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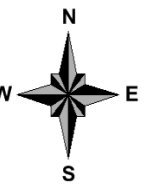
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**Report Ref:** EMS-275279\_370984  
**Grid Ref:** 422522, 408941

**Map Name:** Provisional

**Map date:** 1951-1955

**Scale:** 1:10,560

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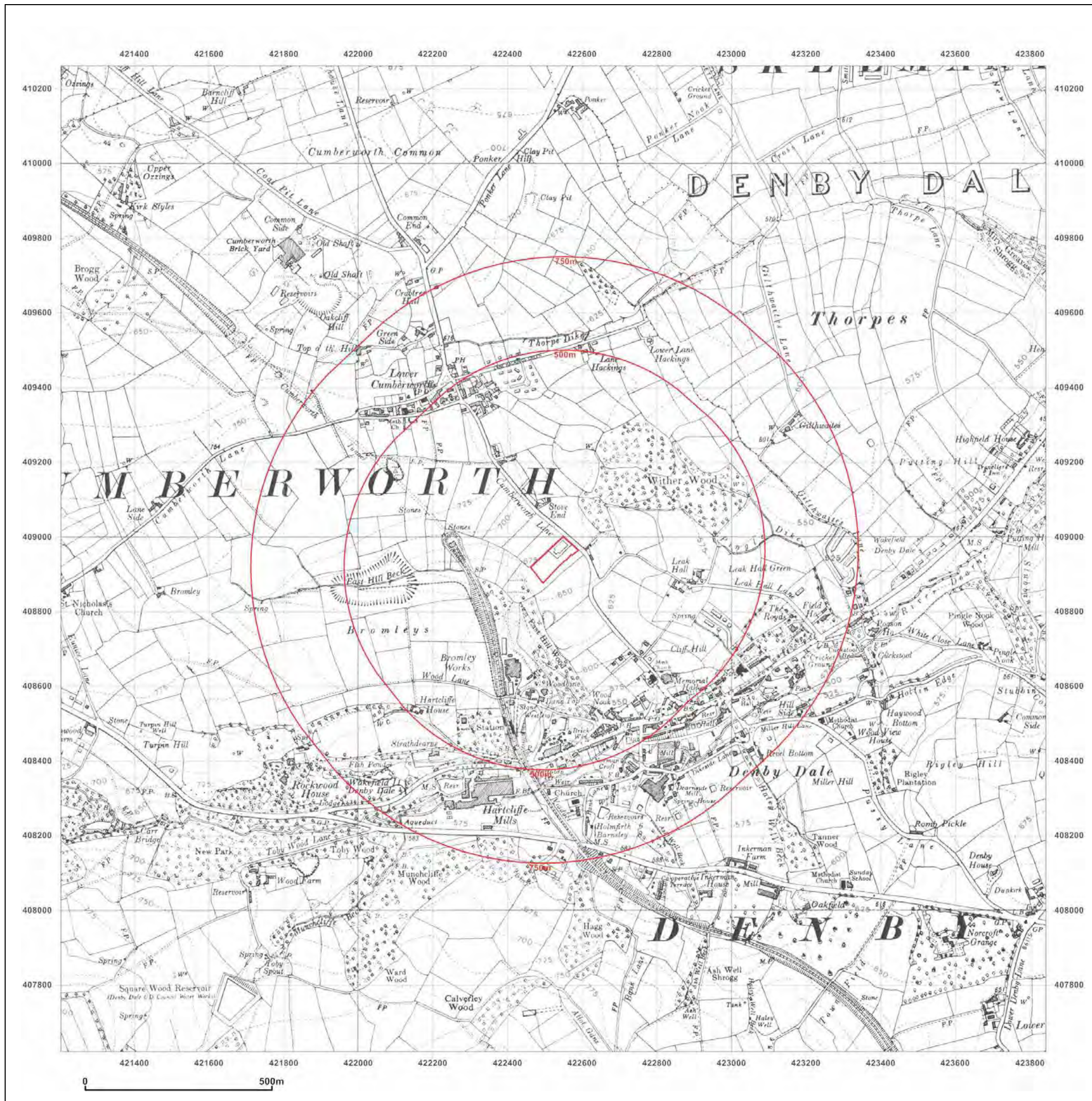


