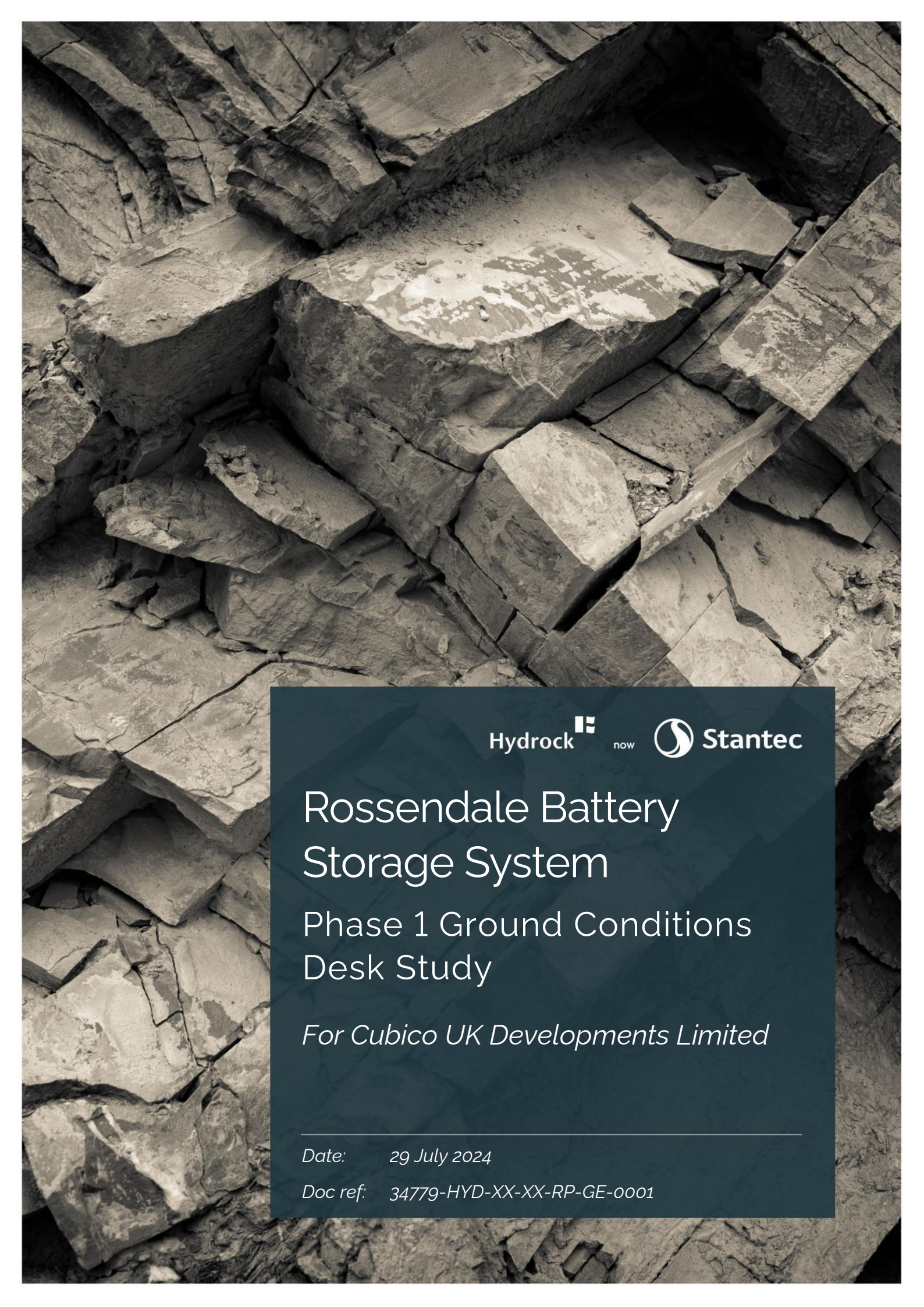




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Rossendale Battery Storage System

Phase 1 Ground Conditions Desk Study

For Cubico UK Developments Limited

Date: 29 July 2024

Doc ref: 34779-HYD-XX-XX-RP-GE-0001

Document control sheet

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Executive summary

Site information and setting	
Objectives	The desk study has been commissioned to support a planning application and to assist with the design of the development. The objective of the Phase 1 Ground Conditions Desk Study is to provide a preliminary assessment of any potential environmental and geotechnical risks to the proposed development.
Client	Cubico Sustainable Investments.
Site name and location	Higher Moss Energy Storage. The site is located adjacent Rochdale Road (A680) which forms the eastern boundary and Bamford Road and black lane which form the south and west boundaries. Ramsbottom town centre is located 2.80km west and Bury town centre 6km south of the site. The National Grid Reference of the approximate centre of the site is 381957, 416967.
Proposed development	Development layout plans are yet to be finalised, but Hydrock understands that the proposed development is to comprise » Battery energy storage system (BESS) Containers to support 2h duration, 60-85MW capacity (TBC); » 33kV Substation, welfare office and parking; » Aux. transformers & inverters; and » Suitable access, fire safety, security, CCTV columns, and landscaping arrangements (including BNG).
Site description	The site is triangular in shape and is currently an agricultural field with evidence of previously containing livestock (sheep). The ground is slightly waterlogged to the west and south however no standing water was noted during the walkover. During the walkover potential asbestos containing material (including asbestos cement), wooden pallets and an ICB was noted along the northern boundary of the site, as shown on the site features plan..
Desk study summary	
Topography	The site slopes from the north-west at 299m Above Ordnance Datum (AOD) to the south-east at 290m AOD. The slope is steeper in the north and becomes a more gradual incline from the centre of the site. A small hollow/ depression measuring 24m across and 2m deep is present in the north-eastern corner and several linear depressions/ collapsed ground were noted parallel to the eastern boundary (on-site and within the footpath adjacent to the A680), along a suspected service route.
Hydrology	Unnamed river located 125m south-east and Cheesden brook located between 167m and 175m south-east.
Site History	1851 – Earliest mapping shows the site is undeveloped and divided into separate agricultural fields until 1891 where the site is no longer divided up. The site has remained unchanged since. Offsite – Earliest mapping shows the wider area as undeveloped agricultural fields with sporadic farm houses/ buildings. Sandstone and unspecified quarries are noted in the vicinity of the site, the closest approximately 120m west. Cotton mills with associated sluice reservoirs and coal pits located between 250m and 500m to the south-east. By 1908 the cotton mills and coal pits are primarily disused or no longer present on mapping.
Geology	Superficial: Glacial Till Solid: Millstone Grit (Mudstone and siltstone) and Holcombe Brook Grit (sandstone) in the far north.
Anthropomorphic geotechnical hazards	A small depression/ hollow in the north-east corner of the site is present which may relate to a former borrow pit. Further consideration and/or investigation is required.

Hydrogeology	The superficial deposits comprise a Secondary Undifferentiated Aquifer and the bedrock geology, Holcombe Brook Grit and Millstone Grit Group, comprise a Secondary A Aquifer.								
Radon	The site lies within an area where less than 1% of homes are affected by radon. Therefore, no radon protection measures are required within new builds.								
UXO risk	A non-specialist UXO assessment indicates a low bomb risk.								
Other	There are no Sites of Special Scientific Interest (SSSI) within 1km of the site, however the site is situated within an SSSI impact risk zone and green belt land. There are two Open Access Land classifications on site which gives a public right of access to land without having to use paths. The site is within a Network Enhancement Zone 1 for habitat networks. The site is within an agricultural area, which is primarily pastoral.								
Preliminary conceptual site model based on desk study									
Potential Geotechnical Hazards	The following plausible geotechnical risks are identified: » Soft / loose compressible ground (low strength and high settlement potential). » Shrinkage/swelling of clay – settlement/heave of foundations, especially where located within the influence of trees and vegetation. » Existing slopes and depression onsite may require regrading or in filling with cut to allow for a flat development platform to be formed. » Instability of slopes and impact on foundations, floor slabs, roads and infrastructure. » Potential for unforeseen ground conditions and the risks associated with limited data.								
Preliminary Geo-environmental Conclusions	It is considered that it is unlikely that the site would be classified as Contaminated Land under Part 2A of the EPA 1990. The overall risk from land contamination at the site is considered to be low for the current development, as the site history suggests minimal former contaminative land uses. The overall risk for a redeveloped site is assessed to be low with one specific potentially high risk (for asbestos only), but this would need to be confirmed with by an appropriate testing and specialist assessment. <table><tr><td>Source(s)</td><td>◀ potential Impact on ▶</td><td>Receptor(s)</td></tr><tr><td>Potential asbestos containing material (including asbestos cement) fly-tipped within the north of the site.</td><td></td><td>Site users Neighbours</td></tr></table>			Source(s)	◀ potential Impact on ▶	Receptor(s)	Potential asbestos containing material (including asbestos cement) fly-tipped within the north of the site.		Site users Neighbours
Source(s)	◀ potential Impact on ▶	Receptor(s)							
Potential asbestos containing material (including asbestos cement) fly-tipped within the north of the site.		Site users Neighbours							
Future considerations									
Further work	In order to confirm the actual risks to receptors and confirm the ground conditions with respect to potential geotechnical and geo-environmental risks, an appropriate intrusive investigation will need to be undertaken. This investigation will need to: » determine the soil strength/density profile beneath the site; » determine the depth/level of groundwater beneath the site; » determine the ground gas concentrations beneath the site; » determine CBRs to assist with pavement design; » determine the ground conditions within the depressions/ collapsed ground adjacent to the eastern boundary and the depression/ hollow in the north-western corner; » assess trench stability, over break potential and ease of excavation; » allow soil infiltration rate testing; » allow sampling for chemical and geotechnical laboratory testing; » allow soil classification to allow geotechnical characterisation and determine suitability for reuse of soils within earthworks (if required); » obtain information in terms of Aggressive Chemical Environment for Concrete Class (ACEC Class). Following investigation, assessment will be required to; » update the ground model; » update the Geotechnical Risk Register;								

- » provide Geotechnical Design recommendations;
- » update the Conceptual Site Model (CSM), including identification of plausible pollution linkages;
- » undertake generic quantitative risk assessment of potential chemical contaminants to establish 'suitability for use' under the current planning regime;
- » provide outline mitigation recommendations to ensure the site is 'suitable for use'.

This Executive Summary forms part of Hydrock Consultants Limited report number 34779-HYD-XX-XX-RP-GE-0001 and should not be used as a separate document.

1. Introduction

1.1 Terms of reference

In July 2024, Hydrock Consultants Limited (Hydrock) was commissioned by Cubico UK Developments Limited (the Client) to undertake site investigation, comprising a Phase 1 ground conditions desk study at Higher Moss Energy Storage. The site is located at land off Bamford Road, Ramsbottom, Bury, Lancashire BLO ORR.

The site is currently an undeveloped agricultural field.

Development layout plans are yet to be finalised, but Hydrock understands that the proposed development is to comprise:

- » Battery energy storage system (BESS) Containers to support 2h duration, 60- 85MW capacity (TBC);
- » 33kV Substation, welfare office and parking;
- » Aux. Transformers & inverters; and
- » Suitable access, fire safety, CCTV columns, security and landscaping arrangements (including BNG).

A proposed development layout (Cubico Sustainable Investments Drawing CUB001-PL-01_rev03), is presented in Appendix A.

The Phase 1 Phase Ground Conditions Desk Study Report has been undertaken in accordance with Hydrock's proposal referenced (34779 Multidisciplinary Engineering Services Fee Proposal dated April 2024) and the Client's instructions to proceed via email dated 9th July 2024.

1.2 Objectives

The works have been commissioned to support the planning application and to assist with the design of the development.

The objectives of the Phase 1 Desk Study are to formulate a preliminary Ground Model and an Initial Conceptual Site Model of the site to identify and make a preliminary assessment of any potential geo-environmental and geotechnical risks to the proposed development.

1.3 Scope

The scope of the Phase 1 Desk Study comprises:

- » a field reconnaissance (walkover) to determine the nature of the site and its surroundings including current and former land uses, topography and hydrology;
- » acquisition and review of:
 - » historical Ordnance Survey maps, to identify any; former potentially contaminative uses shown at the site and immediately surrounding it, and an assessment of the associated contamination risks;
 - » a third-party environmental report to identify any; flooding warning areas, local landfills, pollution incidents, abstractions, environmental permits etc. All of which may have had the potential to have environmental impact on the site;
 - » topographical, geological and hydrogeological maps;
 - » British Geological Survey (BGS) archive records;
 - » regional UXB risk maps;
 - » a site-specific Coal Authority 'Consultants Coal Mining Report';

- » the Coal Authority's Interactive Viewer;
- » development of a preliminary Ground Model representing ground conditions at the site;
- » development of an initial Conceptual Site Model (iCSM), including identification of potential contaminant linkages;
- » a qualitative assessment of any geo-environmental risks identified; and
- » identification of any plausible geotechnical hazards.

1.4 Available information

The following documents, reports etc have been provided to Hydrock by the Client for use in the preparation of this report:

- » Cubico Sustainable Investments. 18th March 2024. 'Higher Moss Bess Site Indicative Site Layout Plan'. Ref: CUB001-PL-01_rev02;
- » Cubico Sustainable Investments. 27th March 2024. 'Higher Moss BESS Site Dimensions and Standards'. Ref: CUB001-PL-02_rev01; and
- » 20240411 Higer Moss RFP Multi Disc.
- » PM Surveys UK. 18th July 2024. A680 Rossendale Road Cheesden. Ref: PMS24131-01.
- » PM Surveys UK. 18th July 2024. A680 Rossendale Road Cheesden. Ref: PMS24131-02.

It is understood that the Client commissioned or has obtained assignment of the above documents and Hydrock has assumed full reliance can be placed upon their contents. Should this not be the case, Hydrock should be informed at the earliest opportunity.

1.5 Regulatory context and guidance

The methods used follow a risk-based approach, the first stage of which is a Phase 1 desk study and field reconnaissance, with any potential geo-environmental risks assessed qualitatively. This is done using the 'source-pathway-receptor contaminant linkage' concept to assess risk as introduced in the Environmental Protection Act 1990 (EPA, 1990). Any potential geotechnical risks are also assessed from the Phase 1 desk study and site reconnaissance stage.

Remaining uncertainties and recommendations for further work are listed in Section 5 and Section 6.

2. Desk study (and field reconnaissance)

2.1 Data

A number of desk study sources have been used to assemble the following information. These are presented in Appendix D and include:

- » Third-party environmental report (Groundsure report, reference HYD-O44-Q3N-234-Y3N);
- » Historical Ordnance Survey mapping;
- » BGS Onshore GeoIndex (GeoIndex - British Geological Survey (bgs.ac.uk));
- » BGS borehole records (Borehole records - British Geological Survey (bgs.ac.uk));
- » BGS Archive Records;
- » BGS Open-loop ground source heat pump viability screening map (GSHP (bgs.ac.uk));
- » Zetica UXB Risk Maps (<https://zeticauxo.com/downloads-and-resources/risk-maps/>);
- » Coal Authority 'CON29 Consultants Coal Mining Report' (Reference: HYD-9NC-61G-NKK-DRM); and
- » Coal Authority's Interactive Viewer (<http://mapapps2.bgs.ac.uk/coalauthority/home.html>).

2.2 Site referencing

Table 2.1: Site referencing information

Item	Brief Description
Site name	Higher Moss Energy Storage.
Site address	Land off Bamford Road, Ramsbottom, Bury, Lancashire. The nearest postcode is BLO ORR.
Site location and grid reference	The site is located adjacent Rochdale Road (A680) which forms the eastern boundary and Bamford Road and black lane which form the south and west boundaries. The site is 2.15km east of the M66. Ramsbottom town centre is located 2.80km west and Bury town centre 6km south of the site. The National Grid Reference of the approximate centre of the site is 381957, 416967. The site is approximately 6.2 Ha.
Site boundaries	An approximately 1m high dry-stone wall surrounds all of the site boundaries with metal sheeting and wooden post with metal mesh fence in areas where the dry-stone wall has collapsed.



Figure 2.1: Site location
(Reproduced with permission from Groundsure)



Figure 2.2: Site layout plan (reproduced with permission from Groundsure)

A site location plan (Hydrock Drawing 34779-HYD-XX-XX-RP-GE-0001) is presented in Appendix A.

2.3 Site description and field reconnaissance survey

A field reconnaissance survey was undertaken on 17th July 2024 to visually identify assess potential geotechnical hazards, contaminant sources for future investigation and identification of possible source-pathway-receptor linkages. The weather during the field reconnaissance survey was sunny and warm.

A description of the site is presented in Table 2.2 and selected photographs are presented in Figure 2.3 to Figure 2.6. Additional photographs are presented in Appendix B.

Table 2.2: Site description

Item	Brief Description
Site access	The site was accessed from Rochdale Road (A680).
Site area	The site is triangular in shape and has an area of approximately 6.2 ha.
Elevation, topography and any geomorphic features	The site slopes from the north-west at 299m Above Ordnance Datum (AOD) to the south-east at 290m AOD. The slope is steeper in the north and becomes a more gradual incline from the centre of the site. A small hollow/ depression measuring 24m across and 2m deep is present in the north-eastern corner (possible old borrow pit), and several linear depressions/ collapsed ground were noted parallel to the eastern boundary, (on-site and within the footpath adjacent to the A680) along a potential service route.
Site boundaries and surrounding land	The site is bound to the east and south by Rochdale Road (A680) and Bamford Road. The site is surrounded in all directions by agricultural fields/ land. Farm buildings/ infrastructure is present beyond the northern and western boundaries and Rossendale school is located approximately 0.65km to the north-west. Overhead cables are present crossing the southern corner of the site.
Present land use	The site is currently an agricultural field with evidence of previously containing livestock (sheep). The ground is slightly waterlogged to the west and south however no standing water was noted during the walkover. During the walkover potential asbestos containing material (including asbestos cement), wooden pallets and an ICB was noted along the northern boundary of the site, as shown on the site features plan (Hydrock Drawing 34779-HYD-XX-XX-DR-GE-0002) are presented in Appendix A).
Vegetation	One semi-mature tree was present on site along the southern boundary with sporadic mature and semi-mature trees adjacent to the south and western boundaries.

General site sensitivity	There are no Sites of Special Scientific Interest (SSSI) within 1km of the site; however the site is situated within an SSSI impact risk zone and green belt land. There are two Open Access Land classifications on site which gives a public right of access to land without having to use paths. The site is within a Network Enhancement Zone 1 for habitat networks. The site is within an agricultural area primarily pastoral.
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A site features plan (Hydrock Drawing 34779-HYD-XX-XX-DR-GE-0002) are presented in Appendix A.



Figure 2.3: Potential Asbestos (including asbestos cement) noted along the northern boundary.



Figure 2.4: Small hollow/ depression in the north-east corner of the site.



Figure 2.5: Several linear depressions/ collapsed ground parallel to the eastern boundary, along a potential service route.



Figure 2.6: Overhead cables crossing the southern section of the site

2.4 Site history

A study of historical Ordnance Survey maps (Appendix D) has been undertaken to identify any former land uses at the site and surrounding areas which may have geotechnical or geo-environmental implications for the proposed development. The key findings are summarised in Table 2.3.

Table 2.3: Site history review

Reference	Key features on site	Key features off-site
County Series 1851: 1:10,560	The site is undeveloped divided into separate agricultural fields. The site and local area are labelled as Shuttleworth Moss.	The site is encircled by agricultural fields and sporadic farm houses. Several cotton mills and associated sluice reservoirs are present to the east and south-east along the course of Cheesden Brook. Three 'Coal Pits/ Old Coal Pits between approximately 100m and 700m south-east and several 'Old Coal Pits' and an unnamed colliery over 1km to the north. Sandstone quarries are located to the north, south and south-east, with the closest approximately 650m south.
County Series 1891: 1:10,560 1891: 1:2,500	The site is no longer separated into individual agricultural fields.	The coal pits/ old coal pits and unnamed colliery are not present on mapping. An 'Old Quarry' is labelled approximately 120m west of the site, potentially sandstone. The previously noted sandstone quarries are either not present on mapping or labelled as 'Old Quarry'. A sandstone quarry is present 500m south.
County Series 1908: 1:10,560 1910: 1:2,500	No significant change.	A pond now occupies the Old Quarry approximately between 120m west of the site. The cotton mills to the east and south-east have been demolished or labelled disused with the sluice reservoirs remaining labelled as 'Old Reservoir'. Four 'Air Shafts' approximately 300m – 400m east are labelled, likely associated with underground coal mining.
County Series 1929 1:2,500 1927-1928 1:10,560	No significant change.	A small pond is present approximately 70m beyond the north-western boundary
National Grid 2001 1:10,000 Google Earth© Imagery 2000 ¹	No significant change.	A small structure is shown adjacent to the north-western boundary. The four air shafts are no longer present on mapping.
Google Earth© Imagery 2013 ²	No significant change.	A farm building/ structure has been constructed adjacent to the western boundary.
Google Earth© Imagery 2017 ³	No significant change.	The small structure adjacent to the north-western boundary is no longer present.
National Grid 2024: 1:10,000 Google Earth© Imagery 2023 ⁴	No significant change.	The pond approximately 120m west and 70m north are no longer present on mapping.

¹ ©The Geoinformation Group, image date: 12/2000.

² ©The Geoinformation Group, image date: 04/2013.

³ ©The Geoinformation Group, image date: 03/2017.

⁴ ©The Geoinformation Group, image date: 04/2023.

2.5 Geology

The geology of the site area is shown on the British Geological Survey (BGS) 1:50,000 geological map of Rochdale (Sheet 76) and the 1:10,000 British Geological Survey (BGS) map extract reproduced as part of the Groundsure report and is summarised below:

Table 2.4: Geology

Ref. for Figures	Location	Stratigraphic Name	Description
Superficial Deposits (Figure 2.7)			
1	On site	Till	Mixture of clay, sand, gravel, and boulders varying widely in size and shape.
Solid Geology (Figure 2.8)			
1	On site - along the northern boundary	Holcombe Brook Grit - Sandstone	A fine- to very coarse-grained and pebbly, feldspathic sandstone, interbedded with grey siltstone and mudstone, and subordinate marine black shales, thin coals and seatearths.
2	On site - remainder of site.	Millstone Grit Group – Mudstone and siltstone	The Millstone Grit Formation is composed of variable proportions of grey, white and brown sandstone, and grey or dark grey, partly carbonaceous mudstone and siltstone. Some sections additionally contain rare thin coal seams and seatearths.



Figure 2.7: Superficial deposits.
(Reproduced with permission from Groundsure)

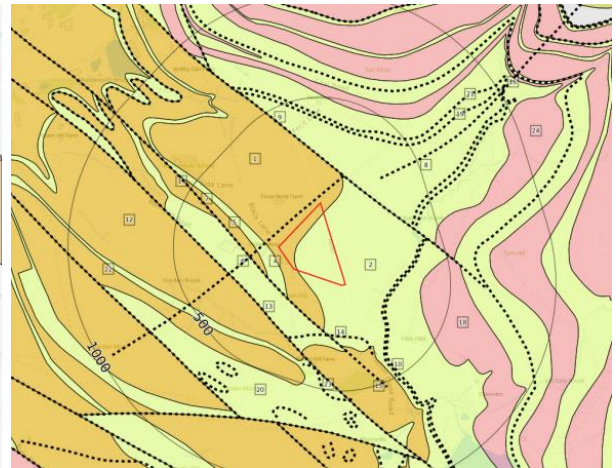


Figure 2.8: Solid geology.
(Reproduced with permission from Groundsure)

A fault, trending approximately north-west to south-east, with a downthrow to the south-west, is located 119m south-west. Another fault also trending north-west to south-east, with a downthrow to the south-west, is located 169m north.

BGS mapping also indicates a fold axis of a major anticline is located 28m north.

There are no borehole logs within 250m of the site.

In addition, two plans have been received from Fluid Environmental Consulting who have undertaken a peat probing exercise across the BESS site. No report accompanies the plans and the details are limited. Nonetheless, three isolated occurrences of peat *estimated between 30cm and

40cm" are presented. These occurrences are indicated to be located to the north of the BESS layout area, outside of the area ear-marked for development. These plans are attached in Appendix A.

2.6 Ground source heat pump (GSHP) viability

The BGS ground source heat pump viability screening map indicates that the site is in an area that is favourable for open-loop ground source heat pumps.

This report does not constitute a Thermogeological Assessment (TGA). For site specific GSHP viability a full TGA to characterise the geological and thermogeological properties beneath the site is required.

2.7 Hydrogeology

2.7.1 Aquifer designations

Based on the inferred geological sequence presented in Section 2.5 and the Environment Agency's interactive aquifer designation map, the aquifer system presented in Table 2.5 applies. Additional information on the hydraulic characteristics of the geological units has been abstracted from Abesser et al (2005).

Table 2.5: Aquifer system

Stratum	Aquifer designation	Comments
Superficial Deposits		
Till	Secondary Undifferentiated.	Predominantly clay of low permeability, interbedded with occasional layers of sand and gravel, of moderate to high permeability. Overall, this unit is likely to be anisotropic in nature with horizontal permeability greater than vertical permeability ((i.e. $k_h > k_v$).
Solid Geology		
Holcombe Brook Grit and Millstone Grit Group	Secondary A.	Abesser et.al, notes "The Millstone Grit forms a multilayered aquifer system in which the persistent, thick sandstone horizons effectively act as separate aquifers with the intervening mudstones and shales acting as aquicludes or aquitards. The sandstones are generally well cemented and groundwater storage and transport is restricted largely to joints and fractures. Flow in the aquifer tends to decrease rapidly with depth as soft and decalcified sandstones of the weathering zone pass into well-cemented, hard and compact bedrock. The relatively low porosity and permeability of the sandstone matrix suggest only minor contributions from intergranular flow."

2.7.2 Groundwater abstraction

There are no active licensed groundwater abstractions within 1000m of the site.

2.7.3 Groundwater source protection zones and groundwater vulnerability

The site is not within a groundwater Source Protection Zone (SPZ).

2.7.4 Groundwater levels, recharge, and flow

There may be shallow perched groundwater on top the Glacial Till below the topsoil, it is likely to drain towards Cheesden Brooke, some 160m south-east of the site. However, the generally low permeability and unsaturated nature of the Till is such that substantial recharge to the deeper groundwater is unlikely to occur on-site given the flux of water is likely to be small.

2.7.5 Groundwater quality

The groundwater body beneath the site (Northern Manchester Carboniferous Aquifers Waterbody) is currently (2019 Cycle 3) classified under the Water Framework Directive as 'poor overall'.

The water body is currently given a 'poor' status due to 'chemical dependant surface water body' conditions. The objective is for chemical dependant surface water body status to be 'good' by 2027.

2.7.6 Groundwater flooding

The environmental data report indicates a low risk of groundwater flooding.

2.8 Hydrology

2.8.1 Surface water system and drainage

The surface water features in the vicinity of the site are listed in Table 2.6.

Table 2.6: Surface water features

Feature	Location Relative to Site
Inland river not influenced by normal tidal action.	125m south-east.
Cheesden Brook	167m – 174m south-east.

2.8.2 Surface water abstractions and discharges

There are no surface water abstractions or surface water discharges withing 1km of the site.

2.8.3 Surface water quality

Reference to the Environment Agency web site shows the site is located within two catchments, the Croal Irwell operational catchment in the north and west of the site and the Roch Irk Medlock Operational Catchment for the centre, east and south.

The specific river water body for Roch Irk Medlock Operational Catchment being Naden Brook. The current (2019 cycle 3) overall status under the Water Framework Directive is described as 'moderate ecological status'.

The reason for the water body currently having a 'moderate' status is due to ecological, supporting elements, chemical and priority hazardous substances of mercury and its compounds and Polybrominated diphenyl ethers (PBDE). The objective is for all the aforementioned qualities to be by 'good' by 2063.

The specific river water body for Croal Irwell operational catchment being Irwell (Irwell STW to Roch). The current (2019 cycle 3) overall status under the Water Framework Directive is described as 'moderate ecological status'.

The reason for the water body currently having a 'moderate' status is due to ecological, physio-chemical quality elements, specific elements (iron and permethrin), chemical and priority

substances (cypermethrin and fluoranthene). The objective is for all the aforementioned qualities to be by 'good' by 2063.

2.8.4 Surface water flooding

The desk study information indicates the proposed development is in Flood Zone 1 with a low probability of flooding from rivers or the sea.

The highest risk of surface water flooding from rainfall events shown by the environmental data report is a flood with depth between 0.3m - 1.0m from a 1 in 30-year return period in the south-eastern section of the site.

No further consideration of flood risk is undertaken in this report. Specialist flood risk advice should be sought with regard to drainage and flooding.

2.9 Mining and mineral extraction

2.9.1 Non-coal mining

2.9.1.1 Surface extraction

Historical mapping and records from the environmental data report show that occasional clay pits and sandstone quarrying has occurred in the wider area. Records of an unspecified pit and pond, 100m north-west, which corroborate the historical mapping showing an 'Old Quarry' and subsequent pond in the area. The mineral extracted from this quarry however was not specified. There are no records of any works, pits or quarries having existed within the site however a small hollow/ depression is located within the north-east corner of the site (approximately 24m width and 2m depth) which could suggest a small scale borrow pit.

The environmental data report lists twenty records relating to surface ground workings within 1km of the site. None are present on-site.

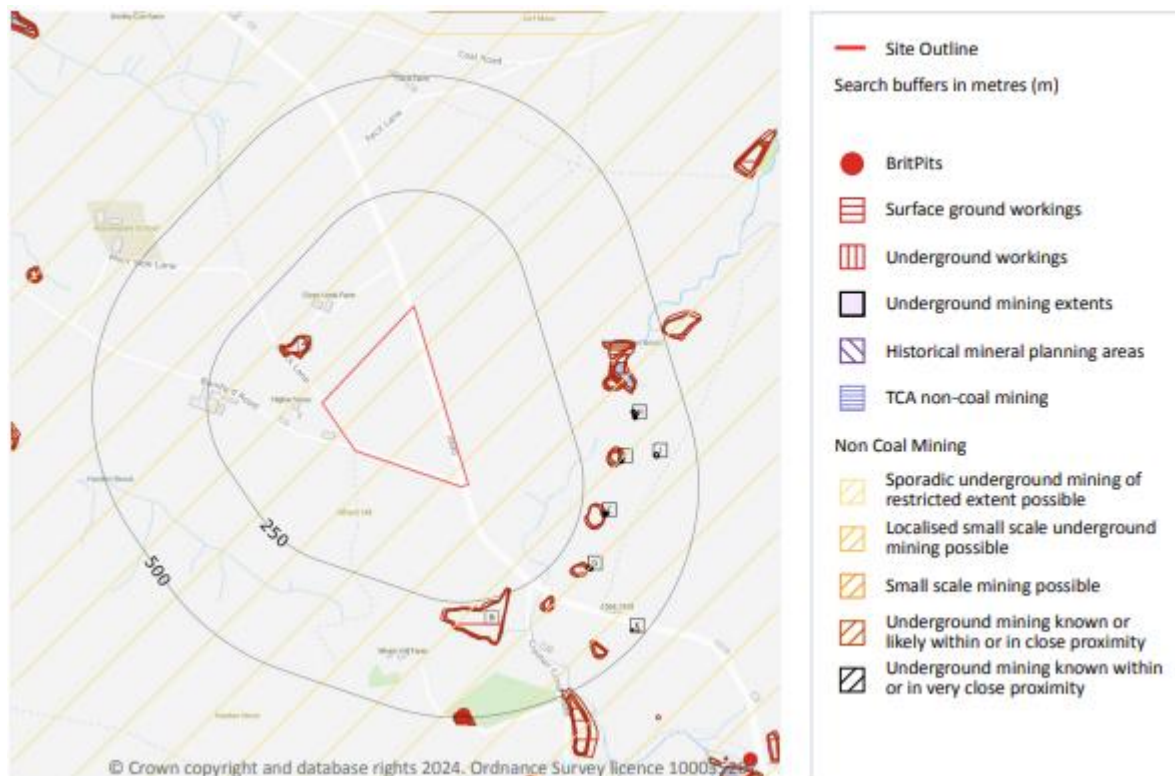


Figure 2.9: Extract of mapped mining and extraction records on and in the vicinity of the site.

The presence of clays (Glacial Till) and sandstone (Holcombe Brook Grit) underlying the northern section of the site, indicates there is a possibility of historical quarrying potentially in the location of the small depression/ hollow in the north-east corner of the site of either superficial clays or shallow sandstone.

2.9.1.2 Underground workings

The environmental data report shows the site is within an area of 'possible sporadic underground mining of restricted extent' of unnamed vein minerals as shown in Figure 2.9 above. The environmental data report further states that the likelihood of underground mine workings are uncommon with the potential for difficult ground conditions as unlikely and are at a level where they need not be considered.

Nonetheless, a small depression/ hollow in the north-east corner of the site is present. Further consideration and or investigation is required to confirm ground stability.

2.9.2 Coal mining risk assessment

The site is located within a Coal Mining Reporting Area and as such a 'Consultants Coal Mining Report' was obtained from the Coal Authority and is included in Appendix D.

The key statements within the report states that below the site there are:

- » No coal outcrops;
- » No records of past underground mining;
- » No probable unrecorded shallow workings recorded on-site;
- » No mine entries within 100m of the site boundary.
- » No records of mine gas within 100m of the site boundary.
- » No records of coal mining subsidence within 50m of the site boundary.

Furthermore, the site is not within a Development High Risk Area and consequently the risks to the development from shallow coal mine workings are considered to be negligible.

2.10 Natural ground instability

The environmental data report lists the on-site risk from running sands, compressible deposits, ground dissolution of soluble rocks and collapsible deposits to be negligible or very low.

2.11 Waste management

There is one historical waste landfill site recorded within 500m of the site as detailed in Table 2.7 below.

Table 2.7: Waste management sites

Site Name and Location	Details
Wham Hill Farm, Off Croston Close Road, Rossendale, Lancashire located 480m to the south.	Status: Closed (Historical). Operational dates: 1989 – 1991. Waste type: Inert.
Waste exemptions	
52m north-west	Category: Storing waste exemption. Subcategory: On a farm. Description: Storage of sludge.

131m north-west	Category: Treating, disposing, using and storing waste exemption. Subcategory: On a farm. Description: A range of uses including, but not limited to: Screening, burning, spreading plant matter, storage of sludge and use of waste in construction.
-----------------	--

2.12 Regulatory Information

Information in the GroundSure Report (Appendix D), relating to various regulatory controls has been reviewed, with a summary presented below in Table 2.8.

Table 2.8: Regulatory information within 500m of the site

Regulatory Data	Distance from Site	Details	Potential Risk	Comment
Discharge Consents	N/A	No entries of licenced discharges to controlled waters.	No	-
Historical Land Uses	100m north-west	Unspecified pit	Yes	Upgradient potential pollution source and gas risk from unknown materials within the backfill.
	137m north-west	Pump	No	Due to the historical date of operation.
	251m – 489m south-east	Unspecified mill/ disused mill/ cotton mill.	No	No due to the distance from the site, the historical date (late 1800's) and downgradient of the site.
	263m – 437m east and south-east	Unspecified heap	No	Due to the distance and being downgradient from the site.
	237m – 482m south-east.	Coal pit	No	Due to the distance and being downgradient from the site.
	306m – 368m east.	Refuse heap	No	Due to the distance from the site.
	331m – 408m east.	Air shaft	No	Due to the distance from the site.
Recent industrial land uses	38m west.	Unspecified works/ factories	Yes	Due to the distance from the site and the and the unspecified nature of activities.
	54m west	Livestock Markets	No	Due to the nature of the activity.
Historical Tanks	270m west 411m - 482m	Unspecified tank	No	Due to the distance from the site and the low permeability Glacial Till underlying the area will restrict horizontal movement of contaminants from the source.

Regulatory Data	Distance from Site	Details	Potential Risk	Comment
Pollution Incidents	N/A	No pollution incidents were recorded within 500m of the site.	No	-
Fuel Station Entries and energy features	N/A	No entries of fuel station entries within 500m of the site.	No	-
Control of major accident hazards sites (COMAH)	N/A	No entries on COMAH sites were recorded within 500m of the site.	No	-
Registered radioactive substances	N/A	No entries on registered radioactive substances were recorded within 500m of the site.	No	-
Notification of installations handling hazardous substances	N/A	No entries on notification of installations handling hazardous substances were recorded within 500m of the site.	No	-
Discharge Consents	N/A	No entries of licenced discharges to controlled waters.	No	-

2.13 Natural soil chemistry

Information contained within the environmental report (Appendix D) gives indicative (estimated) concentration values for the natural soils at the site for a selection of Contaminants of Potential Concern (CoPC). These have been reproduced in Table 2.9.

Table 2.9: Natural soil chemistry

Element	Arsenic	Cadmium	Chromium	Lead	Nickel
Concentration (mg/kg)	15	1.8	60 - 90	100	15 - 30

The data in Table 2.9 are below generic assessment criteria for commercial end use therefore concentrations of natural soil chemistry are not considered to pose a risk to receptors.

2.14 Radon

The guidance indicates that the site is not in a Radon Affected Area and no radon protection measures are required.

2.15 Unexploded ordnance (UXO)

Table 2.10: Non-specialist UXO screening (for the purposes of ground investigation)

Data	Comment	Further Assessment Required
Site History	There is no indication of former military use from the desk study.	No

Post War Development	There is no evidence of war damage from the historical mapping.	No
Geology Type	The site comprises of unknown depth and stiffness of superficial deposits of Glacial Till over Millstone Grit and Holcombe Brook Grit sandstone. There is potential that UXO, if present would remain undetected.	Potentially
Surface Cover during WWI	The surface cover during WWII comprised open fields. There is the potential that UXO, if present, would remain undetected.	Potentially
Indicator of Aerial Delivered UXO	Screening against the regional bomb risk map (Lancashire) Appendix D indicates the site to be in an area where the bomb risk is low.	No

The non-specialist UXO screening exercise has indicated no further assessment is required with regard to UXO in relation to ground investigation. Further assessment may be considered prudent for construction activities.

3. Initial conceptual site model

3.1 Introduction

The initial Conceptual Site Model (CSM) incorporates evidence from the site walkover, the Desk Study and previous investigations carried out at the site. The formulation of an initial CSM is a key component of the LCRM methodology, and incorporates: a ground model of the site physical conditions; and an exposure model of the possible contaminant linkages. It forms the basis for Generic Quantitative Risk Assessment (GQRA) in accordance with current guidelines.

3.2 Ground model

The preliminary ground model presented in Section 2 provides an understanding of the ground conditions and is the basis for preparing the preliminary geotechnical hazard assessment (Section 3.3) and the preliminary geo-environmental exposure model (Section 3.4).

3.3 Geotechnical hazard identification

3.3.1 Context

The preliminary geotechnical hazard identification has been undertaken in accordance with the general requirements of ICE/DETR Document 'Managing Geotechnical Risk' and the HE documents CS 641 and CD 622.

The following section sets out the identified geotechnical hazards and the development elements potentially affected (see Table E1 in **Appendix E** for further information).

3.3.2 *Plausible geotechnical hazards*

Plausible geotechnical hazards identified at the site are:

- » Soft / loose compressible ground (low strength and high settlement potential).
- » Shrinkage / swelling of the clay fraction of soils under the influence of vegetation.
- » Variable lateral and vertical changes in ground conditions.
- » Shallow perched groundwater.
- » Changing groundwater conditions.
- » Earthworks – poor bearing capacity of new fill.
- » Earthworks – unsuitability of site won materials to be reused as fill
- » Slope stability issues – general slopes.
- » Non-coal mining/ quarrying (potential borrow pit).

3.3.3 *Potential development elements affected*

Development elements potentially affected by geotechnical hazards are:

- » Structures – foundations.
- » Structures – floor Slabs
- » Roads and pavements.
- » Services.
- » General slopes.
- » Construction staff, vehicles and plant operators.

Health and safety risks to site Contractors and maintenance workers have not been assessed during these works and will need to be considered separately during design.

The above plausible geotechnical hazards and development elements affected have been carried forward for investigation and assessment.

3.4 Geo-environmental exposure model

3.4.1 Context

The preliminary exposure model is used to identify geo-environmental hazards and to establish potential contaminant linkages, based on the source-pathway-receptor (SPR) approach.

A viable contaminant linkage requires all the components of an SPR to be present. If only one or two are present, there is no linkage and no further assessment is required.

3.4.2 Potential contaminants

For the purpose of this assessment the potential contaminants have been separated according to whether they are likely to have originated from an on-site or off-site source.

3.4.2.1 Potential on-site sources of contamination

- » Potential asbestos (including asbestos cement) containing material fly-tipped within the north of the site (S01).

3.4.2.2 Potential off-site sources of contamination

- » Ground gasses (carbon dioxide and methane) from the backfill of the old water filled quarry 120m west of the site and pond 70m north-west (S02).
- » Contaminants from recent industrial land uses (38m and 54m west) adjacent to the site, including unspecified works/ factories and livestock market. Potential contaminants of concern include solvents, PAHs, heavy metals, petroleum hydrocarbon fuels and oils (S03).

3.4.3 Potential receptors

The following potential receptors in relation to the proposed land use have been identified.

- » People (neighbours, site end users) (R01).
- » Development end use (structures, utilities and landscaping) (R02).

3.4.4 Potential pathways

The following potential pathways have been identified.

- » Ingestion, skin contact, inhalation of dust and outdoor air by people (P01).
- » Migration, build-up and asphyxiation of methane, carbon dioxide, VOC and petroleum hydrocarbon vapour ingress via permeable soils and/or construction gaps (P02).
- » Migration of contaminant from perched groundwater in the Glacial Till (P03)
- » Surface run off (P04).
- » Base flow from contaminated groundwater (P05)

Health and safety risks to site development contractors and maintenance workers have not been assessed as part of this study and will need to be considered separately.

The above sources, pathways and receptors have been considered as part of the Preliminary Risk Assessment in accordance with LCRM (2023), are considered to be plausible in the context of this site and have been carried forward for investigation and assessment. An assessment of the Source

– Pathway – Receptor linkages is undertaken following the assessment and is presented in **Appendix F** (F.2).

3.4.5 *Potential implications of climate change*

Climate change has the potential to change the risk profile for conceptual site models and associated contaminant linkages. The impact of climate change on the CSM is site-specific, and a qualitative assessment of the potential impact of climate change on the CSM for this site is summarised below. The assessment has primarily utilised the guidance in Environment Agency (2010)⁵ and SoBRA (2022)⁶ which set out the UK context to climate change and land contamination. Both guidance documents advocate a “what if” scenario approach in the context of changes in ambient temperatures, an increase in the frequency of extreme rainfall/storm events and heatwaves/droughts, and long-term changes in groundwater and sea levels.

Those “what if” scenarios that are relevant to this CSM are:

- » Increased long-term rainfall leading to increased infiltration and seasonally higher groundwater and water levels in surface waters.
- » Increased frequency and/or magnitude of extreme rainfall events leading to short-term surface flooding, surface water run-off, groundwater flooding, and/or land-based erosion.
- » Increased frequency and/or magnitude of storm events leading to short-term drops in barometric pressure and/or high winds.
- » Occurrence of extreme cold and hot weather events leading to changes in ground conditions such as soil temperature, evapo(trans)piration, and soil moisture (for example freeze-thaw effects and desiccation), decreased infiltration and fall in groundwater and surface water levels.
- » Long-term decrease in rainfall leading to lower infiltration and fall in groundwater and surface water levels.

⁵ Environment Agency, 2010. Guiding Principles for Land Contamination. Part 2. FAQs, technical information, detailed advice and references, March 2010.

⁶ SoBRA, 2022. Guidance on Assessing Risk to Controlled Waters from UK Land Contamination Under Conditions of Future Climate Change, Society of Brownfield Risk Assessment, August 2022.

4. Desk study conclusions

4.1 Geotechnical conclusions

The following plausible geotechnical risks are identified:

- » Soft / loose compressible ground (low strength and high settlement potential).
- » Shrinkage/swelling of clay – settlement/heave of foundations, especially where located within the influence of trees and vegetation.
- » Existing slopes and depressions onsite may require regrading or in filling with cut to allow for a flat development platform to be formed.
- » Non-coal mining or quarrying/ borrow pit – Hollow/ depression in the north-western section of the site resulting in broken ground/ ground instability.
- » Instability of slopes and impact on foundations, floor slabs, roads and infrastructure and construction plant.
- » Potential for unforeseen ground conditions and the risks associated with limited data.

