22	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A10NE (N)	256	-	383396 393910
23	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A7SW (S)	296	-	383758 392677
24	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A7SW (S)	327	-	383796 392669
25	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A10NW (NW)	332	-	383118 393840

Historical Land Use Information (1:10,000)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
26	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A15SE (NE)	337	-	383892 394007
27	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A7NE (E)	399	-	384163 393121
28	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A15SE (NE)	405	-	384067 393989
29	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A10NW (NW)	430	-	383000 393831
30	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A15SE (NE)	444	-	384010 394075
31	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A10NW (NW)	464	-	382961 393827
32	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A2NE (S)	470	-	383423 392456
33	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A14SE (N)	472	-	383421 394130
34	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A12NW (NE)	473	-	384239 393865
35	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A15SE (NE)	489	-	384016 394122
36	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A14SW (NW)	495	-	383065 394021

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	CBSCB Compensation District The site does not fall within the brine compensation area.				
	Brine Subsidence Solution Area The site does not fall within the brine subsidence solution area.				
37	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SW (E)	0	1	383550 393335
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (NW)	0	1	383339 393534
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (N)	0	1	383509 393545
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	192	1	383933 393823
38	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A10SE (NW)	0	1	383339 393534
39	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A10SE (N)	0	1	383509 393545
40	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	192	1	383933 393823
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SW (E)	0	1	383550 393335
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SW (E)	0	1	383550 393335
41	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SW (E)	0	1	383550 393335
42	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SW (E)	0	1	383550 393335
43	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10SE (NW)	0	1	383339 393534
44	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11SW (NE)	0	1	383671 393489
45	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10SE (N)	0	1	383509 393545
46	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	192	1	383933 393823
47	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (NW)	0	1	383339 393534
48	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (N)	0	1	383509 393545
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SW (E)	0	1	383550 393335

The following mapping has been analysed for Historical Land Use Information (1:2,500):

1:2,500	Mapsheet	Published Date
Ordnance Survey Plan	SJ8293	1955
Ordnance Survey Plan	SJ8293	1955
Ordnance Survey Plan	SJ8292	1956
Ordnance Survey Plan	SJ8392	1956
Ordnance Survey Plan	SJ8392	1956
Ordnance Survey Plan	SJ8492	1958
Ordnance Survey Plan	SJ8493	1958
Ordnance Survey Plan	SJ8493	1958

The following mapping has been analysed for Historical Land Use Information (1:10,000):

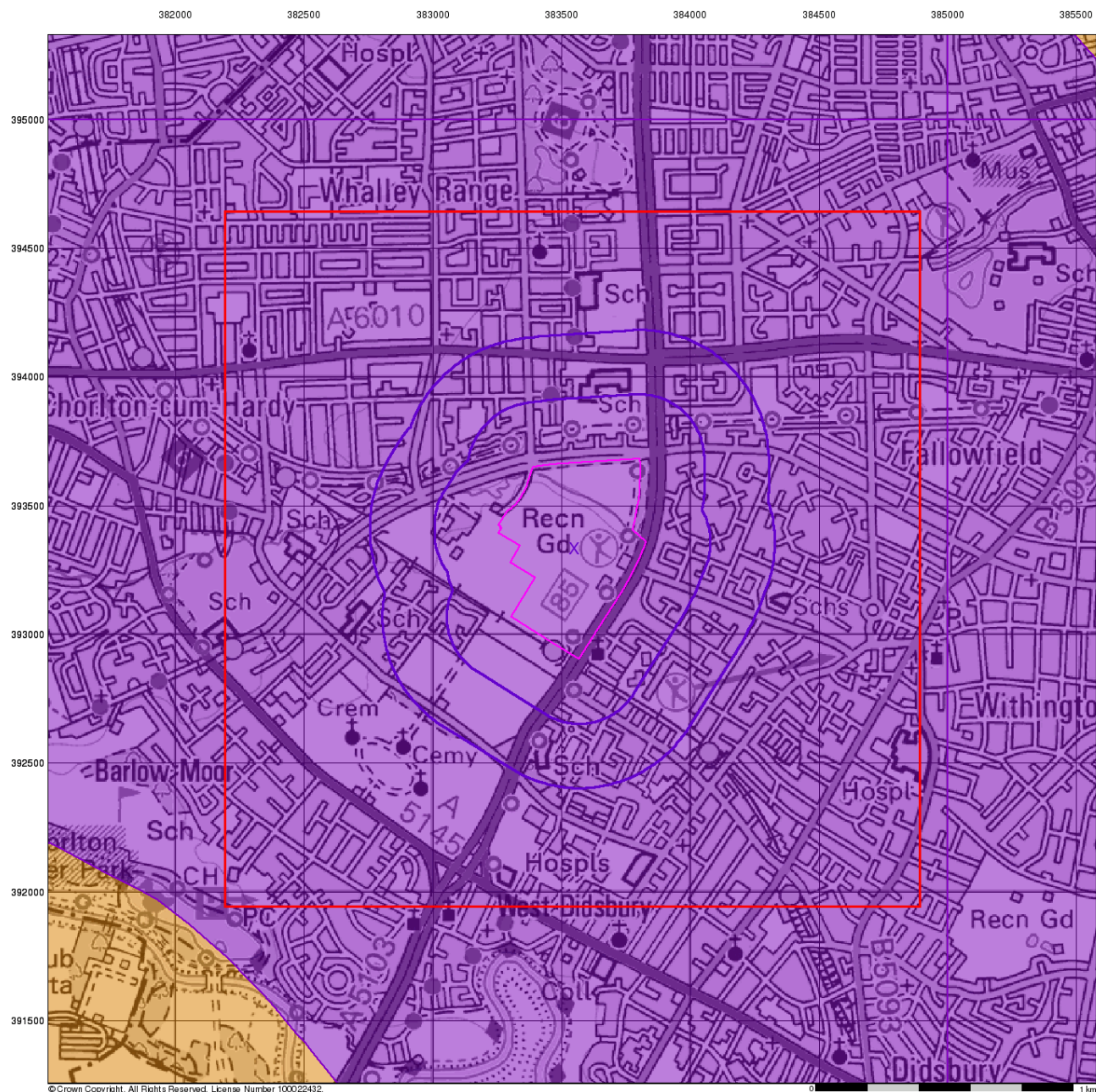
1:10,560	Mapsheet	Published Date
Lancashire And Furness	111_00	1848
Cheshire	009_00	1882
Cheshire	010_00	1882
Lancashire And Furness	111_NE	1894
Lancashire And Furness	111_NW	1894
Cheshire	009_NE	1899
Cheshire	009_SE	1899
Cheshire	010_SW	1899
Lancashire And Furness	111_NE	1908
Lancashire And Furness	111_NW	1908
Cheshire	009_NE	1911
Cheshire	009_SE	1911
Cheshire	010_SW	1911
Lancashire And Furness	111_NE	1923
Lancashire And Furness	111_NW	1933
Cheshire	009_NE	1938
Cheshire	009_SE	1938
Cheshire	010_SW	1938
Ordnance Survey Plan	SJ89SW	1955
1:10,000	Mapsheet	Published Date
Ordnance Survey Plan	SJ89SW	1989

Mining and Cavities Data	Version	Update Cycle
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	November 2020	Bi-Annually
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Man Made Mining Cavities Stantec UK Ltd	October 2020	Bi-Annually
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Natural Cavities Stantec UK Ltd	October 2020	Bi-Annually
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Historical Land Use Information (1:2,500)	Version	Update Cycle
Subterranean Features Landmark Information Group Limited	February 2020	Bi-Annually
Ground Stability Data (1:50,000)	Version	Update Cycle
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	April 2020	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Brine Subsidence Solution Area Johnson Poole & Bloomer	January 2015	Annual Rolling Update

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
British Geological Survey	 British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
The Coal Authority	 The Coal Authority
Ove Arup	
Stantec UK Ltd	
Wardell Armstrong	 wardell armstrong your earth our world
Johnson Poole & Bloomer	

Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
-	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk



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0 1 km



GROUP

Bedrock Aquifer Designation

General

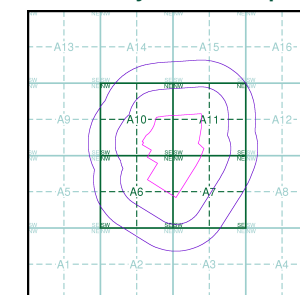
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A



Order Details

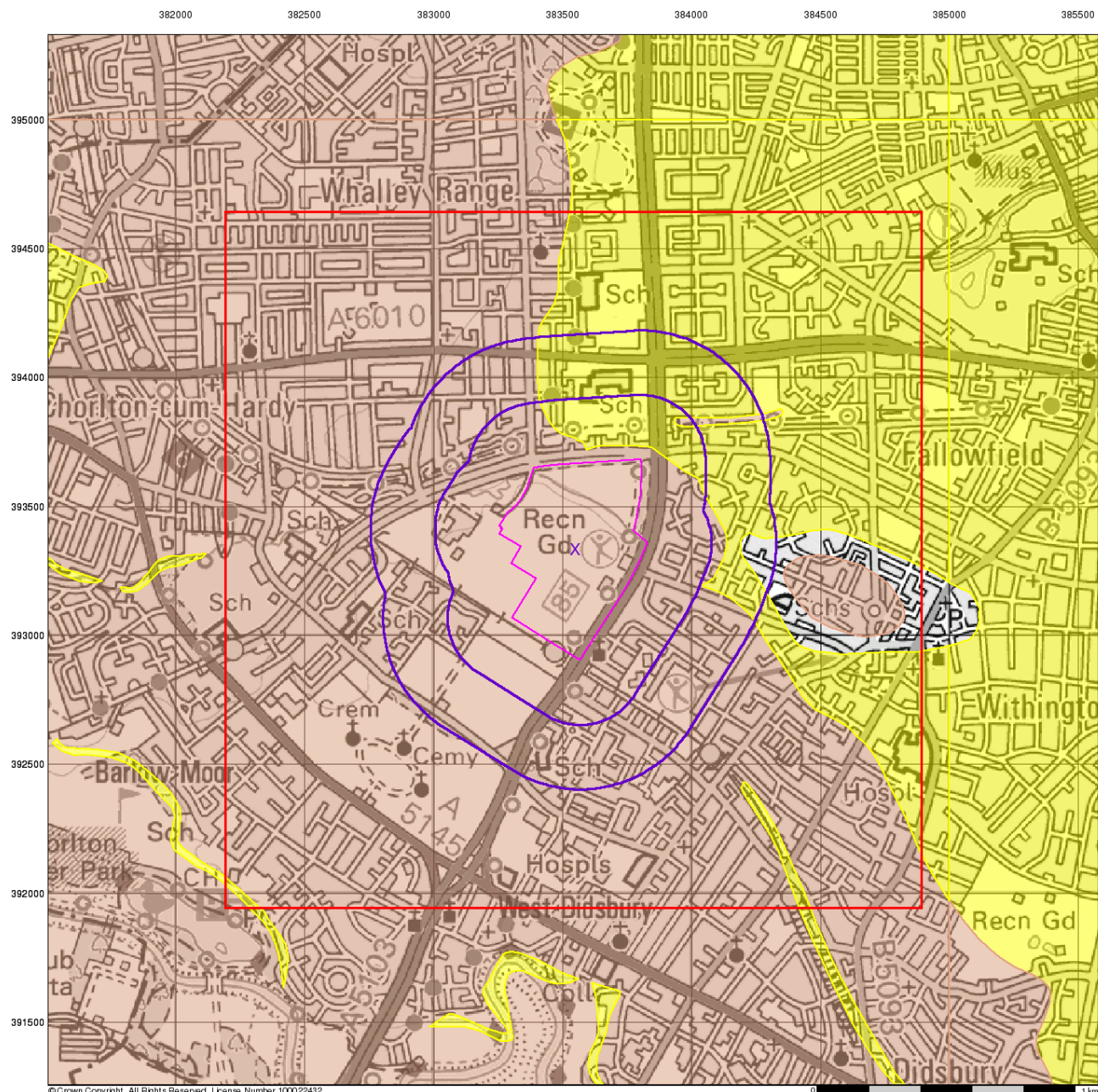
Order Number: 266502671_1_1
 Customer Ref: LKC 20 1488
 National Grid Reference: 383550, 393340
 Slice: A
 Site Area (Ha): 29.81
 Search Buffer (m): 500

Site Details

Hough End Leisure Centre, 480, Princess Road, MANCHESTER, M20 1NA

Landmark
 INFORMATION GROUP

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



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GROUP

Superficial Aquifer Designation

General

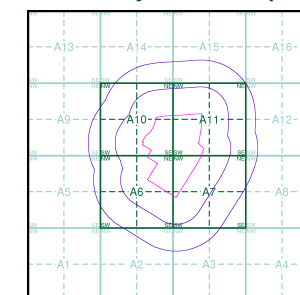
- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point
- Slice
- 8 Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A



Order Details

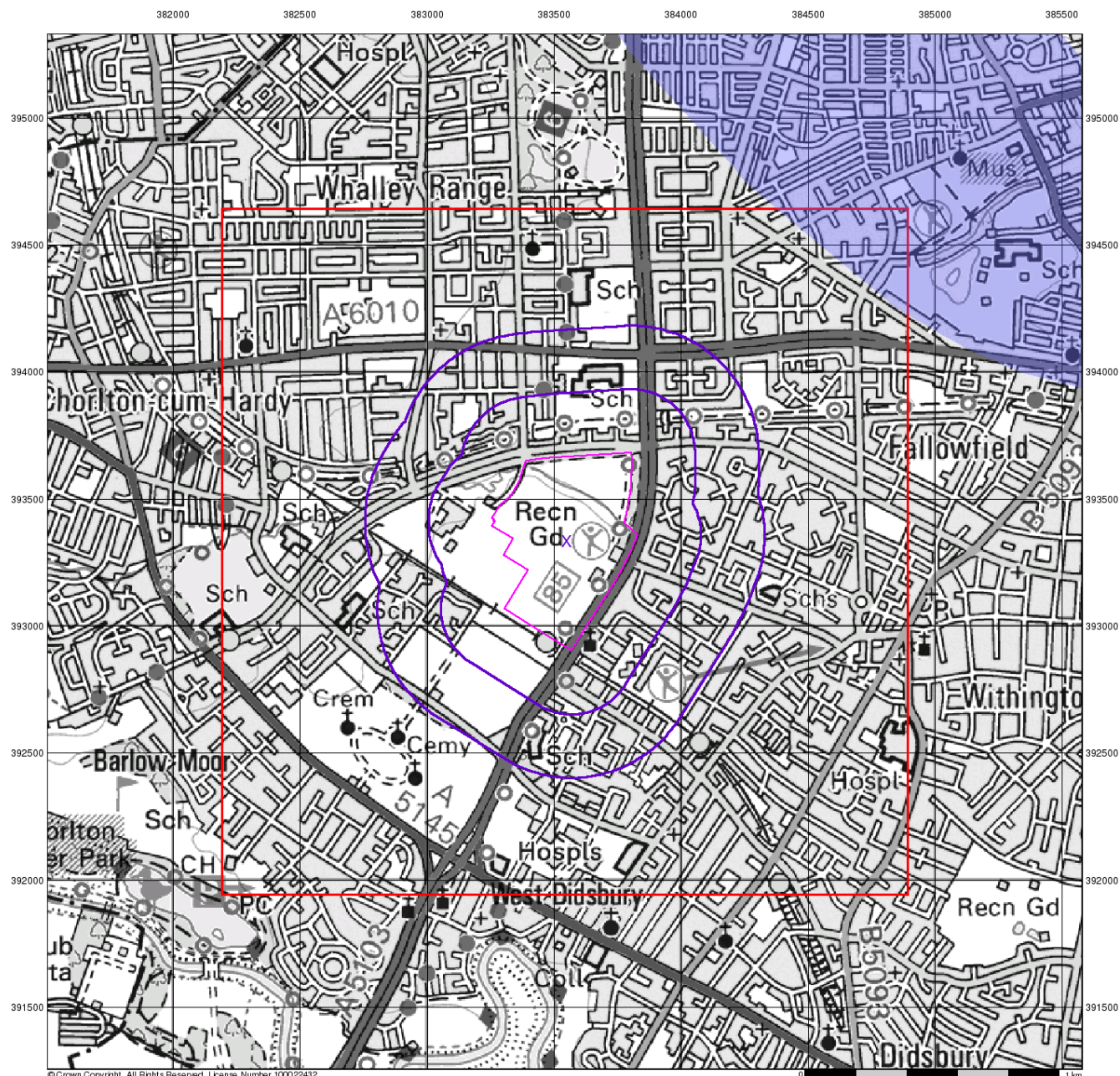
Order Number: 266502671_1_1
 Customer Ref: LKC 20 1488
 National Grid Reference: 383550, 393340
 Slice: A
 Site Area (Ha): 29.81
 Search Buffer (m): 500