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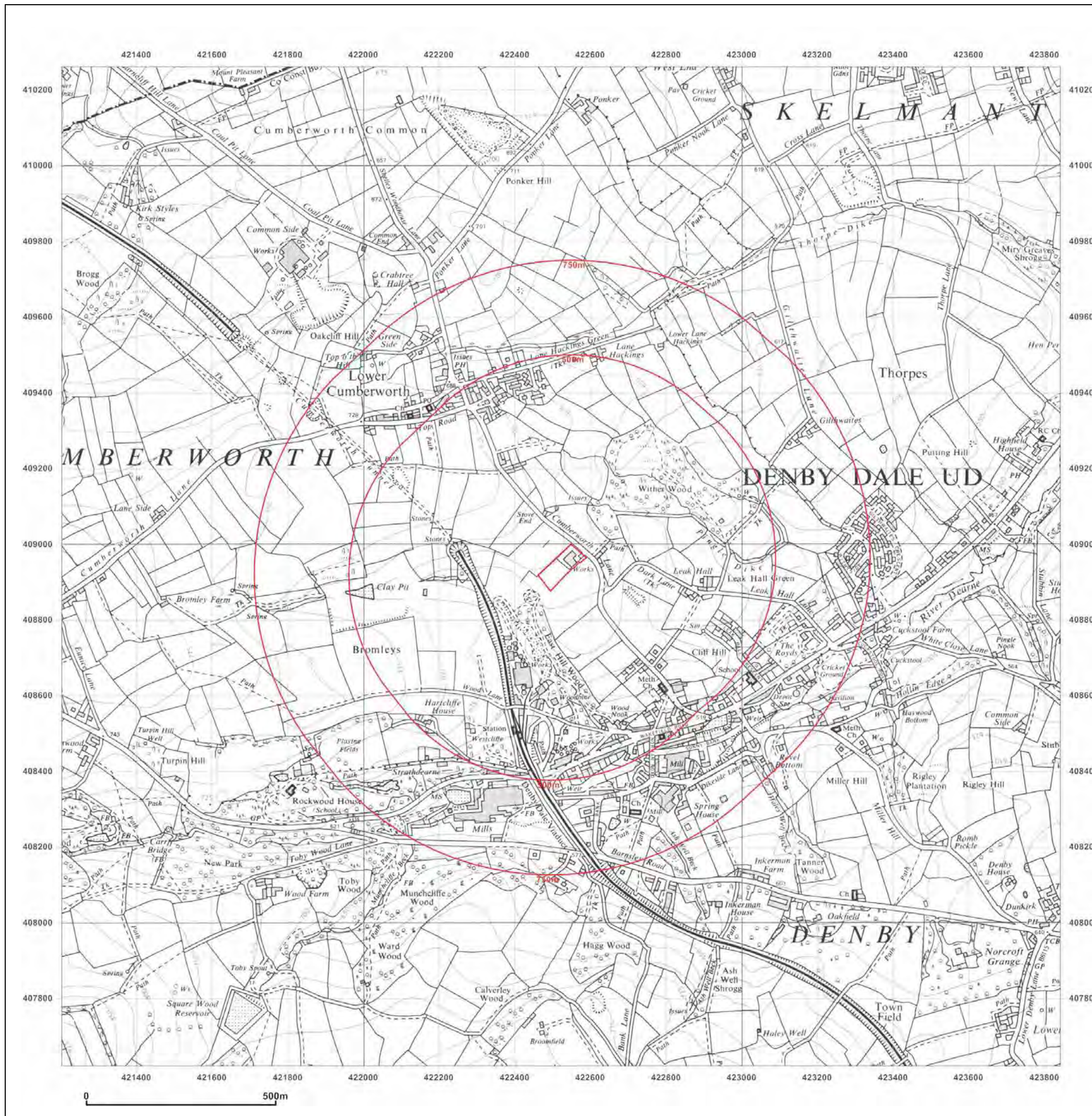


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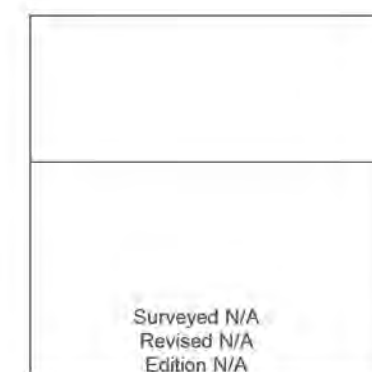
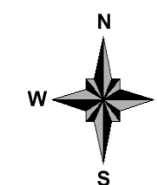
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**Grid Ref:** 422522, 408941