These plausible risks require further investigation and assessment (see Section 6).

4.2 Geoenvironmental conclusions

Based on historical and current land uses:

- » It is considered that it is unlikely that the site would be classified as Contaminated Land under Part 2A of the EPA 1990.
- » The overall risk from land contamination at the site is considered to be low for the current development, as the site history suggests minimal former contaminative land uses.
- » The overall risk for a redeveloped site is assessed to be low with one specific high potentially high risk, but this would need to be confirmed with by an appropriate testing and specialist assessment.

The overall risk for a redeveloped site is assessed to be low as shown in the conceptual site model within Appendix F, but this would need to be confirmed by appropriate intrusive investigation, testing and assessment of the results of the investigation.

The possible pollutant linkages (for risk levels of moderate or greater) on an unremediated redeveloped site, as determined by the desk study and walk-over, are summarised in Table 4.1:

Table 4.1: Possible Pollutant Linkages (for Risk Levels of Moderate or Greater)

Source(s)	◀ potential Impact on ▶	Receptor(s)
Potential asbestos containing material (including asbestos cement) fly-tipped within the north of the site.		Site users Neighbours

These possible pollutant linkages require further investigation and assessment (see Section 6).

5. Uncertainties and limitations

5.1 General comments

Hydrock Consultants Limited (Hydrock) has prepared this report in accordance with the instructions of Cubico UK Developments Limited (the Client), by e-mail dated July 2024 under the terms of appointment for Hydrock, for the sole and specific use of the Client and parties commissioned by them to undertake work where reliance is placed on this report. Any third parties who use the information contained herein do so at their own risk. Hydrock shall not be responsible for any use of the report or its contents for any purpose other than that for which it was prepared or for use of the report by any parties not defined in Hydrock's appointment.

Information provided by third parties has been used in good faith and is taken at face value; however, Hydrock cannot guarantee its accuracy or completeness.

Whilst the preliminary risk assessment process has identified potential risks to construction workers, consideration of occupational health and safety issues is beyond the scope of this report.

The non-specialist UXO screening has been undertaken for the purposes of ground investigation only (i.e. low risk activity in accordance with CIRIA Report C681). Further assessment should be undertaken with regards to other higher risk activities e.g. construction.

Please note that notwithstanding any site observations concerning the presence or otherwise of archaeological sites, asbestos-containing materials or invasive weeds, this report does not constitute a formal survey of these potential constraints and specialist advice should be sought.

Any site boundary line depicted on plans does not imply legal ownership of land.

6. Recommendations for further work

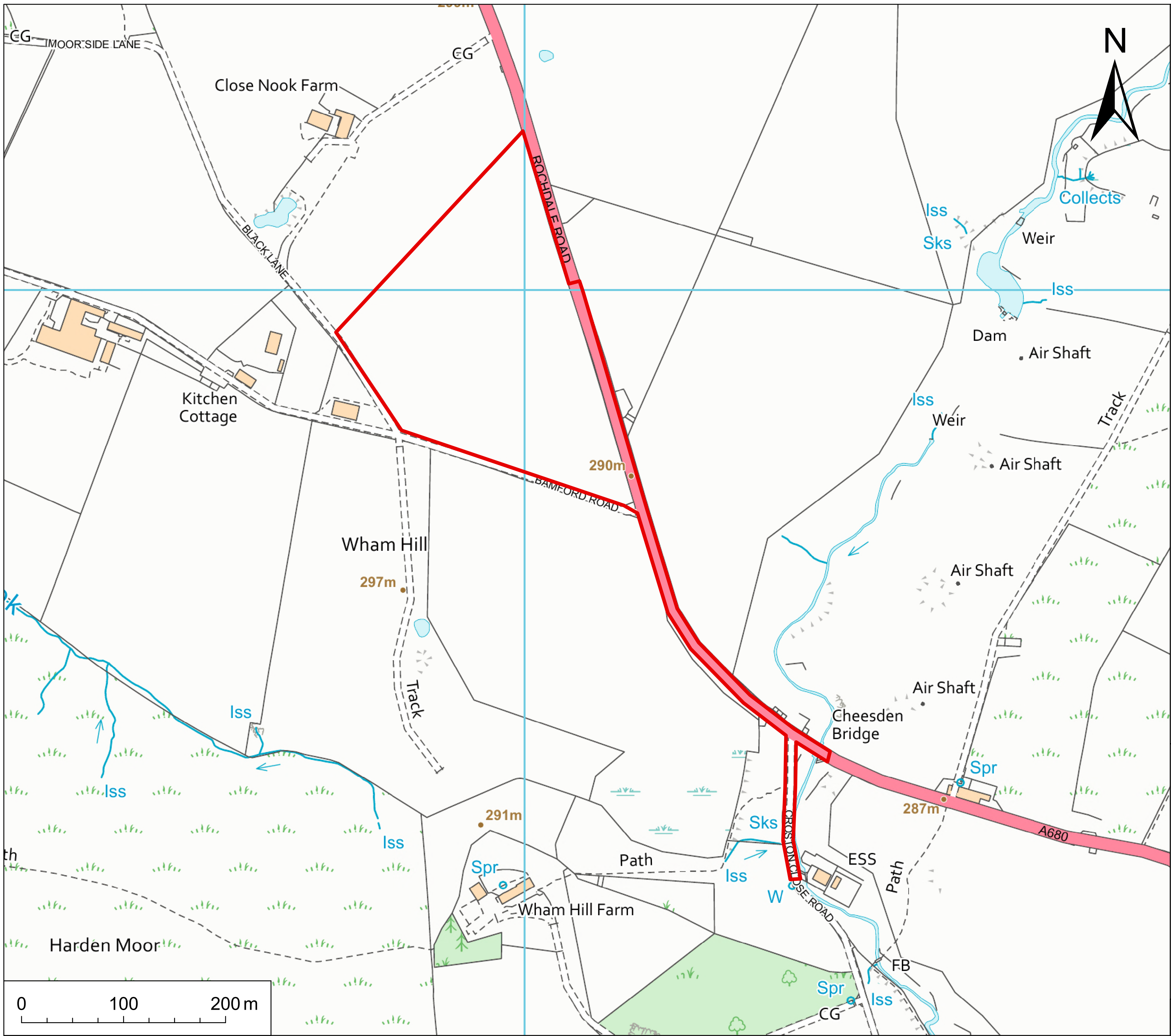
In order to confirm the actual risks to receptors and confirm the ground conditions with respect to potential geotechnical and geo-environmental risks, an appropriate intrusive investigation will need to be undertaken. This investigation will need to: required:

- » determine the soil strength/density profile beneath the site;
- » determine the depth/level of groundwater beneath the site;
- » determine the ground gas concentrations beneath the site;
- » determine CBRs to assist with pavement design;
- » determine the ground conditions within the depressions/ collapsed ground adjacent to the eastern boundary and the depression/ hollow in the north-western corner;
- » assess trench stability, over break potential and ease of excavation;
- » allow soil infiltration rate testing;
- » allow sampling for chemical and geotechnical laboratory testing;
- » allow soil classification to allow geotechnical characterisation and determine suitability for reuse of soils within earthworks (if required);
- » obtain information in terms of Aggressive Chemical Environment for Concrete Class (ACEC Class).

Following investigation, assessment will be required to;

- » update the ground model;
- » update the Geotechnical Risk Register;
- » provide Geotechnical Design recommendations;
- » update the Conceptual Site Model (CSM), including identification of plausible pollution linkages;
- » undertake generic quantitative risk assessment of potential chemical contaminants to establish 'suitability for use' under the current planning regime;
- » provide outline mitigation recommendations to ensure the site is 'suitable for use'.

Appendix A Drawings



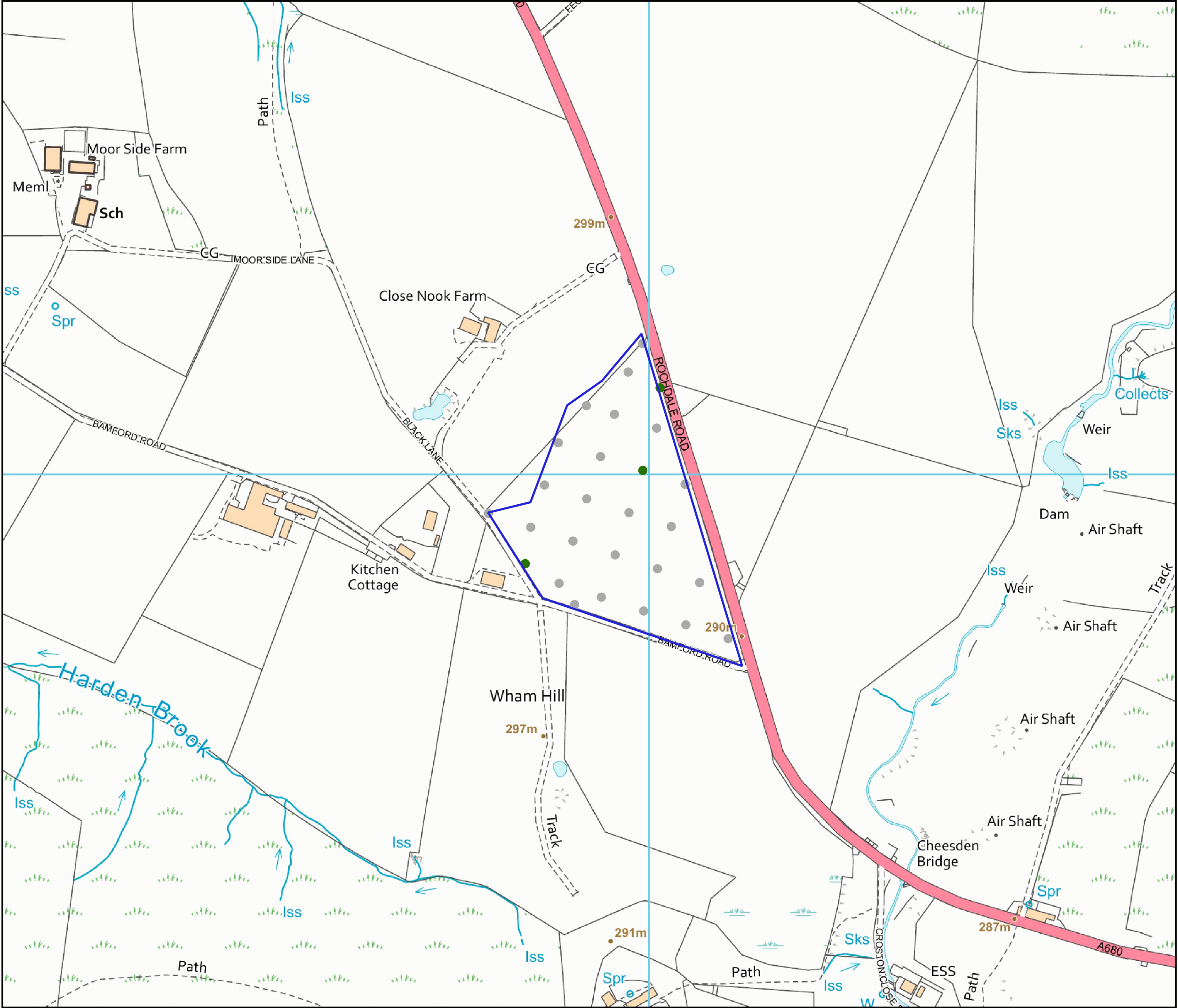
 Site Boundary

Notes

- Scale 1:2500

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Ordnance Survey 0100031673

Rossendale BESS
Site Location Plan



Key:

- Study Area
- Peat Depth of Penetration**
 - Peat less than 30cm (0.3m)
 - Peat greater than 30cm (0.3m)
 - Peat depth greater than 40cm (0.4m)
 - Peat greater than 100cm (1.0m)
 - Peat greater than 200cm (2.0m)

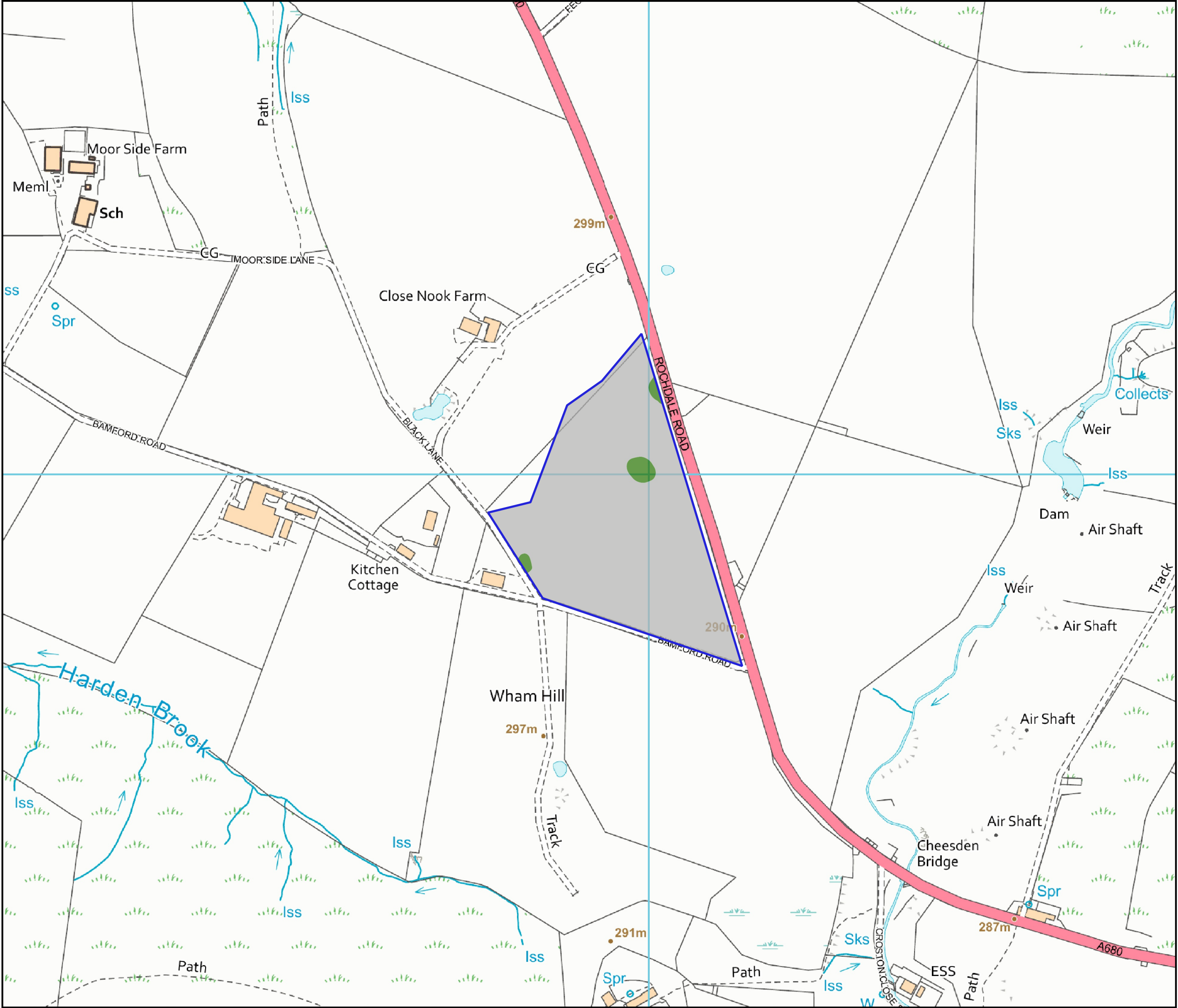
0 50 100 150 200 250 m

PROJECT
SCOUT MOOR

FIGURE: 1
Peat Depth of Penetration (BESS Area)

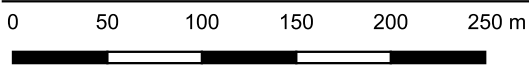
DRAW JM	REVIEW JM
SCALE 1:4,000 @ A3	DATE 08/01/2025

FLUID
ENVIRONMENTAL CONSULTING



Key:

- Study Area
- Estimated Peat Depth**
 - Peat less than 30cm (0.3m)
 - Peat greater than 30cm (0.3m)
 - Peat depth greater than 40cm (0.4m)
 - Peat greater than 100cm (1.0m)
 - Peat greater than 200cm (2.0m)



PROJECT
SCOUT MOOR

FIGURE: 2
**Estimated Peat Depth
(BESS Area)**

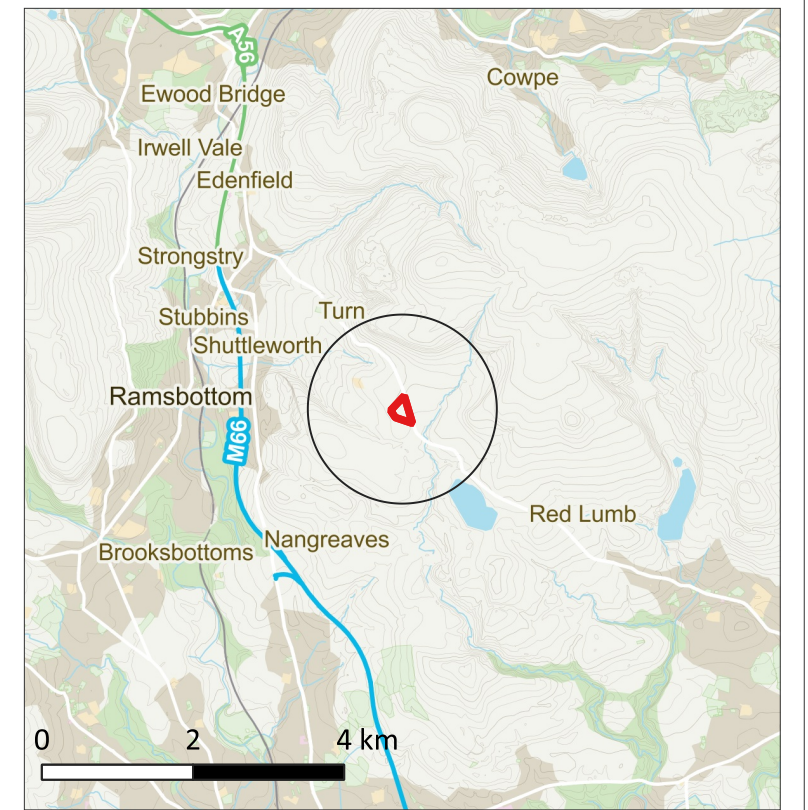
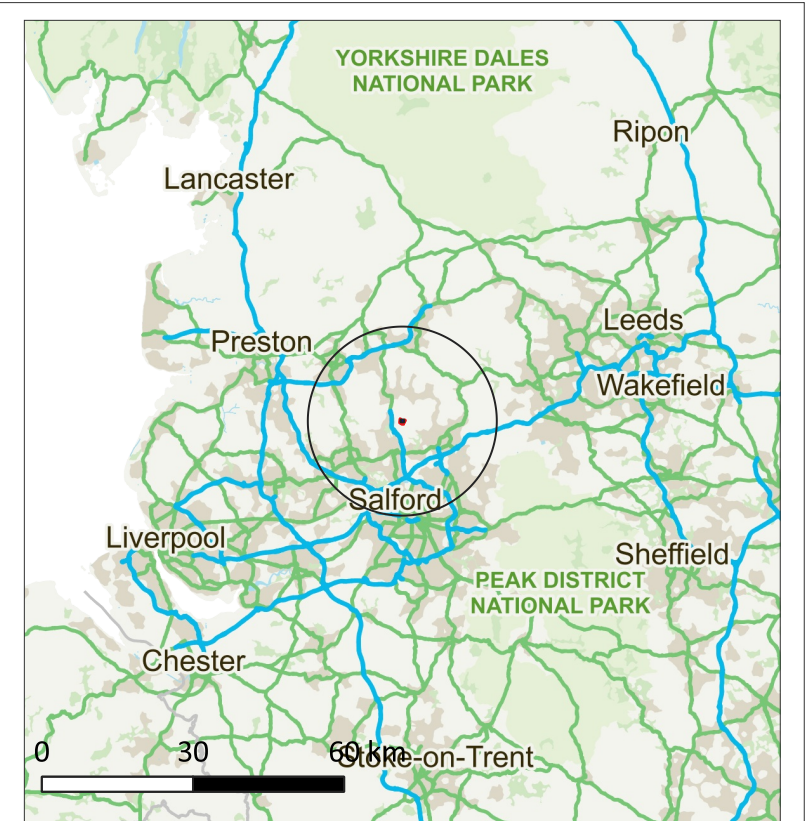
DRAW
JM

REVIEW
JM

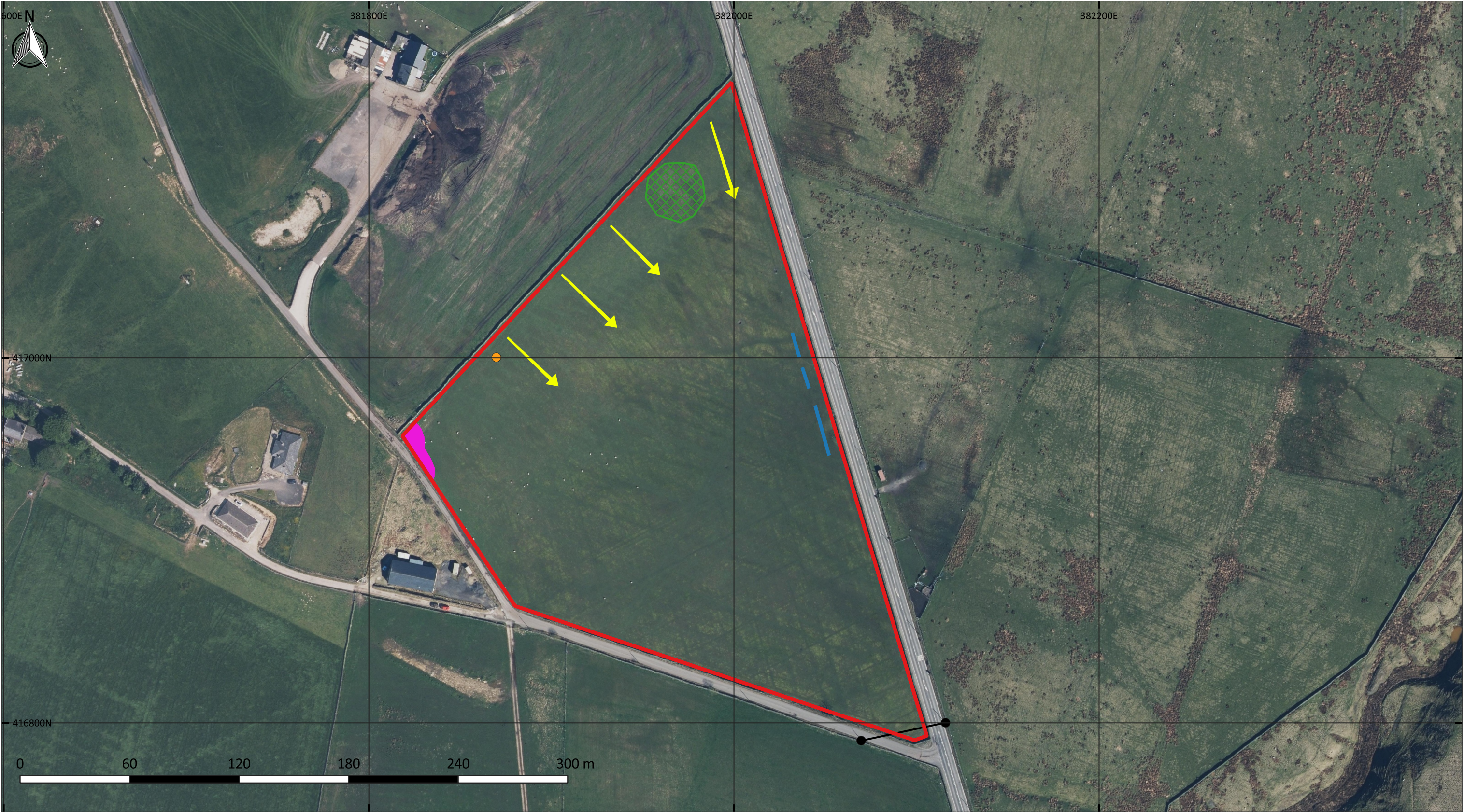
SCALE
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DATE
08/01/2025





KEY PLAN Site Boundary	NOTES 1. Contains OS data © Crown copyright and database right (2022)	REVISIONS <table><tr><th>REV.</th><th>DRAWN BY INITIALS</th><th>CHECKED BY INITIALS</th><th>DATE</th><th>REVISION NOTES/COMMENTS</th></tr><tr><td>P01</td><td>JH</td><td>AC</td><td>24/07/24</td><td>First issue</td></tr></table>				REV.	DRAWN BY INITIALS	CHECKED BY INITIALS	DATE	REVISION NOTES/COMMENTS	P01	JH	AC	24/07/24	First issue	Hydrock		TITLE SITE LOCATION PLAN	
		REV.	DRAWN BY INITIALS	CHECKED BY INITIALS	DATE	REVISION NOTES/COMMENTS													
		P01	JH	AC	24/07/24	First issue													
		HYDROCK PROJECT NO. 34779		SCALE @ A3 1:2,500															
CLIENT Cubico Stainable Investments		PURPOSE OF ISSUE SUITABLE FOR INFORMATION		STATUS S2															
PROJECT Higher Moss Energy Storage		DRAWING NO. 34779-HYD-XX-XX-DR-GE-0001		REVISION P01															



KEY PLAN

Site Boundary	Overhead Cables	Hollow/ Depression
Wooden Pole	Steeper Slope and Direction	Vegetated Mound
Suspected Asbestos	Linear Depression/ Collapse	

NOTES

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REVISIONS				
REV.	DRAWN BY INITIALS	CHECKED BY INITIALS	DATE	REVISION NOTES/COMMENTS
P01	JH	AC	24/05/24	First issue

TITLE SITE FEATURES PLAN		
HYDROCK PROJECT NO. 34779	SCALE @ A3 1:2,000	
CLIENT Cubico Sustainable Developments	PURPOSE OF ISSUE SUITABLE FOR INFORMATION	STATUS S2
PROJECT Higher Moss Energy Storage	DRAWING NO. 34779-HYD-XX-XX-DR-GE-0002	REVISION P01



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Revisions:				
Revision	Date	Revision Notes	Drawn	Inspected
01	18.03.24	First Issue	OB	YS
02	02.04.24	'PL-02' leader added for clarity	OB	YS
03	27.02.25	Technology Changed	RR	PR

LEGEND:	
	PLANNING APPLICATION BOUNDARY
	DNO ACCESS ROUTE
	SITE ACCESS
	INTERNAL ACCESS
	EMERGENCY ACCESS
	PERIMETER FENCELINE
	200M RESIDENTIAL BUFFER
	EXISTING PROW
	EXISTING TELECOMS

SITE INFRASTRUCTURE:			
	SECURITY GATE		WELFARE OFFICE
	33KV SUBSTATION		240,000L WATER TANK
	BATTERY UNIT		WATER HYDRANT
	TRANSFORMER		CCTV CAMERA
	CUSTOMER SWITCHGEAR		AUX TRANSFORMER
	SPARE PARTS CONTAINER		ATTENUATION POND

x 20 @ 5.01MW / 10.02MWh (2hr)
Total Capacity: 100.20MW/ 200.4MWh

Status: **FOR PLANNING**

Project: **Higher Moss BESS**

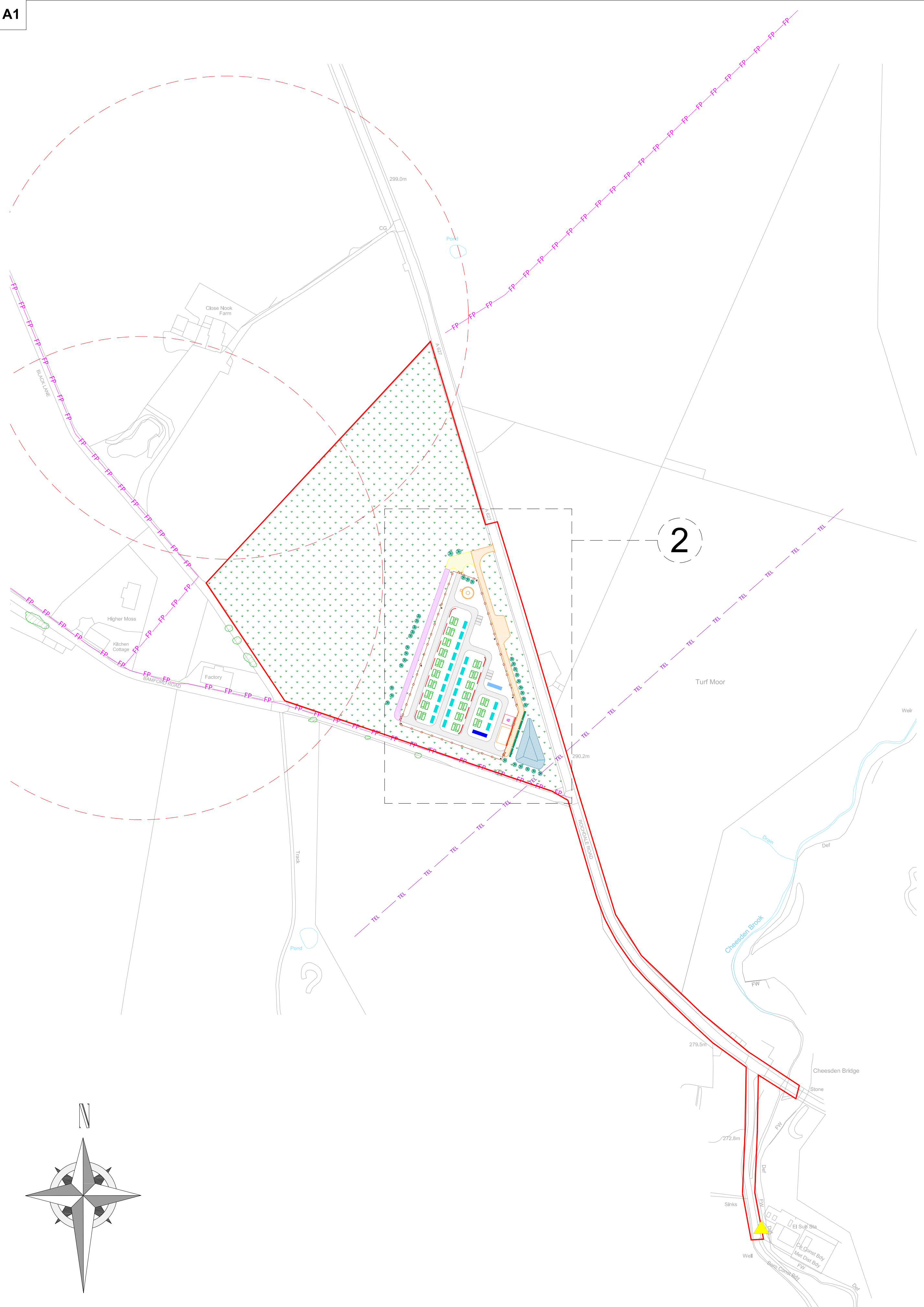
Client:
Cubico
SUSTAINABLE INVESTMENTS
Cubico Sustainable Investments
Tel: 020 3805 3900
www.cubicoinvest.com

Drawn by:

CADmando
2D, 3D CAD & BIM SERVICES
CADmando Design & Draughting Solutions Ltd
The Long Barn, The Courtyard, Seven Drive, Tewkesbury
Business Park, GL20 9GD
Tel: +44 (0) 1684 850019
Mob: +44 (0) 7814538910

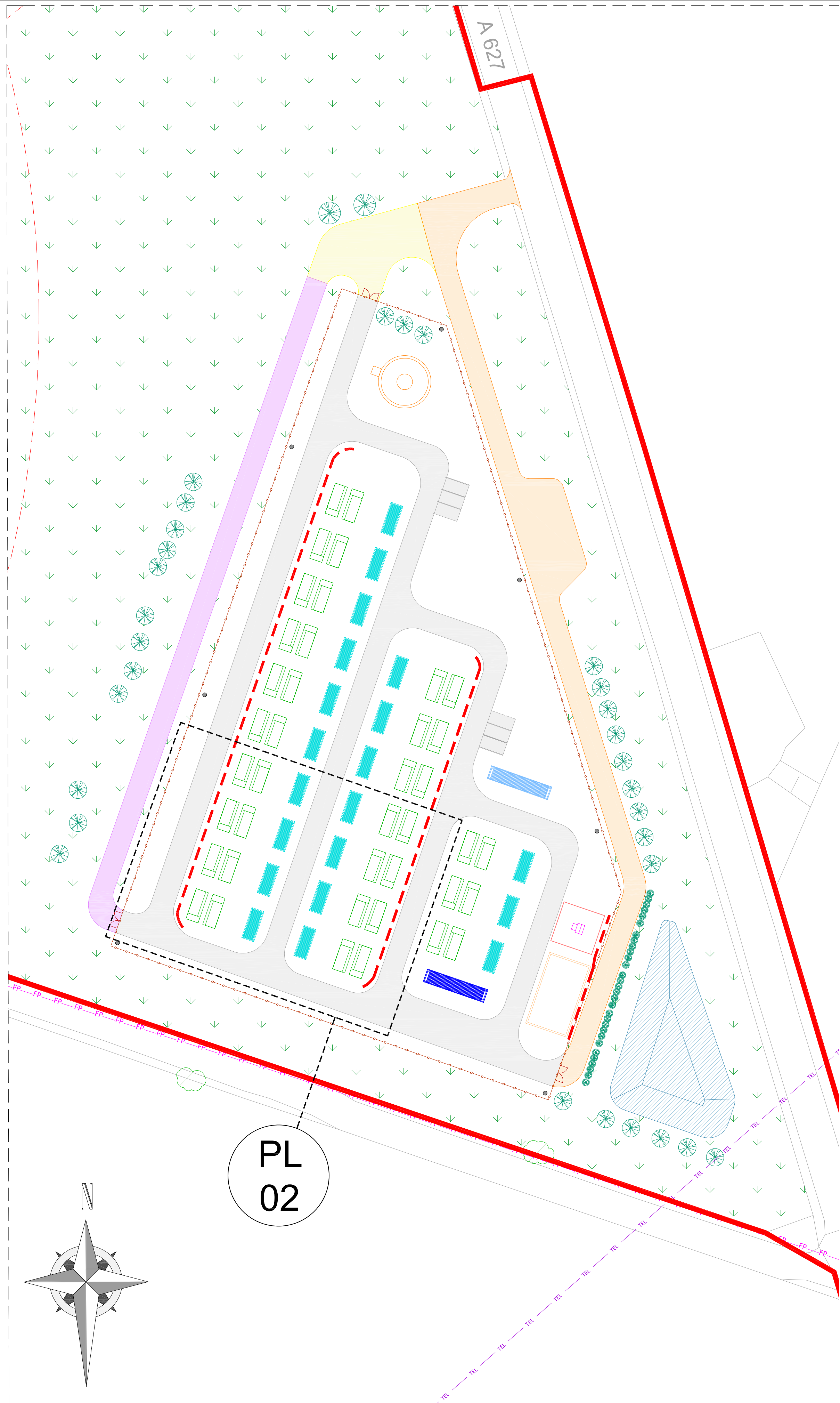
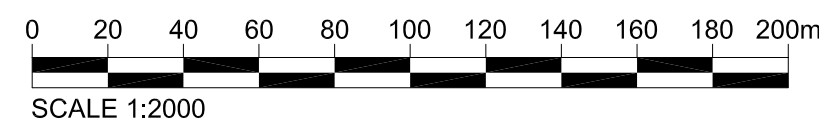
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**Higher Moss BESS Site
Indicative Site Layout Plan**

Drawn: OB	Checked: YS	First Issued: 18.03.2024
Project Code: CUB001-	Drawing Number: PL-01	
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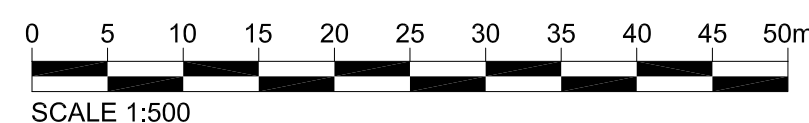
PROPOSED SITE LAYOUT PLAN (OVERALL)

Scale: 1:2000@A1



PROPOSED SITE LAYOUT PLAN (BESS)

Scale: 1:500@A1



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Revisions:

Revision	Date	Revision Notes	Drawn	Inspected
01	13.12.24	First Issue	OM	PR
02	18.12.24	BNG Area Added, RLB Amended	OB	PR
03	27.02.25	Technology Changed	RR	PR
04	16.03.25	Layout, Legend & Title Updated	RL	PR

LEGEND:

WATER COURSE	BOUNDARY
DNO ACCESS ROUTE	SITE ACCESS
INTERNAL ACCESS	EMERGENCY ACCESS
2.4m HIGH WIRE MESH PERIMETER FENCELINE	200M RESIDENTIAL BUFFER
EXISTING PROW	EXISTING TELECOMS
RETAINING WALL	

SITE INFRASTRUCTURE:

SECURITY GATE	240,000L WATER TANK
33kV SUBSTATION	WATER HYDRANT
BATTERY UNIT	CCTV CAMERA
TRANSFORMER	AUX TRANSFORMER
CUSTOMER SWITCHGEAR	ATTENUATION POND
SPARE PARTS CONTAINER	POC

VEGETATION:

EXISTING VEGETATION	BNG AREA	PROPOSED VEGETATION
---------------------	----------	---------------------

Status:

PLANNING

Project:

Rossendale BESS
Rochdale Road, Turn Village

Client:

Cubico
SUSTAINABLE INVESTMENTS

Cubico Sustainable Investments
Tel: 020 3805 3800
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Drawn by:

CADmando
2D, 3D CAD & BIM SERVICES

CADmando Design & Draughting Solutions Ltd
Unit B2, The Courtyard, Seem Drive, Tewkesbury Business Park, GL20 8GD
Tel: +44 (0) 1684 850019
Mob: +44 (0) 7914439910

Drawing Title:

**Rossendale BESS -
Proposed (Illustrative) Site Layout Plan**

Drawn: OM	Checked: PR	First Issued: 13.12.2024
Project Code: CUB001-	Drawing Number: PL-03	
Sheet Size: A1	Scale: A.N	Revision: 04

Revisions:

Revision	Date	Revision Notes	Drawn	Inspected
01	27.03.24	First Issue	OB	YS
02	27.02.25	Technology Changed	RR	PR
03	06.03.25	Titles and Legend Updated	RL	PR

LEGEND:

	INTERNAL ACCESS
	EMERGENCY ACCESS
	2.4m HIGH WELD MESH
	PERIMETER FENCELINE

SITE INFRASTRUCTURE:

	SECURITY GATE		BATTERY UNIT
	CCTV CAMERA		TRANSFORMER

x 20 @ 5.01MW / 10.02MWh (2hr)

Total Capacity:
100.20MW/ 200.4MWh

Status:

FOR PLANNING

Project:

Rossendale BESS
Rochdale Road, Turn Village

Client:

Cubico Sustainable Investments
Tel: 020 3805 3900
www.cubicoinvest.com

Drawn by:

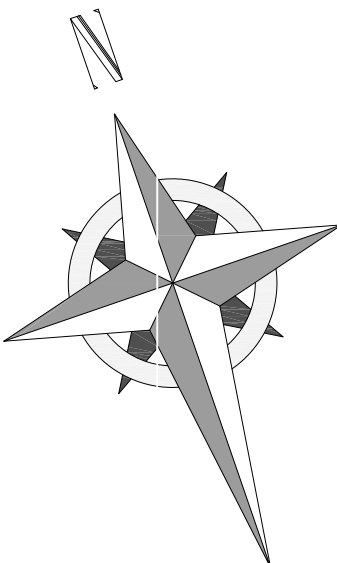
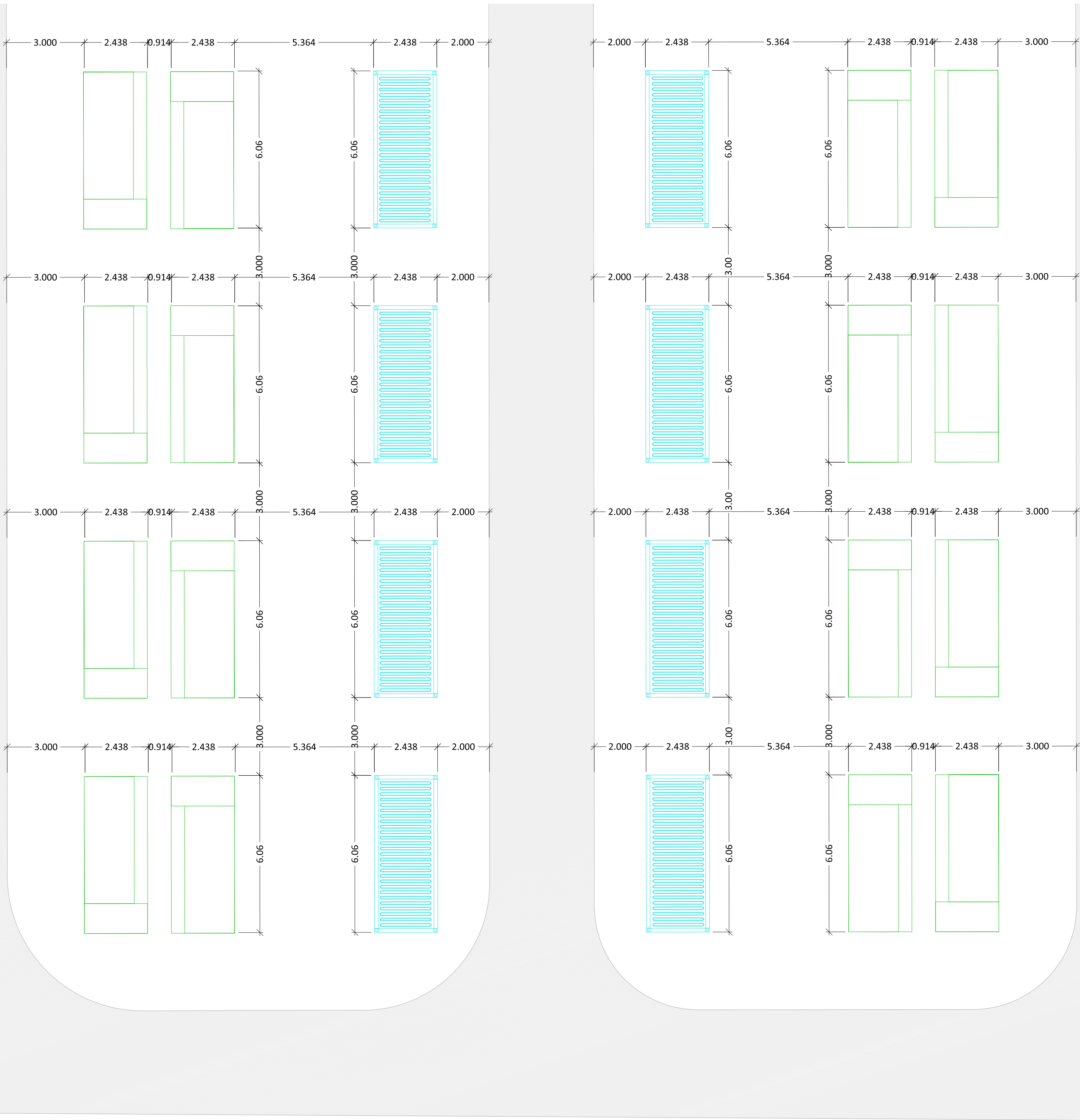
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2D, 3D CAD & BIM SERVICES

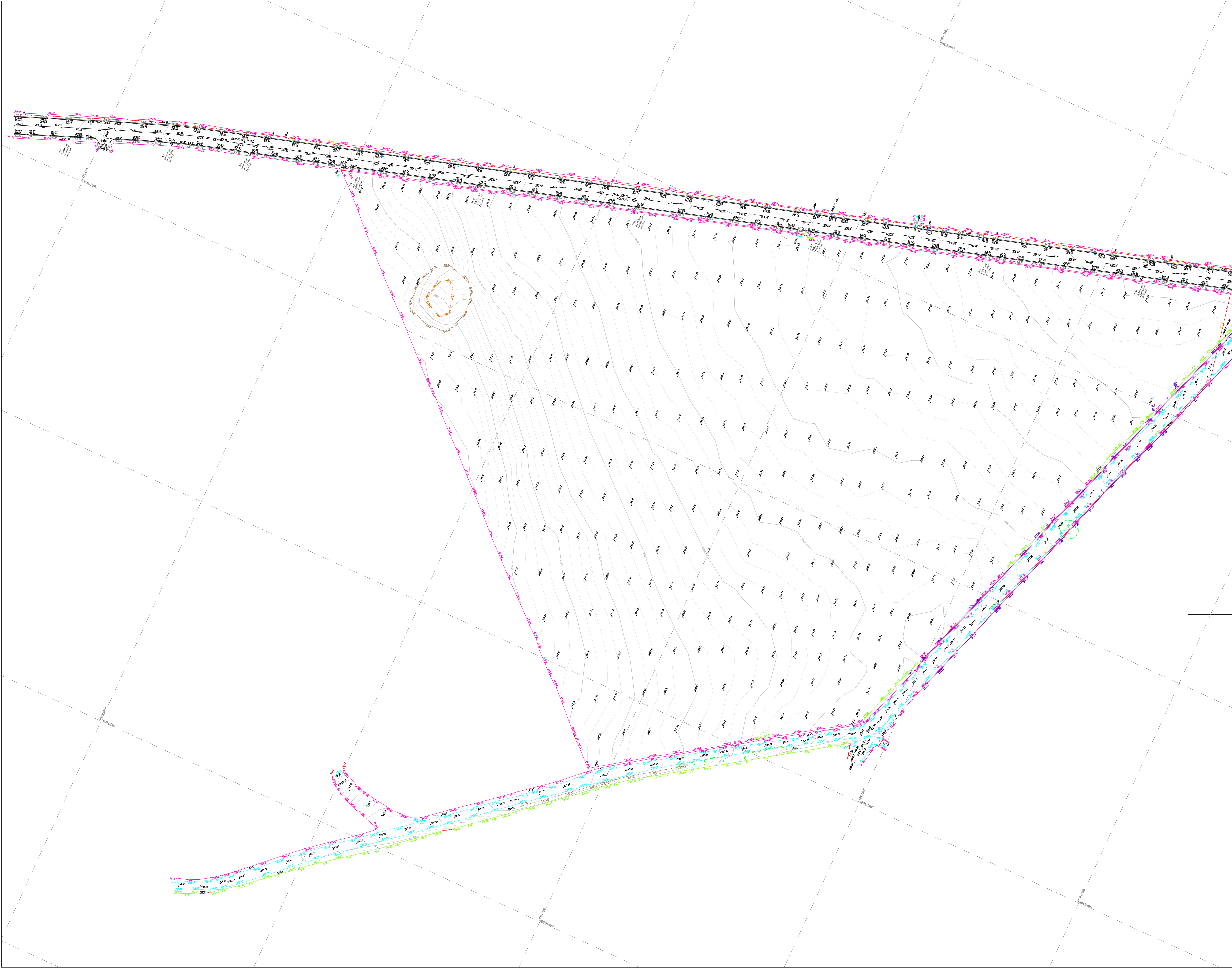
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Unit B2, The Courtyard, Severn Drive, Tewkesbury Business Park, GL20 9GD
Tel: +44 (0) 1684 850019
Mob: +44 (0) 7814438910

Drawing Title:

Rossendale BESS
Dimensions and Standards

Drawn: OB	Checked: YS	First Issued: 27.03.2024
Project Code: A1	Drawing Number: CUB001- PL-02	Revision: 03





Site Grid North

Symbols/Abbreviations (Where Applicable):

+AV: AIR VALVE

+BB: BELISHA BEACON

+BH: BOREHOLE

+BM: BENCH-MARK

+BOL: BOLLARD

+B/S: BUS STOP

+CAM: CAMERA

+CS: CABLE STAY

+CATV: CATV INSPECTION CHAMBER

+CBOX: ELECTRICITY BOX, CABLE BOX, ETC.

