Abbeydale
Building Environment Consultants

DESK STUDY REPORT

A628 DODWORTH ROAD CROSSROADS, BARNSLEY

SOUTH YORKSHIRE

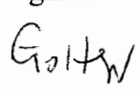
Report 151069DS November 2017

Client:
Design and Transportation
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Westgate Plaza
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DESK STUDY REPORT
A628 DODWORTH ROAD CROSSROADS, BARNSLEY
SOUTH YORKSHIRE
Report 151069DS November 2017

DOCUMENT VERIFICATION

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Qualifications:	MSci FGS	BSc MSc FGS C.Geol
Position:	Engineer	MD
Signiture:		

SUMMARY

Site Grid Ref:	432713E 406242N	**Site Level (m AOD)** 144	**Site Area (Ha)** 7
Development proposed:	New Highway		
Past site development:	Clay pits infilled for use as recreational grounds		
Ground Conditions			
Made Ground:	Made ground and clay pit infill anticipated		
Superficials:	Not anticipated		
Bedrock:	Middle Coal Measures		
Shallowest coal:	Dunsil Coal outcrops in west of of site dipping to ~21m bgl in east of site. Thin Coal outcrops in centre of site.		
Groundwater:	Perched water anticipated		
Drainage:	Soakaways not recommended		
Remediation:	Subject to site investigation		
Gas protection:	In open highway areas no precautions are required. Protective measures are required in enclosed spaces.		
Further Investigation:	Site investigation recommended		

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CONTENTS

1. INTRODUCTION
2. OBJECTIVES
3. THE SITE
4. HISTORY
5. GEOLOGY
6. HYDROGEOLOGY
7. MINING AND QUARRYING/GROUND STABILITY
8. ENVIRONMENTAL ENQUIRY
9. LABORATORY TESTING
10. GROUND CONDITIONS
11. ENVIRONMENTAL ASSESSMENT
12. ENGINEERING CONSIDERATIONS
13. REGULATORY APPROVAL
14. DISPOSAL OF SOILS
15. FURTHER INVESTIGATION

APPENDICES

FIGURES

- Figure 1 - Key Plan
- Figure 2 - Site Plan
- Figure 3 - Section
- Figure 4 - Conceptual Model
- Figure 5 - Conceptual Model Table

GROUNDSURE/LANDMARK REPORT

SYMAS REPORT

EA MAPS / SEARCHES

HISTORIC MAPS

BGS BOREHOLE EXTRACTS

APPENDIX A - CONTAMINATION RISK ASSESSMENT

APPENDIX B - FURTHER REPORTING

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1. INTRODUCTION

On the instruction of Barnsley Metropolitan Borough Council (BMBC), a desk study was carried out by Abbeydale Building Environment Consultants Ltd on a site around a crossroads between Dodworth Road and Pogmoor Road/Broadway, in Barnsley, South Yorkshire.

The site is located on the west side of Barnsley and is centred on National Grid Reference 432713E 406242N at approximately 144m AOD. See Fig 1. The site covers an area of approximately 7 Ha.

This report was produced on behalf of our client, BMBC and their advisors and financiers and should not be relied upon or transferred to any other parties without the express written authorisation of Abbeydale BEC Ltd and our client. If any unauthorised third party comes into possession of this report, they rely on it at their own risk and the authors owe them no duty of care or skill.

The comments and recommendations presented in this desk study report are based on the findings of a review of available information. There may be other conditions prevailing on the site which have not been recorded by the available information and therefore have not been taken into account by this report. Responsibility cannot be accepted for unrecorded information.

When writing this report the proposed development was for a new highway scheme at, or close to, existing ground levels. If there are changes to these proposals, then some modification to the comments and recommendations given may be required.

2. OBJECTIVES

This report has been undertaken to evaluate current or former uses of the site and surrounding areas to determine the presence of any potential contaminative sources. As part of this evaluation the potential impact upon the identified receptors has been made, thus determining if there are any potential significant pollutant linkages present. If a potential significant pollutant linkage is identified, the report gives recommendations for further investigations and / or remediation.

The report also evaluates the current site proposals (where known) with regard to geotechnical and engineering considerations to determine what impact the existing ground conditions will have on the integrity of the proposed building. As part of this

evaluation the report gives foundation, floor slab, highway and drainage recommendations.

3. THE SITE

As part of the Phase 1 Desk Study assessment, a site walkover was undertaken on the 30th of October 2017, to determine the presence of any visually identifiable features that may pose a risk to future site users. The proposed highway is to be constructed on a rectangular shaped parcel of land located on the north side of the crossroads between Pogmoor Road and Dodworth Road/Broadway and covering approximately 7 Ha. See Fig 2.

The site is currently occupied by Penny Pie Park, with a children's play area and sports pitch located toward the northwest corner of the site. An electricity substation is located within the park, just to the north of the crossroads. The sites surface is covered by grass and is undulating, especially in the eastern part of the site where the ground is hummocky.

There was no visual or olfactory evidence at the surface of any contamination, distressed vegetation or any potentially contaminating sources noted on site, externally to any buildings.

The site is bound to the west by Pogmoor Road/Broadway, and to the south by Dodworth Road. Beyond these roads, and to the east of the site, are residential houses. To the north of the site is a railway line.

The park is outlined by mature trees along most of its perimeter.

Ground levels across the site, while hummocky, are essentially level with a slight slope towards the east.

4. HISTORY

The historic Ordnance Survey maps of the site and surrounding area, appended, have been obtained from a GroundSure EnviroInsight report, dated September 2017.

The Site

The earliest OS map of 1855 shows the site to be largely unoccupied, consisting of open fields. Dodworth Road is situated in its present day location, intersected by a footpath in the position of the present day Pogmoor Road/Broadway. A sandstone quarry is shown in the south eastern corner of the site, just to the south of Dodworth Road. Adjacent to the northern site boundary is a railway line.

It is understood anecdotally that between 1861-1872 White Hill or Penny Pie Colliery was located within the site boundary, assumed to be centred around the two shafts seen on the 1893 map. Due to the dates of the maps available, this colliery does not

appear on any of the maps, so it is not known where the colliery buildings were located.

The next map, dated 1893, shows the site to be occupied by a brick works. This is located against the northern site boundary, with a branch line from the railway line leading to the brick works. To the south and east of the brick works two clay pits are labelled, which occupy most of the site between the brickworks and Dodworth Road to the south. A tramway is shown which connects the clay pits to the brick works. Two old shafts are also shown in the centre of the site.

The map of 1906 shows the clay pits and tramway have extended, with the tramway now shown to pass underneath Dodworth Road to a new pit in the southeast corner of the road. The map of 1931 shows the clay pits to have extended further east and south, beyond the site boundary, and the tramway has been repositioned and now passes beneath Dodworth Road further west than it did previously. Several houses are shown along the south side of Dodworth Road, adjacent to the crossroads.

The map of 1956 shows the beginning of the closure of the brickworks, with the tramway and western clay pits no longer shown on the maps. By the 1960 map, the buildings associated with the brick works have been removed, and the portion of the site to the northeast of the crossroads appears to have been infilled, with no clay pits shown. It is understood anecdotally that the clay pits on site were backfilled with domestic waste. The two old shafts in the centre of the site are still shown, and are now labelled as disused. The branch line from the main line to the south has also been removed. In the south east corner of the site, south of Dodworth road, disused clay pits are still shown. The entrance road into the brick works from Dodworth Road is still shown. At this time, Pogmoor Road and Broadway have been constructed.

The next map, dated 1969 shows a filling station on the south side of Dodworth Road, in the southeast corner of the site. To the south of this filling station, the former clay pits are labelled as a refuse tip. An electricity substation is also shown just north of the crossroads, on the east side of Pogmoor Road. The 1978 map shows that factories have been built on the refuse south of the filling station. A model railway is shown towards the north of the site with a few new buildings adjacent. The two shafts in the centre of the site are no longer shown. On the 1991 map, the area to the northeast of the cross roads is labelled as recreation grounds, with trees located along Pogmoor Road and Dodworth Road. The crossroads have also been modified and enlarged slightly, with a left turn lane from Broadway west onto Dodworth Road.

The map of 2000 no longer shows the model railway. The most recent map dated 2017 shows the filling station to have been removed and replaced with a car park which serves a school to the south.

Surrounding Area

The earliest map of 1855 shows the area surrounding the site to be largely unoccupied, consisting of open fields. Several footpaths are shown along the boundaries of fields, including footpaths which later will become Pogmoor Road and Broadway. A well is shown around 50m west of the site. A railway line is shown immedietly north of the site.

The map of 1893 shows several old shafts around the site, in addition to the two labelled within the site. Two shafts are shown around 150m west of the site, with another shown 100m east of the site. Further clay pits associated with Summer Lane brick works are shown 200m east of the site, at the other side of the railway line.

On the map of 1931, additional shafts are shown 125m east of the site. Summer Lane brick works is now labelled as a refuse site. Residential houses have begun to appear along Dodworth road to the southwest of the site. The map of 1932 shows Farmhouse Colliery 500m north of the site, with a drift mine entry labelled. On the 1938 map, residential housing can be seen spreading east from Barnsley centre, towards the site. Several of the footpaths around the site have become roads, including Broadway and Pogmoor Road (initially named West End Road). Farmhouse Colliery to the north of the site is now labelled as disused.

The map of 1960 shows housing to have been built on three of the four sides of the cross roads, with the exception of the northeast side. Additional housing has also been built to the east of the site along Dodworth Road, in the area of the former shafts. The map of 1977 shows that factories have been built to the south east of the site, in the area of the former clay pits. The 1983 map shows housing to have been built in the area of Farmhouse Colliery. The continued spread of housing from the centre of Barnsley has now reached the site, with the majority of the area surrounding the site now consisting of residential housing.

The most recent map, dated 2017, shows the removal of the warehouses to the southeast of the site, and the construction of the school and car park.

5. GEOLOGY

The Geological Survey maps of the area, BGS Sheet 87, Sheet SE30NW and Yorkshire County Series Sheet 274NE have been examined along with the memoir of the area. No drift deposits are shown within the site area indicating bedrock to be present under a residual soil.

The solid geology is recorded as the Middle Coal Measures of the Carboniferous period, dipping gently to the northeast at ~5°. The site is found at a stratigraphic level between the Dunsil Coal and the Barnsley Coal.

A geological fault is shown running through the centre of the site, trending northeast-southwest. Strata are downthrown to the southeast.

6. HYDROGEOLOGY

The Environment Agency (EA) indicate the bedrock is indicated to form a secondary A aquifer (formerly minor aquifer). The site is located within a high Groundwater vulnerability zone.

The site is not located within a groundwater source protection zone and there are no recorded licensed drinking water abstractions within 250m of the site.

The nearest surface water feature is an unnamed watercourse approximately 500m to the south of the site. The exact hydraulic gradient is unknown, however it is believed to have a gentle gradient towards the unnamed watercourse.

The site is located within EA Flood Risk Zone 1.

Relevant EA maps are appended.

7. MINING AND QUARRYING

The presence of rock and mineral seams, including coal, which may have been mined or quarried in the area has been determined from the published geological maps, the memoir of the area and appended South Yorkshire Mining Advisory Service (SYMAS) report, dated August 2017.

The geological maps show two coal seams outcropping within the site boundary. To the west of the site, trending roughly north-south, the Dunsil Coal is shown to outcrop. The Dunsil Coal is shown to outcrop to the south of the fault running through the site. See SYMAS drawing M3360/9A.

The Dunsil seam is indicated to range in thickness from 0.45 to 0.80m in thickness, and the SYMAS report states the seam to typically be 0.60m thick. Using a dip of 5°, the seam is anticipated to underlie the site from outcrop in the west to around 21m bgl to the east of the site.

A thin coal is also shown to outcrop towards the centre of the site, trending roughly north-south. Unlike the Dunsil Coal, this outcrop is shown on both sides of the geological fault. A further thin coal is shown to outcrop around 50m west of the site.

The SYMAS report states that Shallow Coal workings are considered a negligible risk to the proposed scheme as the seams mentioned above are of inferior quality. The Coal Authority interactive viewer agrees with the above, showing the Dunsil seam not to be associated with probable shallow coal mine workings.

Two shafts are located within the site boundary. These are associated with the former Penny Pie Colliery. The shafts are located 35-40m from the proposed highway. The SYMAS report states that abandonment plans show the shafts were sunk to 39m bgl to the Swallow Wood Coal seam. The SYMAS report understands the shafts to be in ownership of BMBC, and that the shafts are known to have been treated, although details about the shaft caps are unknown.

The majority of the site is shown in the past to have been occupied by clay pits. The SYMAS report suggests that these pits were likely less than ~7.3m in depth.

8. ENVIRONMENTAL ENQUIRY

A GroundSure EnviroInsight report, dated September 2017, indicates that there are three historic landfill sites present on site (GS Map ID 76,77,78), with an additional three recorded licensed landfill sites within 250m of the site (GS Map ID 79,80,81).

The EnviroInsight report also highlights the presence of a former petrol station within the site boundary, which was located in the area of the present day school carpark, to the south of Dodworth Road. This petrol station closed in 1999.

The relevant GroundSure pages and maps are appended.

9. LABORATORY TESTING

No Laboratory testing has been requested as part of this Desk Study.

10. GROUND CONDITIONS

The anticipated ground conditions in the area have been interpreted from geological maps and available archive information, including boreholes, within the surrounding areas. This report contains public sector information licensed under the Open Government License v 2.0m which has been used in good faith to provide an indication of anticipated ground conditions beneath the site. See Fig 3. At this stage any diagram of the possible configuration of ground conditions beneath the site is conjectural and given for guidance only. Confirmation of ground conditions should be considered if deemed critical.

From the available information, it is anticipated that the ground conditions will comprise a thin capping material over an unknown depth of infilled material. No record of the infill could be found. Anecdotal evidence suggests that the pits were infilled with degradable municipal waste. This might be borne out by the hummocky and undulating nature of the playing fields.

The underlying bedrock anticipated is mudstone and sandstone bedrock. Any near surface coal would likely have been removed as part of the clay pit workings.

11. ENVIRONMENTAL ASSESSMENT

11.1 General

Contaminated land is defined under law through Part IIA of the Environmental Protection Act 1990, implemented through Section 57 of the Environment Act 1995. This supports a ‘suitable for use’ based approach to the risk assessment of contaminated land. The evaluation is based upon an assessment of plausible pollutant linkages, referred to as the **contaminant - pathway - receptor** model, based upon the current or proposed use of the site.

A **pollutant linkage** is the relationship between a contaminant, a pathway and a receptor, unless all three elements are present a potential pollutant linkage does not exist.

Part IIA states for land to be considered contaminated by the local authority in whose area it is situated it needs to be in such a condition, by reason of substance in on or under the land that :

1. Significant harm is being caused or there is significant possibility of such harm being caused.
2. Pollution of controlled waters is being or is likely to be caused.

11.2. Proposed Site Use

The current development proposal for the site is for commercial and highway use. This end-use is classified as low sensitivity. Future site users will have no direct contact soil materials or exposed indirectly to contaminants through uptake by any vegetables grown in the ground.

11.3 Contamination Assessment

11.3.1 Exploratory Hole Locations and Sampling Strategy

Before constructing on this site a borehole investigation will be required to determine the ground conditions present. As several specific sources of contamination have been identified from the Phase 1 Conceptual Site Model, a targeted exploratory hole location and sampling strategy should be employed. This should take sample from the near surface where materials are to be re-worked as part of highway construction. Particular attention will be required in areas of infill and where the previous petrol station was located.

11.3.2 On-Site Contamination

The potential risk of contamination on the site has been assessed by reference to the tables in Appendix A.

The site is shown in historic records to have been occupied by a brick works and clay pits, which were then infilled with landfill, therefore there is a high risk of contamination. There was no visual or olfactory evidence of contamination observed during the walkover suggesting a capping layer is present.

11.3.3 Off-Site Contamination

Three historic landfill sites are found within 250m of the site. A summary of potential sources of off-site contamination is given in Fig 5.

11.3.4 Potential Receptors

- Future site users.
- Vegetation.
- Ecological Systems.
- Construction workers.
- Surface water.
- Groundwater.
- Adjacent site users.

11.3.5 Potential Pathways

- Dermal contact (outdoor).
- Indirect ingestion (outdoor).
- Inhalation of dust (outdoor).
- Inhalation of vapours (outdoor).
- Leaching to groundwater.
- Surface water run-off.
- Direct contact with substructures (limited by highway construction).
- Migration through the ground (horizontal).

11.4 Ground Gas

As the former clay pits on site have been infilled with unknown landfill, there is a potential risk from ground gasses associated with the landfill. This will require quantifying as part of a site investigation.

BGS Maps confirm the lower Coal Measures recorded as a having a low to moderate potential for radon and gas emissions. Therefore, **basic** protective measures are required in enclosed spaces, but in open highway areas no precautions are anticipated to be required.

11.5 Flood Risk

As part of this Desk Study a Level 1 Screening Study regarding flood risk assessment has been undertaken. The EA indicate that the site area has a low chance of flooding from external sources. When developing the site, drainage measures to meet with the local authority sustainable drainage system (SUDS) requirements will need to be made for any on-site drainage.

11.6 Invasive Species

The existing vegetation in and around the site has been examined. No obvious signs of Japanese Knotweed or other invasive plants were visible. However, because Japanese Knotweed could have been surface stripped or weed killer applied to the stems prior to a site visit, not seeing the weed during our time on site cannot be a guarantee that it is not present on or around the site.

11.7 Risk Assessment

Risk has been assessed with regard to the tables in Appendix A, and is based on the Phase 1 Desk Study data findings presented above.

Although no visual surface contamination was identified in the walkoved contaminated quarry infill and leachate product from the former petrol station should be anticipated.

11.8 Conceptual Model

The conceptual model is based on the **source-pathway-receptor** model and uses the information presented above, to determine if a possible significant pollutant linkage exists and what risks are posed to human health and environmental receptors.

The conceptual model is shown graphically on Fig. 4 and tabulated on Fig. 5. See Appendix A for conceptual model risk matrix.

11.8 Remediation Requirements

Chemical testing and remediation of the site will be required. A remediation method statement will need to be produced. When installing the highway across this area options to reduce the risk of spreading contamination to other areas should be considered. A method of encapsulating any areas of contamination and building over existing fill should be considered.

12 ENGINEERING CONSIDERATIONS

12.1 General

An outline plan was available when completing this report. It has been assumed that the proposed highway is to be constructed at, or close to, existing ground levels. The proposed ground loadings were not known, but for the purpose of this report are assumed to be less than 100 kN/m^2. If there are any changes to these proposals, then some modification to the comments and recommendations given may be required. In particular a separate assessment would be required if development either side of the highway was to be considered.

12.2 Mining and Ground Stability

Before constructing the highway a ground investigation will be required to determine the state and depth of the quarry infill and evaluate the potential risk of shallow worked coal.

The geological/ SYMAS information suggest the shallow coal may have been worked and may well have been removed as part of the clay pit excavation.

The greatest risk is that the quarry infill is recorded to be formed of poorly compacted, degradable contaminated fill which will provide limited support and will require spanning over.

Commonly used ground improvement methods such as vibro stone columns may not be found to be suitable as the stone would cause pathways in which contaminate could gas, and may increase gas or leachate production. An alternative approach might be to install weak concrete columns or grout the infill to assist the stabilisation of the more degradable materials. A flexible highway construction could then be considered supported on a reinforce earth mattress. However, until site investigation data is available a full assessment of ground improvement methods available can not be made.

12.3 Highways & Hardstanding

Highways and hardstanding will need to be constructed on re-engineered material. For preliminary design purposes a CBR of 2.5% may be assumed provided the formation is proof rolled and any soft spots are removed.

12.4 Drainage & Excavatability

Some difficulties in excavation of trenches for sewers and other excavations in the made ground should be anticipated. Consideration should be given where practical to avoid trenching through the old quarry areas.

Due to the made ground encountered soakaways are not suitable for this site, therefore off site drainage and retention in accordance with SUDs requirements will be required.

12.5 Chemical Precautions

At this stage it is recommended that sulphate resistant concrete is used for all sub-surface structures. Where in made ground, water supply pipes should be leachate resistant.

13. REGULATORY APPROVAL

The recommendations given in this report are based on the findings of the Desk Study, undertaken as described. The conclusions cannot be guaranteed to gain regulatory approval, should the report be required as part of a planning application. If it is required as such, it should therefore be passed to the appropriate authorities for comment and approval, prior to undertaking any remediation or development work.