**Map Name:** National Grid

**Map date:** 1958

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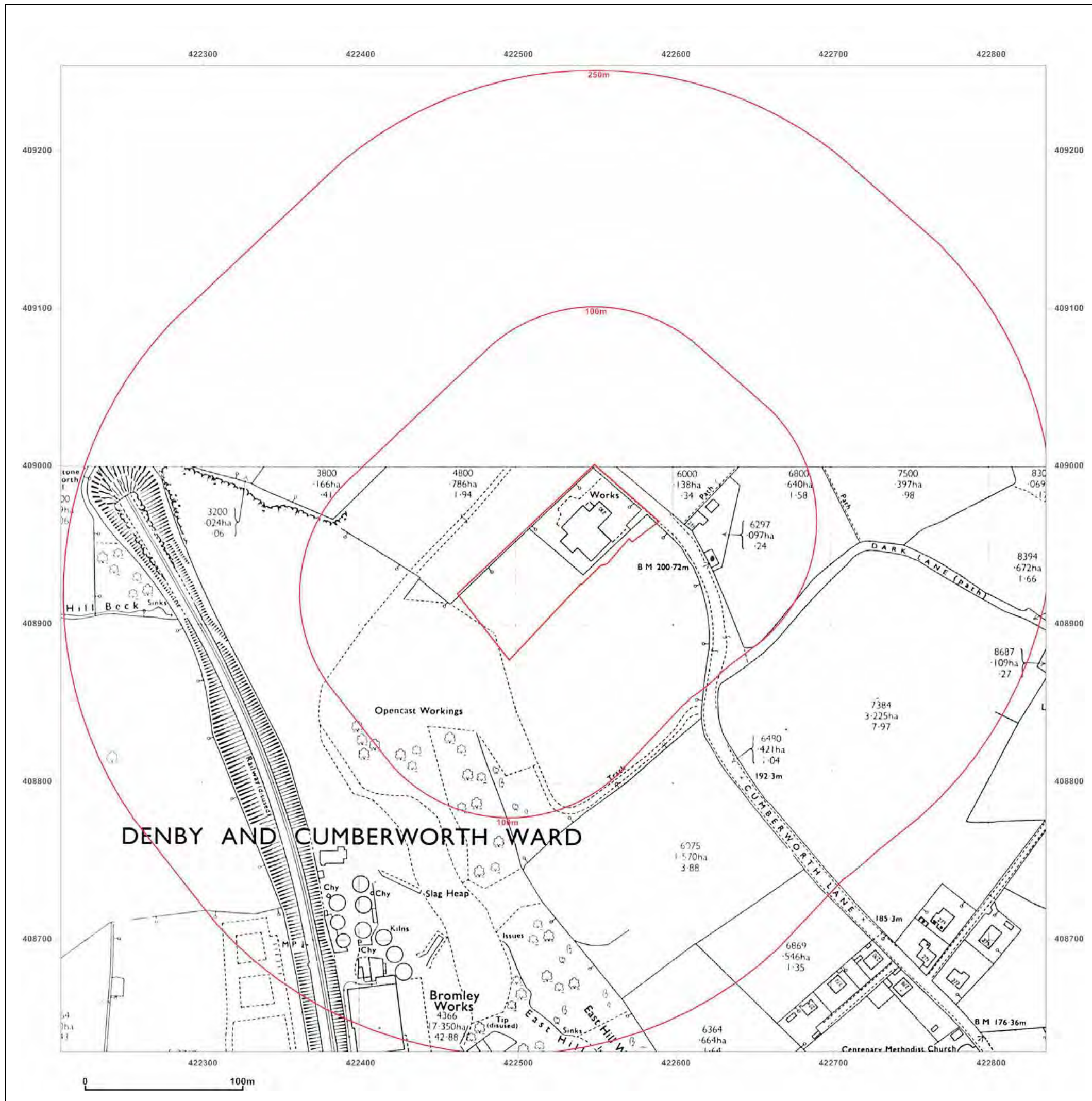