+CCTV: C.C.T.V. CAMERA

+C-FIT: CATCH PIT

+EC: ELECTRICITY COVER

+EP: ELECTRICITY POLE

+ER: EARTH ROD

+FH: FIRE HYDRANT

+FP: FLAG POLE

+G: GULLY

+G: GULLY (ROUND)

+GV: GAS VALVE

+IC: INSPECTION COVER (SQUARE)

+IC: INSPECTION COVER (ROUND)

+IL: INVERT LEVEL

+KO: KERB OUTLET

+LB: LETTER BOX

+LC: LIGHTING COLUMN

+LP: LAMP POST

+LP/BS: LAMP POST/BUS STOP

+MH: MANHOLE (SQUARE)

+MH: MANHOLE (ROUND)

+MKR: MARKER

+O.P: POST

+RE: RUDDING EYE

+R/S: ROAD SIGN

+S/P: SIGN POST

+SNP: STREET NAME PLATE

+ST: STOP TAP

+SV: STOP VALVE

+TCB: TELEPHONE CALL BOX

+TL: TRAFFIC LIGHT

+TP: TELEGRAPH POLE

+TP/EP: TELEGRAPH POLE/ELECTRIC POLE

+T/C: TELECOM INSPECTION COVER

+WO: WATER OUTLET

+WM: WATER METER

+GATE: GATE

+X: DEFINED POINT

+C: CONTROL POINT

+T: TREE (CONIFEROUS)

+D: TREE (DECIDUOUS)

+F: FOLIAGE

+H: HEDGE

+DPC 99.99m: DAMP PROOF COURSE LEVEL

+EL 99.99m: EAVES LEVEL

+FL 99.99m: FLOOR LEVEL

+RL 99.99m: RIDGE LEVEL

+SL 99.99m: SOFFIT LEVEL

+TL 99.99m: THRESHOLD LEVEL

FENCE DESCRIPTIONS:

B/W: BARBED WIRE FENCE

C/B: CLOSE BOARDED FENCE

C/L: CHAIN LINK FENCE

C/P: CHESTNUT PALING FENCE

CONC/P: CONCRETE PANEL FENCE

I/R: IRON RAILING FENCE

P/R: POST AND RAIL FENCE

P/W: POST AND WIRE FENCE

P/C: POST AND CHAIN FENCE

S/PAL: STEEL PALISADE FENCE

S/B: SAFETY BARRIER

T/PAL: TIMBER PALISADE FENCE

SITE LAYOUT:

Revision Information

Rev	Date	Description

INFORMATION

1) Ordnance Survey co-ordinates and level are derived from OSTN15 and OSGM15, transformed from WGS84.

2) Only services located during the site survey are shown on this plan. Further investigation may be required to ascertain the full extent of the site services.

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Project

A680 Rossendale Road

Cheesden

Project No

PMS24131

Sheet

A0

Scale

1:500

Surveyed By

TW KR

Drawn By

JW

Approved By

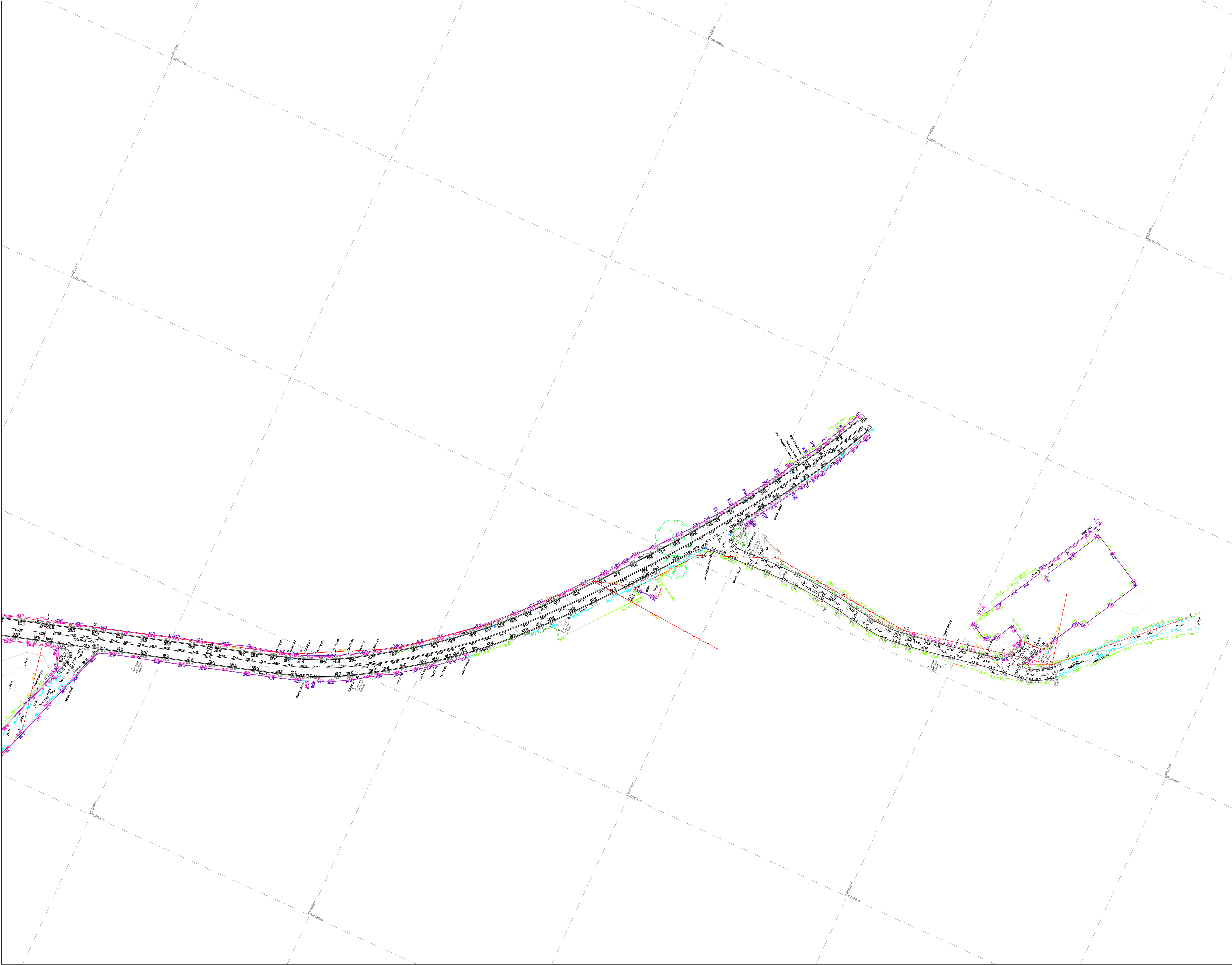
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PMS24131-01

Issued

18/07/24



Site Grid North

Symbols/Abbreviations (Where Applicable):

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•BH: BOREHOLE

+BM: BENCHMARK

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SITE LAYOUT:

Revision Information

Rev	Date	Description

INFORMATION

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Media City UK

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Email: Joe.Chambers@cubicoinvest.com

Project

A680 Rossendale Road

Cheesden

Project No

PMS24131

Sheet

A0

Scale

1:500

Surveyed By

TW KR

Drawn By

JW

Approved By

PM

Dwg

PMS24131-02

Issued

18/07/24

Appendix B Field reconnaissance photographs

Site Investigation Photograph 1

Date: 17/07/2024

**Direction
Photograph
Taken:** Looking
north.

Description:
Public footpath
running along the
northern
boundary.



Site Investigation Photograph 2

Date: 17/07/2024

**Direction
Photograph
Taken:** Looking
west.

Description:
Vegetated mound
in the west
located at the
public footpath
entrance to the
site.



**Site Investigation
Photograph 3****Date:** 17/07/2024**Direction
Photograph
Taken:** N/A.

Description:
Suspected
asbestos
(including
asbestos cement)
along the northern
boundary.

**Site Investigation
Photograph 4****Date:** 17/07/2024**Direction
Photograph
Taken:** Looking
north-west.

Description: IBC
and wooden
pallets along the
northern
boundary.



**Site Investigation
Photograph 5**

Date: 17/07/2024

**Direction
Photograph
Taken:** Looking
north-east.

Description:
Hollow/
depression in the
north-western
section of the site.

**Site Investigation
Photograph 6**

Date: 17/07/2024

**Direction
Photograph
Taken:** Looking
north-west.

Description:
Topography of the
site showing slope
running from the
north-west to the
south-east.



**Site Investigation
Photograph 7****Date:** 17/07/2024**Direction
Photograph
Taken:** Looking
south.**Description:**
Several
depressions/
ground collapse
running parallel to
the eastern
boundary.**Site Investigation
Photograph 8****Date:** 17/07/2024**Direction
Photograph
Taken:** N/A.**Description:**
Subsidence/
ground collapse in
public footpath
along the eastern
boundary.

**Site Investigation
Photograph 9**

Date: 17/07/2024

**Direction
Photograph
Taken:** Looking
south.

Description:
Overhead cables
running along the
southern section
of the site.

**Site Investigation
Photograph 10**

Date: 17/07/2024

**Direction
Photograph
Taken:** Looking
north.

Description:
Topography of the
site showing a
steeper slope in
the north
becoming more
gradual in the
centre.



Appendix C Historical ordnance survey maps



Groundsure
INSIGHTS

HISTORICAL MAP PACK LEGEND

COUNTY SERIES
1:1,2500
NATIONAL GRID
1:1,250 & 1:2,500

Information present on these legends is sourced
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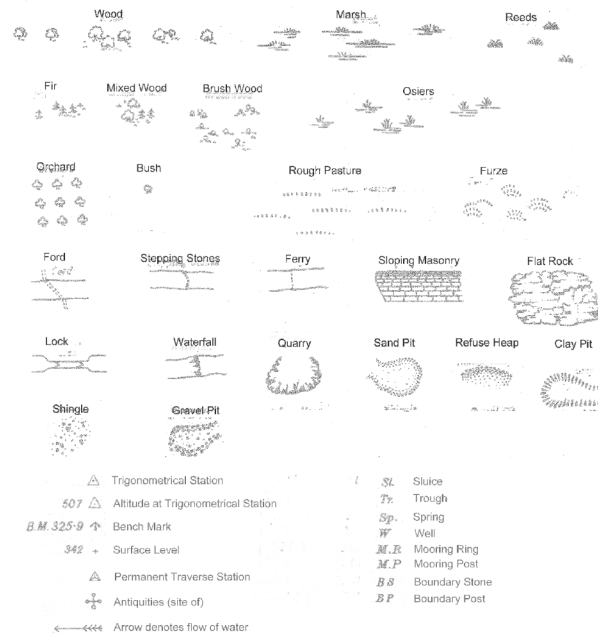
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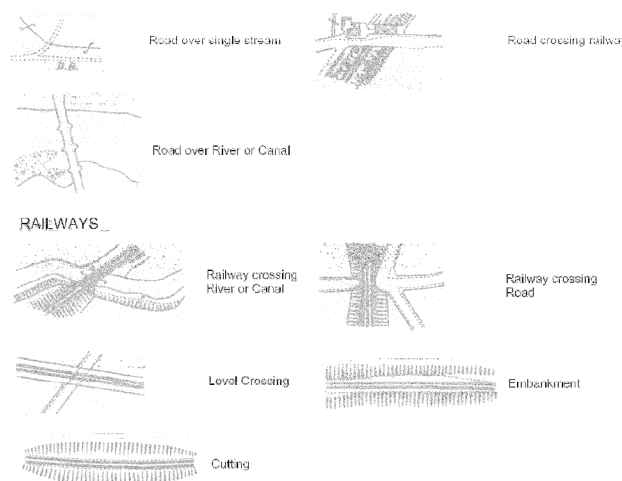
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COUNTY SERIES 1:2,500

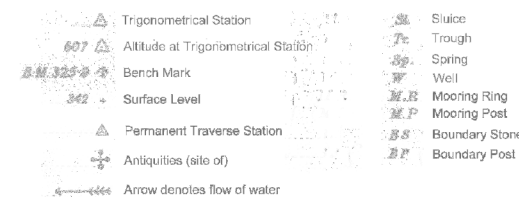
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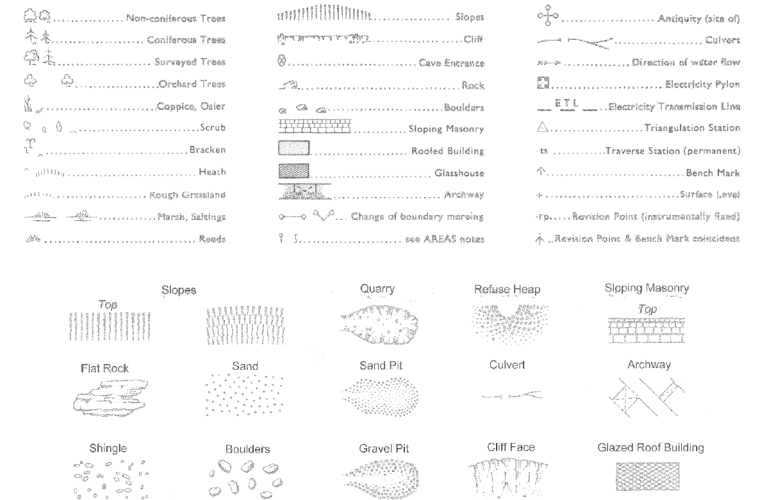


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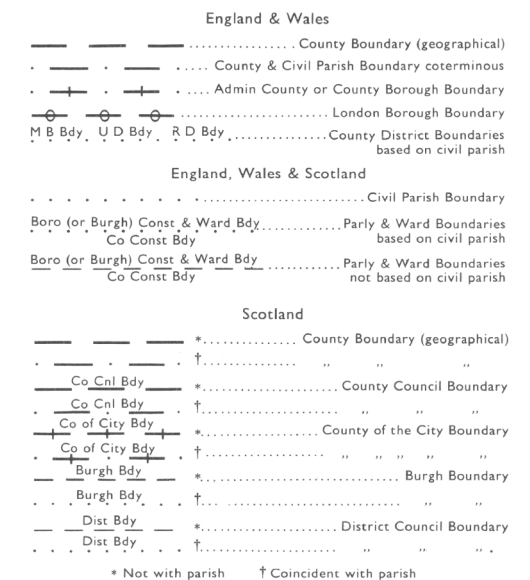


NATIONAL GRID 1:2,500 & 1:1,250

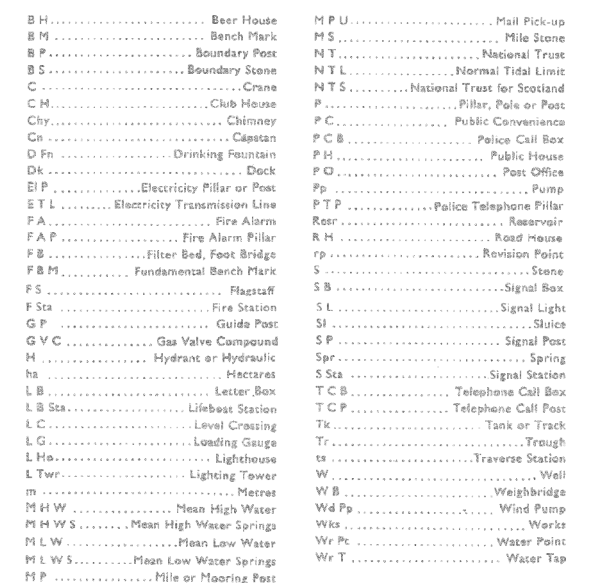
GENERAL FEATURES



BOUNDARIES



ABBREVIATIONS

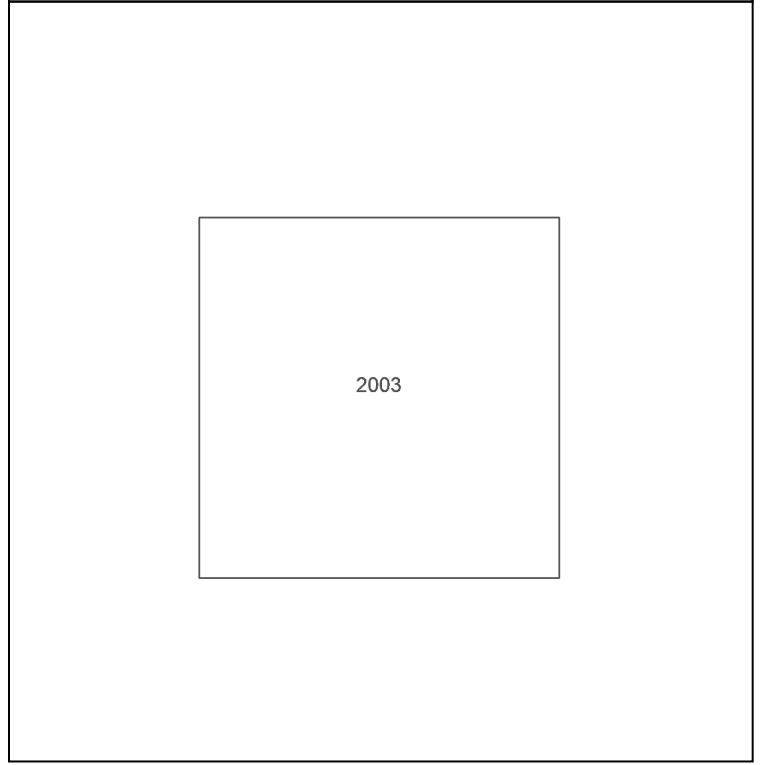


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Grid Ref: 381819, 416815

Map Name: LandLine
Map date: 2003
Scale: 1:1,250
Printed at: 1:1,250



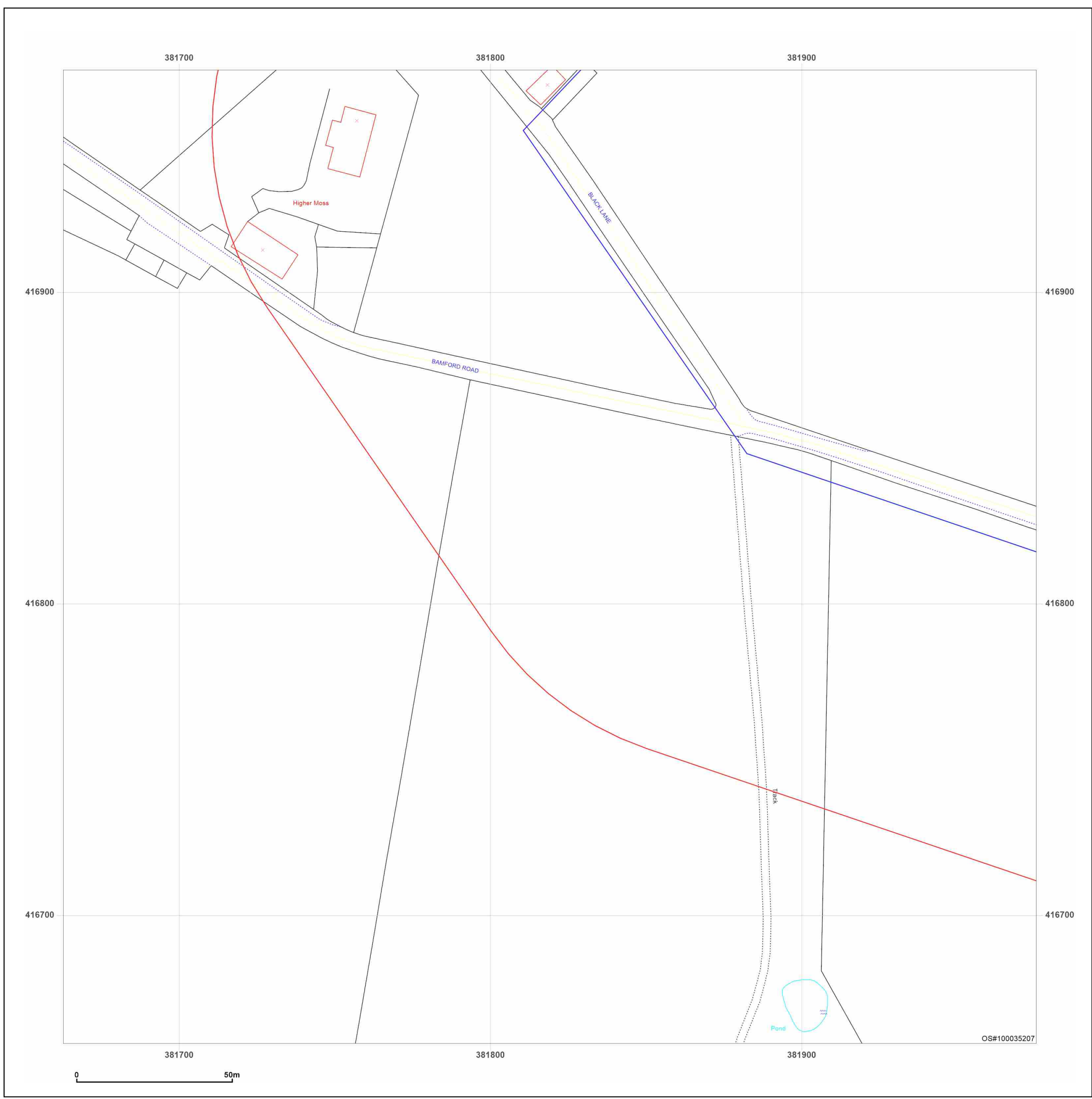


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LANCASHIRE, BL0 0RT

Client Ref: PO35160
Report Ref: HYD-CFY-7BR-I8I-T78_Landline_1_2
Grid Ref: 381819, 417115

Map Name: LandLine

Map date: 2003

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Printed at: 1:1,250



2003

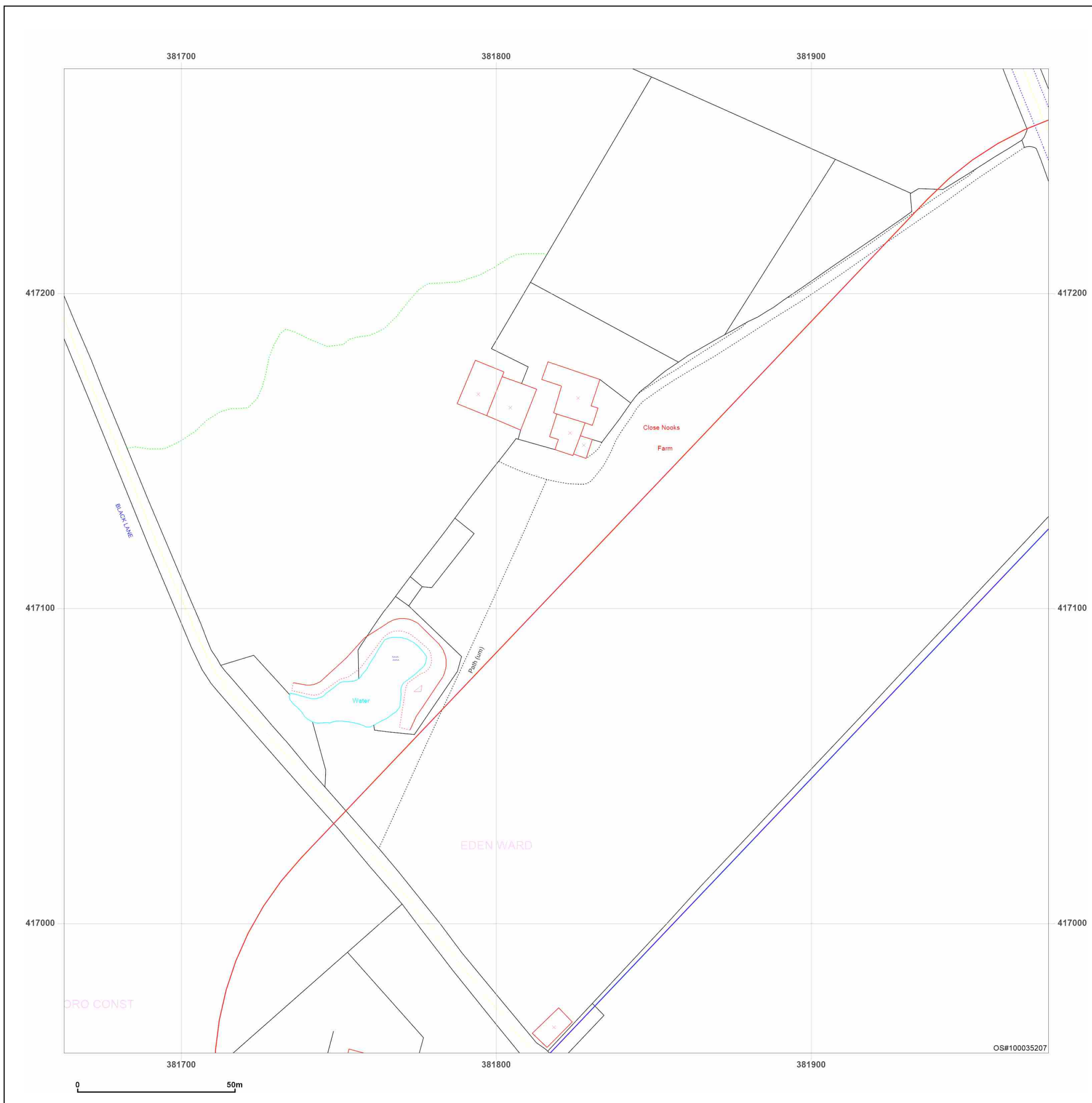


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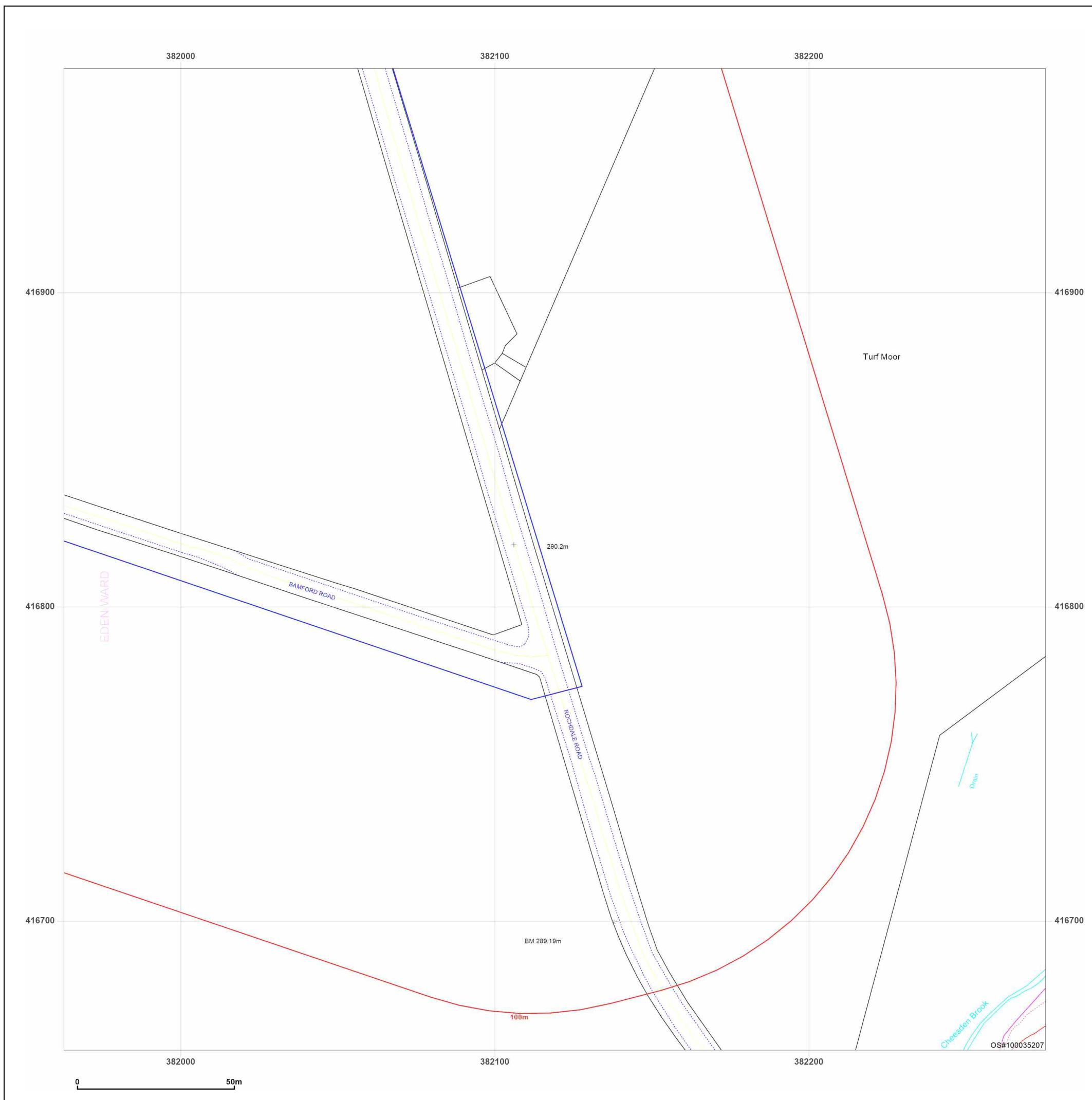


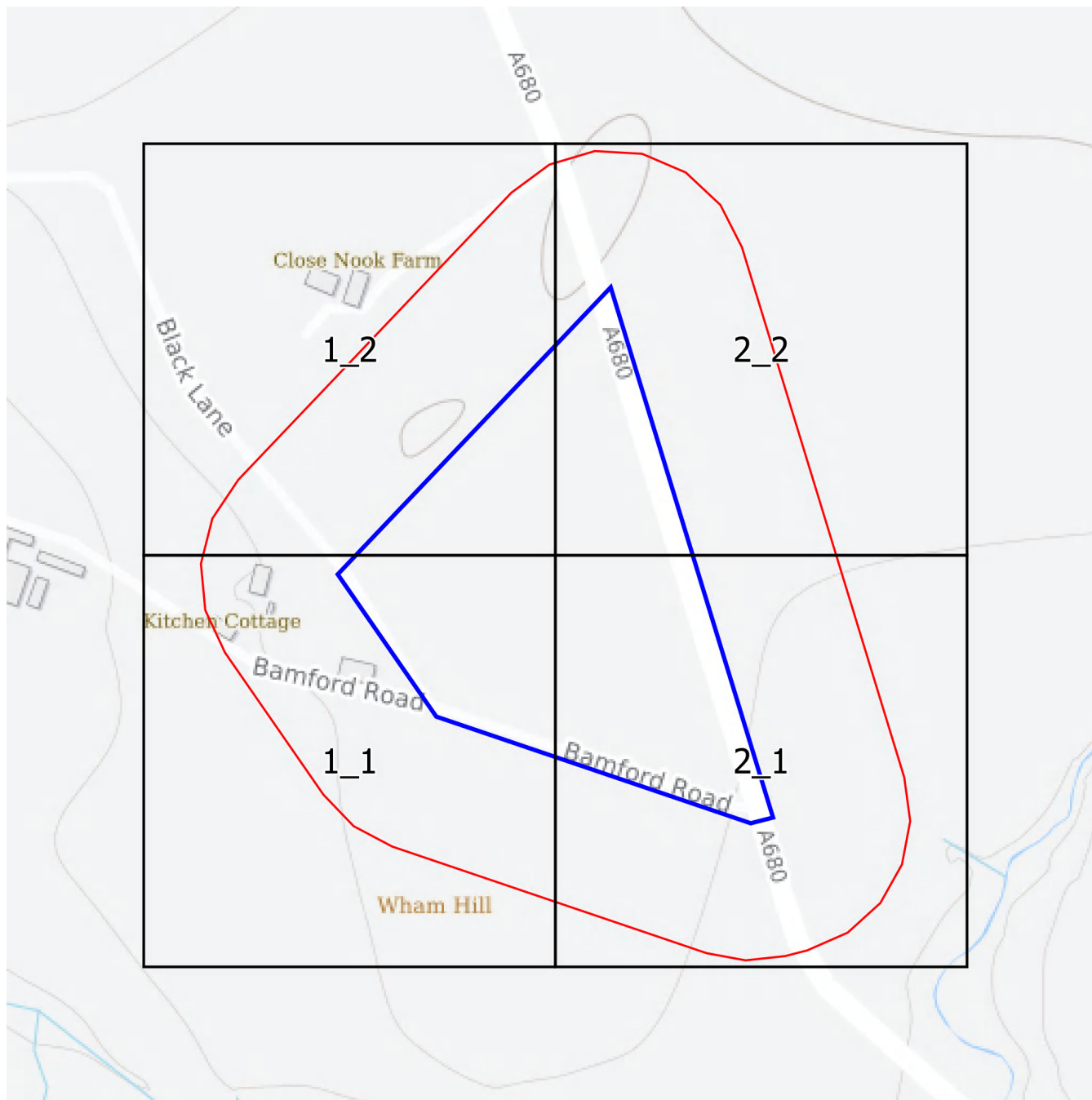
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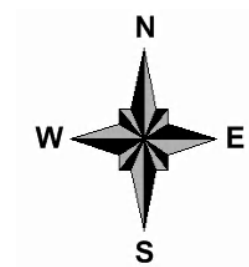
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Groundsure
INSIGHTS

Landline Scale Grid Index



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Client Ref: PO35160
Report Ref: HYD-CFY-7BR-I8I-T78_LS_1_1
Grid Ref: 381968, 416965

Map Name: County Series

Map date: 1910

Scale: 1:2,500

Printed at: 1:2,500



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Revised 1910
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1910
Revised 1910
Edition N/A
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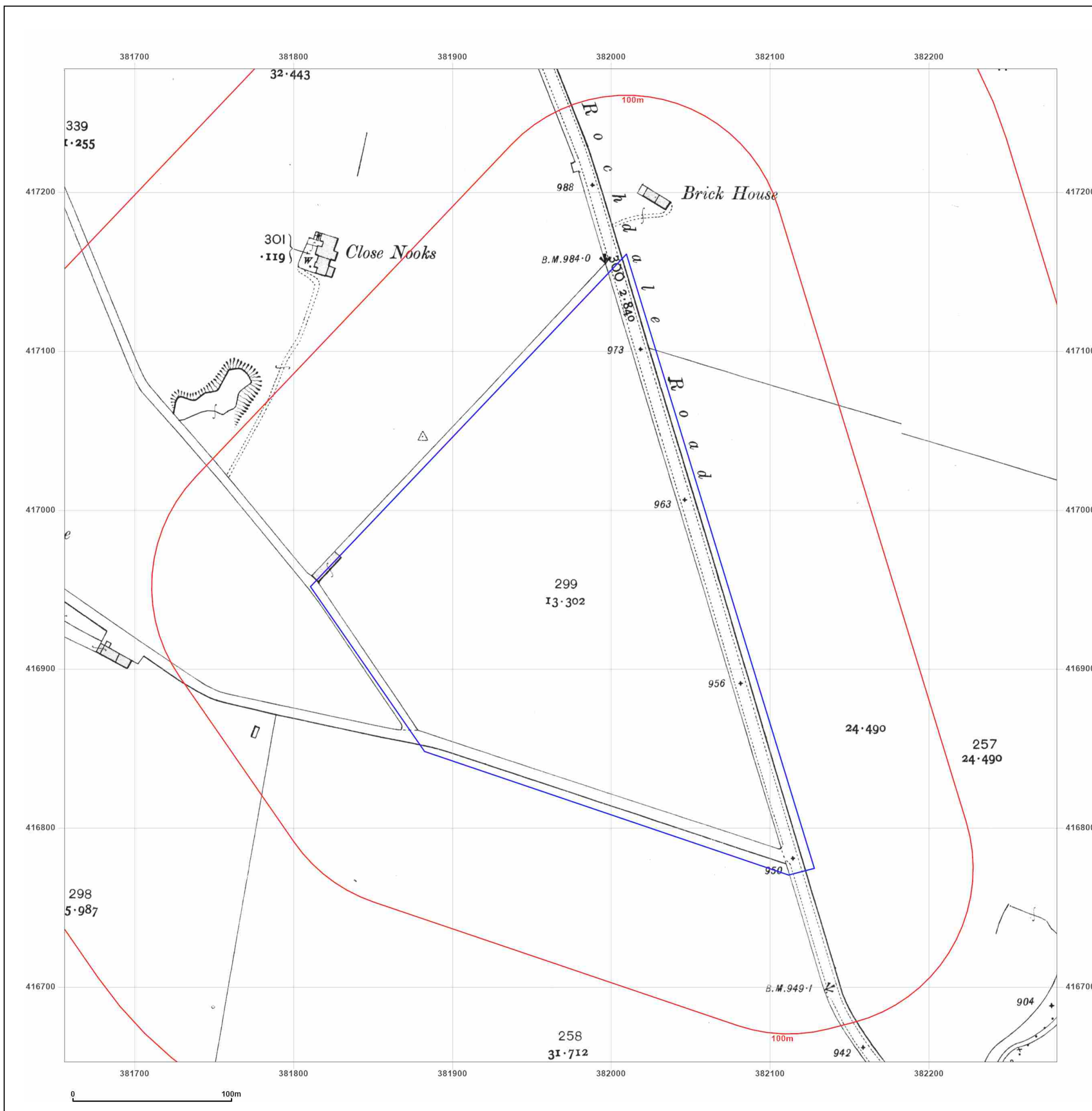


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Client Ref: PO35160
Report Ref: HYD-CFY-7BR-I8I-T78_LS_1_1
Grid Ref: 381968, 416965

Map Name: County Series

Map date: 1929

Scale: 1:2,500

Printed at: 1:2,500



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Revised 1929
Edition N/A
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Surveyed 1929
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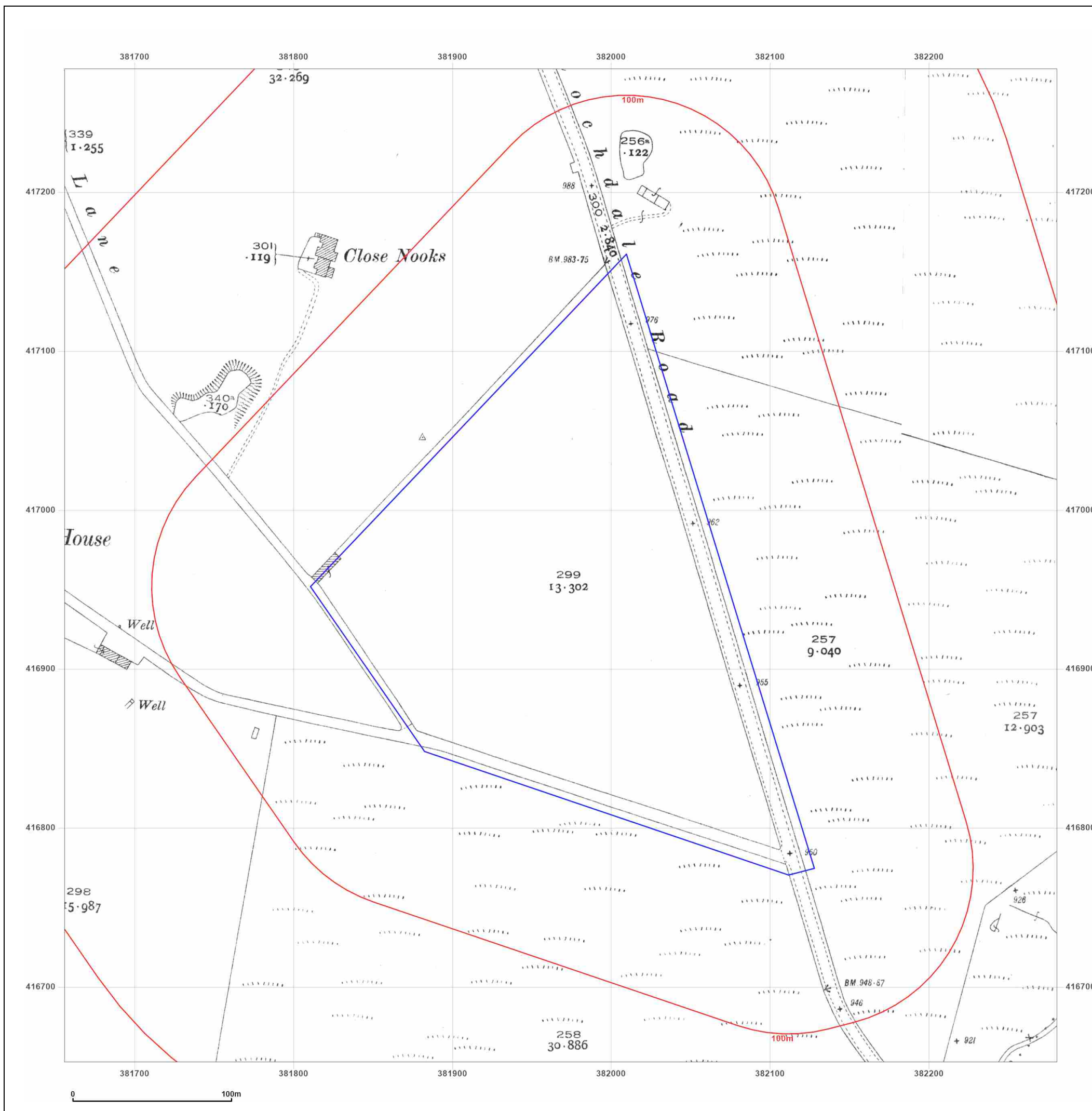