14. DISPOSAL OF SOILS

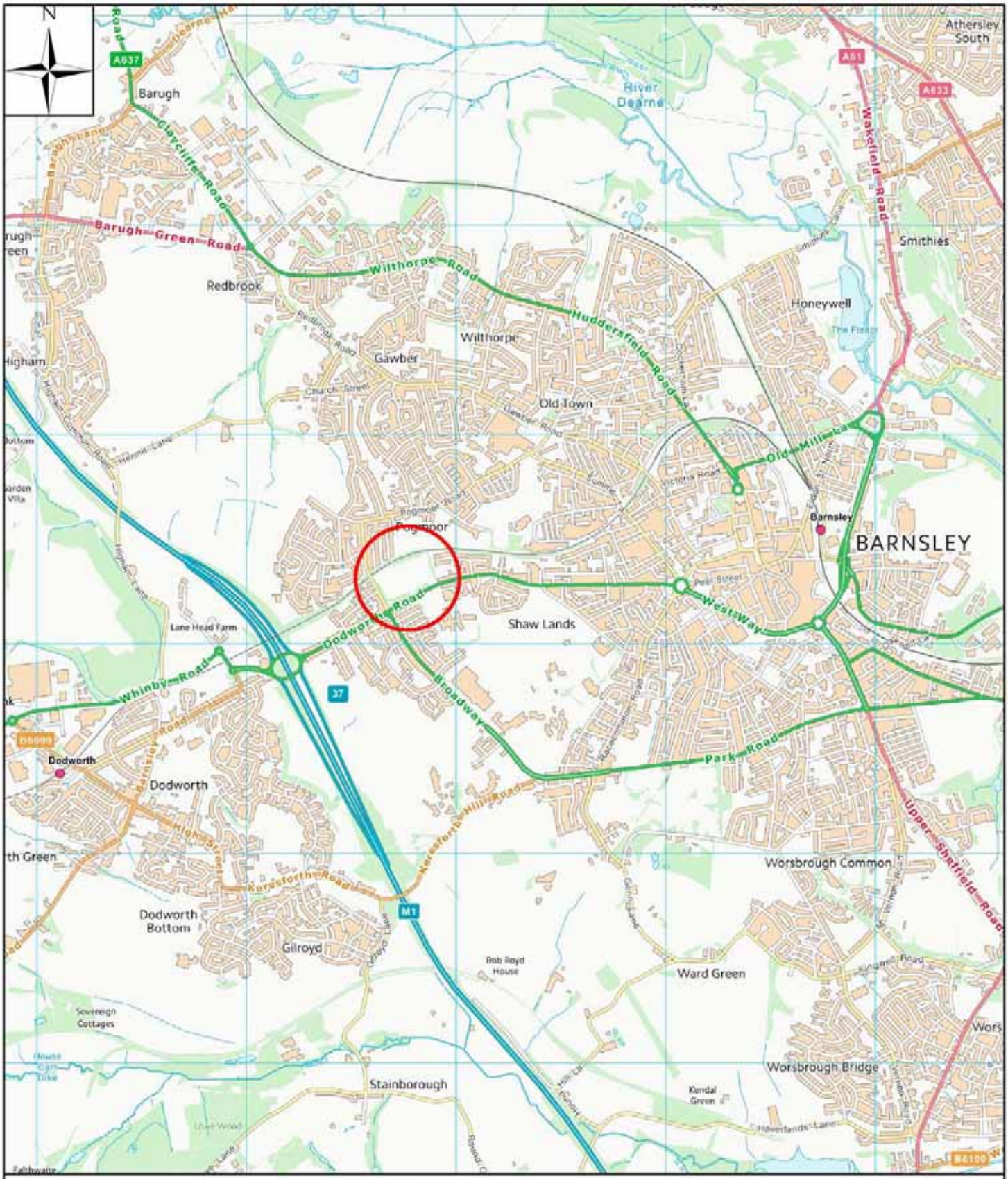
Any wastes arising from remediation and/or development of the site, such as excess spoil or material deemed unsuitable for retention on site, should be disposed of in accordance with the Duty of Care Regulations. Waste Acceptance Criteria (WAC) analysis may be required to determine the most appropriate disposal facility for the waste, in accordance with the requirements of the current Landfill Directive.

15. FURTHER INVESTIGATION

An intrusive site investigation is recommended prior to the commencement of any groundworks to assess the ground conditions across the site and obtain samples for relevant environmental and geotechnical testing. A proposed pattern of exploration holes has been outlined on Fig 3. We would recommend that the least intrusive window sample hole method is employed where practical. Consideration will need to be given to extend some hole locations using Cable Percussive techniques. Trial pitting is also recommended to identify where the highway is crossing the high walls of the clay pit. However, these should only be undertaken once the chemical state of the pit infill is known. The installation of ground gas monitoring standpipes and subsequent gas monitoring is also recommended.

Report **151069DS** November 2017.

FIGURES



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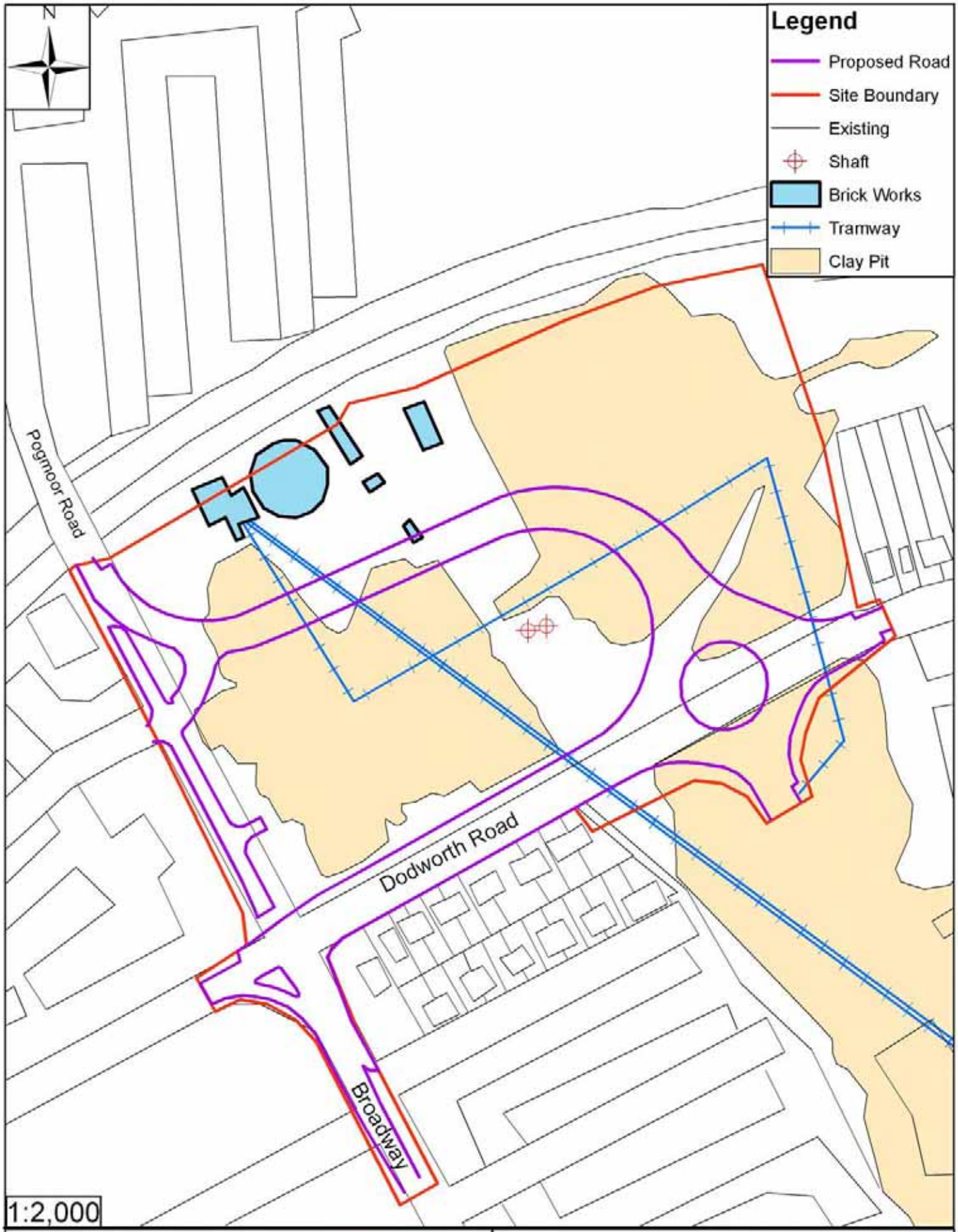
KEY PLAN

Site: A628 Dodworth Road Crossroads, Barnsley

Job No: 151069

Client: BMBC

Fig 1

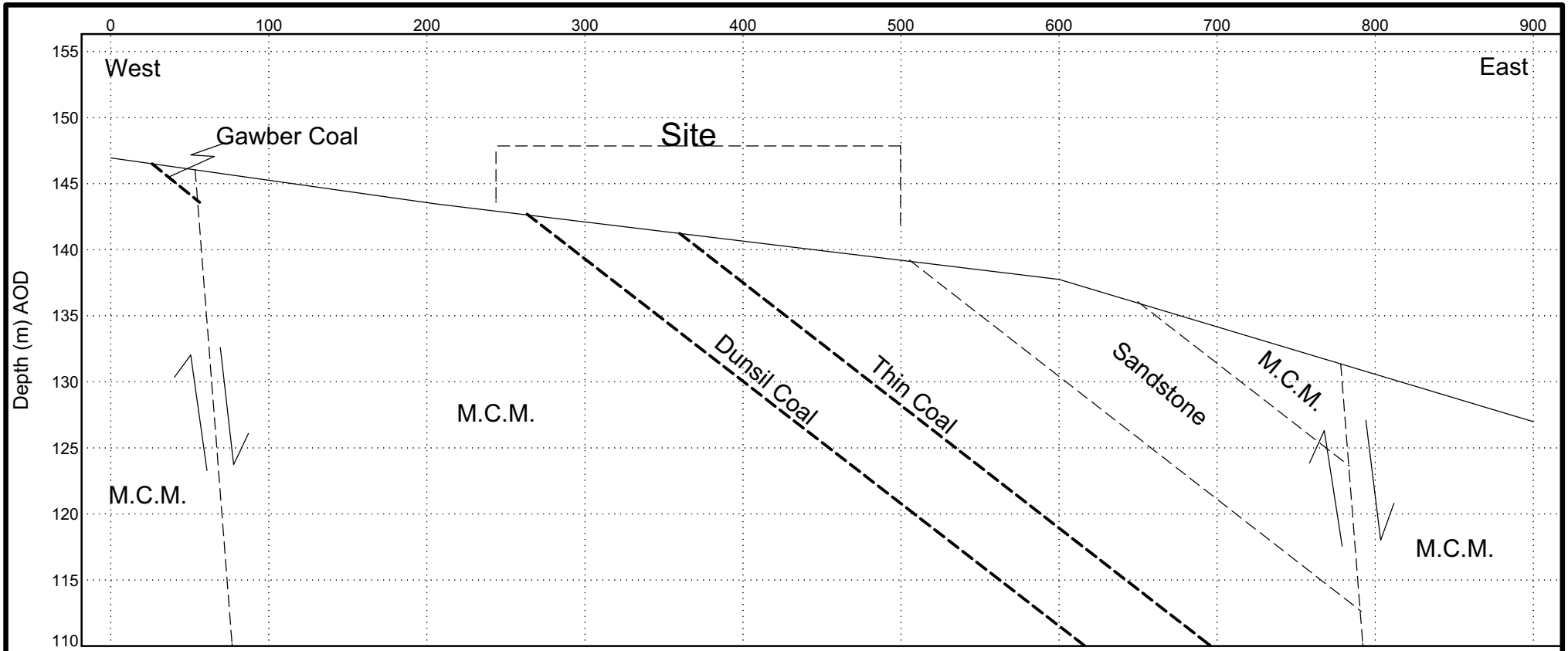


HISTORICAL FEATURES

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Site: A628 Dodworth Road Crossroads, Barnsley
Job No: 151069
Client: BMBC

Fig 2



DEPTH SECTION 151069.GPJ ABEC TEMPLATE.GDT 30/10/17

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SUBSURFACE DIAGRAM

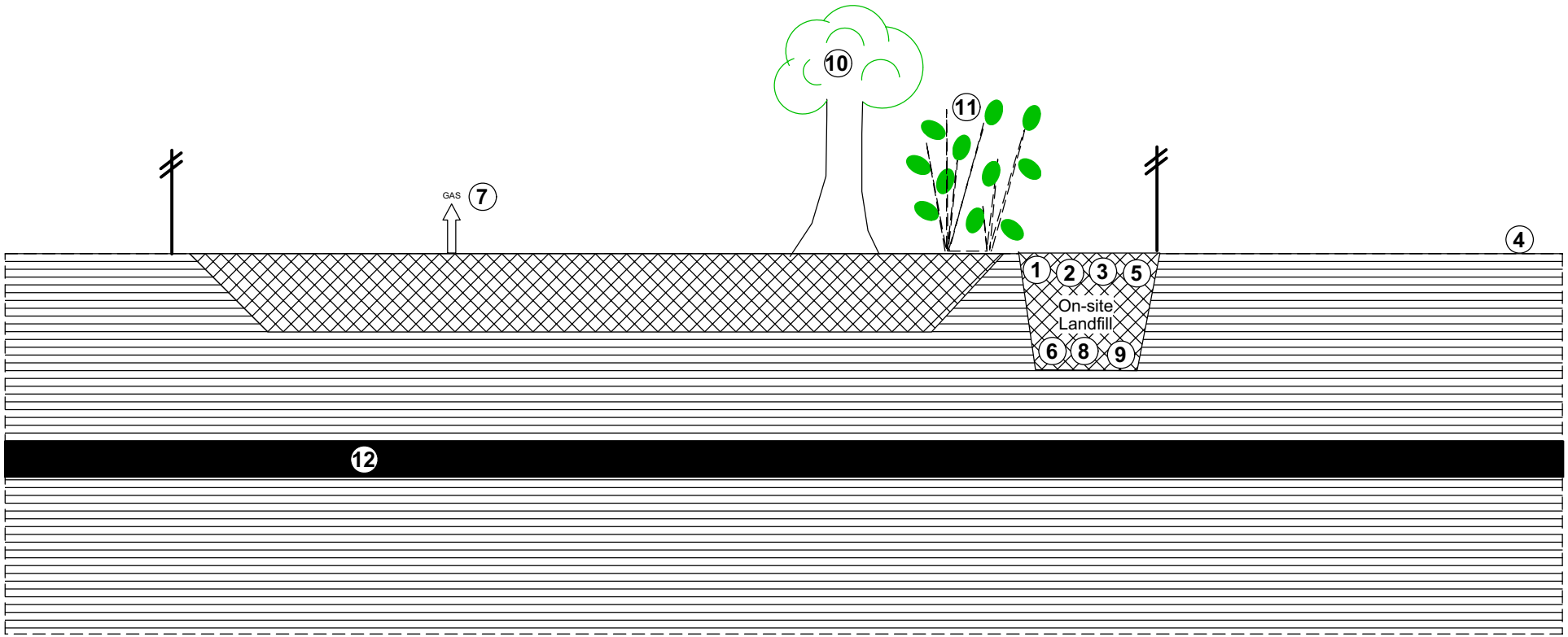
Client: BMBC

Project: A628 Dodworth Road Crossroads, Barnsley

Number: 151069

FIG 3

Commercial



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Notes:
1. Diagram not to scale. This model is schematic only and does not reflect the specific ground conditions identified on or off the site.
2. See Fig 5 for Conceptual Model Table.
3. Sloping ground not depicted. Topography is considered in the report text.

CONCEPTUAL SITE MODEL

Client: BMBC

Project: A628 Dodworth Road Crossroads, Barnsley

Number: 151069

FIG 4

2016 - CONCEPT MODEL 151069.GPJ ABEC TEMPLATE.GDT 31/10/17

Number	Hazard	Source	Pathway	Receptor	Significant Pollutant Linkage	Current anticipated risk (1) *	Comment	Action	Anticipated risk after action *
1	Metals	On site landfill site	Direct contact	Site users	**Yes**	Moderate / 100%	Further investigation required	Subject to SI findings	Moderate
2	PAH	On site landfill site	Direct contact	Site users	**Yes**	Moderate / 100%	Further investigation required	Subject to SI findings	Moderate
3	TPH	On site landfill site	Direct contact	Site users	**Yes**	Moderate / 25%	Further investigation required	Subject to SI findings	Moderate
4	Flooding	Unnamed water course	Over land flow	Buildings / structures	**Yes**	Very Low / 100%	Not within EA flood risk zone	No further action required	Low
5	Landfill Gas	On site landfill site	Vertical migration through the ground	Site users	**Yes**	Moderate / 100%	Further investigation required	Subject to SI findings	Moderate
6	Mine / Ground Gas	Made Ground	Vertical migration through the ground	Site users	**Yes**	Moderate / Low 100%	Further investigation required	Subject to SI findings	Moderate
7	Radon	Bedrock	Vertical migration through the ground	Site users	**Yes**	Low / 100%	No risk at levels present	No further action required	Low
8	Leachable metals	On site landfill site	Leaching to groundwater	Unnamed water course	**Yes**	Moderate / 100%	Further investigation required	Subject to SI findings	Moderate
9	Leachable PAH	On site landfill site	Leaching to groundwater	Unnamed water course	**Yes**	Moderate / 100%	Further investigation required	Subject to SI findings	Moderate
10	Trees	On site trees	Direct contact	Buildings / structures	**Yes**	Moderate / 25%	Further investigation required	Subject to SI findings	Moderate
11	Japanese Knotweed	On site trees	Direct contact	Buildings / structures	**Yes**	Low / 100%	None identified during walkover	Vigilance during construction	Low
12	Mine working collapse	Mine Workings	Vertical migration through the ground	Buildings / structures	**Yes**	Moderate / 100%	Further investigation required	Subject to SI findings	Moderate

(1) Anticipated risk over percentage site area

* See Appendix A

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CONCEPTUAL MODEL TABLE

Client : BMBC

Project : A628 Dodworth Road Cross Roads

Job No : 151069

Fig 5:

SYMAS REPORT

PLACE DIRECTORATE
South Yorkshire Mining Advisory Service

BARNSLEY
Metropolitan Borough Council

To:	Planning & Transportation		**FAO:** Gary Jones		
My Ref:	M3360/9		**Your Ref:** ECHD/GJ/MR		
Date:	8th August 2017	**Enquiries to:**	Mr. M. Lyons	**Ext:**	2690
Subject:	A628 DODWORTH ROAD CROSSROADS IMPROVEMENT SCHEME				

Further to your consultation request of the 25th July 2017, regarding the above highway being considered for development, I have the following comments.

Situation

Sections of highway are being considered for development to improve traffic flow to the north and east of Dodworth Road crossroads, as shown edged orange on the attached plan no. M3360/9A.

Geology

Geological records indicate the site to be underlain by sandstones, shales and mudstones of the middle coal measures. A geological fault is conjectured to pass through the scheme which trends in a south-west to north-east direction, as indicated in blue on plan. Two coal seams are conjectured to outcrop on the southern side of the fault – a 'Thin' seam of negligible thickness and the 'Dunsil' seam at around 600mm in thickness. In this vicinity the coal will dip beneath the land to the north-east, so the coal may be encountered at the surface *(but beneath any fill material associated with the past brick works and then landfill site as detailed below).*

The 'Thin' coal seam is conjectured to outcrop some 50m away to the west of the scheme northwards from the fault as indicated on plan, which will dip beneath the highway at 5m deep or more.

Mine Entries

The old mine shafts of the former 'Penny Pie Colliery' are known centrally within the area, but these appear to be around 35m clear of the actual scheme itself. Abandonment plans detail that the shafts were sunk 39m to the Swallow Wood coal seam.

An old mine adit of the past Dodworth Road Colliery is located some 40m away clear of the scheme to the north-east, which accessed the Barnsley coal seam beneath the land further in that direction.

The old Victoria Colliery mine adit is located in close proximity to the scheme adjacent to Dodworth road (at approximately 432902E/406307N). This adit is recorded as traveling beneath the land at a rate of 1 in 5 (11°) approximately ESE (East-SouthEast). The actual location of the adit entrance beneath any fill material will be uncertain.

No information is available as to what treatment, if any, took place for the mine adits. The mine shafts of the Penny Pie colliery *(which are believed to be in the ownership of BMBC)*, are known to have been treated, although no details can be found as to shaft cap designs.

Opencast Workings / Quarrying

No opencast coal sites are known in the area. Past Brick Works and associated clay quarrying are known within the site, both north and south of Dodworth Road, as indicated on the attached plans M3360/9B to 9D, editions ranging from 1893 to 1932. The 1932 Geological OS Sheet indicates the strata in the region of the southern clay pit as 'sandstone 6ft, mudstone 24ft'. It is uncertain as to how deep the clay pit was worked beneath the land to the north of Dodworth road, but considering the information it is likely to be less than 24ft (7.3m). Also from the available information it appears that the old mineshafts of the 'Penny Pie' Colliery appear to have been 'worked around', so it may be the case that little fill material/made ground exists above them.

Shallow Coal Workings

As the shallow coal beneath this scheme are of relative inferior quality (only limited records exist of Dunsil seam workings in the wider area as a whole), negligible risks are considered by way of any old underground workings causing surface stability issues. This position appears consistent with the Coal Authorities interactive viewer which also indicates that the Dunsil seam is not associated with 'Probable Shallow Coal Mine Workings'.

Deep Mine Workings

The land has been affected by deeper mineworkings in various coal seams over the years, however settlement will now be long complete and as the area is remote from any active coalfield it should not be affected by deep mining subsidence for the foreseeable future.

Landfill

According to the Borough Landfill Register the scheme is located upon Landfill Operation No. 130 (the playing fields area) which is of a Category 1 nature; and partially site No. 131 to the south of Dodworth road, which is also a Category 1 site. These sites are illustrated on plan no. M3360/9A and detailed in the annexed extracts from the register.

Past Land Use

No other former land uses are apparent other than the afore mentioned coal mining, clay quarrying and subsequent landfill operations.

Conclusions

1. The land can be regarded as stable from the deep coal mining subsidence aspect and this position should remain for the foreseeable future

2. Negligible risks are considered from the shallow coal mining position given the nature of the surface coal seams in this vicinity; no intrusive investigation of coal seam horizons are deemed necessary.

3. Care should be taken for any signs of the mine adit in close proximity to the east (Victoria Colliery) adjacent to Dodworth road. If observed the Coal Authority should be notified for their input as owners of the feature; SYMAS could be consulted for further advice as required.

   As regards the mine shafts of the former Penny Pie colliery, which are likely to be in BMBC ownership, care should be taken during any landscaping works in their vicinity – although they are known to be 'treated' it is not known if they are adequately capped near the surface; as such heavy plant should avoid the vicinity. The scheme itself lies clear of the shafts. SYMAS could be consulted for further advice if any more substantial works are required around or over them, or if any further investigations are deemed necessary.

4. Any exposed coal (if encountered in any deep excavations etc) should be removed to the base of the seam and blinded off to help prevent spontaneous combustion.