Site Details

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GROUP

Source Protection Zones

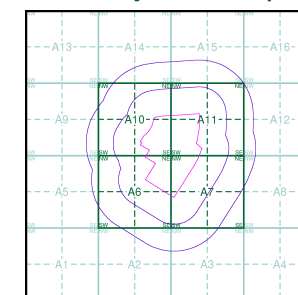
General

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

Agency and Hydrological

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

Site Sensitivity Context Map - Slice A



Order Details

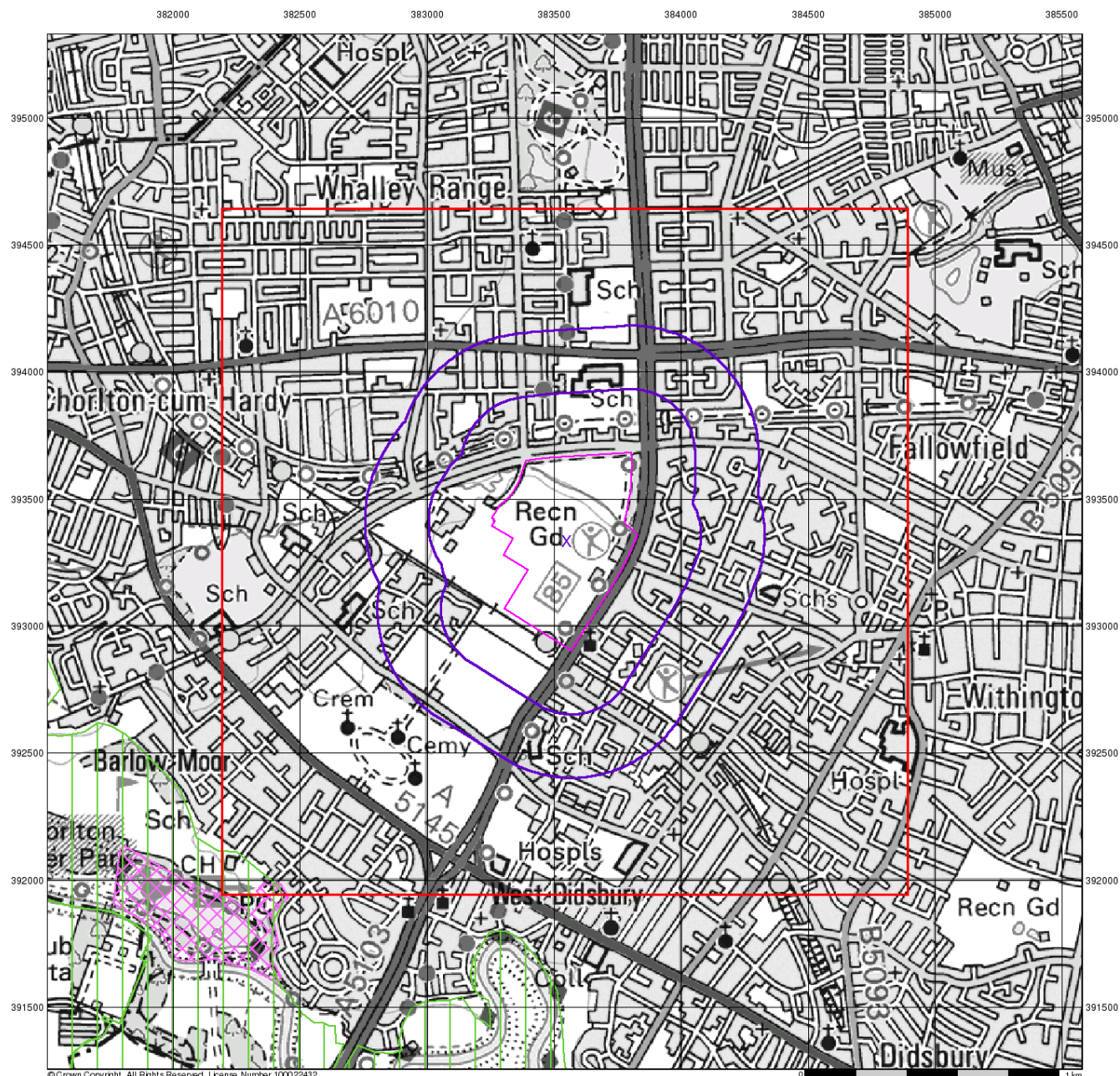
Order Number: 266502671_1_1
 Customer Ref: LKC 20 1488
 National Grid Reference: 383550, 393340
 Slice: A
 Site Area (Ha): 29.81
 Search Buffer (m): 500

Site Details

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GROUP

Sensitive Land Uses

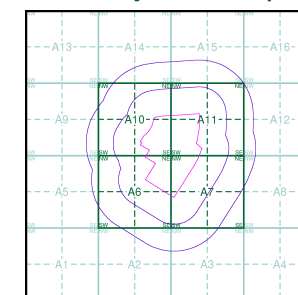
General

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

Sensitive Land Uses

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

Site Sensitivity Context Map - Slice A



Order Details

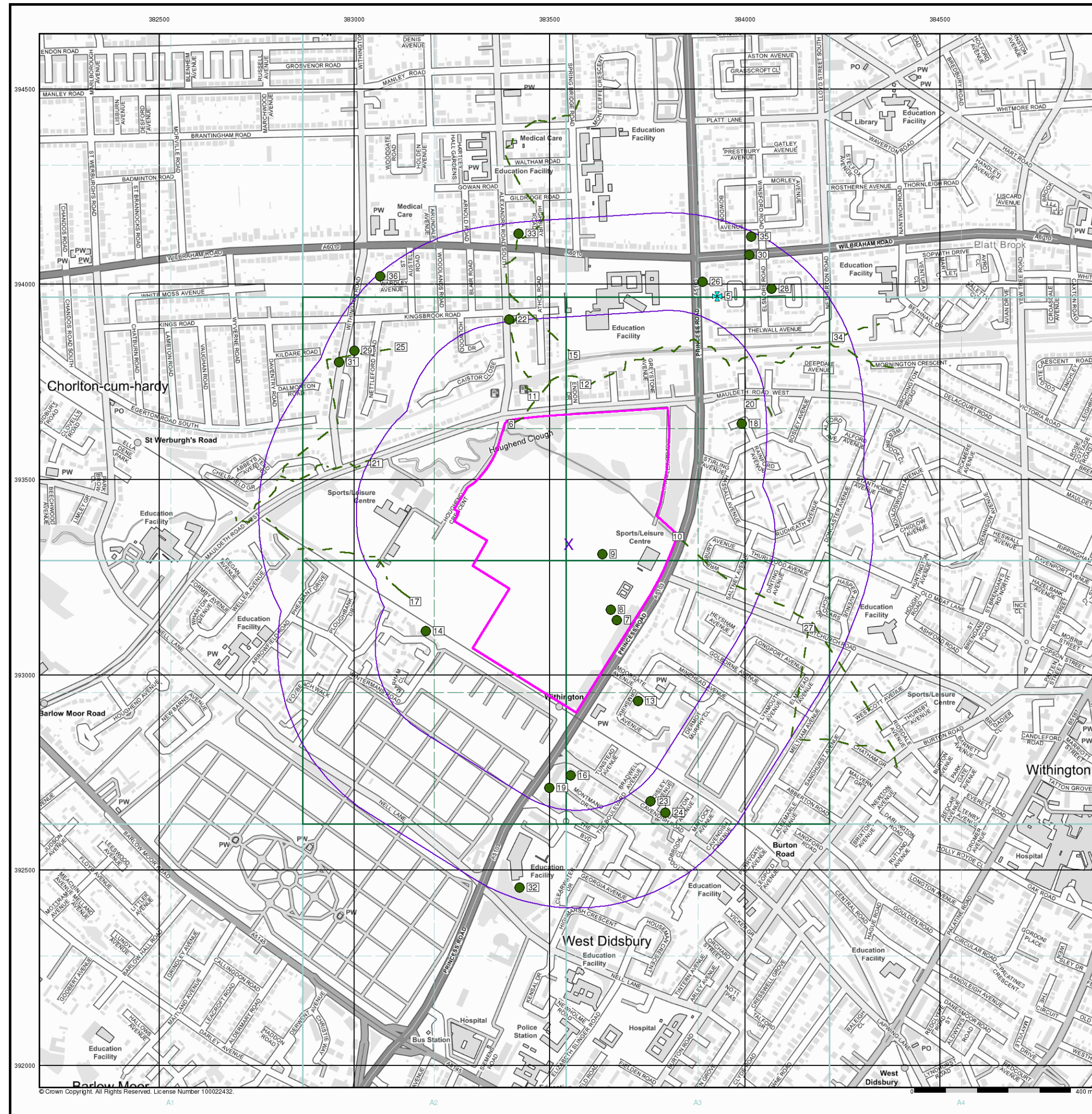
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 Customer Ref: LKC 20 1488
 National Grid Reference: 383550, 393340
 Slice: A
 Site Area (Ha): 29.81
 Search Buffer (m): 500

Site Details

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 Fax: 0844 844 9951
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LK GROUP

Historical Land Use Information (1:10,000)

General

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

Several of Type at Location

Potentially Contaminative Industrial Uses (Past Land Uses - Mining)

	Point	Line	Polygon
Air Shafts			
Disturbed Ground			
General Quarrying			
Heap, unknown constituents			
Mineral Railway			
Mining and Quarrying General			
Mining of Coal & Lignite			
Quarrying of Sand and Clay, Operation of Sand and Gravel Pits			

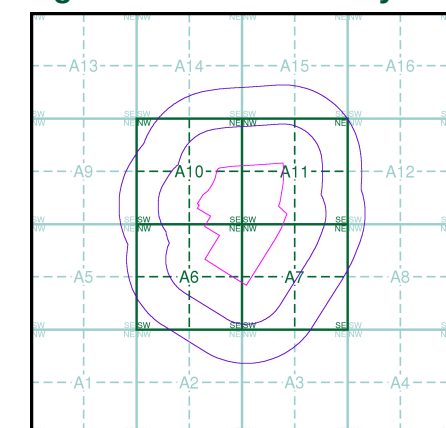
	Point	Line	Polygon
Potentially Infilled Land (Non-Water)			
Potentially Infilled Land (Water)			
Former Marsh			

Mining Data

Potential Mining Area

BGS Recorded Mineral Site

Mining and Ground Stability - Slice A



Order Details

Order Number: 266502671_1_1

Customer Ref: LKC 20 1488

National Grid Reference: 383550, 393340

Slice: A

Site Area (Ha): 29.81

Search Buffer (m): 500

Site Details

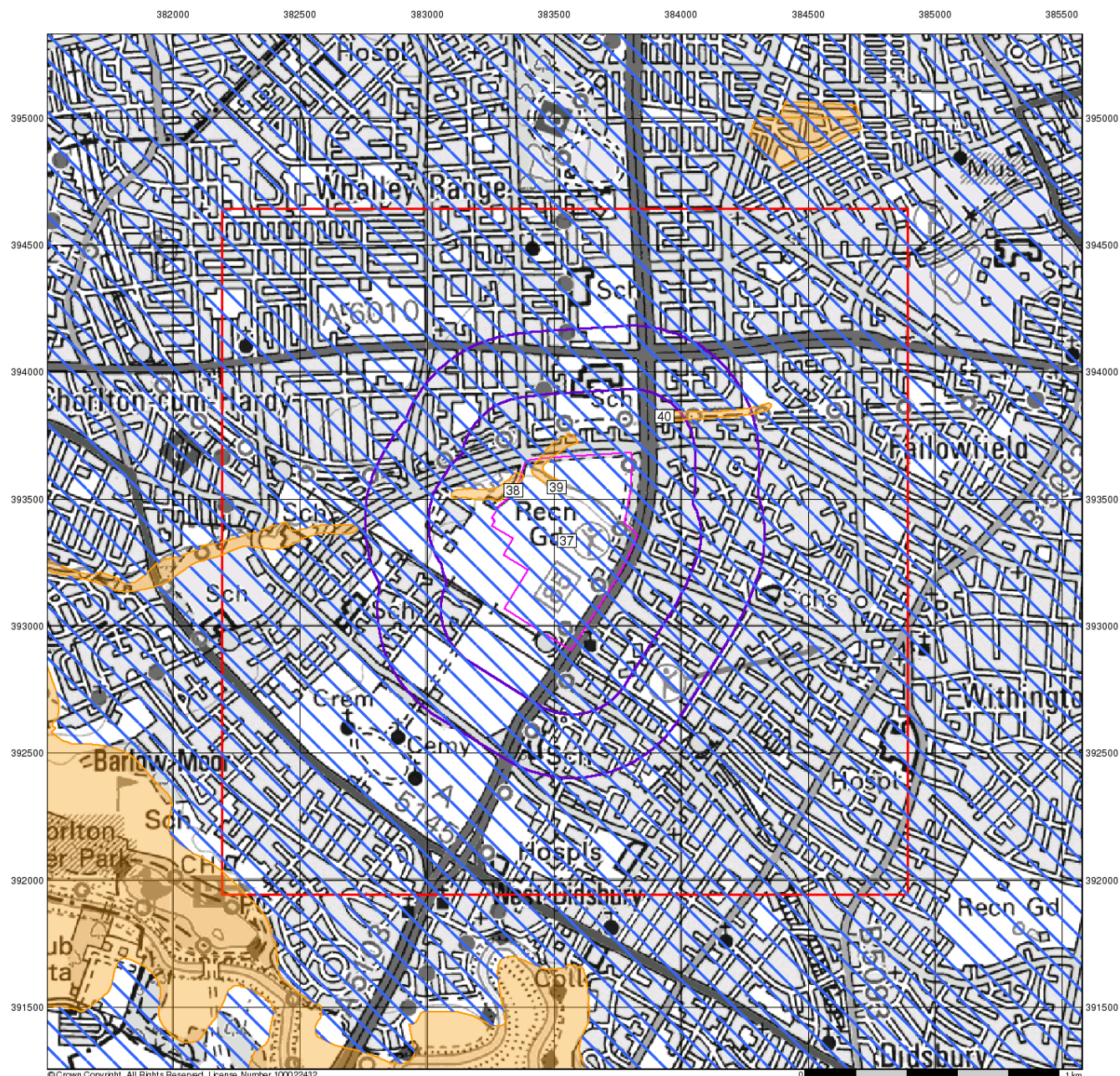
Hough End Leisure Centre, 480, Princess Road, MANCHESTER, M20 1NA

Landmark INFORMATION GROUP

Tel: 0844 844 9952

Fax: 0844 844 9951

Web: www.envirocheck.co.uk



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GROUP

Ground Stability Data (1:50,000)

General

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

Potential for Compressible Ground Stability Hazards

- High
- Low
- Moderate
- Very Low

Potential for Collapsible Ground Stability Hazards

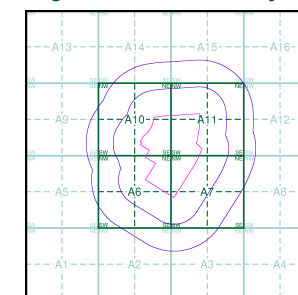
- High
- Low
- Moderate
- Very Low

Brine Pumping and Salt Mining

- Brine Pumping Related Feature
- Salt Mining Related Feature

- | Point | Polygon |
|-------|---------|
| | |
| | |

Mining and Ground Stability - Slice A



Order Details

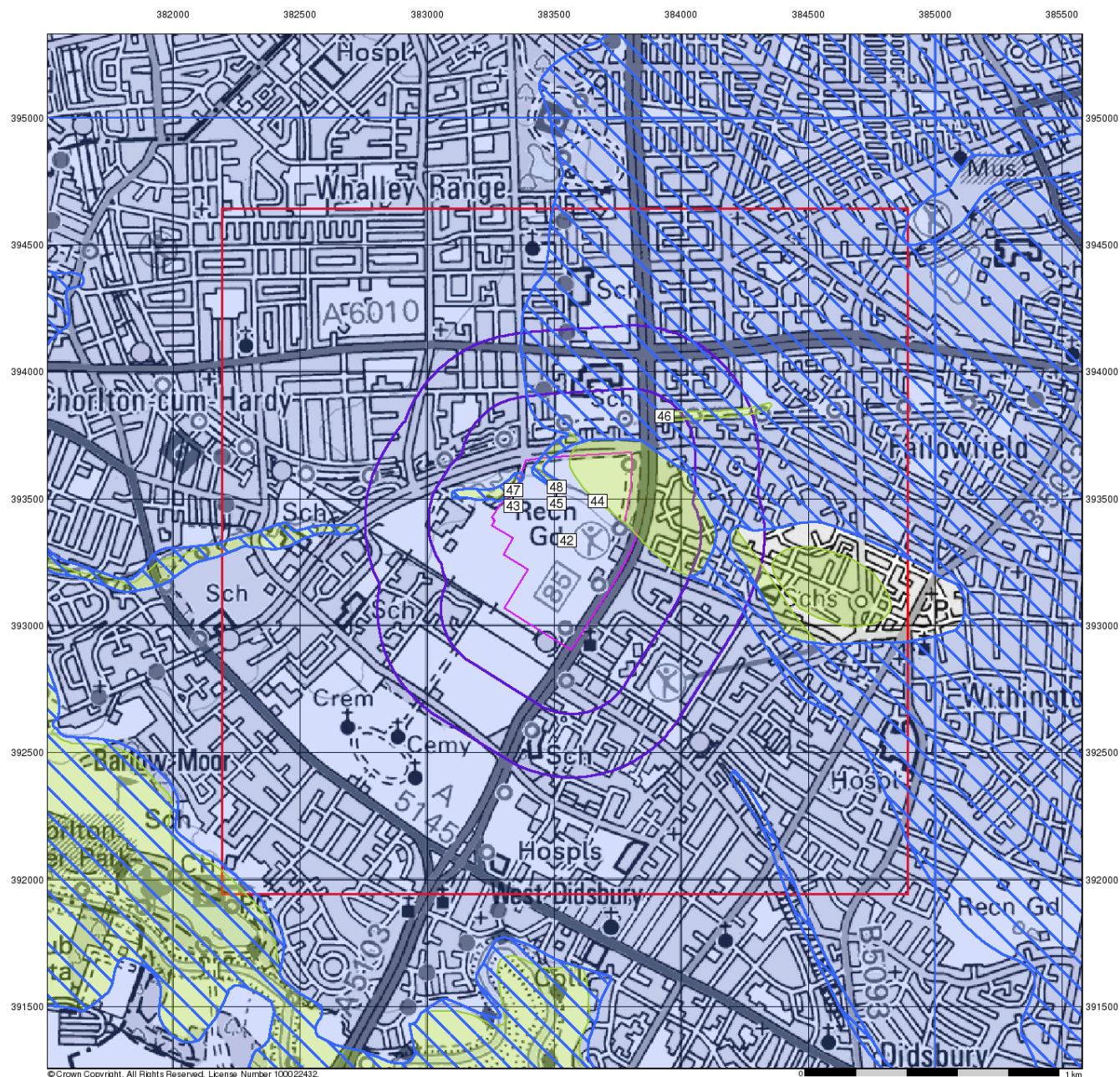
Order Number: 266502671_1_1
 Customer Ref: LKC 20 1488
 National Grid Reference: 383550, 393340
 Slice: A
 Site Area (Ha): 29.81
 Search Buffer (m): 500

Site Details

Hough End Leisure Centre, 480, Princess Road, MANCHESTER, M20 1NA

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Envirocheck[®] Report:

Mining and Ground Stability Datasheet

Order Details:

Order Number:

266502671_1_1

Customer Reference:

LKC 20 1488

National Grid Reference:

383550, 393340

Slice:

A

Site Area (Ha):

29.81

Search Buffer (m):

500

Site Details:

Hough End Leisure Centre, 480
Princess Road
MANCHESTER
M20 1NA

Client Details:

L Consult
LK Consult Ltd
Unit 29 Eton Business Park
Eton Hill Road
Radcliffe
Greater Manchester
M26 2ZS

Report Section and Details	Page Number
Summary	-
The Summary section provides an overview of the data contained within the report, detailing the number of data set features or the existence of a data set in relation to the buffer selected. For ease of reference, the report is broken down into 4 sections of data; Mining and Natural Cavities Data, Historical Land Use Information (1:2,500), Historical Land Use Information (1:10,000) and Ground Stability Data (1:50,000).	
Mining and Natural Cavities Data	-
The Mining and Natural Cavities Data section features data sets related to the existence of mining areas and their potential hazards; and details of naturally formed cavities. Data sets within this section are not plotted, with the exception of BGS Recorded Mineral Sites and Potential Mining Areas which feature on the Historical Land Use Information (1:10,000) map.	
Historical Land Use Information (1:2,500)	1
The Historical Land Use Information (1:2,500) section contains data captured from analysis carried out by Landmark of 1:1,250 and 1:2,500 scale historical Ordnance Survey mapping, identifying areas where, historically, the land uses were potentially contaminative. For the purpose of this Envirocheck module, only historical data relating to mining and ground stability has been included and plotted on the corresponding Historical Land Use Information (1:2,500) map. This section also includes the Subterranean Features data set, which details various man-made and man-used underground spaces obtained from the Subterranea Britannica society.	
Historical Land Use Information (1:10,000)	2
The Historical Land Use (1:10,000) section covers data captured from the systematic analysis carried out by Landmark of 1:10, 560 and 1:10,000 scale historical Ordnance Survey mapping dating back to the mid-19th century, identifying potentially contaminative past industrial land uses. For the purpose of this Envirocheck module, only data relating to mining and ground stability has been included and plotted on the accompanying Historical Land Use Information (1:10,000) map.	
Ground Stability Data (1:50,000)	4
The Ground Stability (1:50,000) section includes the BGS Geosure data suite, reporting features to 250m and plotted onto 3 separate maps. Also reported is brine subsidence, brine mining and salt mining data sets, of which Brine Pumping and Salt Mining Related Features are plotted, and subsidence insurance claims and insurance investigations data, which is not plotted.	
Historical Map List	5
The Historical Map List section details the historical mapping that has been analysed for your site, in relation to the Historical Land Use Information sections.	
Data Currency	6
Data Suppliers	7
Useful Contacts	8

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The brine subsidence data relating to the Driotwich area as provided in this report is derived from JPB studies and physical monitoring undertaken annually over more than 35 years. For more detailed interpretation contact enquiries@jpb.co.uk. JPB retain the copyright and intellectual rights to this data and accept no liability for any loss or damage, including in direct or consequential loss, arising from the use of this data.