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Client Ref: PO35160
Report Ref: HYD-CFY-7BR-I8I-T78_LS_1_1
Grid Ref: 381968, 416965

Map Name: National Grid

Map date: 1963

Scale: 1:2,500

Printed at: 1:2,500



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 Revised 1962
 Edition N/A
 Copyright 1963
 Levelled 1957

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 Revised 1962
 Edition N/A
 Copyright 1963
 Levelled 1956

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 Edition N/A
 Copyright 1963
 Levelled 1956

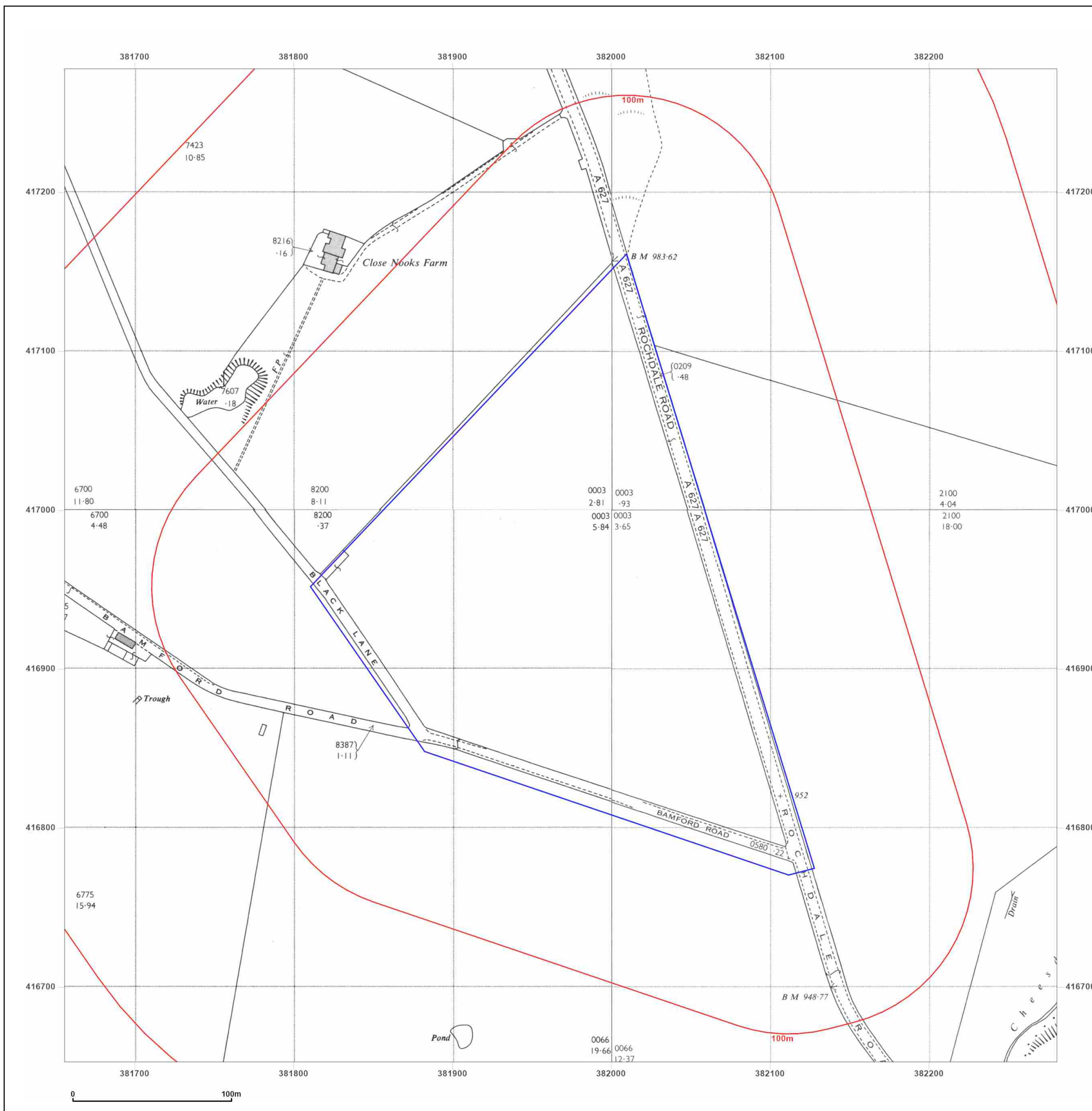


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Grid Ref: 381968, 416965

Map Name: National Grid

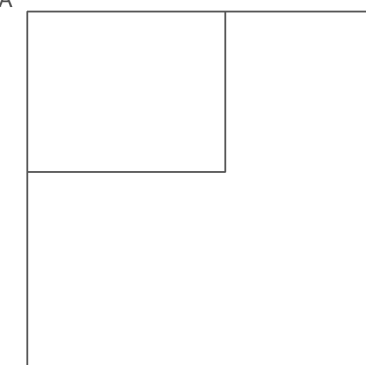
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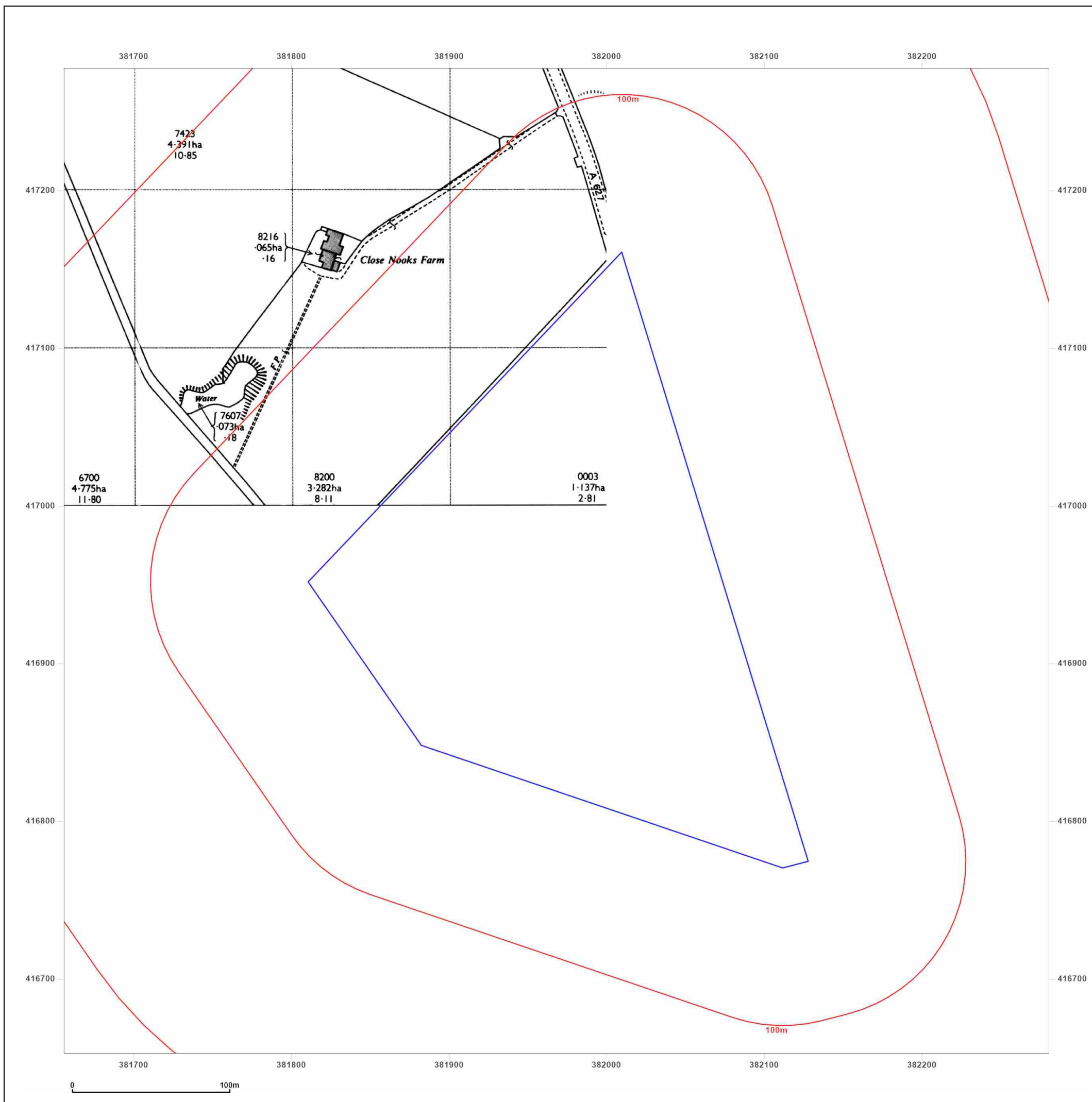


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Map Name: National Grid

Map date: 1992

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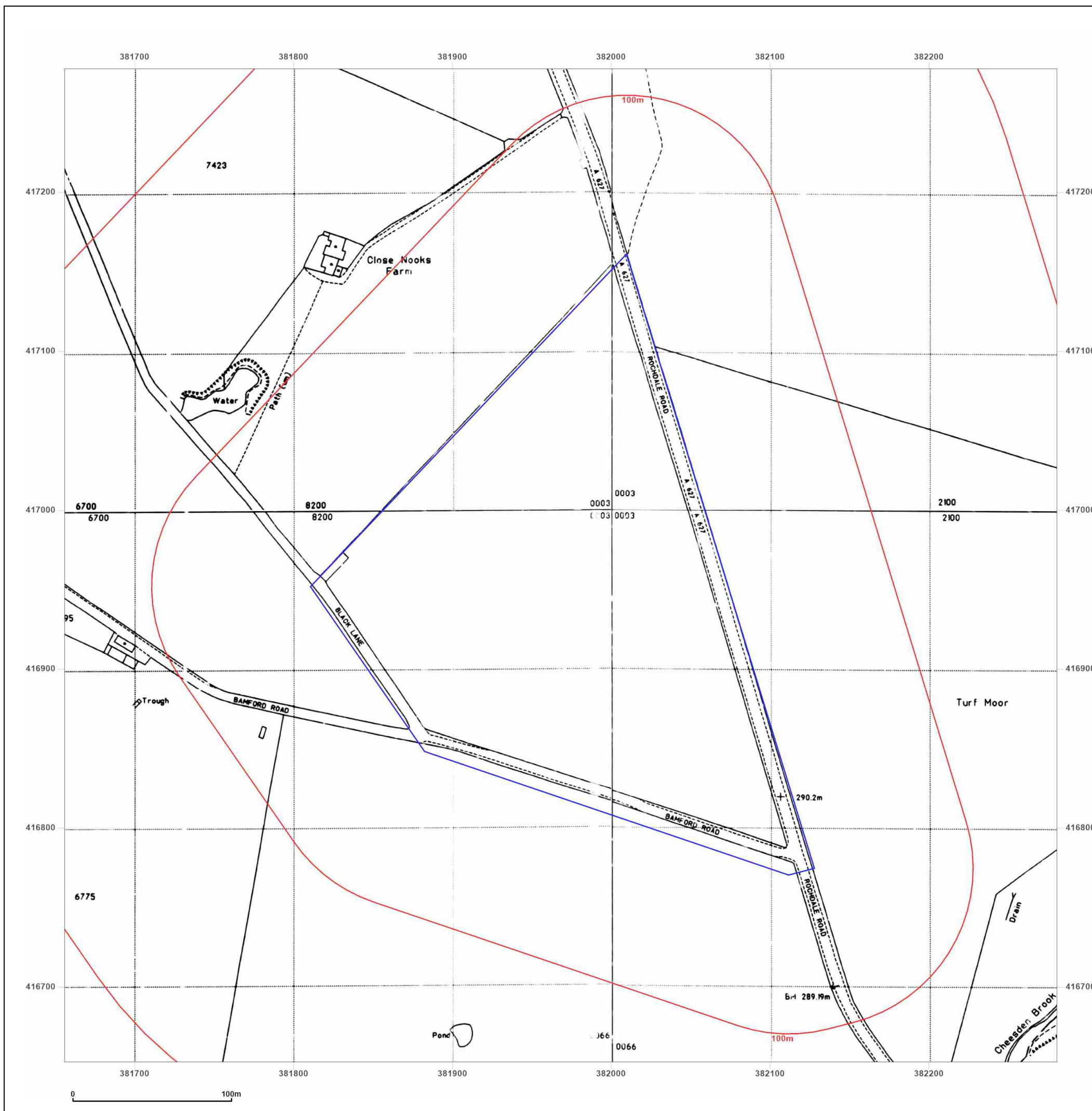


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Grid Ref: 381968, 416965

Map Name: National Grid

Map date: 1992

Scale: 1:2,500

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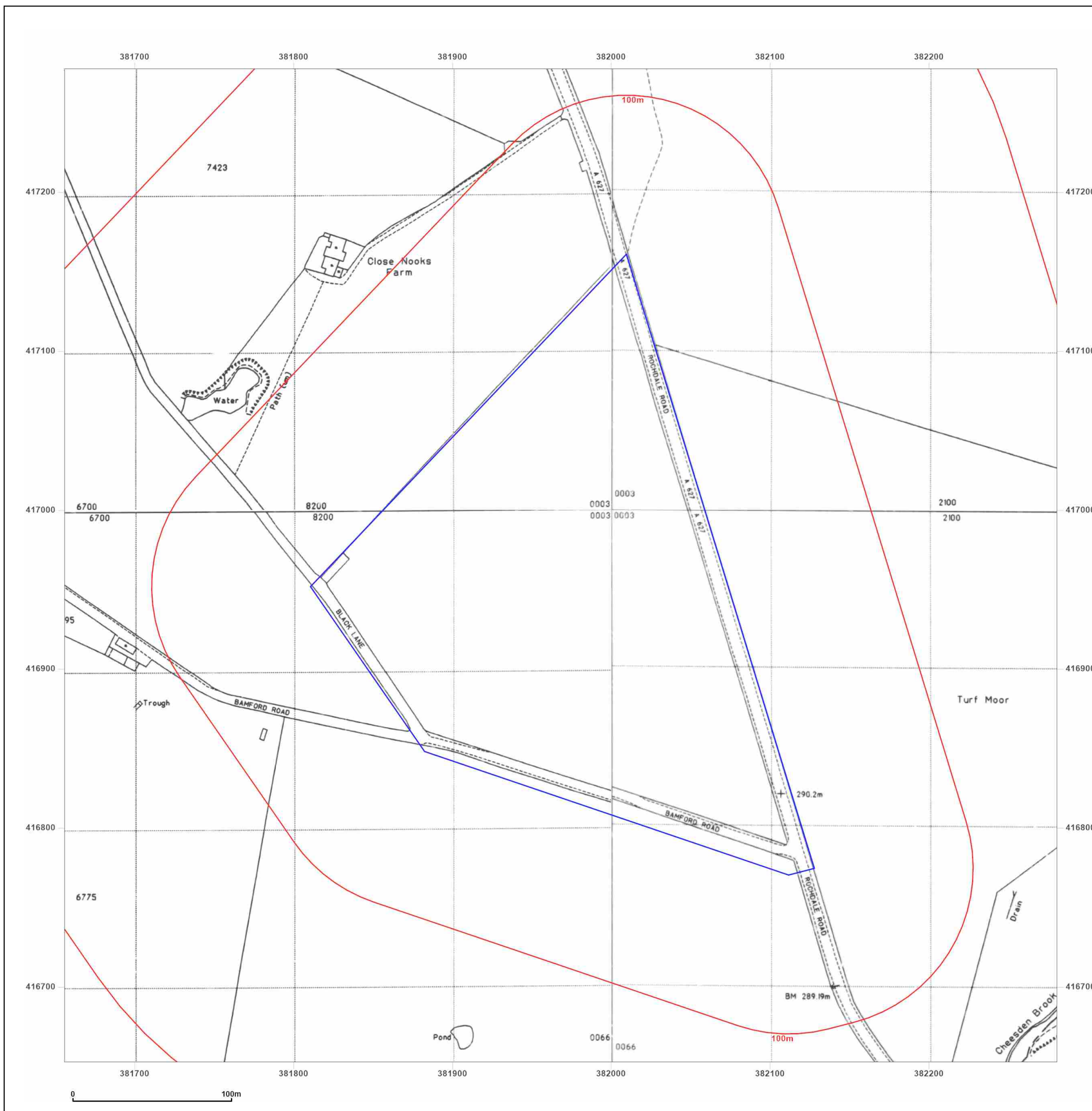


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COUNTY SERIES 1:10,560

VEGETATION



Fir Wood



Mixed Wood



Orchard



Rough Pasture



Marsh



Deciduous Wood



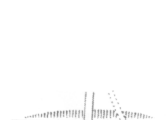
Brushwood



Reeds

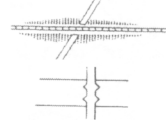


Furze

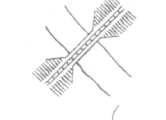


Osiers

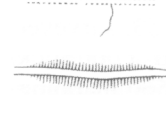
ROADS



Railway over Road



Road over River or Canal



Railway over River



Road over Stream



Raised Road

RAILWAYS



Double Lines of Railway



Single Lines of Railway and Tramway

GENERAL FEATURES



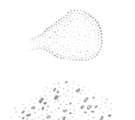
Gravel Pit



Quarry



Other Pits



Sand Pit



Shingle



Antiquities, Site of

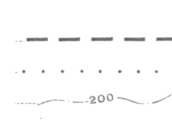


Arrow, showing direction of flow of water



Trigonometrical Station

BOUNDARIES



County Boundary



Parish Boundary



Contours



Parliamentary Division Boundary



Union Boundary



Rural District Boundary

NATIONAL GRID 1:10,000 & 1:10,560

HEIGHTS (METRES)

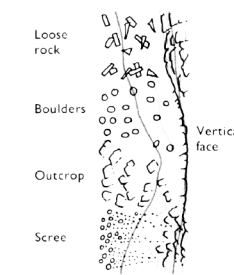
Values are given in metres above mean sea level at Newlyn.

Surface heights determined by ground survey 163m

Bench marks and their values are shown on large scale maps, and bench mark lists containing fuller and possibly later levelling information are obtainable from the Director General, Ordnance Survey.

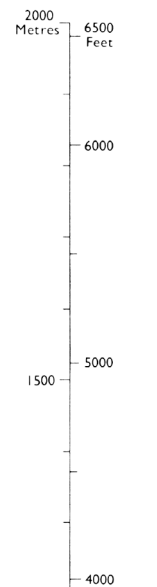
Contours are at 5 metres vertical interval.

ROCK FEATURES



CONVERSION SCALE

Metres - Feet

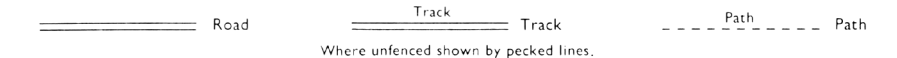


ABBREVIATIONS

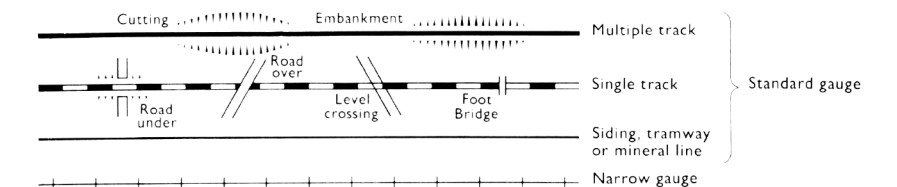
BP,BS Boundary Post or Stone
Ch Church
CH Club House
F Sta Fire Station
FB Foot Bridge
Fn Fountain
GP Guide Post
MP,MS Mile Post or Stone
P Pole or Post
Pol Sta Police Station

PO Post Office
PC Public Convenience
PH Public House
S Stone
Spr Spring
TCB Telephone Call Box
TCP Telephone Call Post
TH Town Hall
W Well
Y Youth hostel

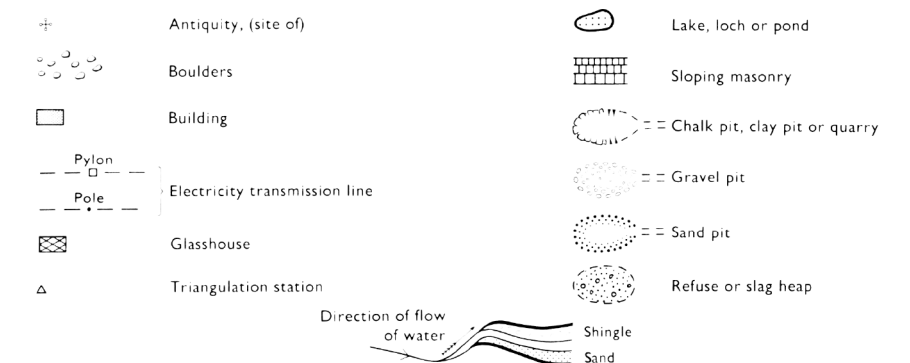
ROADS



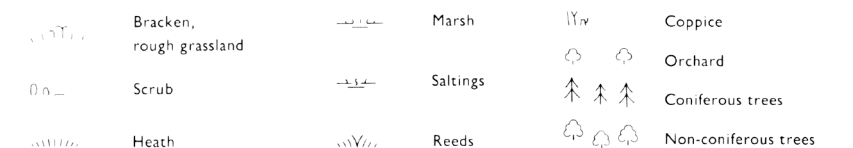
RAILWAYS



GENERAL FEATURES



VEGETATION



In some areas bracken (T) and rough grassland (T) are shown separately.

Site Details:

HIGHER MOSS, BAMFORD ROAD, RAMSBOTTOM, BURY, LANCASHIRE, BL0 0RT

Client Ref: PO35160

Report Ref: HYD-CFY-7BR-IBI-T78

Grid Ref: 381969, 416965

Map Name: County Series

Map date: 1851

Scale: 1:10,560

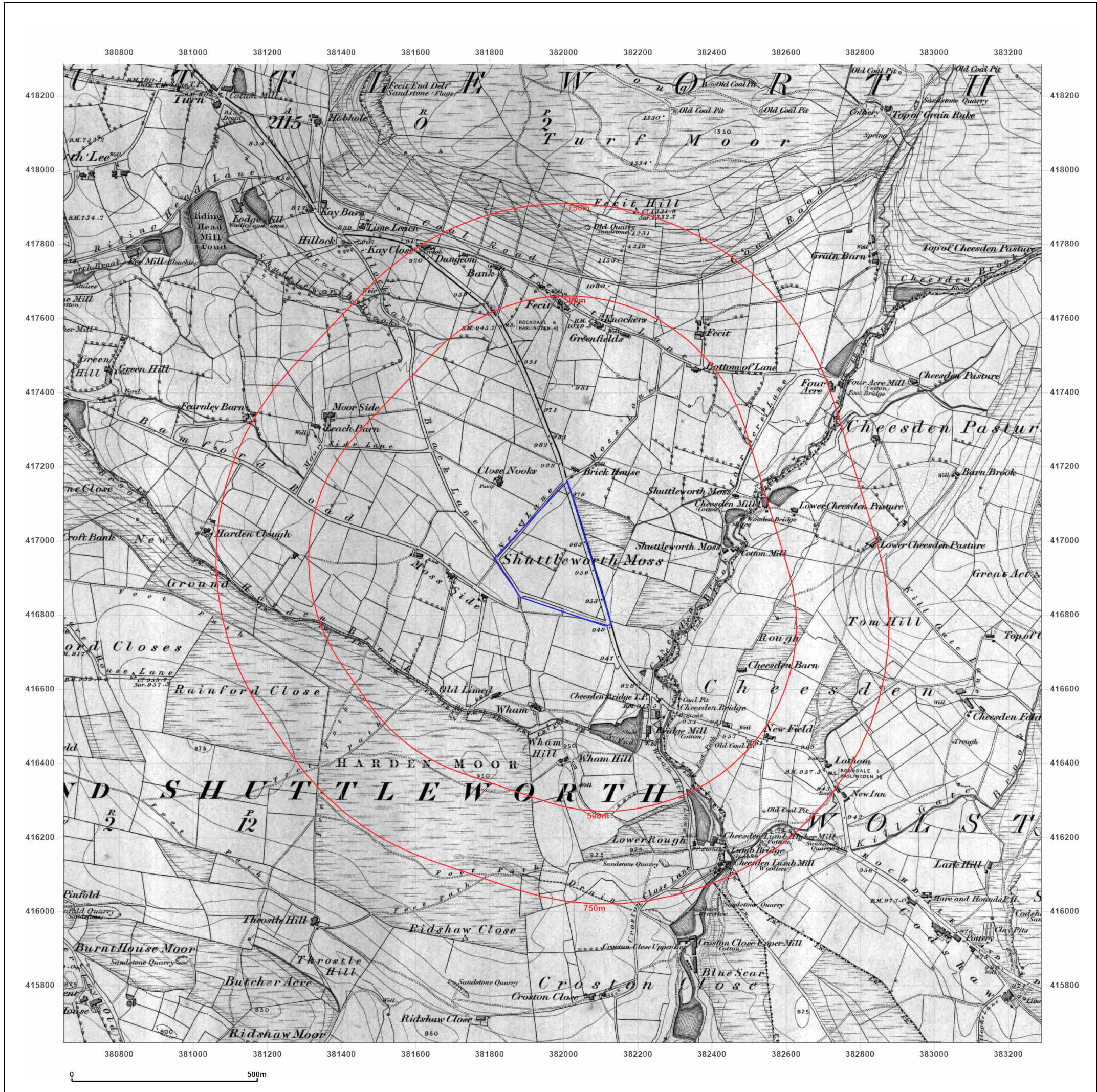
Printed at: 1:10,560



Surveyed 1848
Revised N/A
Edition 1851
Copyright N/A
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Client Ref: PO35160
Report Ref: HYD-CFY-7BR-181-T78
Grid Ref: 381969, 416965

Map Name: County Series
Map date: 1891
Scale: 1:10,560
Printed at: 1:10,560



Surveyed 1891
Revised 1891
Edition N/A
Copyright N/A
Levelled N/A

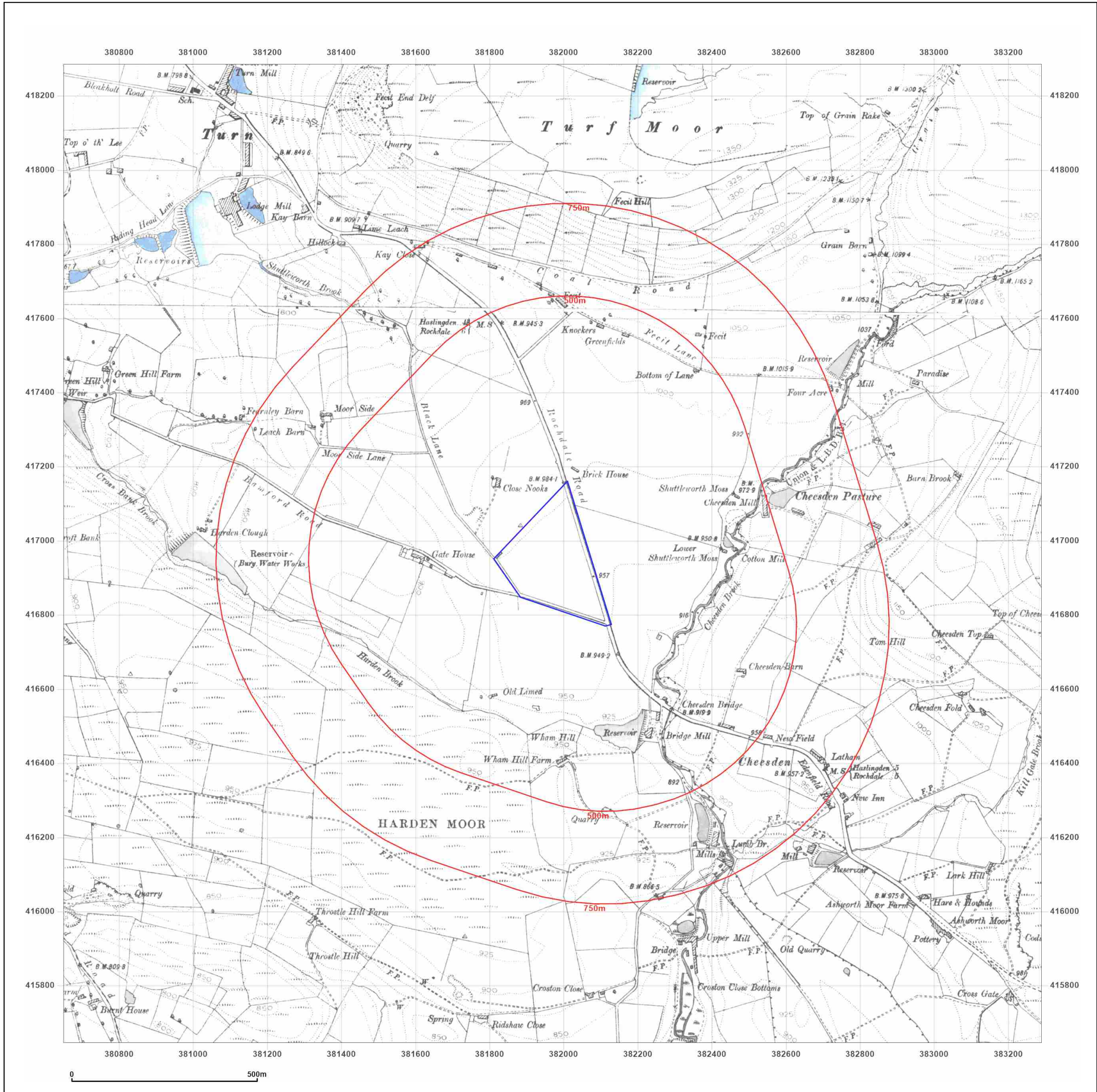
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Client Ref: PO35160
Report Ref: HYD-CFY-7BR-IBI-T78
Grid Ref: 381969, 416965

Map Name: County Series
Map date: 1908
Scale: 1:10,560
Printed at: 1:10,560

N
W E
S

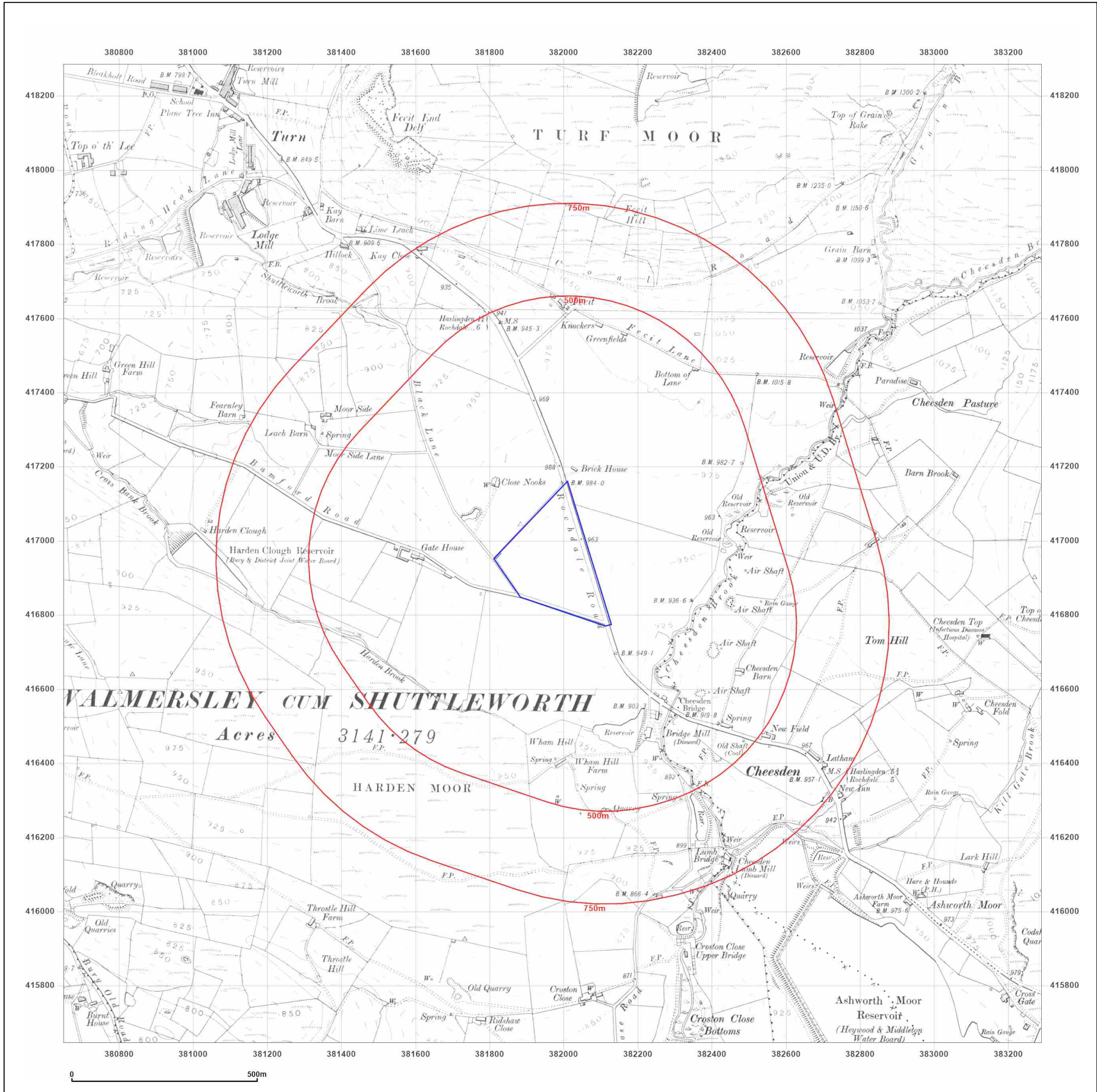
Surveyed 1848
Revised 1908
Edition N/A
Copyright N/A
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Revised 1908
Edition N/A
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Client Ref: PO35160
Report Ref: HYD-CFY-7BR-IBI-T78
Grid Ref: 381969, 416965

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1848
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

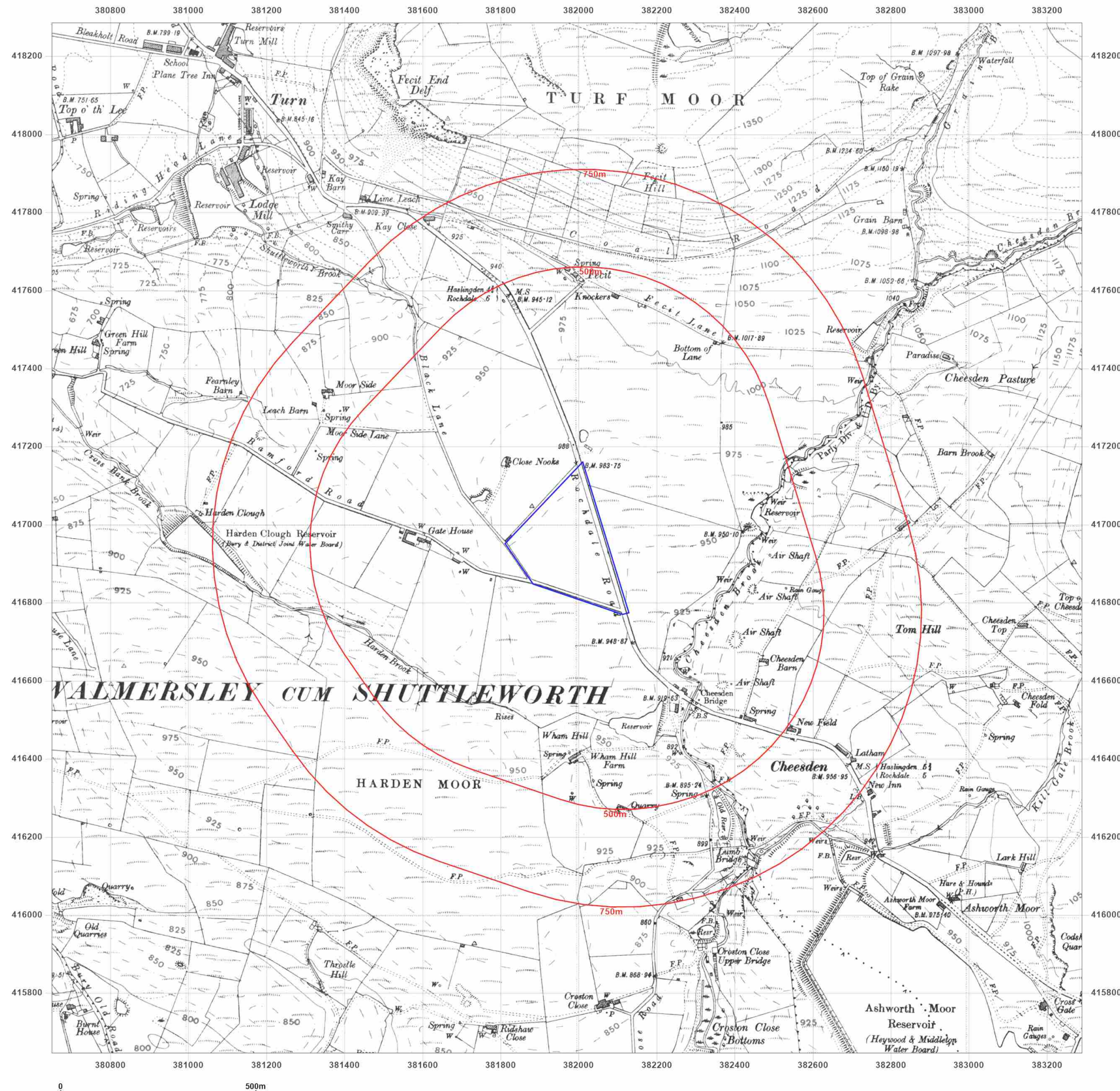


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Client Ref: PO35160

Report Ref: HYD-CFY-7BR-IBI-T78

Grid Ref: 381969, 416965

Map Name: Provisional

Map date: 1949

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1949
Revised 1949
Edition N/A
Copyright N/A
Levelled N/A

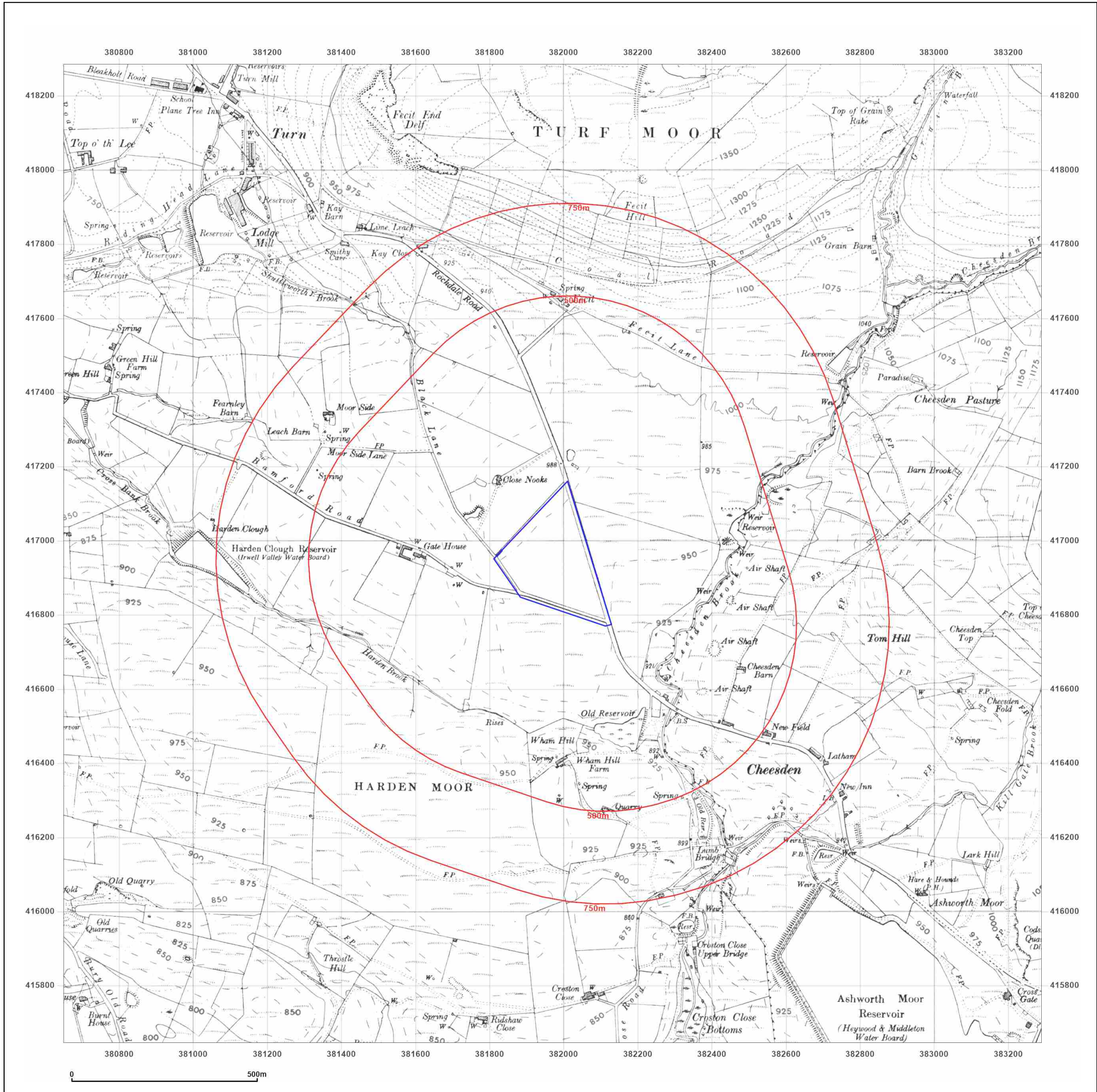


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Client Ref: PO35160
Report Ref: HYD-CFY-7BR-181-T78
Grid Ref: 381969, 416965

Map Name: Provisional

Map date: 1967

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1967
Revised 1967
Edition N/A
Copyright N/A
Levelled N/A