5. The nature of the fill material will require investigation as to potential requirements for removal of contamination, capping layers etc and to determine what works are required to provide adequate foundations for the scheme, such as compaction or piling for example.

6. An inspection for suitability of the bedrock would be prudent in the areas of anticipated geological faulting – for any signs of weak/fractured ground that will require treatment/stabilisation works; although depth of fill material may make this unfeasible/unnecessary.

7. All usual safety precautions with regard to fugitive gases should be employed in any deep excavations and within construction design considering the made ground/fill material classified as Category 1 Landfill *(where Category 1 indicates a "site which is known to be producing landfill gas and from which landfill gas is migrating.").*

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Report prepared by M. Lyons 8th August, 2017.



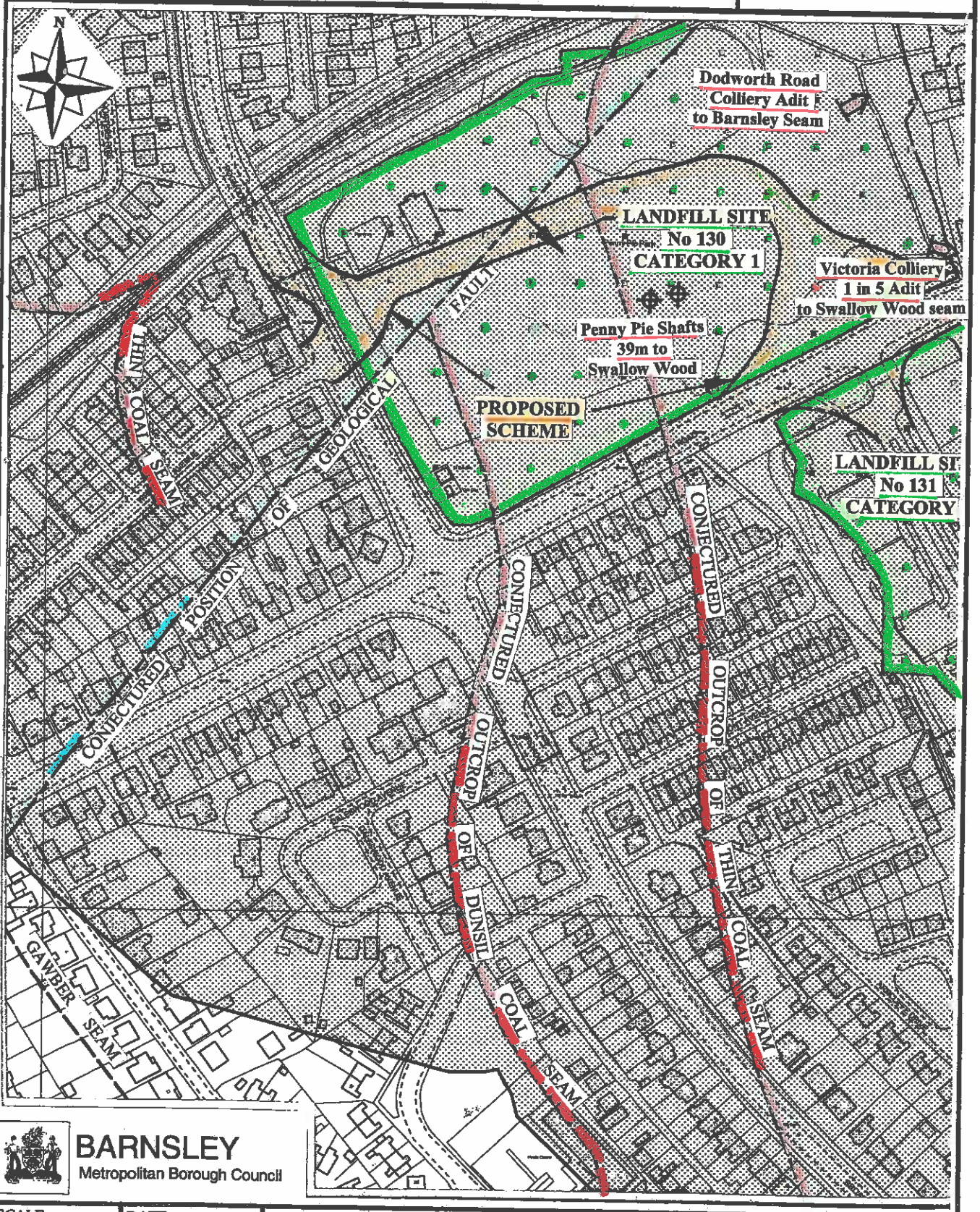
Principal Mining Engineer.

DRAWING TITLE

A628 DODWORTH ROAD CROSSROADS IMPROVEMENT SCHEME MINING & GEOLOGICAL INFORMATION

DRAWING NO.

M3360/9A



BARNSLEY
Metropolitan Borough Council

SCALE	DATE		O.S REFERENCE
1:2500	7.8.17	SOUTH YORKSHIRE MINING ADVISORY SERVICE	SE 3206
DRAWN BY: AS	CHECKED BY:		P. JAMES BSc (Hons) PRINCIPAL MINING ENGINEER

BMBC Licence Number 100022264 2012

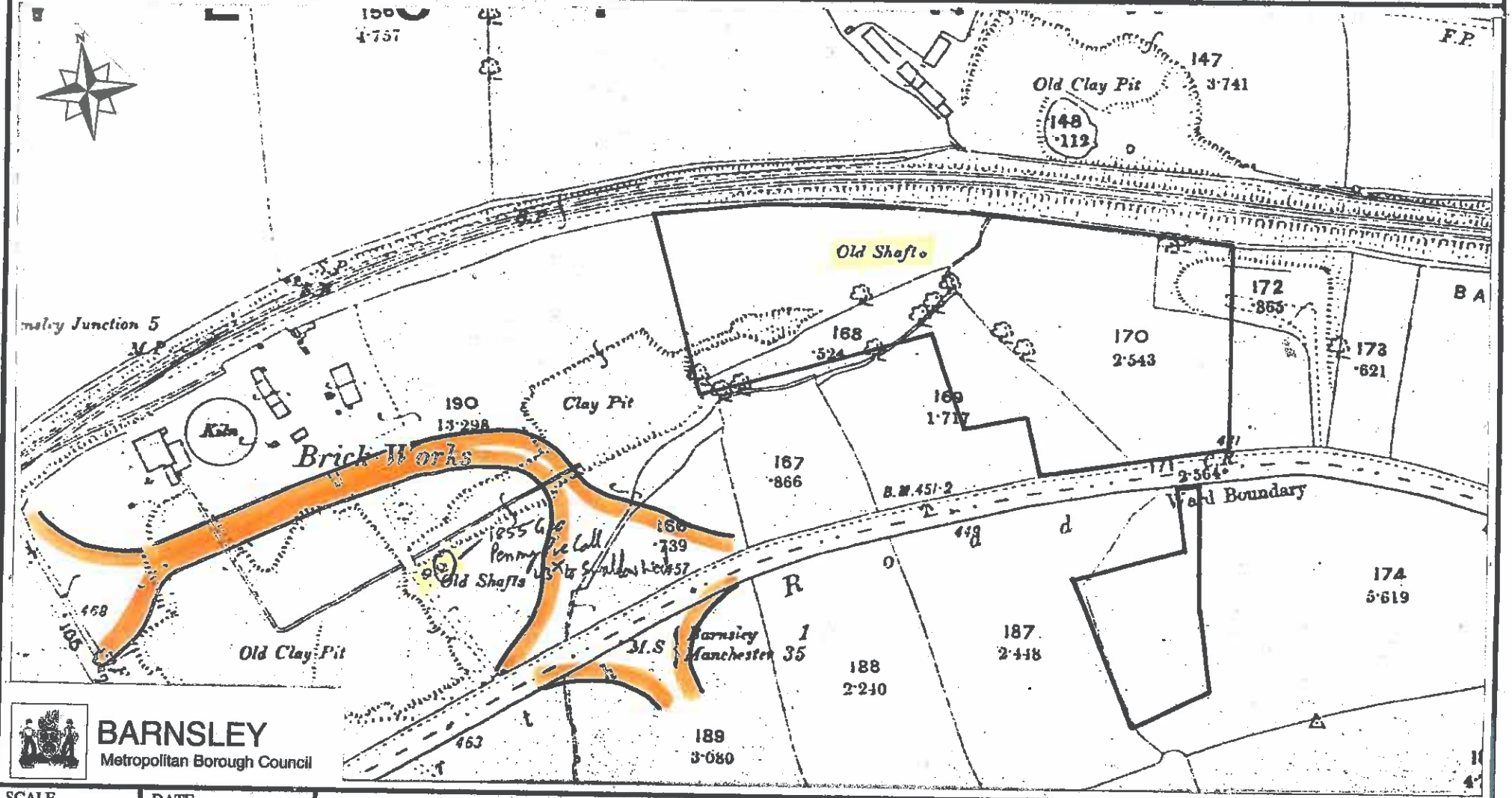
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DRAWING TITLE

A628 DODWORTH ROAD CROSSROADS IMPROVEMENT SCHEME HISTORICAL INFORMATION

DRAWING NO.

M3360/9B



SCALE	DATE		O.S REFERENCE
1:2500	7.8.17	SOUTH YORKSHIRE MINING ADVISORY SERVICE	274/7 -1893
DRAWN BY: AS	CHECKED BY:		P. JAMES BSc (Hons) PRINCIPAL MINING ENGINEER

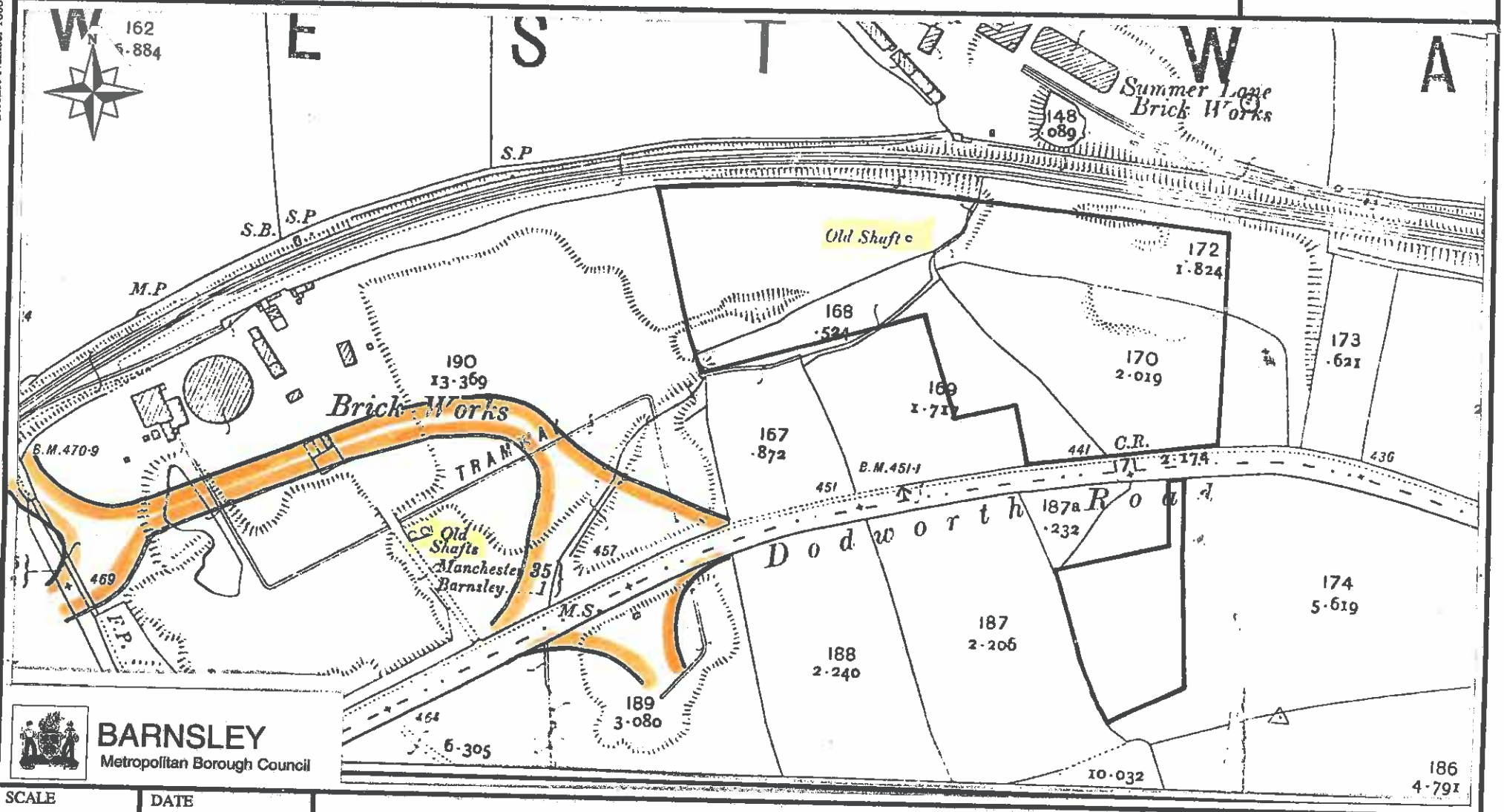
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DRAWING TITLE

A628 DODWORTH ROAD CROSSROADS
IMPROVEMENT SCHEME
HISTORICAL INFORMATION

DRAWING NO.

M3360/9C



BARNSLEY
Metropolitan Borough Council

SCALE	DATE	SOUTH YORKSHIRE MINING ADVISORY SERVICE	O.S REFERENCE
1:2500	7.8.17		274/7 - 1906
DRAWN BY: AS	CHECKED BY:		P. JAMES BSc (Hons) PRINCIPAL MINING ENGINEER

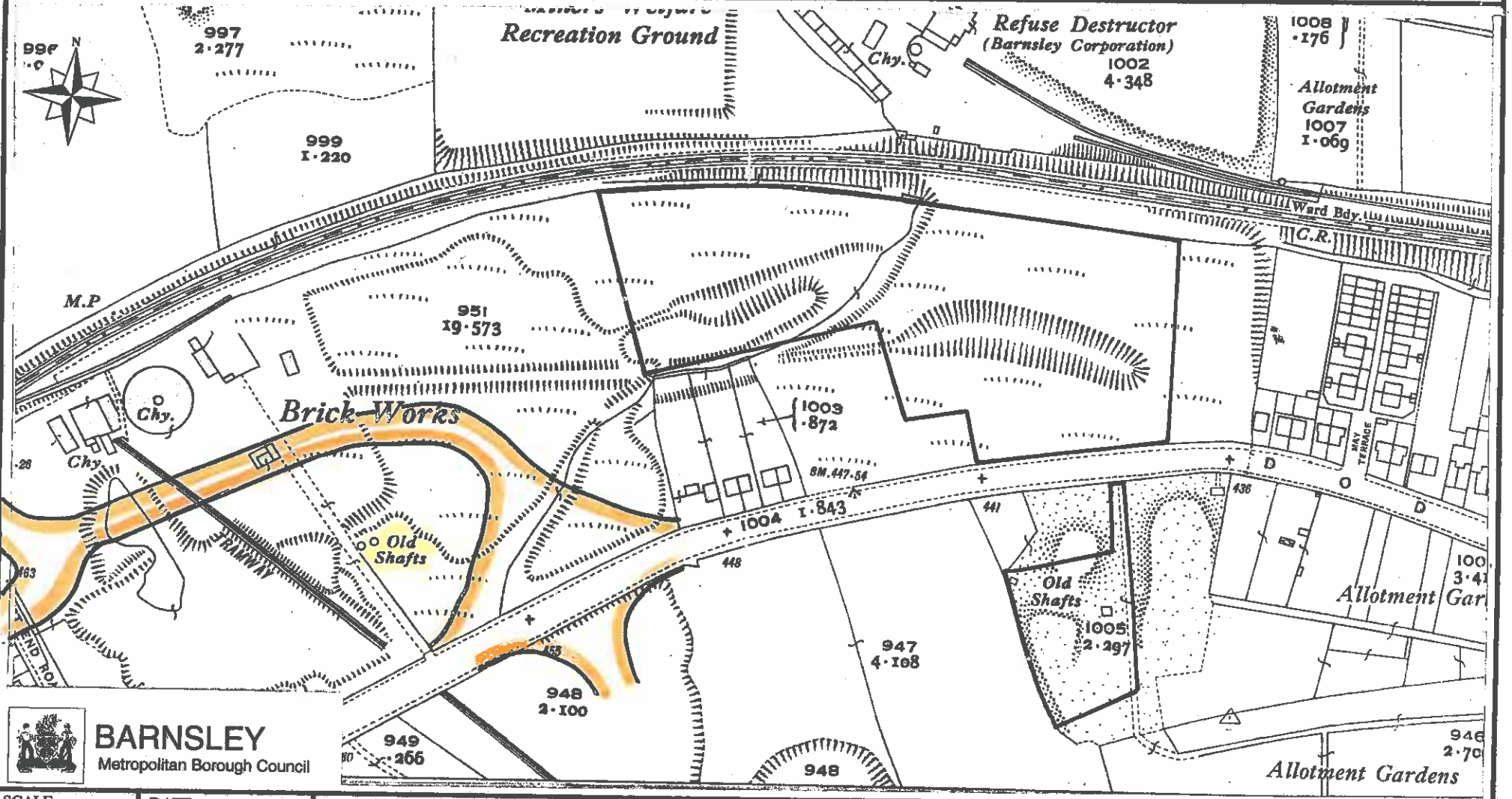
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A628 DODWORTH ROAD CROSSROADS IMPROVEMENT SCHEME HISTORICAL INFORMATION

DRAWING NO.

M3360/9D



BARNSLEY
Metropolitan Borough Council

SCALE	DATE
1:2500	7.8.17
DRAWN BY	CHECKED BY
AS	

SOUTH YORKSHIRE MINING ADVISORY SERVICE

O.S REFERENCE
274/7 - 1932

P. JAMES BSc (Hons)
PRINCIPAL MINING ENGINEER

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LANDFILL SITES REGISTER - LANDFILL GAS MONITORING

ANNEX

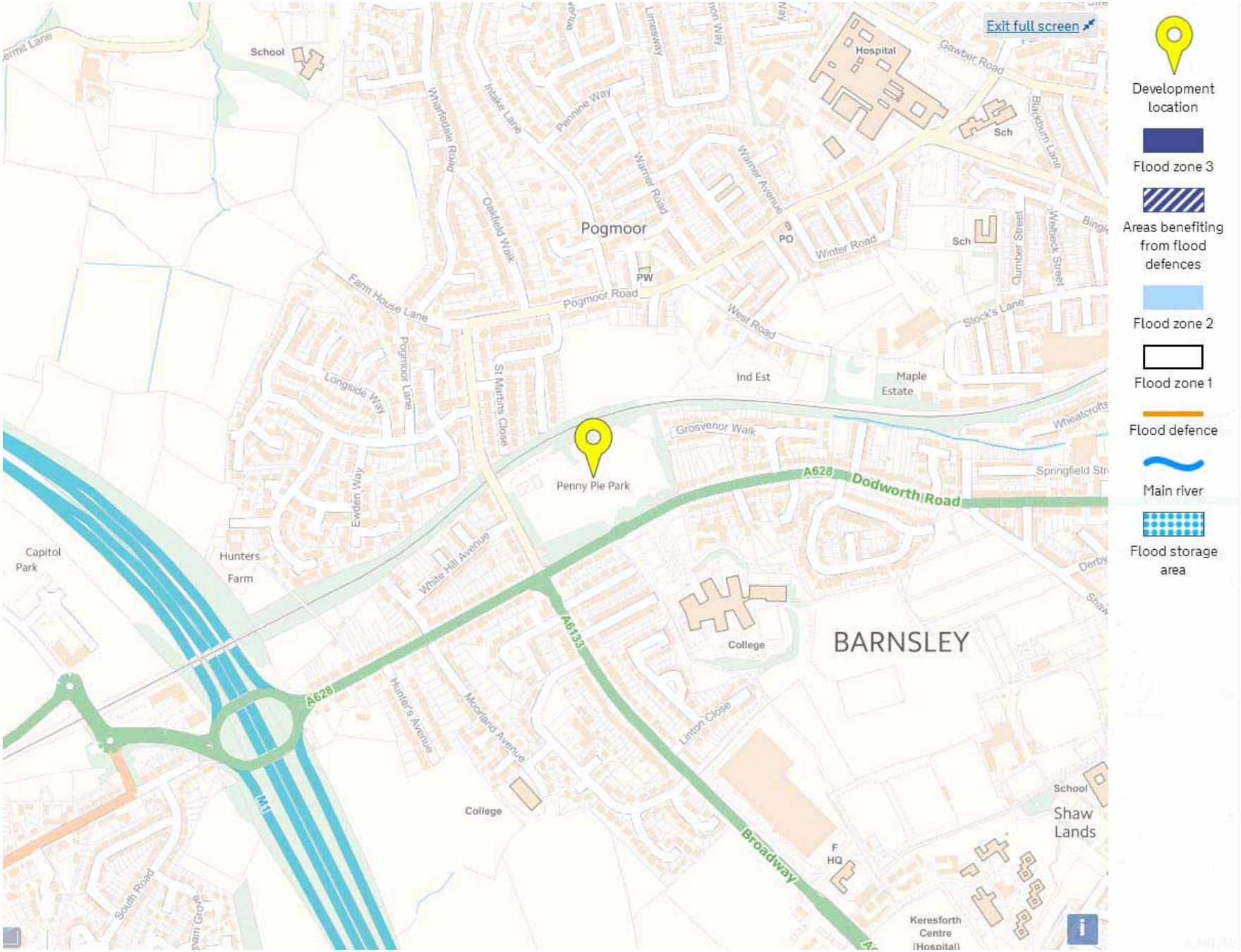
No.	Site	National Grid Ref.	Planning Permission	Waste Disposal Site Licence	Site Operator	Landfill Material	Landfill commenced	Landfill completed	Category response	Total Volume 000's m^3	Final Land Use
129	Greaves Lane High Green Sheffield	339 981	Source: Sheffield City Council			Domestic Sewage Sludge		1977	2	250	
130	Dodworth Road Crossroads Pogmoor Barnsley	327 064	Source: Environmental Health						1		
131	S. R. Gents Dodworth Road Barnsley	328 062	Source: Environmental Health						1		
132	Lidget Lane Thurnscoe	470 055	Source: Doncaster Metropolitan Borough Council						2		
133 Closed	Former Quarry off Dovecliffe Road Wombwell Barnsley	381 028	WW 311 Issued 6/6/58		Wombwell UDC	Domestic			2		Woodland
134 Closed	Recreation Ground Pogmoor Road Barnsley	328 066	Source: Environmental Health						2		Amenity
135 Closed	Land off Dayhouse Lane and Wilthorpe Road Gawber Barnsley	327 078	DT 1693 Issued 2/7/70		Mr. B. Dixon	Excavation			2		Agriculture