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**Map Name:** National Grid

**Map date:** 1959

**Scale:** 1:2,500

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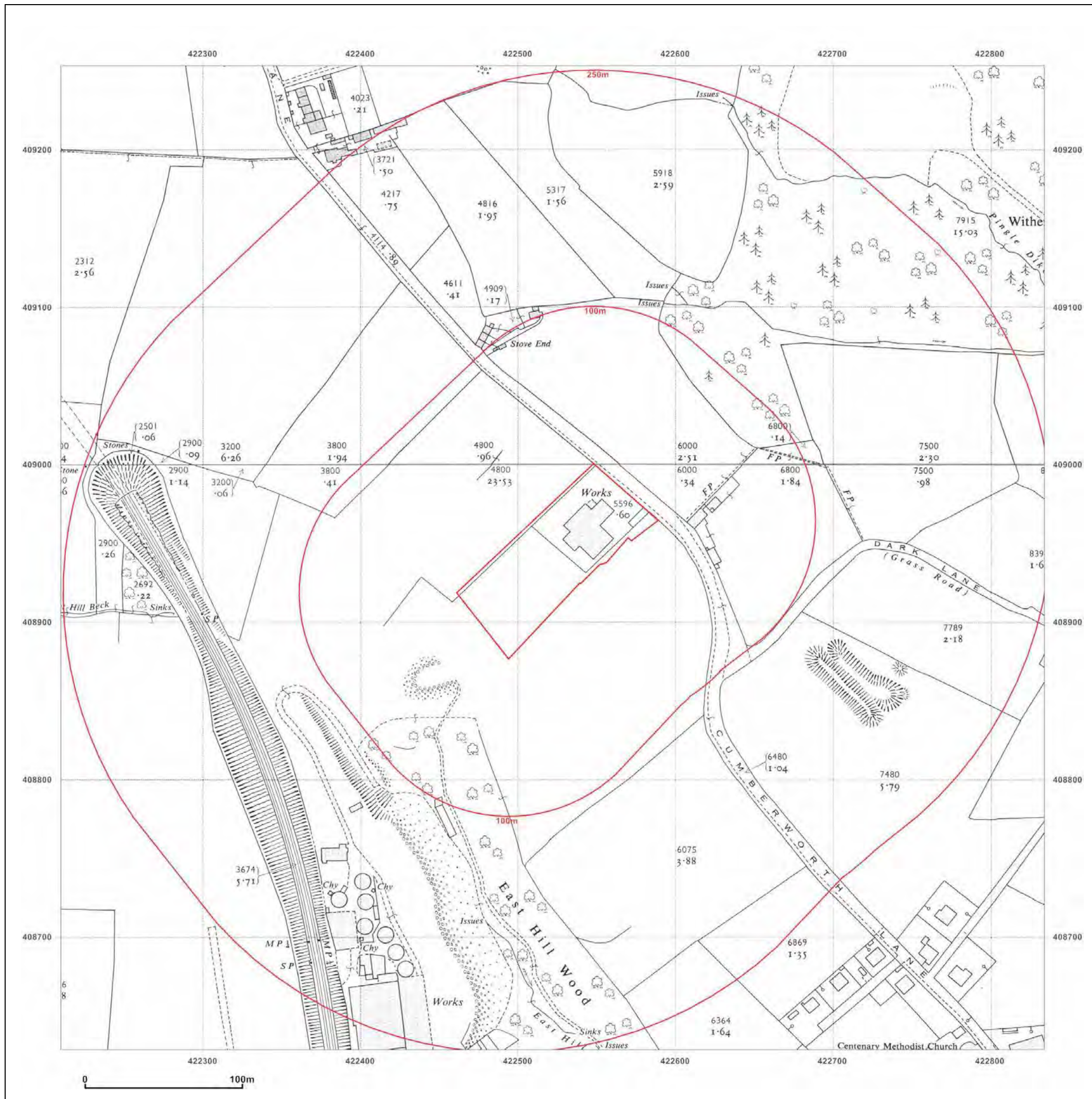


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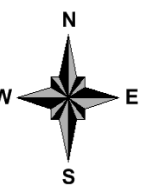
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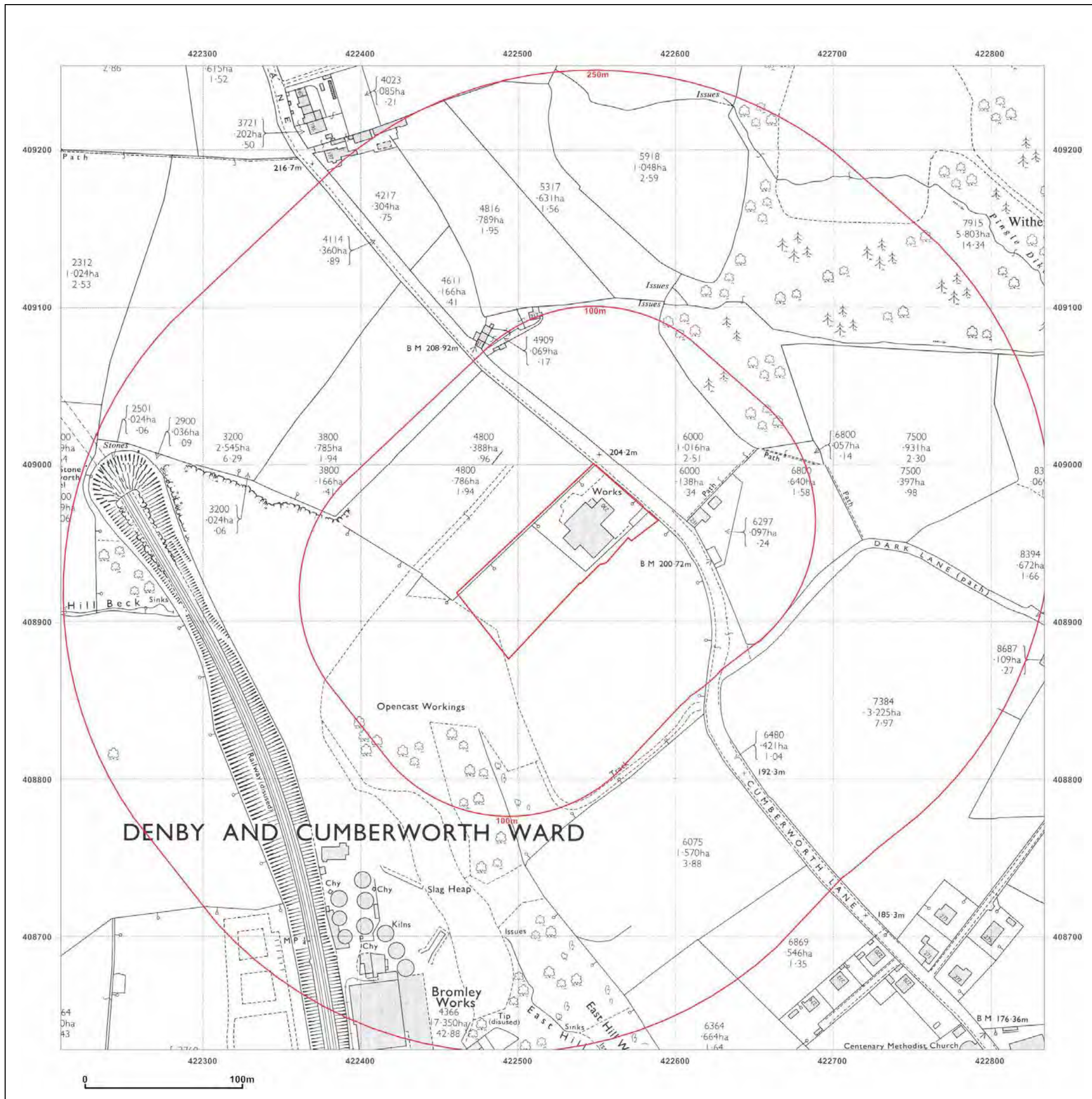
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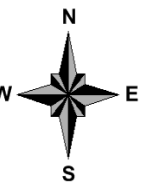
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**Map Name:** National Grid