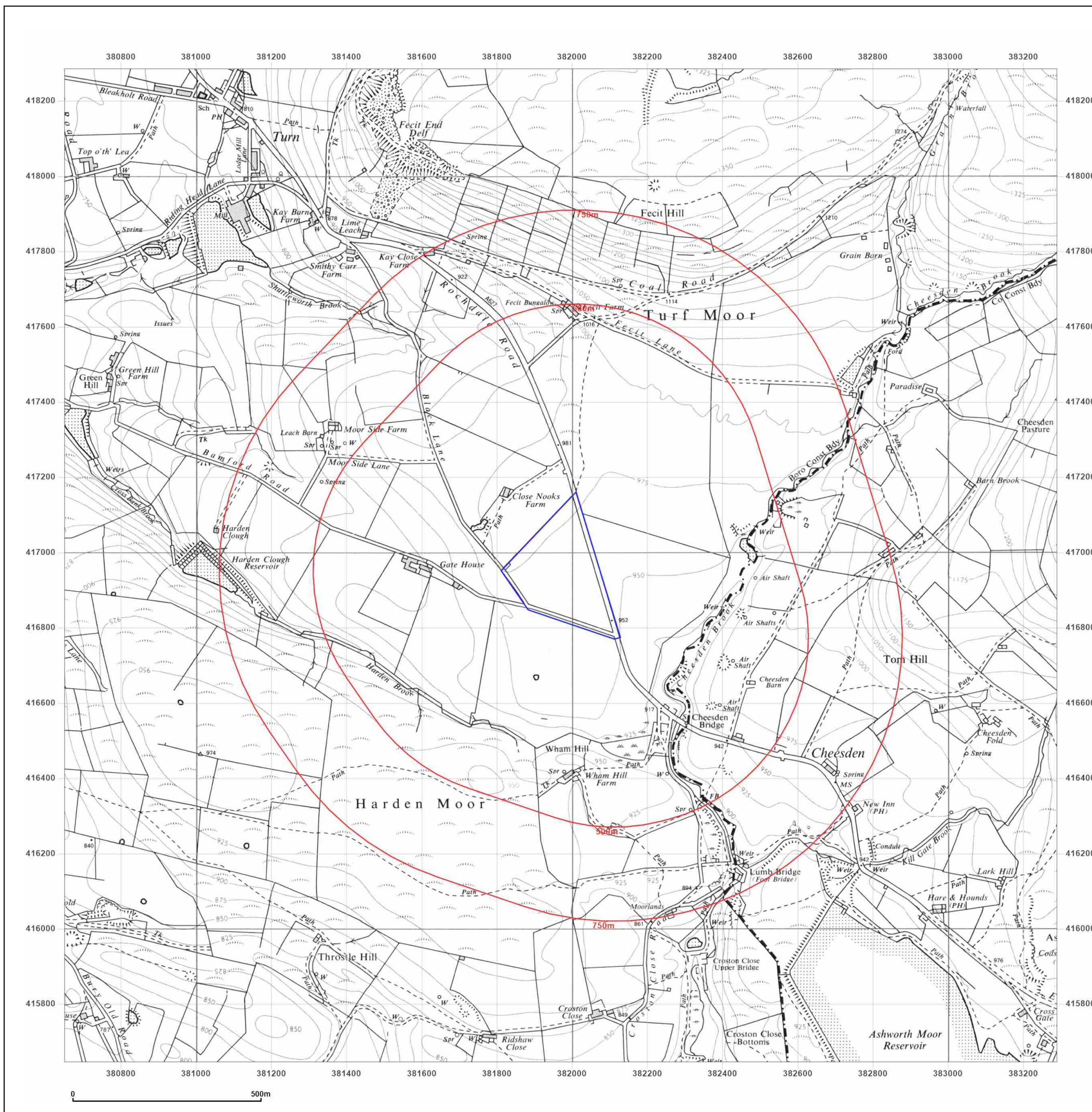


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Client Ref: PO35160
Report Ref: HYD-CFY-7BR-IBI-T78
Grid Ref: 381969, 416965

Map Name: National Grid

Map date: 1987

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1962
Revised 1987
Edition N/A
Copyright N/A
Levelled N/A

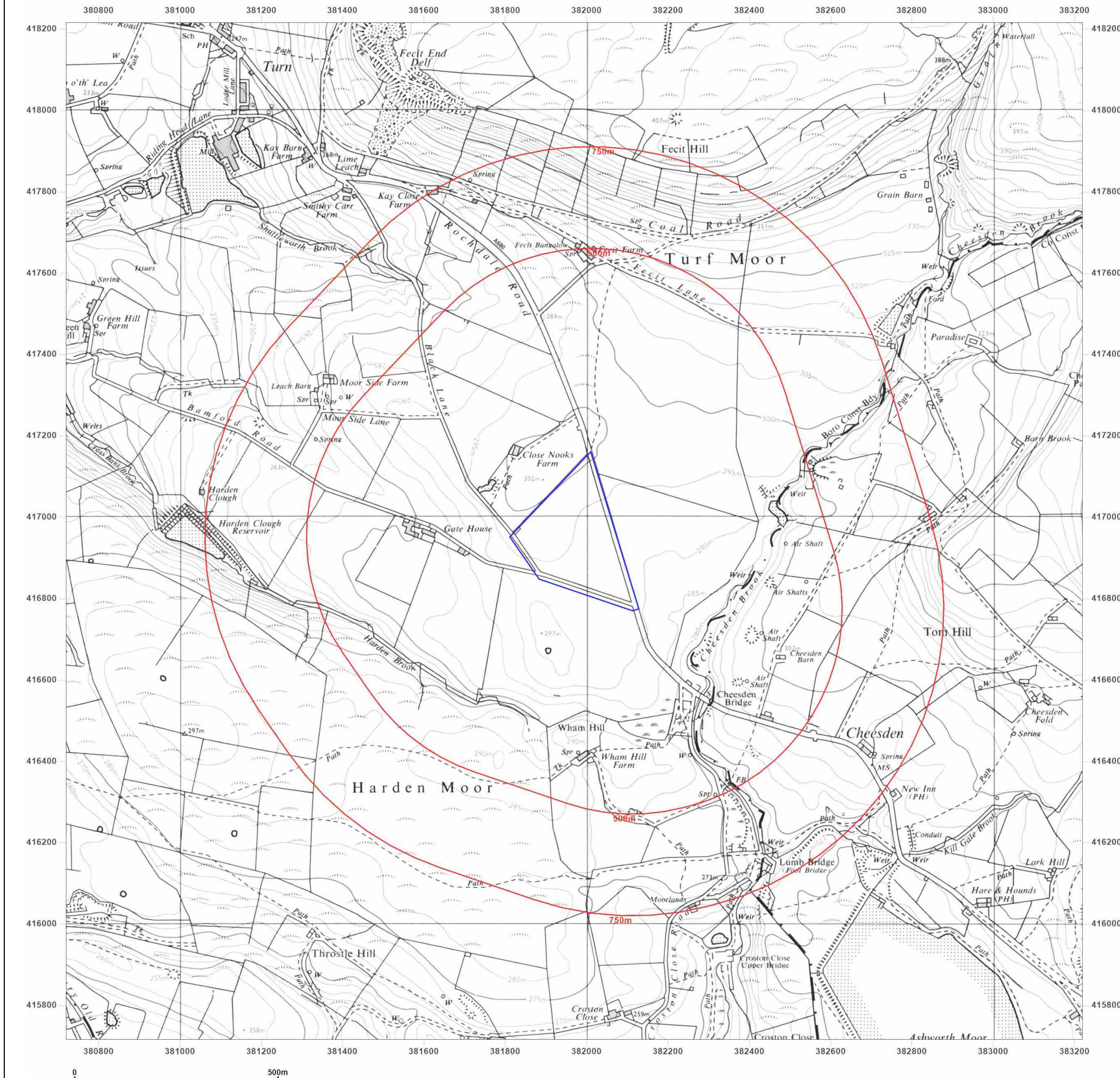


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LANCASHIRE, BL0 0RT

Client Ref: PO35160
Report Ref: HYD-CFY-7BR-I8I-T78
Grid Ref: 381969, 416965

Map Name: National Grid

Map date: 1992

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1962
Revised 1992
Edition N/A
Copyright N/A
Levelled N/A

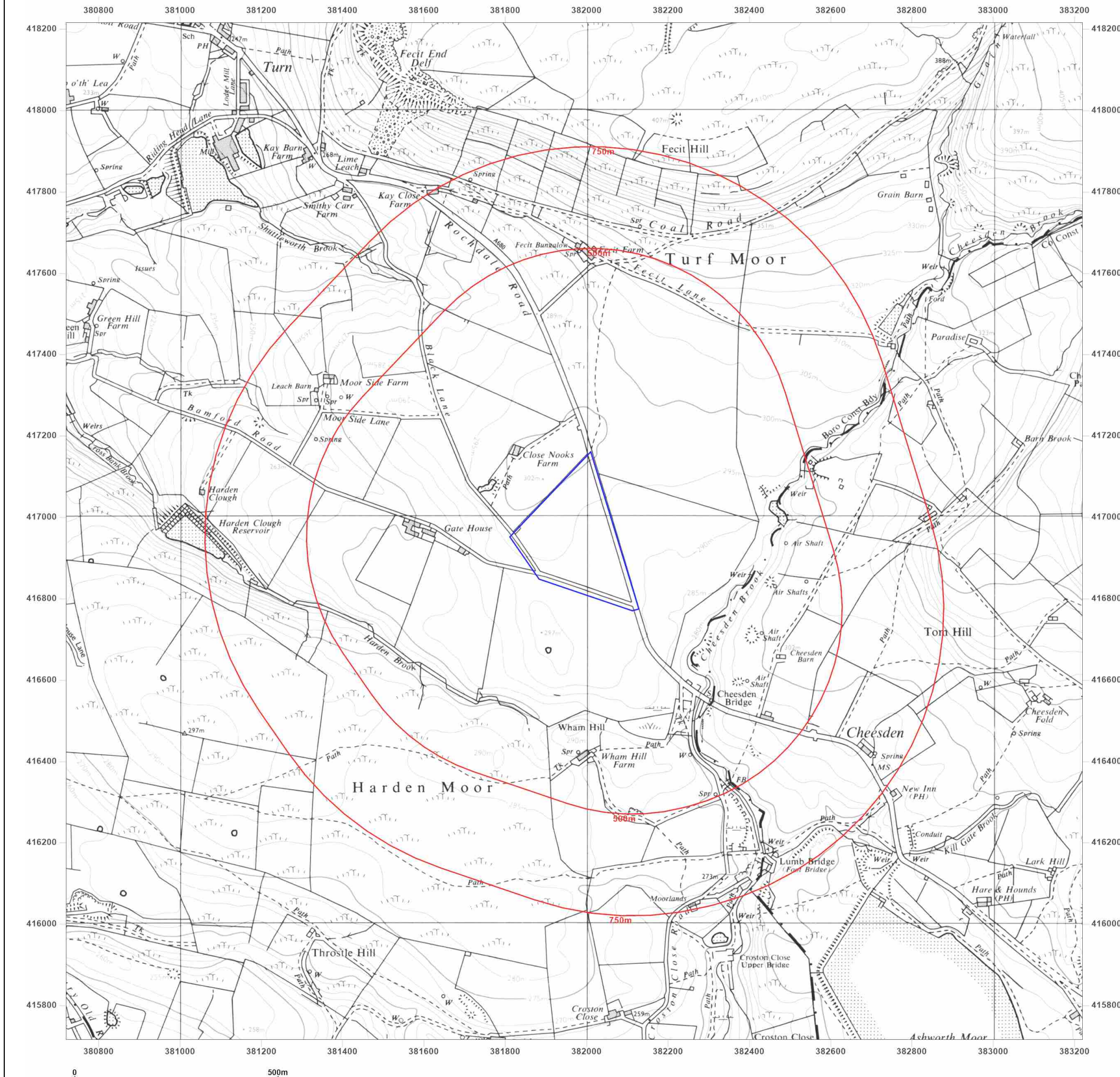


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Site Details:

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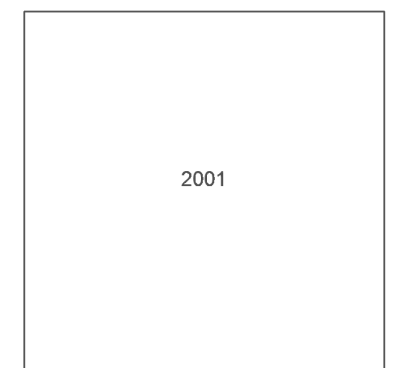
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Report Ref: HYD-CFY-7BR-181-T78
Grid Ref: 381969, 416965

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000

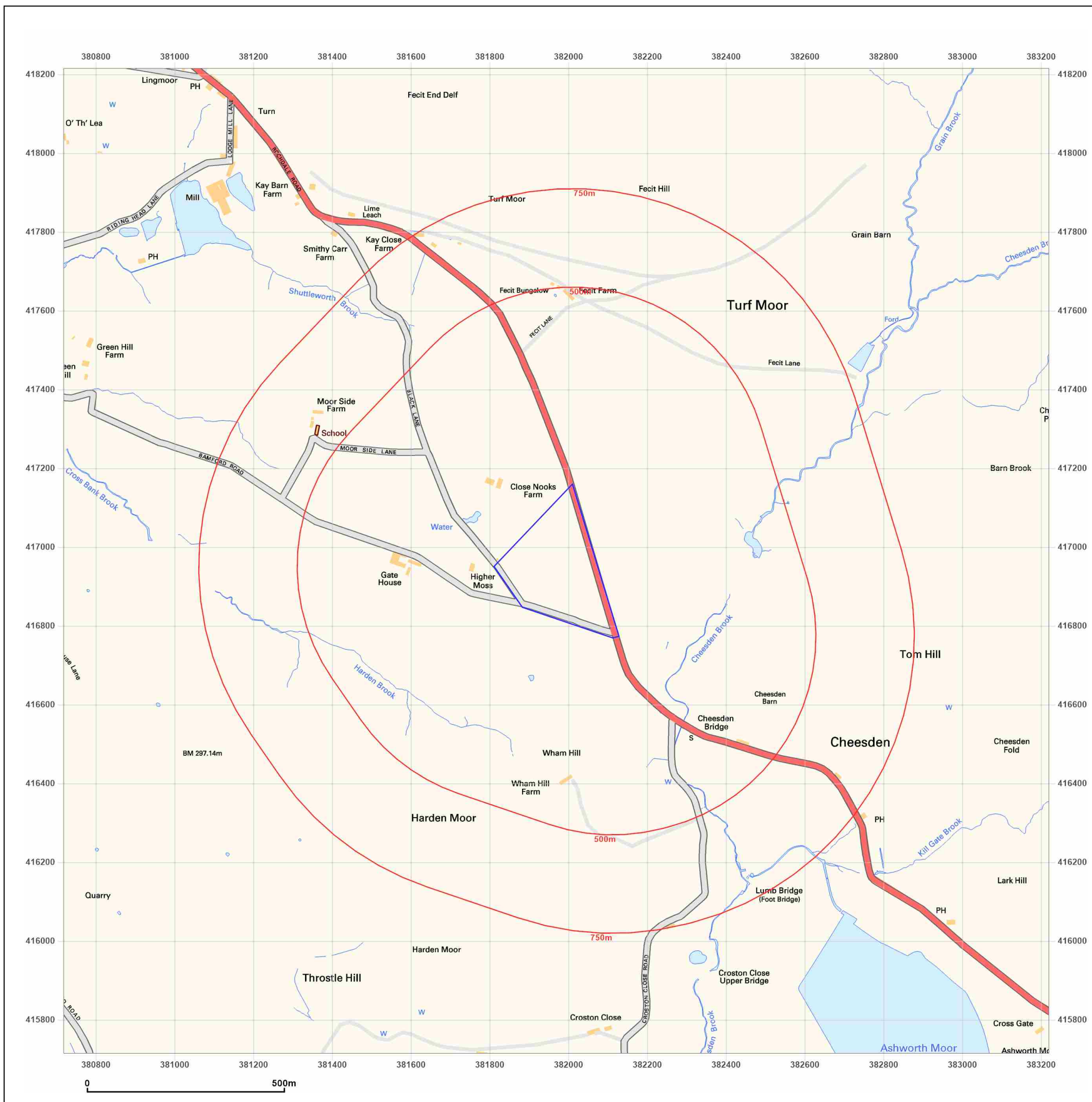


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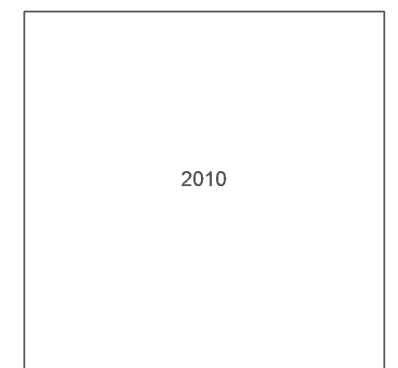
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Report Ref: HYD-CFY-7BR-I8I-T78
Grid Ref: 381969, 416965

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000

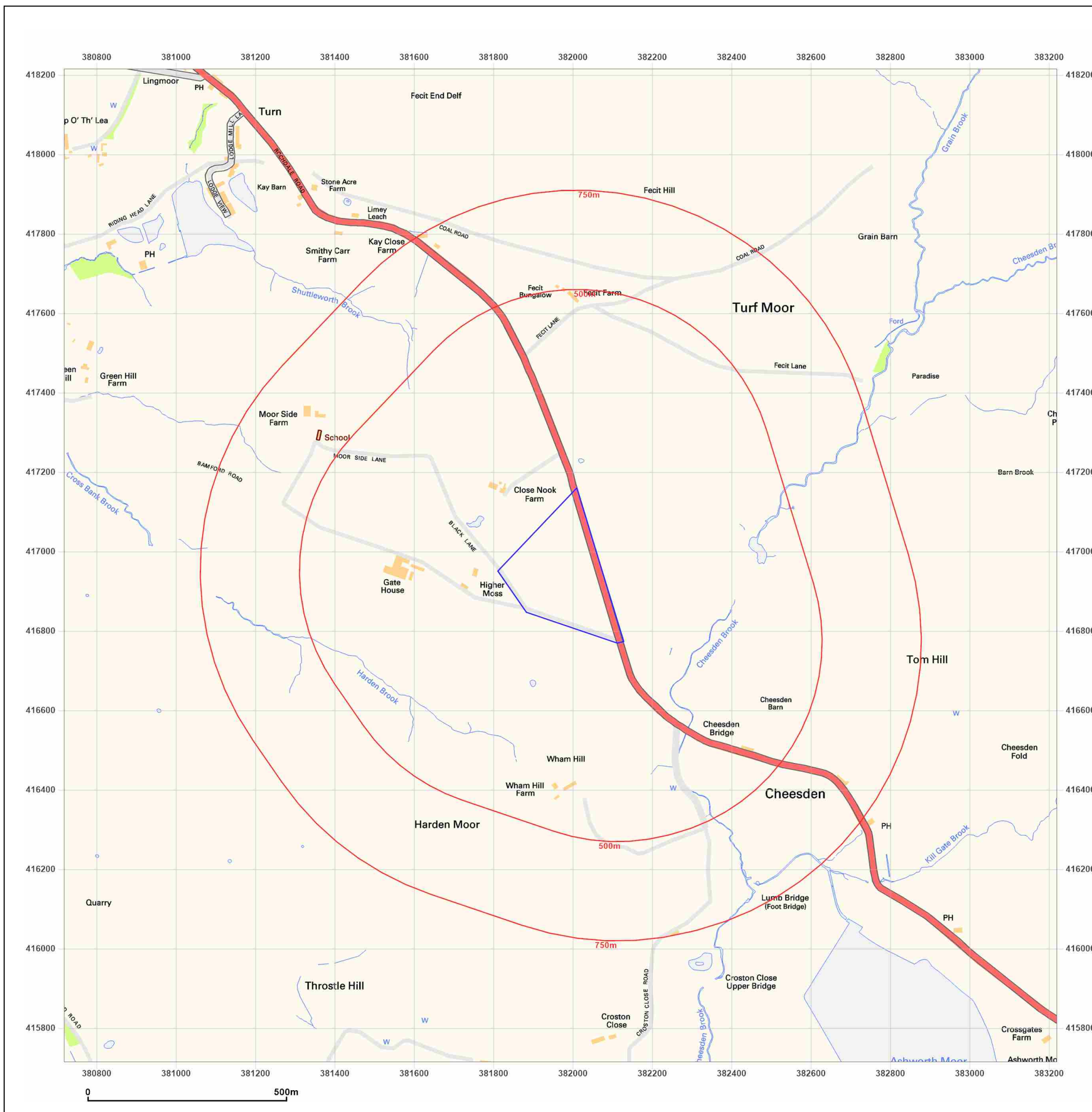


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LANCASHIRE, BL0 0RT

Client Ref: PO35160
Report Ref: HYD-CFY-7BR-I8I-T78
Grid Ref: 381969, 416965

Map Name: National Grid

Map date: 2024

Scale: 1:10,000

Printed at: 1:10,000



2024

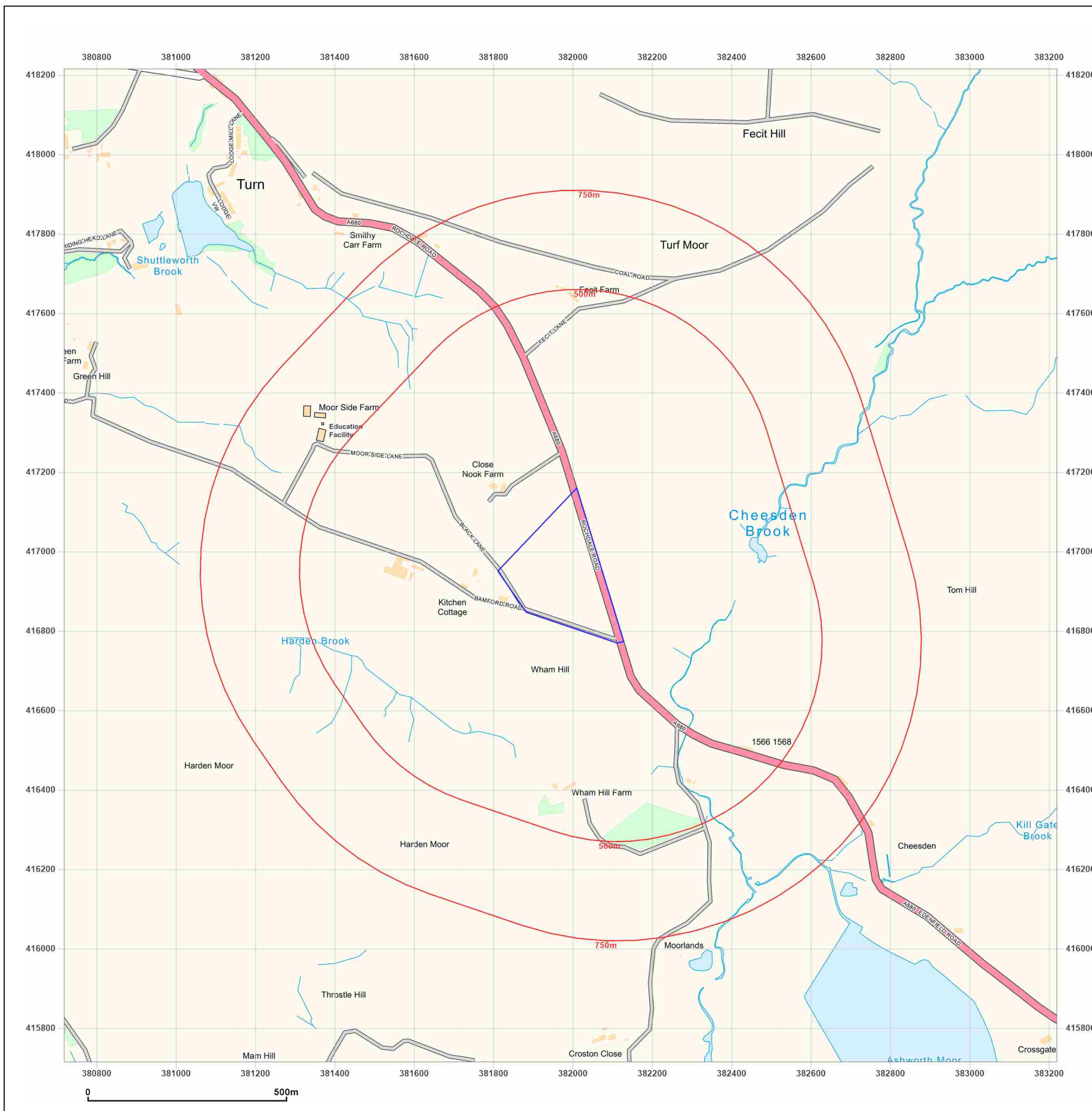


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Appendix D Desk study research information

Groundsure Enviro Insight



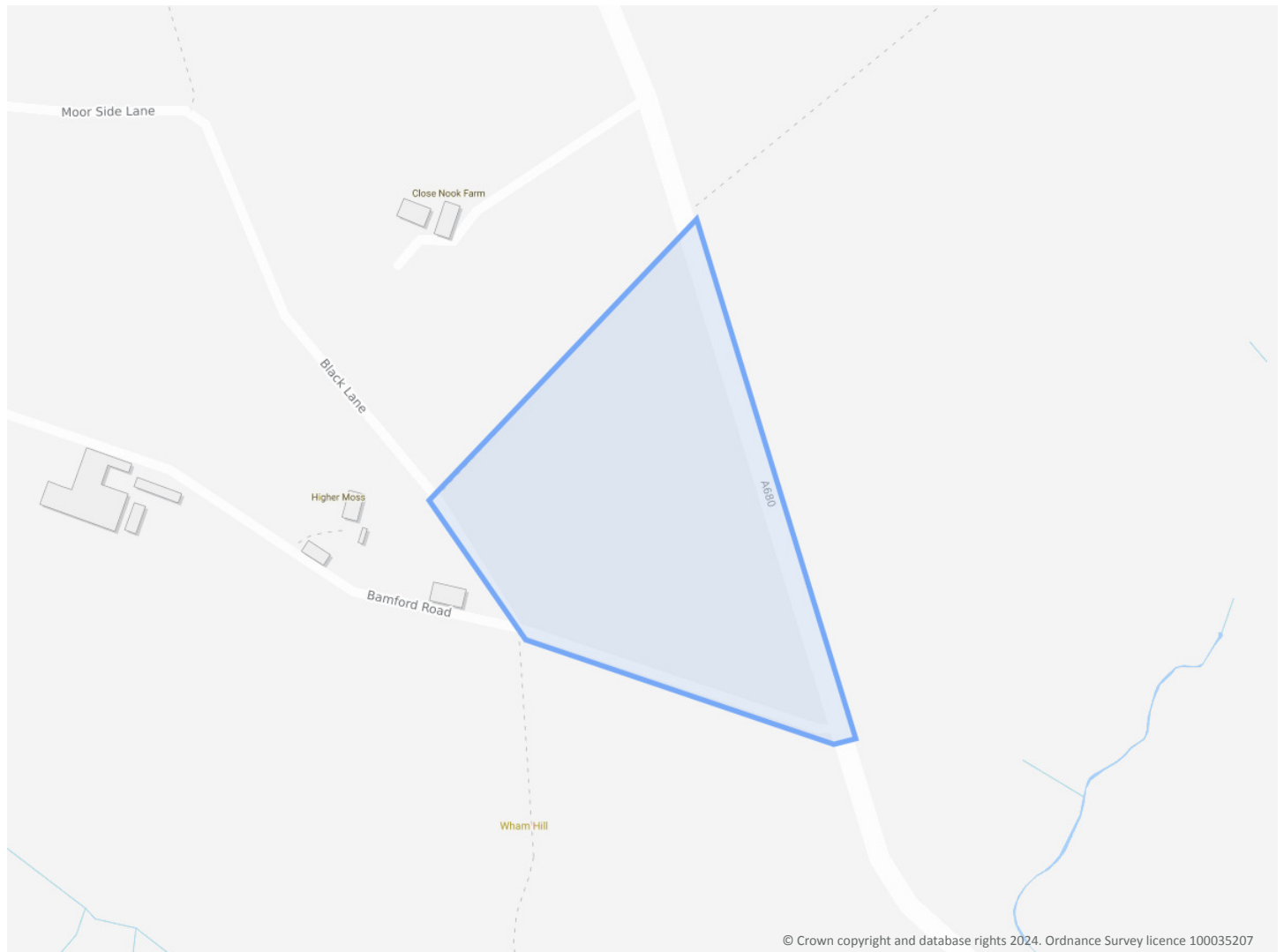
HIGHER MOSS, BAMFORD ROAD, RAMSBOTTOM, BURY, LANCASHIRE, BL0 0RT

Order Details

Date: 09/07/2024
Your ref: PO35160
Our Ref: HYD-2OK-NGJ-EBO-37S

Site Details

Location: 381976 416942
Area: 6.2 ha
Authority: [Rossendale Borough Council](#) ↗



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[Summary of findings](#)

[p. 2 >](#)

[Aerial image](#)

[p. 9 >](#)

[OS MasterMap site plan](#)

[p.14 >](#)

[Insight User Guide](#) ↗

Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	0	0	2	38	-
17 >	1.2 >	Historical tanks >	0	0	0	3	-
18	1.3	Historical energy features	0	0	0	0	-
18	1.4	Historical petrol stations	0	0	0	0	-
18	1.5	Historical garages	0	0	0	0	-
18	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
19 >	2.1 >	Historical industrial land uses >	0	0	2	65	-
22 >	2.2 >	Historical tanks >	0	0	0	4	-
22	2.3	Historical energy features	0	0	0	0	-
23	2.4	Historical petrol stations	0	0	0	0	-
23	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
24	3.1	Active or recent landfill	0	0	0	0	-
24	3.2	Historical landfill (BGS records)	0	0	0	0	-
25	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
25 >	3.4 >	Historical landfill (EA/NRW records) >	0	0	0	1	-
25	3.5	Historical waste sites	0	0	0	0	-
25	3.6	Licensed waste sites	0	0	0	0	-
26 >	3.7 >	Waste exemptions >	0	0	32	0	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
29 >	4.1 >	Recent industrial land uses >	0	1	1	-	-
30	4.2	Current or recent petrol stations	0	0	0	0	-
30	4.3	Electricity cables	0	0	0	0	-
30	4.4	Gas pipelines	0	0	0	0	-
30	4.5	Sites determined as Contaminated Land	0	0	0	0	-



30	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
31	4.7	Regulated explosive sites	0	0	0	0	-
31	4.8	Hazardous substance storage/usage	0	0	0	0	-
31	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
31	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
31	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
32	4.12	Radioactive Substance Authorisations	0	0	0	0	-
32	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
32	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
32	4.15	Pollutant release to public sewer	0	0	0	0	-
32	4.16	List 1 Dangerous Substances	0	0	0	0	-
33	4.17	List 2 Dangerous Substances	0	0	0	0	-
33	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
33	4.19	Pollution inventory substances	0	0	0	0	-
33	4.20	Pollution inventory waste transfers	0	0	0	0	-
33	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
34 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
36 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
37 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
38	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
39	5.5	Groundwater vulnerability- local information	None (within 0m)				
40 >	5.6 >	Groundwater abstractions >	0	0	0	4	14
45 >	5.7 >	Surface water abstractions >	0	0	0	0	8
47 >	5.8 >	Potable abstractions >	0	0	0	0	5
49	5.9	Source Protection Zones	0	0	0	0	-
49	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
50 >	6.1 >	Water Network (OS MasterMap) >	0	0	3	-	-



51 >	6.2 >	Surface water features >	0	0	2	-	-
51 >	6.3 >	WFD Surface water body catchments >	2	-	-	-	-
52 >	6.4 >	WFD Surface water bodies >	0	0	1	-	-
52 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
53	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
53	7.2	Historical Flood Events	0	0	0	-	-
53	7.3	Flood Defences	0	0	0	-	-
54	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
54	7.5	Flood Storage Areas	0	0	0	-	-
55	7.6	Flood Zone 2	None (within 50m)				
55	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
56 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
58 >	9.1 >	Groundwater flooding >	Low (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
59	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
60	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
60	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
60	10.4	Special Protection Areas (SPA)	0	0	0	0	0
60	10.5	National Nature Reserves (NNR)	0	0	0	0	0
61	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
61	10.7	Designated Ancient Woodland	0	0	0	0	0
61	10.8	Biosphere Reserves	0	0	0	0	0
61	10.9	Forest Parks	0	0	0	0	0
62	10.10	Marine Conservation Zones	0	0	0	0	0
62 >	10.11 >	Green Belt >	1	0	1	0	1
62	10.12	Proposed Ramsar sites	0	0	0	0	0

62	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
63	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
63	10.15	Nitrate Sensitive Areas	0	0	0	0	0
63	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
64 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
65	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
66	11.1	World Heritage Sites	0	0	0	-	-
66	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
66	11.3	National Parks	0	0	0	-	-
66	11.4	Listed Buildings	0	0	0	-	-
67	11.5	Conservation Areas	0	0	0	-	-
67	11.6	Scheduled Ancient Monuments	0	0	0	-	-
67	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
68 >	12.1 >	Agricultural Land Classification >	Grade 5 (within 250m)				
69 >	12.2 >	Open Access Land >	2	0	0	-	-
69	12.3	Tree Felling Licences	0	0	0	-	-
70	12.4	Environmental Stewardship Schemes	0	0	0	-	-
70	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations >	On site	0-50m	50-250m	250-500m	500-2000m
71 >	13.1 >	Priority Habitat Inventory >	0	0	3	-	-
72 >	13.2 >	Habitat Networks >	1	0	1	-	-
72	13.3	Open Mosaic Habitat	0	0	0	-	-
72	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
73 >	14.1 >	10k Availability >	Identified (within 500m)				
74 >	14.2 >	Artificial and made ground (10k) >	0	0	2	8	-
76 >	14.3 >	Superficial geology (10k) >	1	0	1	4	-

77	14.4	Landslip (10k)	0	0	0	0	-
78 >	14.5 >	Bedrock geology (10k) >	2	1	4	6	-
79 >	14.6 >	Bedrock faults and other linear features (10k) >	0	1	6	4	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
81 >	15.1 >	50k Availability >	Identified (within 500m)				
82	15.2	Artificial and made ground (50k)	0	0	0	0	-
82	15.3	Artificial ground permeability (50k)	0	0	-	-	-
83 >	15.4 >	Superficial geology (50k) >	1	0	1	2	-
84 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
84	15.6	Landslip (50k)	0	0	0	0	-
84	15.7	Landslip permeability (50k)	None (within 50m)				
85 >	15.8 >	Bedrock geology (50k) >	2	1	5	8	-
86 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
87 >	15.10 >	Bedrock faults and other linear features (50k) >	0	1	5	3	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
88	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	Natural ground subsidence >					
89 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
90 >	17.2 >	Running sands >	Very low (within 50m)				
91 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
92 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
93 >	17.5 >	Landslides >	Very low (within 50m)				
94 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
96 >	18.1 >	BritPits >	0	0	0	1	-
97 >	18.2 >	Surface ground workings >	0	0	14	-	-
98 >	18.3 >	Underground workings >	0	0	0	32	7
99	18.4	Underground mining extents	0	0	0	0	-
99	18.5	Historical Mineral Planning Areas	0	0	0	0	-



100 >	18.6 >	Non-coal mining >	1	0	0	0	4
100	18.7	JPB mining areas	None (within 0m)				
101	18.8	The Coal Authority non-coal mining	0	0	0	0	-
101	18.9	Researched mining	0	0	0	0	-
101	18.10	Mining record office plans	0	0	0	0	-
101	18.11	BGS mine plans	0	0	0	0	-
102 >	18.12 >	Coal mining >	Identified (within 0m)				
102	18.13	Brine areas	None (within 0m)				
102	18.14	Gypsum areas	None (within 0m)				
102	18.15	Tin mining	None (within 0m)				
102	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
103	19.1	Natural cavities	0	0	0	0	-
103	19.2	Mining cavities	0	0	0	0	0
103	19.3	Reported recent incidents	0	0	0	0	-
103	19.4	Historical incidents	0	0	0	0	-
104	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
105 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
107 >	21.1 >	BGS Estimated Background Soil Chemistry >	6	1	-	-	-
107	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
108	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
109	22.1	Underground railways (London)	0	0	0	-	-
109	22.2	Underground railways (Non-London)	0	0	0	-	-
109	22.3	Railway tunnels	0	0	0	-	-
109	22.4	Historical railway and tunnel features	0	0	0	-	-
109	22.5	Royal Mail tunnels	0	0	0	-	-



110	22.6	Historical railways	0	0	0	-	-
110	22.7	Railways	0	0	0	-	-
110	22.8	Crossrail 1	0	0	0	0	-
110	22.9	Crossrail 2	0	0	0	0	-
110	22.10	HS2	0	0	0	0	-

Recent aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

Capture Date: 23/05/2019

Site Area: 6.2ha



Recent site history - 2012 aerial photograph



Capture Date: 26/03/2012

Site Area: 6.2ha



Recent site history - 2001 aerial photograph



Capture Date: 07/05/2001

Site Area: 6.2ha



Recent site history - 2000 aerial photograph



Capture Date: 07/05/2000

Site Area: 6.2ha



Recent site history - 1999 aerial photograph



Capture Date: 10/09/1999

Site Area: 6.2ha



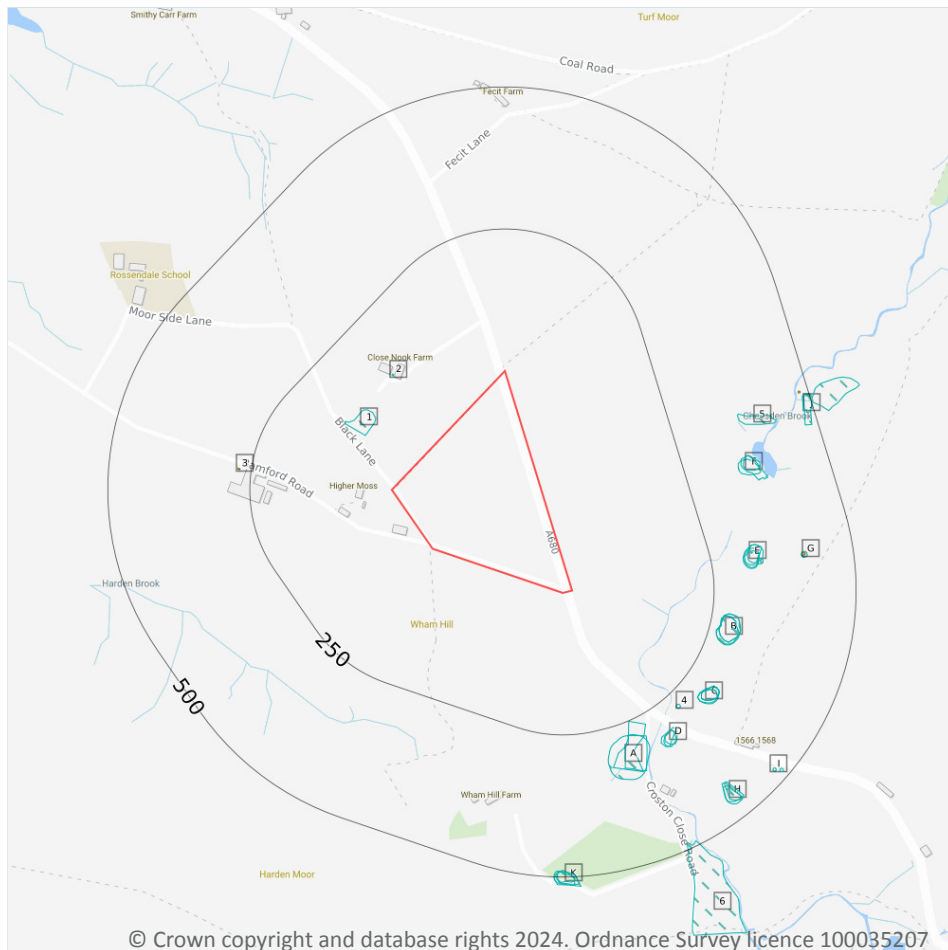
OS MasterMap site plan



Site Area: 6.2ha



1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks

1.1 Historical industrial land uses

Records within 500m

40

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
1	100m NW	Unspecified Pit	1891	675436



ID	Location	Land use	Dates present	Group ID
2	137m NW	Pump	1851	682525
A	251m SE	Unspecified Disused Mill	1908	658170
B	263m SE	Unspecified Heap	1938	723216
B	264m SE	Unspecified Heap	1908 - 1928	785631
B	268m SE	Unspecified Heap	1949	718612
B	268m SE	Unspecified Heap	1967 - 1992	736677
A	272m SE	Unspecified Mill	1891	673336
4	273m SE	Coal Pit	1851	679460
A	274m SE	Cotton Mill	1851	654646
C	288m SE	Unspecified Heap	1908 - 1928	793209
C	289m SE	Unspecified Heap	1938	792668
C	291m SE	Unspecified Heap	1987 - 1992	728523
C	291m SE	Unspecified Heap	1967	738267
C	291m SE	Unspecified Heap	1949	781280
D	299m SE	Unspecified Heap	1949 - 1992	760773
D	300m SE	Unspecified Heap	1938	777854
D	301m SE	Unspecified Heap	1908 - 1928	749198
E	306m E	Unspecified Heap	1938	754898
E	306m E	Refuse Heap	1908	656033
E	309m E	Unspecified Heap	1928	707374
E	315m E	Unspecified Heap	1949 - 1992	747399
E	331m E	Air Shafts	1967 - 1992	707718
F	343m E	Unspecified Pit	1928 - 1938	778375
F	349m E	Unspecified Pit	1949	803980
F	353m E	Cotton Mill	1851 - 1891	716943
5	368m E	Refuse Heap	1928 - 1938	792303
G	408m E	Air Shafts	1967 - 1992	798149
H	431m SE	Unspecified Heap	1938	729049



ID	Location	Land use	Dates present	Group ID
H	432m SE	Unspecified Heap	1949 - 1992	797023
H	437m SE	Unspecified Heap	1908 - 1928	771096
I	473m SE	Old Coal Shaft	1908	657972
J	478m E	Unspecified Mill	1891	673337
I	482m SE	Old Coal Pit	1851	687001
J	483m E	Cotton Mill	1851	654575
K	488m S	Unspecified Quarry	1891	716917
6	489m SE	Cotton Mill	1851	654740
K	490m S	Unspecified Quarry	1938	773174
K	490m S	Unspecified Quarry	1908 - 1928	737295
K	490m S	Unspecified Quarry	1949 - 1992	736896

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	3
----------------------------	----------

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
3	270m W	Unspecified Tank	1910	90703
G	411m E	Unspecified Tank	1963 - 1992	98492
J	482m E	Unspecified Tank	1891	90704

This data is sourced from Ordnance Survey / Groundsure.



1.3 Historical energy features

Records within 500m**0**

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m**0**

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m**0**

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

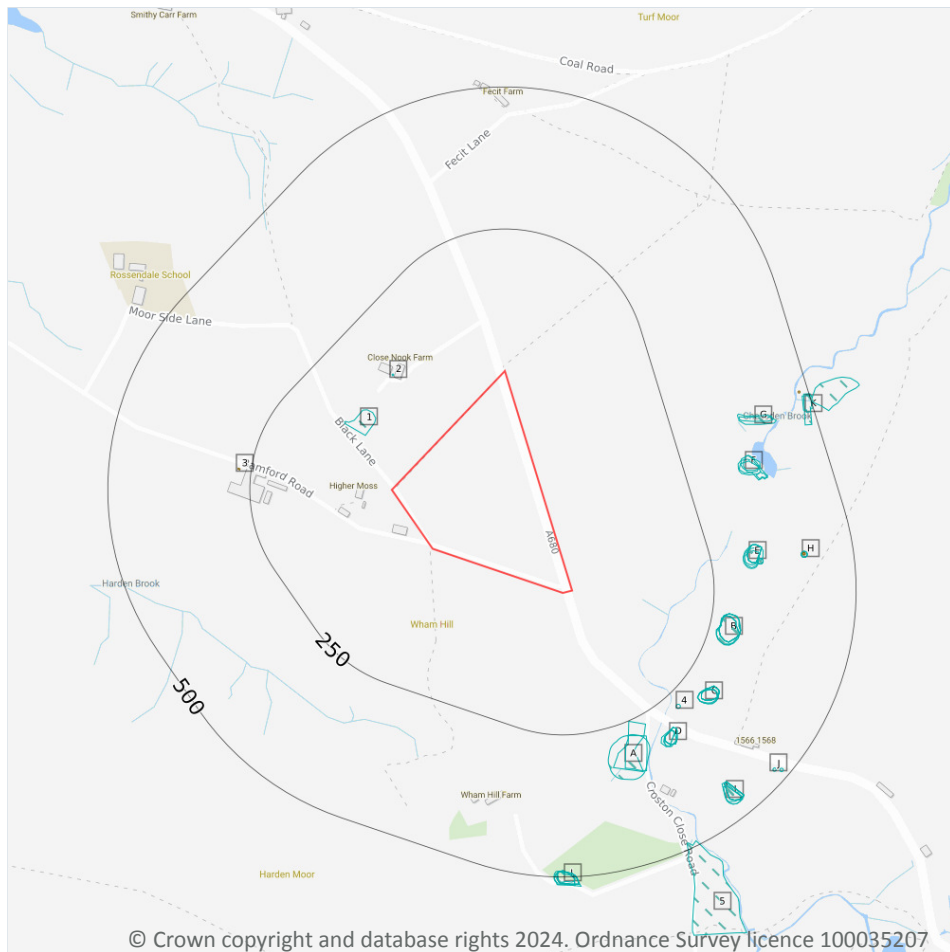
Records within 500m**0**

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.