GROUNDSURE REPORT EXTRACTS

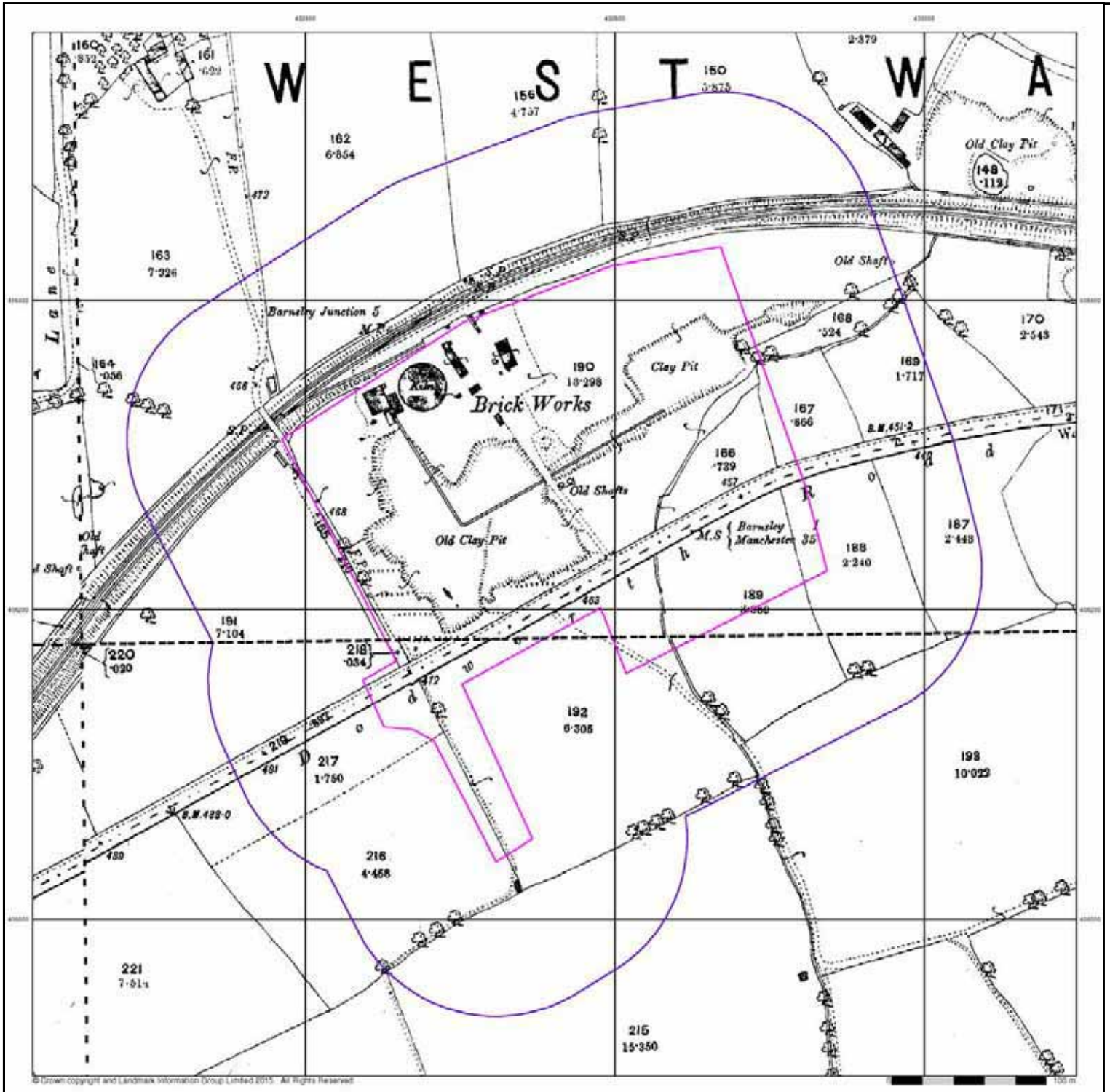
Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
76	**BGS Recorded Landfill Sites** Site Name: Disused Quarry Location: Dodworth Rd, BARNSLEY, Yorks Authority: British Geological Survey, National Geoscience Information Service Ground Water: Information not available Surface Water: Information not available Geology: N/A Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Derived	A13SE (SE)	0	-	432796 406212
77	**Historical Landfill Sites** Licence Holder: Mr J Clayton Location: Oakworth, Keighley Name: Quarry at Higher Spring Head Farm Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD04324 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert and Commercial Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 4400/0532 BGS Ref: Not Supplied Other Ref: 671, 4400/(130)	A13NW (N)	0	2	432760 406335
78	**Historical Landfill Sites** Licence Holder: Barnsley Metropolitan Borough Council Location: Dodworth Road, Barnsley Name: S.R. Gents Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD04326 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Not Supplied EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 4400/0533 BGS Ref: Not Supplied Other Ref: 4400/(131)	A13SE (E)	0	2	432878 406207
79	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Pogmoor Road, Barnsley Name: Recreation Ground Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD04325 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Not Supplied EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 4400/0536 BGS Ref: Not Supplied Other Ref: 4400/(134)	A13NE (N)	27	2	432811 406459
80	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Dodworth Road, Barnsley, Yorkshire Name: Disused Quarry Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD31670 First Input Date: 31st December 1968 Last Input Date: Not Supplied Specified Waste Type: Not Supplied EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: 1892 Other Ref: Not Supplied	A13SE (SE)	109	2	432899 406081

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
81	**Historical Landfill Sites** Licence Holder: Polar Motors Location: Pogmoor Name: Land North of Dodworth Road Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD04327 First Input Date: 1st February 1992 Last Input Date: 31st December 1992 Specified Waste Type: Not Supplied EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: 4400/(139)	A13NE (NE)	159	2	433041 406422
82	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Pogmoor Name: Allotment Gardens Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD04330 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Not Supplied EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: 4400/B197	A13NE (NE)	253	2	433083 406568
83	**Historical Landfill Sites** Licence Holder: A F Budge Location: Pogmoor, Barnsley Name: West Road Operator Location: Public Services Department, Central Services Department, Kendray Street, Barnsley Boundary Accuracy: As Supplied Provider Reference: EAHLD04328 First Input Date: 15th July 1987 Last Input Date: 31st December 1987 Specified Waste Type: Deposited Waste included Inert and Commercial Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 4400/0566 BGS Ref: Not Supplied Other Ref: WD2 B19, 20B572(57), WD20 B572, 4400/B572, 4400/0459	A14NW (NE)	259	2	433134 406457
84	**Historical Landfill Sites** Licence Holder: Co-op Retail Services Limited, Yorkshire Region Location: Stocks Lane, Barnsley, South Yorkshire Name: Land West of Summer Lane Dairy Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD04329 First Input Date: 30th November 1982 Last Input Date: 3rd June 1988 Specified Waste Type: Deposited Waste included Inert, Industrial and Commercial Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 4400/0463 BGS Ref: Not Supplied Other Ref: 20B38(61), 4400/B19, 4400/B38, WD20 B38	A14NW (NE)	291	2	433170 406455

EA MAPS / SEARCHES


Exit full screen
Development location
Flood zone 3
Areas benefiting from flood defences
Flood zone 2
Flood zone 1
Flood defence
Main river
Flood storage area
Penny Pie Park
Pogmoor
Pogmoor Road
Farm House Lane
Longside Way
Pogmoor Lane
Ewden Way
St Martins Close
Wharfedale Road
Intake Lane
Pennine Way
Limesway
Warner Road
Warner Avenue
Oakfield Walk
Winter Road
West Road
Stock's Lane
Clumber Street
Welbeck Street
Blackburn Lane
Gawber Road
Hospital
Sch
PO
PW
Ind Est
Maple Estate
Grosvenor Walk
Wheatcroft
Springfield Str
A628
Dodworth Road
Capitol Park
Hunters Farm
White Hill Avenue
A6133
College
BARNSLEY
Hunter's Avenue
Moorland Avenue
Linton Close
M1
South Road
Broadway
School
Shaw Lands
F HQ
Keresforth Centre (Hospital)
Derby
Shaw
School
Bingl

HISTORIC MAPS



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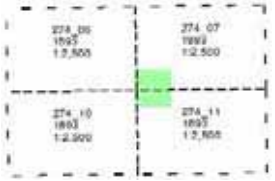
Yorkshire

Published 1893

Source map scale - 1:2,500

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Map Name(s) and Date(s)



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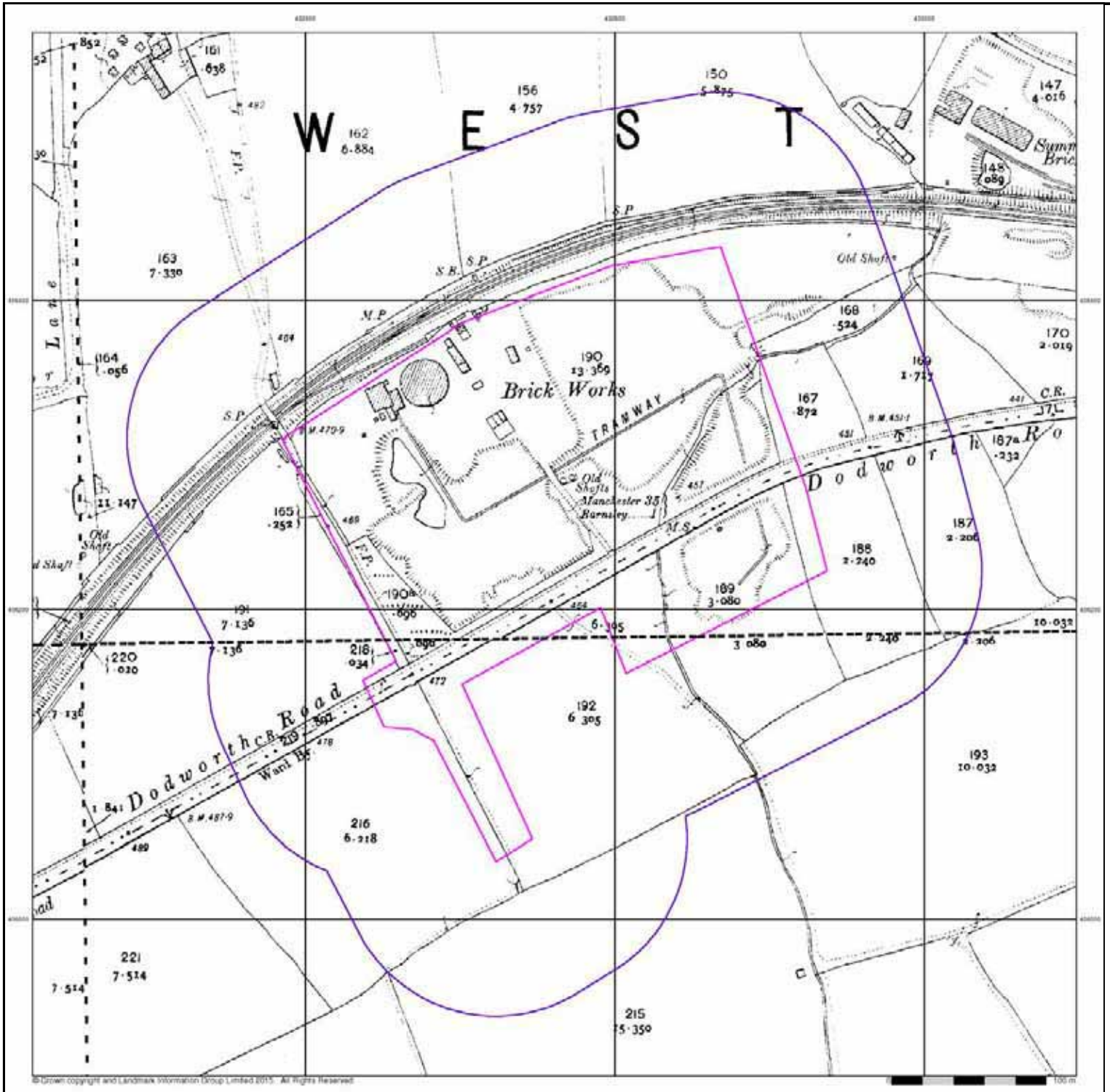
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Site Area (Ha):	6.98
Search Buffer (m):	100

Site Details

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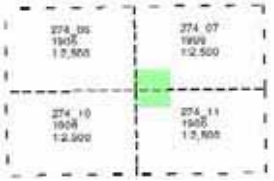
Yorkshire

Published 1906

Source map scale - 1:2,500

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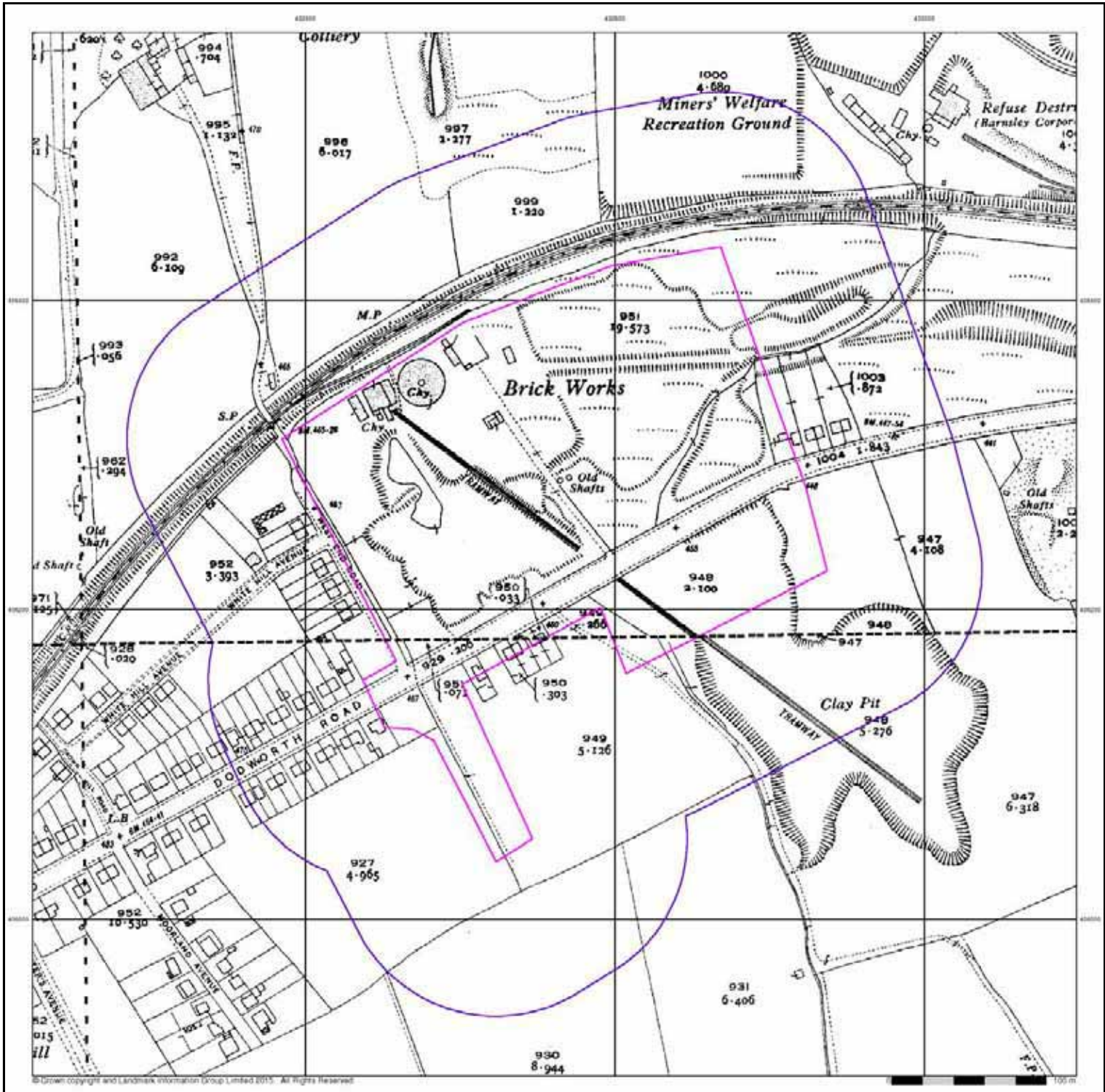
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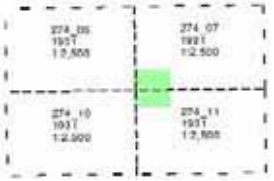
Yorkshire

Published 1931

Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A13



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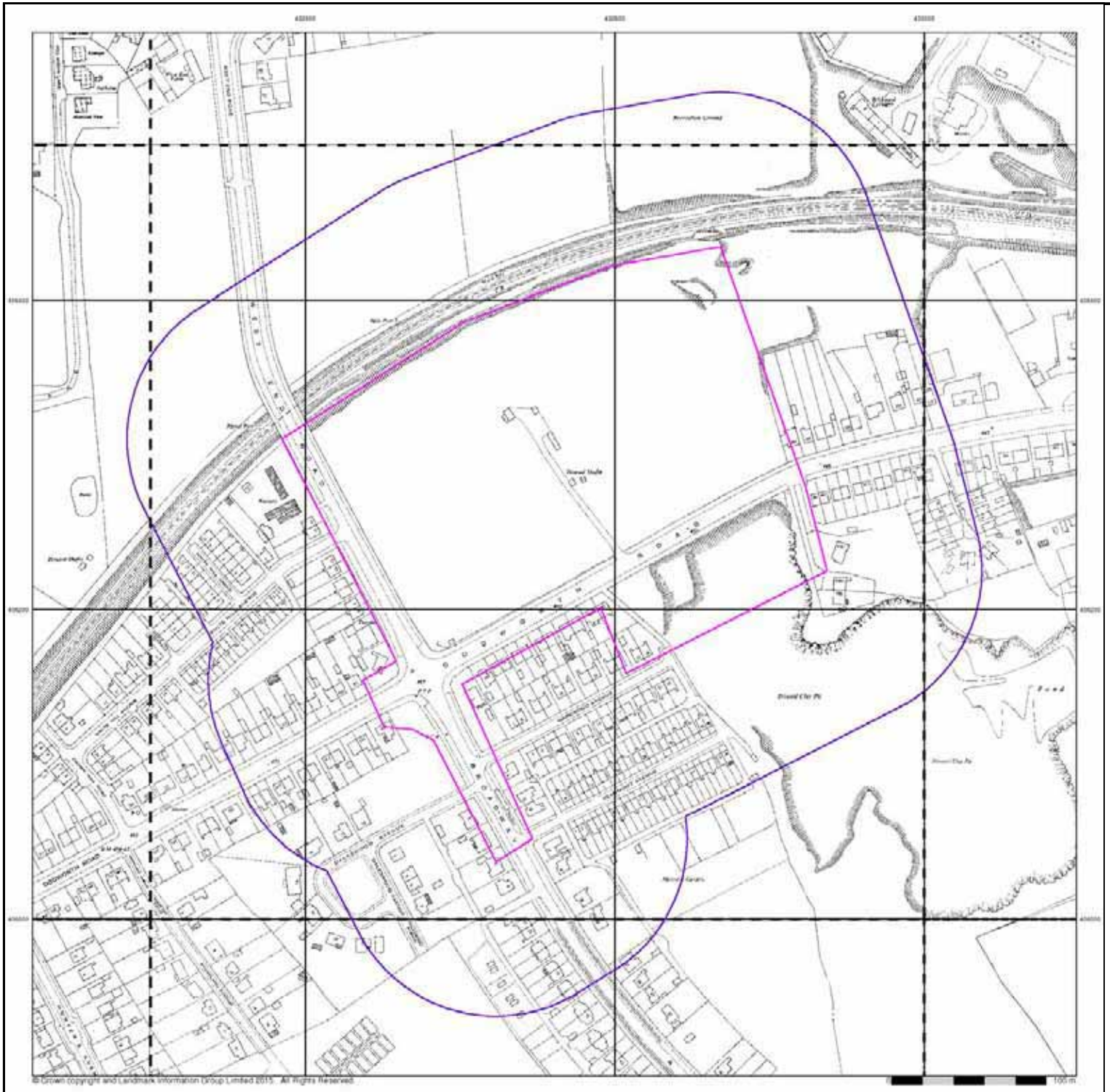
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Ordnance Survey Plan

Published 1960

Source map scale - 1:1,250

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Map Name(s) and Date(s)