The Mining Instability data was obtained on licence from Ove Arup & Partners Limited (for further information, contact mining.review@arup.com). No reproduction or further use of such Data is to be made without the prior written consent of Ove Arup & Partners Limited. The supplied Mining Instability data is derived from publicly available records and other third party sources and neither Ove Arup & Partners nor Landmark warrant the accuracy or completeness of such information or data.

Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m
Mining and Natural Cavities Data				
BGS Recorded Mineral Sites				
Coal Mining Affected Areas			n/a	n/a
Man Made Mining Cavities				
Mining Instability			n/a	n/a
Natural Cavities				
Non Coal Mining Areas of Great Britain				n/a
Potential Mining Areas				
Historical Land Use Information (1:2,500)				
Extractive Industries or Potential Excavations from 1855-1909 (100m)				n/a
Extractive Industries or Potential Excavations from 1893-1915 (100m)				n/a
Extractive Industries or Potential Excavations from 1906-1937 (100m)				n/a
Extractive Industries or Potential Excavations from 1924-1949 (100m)				n/a
Extractive Industries or Potential Excavations from 1950-1980 (100m)	pg 1	1	3	n/a
Subterranean Features (100m)				n/a
Historical Land Use Information (1:10,000)				
Air Shafts				
Disturbed Ground				
General Quarrying				
Heap, unknown constituents				
Mineral Railway				
Mining & quarrying general				
Mining of coal & lignite				
Quarrying of sand & clay, operation of sand & gravel pits				
Former Marshes	pg 2			1
Potentially Infilled Land (Non-Water)				
Potentially Infilled Land (Water)	pg 2	4	12	15
Ground Stability Data (1:50,000)				
CBSCB Compensation District			n/a	n/a
Brine Pumping Related Features				
Brine Subsidence Solution Area				
Potential for Collapsible Ground Stability Hazards	pg 4	Yes	Yes	n/a
Potential for Compressible Ground Stability Hazards	pg 4	Yes	Yes	n/a
Potential for Ground Dissolution Stability Hazards	pg 4	Yes		n/a
Potential for Landslide Ground Stability Hazards	pg 4	Yes		n/a
Potential for Running Sand Ground Stability Hazards	pg 4	Yes	Yes	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 4	Yes		n/a
Salt Mining Related Features				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	Extractive Industries or Potential Excavations from 1950-1980 Use: Railway Cutting First Map Published 1951 Date: Last Map Published 1958 Date:	A6NE (SW)	0	-	383361 393031
2	Extractive Industries or Potential Excavations from 1950-1980 Use: Refuse Heap First Map Published 1951 Date: Last Map Published N/A Date:	A10NE (N)	39	-	383472 393699
3	Extractive Industries or Potential Excavations from 1950-1980 Use: Refuse Heap First Map Published 1951 Date: Last Map Published 1951 Date:	A10SE (NW)	42	-	383243 393482
4	Extractive Industries or Potential Excavations from 1950-1980 Use: Thirlmere Aqueduct (Manchester Corporation Water Works) First Map Published 1951 Date: Last Map Published 1951 Date:	A10NE (N)	77	-	383440 393744

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	Former Marshes Use: Former Marsh Date of Mapping: 1848	A15SE (NE)	314	-	383929 393969
6	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1908	A10NE (NW)	0	-	383402 393642
7	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1894	A7NW (SE)	0	-	383671 393140
8	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1894	A7NW (SE)	0	-	383656 393166
9	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A11SW (E)	0	-	383634 393309
10	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1908	A11SW (E)	3	-	383829 393353
11	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A10NE (N)	54	-	383458 393714
12	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A11NW (N)	75	-	383592 393744
13	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A7SW (SE)	117	-	383726 392934
14	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A6NW (SW)	130	-	383182 393113
15	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1894	A11NW (N)	152	-	383562 393819
16	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A7SW (S)	161	-	383553 392743
17	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A6NW (W)	173	-	383155 393188
18	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A11NE (NE)	187	-	383992 393644
19	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A6SE (S)	204	-	383498 392712
20	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1908	A11NE (NE)	211	-	384014 393694
21	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A10SW (NW)	232	-	383056 393542
22	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A10NE (N)	256	-	383396 393910
23	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A7SW (S)	296	-	383758 392677
24	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A7SW (S)	327	-	383796 392669
25	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A10NW (NW)	332	-	383118 393840

Historical Land Use Information (1:10,000)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
26	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A15SE (NE)	337	-	383892 394007
27	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A7NE (E)	399	-	384163 393121
28	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A15SE (NE)	405	-	384067 393989
29	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A10NW (NW)	430	-	383000 393831
30	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A15SE (NE)	444	-	384010 394075
31	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A10NW (NW)	464	-	382961 393827
32	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A2NE (S)	470	-	383423 392456
33	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A14SE (N)	472	-	383421 394130
34	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A12NW (NE)	473	-	384239 393865
35	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A15SE (NE)	489	-	384016 394122
36	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A14SW (NW)	495	-	383065 394021

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	CBSCB Compensation District The site does not fall within the brine compensation area.				
	Brine Subsidence Solution Area The site does not fall within the brine subsidence solution area.				
37	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SW (E)	0	1	383550 393335
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (NW)	0	1	383339 393534
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (N)	0	1	383509 393545
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	192	1	383933 393823
38	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A10SE (NW)	0	1	383339 393534
39	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A10SE (N)	0	1	383509 393545
40	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	192	1	383933 393823
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SW (E)	0	1	383550 393335
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SW (E)	0	1	383550 393335
41	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SW (E)	0	1	383550 393335
42	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SW (E)	0	1	383550 393335
43	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10SE (NW)	0	1	383339 393534
44	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11SW (NE)	0	1	383671 393489
45	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10SE (N)	0	1	383509 393545
46	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	192	1	383933 393823
47	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (NW)	0	1	383339 393534
48	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10SE (N)	0	1	383509 393545
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SW (E)	0	1	383550 393335

The following mapping has been analysed for Historical Land Use Information (1:2,500):

1:2,500	Mapsheet	Published Date
Ordnance Survey Plan	SJ8293	1955
Ordnance Survey Plan	SJ8293	1955
Ordnance Survey Plan	SJ8292	1956
Ordnance Survey Plan	SJ8392	1956
Ordnance Survey Plan	SJ8392	1956
Ordnance Survey Plan	SJ8492	1958
Ordnance Survey Plan	SJ8493	1958
Ordnance Survey Plan	SJ8493	1958

The following mapping has been analysed for Historical Land Use Information (1:10,000):

1:10,560	Mapsheet	Published Date
Lancashire And Furness	111_00	1848
Cheshire	009_00	1882
Cheshire	010_00	1882
Lancashire And Furness	111_NE	1894
Lancashire And Furness	111_NW	1894
Cheshire	009_NE	1899
Cheshire	009_SE	1899
Cheshire	010_SW	1899
Lancashire And Furness	111_NE	1908
Lancashire And Furness	111_NW	1908
Cheshire	009_NE	1911
Cheshire	009_SE	1911
Cheshire	010_SW	1911
Lancashire And Furness	111_NE	1923
Lancashire And Furness	111_NW	1933
Cheshire	009_NE	1938
Cheshire	009_SE	1938
Cheshire	010_SW	1938
Ordnance Survey Plan	SJ89SW	1955
1:10,000	Mapsheet	Published Date
Ordnance Survey Plan	SJ89SW	1989

Mining and Cavities Data	Version	Update Cycle
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	November 2020	Bi-Annually
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Man Made Mining Cavities Stantec UK Ltd	October 2020	Bi-Annually
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Natural Cavities Stantec UK Ltd	October 2020	Bi-Annually
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Historical Land Use Information (1:2,500)	Version	Update Cycle
Subterranean Features Landmark Information Group Limited	February 2020	Bi-Annually
Ground Stability Data (1:50,000)	Version	Update Cycle
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	April 2020	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Brine Subsidence Solution Area Johnson Poole & Bloomer	January 2015	Annual Rolling Update

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
British Geological Survey	 British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
The Coal Authority	 The Coal Authority
Ove Arup	
Stantec UK Ltd	
Wardell Armstrong	 wardell armstrong your earth our world
Johnson Poole & Bloomer	

Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
-	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Geology 1:50,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WMGR	Infilled Ground	Artificial Deposit	Not Supplied - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	SSA	Shirdley Hill Sand Formation	Sand	Not Supplied - Devensian
	GFSDD	Glaciofluvial Sheet Deposits, Devensian	Sand and Gravel	Not Supplied - Devensian
	TILLD	Till, Devensian	Diamicton	Not Supplied - Devensian
	GFICD	Glaciofluvial Ice Contact Deposits, Devensian	Sand and Gravel	Not Supplied - Devensian
	RTDU	River Terrace Deposits (Undifferentiated)	Sand and Gravel	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	HEY	Helsby Sandstone Formation	Sandstone, Pebbly (Gravelly)	Not Supplied - Anisian
	CHES	Chester Formation	Sandstone, Pebbly (Gravelly)	Not Supplied - Olenekian
	CHES	Chester Formation	Sandstone	Not Supplied - Olenekian
	TPSF	Tarporley Siltstone Formation	Siltstone, Mudstone and Sandstone	Not Supplied - Olenekian
	WLSF	Wilmslow Sandstone Formation	Sandstone	Not Supplied - Early Triassic
	MM	Manchester Marls Formation	Mudstone	Not Supplied - GUADALUPIAN
		Faults		



Geology 1:50,000 Maps

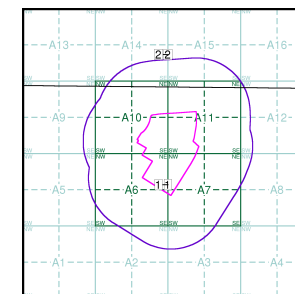
This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published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

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

Geology 1:50,000 Maps Coverage

Map ID:	1	Map ID:	2
Map Sheet No:	098	Map Sheet No:	085
Map Name:	Stockport	Map Name:	Manchester
Map Date:	1962	Map Date:	2010
Bedrock Geology:	Available	Bedrock Geology:	Available
Superficial Geology:	Available	Superficial Geology:	Not Available
Artificial Geology:	Not Available	Artificial Geology:	Not Available
Faults:	Not Supplied	Faults:	Not Supplied
Landslip:	Available	Landslip:	Not Available
Rock Segments:	Not Supplied	Rock Segments:	Not Supplied

Geology 1:50,000 Maps - Slice A



Order Details:

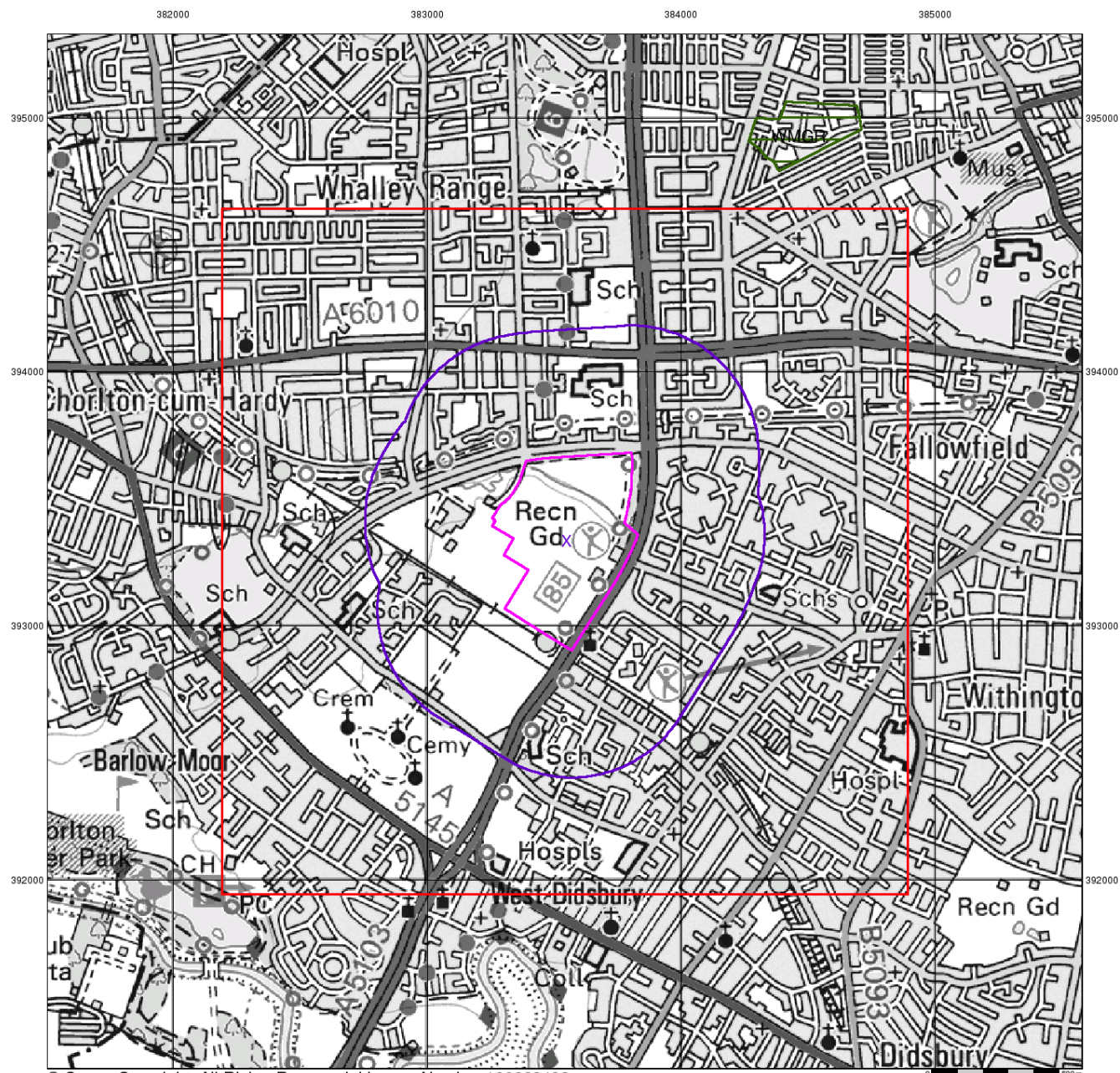
Order Number:	266502671_1_1
Customer Reference:	LKC 20 1488
National Grid Reference:	383550, 393340
Slice:	A
Site Area (Ha):	29.81
Search Buffer (m):	500

Site Details:

Hough End Leisure Centre, 480, Princess Road, MANCHESTER, M20 1NA



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



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Artificial Ground and Landslip

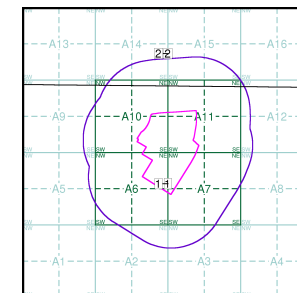
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions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

Artificial ground includes:

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

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

Artificial Ground and Landslip Map - Slice A



Order Details:

Order Number: 266502671_1_1
 Customer Reference: LKC 20 1488
 National Grid Reference: 383550, 393340
 Slice: A
 Site Area (Ha): 29.81
 Search Buffer (m): 500

Site Details:

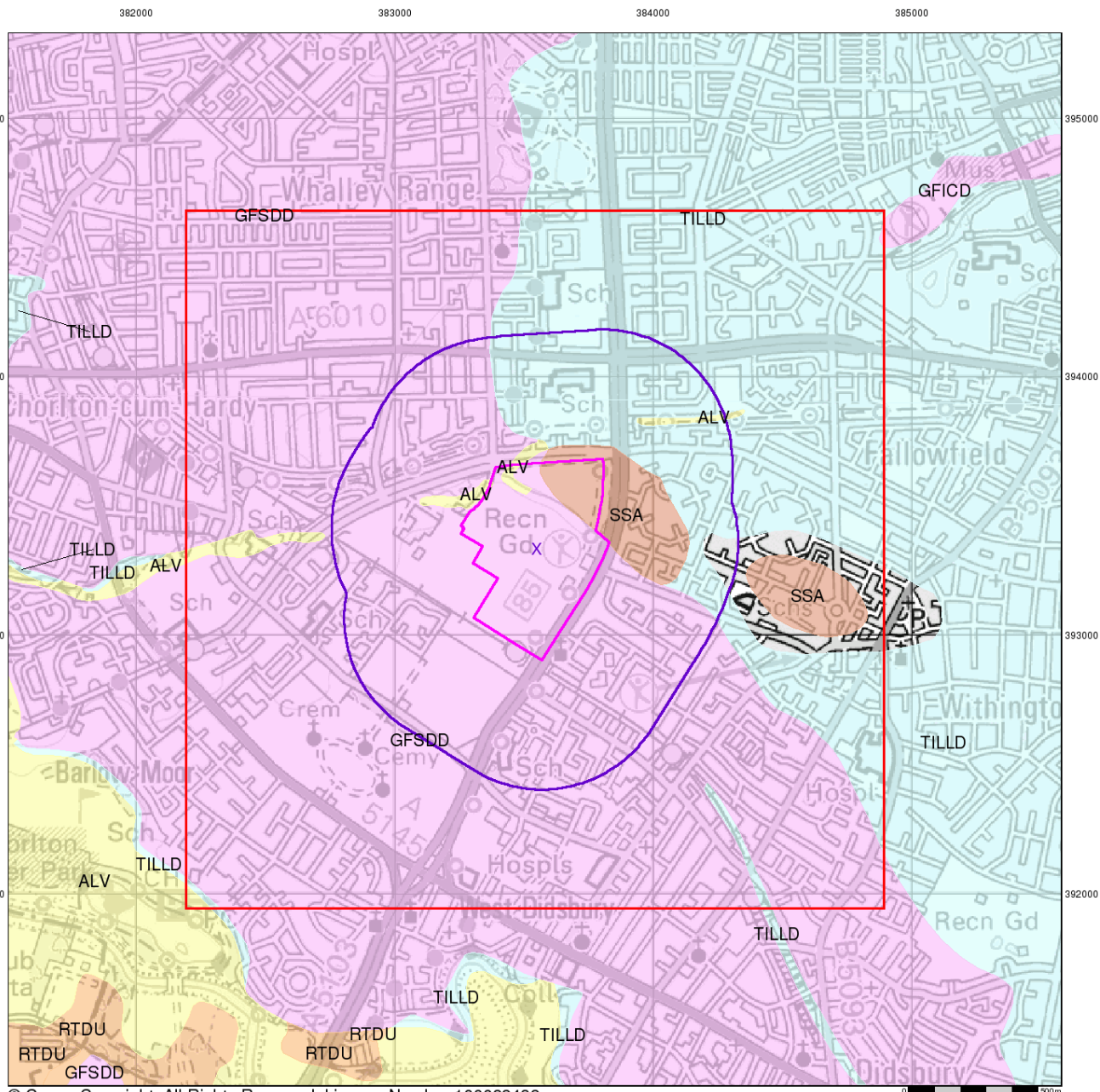
Hough End Leisure Centre, 480, Princess Road, MANCHESTER, M20 1NA