**Map date:** 1979-1983

**Scale:** 1:10,000

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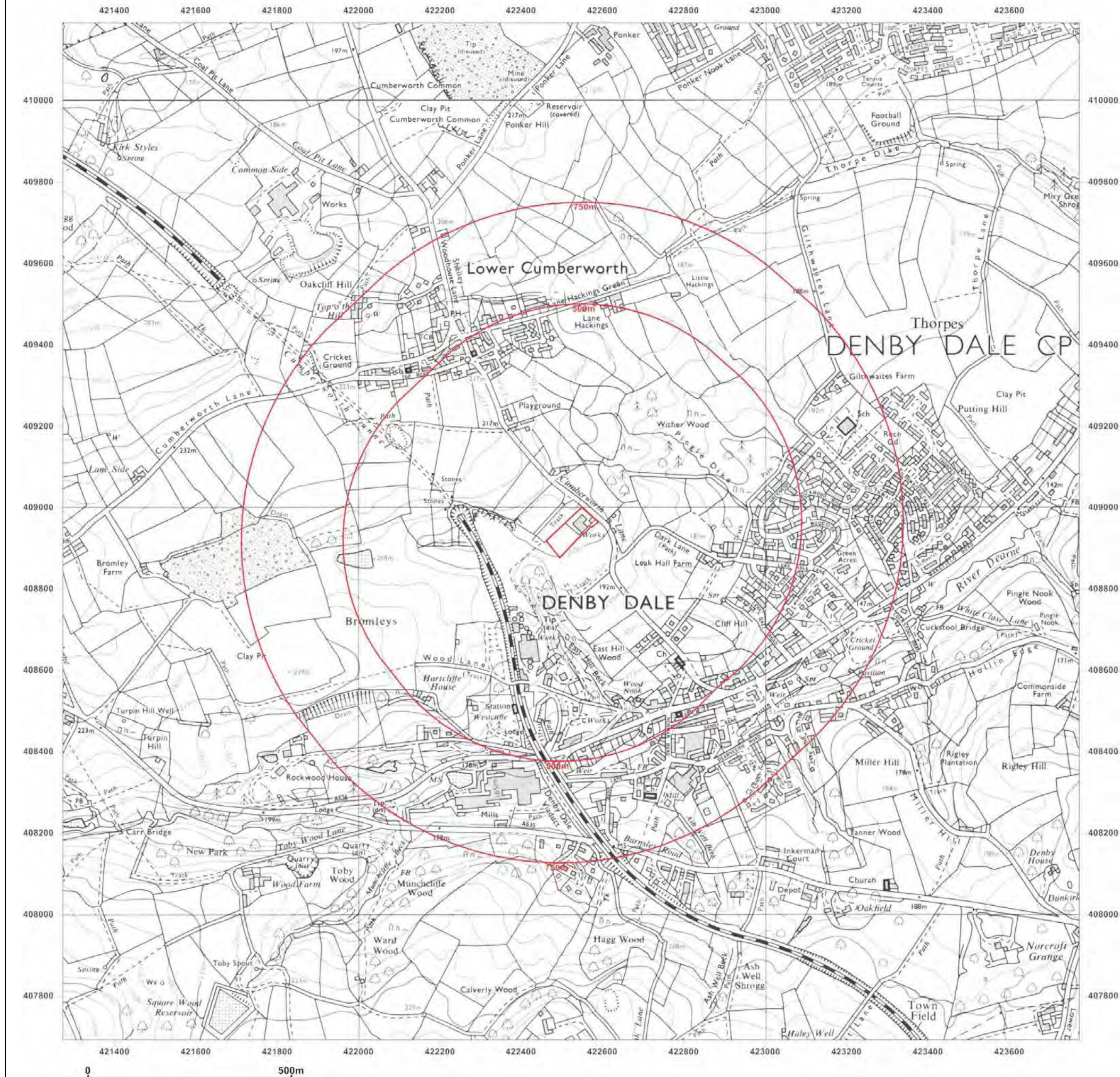