Historical Map - Segment A13

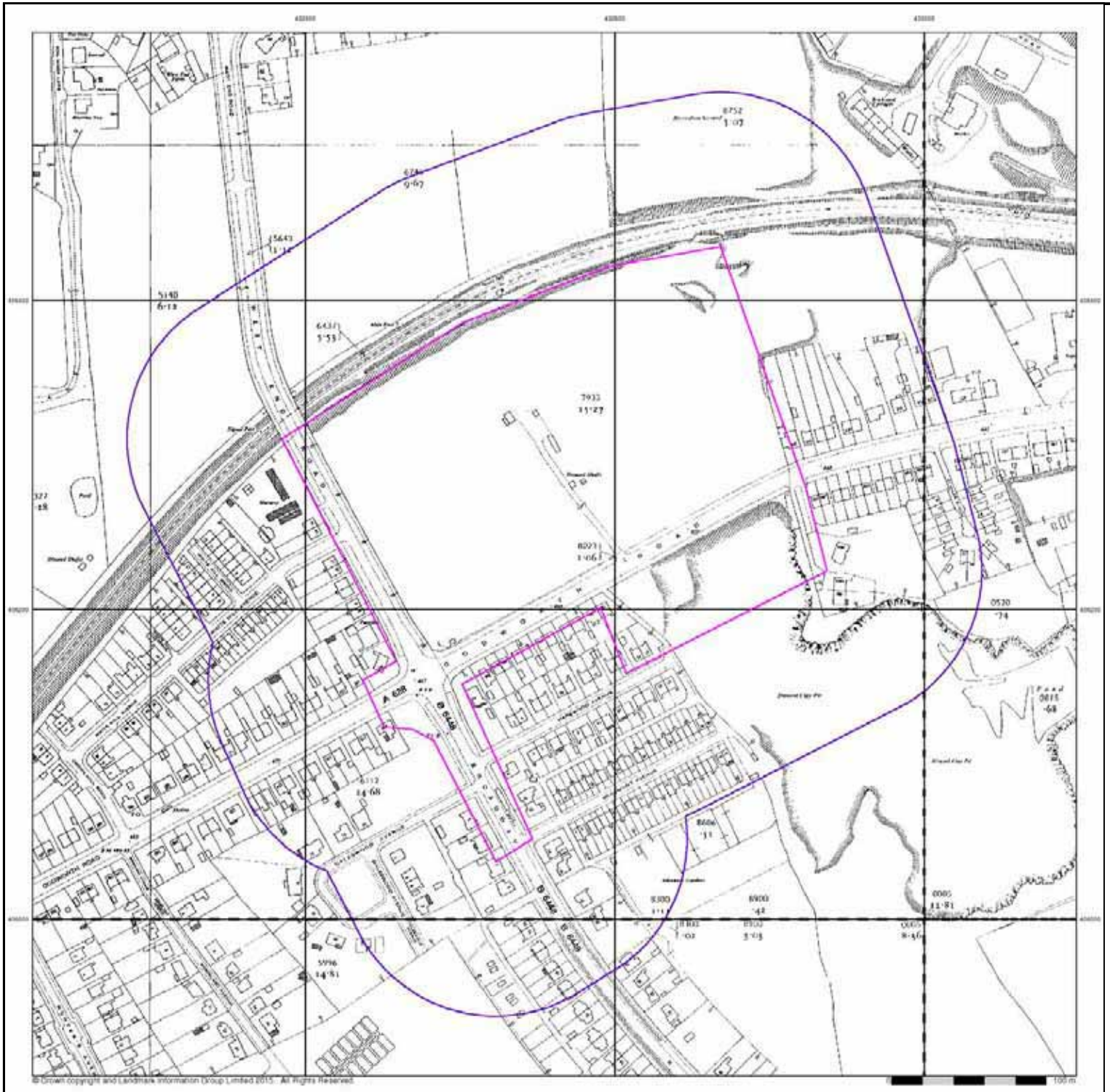


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Published 1961

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Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

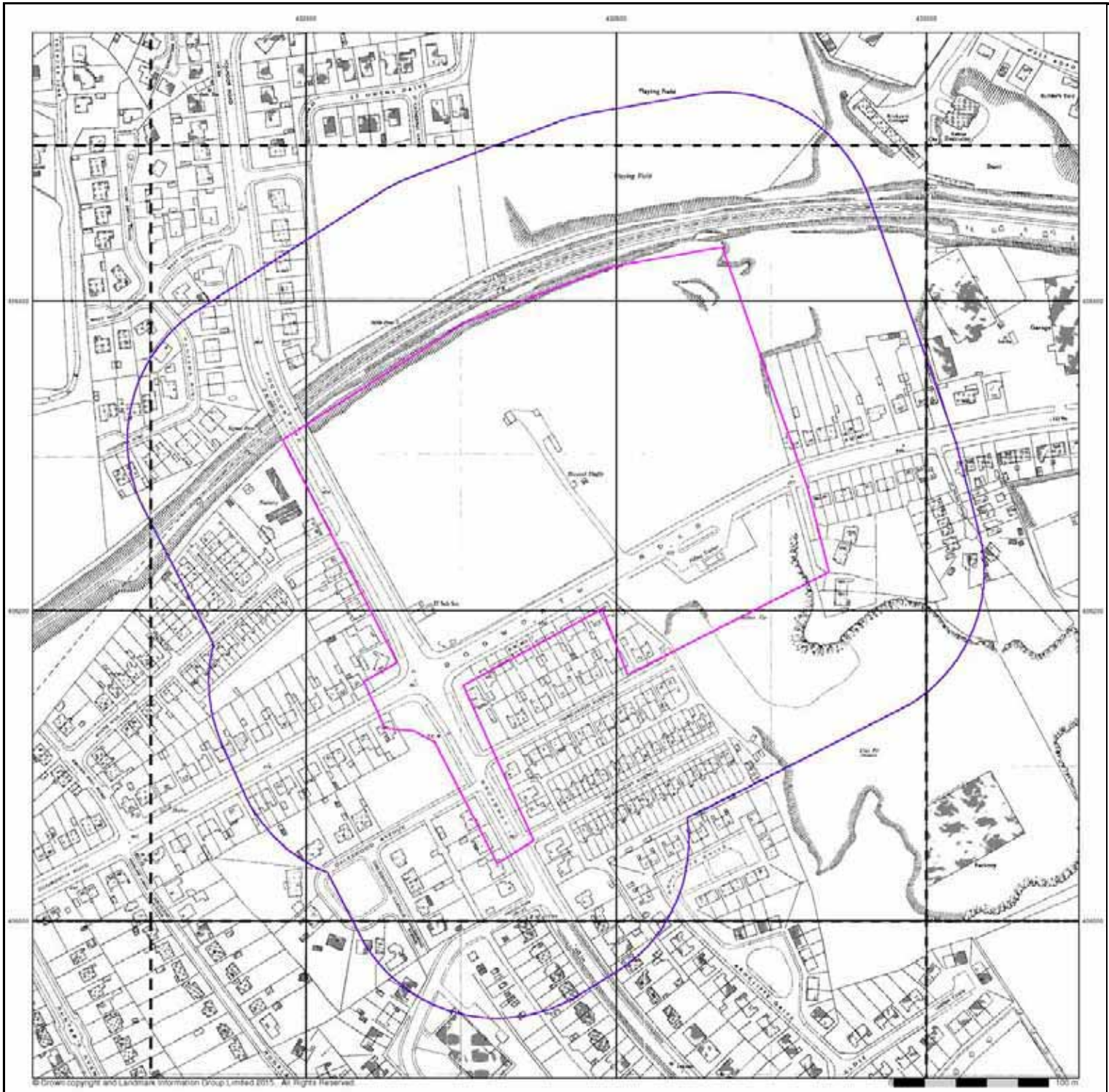
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Ordnance Survey Plan

Published 1969 - 1980

Source map scale - 1:1,250

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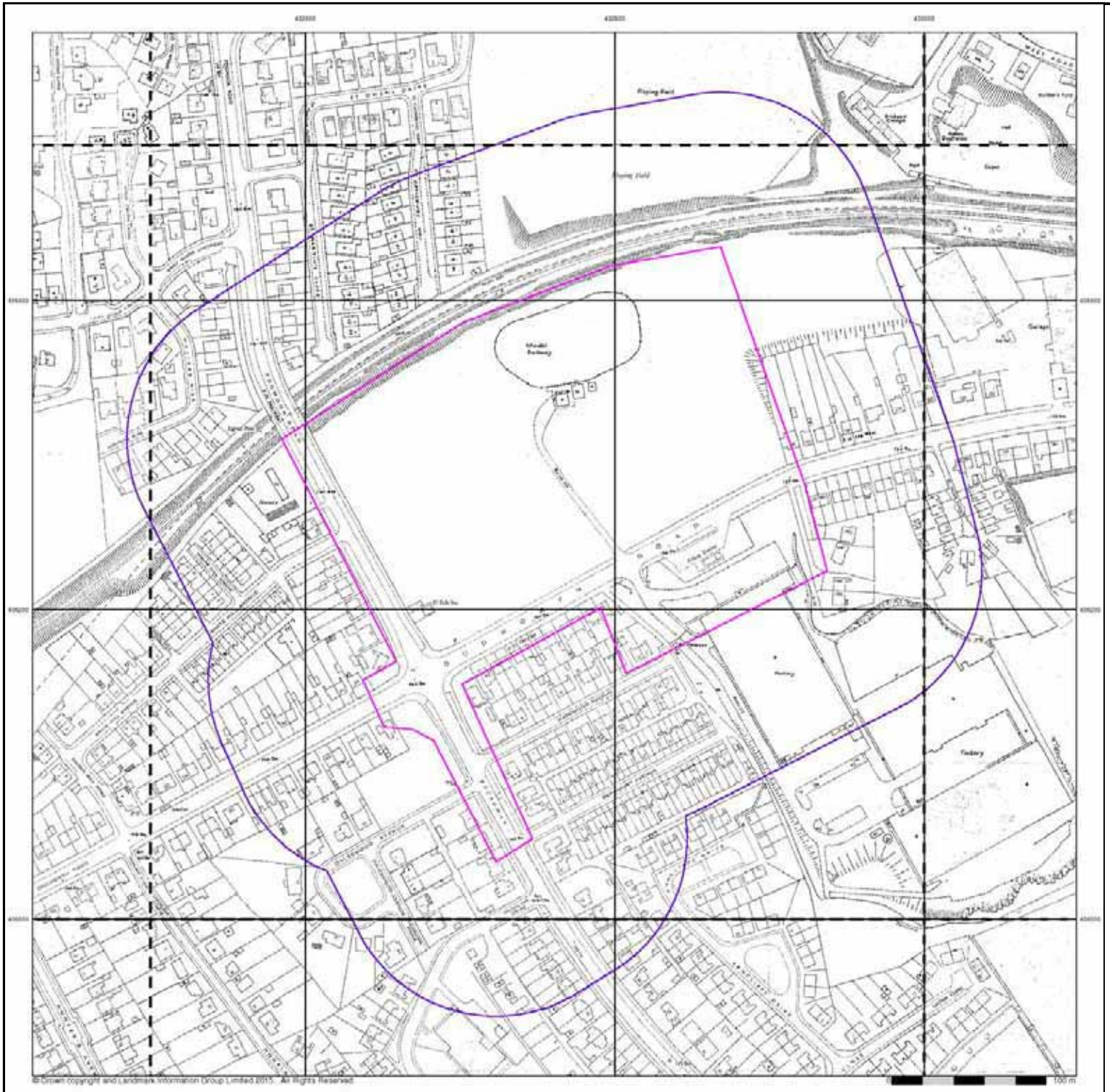
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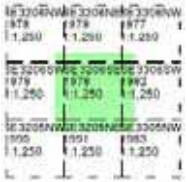
Additional SIMs

Published 1977 - 1991

Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

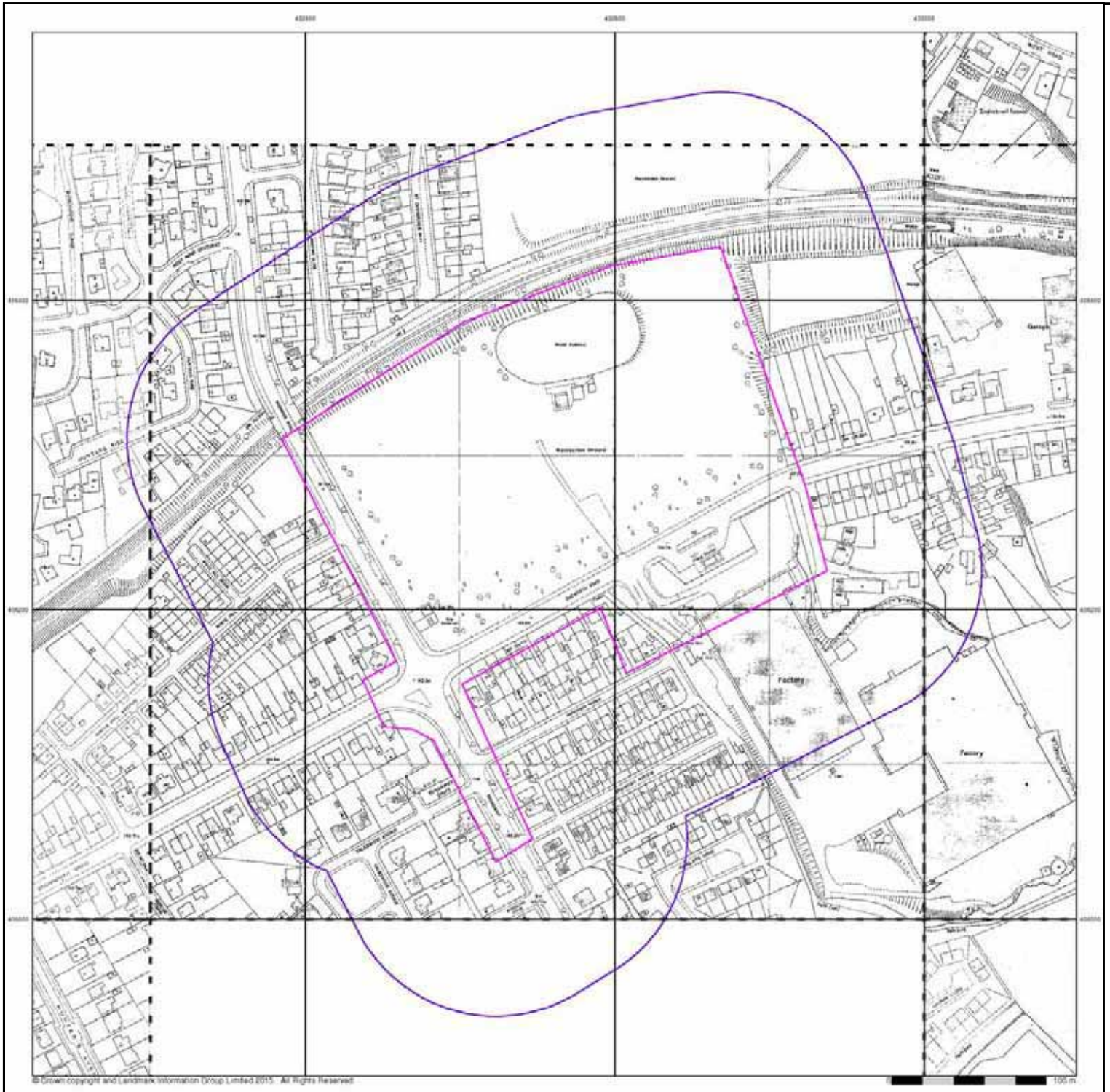
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Search Buffer (m):	100

Site Details

137, Pogmoor Road, BARNSLEY, S70 6PT

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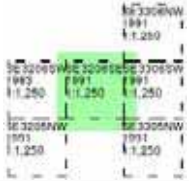
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Map Name(s) and Date(s)



Historical Map - Segment A13



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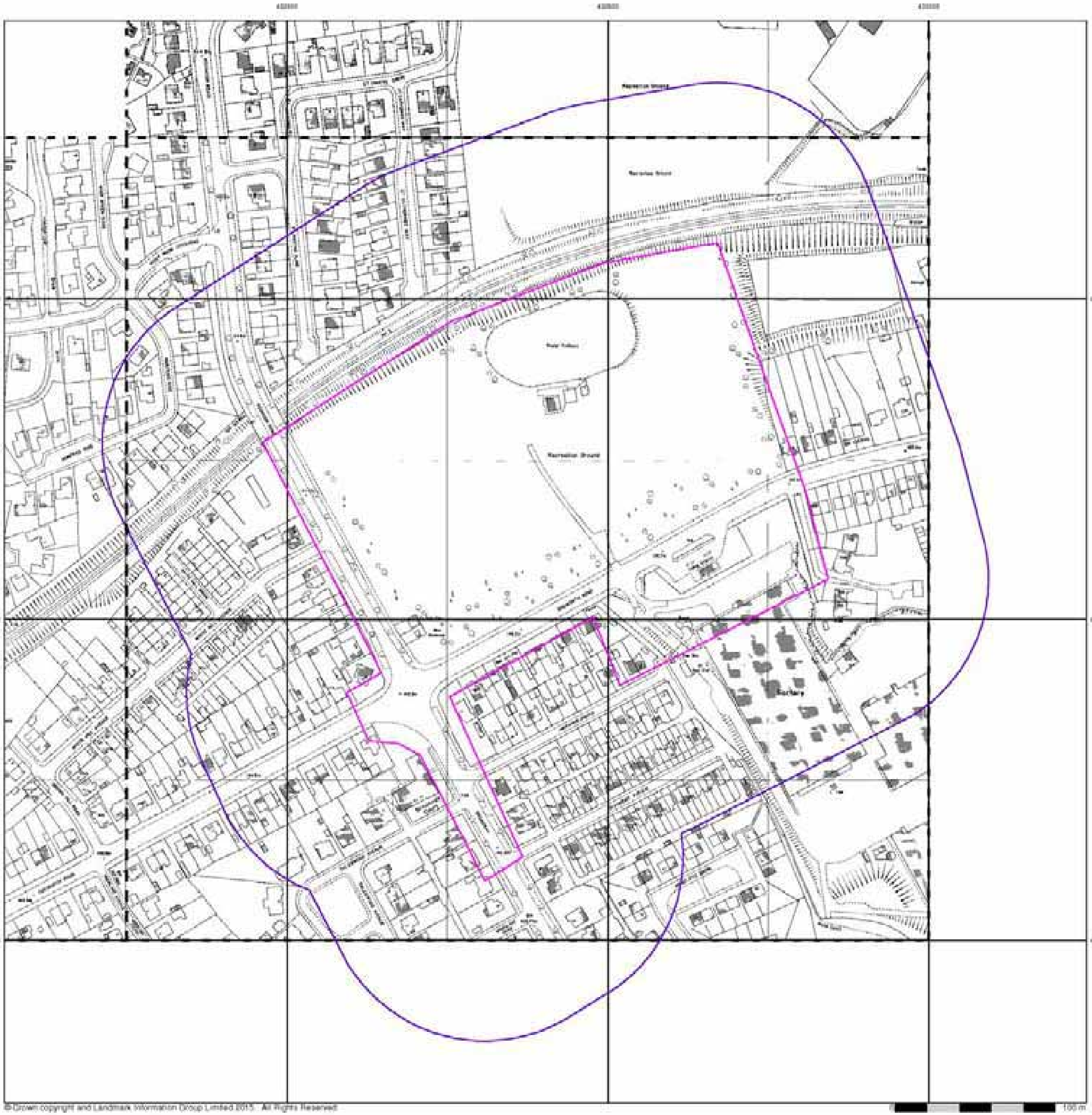
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Ordnance Survey Plan

Published 1987 - 1989

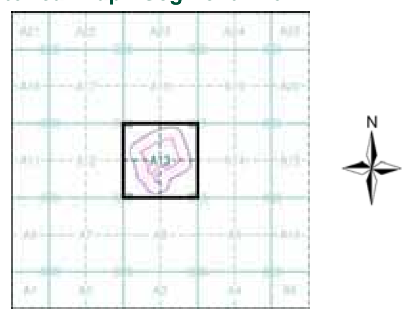
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