Landmark
 INFORMATION GROUP

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 Fax: 0844 844 9951
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v15.0 10-Nov-2020

Page 2 of 5



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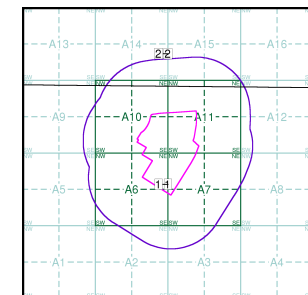
Superficial Geology

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

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

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

Superficial Geology Map - Slice A



Order Details:

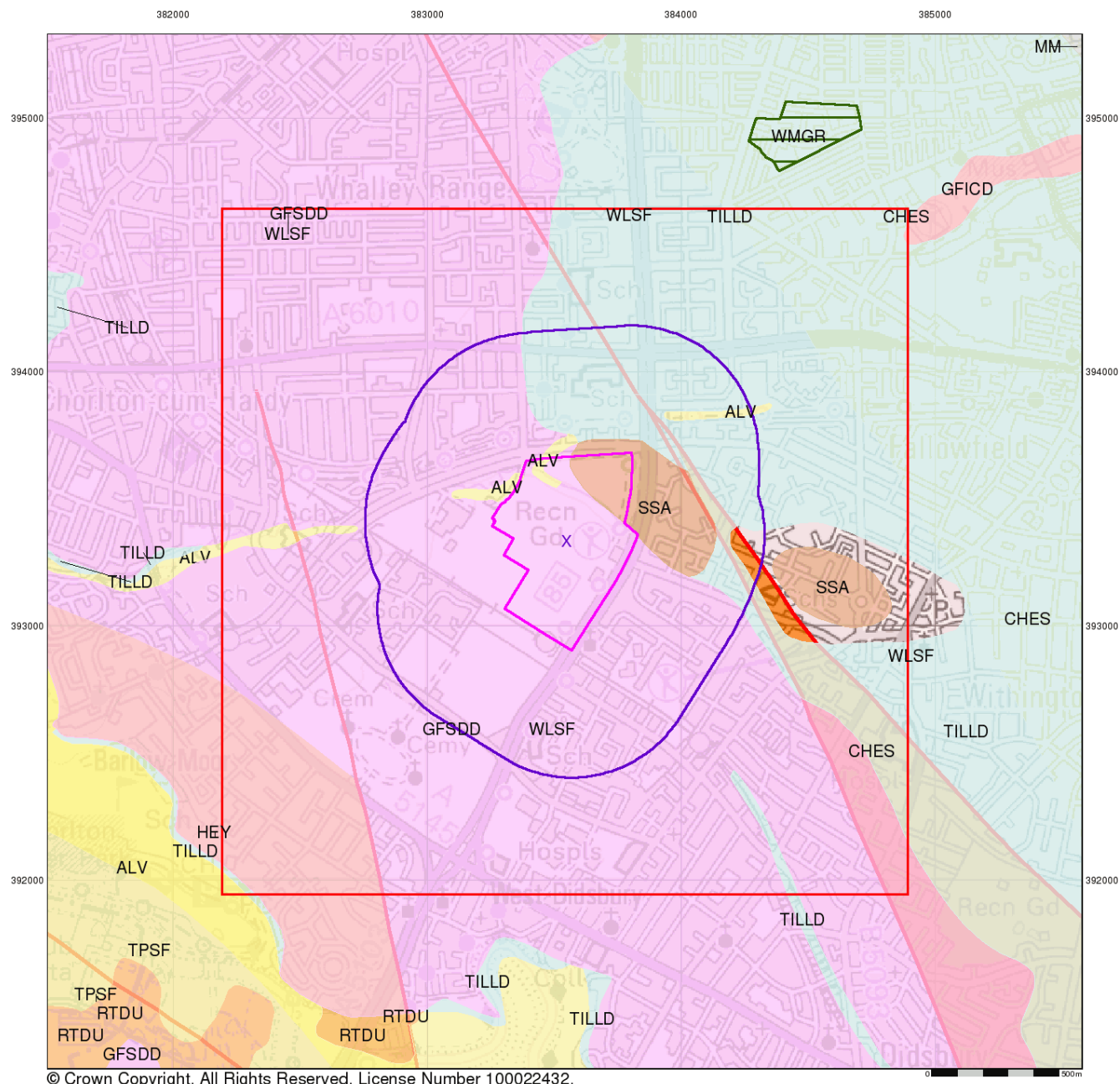
Order Number: 266502671_1_1
 Customer Reference: LKC 20 1488
 National Grid Reference: 383550, 393340
 Slice: A
 Site Area (Ha): 29.81
 Search Buffer (m): 500

Site Details:

Hough End Leisure Centre, 480, Princess Road, MANCHESTER, M20 1NA



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Combined Surface Geology

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

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

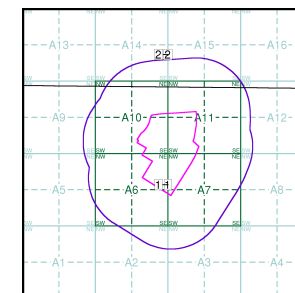
Additional Information

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

Contact

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

Combined Geology Map - Slice A



Order Details:

Order Number:	266502671_1_1
Customer Reference:	LKC 20 1488
National Grid Reference:	383550, 393340
Slice:	A
Site Area (Ha):	29.81
Search Buffer (m):	500

Site Details:

Hough End Leisure Centre, 480, Princess Road, MANCHESTER, M20 1NA



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

General

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

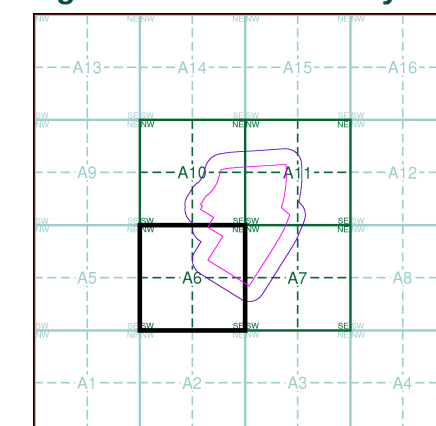
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	■
Extractive Industries Activity from 1893 - 1915	▲	—	■
Extractive Industries Activity from 1906 - 1937	▲	—	■
Extractive Industries Activity from 1924 - 1949	▲	—	■
Extractive Industries Activity from 1950 - 1980	▲	—	■

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	- - -	■

Mining and Ground Stability - Segment A6

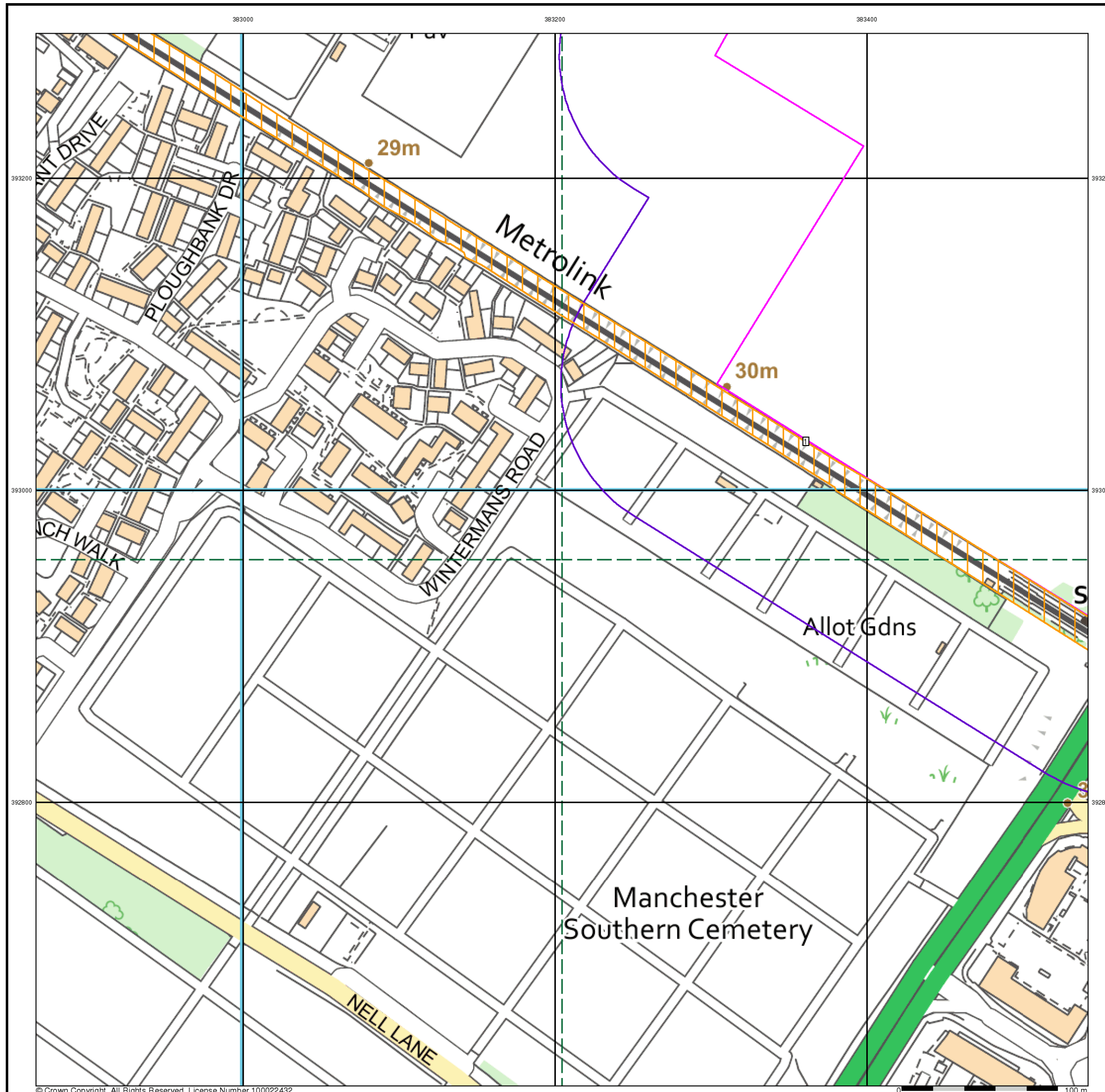


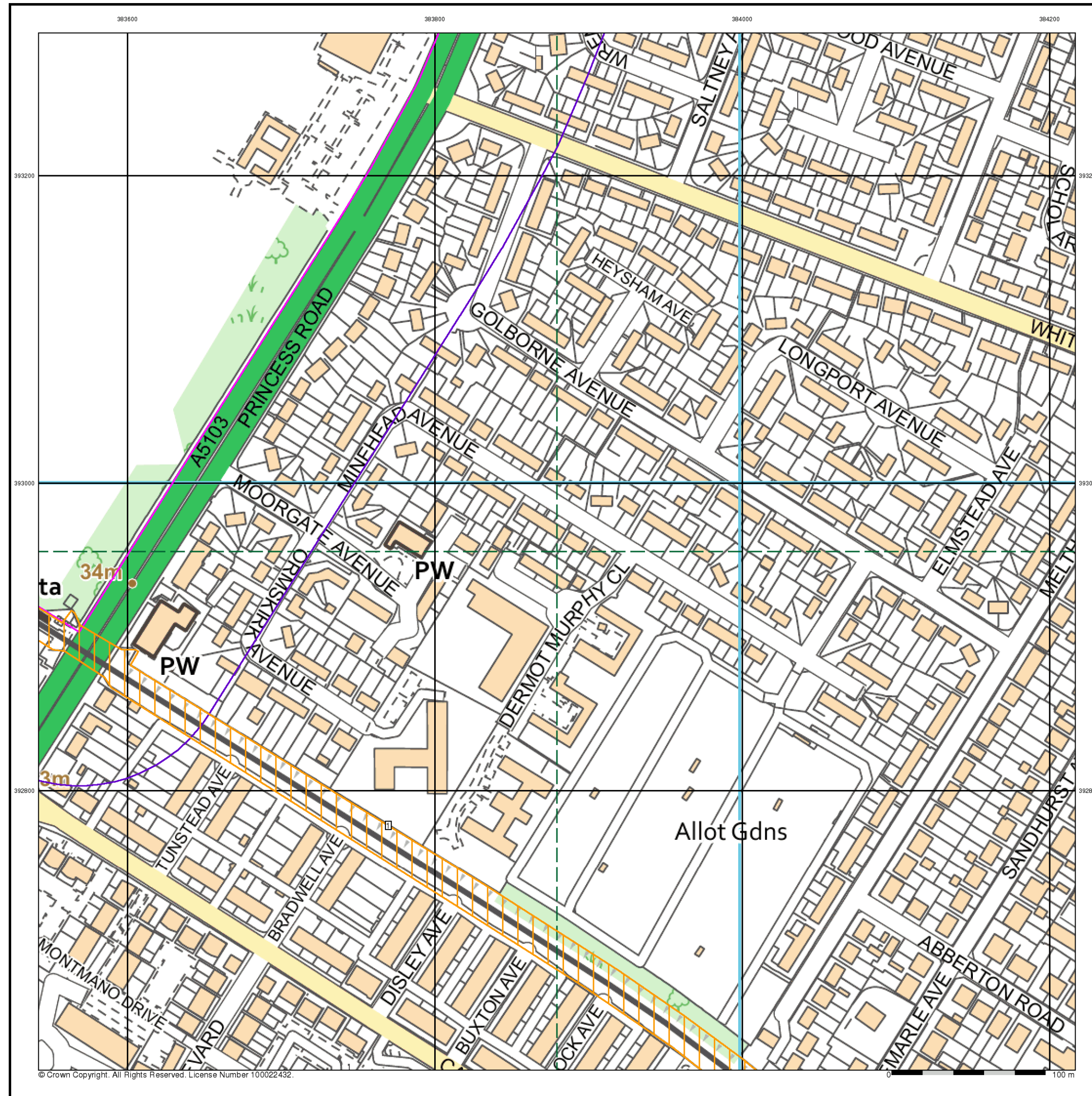
Order Details

Order Number: 266502671_1_1
 Customer Ref: LKC 20 1488
 National Grid Reference: 383550, 393340
 Slice: A
 Site Area (Ha): 29.81
 Plot Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA





General

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

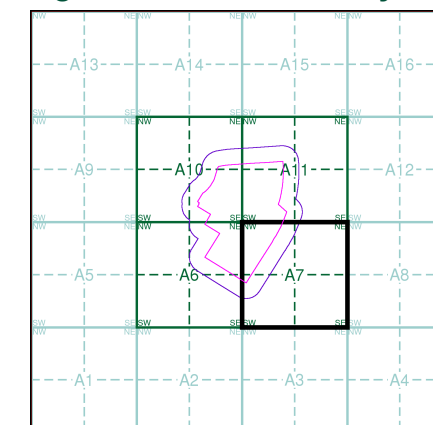
**Potentially Contaminative Industrial Uses
(Extractive Industries Activity)**

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	■
Extractive Industries Activity from 1893 - 1915	▲	—	■
Extractive Industries Activity from 1906 - 1937	▲	—	■
Extractive Industries Activity from 1924 - 1949	▲	—	■
Extractive Industries Activity from 1950 - 1980	▲	—	■

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	---	■

Mining and Ground Stability - Segment A7

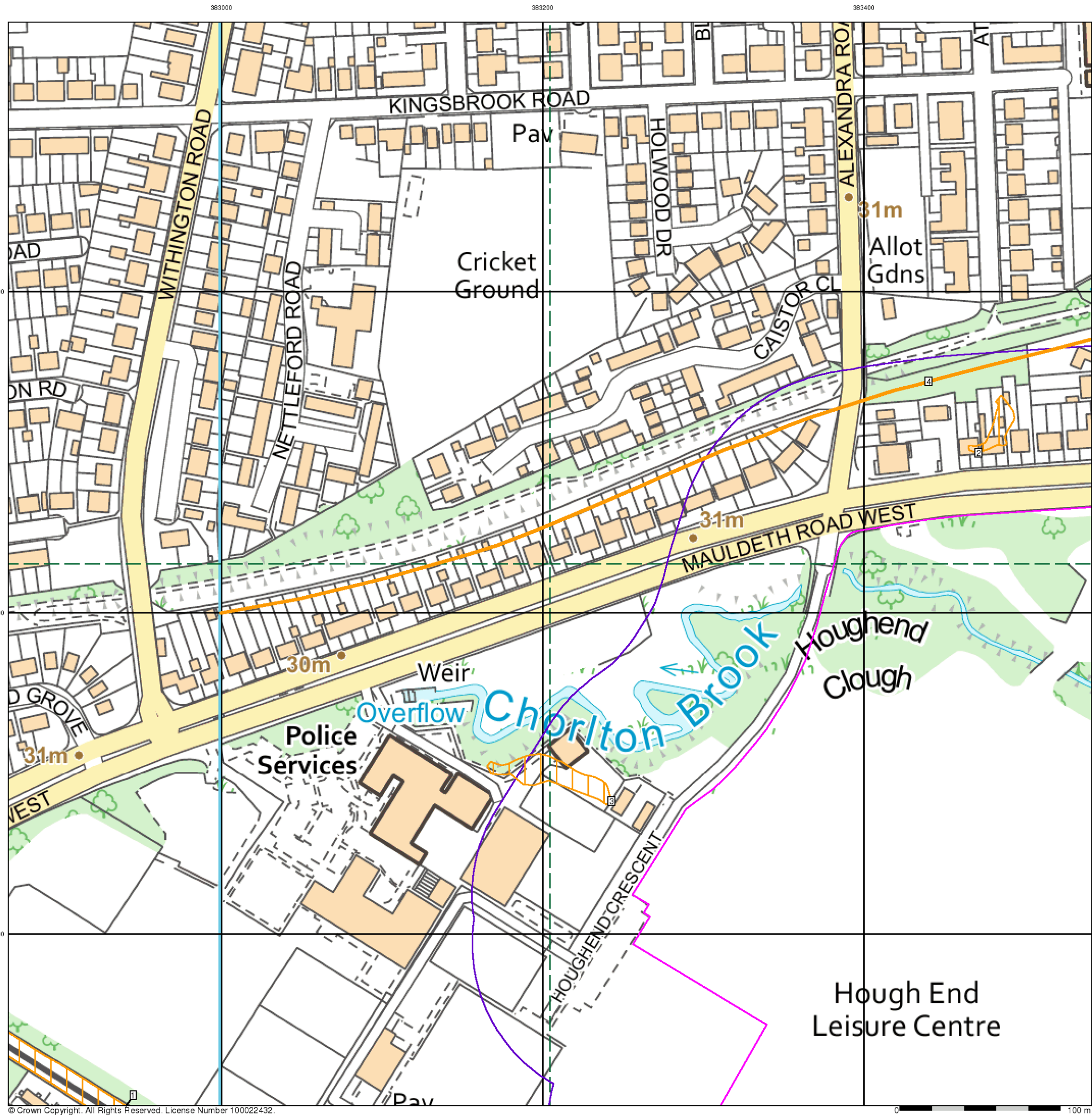


Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Plot Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