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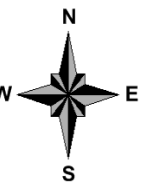
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**Grid Ref:** 422522, 408941

**Map Name:** National Grid

**Map date:** 1983-1986

**Scale:** 1:2,500

**Printed at:** 1:2,500



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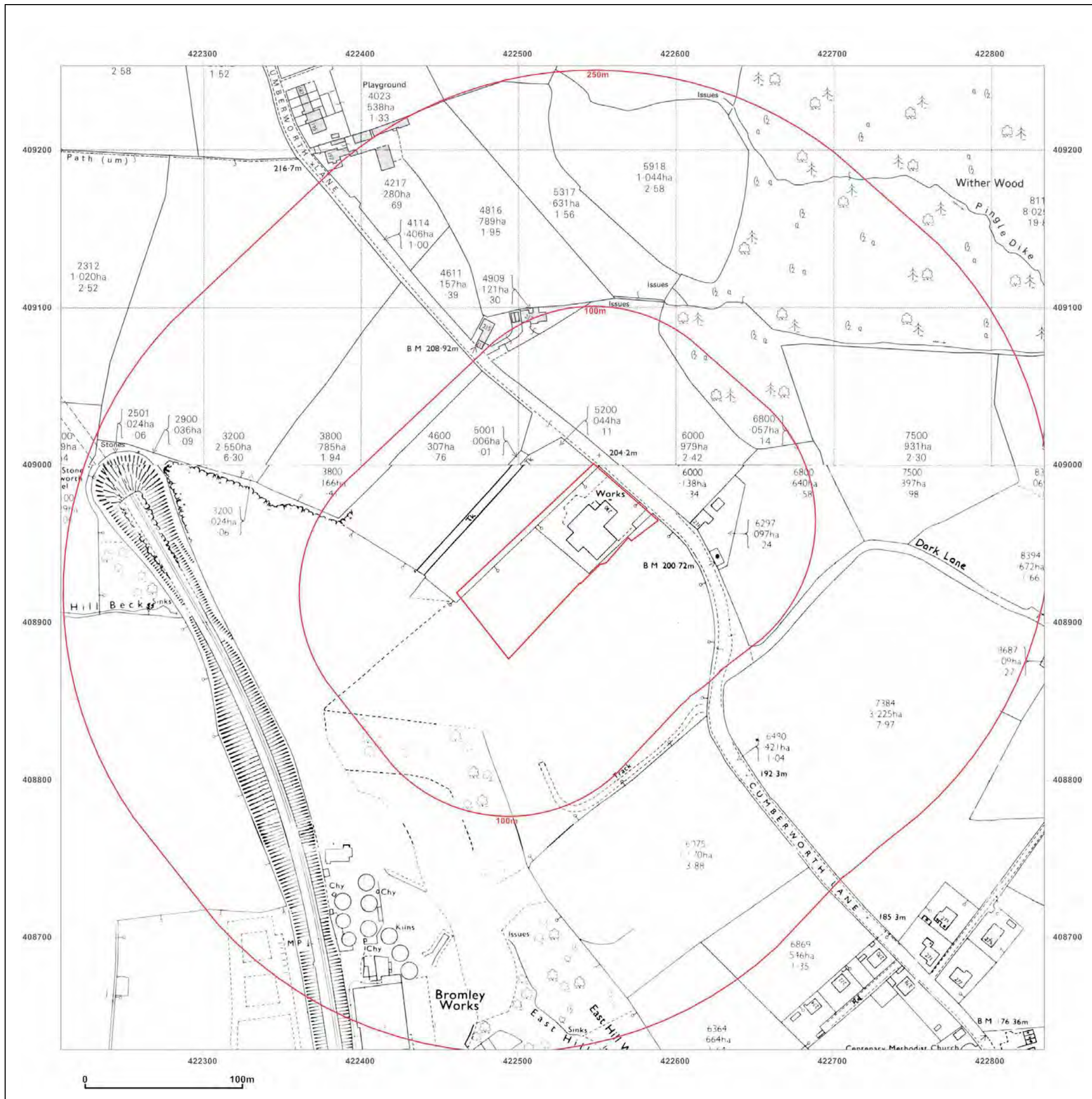