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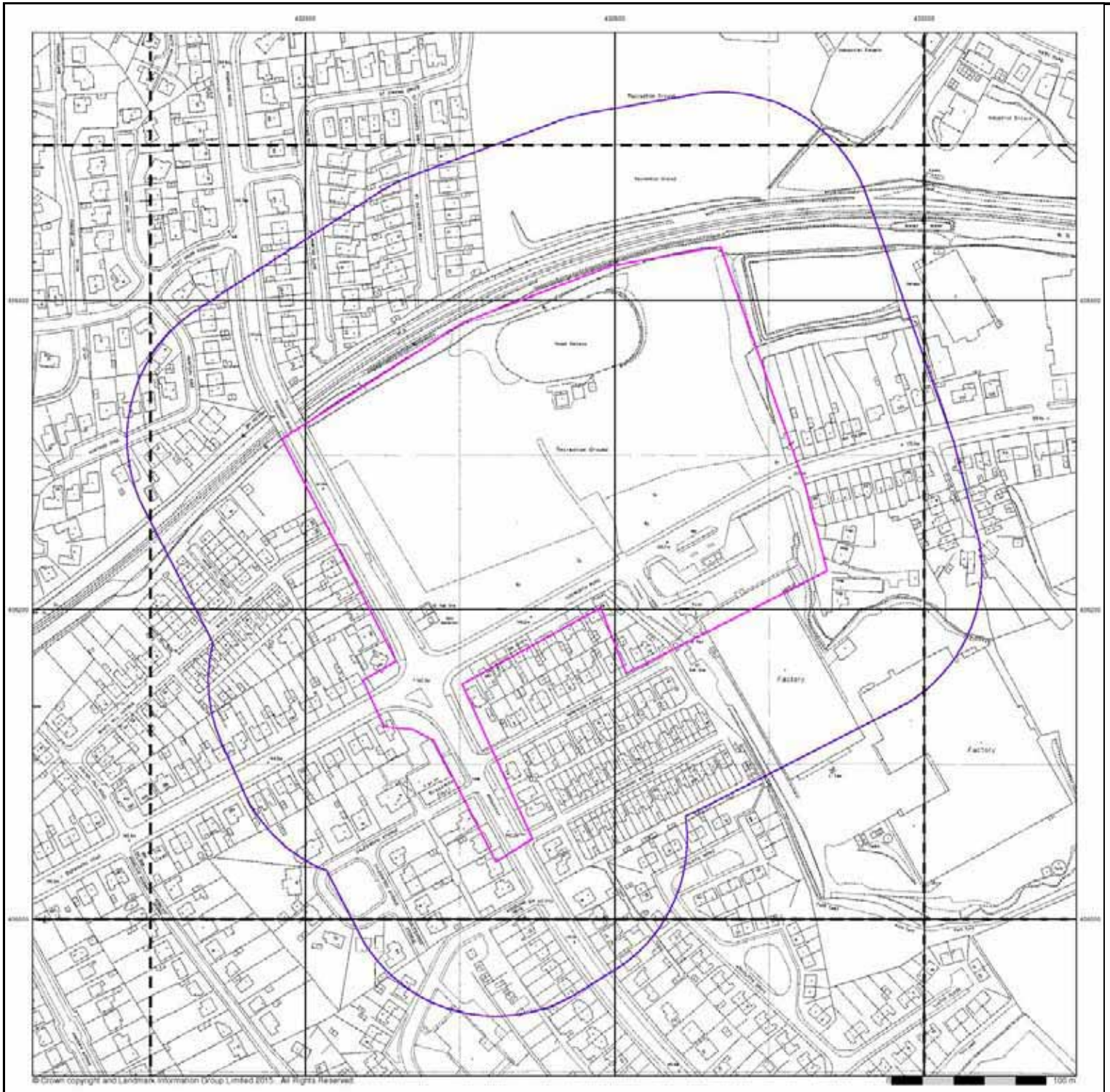
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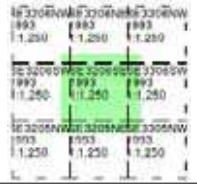
Large-Scale National Grid Data

Published 1993

Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



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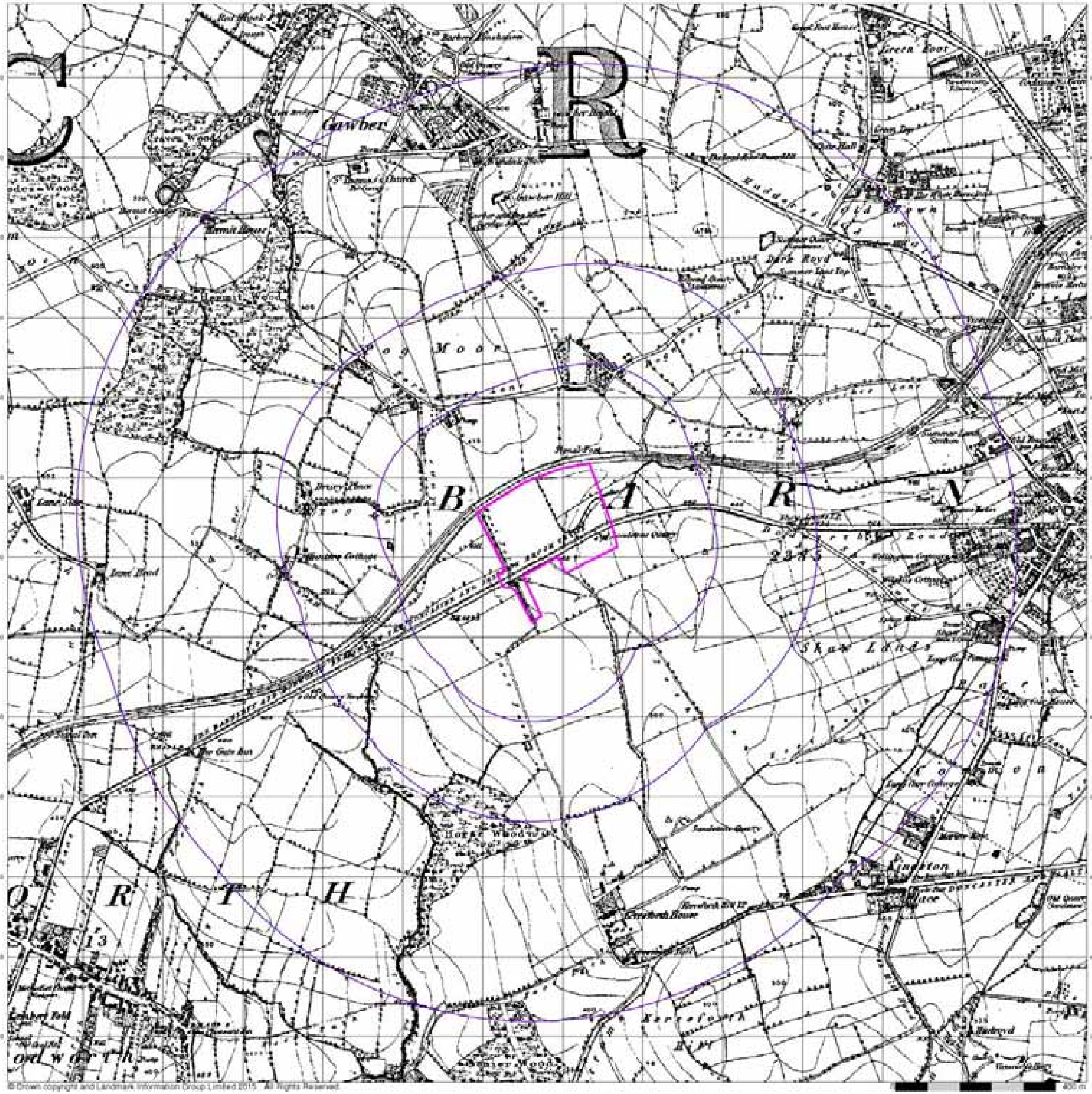
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Yorkshire

Published 1855

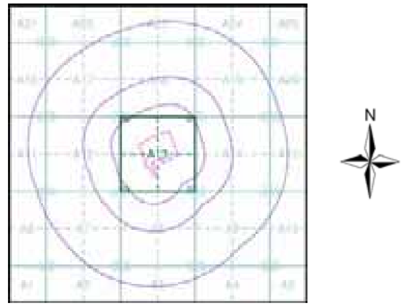
Source map scale - 1:10,560

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)

27400
1055
1:10,560

Historical Map - Slice A



Order Details

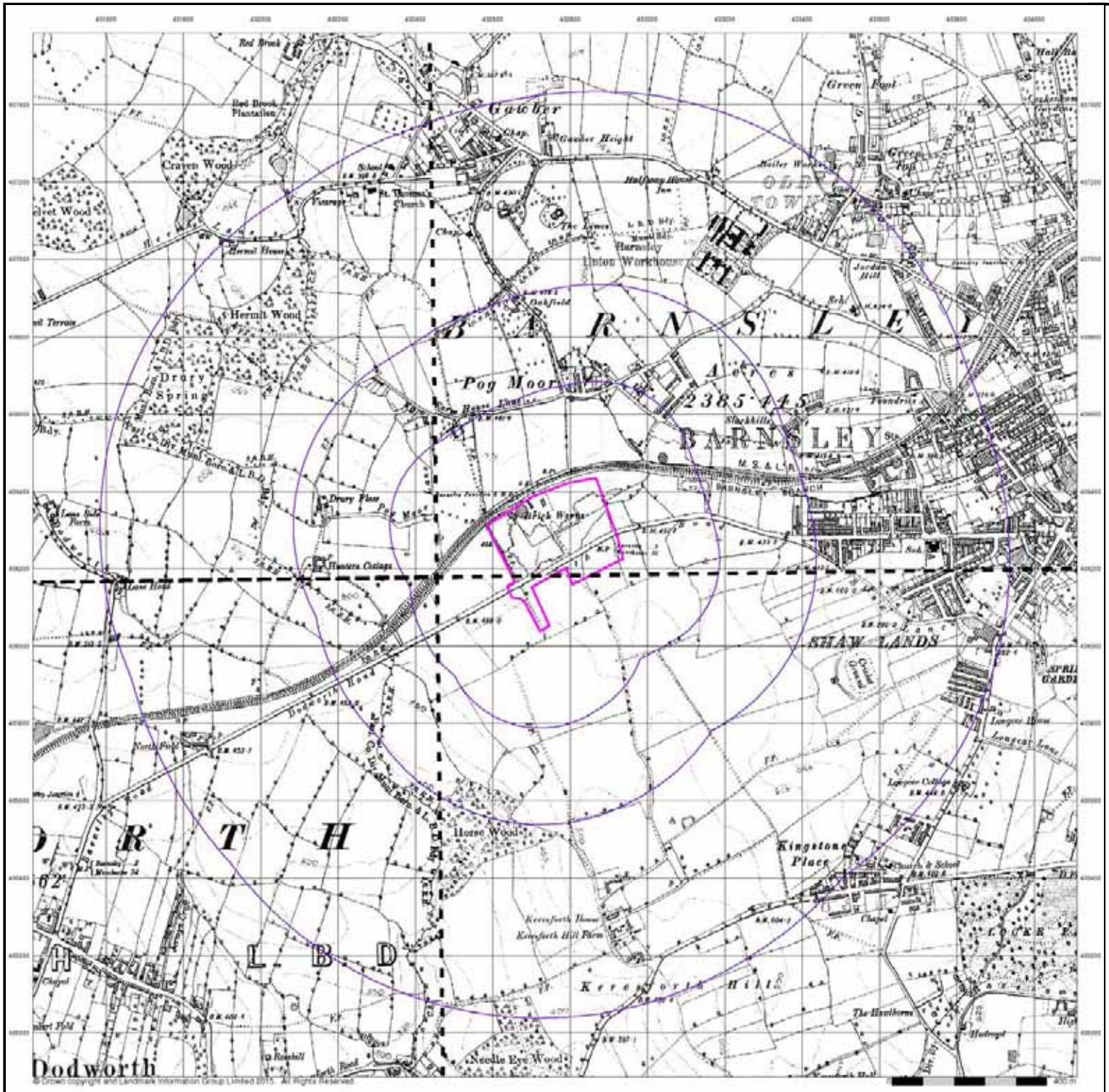
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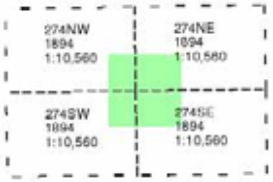
Yorkshire

Published 1894

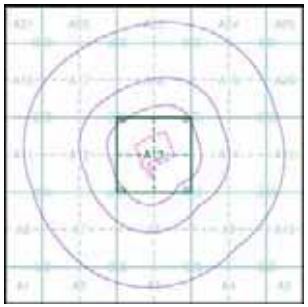
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

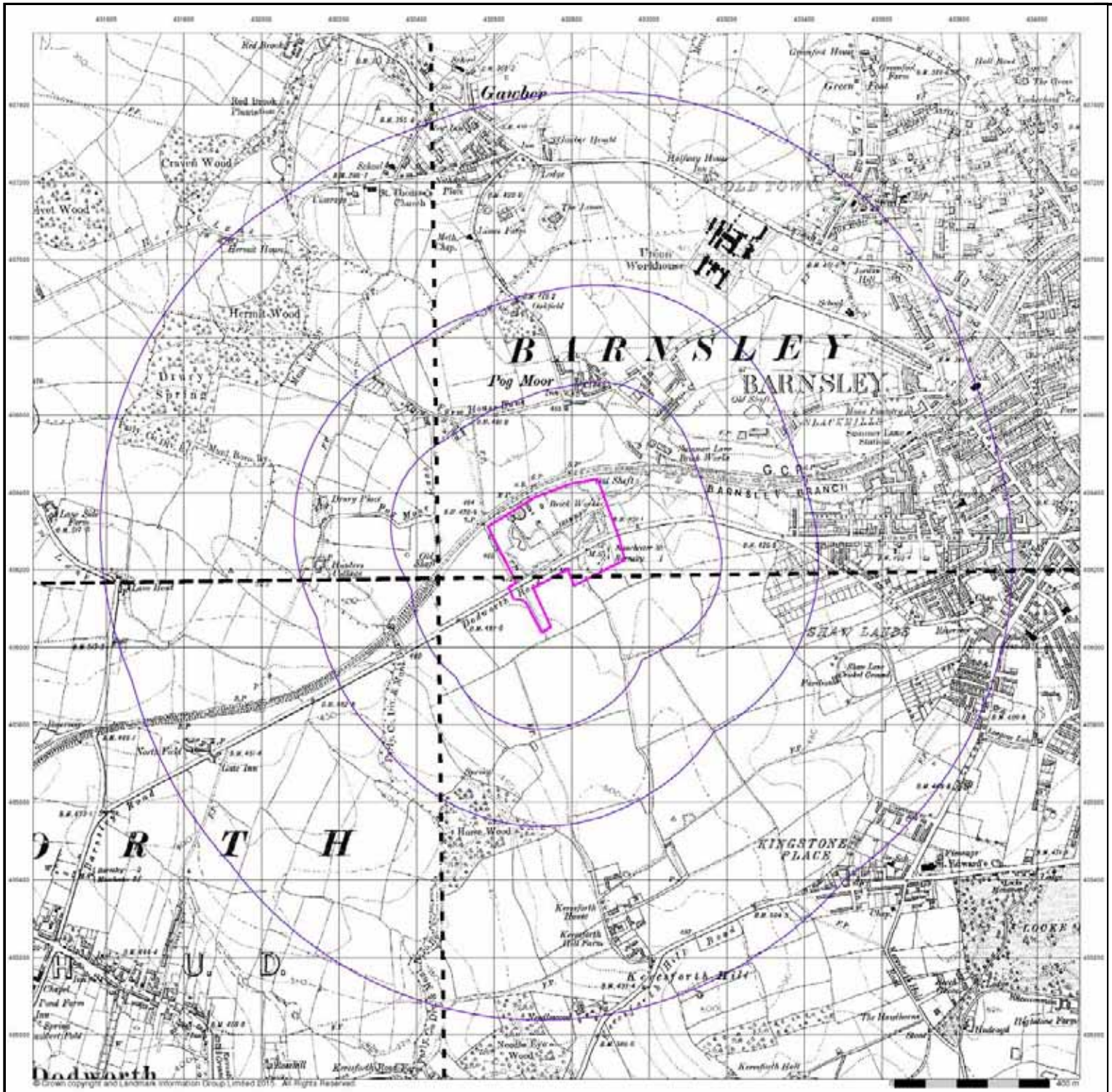
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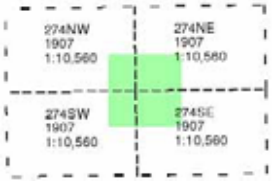
Yorkshire

Published 1907

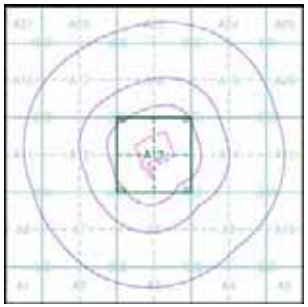
Source map scale - 1:10,560

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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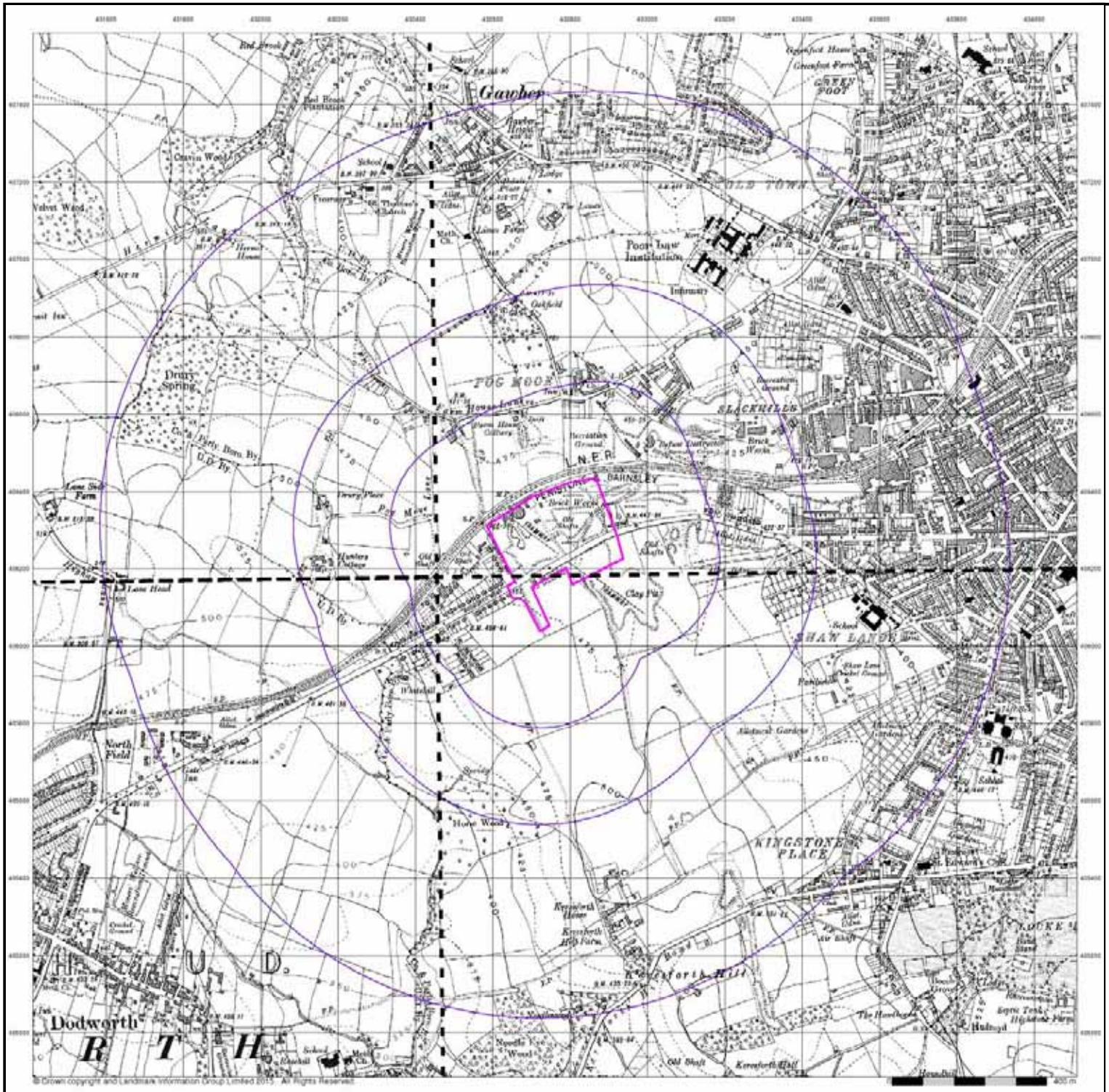
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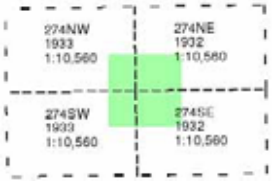
Yorkshire

Published 1932 - 1933

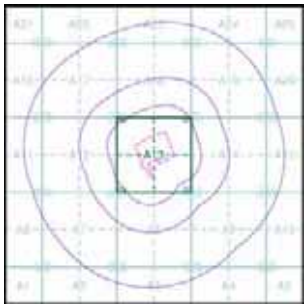
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

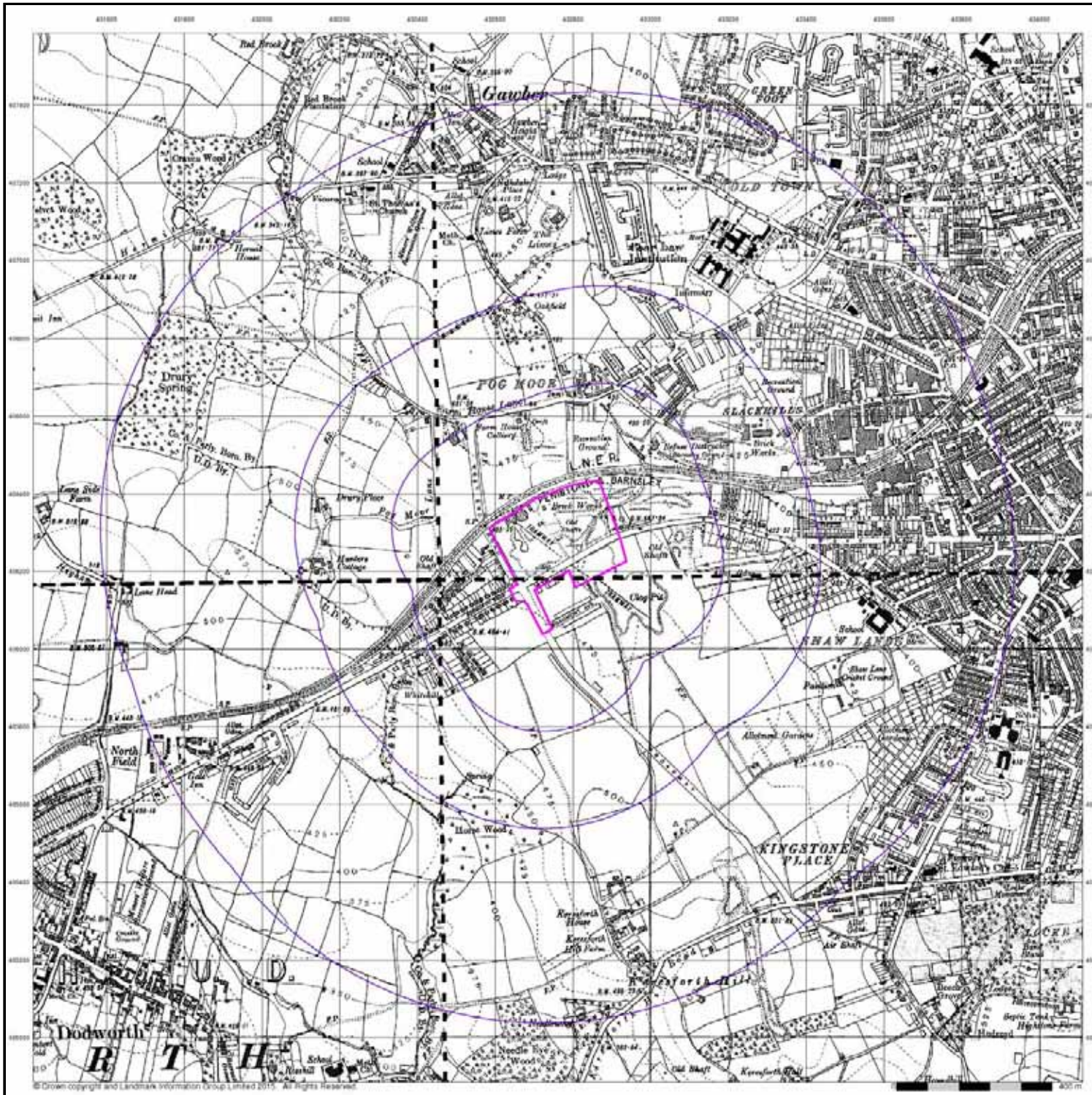
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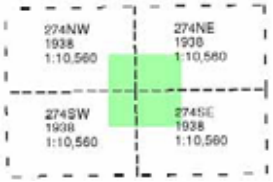
Yorkshire