2 Past land use - un-grouped



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks

2.1 Historical industrial land uses

Records within 500m

67

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 19](#) >

ID	Location	Land Use	Date	Group ID
1	100m NW	Unspecified Pit	1891	675436
2	137m NW	Pump	1851	682525
A	251m SE	Unspecified Disused Mill	1908	658170



ID	Location	Land Use	Date	Group ID
B	263m SE	Unspecified Heap	1938	723216
B	264m SE	Unspecified Heap	1928	785631
B	264m SE	Unspecified Heap	1908	785631
B	268m SE	Unspecified Heap	1992	736677
B	268m SE	Unspecified Heap	1967	736677
B	268m SE	Unspecified Heap	1949	718612
B	268m SE	Unspecified Heap	1987	736677
A	272m SE	Unspecified Mill	1891	673336
4	273m SE	Coal Pit	1851	679460
A	274m SE	Cotton Mill	1851	654646
C	288m SE	Unspecified Heap	1928	793209
C	288m SE	Unspecified Heap	1908	793209
C	289m SE	Unspecified Heap	1938	792668
C	291m SE	Unspecified Heap	1992	728523
C	291m SE	Unspecified Heap	1967	738267
C	291m SE	Unspecified Heap	1949	781280
C	291m SE	Unspecified Heap	1987	728523
D	299m SE	Unspecified Heap	1992	760773
D	299m SE	Unspecified Heap	1967	760773
D	299m SE	Unspecified Heap	1949	760773
D	299m SE	Unspecified Heap	1987	760773
D	300m SE	Unspecified Heap	1938	777854
D	301m SE	Unspecified Heap	1928	749198
D	301m SE	Unspecified Heap	1908	749198
E	306m E	Unspecified Heap	1938	754898
E	306m E	Refuse Heap	1908	656033
E	309m E	Unspecified Heap	1928	707374
E	315m E	Unspecified Heap	1992	747399

ID	Location	Land Use	Date	Group ID
E	315m E	Unspecified Heap	1967	747399
E	315m E	Unspecified Heap	1949	747399
E	315m E	Unspecified Heap	1987	747399
E	331m E	Air Shafts	1992	707718
E	331m E	Air Shafts	1967	707718
E	331m E	Air Shafts	1987	707718
F	343m E	Unspecified Pit	1938	778375
F	343m E	Unspecified Pit	1928	778375
F	349m E	Unspecified Pit	1949	803980
F	353m E	Cotton Mill	1851	716943
G	368m E	Refuse Heap	1928	792303
G	368m E	Refuse Heap	1938	792303
F	369m E	Cotton Mill	1891	716943
H	408m E	Air Shafts	1992	798149
H	408m E	Air Shafts	1967	798149
H	408m E	Air Shafts	1987	798149
I	431m SE	Unspecified Heap	1938	729049
I	432m SE	Unspecified Heap	1992	797023
I	432m SE	Unspecified Heap	1967	797023
I	432m SE	Unspecified Heap	1949	797023
I	432m SE	Unspecified Heap	1987	797023
I	437m SE	Unspecified Heap	1928	771096
I	437m SE	Unspecified Heap	1908	771096
J	473m SE	Old Coal Shaft	1908	657972
K	478m E	Unspecified Mill	1891	673337
J	482m SE	Old Coal Pit	1851	687001
K	483m E	Cotton Mill	1851	654575
L	488m S	Unspecified Quarry	1891	716917



ID	Location	Land Use	Date	Group ID
5	489m SE	Cotton Mill	1851	654740
L	490m S	Unspecified Quarry	1938	773174
L	490m S	Unspecified Quarry	1928	737295
L	490m S	Unspecified Quarry	1908	737295
L	490m S	Unspecified Quarry	1992	736896
L	490m S	Unspecified Quarry	1967	736896
L	490m S	Unspecified Quarry	1949	736896
L	490m S	Unspecified Quarry	1987	736896

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

4

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 19 >](#)

ID	Location	Land Use	Date	Group ID
3	270m W	Unspecified Tank	1910	90703
H	411m E	Unspecified Tank	1963	98492
H	411m E	Unspecified Tank	1992	98492
K	482m E	Unspecified Tank	1891	90704

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

0

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.



2.4 Historical petrol stations

Records within 500m**0**

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

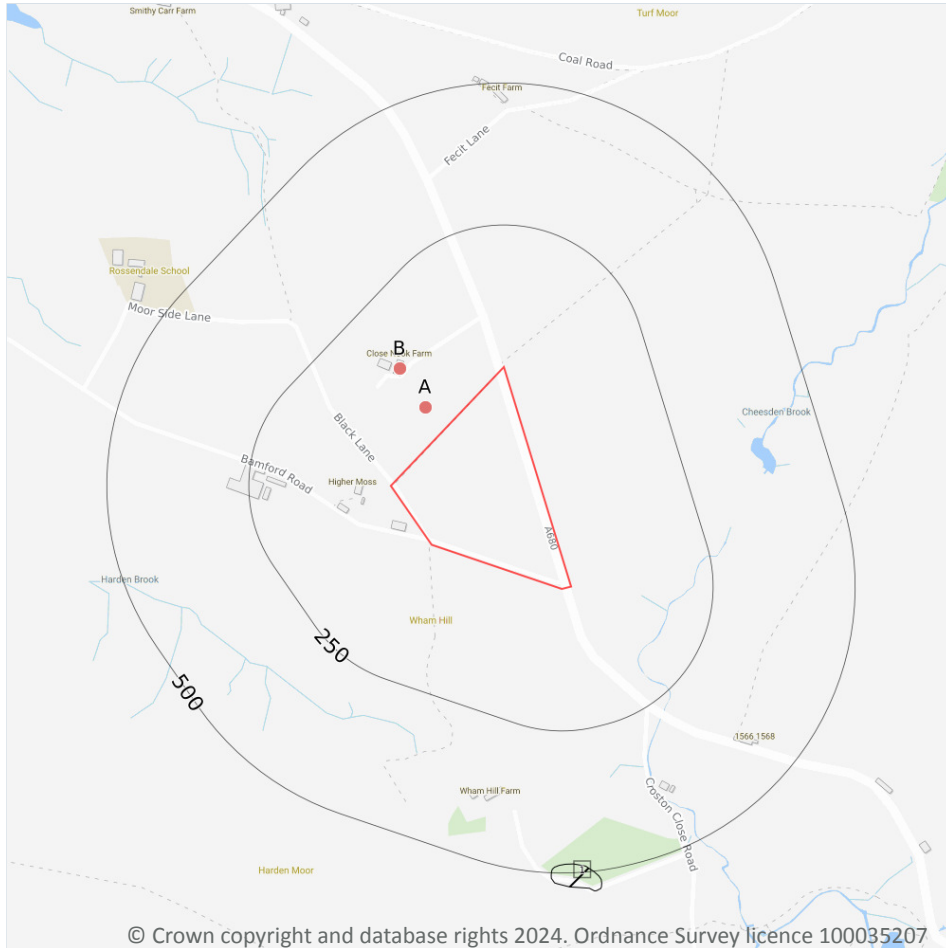
Records within 500m**0**

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Historical landfill (EA/NRW)
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m

0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m

1

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

Features are displayed on the Waste and landfill map on [page 24 >](#)

ID	Location	Details		
1	484m S	Site Address: Wham Hill Farm, Off Croston Close Road, Rossendale, Lancashire Licence Holder Address: -	Waste Licence: Yes Site Reference: R046, K1/14/046, Licence No 289 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 23/03/1989 Licence Surrender: 01/01/1991	Operator: - Licence Holder: David and Jeanette Thompson First Recorded 24/03/1989 Last Recorded: 01/01/1991

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m

0

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m

0

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.



3.7 Waste exemptions

Records within 500m	32
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Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on [page 24 >](#)

ID	Location	Site	Reference	Category	Sub-Category	Description
A	52m NW	-	WEX319991	Storing waste exemption	On a farm	Storage of sludge
A	52m NW	-	WEX282476	Storing waste exemption	On a farm	Storage of sludge
A	52m NW	-	WEX231869	Storing waste exemption	On a farm	Storage of sludge
B	131m NW	-	WEX107730	Treating waste exemption	On a farm	Screening and blending of waste
B	131m NW	-	WEX107730	Disposing of waste exemption	On a farm	Burning waste in the open
B	131m NW	-	WEX107730	Treating waste exemption	On a farm	Manual treatment of waste
B	131m NW	-	WEX107730	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
B	131m NW	-	WEX107730	Using waste exemption	On a farm	Use of mulch
B	131m NW	-	WEX250452	Using waste exemption	On a farm	Spreading of plant matter to confer benefit
B	131m NW	-	WEX250452	Using waste exemption	On a farm	Incorporation of ash into soil
B	131m NW	-	WEX250452	Using waste exemption	On a farm	Pig and poultry ash
B	131m NW	-	WEX250452	Treating waste exemption	On a farm	Preparatory treatments (baling, sorting, shredding etc)
B	131m NW	-	WEX250452	Storing waste exemption	On a farm	Storage of sludge
B	131m NW	-	WEX250452	Using waste exemption	On a farm	Use of waste in construction



ID	Location	Site	Reference	Category	Sub-Category	Description
B	131m NW	-	WEX250452	Using waste exemption	On a farm	Use of baled end-of-life tyres in construction
B	131m NW	-	WEX250452	Using waste exemption	On a farm	Use of waste for a specified purpose
B	131m NW	-	WEX250452	Using waste exemption	On a farm	Spreading waste on non-agricultural land to confer benefit
B	131m NW	-	WEX250452	Treating waste exemption	On a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
B	131m NW	-	WEX250452	Storing waste exemption	On a farm	Storage of waste in secure containers
B	131m NW	-	WEX250452	Storing waste exemption	On a farm	Storage of waste in a secure place
B	131m NW	-	WEX107730	Storing waste exemption	On a farm	Storage of sludge
B	131m NW	-	WEX107730	Treating waste exemption	On a farm	Preparatory treatments (baling, sorting, shredding etc)
B	131m NW	-	WEX107730	Treating waste exemption	On a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
B	131m NW	-	WEX107730	Using waste exemption	On a farm	Use of waste in construction
B	131m NW	-	WEX107730	Using waste exemption	On a farm	Spreading of plant matter to confer benefit
B	131m NW	-	WEX107730	Using waste exemption	On a farm	Incorporation of ash into soil
B	131m NW	-	WEX107730	Using waste exemption	On a farm	Pig and poultry ash
B	131m NW	-	WEX250452	Treating waste exemption	On a farm	Manual treatment of waste
B	131m NW	-	WEX250452	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
B	131m NW	-	WEX250452	Using waste exemption	On a farm	Use of mulch
B	131m NW	-	WEX250452	Treating waste exemption	On a farm	Screening and blending of waste

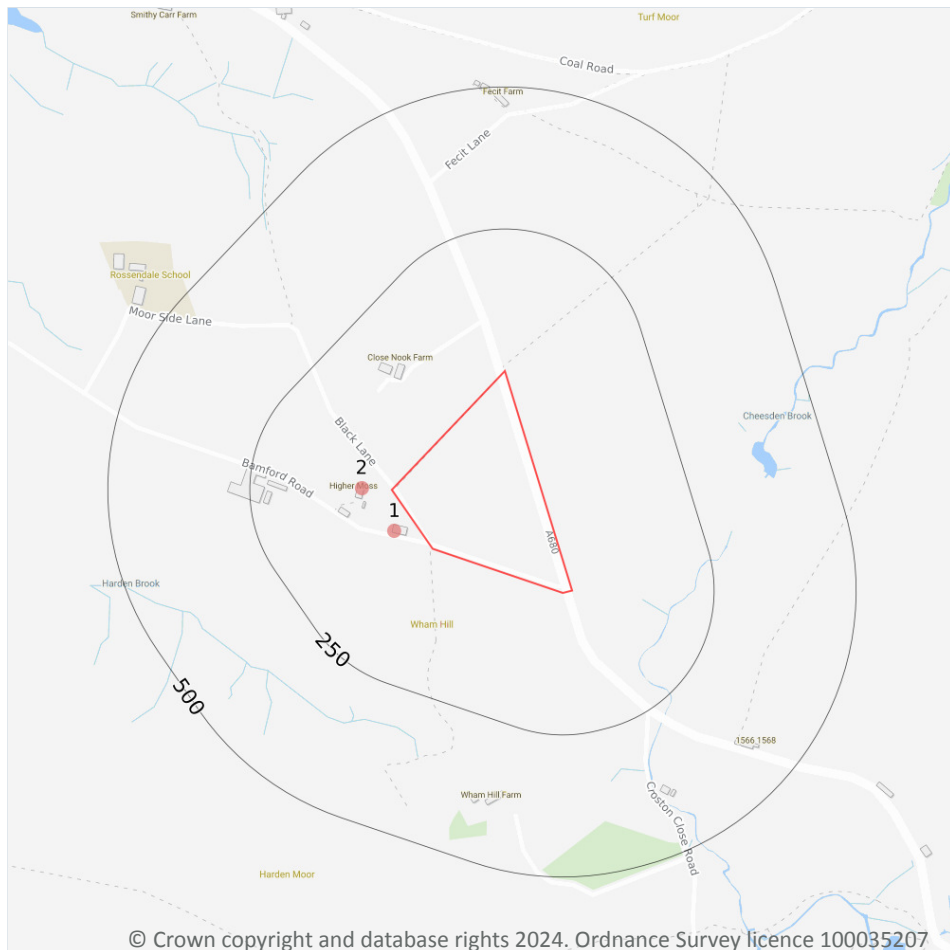


ID	Location	Site	Reference	Category	Sub-Category	Description
B	131m NW	-	WEX250452	Disposing of waste exemption	On a farm	Burning waste in the open

This data is sourced from the Environment Agency and Natural Resources Wales.



4 Current industrial land use



— Site Outline
Search buffers in metres (m)
● Recent industrial land uses

4.1 Recent industrial land uses

Records within 250m

2

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 29 >](#)

ID	Location	Company	Address	Activity	Category
1	38m W	Factory	Lancashire, BLO	Unspecified Works Or Factories	Industrial Features
2	54m W	J F Worthington	Higher Moss, Bamford Road, Ramsbottom, Bury, Lancashire, BLO ORT	Livestock Markets	Food, Drink and Multi Item Retail

This data is sourced from Ordnance Survey.



4.2 Current or recent petrol stations

Records within 500m**0**

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m**0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m**0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m**0**

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m**0**

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m

0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m

0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m

0

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m

0

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m**0**

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m**0**

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m**0**

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

Records within 500m**0**

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m**0**

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.



4.17 List 2 Dangerous Substances

Records within 500m**0**

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m**0**

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m**0**

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m**0**

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory radioactive waste

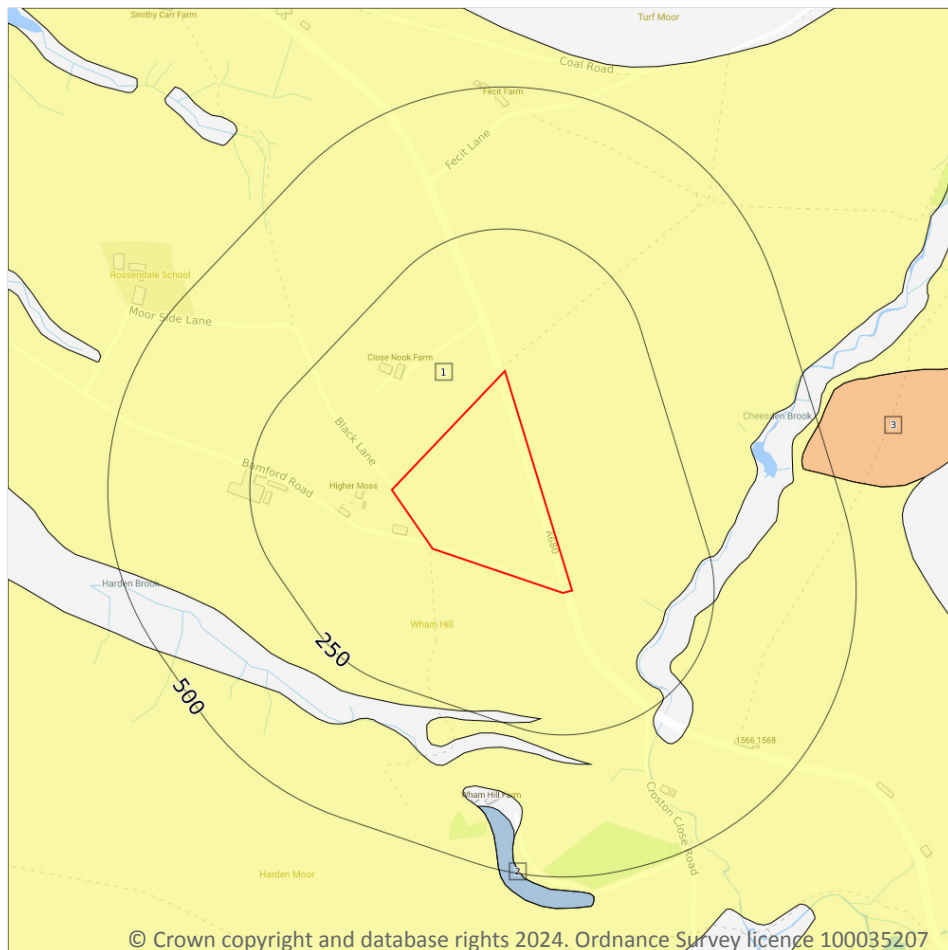
Records within 500m**0**

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



5 Hydrogeology - Superficial aquifer



- Site Outline**
- Search buffers in metres (m)**
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive
 - Unknown

5.1 Superficial aquifer

Records within 500m

3

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on [page 34 >](#)

ID	Location	Designation	Description
1	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
2	398m S	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

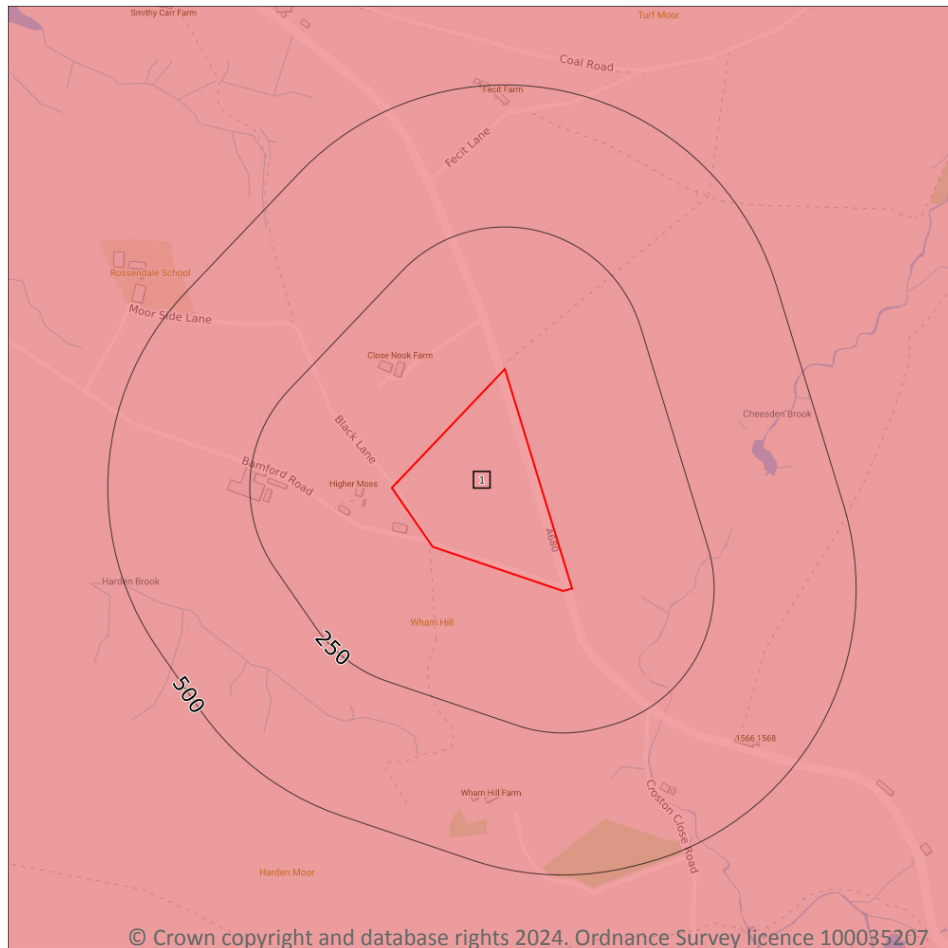


ID	Location	Designation	Description
3	452m E	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Bedrock aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive

5.2 Bedrock aquifer

Records within 500m

1

Aquifer status of groundwater held within bedrock geology.

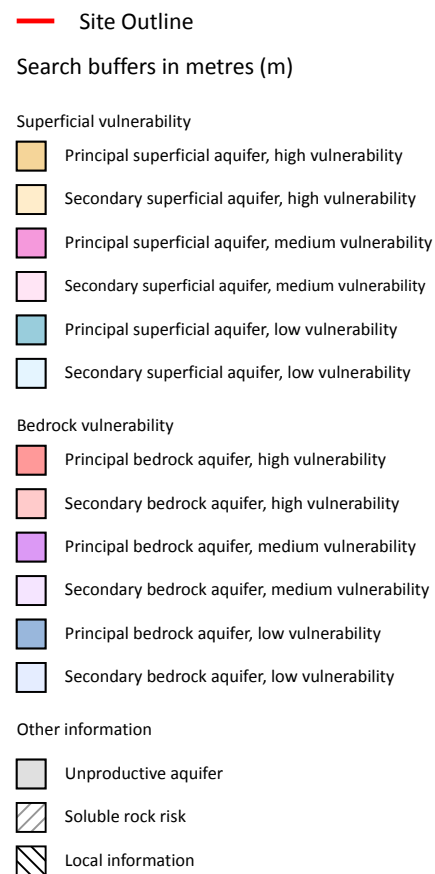
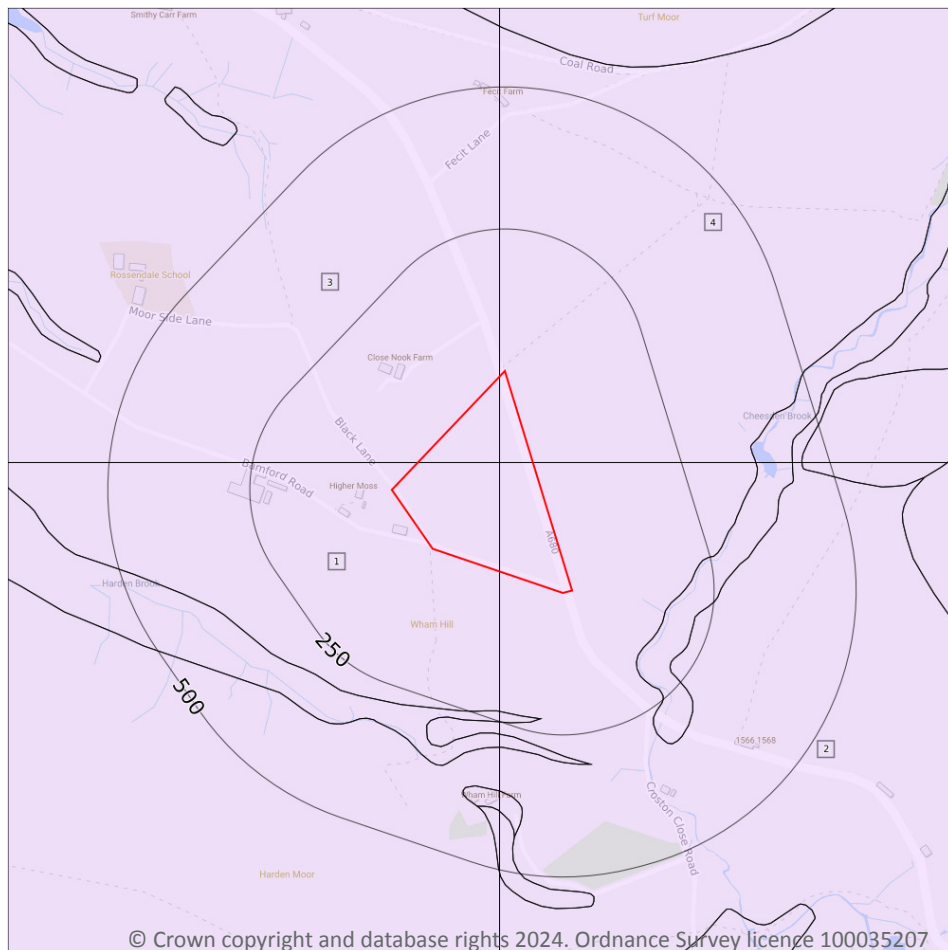
Features are displayed on the Bedrock aquifer map on [page 36](#) >

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

4

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on [page 37](#) >



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: High	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: High	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
3	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: High	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
4	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site

0

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.



5.5 Groundwater vulnerability- local information

Records on site

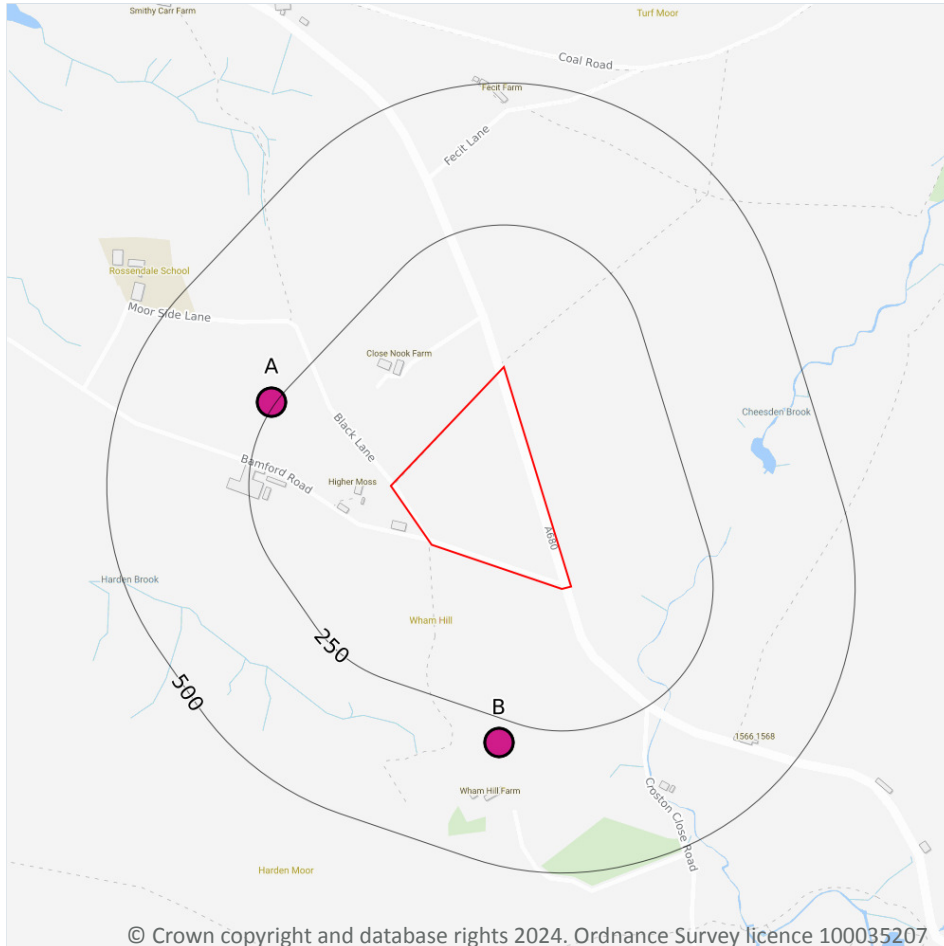
0

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk ↗.

This data is sourced from the British Geological Survey and the Environment Agency.



Abstractions and Source Protection Zones



- Site Outline
- Search buffers in metres (m)
- Source Protection Zone 1
Inner catchment
- Source Protection Zone 2
Outer catchment
- Source Protection Zone 3
Total catchment
- Source Protection Zone 4
Zone of Special Interest
- Source Protection Zone 1c
Inner catchment - confined aquifer
- Source Protection Zone 2c
Outer catchment - confined aquifer
- Source Protection Zone 3c
Total catchment - confined aquifer
- Drinking water abstraction licences
Point features
- Drinking water abstraction licences
Polygon features
- Drinking water abstraction licences
Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m

18

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on [page 40](#) >



ID	Location	Details	
A	257m NW	Status: Historical Licence No: 2569001097 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING FED CATCHPIT AT GATE HOUSE FARM, SHUTTLEWORTH, RAMS" Data Type: Point Name: OVENDEN Easting: 381600 Northing: 417100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 19/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 19/01/1966 Version End Date: -
A	257m NW	Status: Historical Licence No: 2569001097 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING FED CATCHPIT AT GATE HOUSE FARM, SHUTTLEWORTH, RAMS Data Type: Point Name: OVENDEN Easting: 381600 Northing: 417100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 19/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 19/01/1966 Version End Date: -
B	292m S	Status: Historical Licence No: 2569002139 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING FED CATCHPIT AT WHAM HILL FARM, WHAM HILL SHUTTLEW" Data Type: Point Name: OVENDEN Easting: 382000 Northing: 416500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 04/02/1966 Version End Date: -
B	292m S	Status: Historical Licence No: 2569002139 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING FED CATCHPIT AT WHAM HILL FARM, WHAM HILL SHUTTLEW Data Type: Point Name: OVENDEN Easting: 382000 Northing: 416500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 04/02/1966 Version End Date: -



ID	Location	Details	
-	839m NW	Status: Historical Licence No: 2569001100 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING FED CATCHPIT AT GREEN HILL FARM, SHUTTLEWORTH, RAMS" Data Type: Point Name: OVENDEN Easting: 381100 Northing: 417400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 19/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 19/01/1966 Version End Date: -
-	839m NW	Status: Historical Licence No: 2569001100 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING FED CATCHPIT AT GREEN HILL FARM, SHUTTLEWORTH, RAMS Data Type: Point Name: OVENDEN Easting: 381100 Northing: 417400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 19/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 19/01/1966 Version End Date: -
-	949m SE	Status: Historical Licence No: 2569002164 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "SPRING FED COLLECTING TANK AT TOM HILL, CHEESDEN, ROCHDALE" Data Type: Point Name: NUTTER Easting: 383000 Northing: 416400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 31/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -
-	949m SE	Status: Historical Licence No: 2569002164 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: SPRING FED COLLECTING TANK AT TOM HILL, CHEESDEN, ROCHDALE Data Type: Point Name: NUTTER Easting: 383000 Northing: 416400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 31/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -



ID	Location	Details	
-	1216m SE	Status: Historical Licence No: 2569002083 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: SPRING FED COLLECTING TANK AT ASHWORTH MOOR, NORDEN Data Type: Point Name: GREENALL WHITLEY P LC Easting: 383200 Northing: 416200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1987 Version End Date: -
-	1377m SW	Status: Historical Licence No: 2569001187 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING FED COLLECTING CHAMBER AT NANGREAVES, BURY" Data Type: Point Name: SELLERS Easting: 381300 Northing: 415600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 17/06/1971 Expiry Date: - Issue No: 100 Version Start Date: 17/06/1971 Version End Date: -
-	1377m SW	Status: Historical Licence No: 2569001187 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING FED COLLECTING CHAMBER AT NANGREAVES, BURY Data Type: Point Name: SELLERS Easting: 381300 Northing: 415600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 17/06/1971 Expiry Date: - Issue No: 100 Version Start Date: 17/06/1971 Version End Date: -
-	1378m NW	Status: Historical Licence No: 2569001099 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING FED CATCHPIT AT TOP O'TH' LEE AND DRY GAP FARMS, S" Data Type: Point Name: OVENDEN Easting: 381000 Northing: 418100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 19/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 19/01/1966 Version End Date: -



ID	Location	Details	
-	1378m NW	Status: Historical Licence No: 2569001099 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING FED CATCHPIT AT TOP O'TH' LEE AND DRY GAP FARMS, S Data Type: Point Name: OVENDEN Easting: 381000 Northing: 418100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 19/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 19/01/1966 Version End Date: -
-	1618m N	Status: Historical Licence No: 2569001287 Details: Process Water Direct Source: Ground Water - North West Region Point: SCOUT MOOR QUARRY BOREHOLE 4 Data Type: Point Name: MARSHALLS MONO LTD Easting: 381540 Northing: 418710	Annual Volume (m ³): 87600 Max Daily Volume (m ³): 240 Original Application No: - Original Start Date: 31/03/2008 Expiry Date: 31/03/2015 Issue No: 2 Version Start Date: 15/10/2014 Version End Date: -
-	1628m N	Status: Historical Licence No: 2569001287 Details: Process Water Direct Source: Ground Water - North West Region Point: SCOUT MOOR QUARRY BOREHOLE 2 Data Type: Point Name: MARSHALLS MONO LTD Easting: 381540 Northing: 418720	Annual Volume (m ³): 87600 Max Daily Volume (m ³): 240 Original Application No: - Original Start Date: 31/03/2008 Expiry Date: 31/03/2015 Issue No: 2 Version Start Date: 15/10/2014 Version End Date: -
-	1632m N	Status: Historical Licence No: 2569001287 Details: Process Water Direct Source: Ground Water - North West Region Point: SCOUT MOOR QUARRY BOREHOLE 1 Data Type: Point Name: MARSHALLS MONO LTD Easting: 381560 Northing: 418730	Annual Volume (m ³): 87600 Max Daily Volume (m ³): 240 Original Application No: - Original Start Date: 31/03/2008 Expiry Date: 31/03/2015 Issue No: 2 Version Start Date: 15/10/2014 Version End Date: -
-	1633m N	Status: Historical Licence No: 2569001287 Details: Process Water Direct Source: Ground Water - North West Region Point: SCOUT MOOR QUARRY BOREHOLE 3 Data Type: Point Name: MARSHALLS MONO LTD Easting: 381520 Northing: 418720	Annual Volume (m ³): 87600 Max Daily Volume (m ³): 240 Original Application No: - Original Start Date: 31/03/2008 Expiry Date: 31/03/2015 Issue No: 2 Version Start Date: 15/10/2014 Version End Date: -



ID	Location	Details	
-	1652m SW	Status: Historical Licence No: 2569001190 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING FED COLLECTING CHAMBER AT WALMERSLEY Data Type: Point Name: MOSLEY AND THWAITES Easting: 380800 Northing: 415600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 08/05/1972 Expiry Date: - Issue No: 100 Version Start Date: 08/05/1972 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m	8
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Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on [page 40 >](#)

ID	Location	Details	
-	1048m S	Status: Historical Licence No: 2569001229 Details: General Farming & Domestic Direct Source: "Surface, Non-Tidal - North West Region" Point: "SPRING FED STORAGE TANKS AT NANGREAVES, BURY" Data Type: Point Name: ALEXANDER Easting: 381650 Northing: 415820	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 29/11/1990 Expiry Date: - Issue No: 100 Version Start Date: 29/11/1990 Version End Date: -
-	1048m S	Status: Historical Licence No: 2569001229 Details: General Farming & Domestic Direct Source: Surface, Non-Tidal - North West Region Point: SPRING FED STORAGE TANKS AT NANGREAVES, BURY Data Type: Point Name: ALEXANDER Easting: 381650 Northing: 415820	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 29/11/1990 Expiry Date: - Issue No: 100 Version Start Date: 29/11/1990 Version End Date: -



ID	Location	Details	
-	1095m NW	Status: Historical Licence No: 2569001012 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIR FED BY NEW GATE BRK AND FIELD DRAINAGE, ADJACENT Data Type: Point Name: TOMASZEWSKI Easting: 381200 Northing: 417900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 14/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 08/01/1991 Version End Date: -
-	1208m N	Status: Historical Licence No: 2569001262 Details: Mineral Washing Direct Source: Surface, Non-Tidal - North West Region Point: NEW GATE BROOK EDEN FIELD LANCS Data Type: Point Name: MARSHALLS MONO LTD Easting: 381920 Northing: 418366	Annual Volume (m ³): 73000 Max Daily Volume (m ³): 200 Original Application No: - Original Start Date: 22/09/2008 Expiry Date: 31/03/2019 Issue No: 2 Version Start Date: 15/10/2014 Version End Date: -
-	1513m W	Status: Historical Licence No: 2569001199 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "CROSS BANK BRK AT RAMSBOTTOM, BURY" Data Type: Point Name: MARSHALLS MONO LTD Easting: 380400 Northing: 417500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 22/09/1975 Expiry Date: - Issue No: 100 Version Start Date: 18/02/1987 Version End Date: -
-	1513m W	Status: Historical Licence No: 2569001199 Details: Process Water Direct Source: Surface, Non-Tidal - North West Region Point: CROSS BANK BRK AT RAMSBOTTOM, BURY Data Type: Point Name: MARSHALLS MONO LTD Easting: 380400 Northing: 417500	Annual Volume (m ³): 34096 Max Daily Volume (m ³): 136 Original Application No: - Original Start Date: 22/09/1975 Expiry Date: - Issue No: 101 Version Start Date: 28/08/2014 Version End Date: -



ID	Location	Details	
-	1683m SE	Status: Historical Licence No: 2569002197 Details: Potable Water Supply - Direct Direct Source: "Surface, Non-Tidal - North West Region" Point: "ASHWORTH MOOR, NADEN AND GREENBOOTH RESERVOIRS, ROCHDALE" Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 383100 Northing: 415400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 22/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 14/03/1990 Version End Date: -
-	1683m SE	Status: Historical Licence No: 2569002197 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: ASHWORTH MOOR, NADEN AND GREENBOOTH RESERVOIRS, ROCHDALE Data Type: Point Name: United Utilities Water Ltd Easting: 383100 Northing: 415400	Annual Volume (m ³): 9092000 Max Daily Volume (m ³): 40914 Original Application No: 1613 Original Start Date: 22/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 14/03/1990 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m

5

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on [page 40 >](#)

ID	Location	Details	
-	949m SE	Status: Historical Licence No: 2569002164 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "SPRING FED COLLECTING TANK AT TOM HILL, CHEESDEN, ROCHDALE" Data Type: Point Name: NUTTER Easting: 383000 Northing: 416400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 31/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -



ID	Location	Details	
-	949m SE	Status: Historical Licence No: 2569002164 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: SPRING FED COLLECTING TANK AT TOM HILL, CHEESDEN, ROCHDALE Data Type: Point Name: NUTTER Easting: 383000 Northing: 416400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 31/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -
-	1216m SE	Status: Historical Licence No: 2569002083 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: SPRING FED COLLECTING TANK AT ASHWORTH MOOR, NORDEN Data Type: Point Name: GREENALL WHITLEY P LC Easting: 383200 Northing: 416200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1987 Version End Date: -
-	1683m SE	Status: Active Licence No: 2569002197 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: ASHWORTH MOOR, NADEN AND GREENBOOTH RESERVOIRS, ROCHDALE Data Type: Point Name: United Utilities Water Ltd Easting: 383100 Northing: 415400	Annual Volume (m ³): 9092000 Max Daily Volume (m ³): 40914 Original Application No: 1613 Original Start Date: 22/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 14/03/1990 Version End Date: -
-	1683m SE	Status: Historical Licence No: 2569002197 Details: Potable Water Supply - Direct Direct Source: "Surface, Non-Tidal - North West Region" Point: "ASHWORTH MOOR, NADEN AND GREENBOOTH RESERVOIRS, ROCHDALE" Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 383100 Northing: 415400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 22/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 14/03/1990 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.



5.9 Source Protection Zones

Records within 500m

0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

Records within 500m

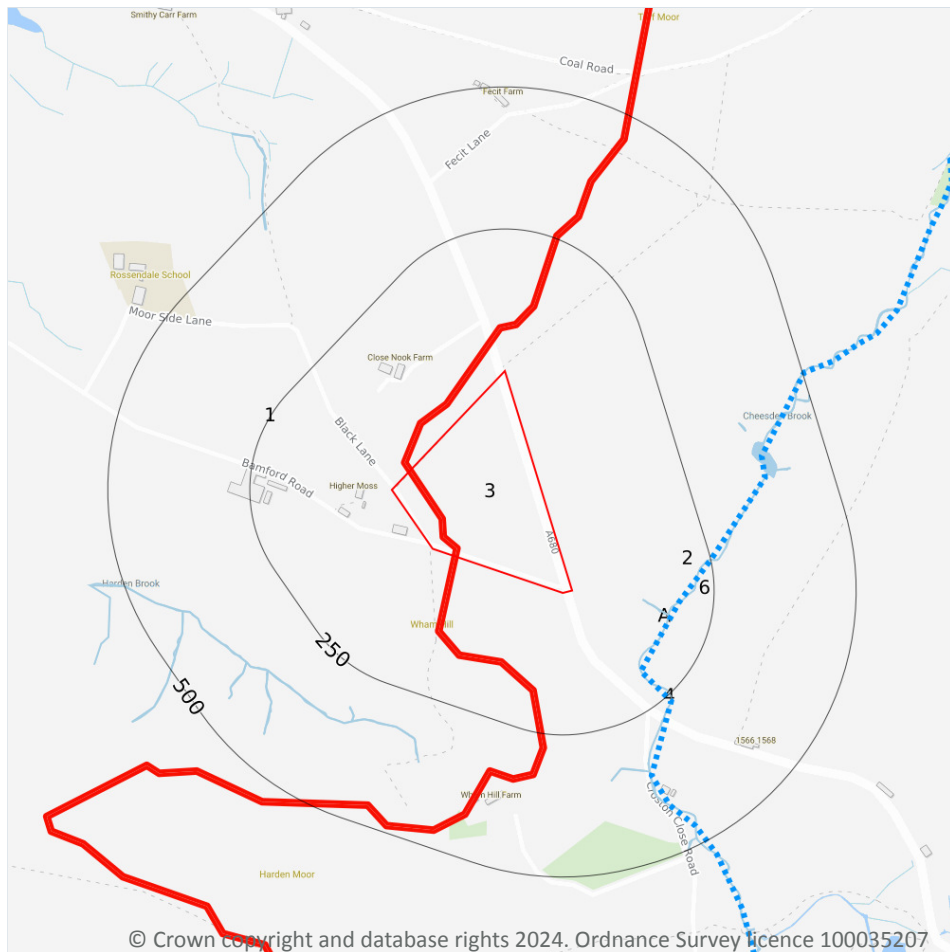
0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.



6 Hydrology



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ⋯ WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

3

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on [page 50](#) >

ID	Location	Type of water feature	Ground level	Permanence	Name
A	125m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
4	167m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Cheesden Brook
6	174m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Cheesden Brook

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	2
----------------------------	----------

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on [page 50 >](#)

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	2
------------------------	----------

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on [page 50 >](#)

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	River	Irwell (Rossendale STW to Roch)	GB112069064620	Croal Irwell	Irwell
2	On site	River	Naden Brook	GB112069064710	Roch Irk Medlock	Irwell

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified

2

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on [page 50 >](#)

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
5	175m SE	River	Naden Brook	GB112069064710 ↗	Moderate	Fail	Moderate	2019
-	2308m W	River	Irwell (Rossendale STW to Roch)	GB112069064620 ↗	Moderate	Fail	Moderate	2019

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site

1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on [page 50 >](#)

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
3	On site	Northern Manchester Carboniferous Aquifers	GB41202G101800 ↗	Poor	Poor	Good	2019

This data is sourced from the Environment Agency and Natural Resources Wales.



7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m**0**

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m**0**

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m**0**

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.