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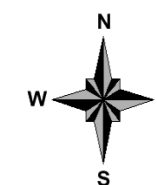
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**Map Name:** National Grid

**Map date:** 1988-1993

**Scale:** 1:2,500

**Printed at:** 1:2,500



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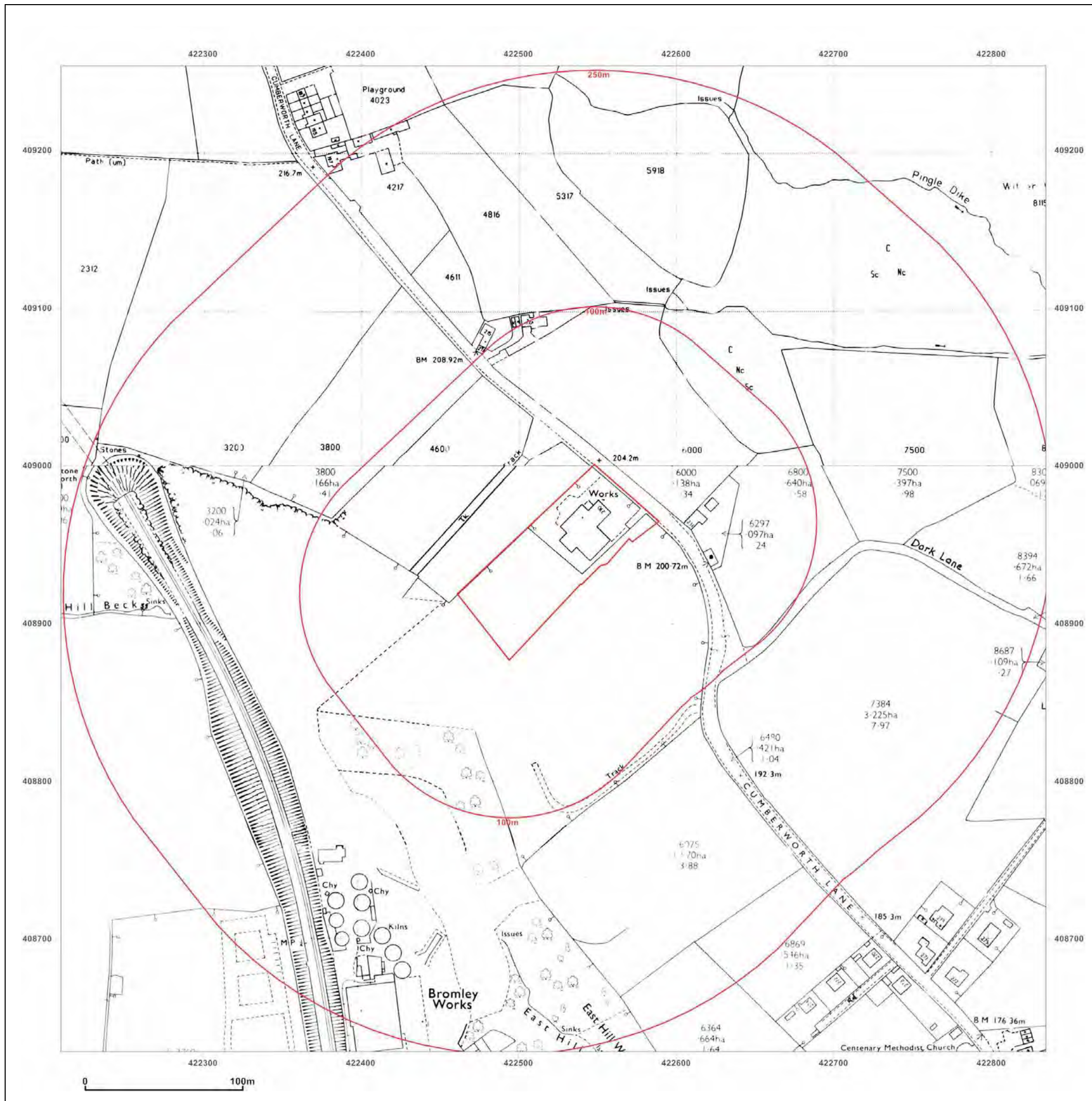


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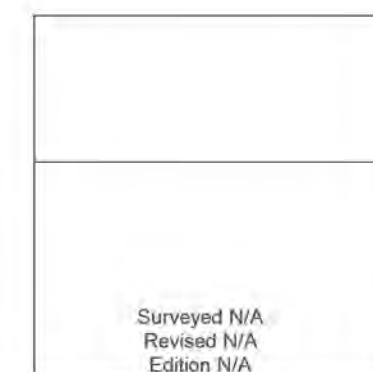
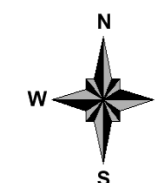
Grid Ref: 422522, 408941