Published 1938

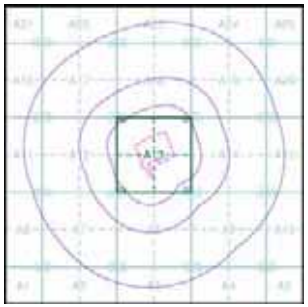
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Map Name(s) and Date(s)



Historical Map - Slice A



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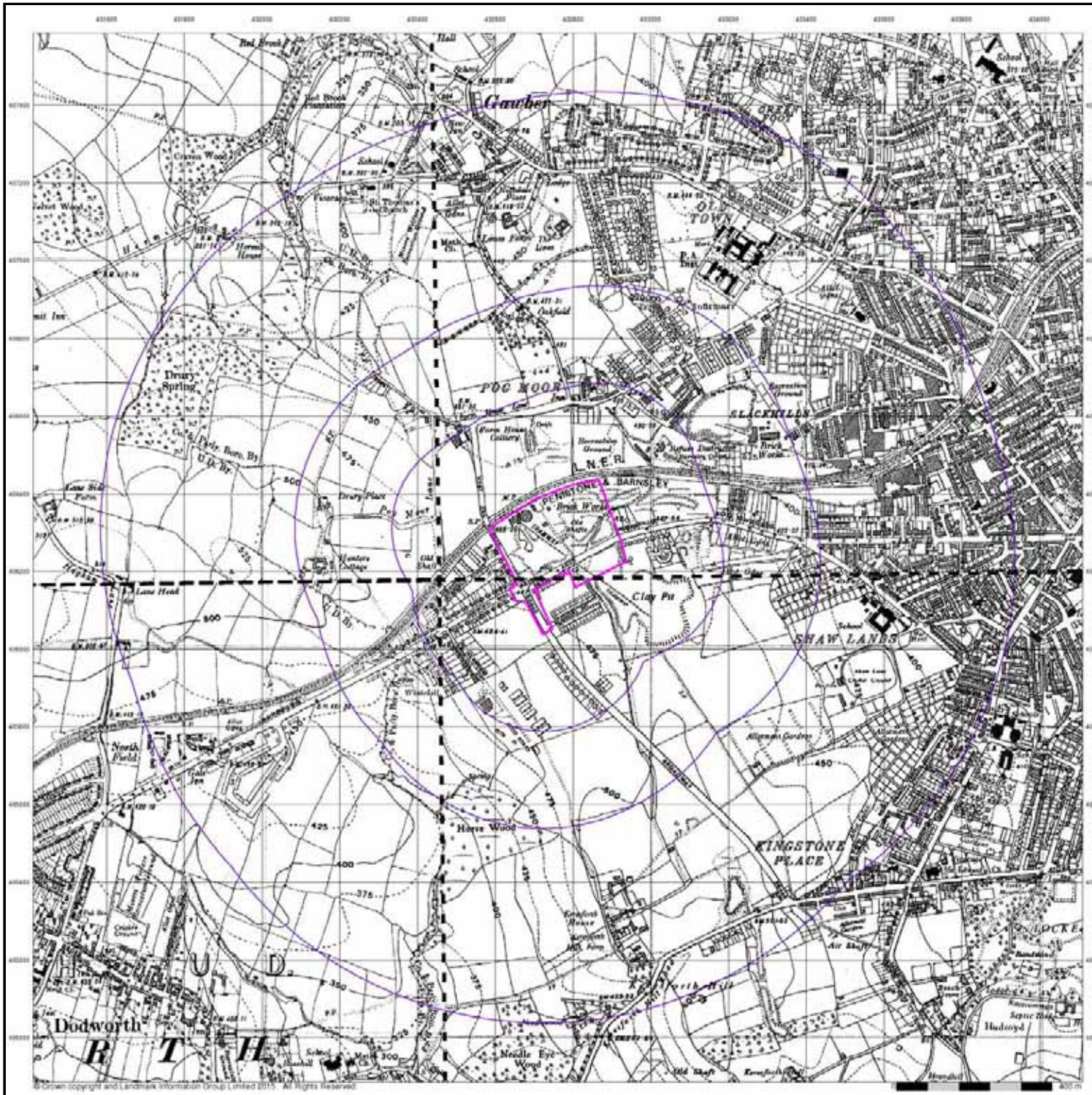
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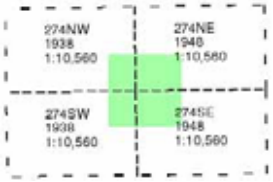
Yorkshire

Published 1938 - 1948

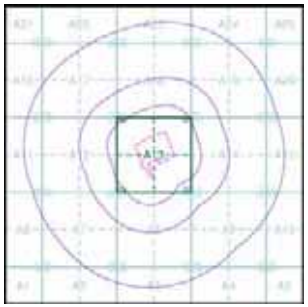
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

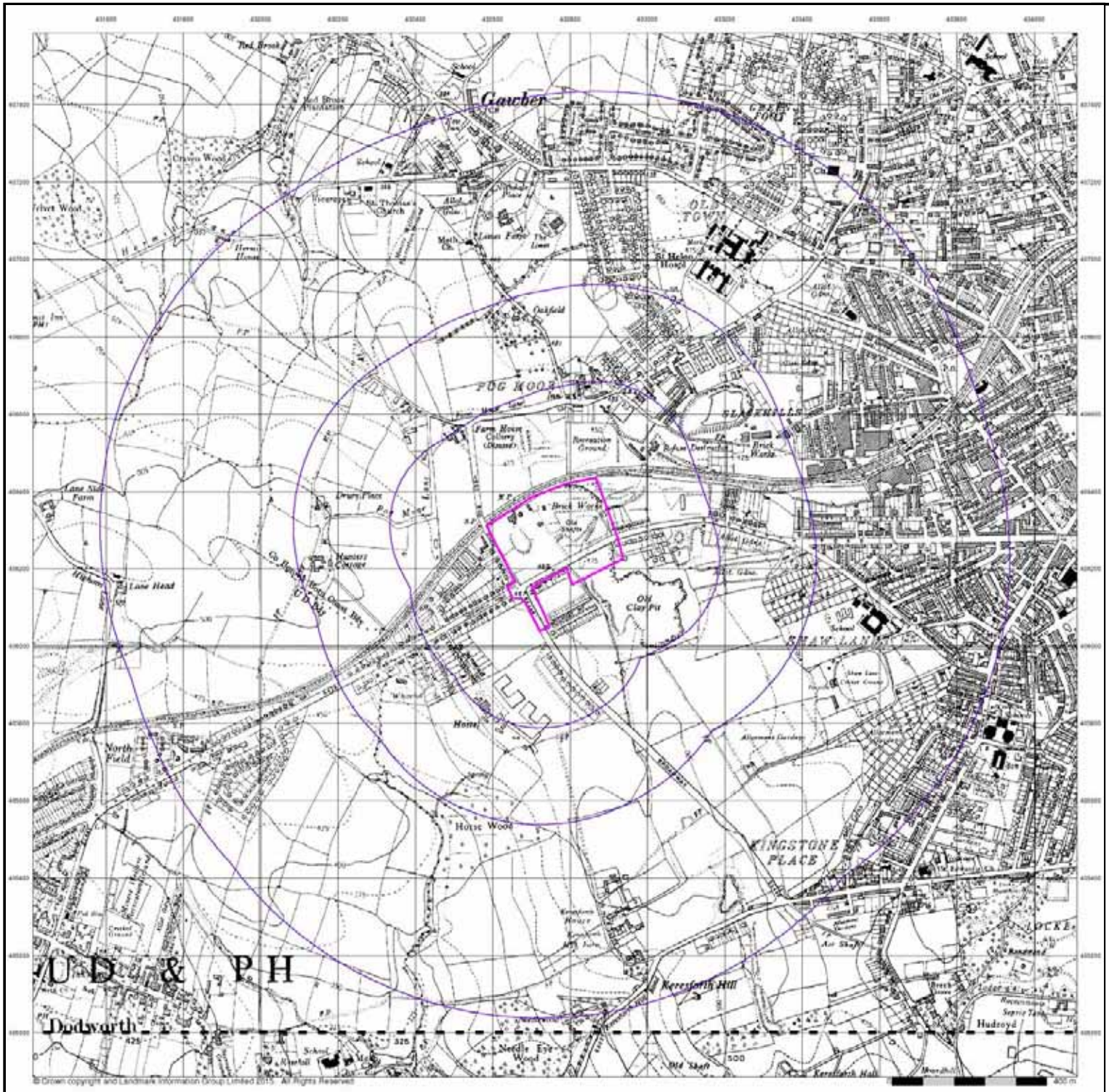
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Ordnance Survey Plan

Published 1956

Source map scale - 1:10,000

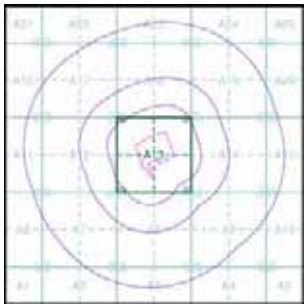
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Map Name(s) and Date(s)

SE30NW
1956
1:10,560

SE30SW
1956
1:10,560

Historical Map - Slice A



Order Details

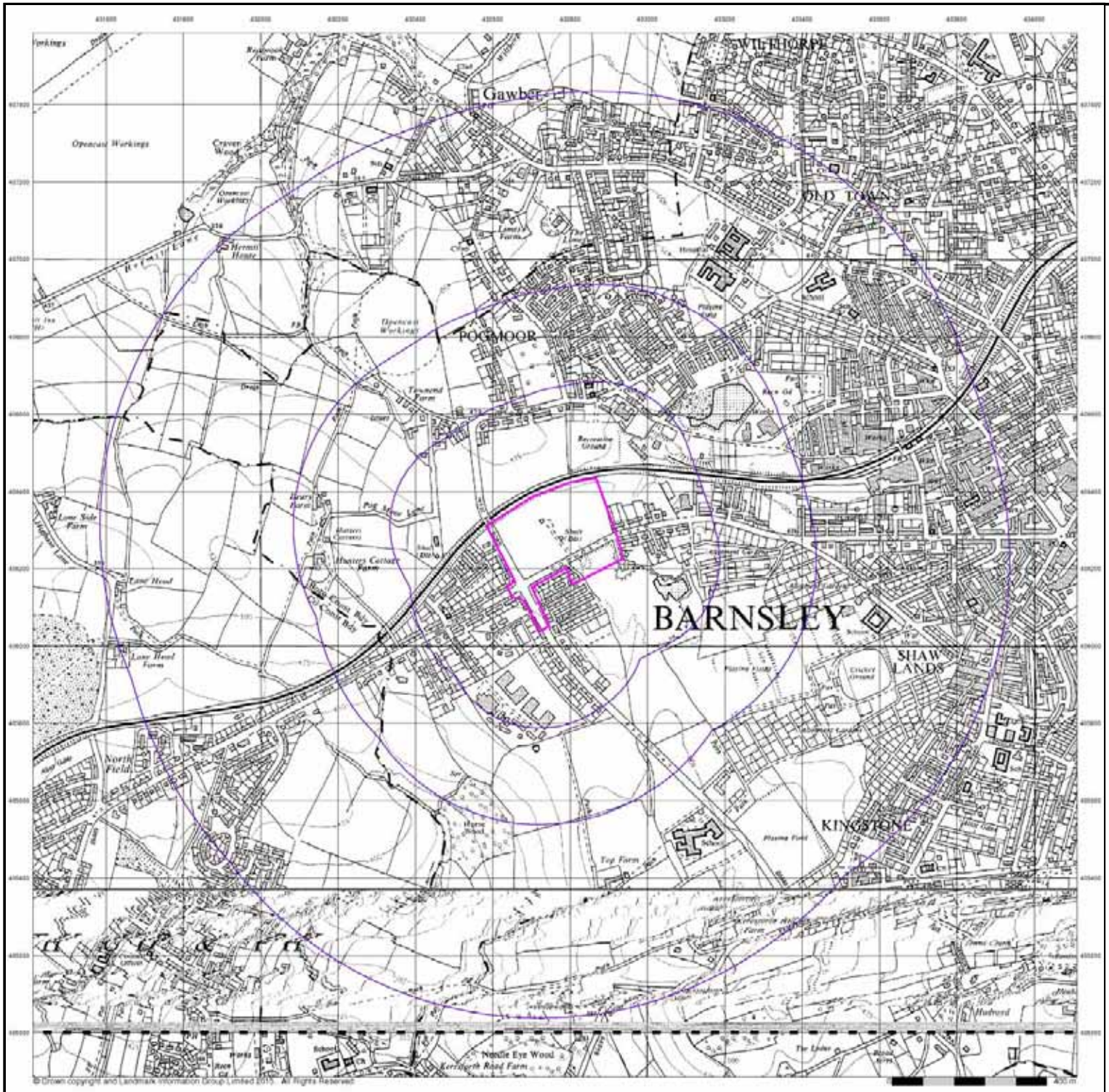
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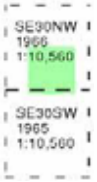
Ordnance Survey Plan

Published 1965 - 1966

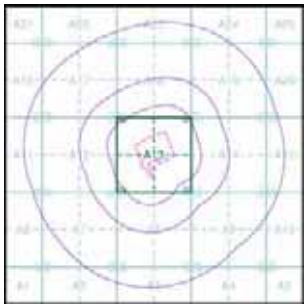
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

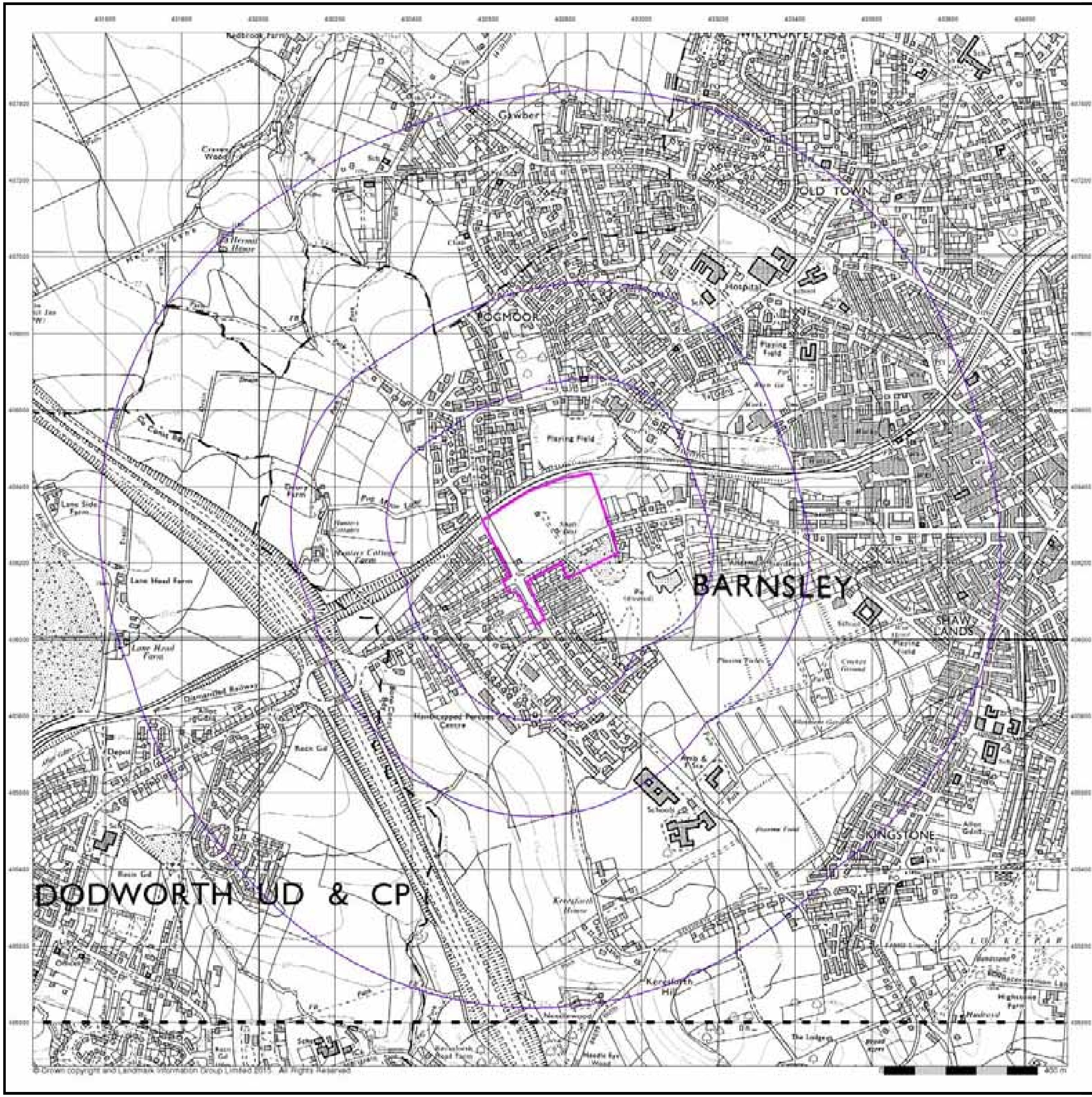
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Customer Ref:	151069-3168
National Grid Reference:	432760, 406250
Slice:	A
Site Area (Ha):	6.98
Search Buffer (m):	1000

Site Details

137, Pogmoor Road, BARNSLEY, S70 6PT

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Ordnance Survey Plan

Published 1973 - 1978

Source map scale - 1:10,000

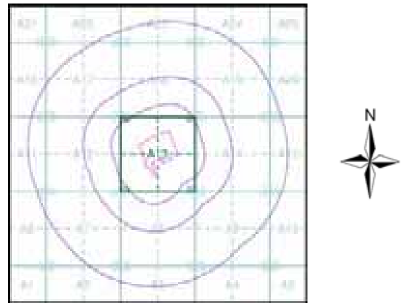
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

SE30NW 1973 1:10,000

SE30SW 1978 1:10,000

Historical Map - Slice A



Order Details

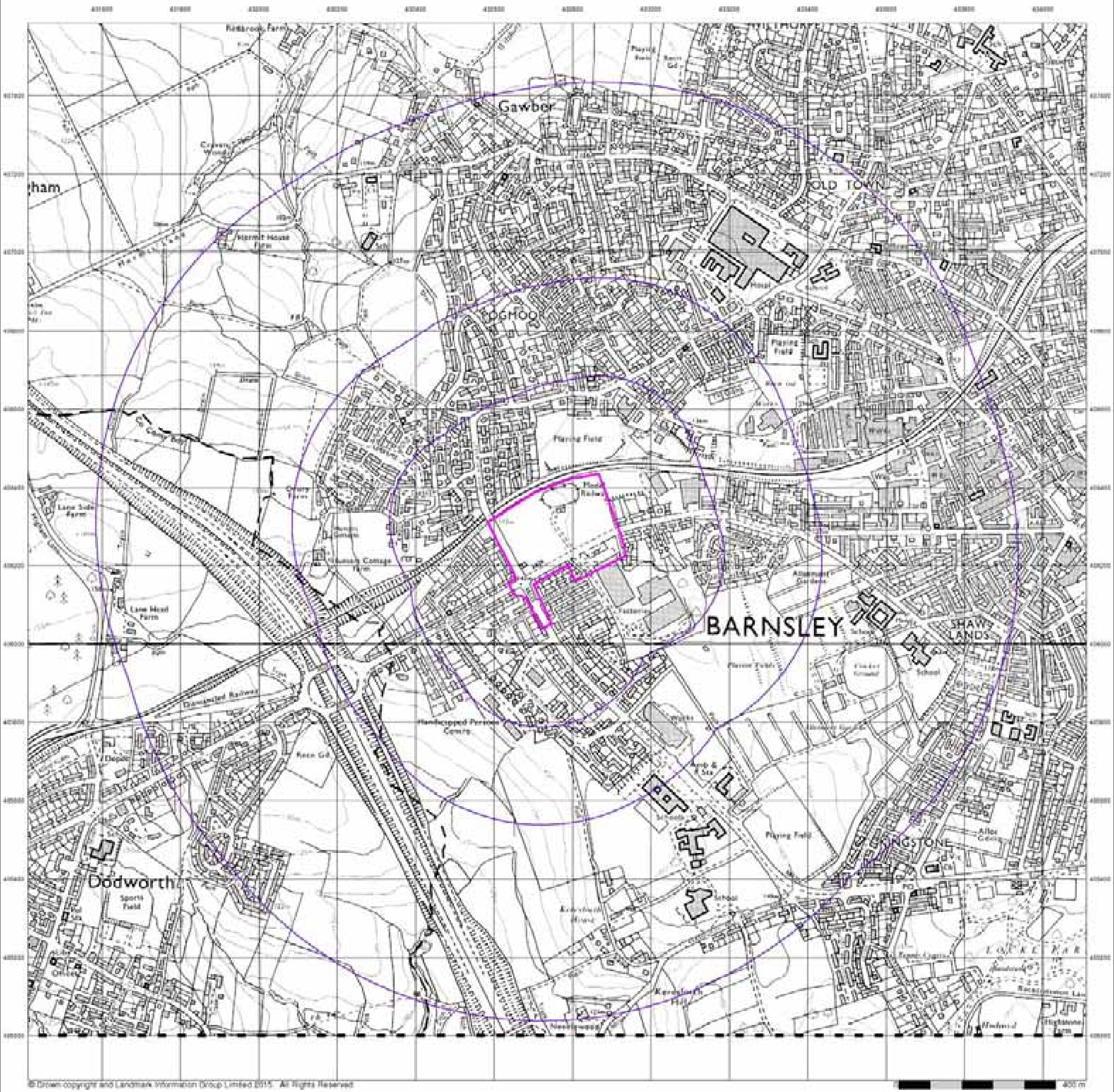
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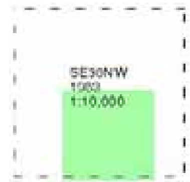
Ordnance Survey Plan