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Historical Land Use Information (1:2,500)

General

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

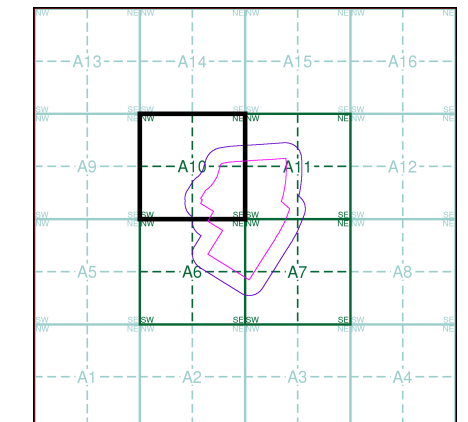
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	■
Extractive Industries Activity from 1893 - 1915	▲	—	■
Extractive Industries Activity from 1906 - 1937	▲	—	■
Extractive Industries Activity from 1924 - 1949	▲	—	■
Extractive Industries Activity from 1950 - 1980	▲	—	■

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	---	■

Mining and Ground Stability - Segment A10



Order Details

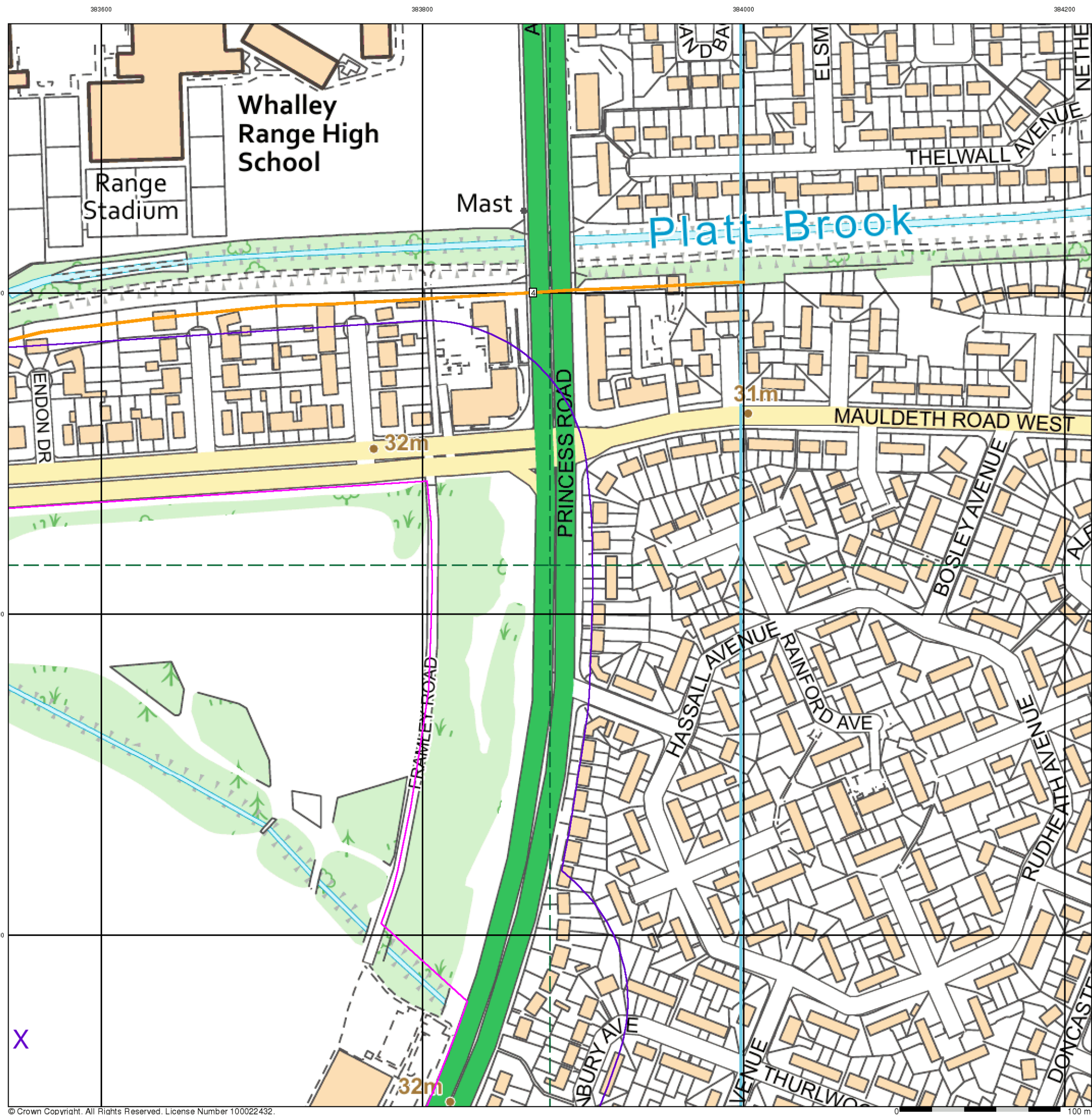
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Plot Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road,
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LK GROUP

Historical Land Use Information (1:2,500)

General

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

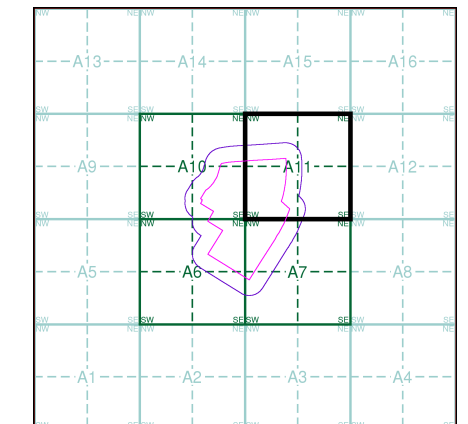
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	■
Extractive Industries Activity from 1893 - 1915	▲	—	■
Extractive Industries Activity from 1906 - 1937	▲	—	■
Extractive Industries Activity from 1924 - 1949	▲	—	■
Extractive Industries Activity from 1950 - 1980	▲	—	■

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	---	■

Mining and Ground Stability - Segment A11



Order Details

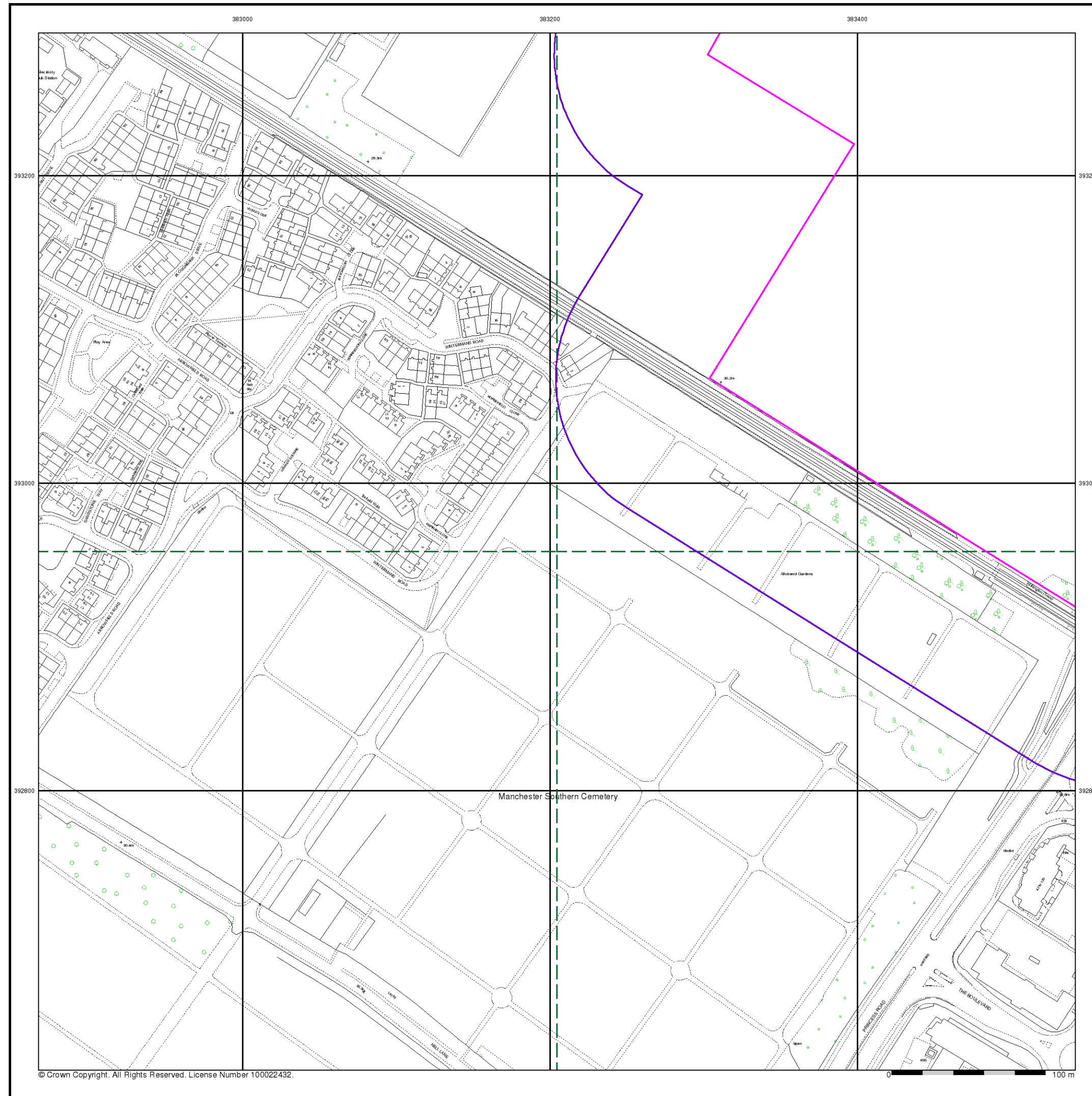
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Plot Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA

Landmark
INFORMATION GROUP

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



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General

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

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral
- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

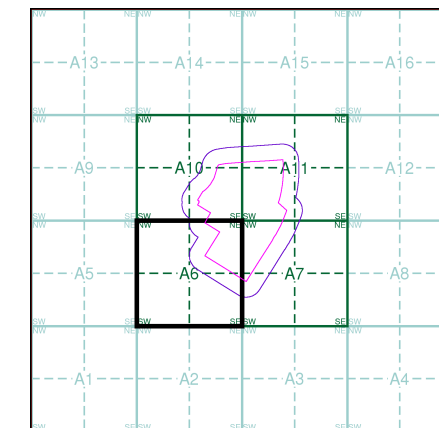
Hazardous Substances

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

Geological

- BGS Recorded Mineral Site

Site Sensitivity Map - Segment A6



Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Plot Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



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

General

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

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral
- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

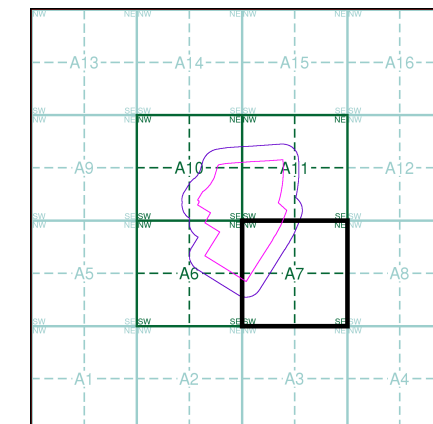
Hazardous Substances

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

Geological

- BGS Recorded Mineral Site

Site Sensitivity Map - Segment A7



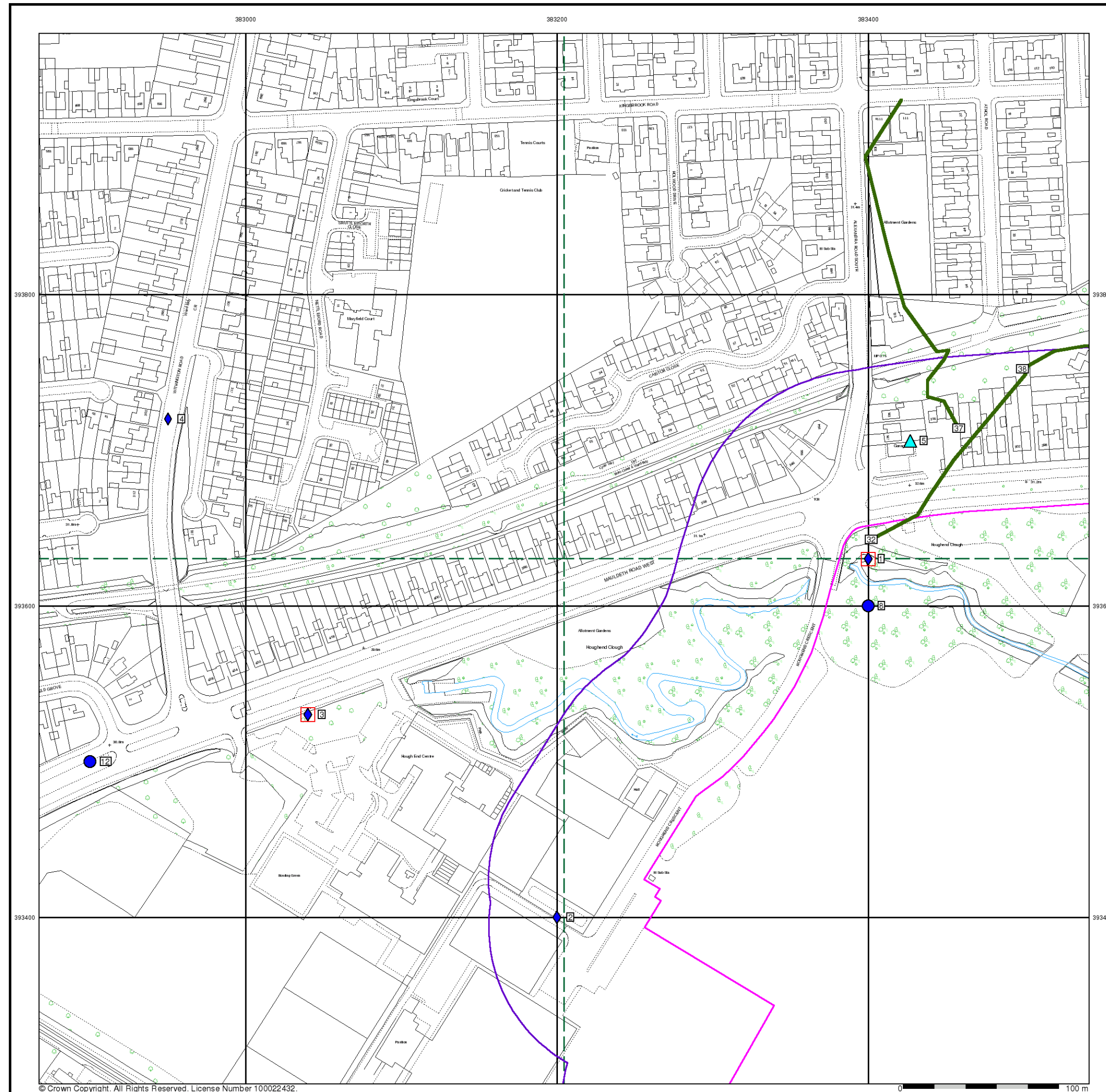
Order Details

Order Number: 266502671_1_1
 Customer Ref: LKC 20 1488
 National Grid Reference: 383550, 393340
 Slice: A
 Site Area (Ha): 29.81
 Plot Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road,
 MANCHESTER, M20 1NA





General

- General**

 - Specified Site
 - Specified Buffer(s)
 - Several of Type at Location
 - Pylon
 - Overhead Transmission Line
 - Map ID