7.4 Areas Benefiting from Flood Defences

Records within 250m

0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

Records within 250m

0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

Records within 50m

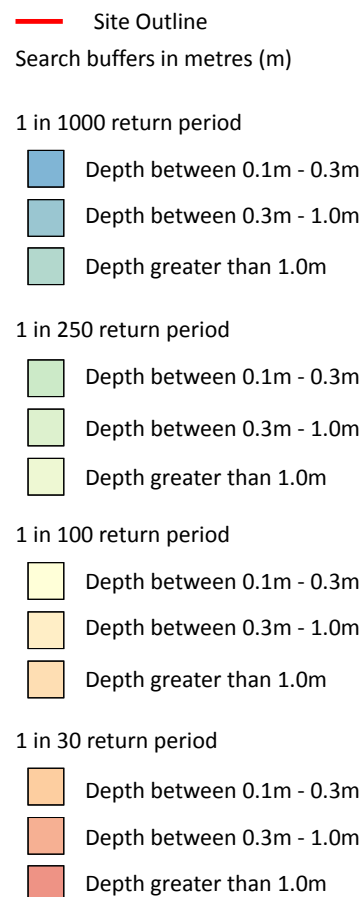
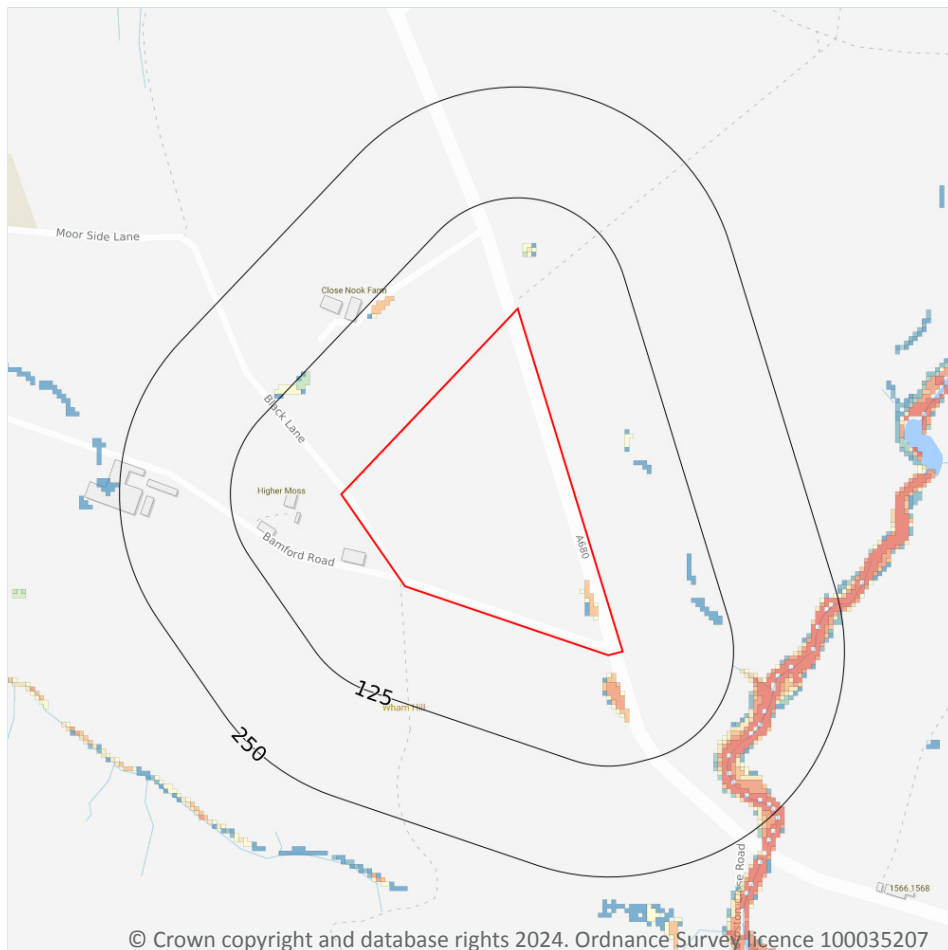
0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.



8 Surface water flooding



8.1 Surface water flooding

Highest risk on site

1 in 30 year, 0.1m - 0.3m

Highest risk within 50m

1 in 30 year, 0.3m - 1.0m

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on [page 56 >](#)

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

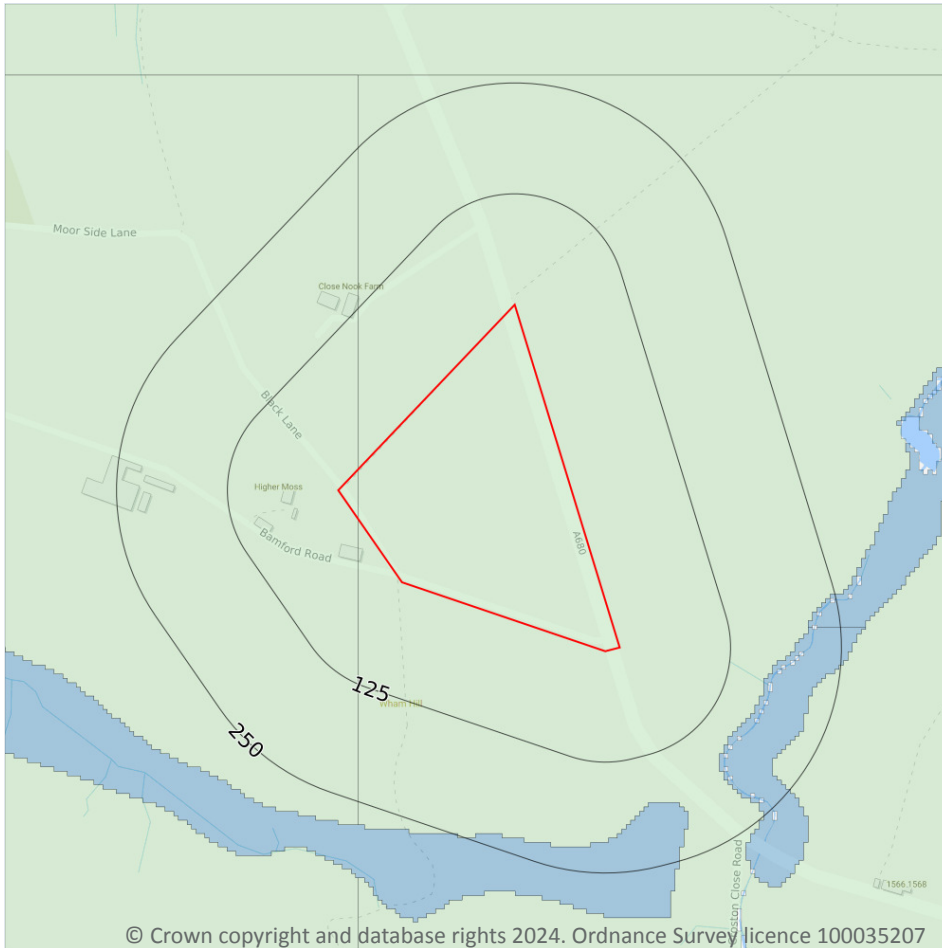
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.1m and 0.3m

This data is sourced from Ambiental Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

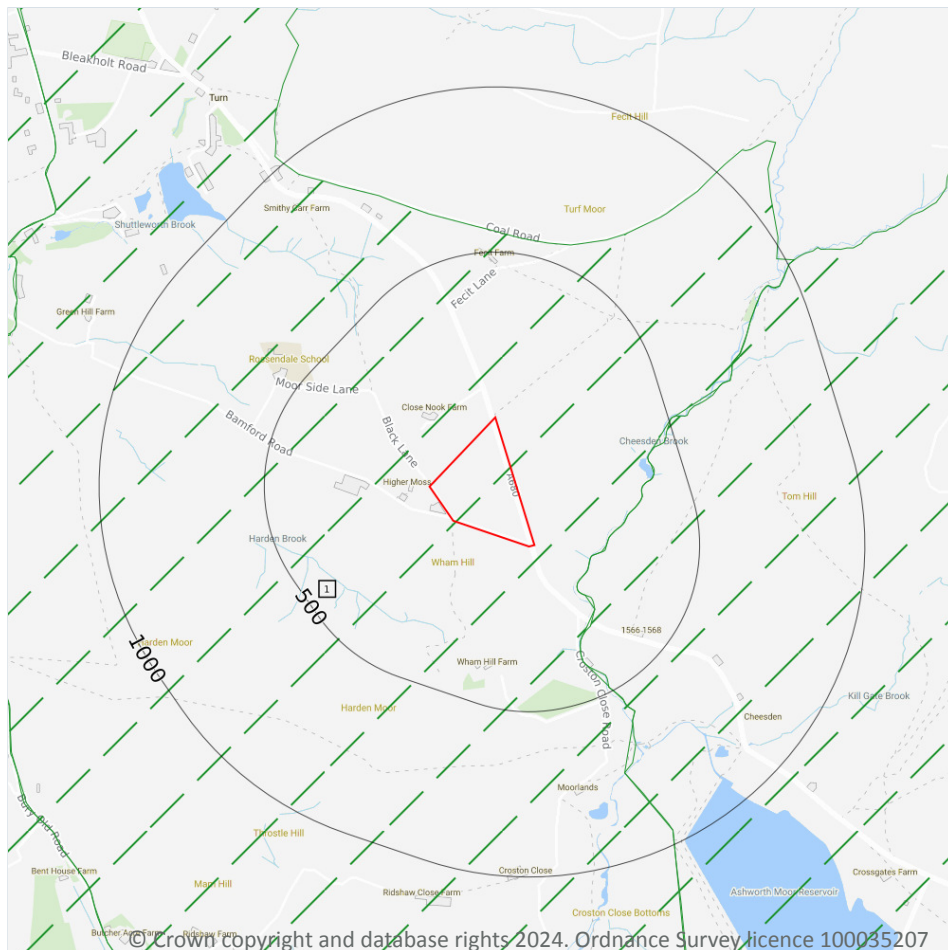
Low

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on [page 58 >](#)

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.



10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m**0**

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m**0**

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m**0**

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m**0**

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m

0

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m

0

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m

0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m

0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m

3

Areas designated to prevent urban sprawl by keeping land permanently open.

Features are displayed on the Environmental designations map on [page 59 >](#)

ID	Location	Name	Local Authority name
1	On site	Merseyside and Greater Manchester	Rossendale
2	173m SE	Merseyside and Greater Manchester	Rochdale
3	1342m W	Merseyside and Greater Manchester	Bury

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m

0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.



10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

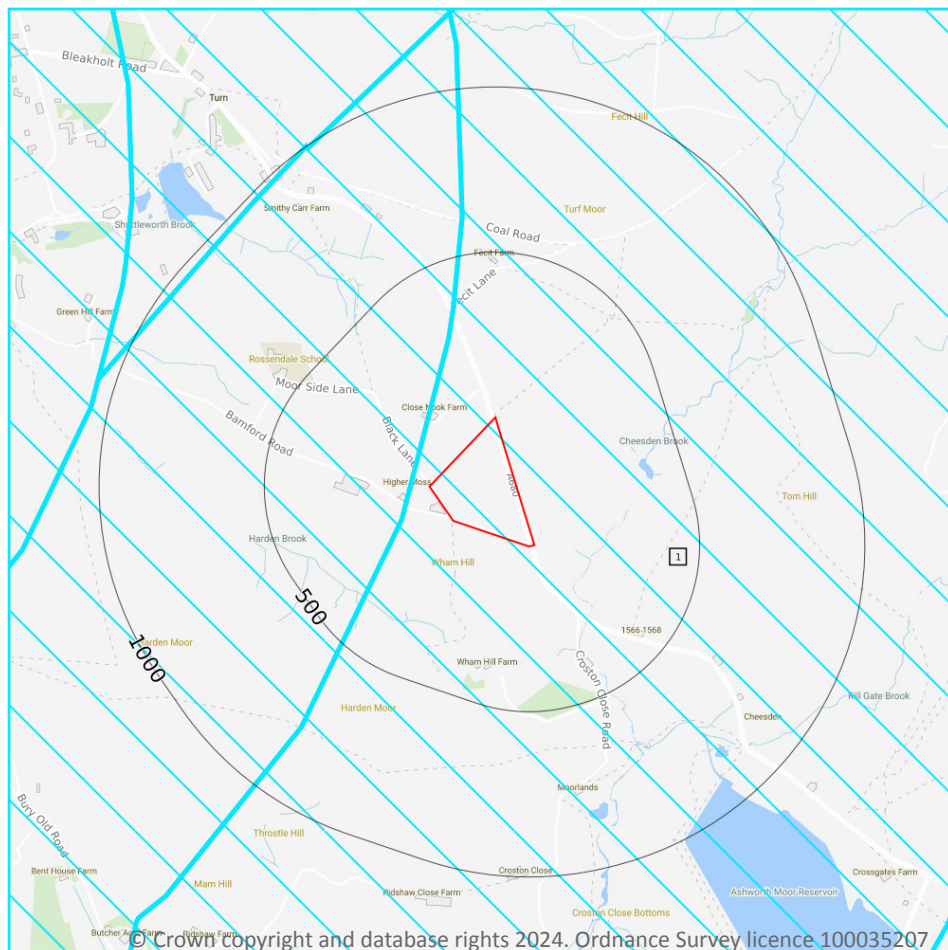
Records within 2000m

0

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

This data is sourced from Natural England and Natural Resources Wales.

SSSI Impact Zones and Units



- Site Outline
- Search buffers in metres (m)
- SSSI Impact Risk Zones
- SSSI Units
- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site

1

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on [page 64](#) >

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Airports, helipads and other aviation proposals. Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t. Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0
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Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.



11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m

0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m

0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m

0

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.



This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m

0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m

0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

Records within 250m

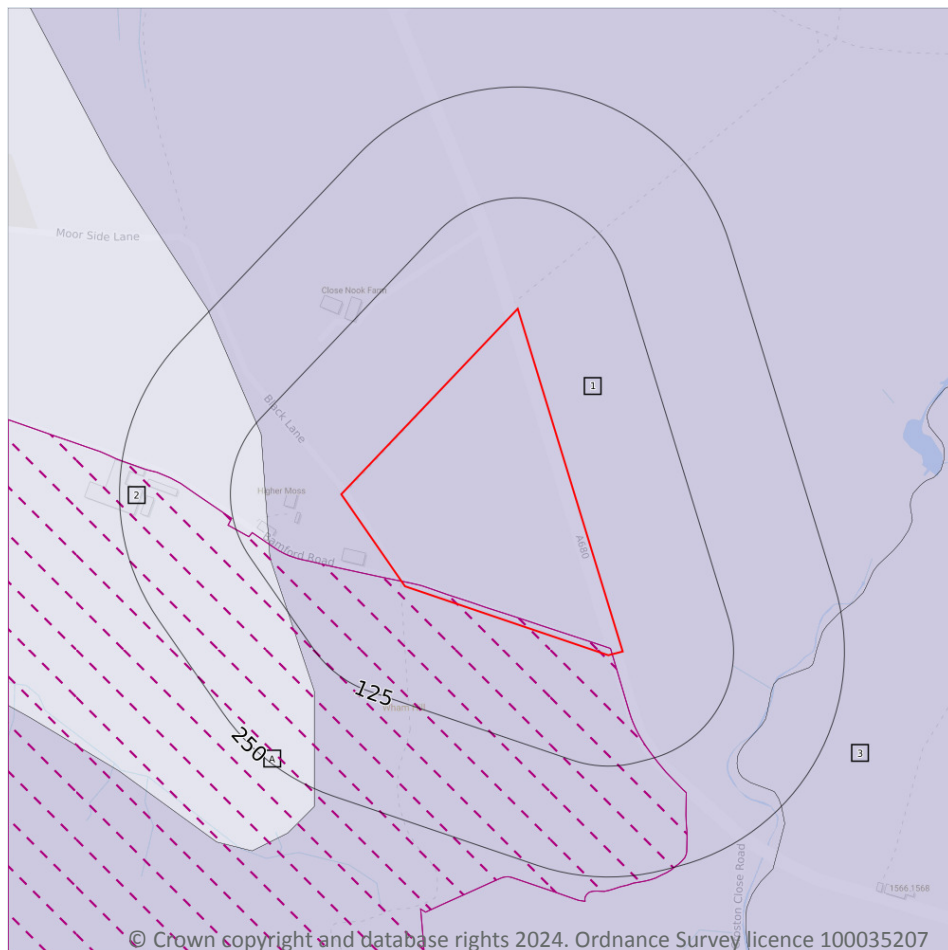
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Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.



12 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m

3

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on [page 68](#) >

ID	Location	Classification	Description
1	On site	Grade 5	Very poor quality agricultural land. Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

ID	Location	Classification	Description
2	85m W	Grade 4	Poor quality agricultural land. Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.
3	173m SE	Grade 5	Very poor quality agricultural land. Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	2
----------------------------	----------

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

Features are displayed on the Agricultural designations map on [page 68 >](#)

ID	Location	Name	Classification	Other relevant legislation
A	On site	Harden Moor	Section 4 Conclusive Registered Common Land	-
A	On site	Harden Moor	Section 15 Land	S.193 - Urban Borough District

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m	0
----------------------------	----------

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

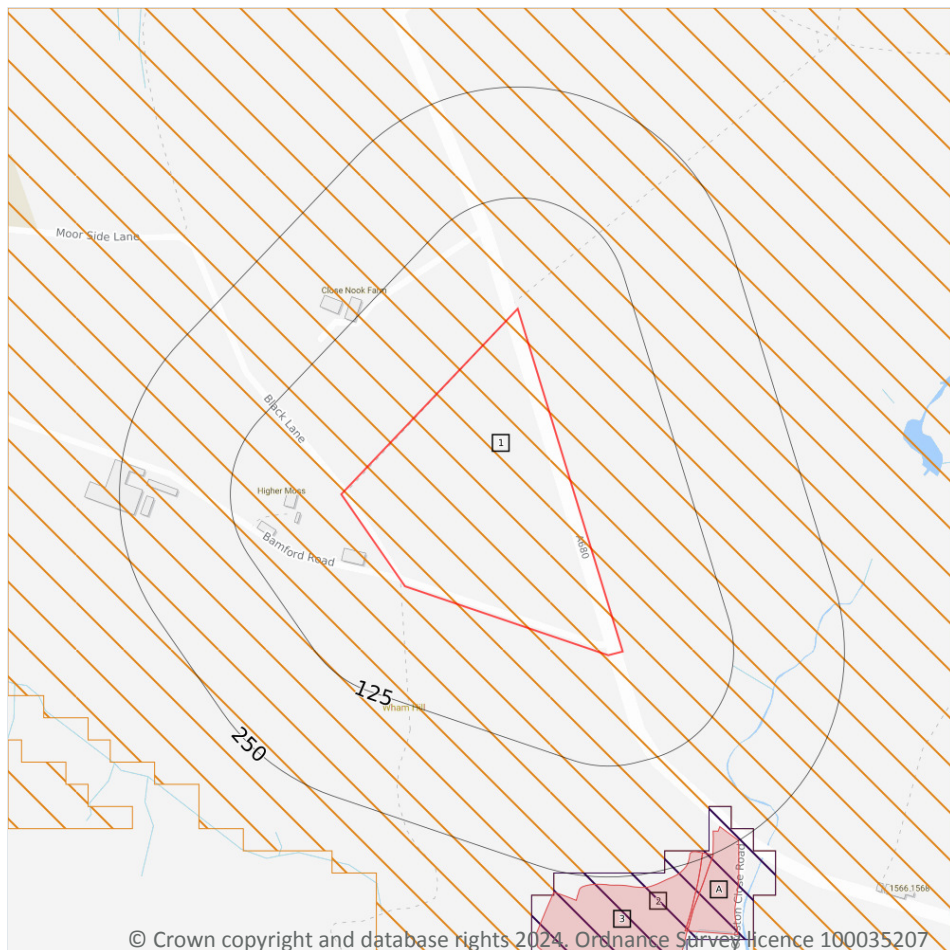
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Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.



13 Habitat designations



- Site Outline
- Search buffers in metres (m)
- Priority Habitat Inventory
- Open Mosaic Habitat
- Limestone Pavement Orders
- Habitat Networks
- Primary Habitat
- Restorable Habitat
- Associated Habitats
- Habitat Restoration-Creation
- Network Enhancement Zone 1
- Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m

3

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

Features are displayed on the Habitat designations map on [page 71 >](#)

ID	Location	Main Habitat	Other habitats
A	226m SE	Lowland meadows	Main habitat: LMEAD (INV > 50%)
3	239m SE	Lowland meadows	Main habitat: LMEAD (INV > 50%)
A	244m SE	Lowland meadows	Main habitat: LMEAD (INV > 50%)

This data is sourced from Natural England.



13.2 Habitat Networks

Records within 250m

2

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

Features are displayed on the Habitat designations map on [page 71](#) >

ID	Location	Type	Habitat
1	On site	Network Enhancement Zone 1	Not specified
2	200m SE	Primary Habitat	Lowland meadows

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m

0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m

0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.



-  Reclaimed ground
-  Made ground
-  Worked ground
-  Infilled ground
-  Disturbed ground
-  Landscaped ground

Records within 500m	10
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Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on [page 74](#) >

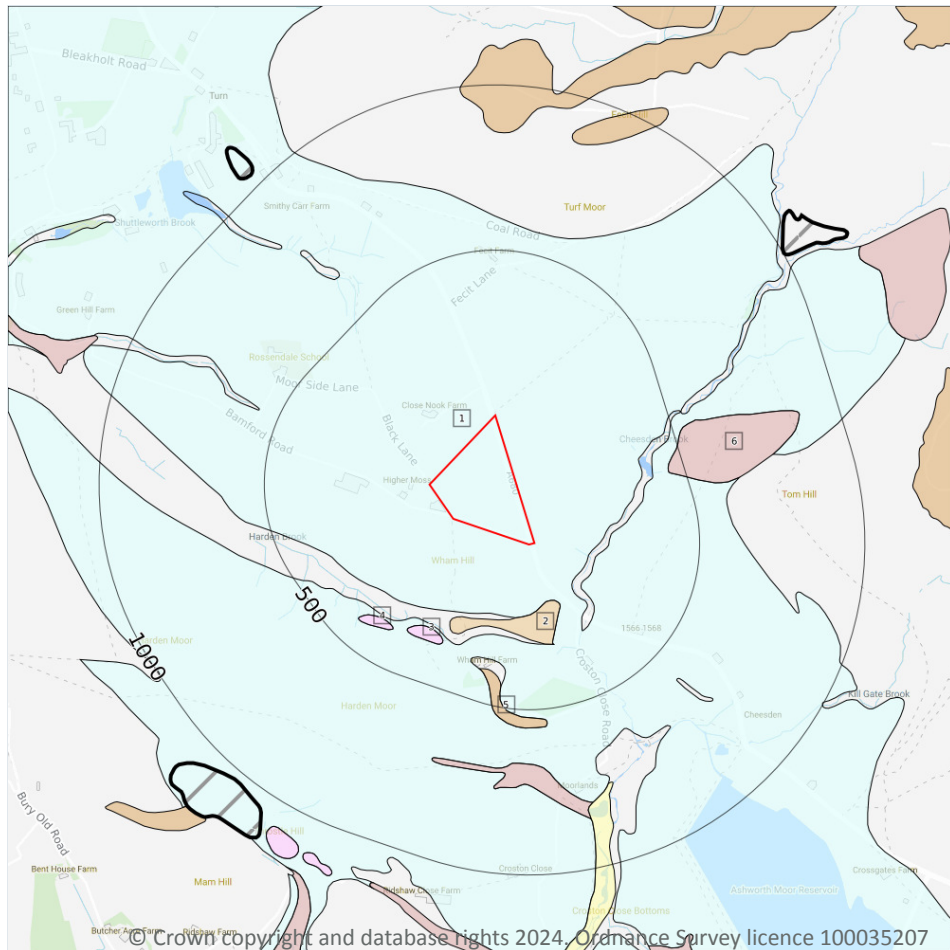
ID	Location	LEX Code	Description	Rock description
A	200m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	244m SE	WGR-VOID	Worked Ground (Undivided)	Void
1	256m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	278m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

ID	Location	LEX Code	Description	Rock description
3	305m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
B	412m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
B	428m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
B	458m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	484m S	WMGR-ARTDP	Infilled Ground	Artificial Deposit
B	496m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m

6

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 76 >](#)

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
2	180m SE	LDE-C	Lacustrine Deposits - Clay	Clay
3	334m SW	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel



ID	Location	LEX Code	Description	Rock description
4	369m SW	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
5	397m S	PEAT-P	Peat - Peat	Peat
6	452m E	HEAD-DMTN	Head - Diamicton	Diamicton

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

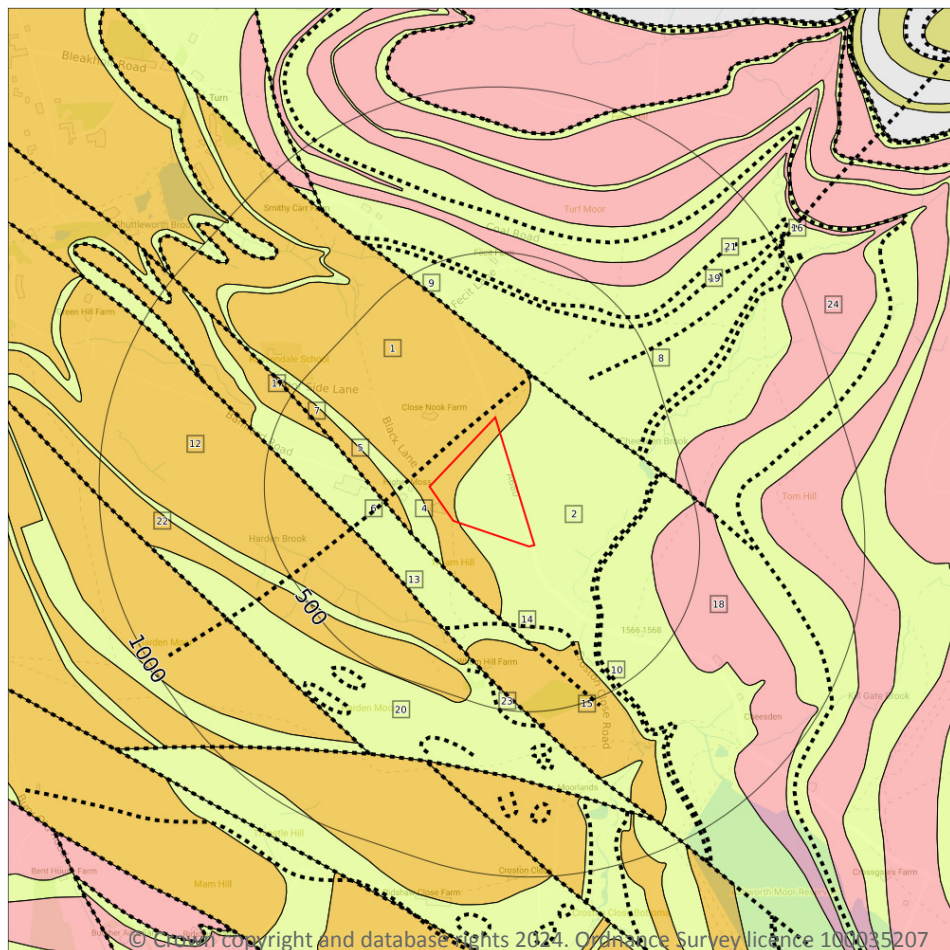
0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m

13

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 78](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	HLBG-SDST	Holcombe Brook Grit - Sandstone	Marsdenian Sub-age
2	On site	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age
4	38m W	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age



ID	Location	LEX Code	Description	Rock age
5	99m W	BBS-SDST	Brooksbottoms Grit - Sandstone	Marsdenian Sub-age
6	119m SW	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age
8	169m N	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age
12	238m SW	FLB-SDST	Fletcher Bank Grit - Sandstone	Marsdenian Sub-age
15	286m S	HLBG-SDST	Holcombe Brook Grit - Sandstone	Marsdenian Sub-age
17	324m W	HLBG-SDST	Holcombe Brook Grit - Sandstone	Marsdenian Sub-age
18	357m E	LH-SDST	Lower Haslingden Flags - Sandstone	Yeadonian Sub-age
20	368m SW	MG-MDSI	Millstone Grit Group [see Also Migr] - Mudstone And Siltstone	Namurian Age
22	391m SW	HSG-SDST	Helmshore Grit - Sandstone	Marsdenian Sub-age
24	463m E	LH-SDST	Lower Haslingden Flags - Sandstone	Yeadonian Sub-age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

11

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 78 >](#)

ID	Location	Category	Description
3	28m N	FOLD_AXIS	Axial plane trace of major anticline
7	119m SW	FAULT	Normal fault, inferred
9	169m N	FAULT	Normal fault, inferred
10	201m SE	ROCK	Coal seam, inferred
11	212m SE	FOSSIL_HORIZON	Fossil horizon, marine band
13	238m SW	FAULT	Normal fault, inferred
14	241m S	LANDFORM	Glacial meltwater channel, undifferentiated, centre line
16	307m NE	FOLD_AXIS	Axial plane trace of major anticline

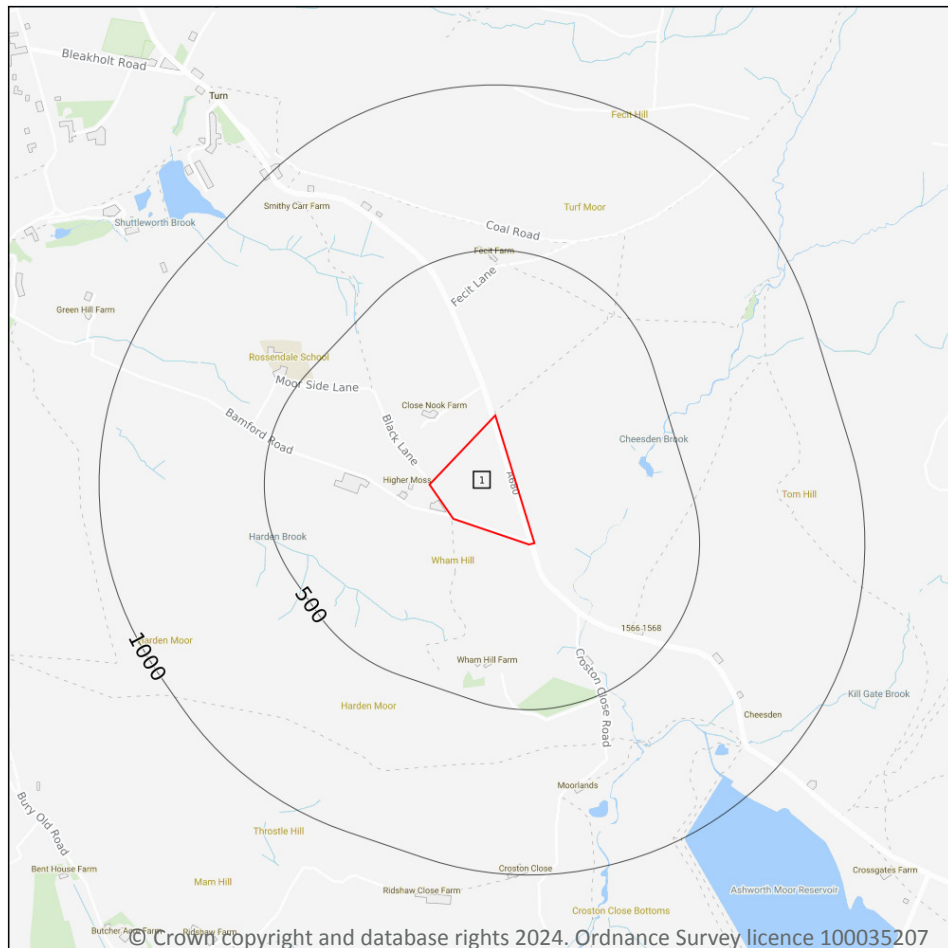


ID	Location	Category	Description
19	363m N	ROCK	Coal seam, inferred
21	379m N	FOSSIL_HORIZON	Fossil horizon, marine band
23	408m S	LANDFORM	Glacial meltwater channel, undifferentiated, centre line

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 81](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	Full	EW076_rochdale_v4

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Artificial and made ground

15.2 Artificial and made ground (50k)

Records within 500m

0

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

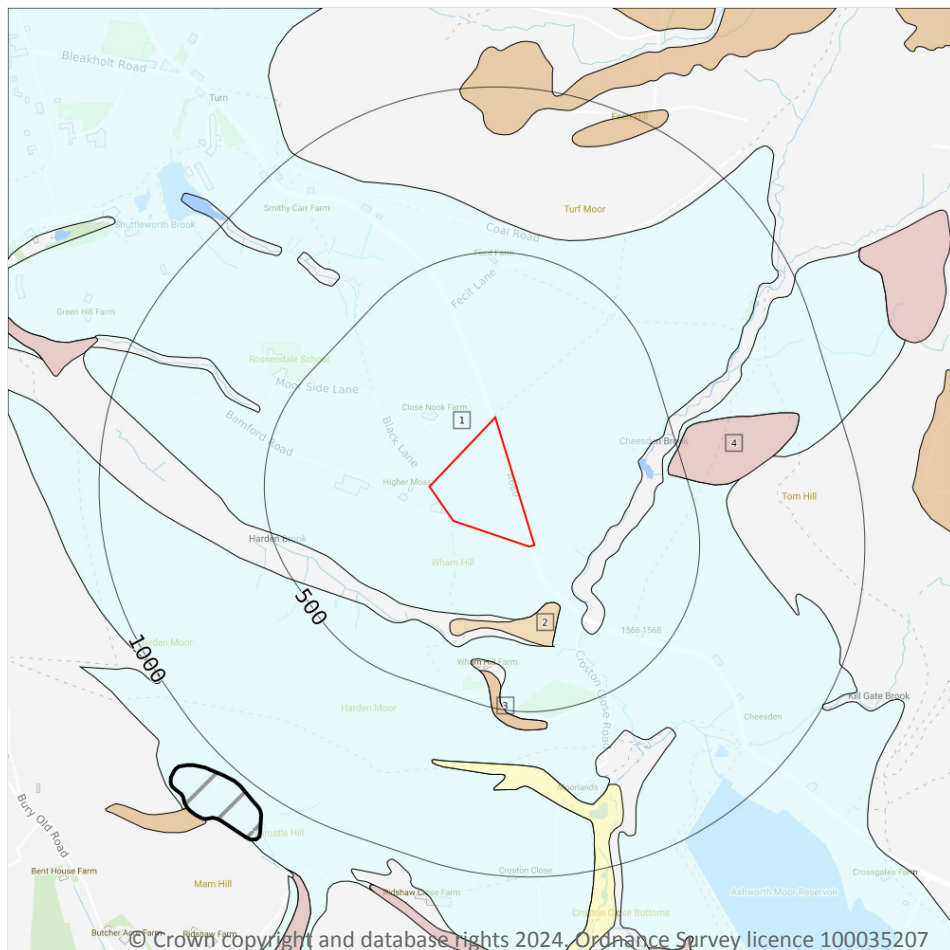
0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m

4

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 83](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	TILL, DEVANSIAN	DIAMICTON
2	180m SE	LDE-C	LACUSTRINE DEPOSITS	CLAY
3	398m S	PEAT-P	PEAT	PEAT



ID	Location	LEX Code	Description	Rock description
4	452m E	HEAD-DMTN	HEAD	DIAMICTON

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1
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A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	High	Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0
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Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

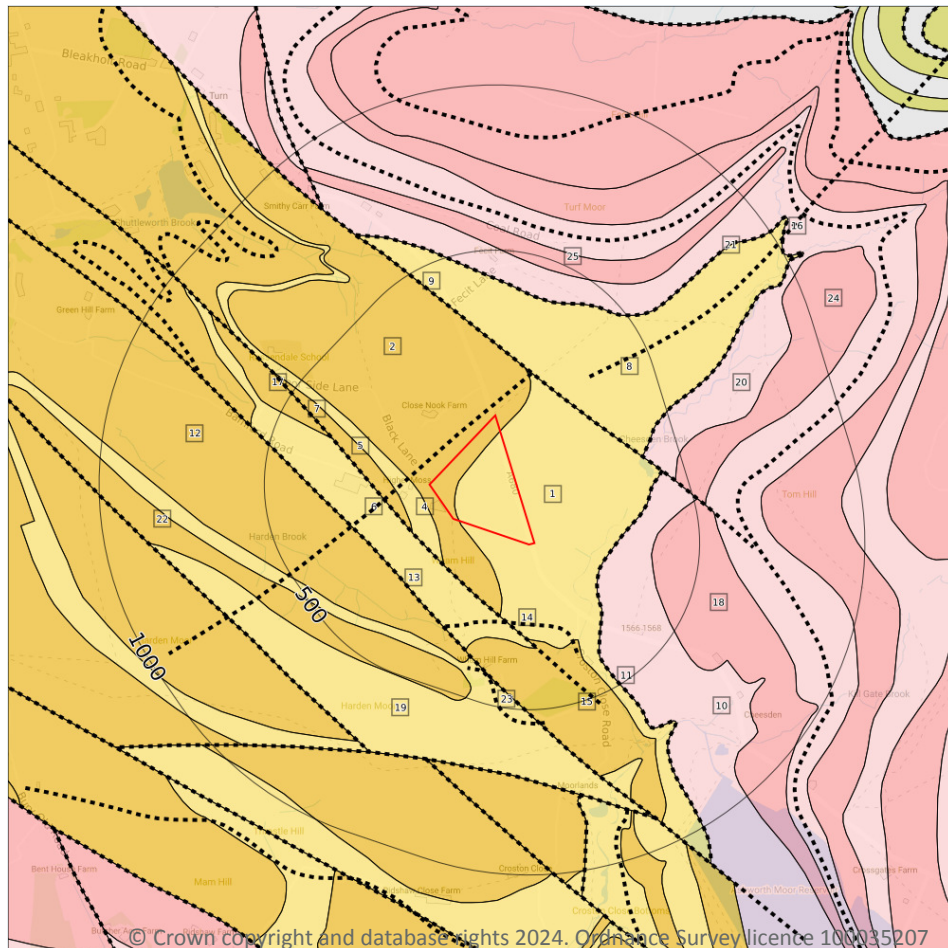
Records within 50m	0
--------------------	---

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m

16

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 85](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	MARSD-MDSI	MARSDEN FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN
2	On site	HLBG-SDST	HOLCOMBE BROOK GRIT - SANDSTONE	NAMURIAN
4	38m W	MARSD-MDSI	MARSDEN FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN



ID	Location	LEX Code	Description	Rock age
5	98m W	BBS-SDST	BROOKSBOTTOMS GRIT - SANDSTONE	NAMURIAN
6	119m SW	MARSD-MDSI	MARSDEN FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN
8	169m N	MARSD-MDSI	MARSDEN FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN
10	212m SE	ROSSE-MDSI	ROSSENDALE FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN
12	238m SW	FLB-SDST	FLETCHER BANK GRIT - SANDSTONE	NAMURIAN
15	287m S	HLBG-SDST	HOLCOMBE BROOK GRIT - SANDSTONE	NAMURIAN
17	325m W	HLBG-SDST	HOLCOMBE BROOK GRIT - SANDSTONE	NAMURIAN
18	356m E	LH-SDST	LOWER HASLINGDEN FLAGS - SANDSTONE	NAMURIAN
19	368m SW	MARSD-MDSI	MARSDEN FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN
20	379m N	ROSSE-MDSI	ROSSENDALE FORMATION - MUDSTONE AND SILTSTONE	NAMURIAN
22	404m SW	HSG-SDST	HELMSHORE GRIT - SANDSTONE	NAMURIAN
24	463m E	LH-SDST	LOWER HASLINGDEN FLAGS - SANDSTONE	NAMURIAN
25	470m N	LH-SDST	LOWER HASLINGDEN FLAGS - SANDSTONE	NAMURIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m

2

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	High	Moderate
On site	Fracture	Low	Low

This data is sourced from the British Geological Survey.



15.10 Bedrock faults and other linear features (50k)

Records within 500m

9

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 85](#) >

ID	Location	Category	Description
3	28m N	FOLD_AXIS	Axial plane trace of major anticline
7	119m SW	FAULT	Fault, inferred
9	169m N	FAULT	Fault, inferred
11	212m SE	FOSSIL_HORIZON	Marine band
13	238m SW	FAULT	Fault, inferred
14	241m S	LANDFORM	Glacial meltwater channel centre line, undifferentiated
16	308m NE	FOLD_AXIS	Axial plane trace of major anticline
21	379m N	FOSSIL_HORIZON	Marine band
23	408m S	LANDFORM	Glacial meltwater channel centre line, undifferentiated

This data is sourced from the British Geological Survey.