Published 1983

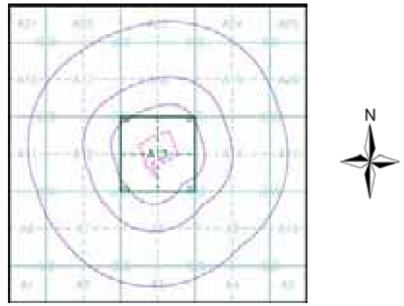
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



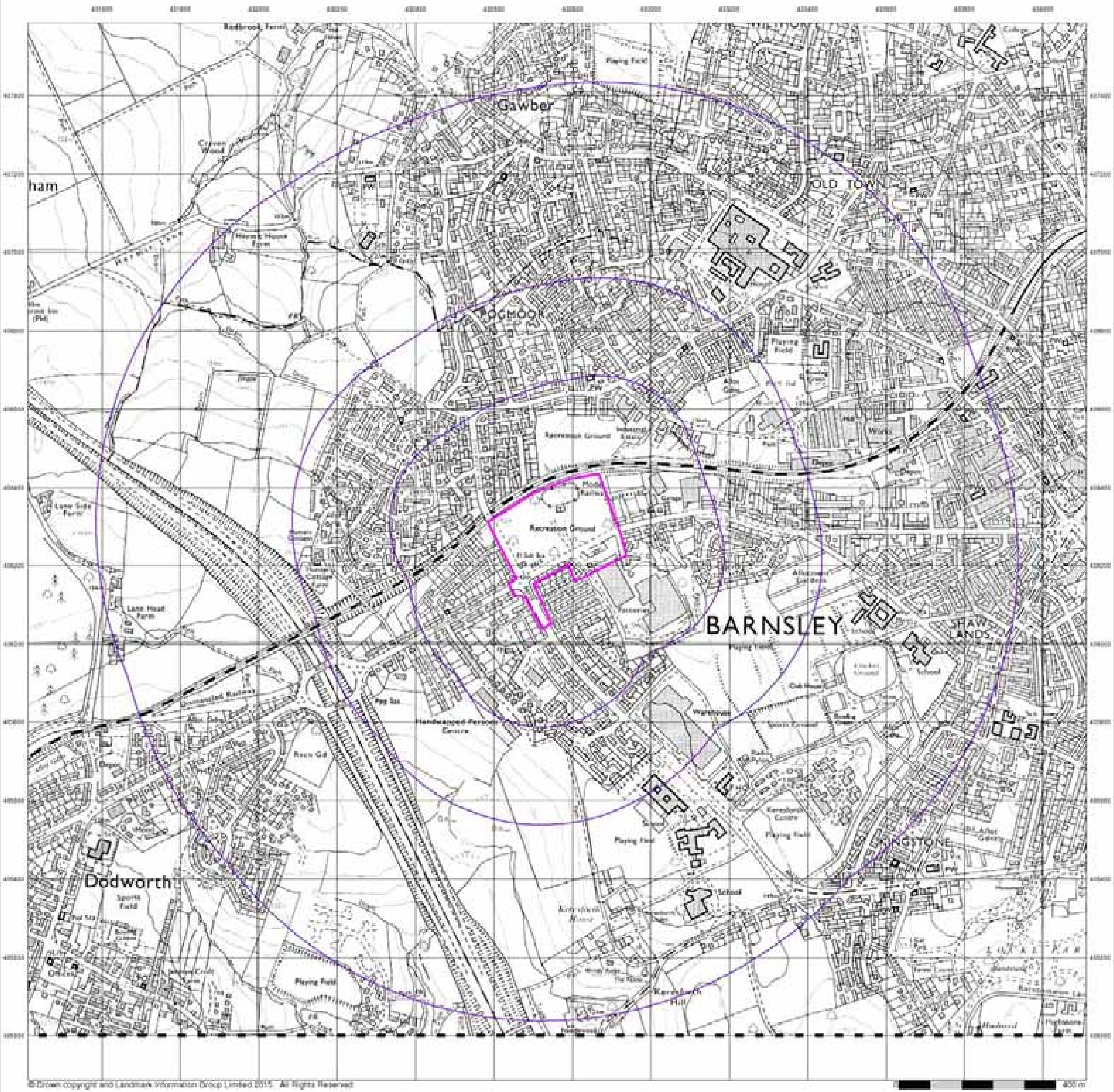
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Ordnance Survey Plan

Published 1993

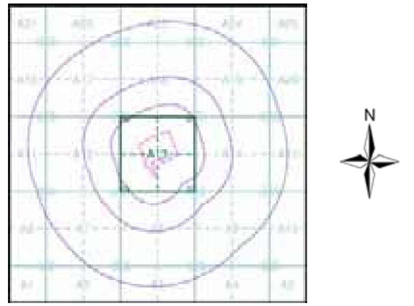
Source map scale - 1:10,000

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

Map Name(s) and Date(s)

SE30NW
1993
1:10,000

Historical Map - Slice A



Order Details

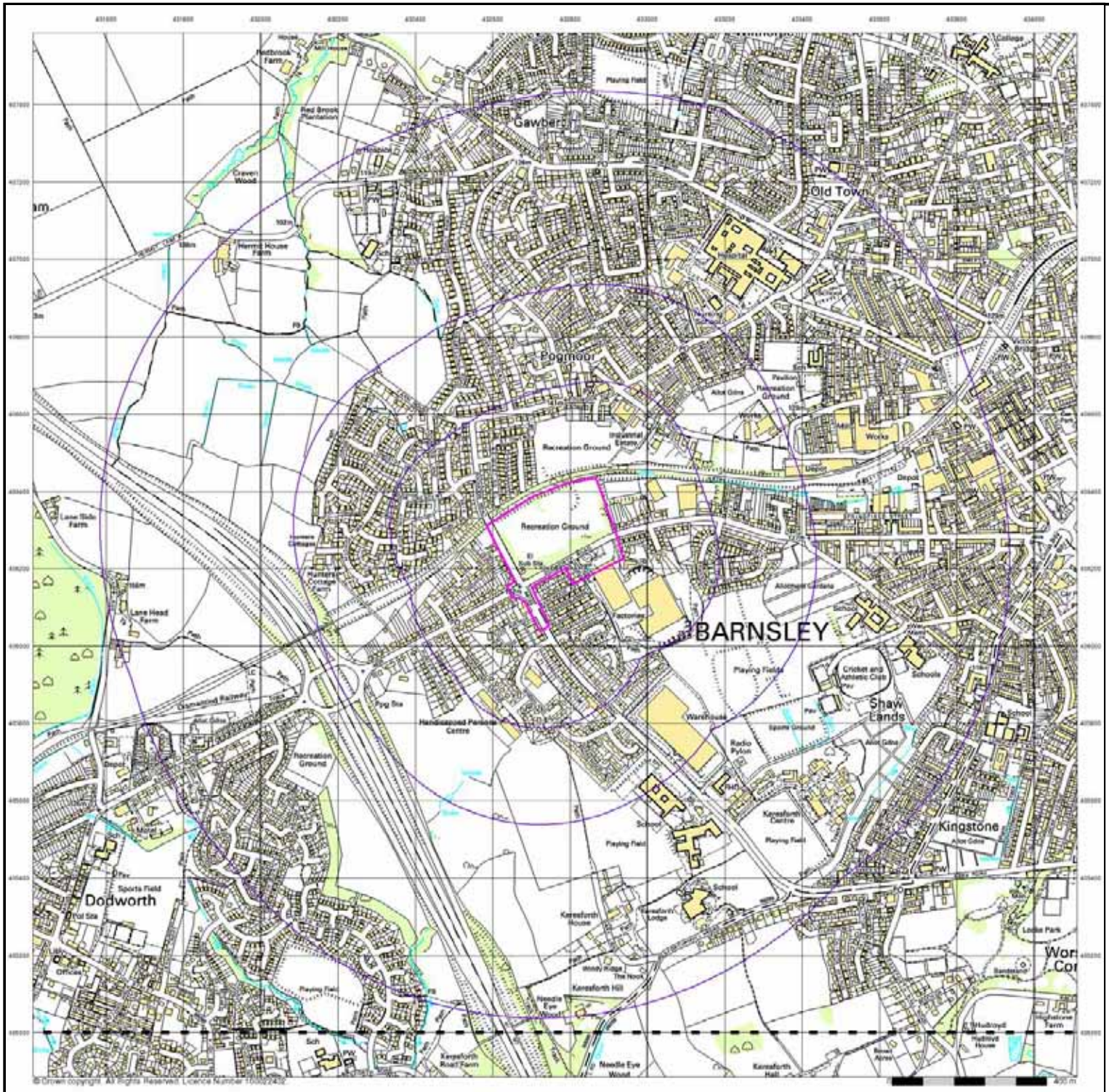
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Customer Ref: 151069-3168
National Grid Reference: 432760, 406250
Slice: A
Site Area (Ha): 6.98
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10k Raster Mapping

Published 2000

Source map scale - 1:10,000

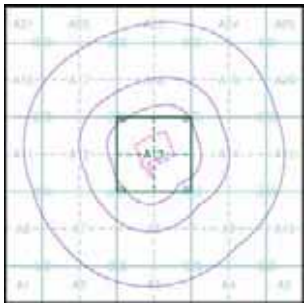
The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks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

Map Name(s) and Date(s)

SE30NW
2000
1:10,000

SE30SW
2000
1:10,000

Historical Map - Slice A



Order Details

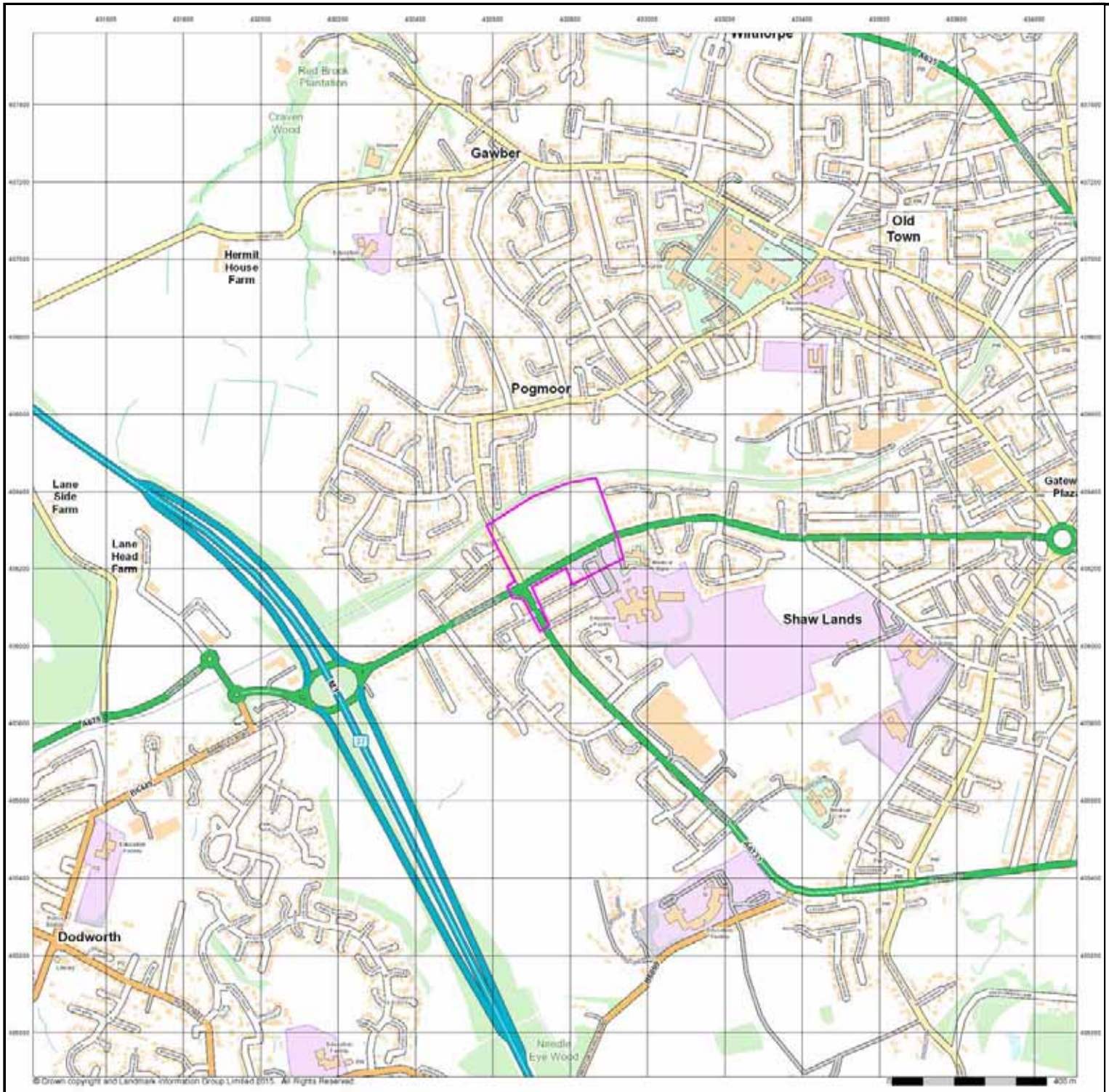
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Street View

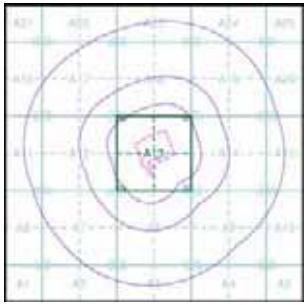
Published 2017

Source map scale - 1:10,000

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

Map Name(s) and Date(s)

Street View Map - Slice A



Order Details

Order Number:	140225549_1_1
Customer Ref:	151069-3168
National Grid Reference:	432760, 406250
Slice:	A
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BGS BOREHOLE EXTRACTS

Location No. 3983

LOG FOR BOREHOLE BH17

SE30NW 340 32456 06231

ASTON – SHEFFIELD – LEEDS MOTORWAY
DODWORTH TO LEEDS

WEST RIDING OF YORKSHIRE COUNTY COUNCIL

Type of Boring: a) Shell and Auger b) Light core drill – Diameter: a) 8" to 8'0" b) 2¼" core. Date: Sept. 1962

Chainage: 3210 Ground Level: 469.4 ft. above N.D. (143.00) Cut: 8 ft. Fill: – ft.

DODWORTH RAILWAY DIVERSION

Description	Legend	Sample	Depth	m.c. %	Test Results & Notes
Ground Level			0' 0"		
Dark grey silty TOPSOIL and roots		1	1'0"		
Firm mottled grey and brown silty CLAY.		2	3'0"	33 27	MH. C = 860 ϕ = 0 d=118 SO_3 = 0.01
Soft, friable black carbonaceous MUDSTONE, with bands of soft shaley mudstone.		3		23	OH. OMC = 24 D = 96 (B.S. Compaction)
		4		7	
Soft, broken, dark grey slightly silty MUDSTONE, softened in places to consistency of firm clay.			10'0"		
		5	13'0"		
Broken COAL			14'3"		
Hard broken pale grey coarse SILTSTONE with roots and plant debris.			15'0"		
			457		
END OF BOREHOLE					

OBSERVATIONS OF WATER LEVELS IN BOREHOLE

Date	Time	Depth of Hole	Depth of Casing	Depth to Water
2/9	17.30	8'0"	Nil	Dry
6/9*	08.00	11'0"	Nil	Dry

* Water added during drilling.

3

(For Survey use only)
GEOLOGICAL CLASSIFICATION

NATURE OF STRATA

116

If measurements start below ground surface, state how far... ...

THICKNESS Feet	Inches	DEPTH Feet	Inches	
Soil	0 3	1 -		
Yellow clay	1 52	5 -	6	-
Yellow sandstone with odd clay seams	5 79	19 -	25	- 7.62
Soft grey shale	1 52	5 -	30	- 9.14
Grey shale with ironstone seams	7 32	24 -	54	- 16.46
Black shale	1 22	4 -	58	- 17.68
Hard grey shale	7 92	26 -	84	- 25.60
COAL	0 20	6	84	6 25.81
Hard grey shale (broken)	19 91	65 4	150	- 45.72
COAL working	2 74	9 -	159	- 48.46
Shaley sandstone	9 45	31 -	190	- 57.91
Black shale	1 52	5 -	195	59.44

CARBONIFEROUS. WESTPHALIAN B. BARNSLEY (SEAM?)

H.J. 19.6.72

British Geological Survey

APPENDIX A - CONTAMINATION RISK ASSESSMENT

Land Use Risk Assessment:

An assessment has been carried out for a number of common past land uses, indicating the severity risk rating that should be used. Where little is known about a site the higher land uses found and rating range figures should be used. Also given are the recommended chemical tests associated with a site investigation, however the exact tests will be determined on a site by site basis.

Potential Risk		Land Use	Risk Rating Range	Contamination testing					Comment
Description	SI Colour Rating			EA Screen	Leachate	TPH	PAH 16	BTEX PCBs	
Very High 5	Red	Radioactive site	5	Specialist assessment required					
		Petrol/Chemical Plant	5	x	x	x	x	x	
		Metal Works	5	x	x	x	x		Toxic metals
		Landfill Site	3 - 5	x	x				Dependent on infill
		Dye Works	3 - 5	x	x	x	x	x	
		Coke Works	4 - 5	x	x	x	x	x	
		Gas Works	4 - 5	x	x	x	x	x	
		Tannery	4 - 5	x	x				
		Petrol Station	3 - 5	x	x	x	x		
		Oil Depot	3 - 5	x	x	x	x		
High 4	Yellow	Infilled ground	3 - 5	x	x				Dependent on infill
		Heavy Industry	4	x	x		x	x	
		Soap Works	4	x	x			x	
		Power Station	4	x	x				
		Garage	4	x	x	x	x		
		Timber Yard	4	x	x				
		Highway	3 - 4	x	x	x	x		
		Abattoir	3 - 4	x	x				
		Colliery	3 - 4	x	x				
Moderate 3		Fabric Mill	3 - 5	x	x			x	5 if dye on site
		Foundry	3 - 4	x	x				
		Hospital	3 - 4	x	x				
		Food Factory	3	x	x				
		Sewage Works	3	x	x		x	x	
		Brewery	3	x	x				
		Coal Yard	3	x	x				
		Airfield	3	x	x				
		Light Industry	3	x	x				
		Colliery Spoil	2 - 3	x	x				
Low 2	Green	Offices/Commercial	2	x	x				
		Storage/Warehouse	2	x	x				
		Residential	2	x	x				
		Quarry	2	x	x				Unfilled
		Gardens/Parkland	1 - 2	x	x				
Negligible		Farm/Wood/Moors	1 - 2	x	x				

Site Contamination Risk Assessment

In assessing overall contamination risk, the following categorisation has been developed:

Term	Description
Very High Risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard at the site without appropriate remedial action. Investigation required (if not already undertaken) and remediation very likely to be required.
High Risk	Harm is likely to arise to a designated receptor from an identified hazard at the site without appropriate remedial action. Investigation required (if not already undertaken) and remediation likely to be required.
Moderate Risk	It is possible that without appropriate remedial action harm could arise to a designated receptor. It is relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely that such harm would be relatively mild. Investigation usually required (if not already undertaken) and remediation may be required.
Low Risk	It is possible that harm could arise to a designated receptor from an identified hazard. It is likely that, at worst if any harm was realised any effects would be mild. Investigation may be required (if not already undertaken) but remediation is unlikely to be required.
Negligible Risk	The presence of an identified hazard does not give rise to the potential to cause harm to a designated receptor. Investigation may be required (if not already undertaken) to confirm.

Risk matrix to be used when assessing risk for conceptual site model

		Severe	Medium	Mild	Minor	>12 = Very High
	Risk	4	3	2	1	12 = High
High Likelihood	4	16	12	8	4	8 to 9 = Moderate
Likely	3	12	9	6	3	4 to 6 = Moderate / low
Low Likelihood	2	8	6	4	2	3 = Low
Unlikely	1	4	3	2	1	1 to 2 = Very Low

Risk	Risk Rating
Very High	5
High	4
Moderate	3
Moderate / Low	2 to 3
Low	2
Very Low	1

APPENDIX B - FURTHER REPORTING

None requested at present - November 2017