And Hydrological

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

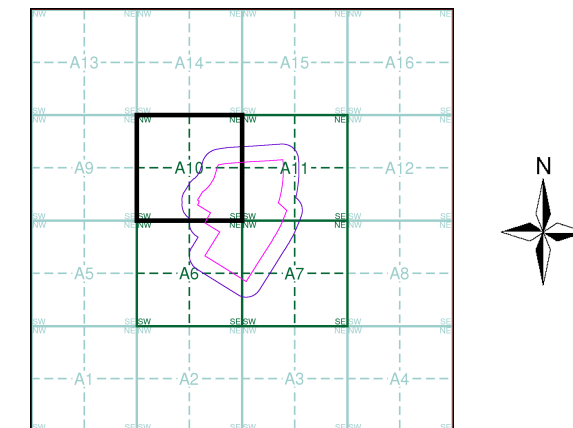
Hazardous Substances

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

Geological

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

Site Sensitivity Map - Segment A10



Order Details

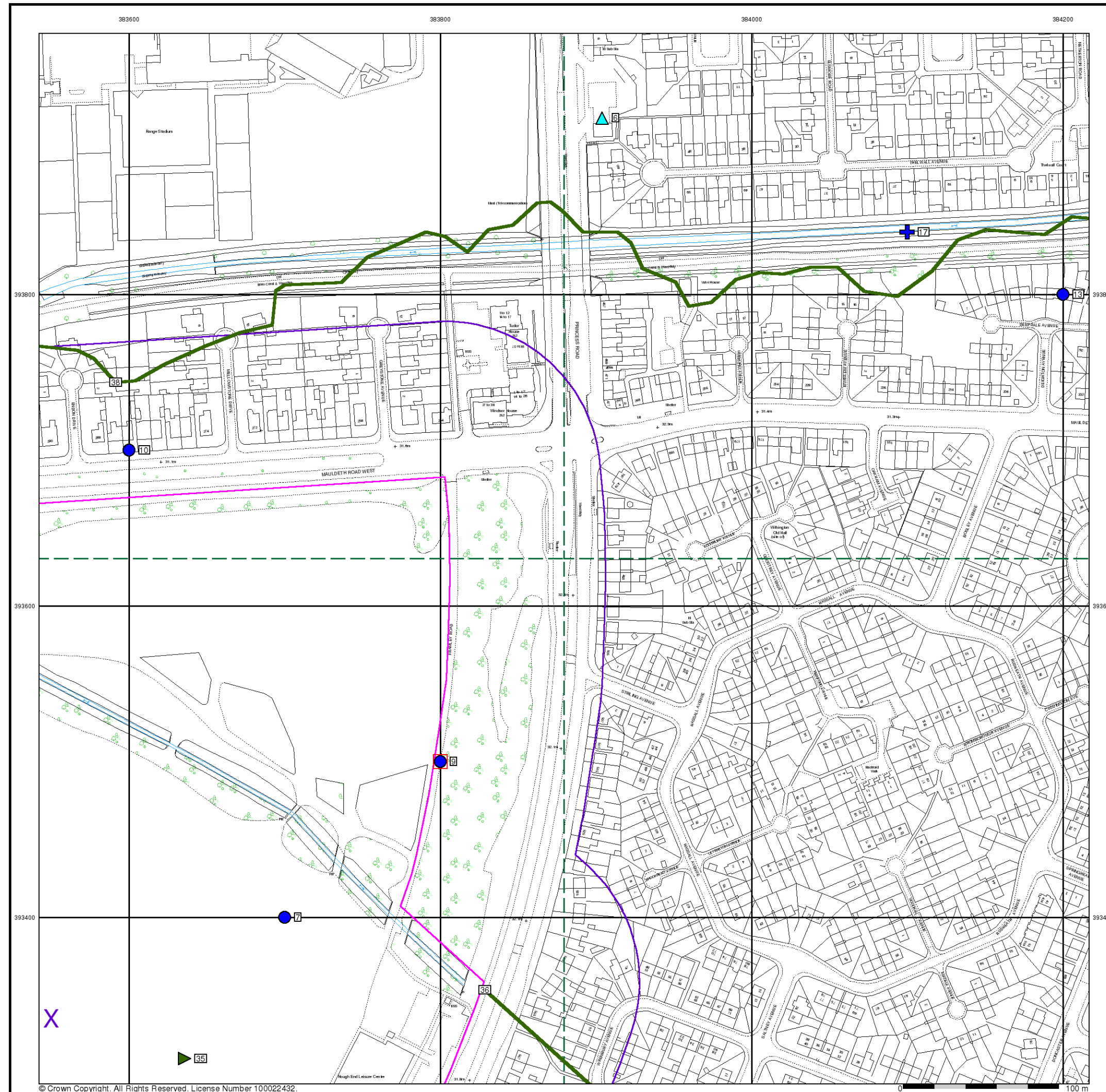
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Plot Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA

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INFORMATION GROUP

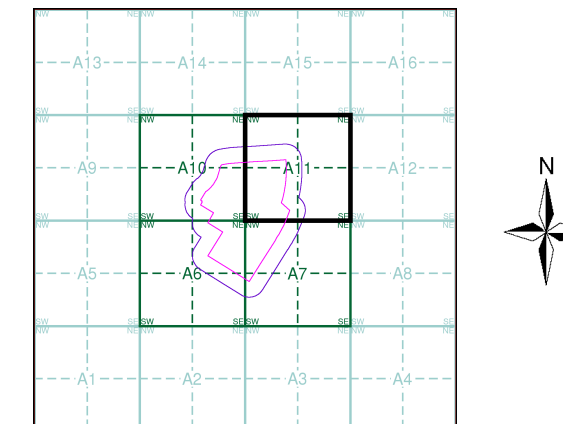
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



General

- | | | | | | | | |
|---|---|---|--|---|--|---|--|
|  | Specified Site |  | Specified Buffer(s) |  | Bearing Reference Point |  | Map ID |
|  | Several of Type at Location |  | Pylon |  | Overhead Transmission Line | | |
| Agency and Hydrological | | | | Waste | | | |
|  | Contaminated Land Register Entry or Notice (Location) |  | BGS Recorded Landfill Site (Location) |  | BGS Recorded Landfill Site |  | EA Historic Landfill (Buffered Point) |
|  | Discharge Consent |  | EA Historic Landfill (Polygon) |  | Integrated Pollution Control Registered Waste Site |  | Licensed Waste Management Facility (Landfill Boundary) |
|  | Enforcement or Prohibition Notice |  | Integrated Pollution Control |  | Licensed Waste Management Facility (Location) |  | Local Authority Recorded Landfill Site (Location) |
|  | Integrated Pollution Prevention Control |  | Local Authority Integrated Pollution Prevention and Control |  | Local Authority Recorded Landfill Site |  | Potentially Infilled Land (Non-water) |
|  | Local Authority Integrated Pollution Prevention and Control |  | Local Authority Pollution Prevention and Control |  | Potentially Infilled Land (Non-water) |  | Potentially Infilled Land (Non-water) |
|  | Local Authority Pollution Prevention and Control |  | Local Authority Pollution Prevention and Control Enforcement |  | Potentially Infilled Land (Water) |  | Potentially Infilled Land (Water) |
|  | Pollution Incident to Controlled Waters |  | Prosecution Relating to Authorised Processes |  | Potentially Infilled Land (Water) |  | Potentially Infilled Land (Water) |
|  | Prosecution Relating to Controlled Waters |  | Registered Radioactive Substance |  | Registered Landfill Site |  | Registered Landfill Site (Point Buffered to 100m) |
|  | Registered Radioactive Substance |  | River Network or Water Feature |  | Registered Landfill Site (Point Buffered to 250m) |  | Registered Waste Transfer Site (Location) |
|  | River Quality Sampling Point |  | Substantiated Pollution Incident Register |  | Registered Waste Treatment or Disposal Site (Location) |  | Registered Waste Treatment or Disposal Site |
|  | Substantiated Pollution Incident Register |  | Water Abstraction |  | Registered Waste Treatment or Disposal Site |  | Registered Waste Treatment or Disposal Site |
|  | Water Abstraction |  | Water Industry Act Referral |  | Registered Waste Treatment or Disposal Site |  | Registered Waste Treatment or Disposal Site |
|  | Water Industry Act Referral | | | | | | |
| Hazardous Substances | | | | | | | |
|  | COMAH Site |  | Explosive Site | | | | |
|  | NIHHS Site | | | | | | |
|  | Planning Hazardous Substance Consent | | | | | | |
|  | Planning Hazardous Substance Enforcement | | | | | | |
| Geological | | | | | | | |
|  | BGS Recorded Mineral Site | | | | | | |

Site Sensitivity Map - Segment A11



Order Details

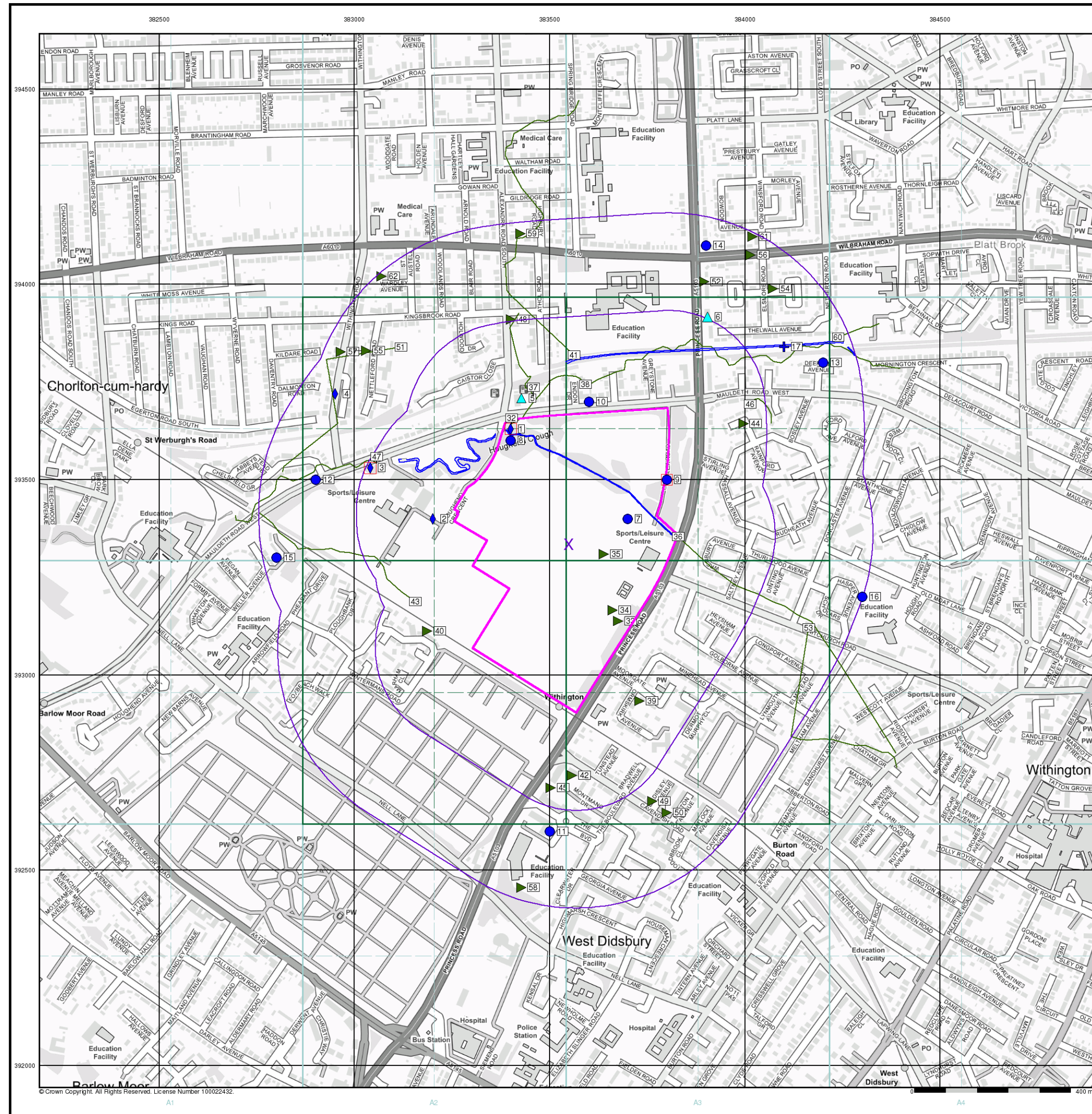
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Plot Buffer (m): 100

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA

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INFORMATION GROUP

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Web: www.envirocheck.co.uk

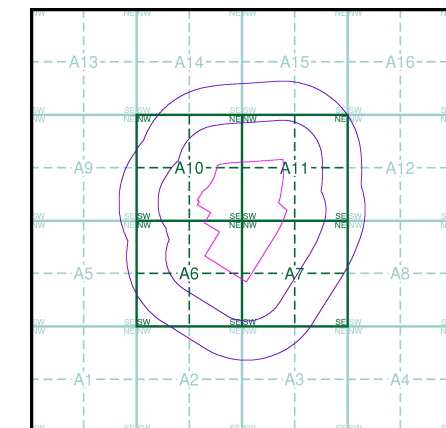


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- General**
- Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
 - Map ID
 - Several of Type at Location
- Agency and Hydrological**
- Contaminated Land Register Entry or Notice (Location)
 - Contaminated Land Register Entry or Notice
 - Discharge Consent
 - Enforcement or Prohibition Notice
 - Integrated Pollution Control
 - Integrated Pollution Prevention and Control
 - Local Authority Integrated Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control Enforcement
 - Pollution Incident to Controlled Waters
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 - Prosecution Relating to Controlled Waters
 - Registered Radioactive Substance
 - River Network or Water Feature
 - River Quality Sampling Point
 - Substantiated Pollution Incident Register
 - Water Abstraction
 - Water Industry Act Referral
- Hazardous Substances**
- COMAH Site
 - Explosive Site
 - NIHHS Site
 - Planning Hazardous Substance Consent
 - Planning Hazardous Substance Enforcement
 - BGS Recorded Mineral Site
- Waste**
- BGS Recorded Landfill Site (Location)
 - BGS Recorded Landfill Site
 - EA Historic Landfill (Buffered Point)
 - EA Historic Landfill (Polygon)
 - Integrated Pollution Control Registered Waste Site
 - Licensed Waste Management Facility (Landfill Boundary)
 - Licensed Waste Management Facility (Location)
 - Local Authority Recorded Landfill Site (Location)
 - Local Authority Recorded Landfill Site
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 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Registered Landfill Site (Location)
 - Registered Landfill Site (Point Buffered to 100m)
 - Registered Landfill Site (Point Buffered to 250m)
 - Registered Waste Transfer Site (Location)
 - Registered Waste Transfer Site
 - Registered Waste Treatment or Disposal Site (Location)
 - Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Slice A



Order Details

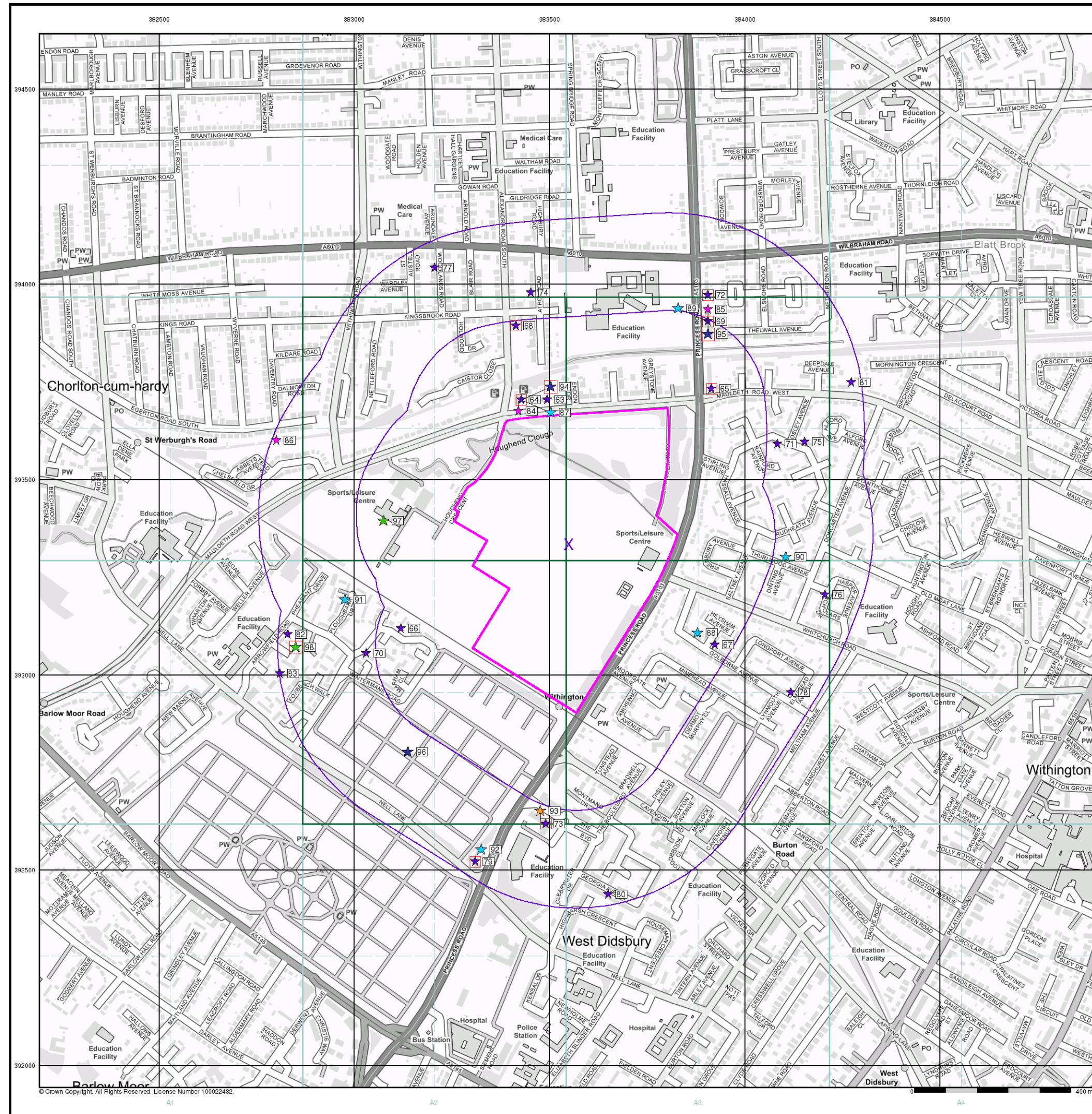
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Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 500

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



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



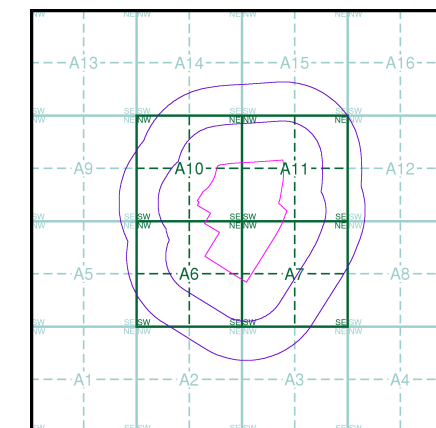
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LK GROUP

Industrial Land Use Map

- General**
- Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
 - Slice
 - Map ID
- Industrial Land Use**
- Contemporary Trade Directory Entry
 - Fuel Station Entry
 - Gas Pipeline
 - Points of Interest - Commercial Services
 - Points of Interest - Education and Health
 - Points of Interest - Manufacturing and Production
 - Points of Interest - Public Infrastructure
 - Points of Interest - Recreational and Environmental
 - Underground Electrical Cables