16 Boreholes

16.1 BGS Boreholes

Records within 250m

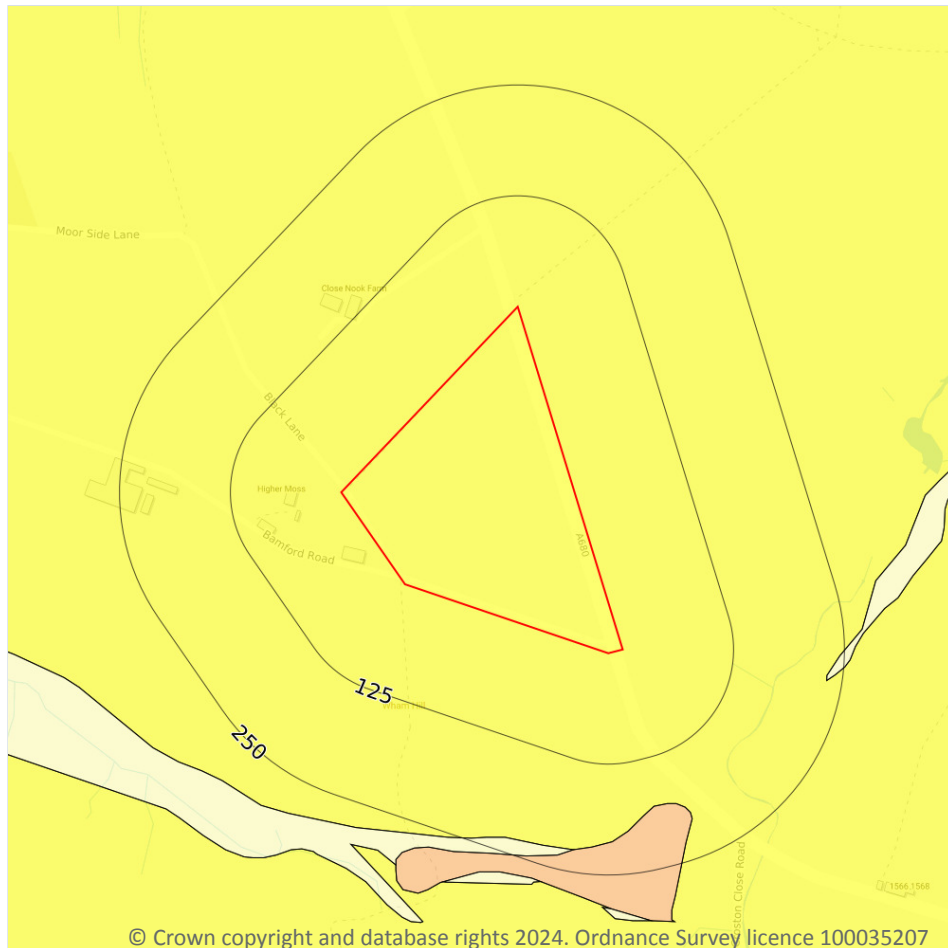
0

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☒ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.1 Shrink swell clays

Records within 50m

1

The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

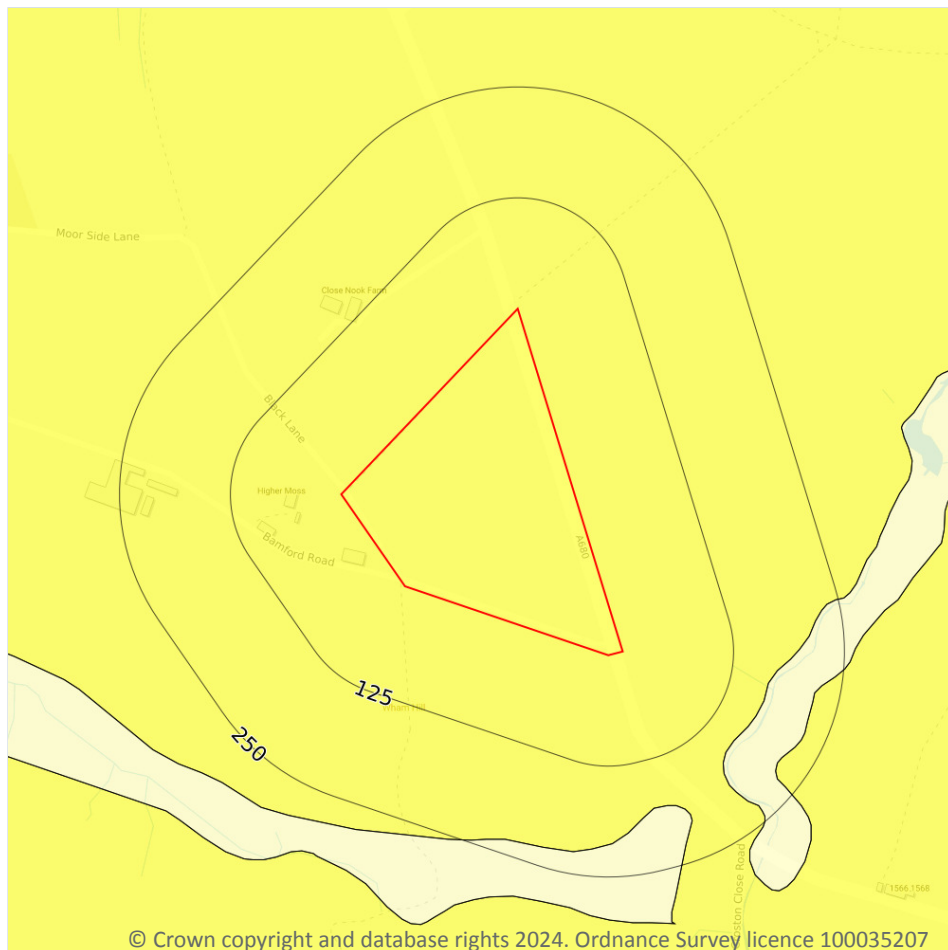
Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 89](#) >

Location	Hazard rating	Details
On site	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☒ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.2 Running sands

Records within 50m

1

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

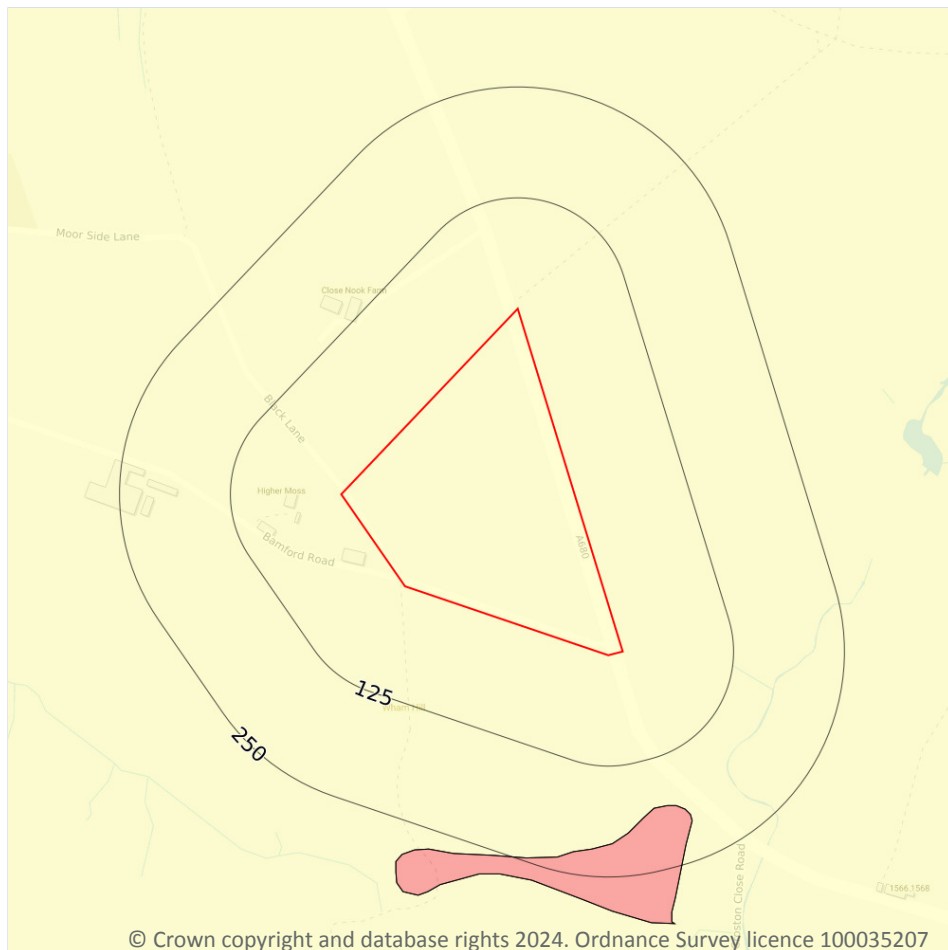
Features are displayed on the Natural ground subsidence - Running sands map on [page 90](#) >

Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.3 Compressible deposits

Records within 50m

1

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

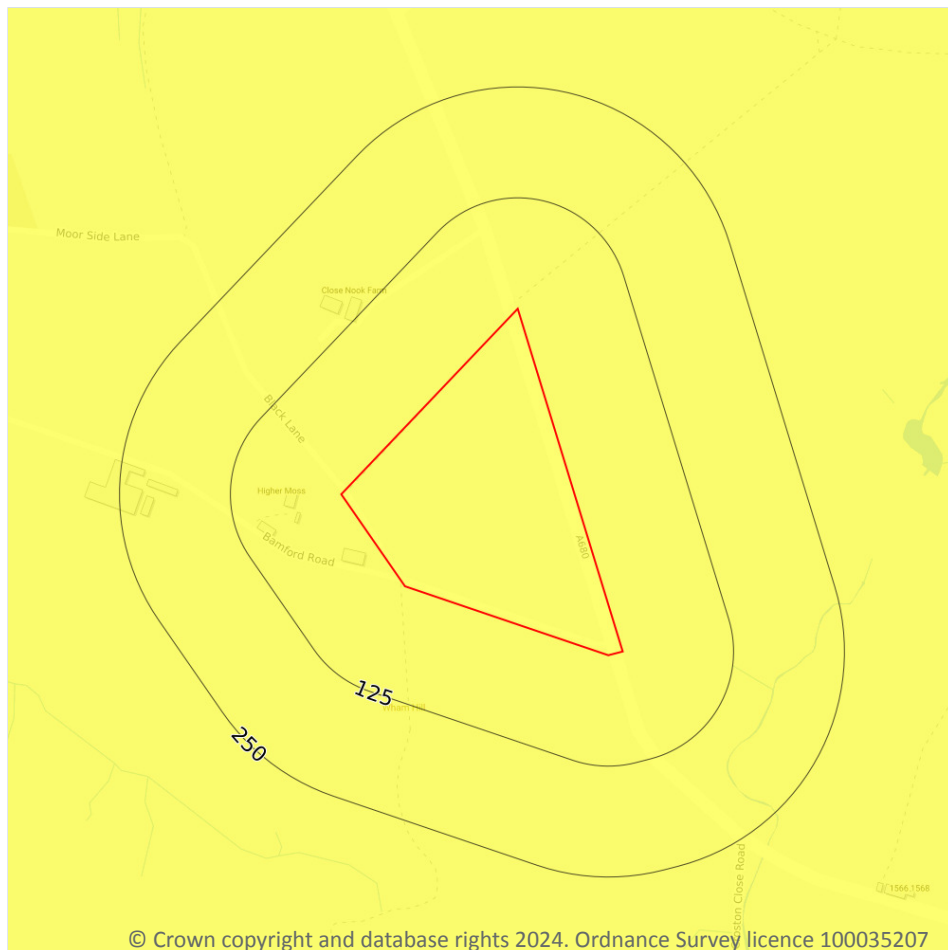
Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 91](#) >

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☒ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.4 Collapsible deposits

Records within 50m

1

The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

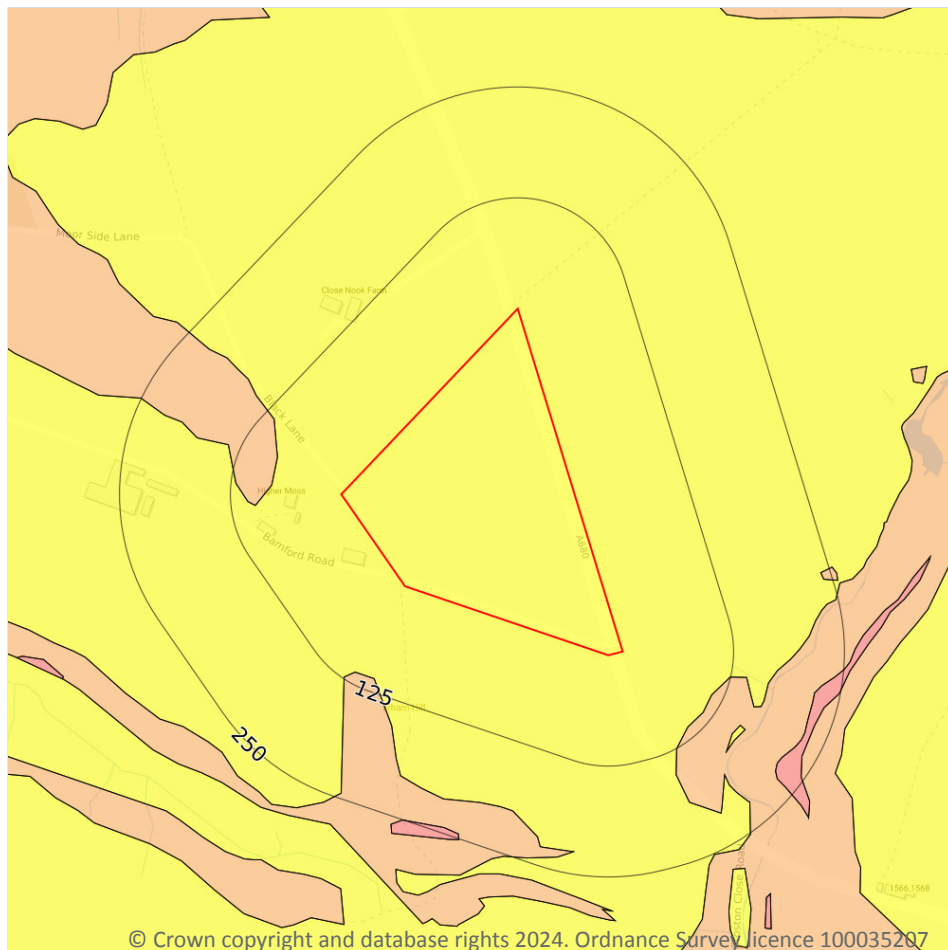
Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 92 >](#)

Location	Hazard rating	Details
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.5 Landslides

Records within 50m

1

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

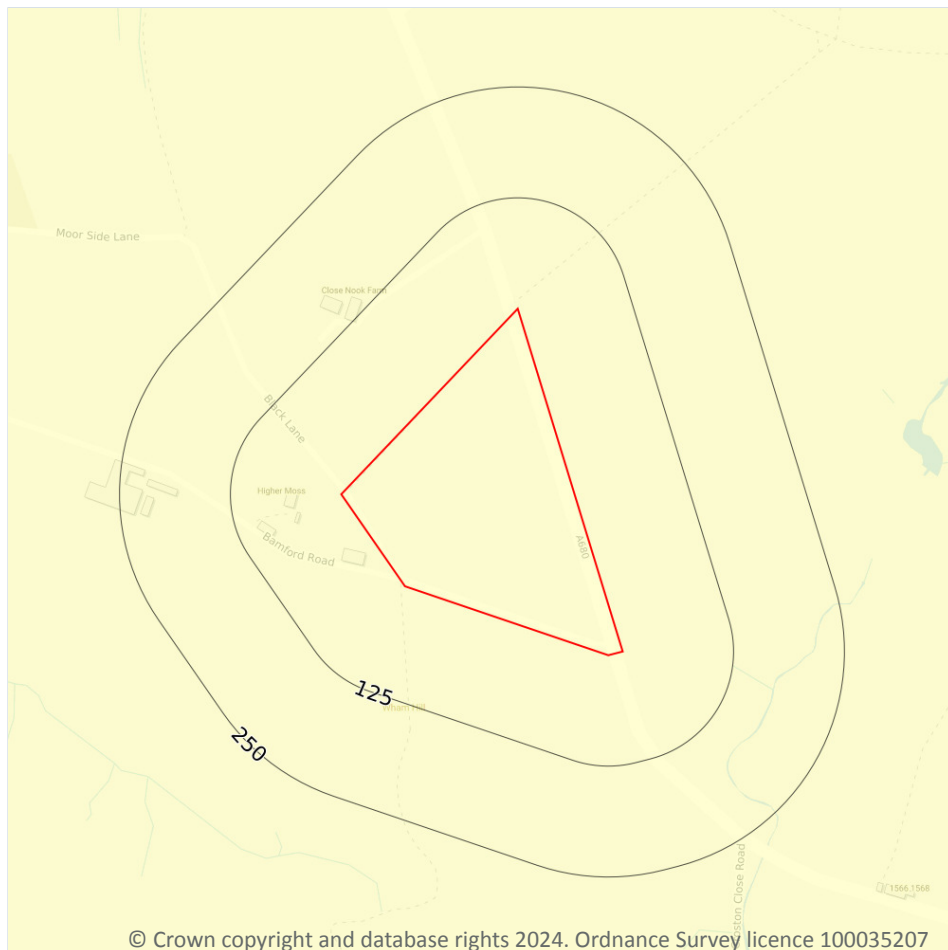
Features are displayed on the Natural ground subsidence - Landslides map on [page 93](#) >

Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.6 Ground dissolution of soluble rocks

Records within 50m

1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on [page 94](#)

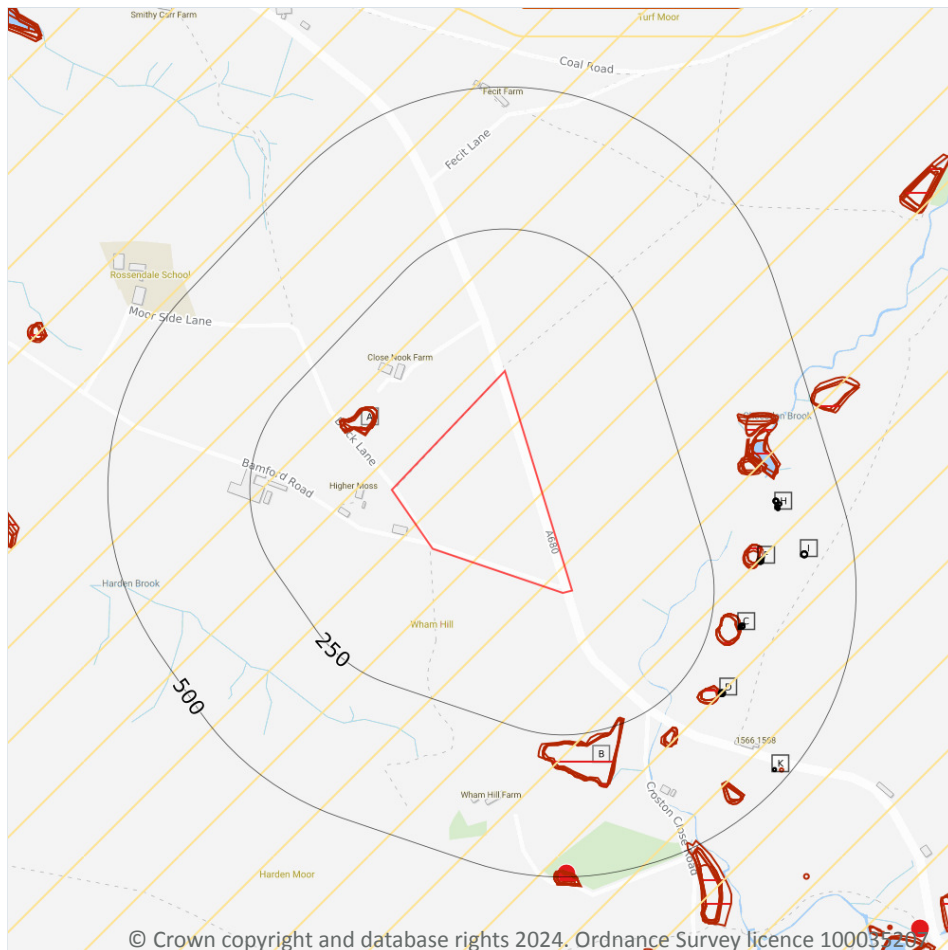
Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.



This data is sourced from the British Geological Survey.



18 Mining and ground workings



- Site Outline
- Search buffers in metres (m)
- BritPits
- Surface ground workings
- Underground workings
- Underground mining extents
- Historical mineral planning areas
- TCA non-coal mining
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m

1

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

Features are displayed on the Mining and ground workings map on [page 96 >](#)

ID	Location	Details	Description
L	494m S	Name: Wham Hill Farm Address: Cheesden, ROCHDALE, Lancashire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	14
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Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining and ground workings map on [page 96 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
A	100m NW	Unspecified Pit	1891	1:10560
A	101m NW	Pond	1992	1:10000
A	101m NW	Pond	1967	1:10560
A	101m NW	Pond	1949	1:10560
A	101m NW	Pond	1987	1:10000
A	102m NW	Pond	1928	1:10560
A	102m NW	Pond	1908	1:10560
A	107m NW	Pond	1938	1:10560
B	239m SE	Pond	1851	1:10560
B	239m SE	Old Reservoir	1949	1:10560
B	241m SE	Reservoir	1891	1:10560
B	241m SE	Reservoir	1938	1:10560
B	242m SE	Reservoir	1928	1:10560
B	242m SE	Reservoir	1908	1:10560

This data is sourced from Ordnance Survey/Groundsure.



18.3 Underground workings

Records within 1000m

39

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

Features are displayed on the Mining and ground workings map on [page 96 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
C	300m SE	Air Shaft	1938	1:10560
C	301m SE	Air Shaft	1992	1:10000
C	301m SE	Air Shaft	1967	1:10560
C	301m SE	Air Shaft	1987	1:10000
C	301m SE	Air Shaft	1928	1:10560
C	301m SE	Air Shaft	1908	1:10560
C	304m SE	Air Shaft	1949	1:10560
D	314m SE	Air Shaft	1992	1:10000
D	314m SE	Air Shaft	1967	1:10560
D	314m SE	Air Shaft	1987	1:10000
D	317m SE	Air Shaft	1938	1:10560
D	318m SE	Air Shaft	1949	1:10560
D	319m SE	Air Shaft	1928	1:10560
D	320m SE	Air Shaft	1908	1:10560
F	331m E	Air Shafts	1992	1:10000
F	331m E	Air Shafts	1967	1:10560
F	331m E	Air Shafts	1987	1:10000
F	331m E	Air Shaft	1938	1:10560
F	333m E	Air Shaft	1928	1:10560
F	333m E	Air Shaft	1908	1:10560
F	336m E	Air Shaft	1949	1:10560
H	385m E	Air Shaft	1938	1:10560
H	385m E	Air Shaft	1992	1:10000



ID	Location	Land Use	Year of mapping	Mapping scale
H	385m E	Air Shaft	1967	1:10560
H	385m E	Air Shaft	1987	1:10000
H	386m E	Air Shaft	1928	1:10560
H	386m E	Air Shaft	1908	1:10560
H	391m E	Air Shaft	1949	1:10560
I	408m E	Air Shafts	1992	1:10000
I	408m E	Air Shafts	1967	1:10560
I	408m E	Air Shafts	1987	1:10000
K	473m SE	Old Coal Shaft	1908	1:10560
-	868m N	Delf	1927	1:10560
-	869m N	Delf	1938	1:10560
-	878m NW	Delf	1908	1:10560
-	879m N	Delf	1949	1:10560
-	881m N	Delf	1992	1:10000
-	881m N	Delf	1967	1:10560
-	881m N	Delf	1987	1:10000

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m

0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.



This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

5

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

Features are displayed on the Mining and ground workings map on [page 96 >](#)

ID	Location	Name	Commodity	Class	Likelihood
1	On site	Not available	Vein Mineral	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
2	590m N	Not available	Building stone (zone of influence)	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
3	640m N	Edenfield	Sandstone - Flagstones/Vein Mineral	D	Underground mining is considered likely to have occurred within or close to the area. The location, extent and nature of mining should be considered in any site investigation. Potential for difficult ground conditions should be considered.
-	789m E	Not available	Building stone (zone of influence)	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
-	839m E	Whitworth	Sandstone - Flagstones/Vein Mineral	D	Underground mining is considered likely to have occurred within or close to the area. The location, extent and nature of mining should be considered in any site investigation. Potential for difficult ground conditions should be considered.

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site

0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.



18.8 The Coal Authority non-coal mining

Records within 500m**0**

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m**0**

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m**0**

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m**0**

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.



18.12 Coal mining

Records on site	1
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Areas which could be affected by past, current or future coal mining.

Location	Details
On site	The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider.

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site	0
-----------------	---

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.14 Gypsum areas

Records on site	0
-----------------	---

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0
-----------------	---

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0
-----------------	---

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).



19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m

0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m

0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m

0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m

0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.



This data is sourced from Groundsure.

19.5 National karst database

Records within 500m

0

This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

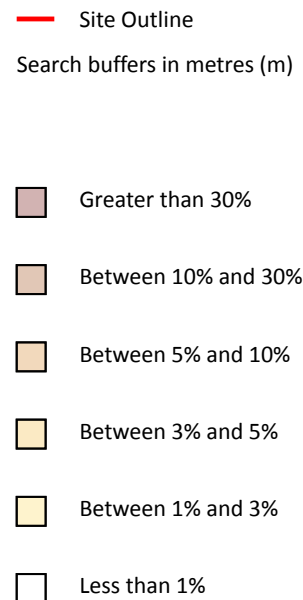
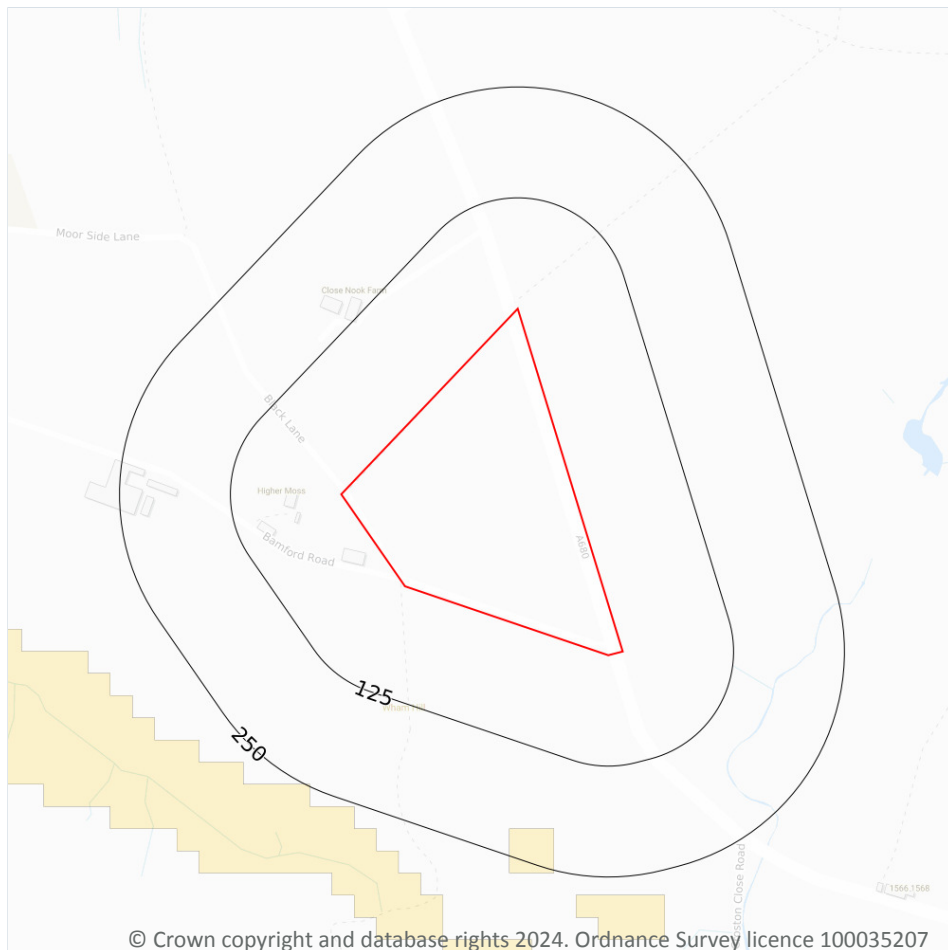
Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

This data is sourced from the British Geological Survey.



20 Radon



20.1 Radon

Records on site

1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on [page 105](#) >

Location	Estimated properties affected	Radon Protection Measures required
On site	Less than 1%	None



This data is sourced from the British Geological Survey and UK Health Security Agency.



21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m

7

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
20m SE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.



21.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



22 Railway infrastructure and projects

22.1 Underground railways (London)

Records within 250m**0**

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m**0**

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m**0**

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m**0**

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m**0**

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.



This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m

0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m

0

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 1

Records within 500m

0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

22.9 Crossrail 2

Records within 500m

0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

22.10 HS2

Records within 500m

0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 Ltd.



Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference> ↗.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: www.groundsure.com/terms-and-conditions-april-2023/ ↗.



Zetica UXB risk maps

UNEXPLODED BOMB RISK MAP



SITE LOCATION

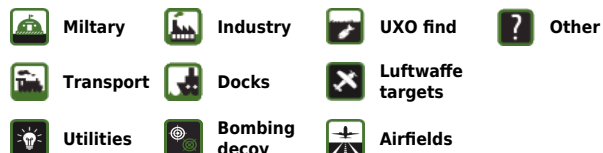
Map Centre: 381916,416947



This map principally indicates a hazard from Unexploded Bombs (UXB) due to WWII bombardment. Other sources of Unexploded Ordnance (UXO) may be present. It should be noted that this map does not represent UXO risk and should not be reported as such when reproduced.

LEGEND

- High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- Low:** Areas indicated as having 15 bombs per 1000acre or less.



How to use your Unexploded Bomb (UXB) risk map?

This map indicates the potential for UXBs to be present because of World War Two (WWII) bombing. It can be incorporated into a technical report, such as a Phase 1 Desk Study, or similar document as an indication of the potential for UXO encounter on a Site. Other sources of UXO may also be indicated, although note that these are not comprehensive and more detailed research is required to confirm their presence.

What if my Site is in a moderate or high density area?

We typically recommend that a detailed UXO desk study and risk assessment is undertaken for sites in an area with a moderate or high bombing density. Additionally, if your site is in close proximity to a strategic target, military establishment, airfield or bombing decoy, then [additional detailed research](#) is recommended.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirm that there is a low potential for UXO to be present on your site, then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

If you are unsure whether other sources of UXO may be present, you can request one of our [pre-desk study assessments \(PDSA\)](#) by emailing a site boundary and location to pdsa@zetica.com.

You should never plan site work or undertake a risk assessment using these maps alone. More detail is required, to include an assessment of the likelihood of a source of UXO hazard from other military activity not reflected on these maps.

If I have any questions, who do I contact?

tel: +44 (0) 1993 886682 email: uxo@zetica.com web: www.zeticauxo.com

The information in this UXB risk map is derived from a range of sources and should be used with the [accompanying notes on our website](#).

Zetica cannot guarantee the accuracy or completeness of the information or data used and cannot accept any liability for any use of the maps. These maps can be used as part of a technical report or similar publication, subject to acknowledgement. The copyright remains with Zetica Ltd.

Coal Authority 'Consultants Coal Mining Report'



The Coal
Authority

Consultants Coal Mining Report

Higher Moss, Bamford Road,
Ramsbottom, Bury, Lancashire
Lancashire
BL0 0RT

Date of enquiry: 10 July 2024
Date enquiry received: 10 July 2024
Issue date: 10 July 2024

Our reference: 51003436620001
Your reference: HYD-9NC-61G-NKK-DRM



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

GROUNDSURE LIMITED

Enquiry address

Higher Moss, Bamford Road, Ramsbottom, Bury,
Lancashire
Lancashire
BL0 0RT

How to contact us

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200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

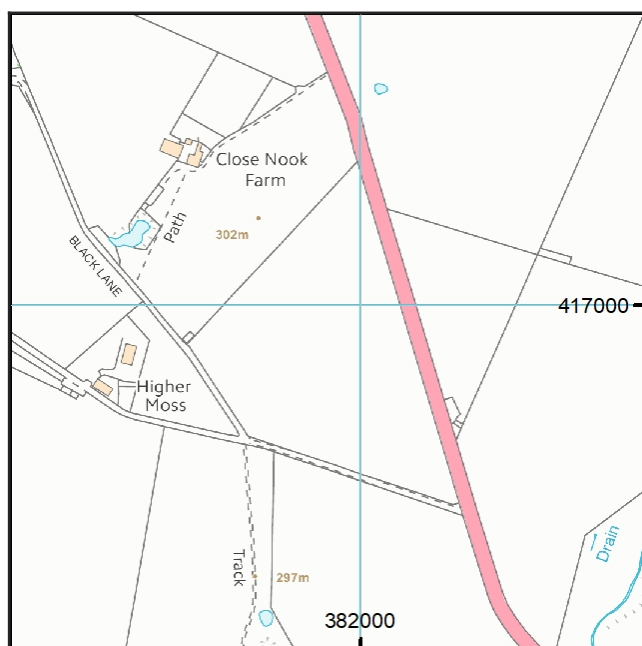
www.groundstability.com

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

No past mining recorded.

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

16820		
-------	--	--

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

No outcrops recorded.

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

Based on the responses in this report, no further information has been highlighted.

Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices

Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land

Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

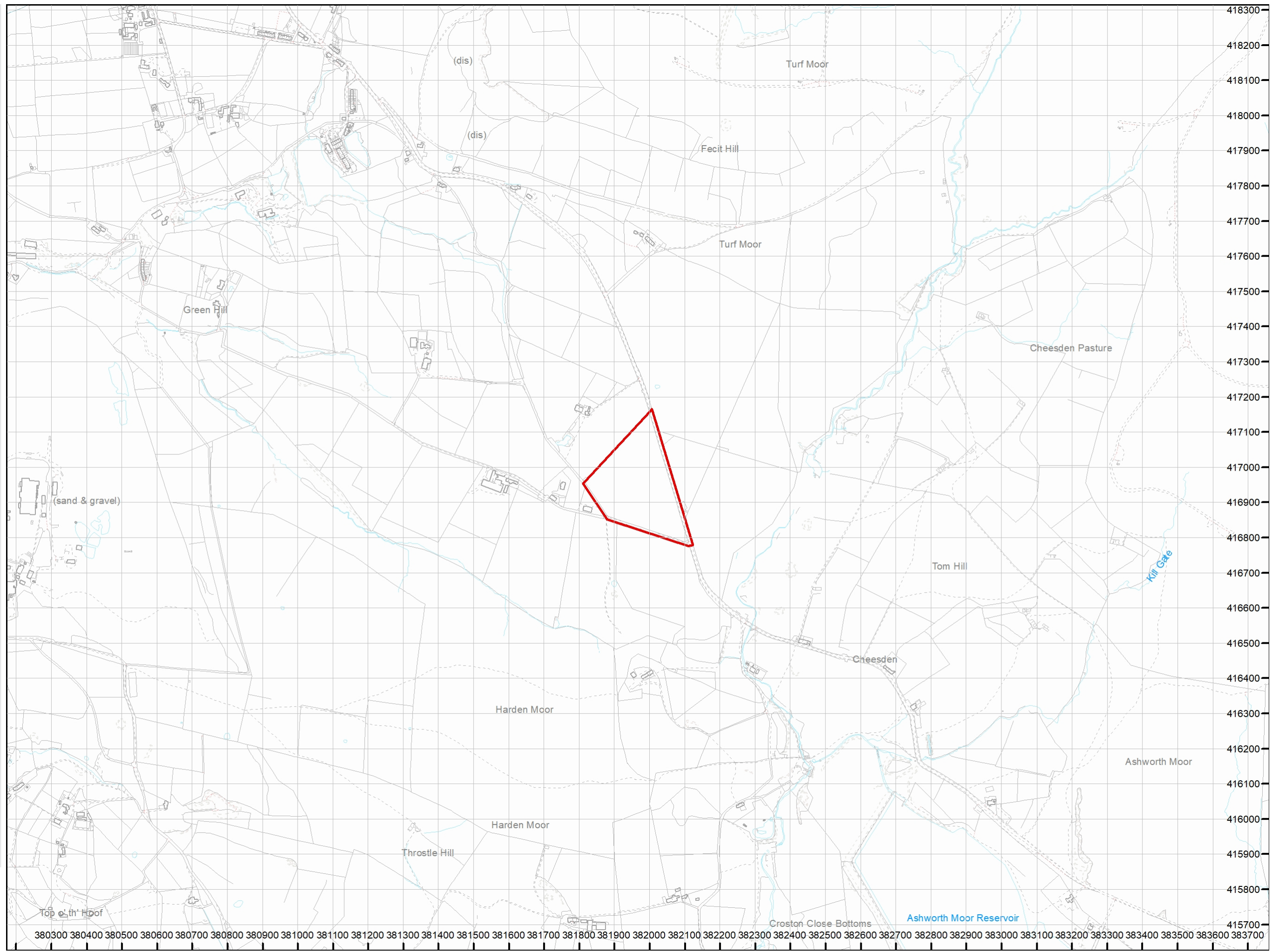
The map highlights any specific surface or subsurface features within or near to the boundary of the site.

Key

Approximate position of the enquiry boundary shown 

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)
www.groundstability.com



Appendix E Preliminary geotechnical risk register

Geotechnical hazard identification – desk study stage

Potential geotechnical hazards have been assessed in accordance with the general requirements of ICE/DETR Document 'Managing Geotechnical Risk' and the HE documents HD 41/15 and CD 622. The following pages set out the identified geotechnical risks and hazards which are associated with the proposed development and establish the approach which is to be taken to manage the risks including the geotechnical input and analysis.

Table E.1 is a preliminary assessment of possible geotechnical hazards at the site at Desk Study stage. This information is used to assist with ground investigation design.

Table E.1: Possible geotechnical hazards

Hazard	Comment	Hazard status based on desk study	
		Could be present and / or affect site (i.e. Plausible)	Unlikely to be present and/or affect site
Uncontrolled Made Ground (variable strength and compressibility).	It is anticipated that there is no Made Ground present on site based on the former land use.	-	✓
Soft / loose compressible ground (low strength and high settlement potential).	Potential for low strength clays and sands within the superficial deposits. Investigation required to confirm the compressibility of the superficial deposits.	✓	-
Shrink swell of the clay fraction of soils under the influence of vegetation.	There is one semi-mature tree along the southern boundary and sporadic mature and semi-mature trees beyond the south-western boundary. Cohesive deposits of the Glacial Till may be impacted by the planting or removal of vegetation.	✓	-
Variable lateral and vertical changes in ground conditions.	Potentially within the Glacial Till.	✓	-
High sulfates present in the soils.	The soils are unlikely to pose a risk.	-	✓
Adverse chemical ground conditions, (e.g. expansive slag).	Unlikely to pose a risk.	-	✓
Obstructions.	Unlikely to pose a risk.	-	✓
Existing below ground structures to remain.	Unlikely to pose a risk.	-	✓
Shallow groundwater.	Potential for perched groundwater on top of cohesive soils.	✓	-

Changing groundwater conditions.	Seasonal groundwater variations may occur.	✓	-
Risk from erosion.	Unlikely to pose a risk.	-	✓
Risk from flooding.	Pluvial Flooding risk in topographically lower areas.	✓	-
Running sands and / or loose Made Ground, leading to difficulty with excavation and collapse of side walls.	It is anticipated that there is no Made Ground present on site.	-	✓
Slope stability issues – general slopes.	Existing slope present adjacent to the northern boundary running south-east toward the centre of the site.	✓	-
Slope stability issues – retaining walls.	Unlikely to pose a risk, no retaining walls proposed.	-	✓
Earthworks – settlement (due to placement of fill on soft / loose ground).	Proposals are yet to be finalised but may include earthworks. Investigations may be required to confirm the suitability of site won materials for cut and fill to create development platforms.	✓	-
Earthworks – poor bearing capacity of new fill.		✓	-
Earthworks – unsuitability of site won material to be reused as fill.		✓	-
Solution features in Chalk.	Unlikely to pose a risk.	-	✓
Cavities in the Superficial Deposits due to solution features.	Unlikely to pose a risk.	-	✓
Dissolution (associated with “wet rock head”).	Unlikely to pose a risk.	-	✓
Brine extraction.	Unlikely to pose a risk.	-	✓
Non-coal Mining.	A small hollow/ depression in the north-east corner of the site could potentially represent quarrying (superficial clays or sandstone bedrock). This requires consideration and or investigation to assess ground stability.	✓	-
Cambered ground with gulls possibly present.	Unlikely to pose a risk.	-	✓
Relict Slip Surfaces.	Unlikely to pose a risk.	-	✓
Solifluction.	Unlikely to pose a risk.	-	✓
Problematic soils (silts and rewetting etc.).	Unlikely to pose a risk.	-	✓

Appendix F Plausible source-pathway-receptor contaminant linkages

Summary of potential contaminant linkages

Table F.2 lists the plausible contaminant linkages which have been identified. These are considered as potentially unacceptable risks in line with guidelines published in LCRM (2023) and additional risk assessment is required.

Source – Pathway – Receptor Linkages have been assessed in general accordance with guidance in CIRIA Report C552 (Rudland *et al* 2001) but modified to add a 'no linkage' category and to remove low/moderate risk (See Table F.1).

It should be noted that whilst the risk assessment process undertaken in this report may identify potential risks to site demolition and redevelopment workers, consideration of occupational health and safety issues is beyond the scope of this report and need to be considered separately in the Construction Phase Health and Safety Plan.

Table F.1: Consequence versus probability assessment.

Probability	Consequence				
		Severe	Medium	Mild	Minor
	High Likelihood	Very high risk	High risk	Moderate risk	Low risk
	Likely	High risk	Moderate risk	Low risk	Very low risk
	Low Likelihood	Moderate risk	Low risk	Low risk	Very low risk
	Unlikely	Low risk	Very low risk	Very low risk	Very low risk
	No Linkage	No risk			

Table F.2: Exposure model – final source-pathway-receptor contaminant linkages

Sources	Possible Pathways	Receptors	Probability	Consequence	Risk Level	Comments
Potential asbestos containing material (including asbestos cement) fly-tipped within the north of the site (S01).	Ingestion, direct contact, inhalation of dust and outdoor air.	People (neighbours, site end users)	Likely	Severe	High	Asbestos is present within the northern section of the site. Provided all removal work of asbestos is undertaken in accordance with the control of Asbestos Regulations (CAR 2012) the risk can be downgraded from high to low.
Ground gasses (carbon dioxide and methane) from the backfill of the old water filled quarry 120m west of the site and pond 70m north-west (S02).	Migration, build-up and asphyxiation of methane, carbon dioxide via permeable soils and/or construction gaps.	People (site end users) Development end use (structures)	Low likelihood	Medium	Low	Two small ponds adjacent to the west and north-western site boundaries. The presence of low permeability Glacial Till adjacent to the pond is anticipated to restrict migration of ground gases onto the site. Also due to the small size of the ponds, there is not anticipated to be significant quantities of organic soils used as backfill, therefore it's not considered to pose a viable gas source. Given these features were recently backfill it is anticipated they would not contain significant volumes of organic material.
Contaminants from recent industrial land uses adjacent to the site, including unspecified works/ factories and livestock market.	Surface run off.	People (site end users)	Unlikely	Medium	Very Low	The location of the offsite contamination appears to be marginally downslope of the site and as such it is considered unlikely surface run off from the off-site source could reach the site.
Potential contaminants of concern include solvents, PAHs, heavy metals, petroleum hydrocarbon fuels and oils (S03)	Base flow from contaminated groundwater, ingress of hydrocarbon vapours and VOC's via permeable soils and or construction gaps.	People (site end users) Development end use (structures, utilities)	Unlikely Unlikely	Medium Medium	Very Low	If groundwater flow is to the south-east as assumed on site, base flow of leached contaminants could result in contaminated groundwater reaching the saturated zone below the site. If a hydrocarbon or solvent plume were present it could present a vapour risk to any enclosed structures on the site. However, given the off-site sources sit at lower topographical elevations than the site it is considered less likely that impacted groundwater could reach the site. Notwithstanding the above, it is unlikely that site users would come into contact with groundwater below the site.

Appendix G Climate change considerations for CSM

Table G1 summarises the considerations that have been made in relation the possible implications of predicted climate change. These considerations have been made with reference to prevailing guidance on climate change and land contamination (SoBRA (2022), CL:AIRE (2022), Environment Agency (2010)), and climate change information published by the Met Office and the Environment Agency / NRW / SEPA.

Table G.1: Possible CSM considerations related to climate change.

Climate change type	Potential climate change induced effect	Possible considerations on CSM
Increase in frequency and severity of extreme rainfall events	Temporary increasing in groundwater levels	It is possible that future groundwater level rise could be sufficient to impact identified contaminant linkages. The risk of groundwater flooding is increased but is unlikely to result in changes to the identified potential contaminant linkages.
	Increased surface run-off	Site is covered in soft standing with no associated surface water drainage. Surface water run-off will impact drainage network (in terms of volume of water) but is not expected to impact underlying ground conditions or the identified potential contaminant linkages.
	Land-based erosion	Unlikely, given of the proximity of the site to surface water courses. River bank erosion caused by extreme river level events is not considered to affect the site.
	River flooding	The site is located within a Flood Zone 1, with low probability risk of flooding however. An increase in frequency and severity of extreme rainfall events may increase the risk but is not anticipated to alter identified potential contaminant linkages.
Increase in frequency and severity of extreme cold and hot weather events	Soil freezing	Could cause failure of surface water drainage network (requiring repair) due to freeze/thaw action but not evident that this would cause a significant change to identified potential contaminant linkages.
	Soil desiccation/shrinkage	The cohesive nature of the superficial deposit (Glacial Till) suggests a risk from shrinkage related subsidence is likely which could present a risk of subsidence and slab cracking increasing the viability of gas pathways.
	Land fires	Not relevant to current nature and location of site.
	Temporary drop in water (GW and/or SW) levels due to increased water abstraction demand	Underlying aquifer does not have any licenced abstractions registered within 1km of the site. The impact of a drop in water levels in the Holcombe Brook Grit and Millstone Grit Group measures is not expected to adversely affect identified contaminant linkages.
	Temporary drop in water levels (GW and/or SW) due to lower rainfall.	Water levels in the aquifer may fall further in drier summer months. This is not expected to adversely affect identified contaminant linkages.

Long-term sea level rise	Coastal erosion	Not relevant due to distance from the coast
	Saline intrusion and marine inundation	Not relevant due to distance from the coast. .
Long-term increase in rainfall	Increase in groundwater levels	The risk of groundwater flooding is currently moderate in the southern section of the site and it is likely that the risk will increase, but is not anticipated to alter the identified potential contaminant linkages.
Long-term decrease in rainfall	Decrease in groundwater levels	Whilst it is expected that there will be an increase in winter rainfall it is also expected that there will be a reduction in summer rainfall such that there will be a long-term increase in the expected seasonal fluctuation in shallow groundwater depth.
Long-term change in seasonal temperatures	Change in soil temperature	Worst-case (RCP8.5) prediction for average summer temperatures in 2060-2080 in this area is 4-5 degrees Celsius. Soil temperature at depth below the site (considering the surface cover of buildings and concrete hardstanding) is not expected to rise by this amount and may see a much smaller rise in average temperature as a result of seasonal variation in temperature. A small increase in average soil temperature is not expected to have a significant effect on contaminant fate and transport.