Industrial Land Use Map - Slice A



Order Details

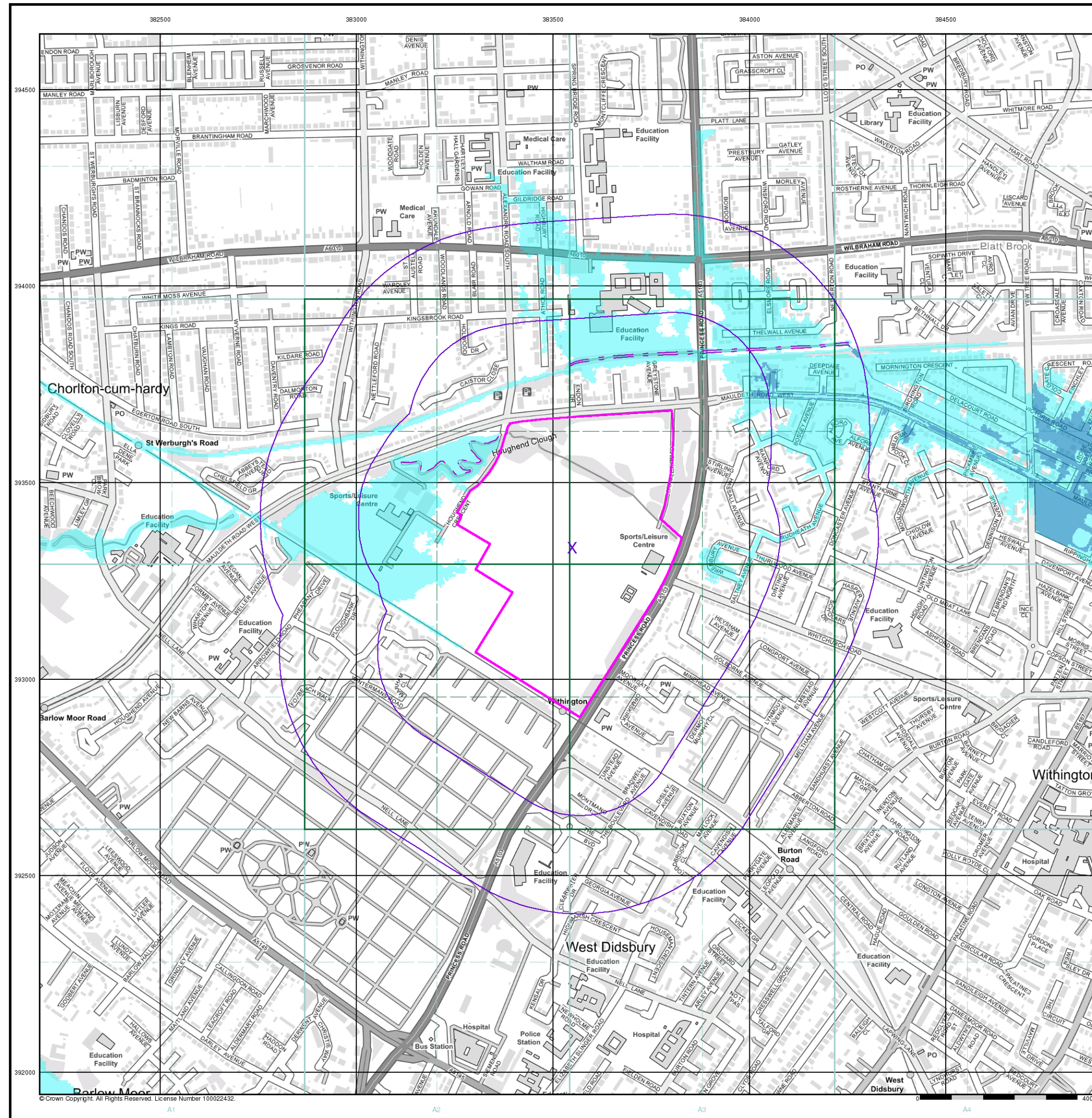
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 500

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA

Landmark
INFORMATION GROUP

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



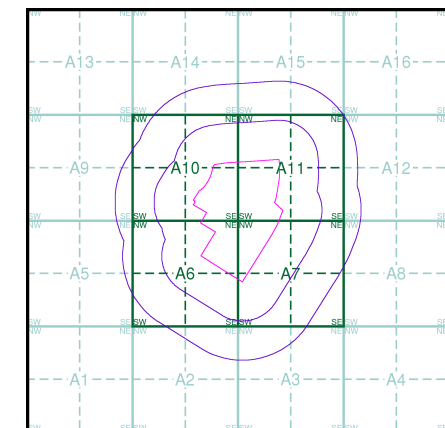
General

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

Agency and Hydrological (Flood)

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

Flood Map - Slice A



Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 500

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



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

General

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

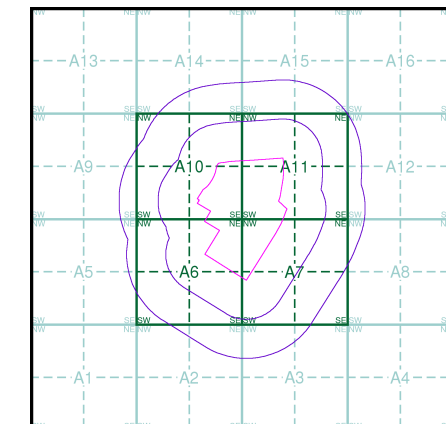
Agency and Hydrological (Boreholes)

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

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

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

Borehole Map - Slice A

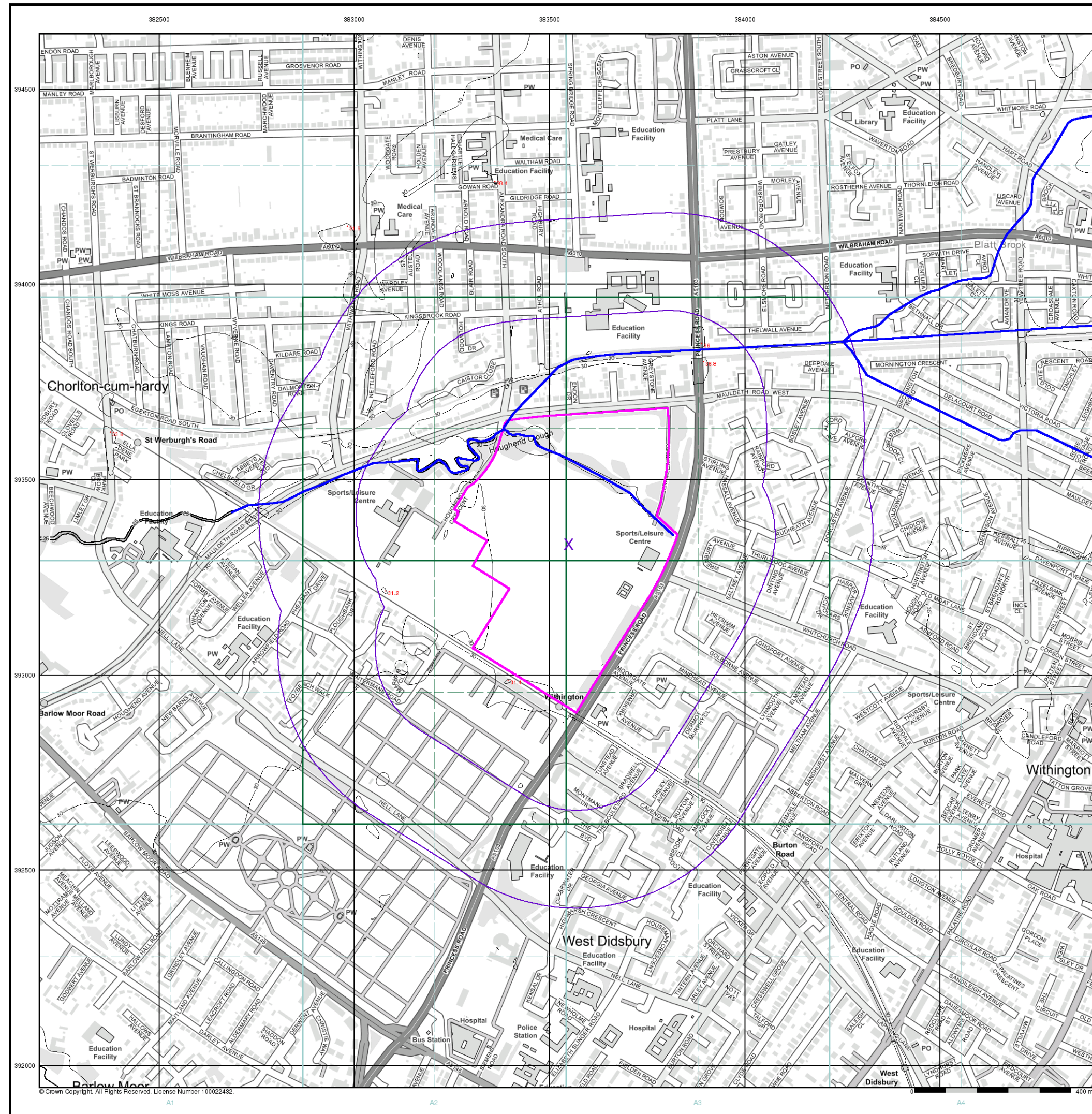


Order Details

Order Number: 266502671_1_1
 Customer Ref: LKC 20 1488
 National Grid Reference: 383550, 393340
 Slice: A
 Site Area (Ha): 29.81
 Search Buffer (m): 500

Site Details

Hough End Leisure Centre, 480, Princess Road, MANCHESTER, M20 1NA



General

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

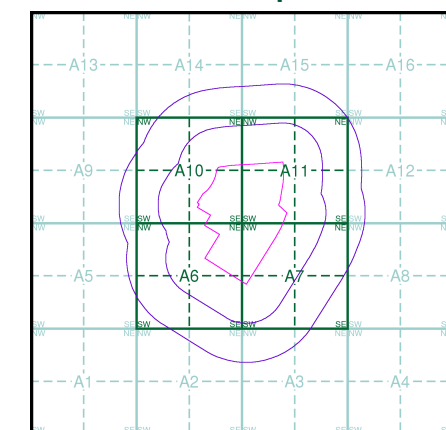
OS Water Network Data

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

Contours (height in meters)

- Standard Contour: 105, 100, 95
- Master Contour: 105, 100, 95
- Spot Height: 167.3
- MLW: Mean Low Water
- MHW: Mean High Water

OS Water Network Map - Slice A



Order Details

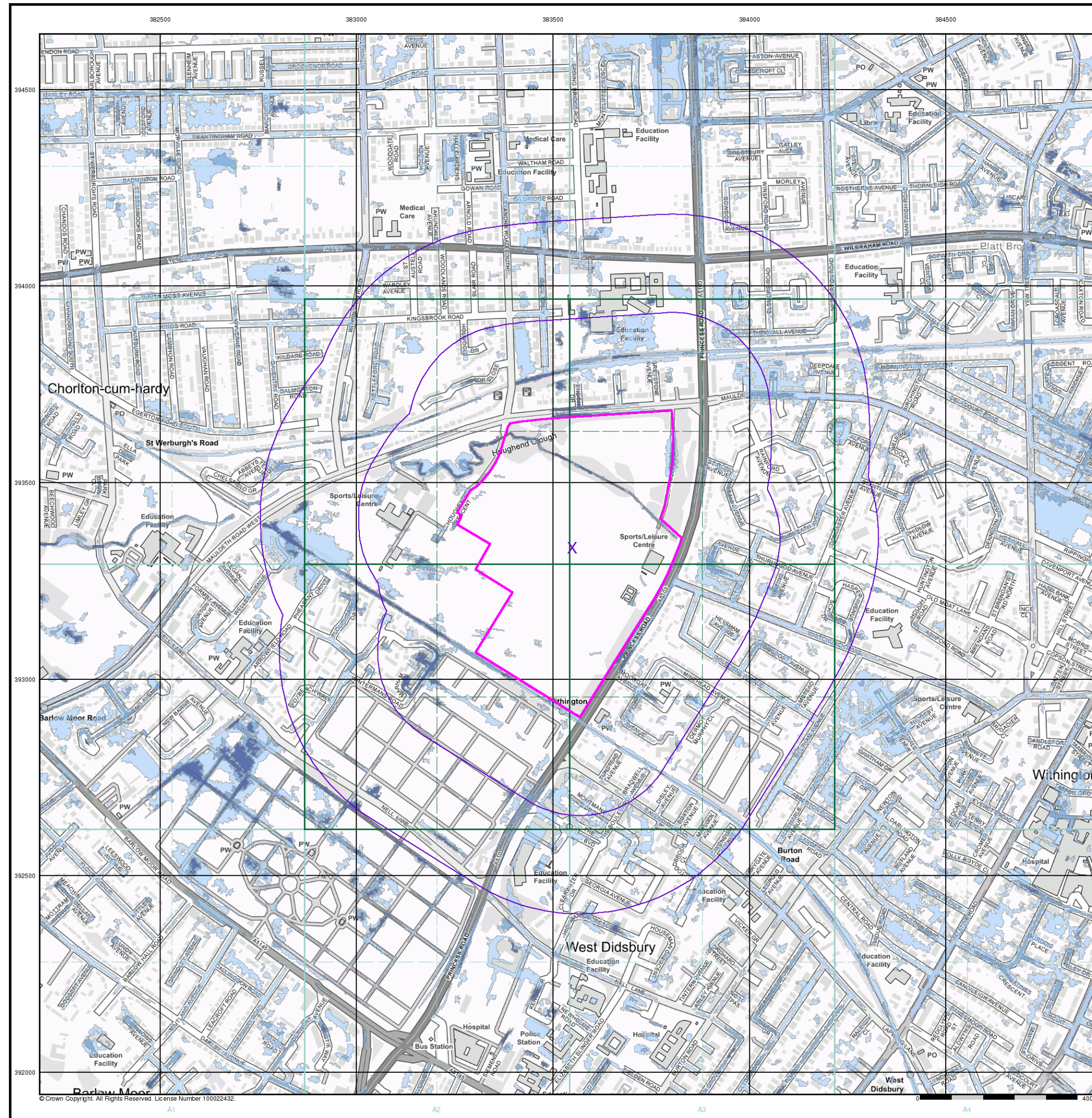
Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 500

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



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



General

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

Risk of Flooding from Surface Water

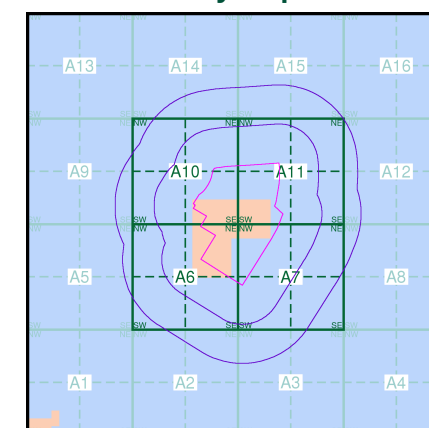
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

EA/NRW Suitability Map - Slice A



Order Details

Order Number: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 500

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



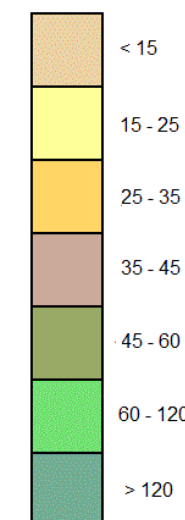
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

General

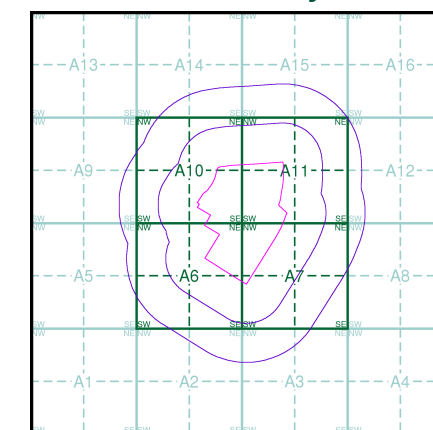
○ Specified Site
 ○ Specified Buffer(s)
 X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg



Estimated Soil Chemistry Arsenic - Slice A

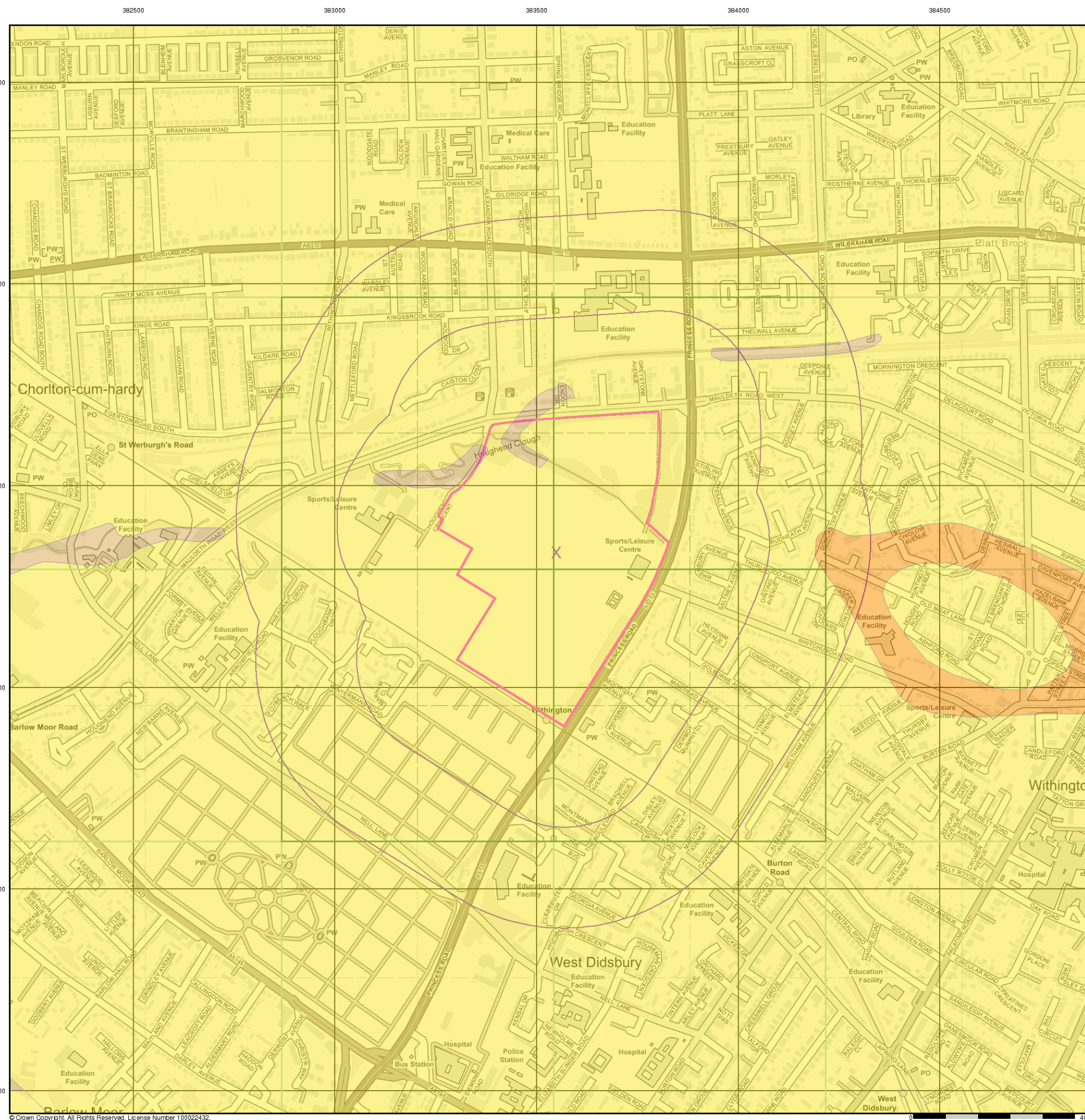


Order Details

Order Details: 266502671_1_1
 Customer Ref: LKC 20 1488
 National Grid Reference: 383550, 393340
 Slice: A
 Site Area (Ha): 29.81
 Search Buffer (m): 500

Site Details

Hough End Leisure Centre, 480, Princess Road, MANCHESTER, M20 1NA

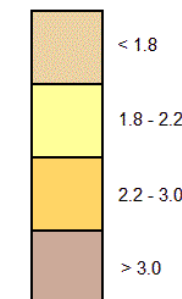


General

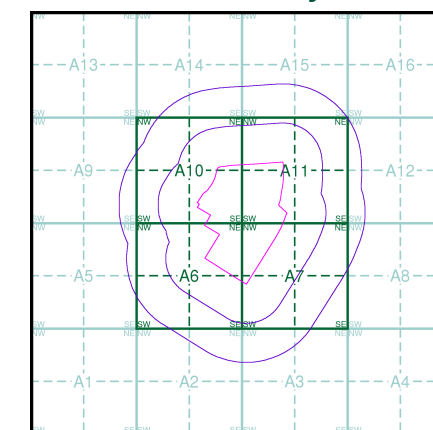
Specified Site Specified Buffer(s) Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg



Estimated Soil Chemistry Cadmium - Slice A

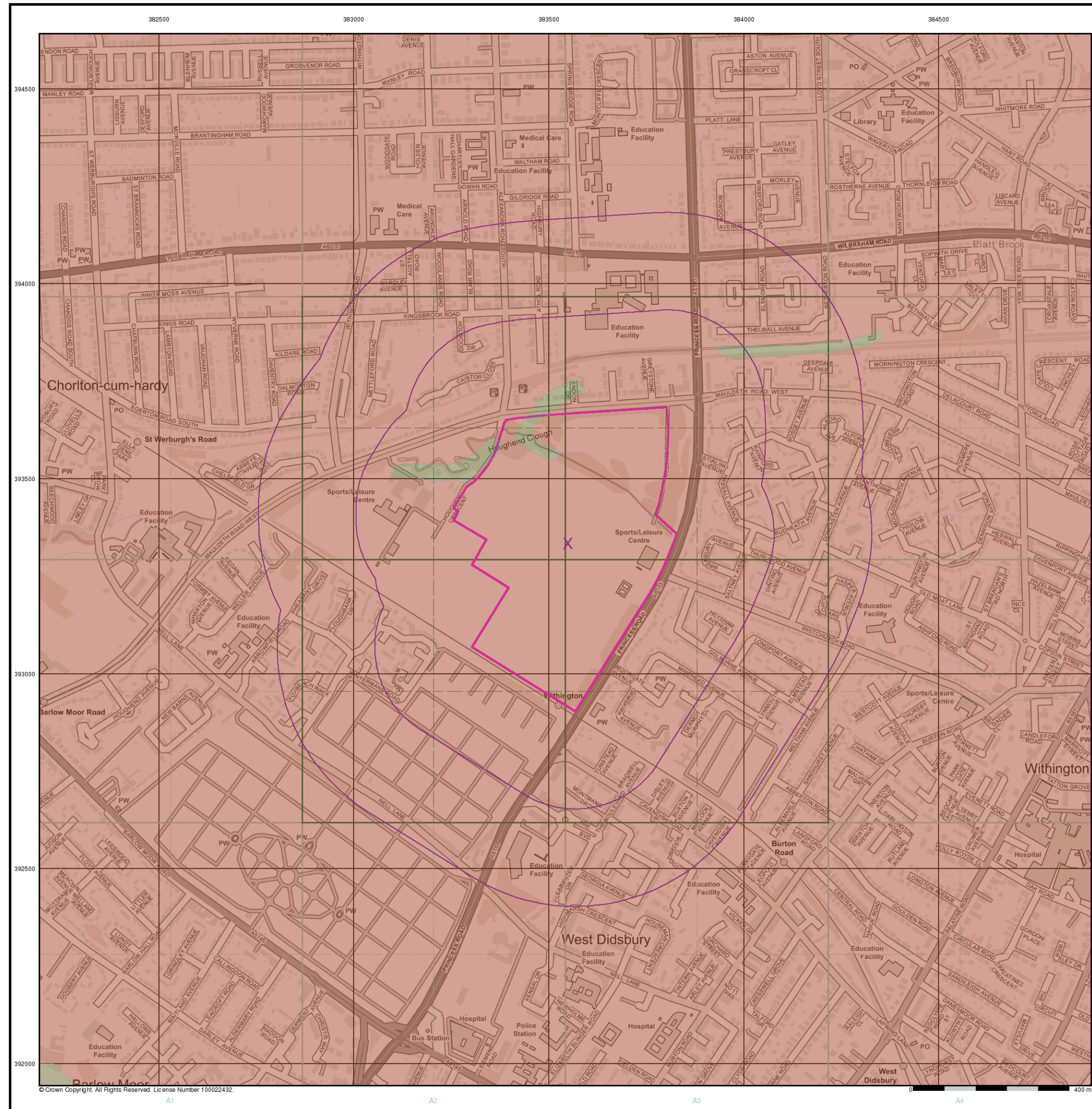


Order Details

Order Details: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 500

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA

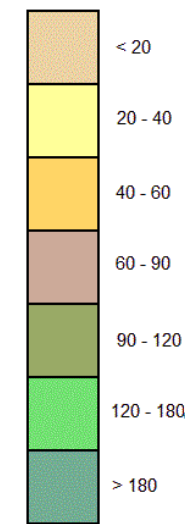


General

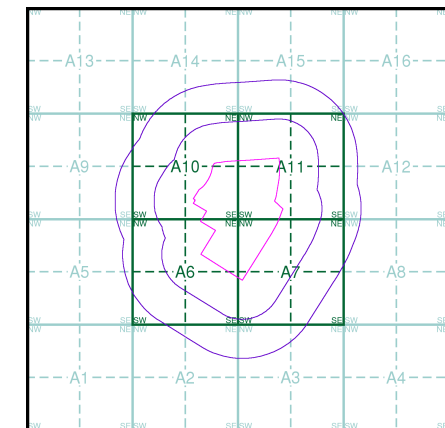
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg



Estimated Soil Chemistry Chromium - Slice A



Order Details

Order Details: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 500

Site Details

Hough End Leisure Centre, 480, Princess Road, MANCHESTER, M20 1NA



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

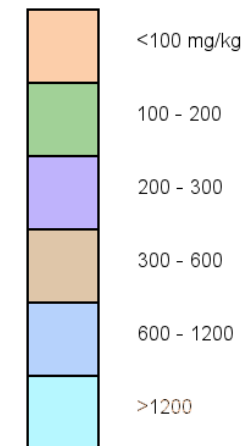


General

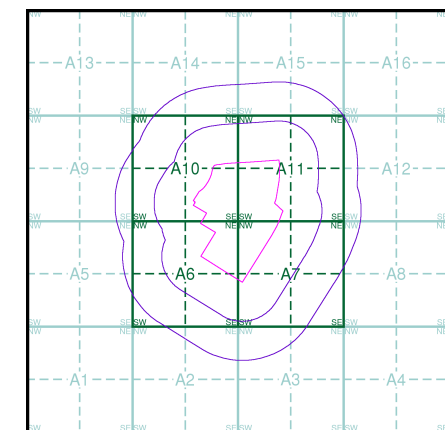
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg



Estimated Soil Chemistry Lead - Slice A



Order Details

Order Details: 266502671_1_1
Customer Ref: LKC 20 1488
National Grid Reference: 383550, 393340
Slice: A
Site Area (Ha): 29.81
Search Buffer (m): 500

Site Details

Hough End Leisure Centre, 480, Princess Road,
MANCHESTER, M20 1NA



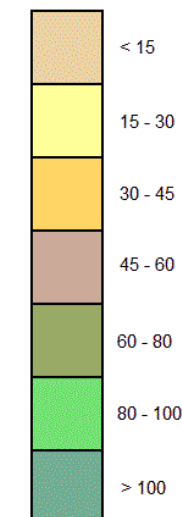
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

General

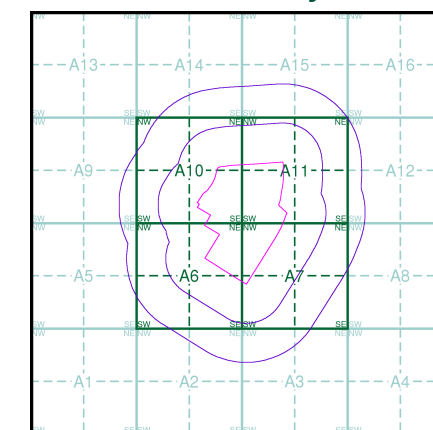
○ Specified Site
 ○ Specified Buffer(s)
 X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg



Estimated Soil Chemistry Nickel - Slice A

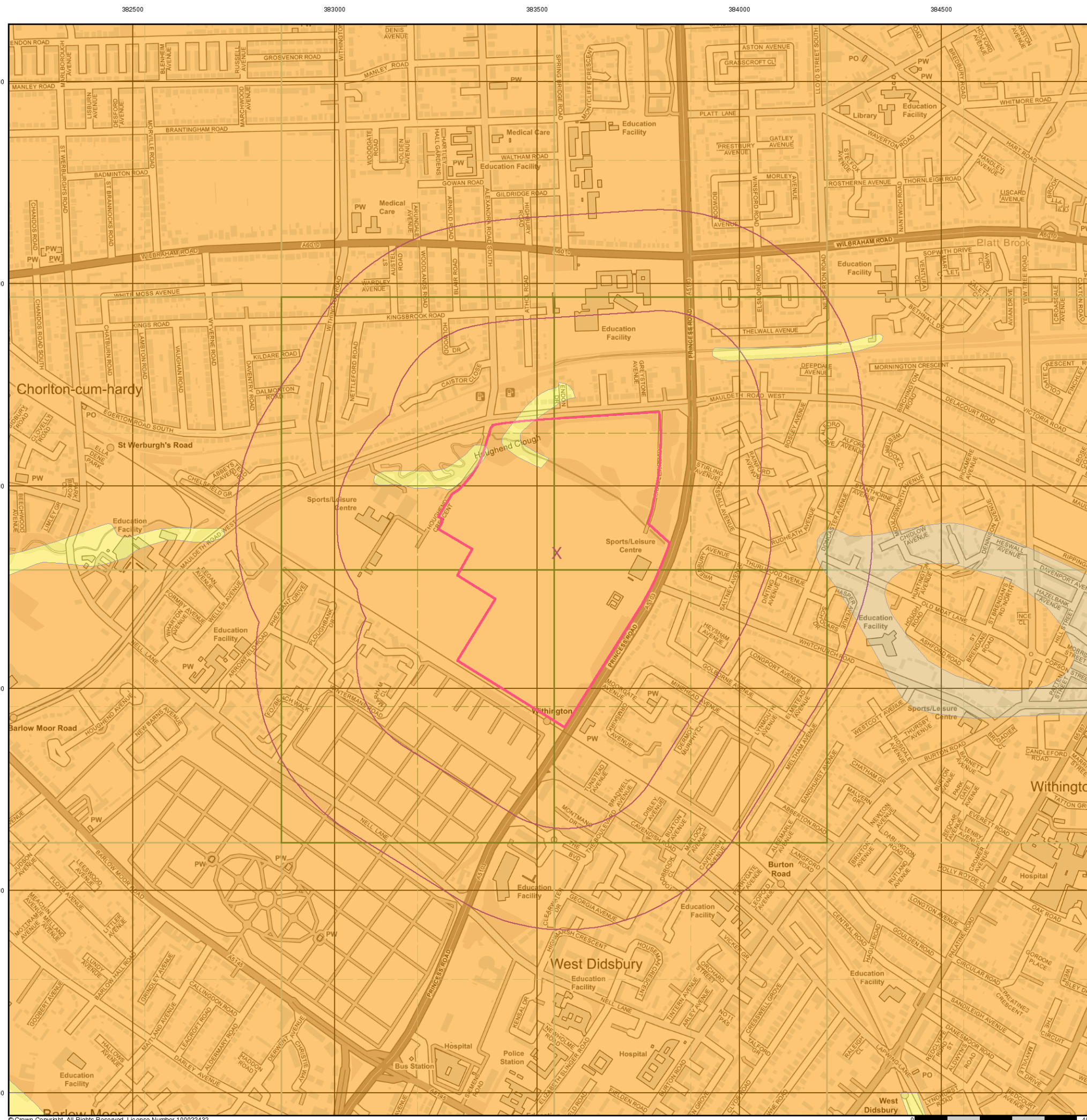


Order Details

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 Customer Ref: LKC 20 1488
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 Search Buffer (m): 500

Site Details

Hough End Leisure Centre, 480, Princess Road, MANCHESTER, M20 1NA



Appendix C

Zetica UXO Unexploded Bomb Pre Desk Study Assessment

Rosie Cummings

From: Sven Leman <sven.leman@zetica.com>
Sent: 19 November 2020 10:23
To: Rosie Cummings
Cc: Quotes; Helen Finch; Natasha Jeffery; Uxo
Subject: Zetica UXO Desk Study Risk Assessment Hough End Leisure Centre 191120 (E10299-20)
Attachments: E10299-20 Zetica UXO Desk Study Risk Assessment Hough End Leisure Centre 191120.pdf

Morning Rosie

Please find the PDSA below as requested, and a quote for the recommended desk study attached. Any further queries, don't hesitate to contact us.

	
Pre-Desk Study Assessment	
Site:	Hough End Leisure Centre, Princess Road, Manchester
Client:	The LK Group
Contact:	Natasha Jeffery/Helen Finch
Date:	19 th November 2020
Pre-WWI Military Activity on or Affecting the Site	None identified.
WWI Military Activity on or Affecting the Site	None identified.
WWI Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: ■ Salford docks and Manchester Ship Canal. ■ Transport infrastructure and public utilities. ■ Military barracks and training areas. ■ Industries important to the war effort, including munitions works. ■ Anti-Aircraft (AA) guns.
WWI Bombing	None identified on the Site.
Interwar Military Activity on or Affecting the Site	None identified.
WWII Military Activity on or Affecting the Site	None identified on the Site. During WWII, 1No. Heavy Anti-Aircraft (HAA) battery was established in the immediate vicinity of the Site. HAA batteries often had associated munitions storage and troop accommodation.

WWII Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: ■ Salford docks and Manchester Ship Canal. ■ Transport infrastructure and public utilities. ■ Military barracks, camps and training areas. ■ Industries important to the war effort, including motor works. ■ AA and anti-invasion defences.
WWII Bombing Decoys (within 5km of Site)	None.
WWII Bombing	During WWII the Site was located in the County Borough (CB) of Manchester, which officially recorded 737No. High Explosive (HE) bombs with a bombing density of 27.0 bombs per 405 hectares (ha). The Manchester area was heavily bombed between the 22nd and 24th December 1940 (the 'Manchester Blitz'). Over 400No. HE bombs and more than 30,000 Incendiary Bombs (IBs) fell across the region. Readily available records have been found to indicate that several HE bombs fell in close proximity to the Site.
Post-WWII Military Activity on or Affecting the Site	None identified.
Recommendation	It is recommended that a detailed desk study is commissioned to assess, and potentially zone, the Unexploded Ordnance (UXO) hazard level on the Site.
This summary is based on a cursory review of readily available records. Caution is advised if you plan to action work based on this summary. It should be noted that where a potentially significant source of UXO hazard has been identified on the Site, the requirement for a detailed desk study and risk assessment has been confirmed and no further research will be undertaken at this stage. It is possible that further in-depth research as part of a detailed UXO desk study and risk assessment may identify other potential sources of UXO hazard on the Site.	

Kind regards

Sven

Dr Sven Leman
Lead Risk Assessor
Zetica Limited

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Appendix D

Risk Evaluation

Risk Evaluation

The method for risk evaluation is a qualitative method of interpreting the output from the risk estimation stage of the assessment, based on CIRIA 552¹⁹. It involves the classification of the:

- Magnitude of the potential consequence (severity) of the risk occurring (Table A).
- Magnitude of the probability (likelihood) of the risk occurring (Table B).

Consequence (Severity)		
Classification	Definition	Example
Severe	- Short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. - Short term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource. - Catastrophic damage to buildings/properties. - A short term risk to a particular ecosystem, or organism forming part of such ecosystem (note: the definition of ecological systems within the Draft Circular on Contaminated Land, DETR, 2000).	- High concentrations of cyanide on the surface of an informal recreation area. - Major spillage of contaminants from site into controlled waters. - Explosion, causing building collapse (can also equate to short term human health risk if buildings are occupied).
Medium	- Chronic damage to Human Health ('significant harm' as defined in DETR, 2000). - Pollution of sensitive water resources (note Water Resources Act contains no scope for considering significance of pollution). - A significant change in a particular ecosystem, or organism forming part of such ecosystem.	- Concentrations of a contaminant from site exceed generic, or site specific assessment criteria. - Leaching of contaminants from a site to a major or minor aquifer (Principal and Secondary). - Death of a species within a designated nature reserve.
Mild	- Pollution of non-sensitive water resources. - Significant damage to crops, buildings, structures and services ('significant harm' as defined in DETR, 2000). - Damage to sensitive buildings / structures / services or the environment.	- Pollution of non-classified groundwater. - Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability).
Minor	- Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. - Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc.). - Easily repairable damage to buildings, structures and services.	- The presence of contaminants at such concentrations that protective equipment is required during site works. - The loss of plants in a landscaping scheme. - Discoloration of concrete.

Table A: Classification of consequence.

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

Table B: Classification of probability.

¹⁹ CIRIA (2001). "Contaminated Land Risk Assessment: A Guide to Good Practice". C552.

These classifications are then compared to indicate the risk presented by each pollutant linkage (Table C). It is important that this classification is only applied where there is a possibility (which can range from high likelihood to unlikely) of a pollutant linkage existing.

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

Table C: Comparison of consequence against probability.

Once the risk has been determined the corresponding action can be assessed (Table D).

Risk	Action Required
Very High Risk	- There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. - This risk, if realised, is likely to result in a substantial liability. - Urgent investigation (if not already undertaken) and remediation are likely to be required.
High Risk	- Harm is likely to arise to a designated receptor from an identified hazard. - Realisation of the risk is likely to present a substantial liability. - Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the longer term.
Moderate Risk	- It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. - Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low Risk	- It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very Low Risk	- There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

Table D: Description of the classification and likely action required.

Where LKC identified a low to very low risk either limited intrusive investigation work, a watching brief (during construction work) or no investigation work will be recommended. This will be dependent on the nature of the site and the proposed development.

Where the risk falls into the moderate/low risk, LKC will undertake an assessment to establish what category the pollutant linkage will fall into (i.e. moderate or low risk will be chosen).

Where LKC identifies a moderate or higher risk intrusive work or precautionary remedial measures will be recommended.

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