Map Name: National Grid

Map date: 1993

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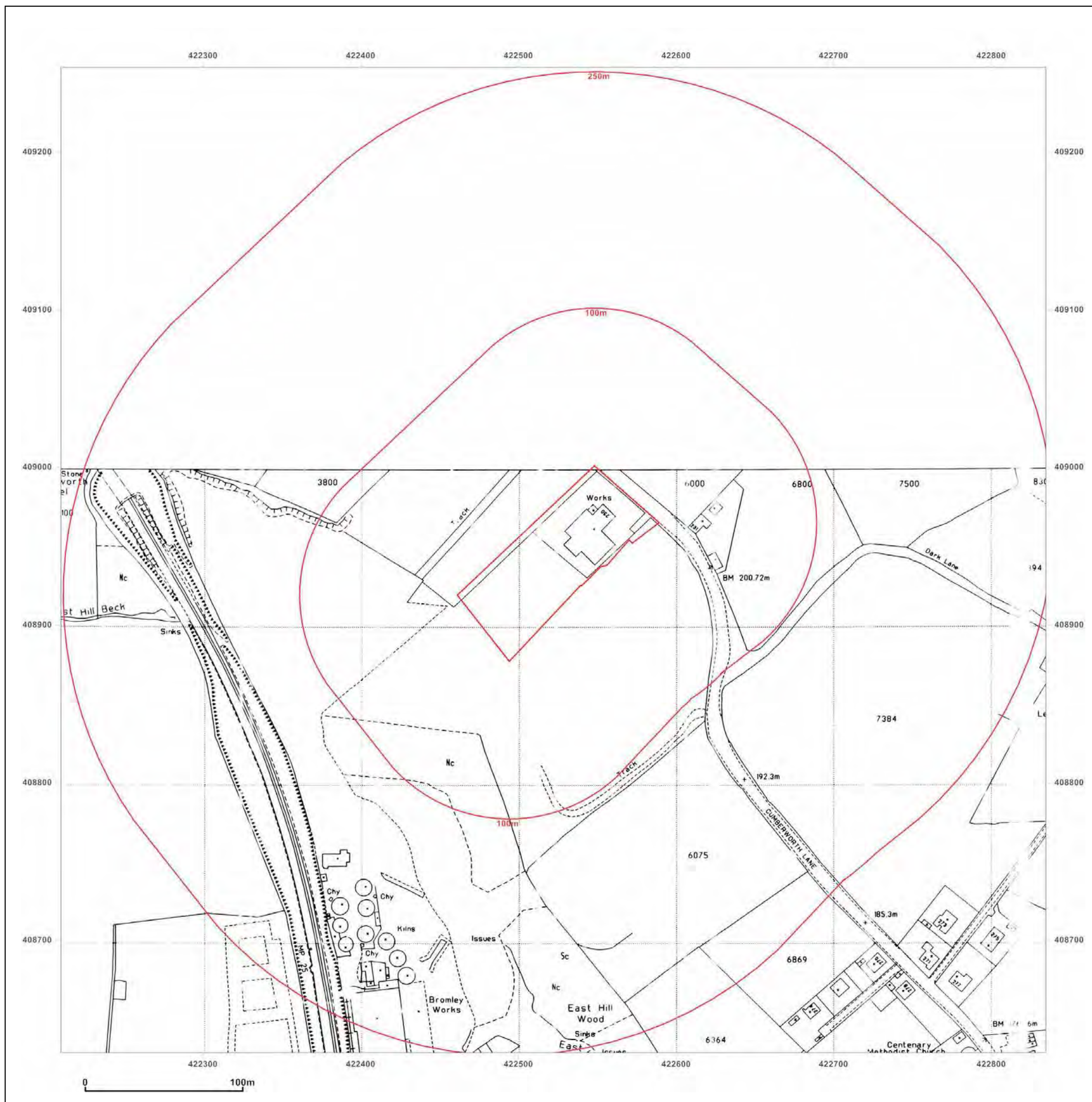


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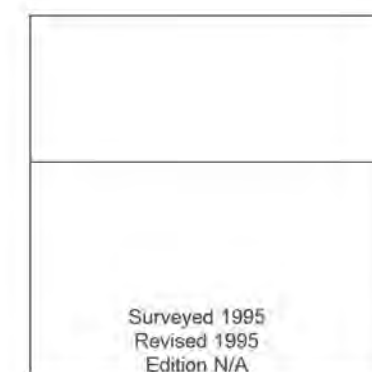
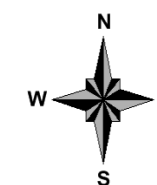
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**Grid Ref:** 422522, 408941

**Map Name:** National Grid

**Map date:** 1995

**Scale:** 1:2,500

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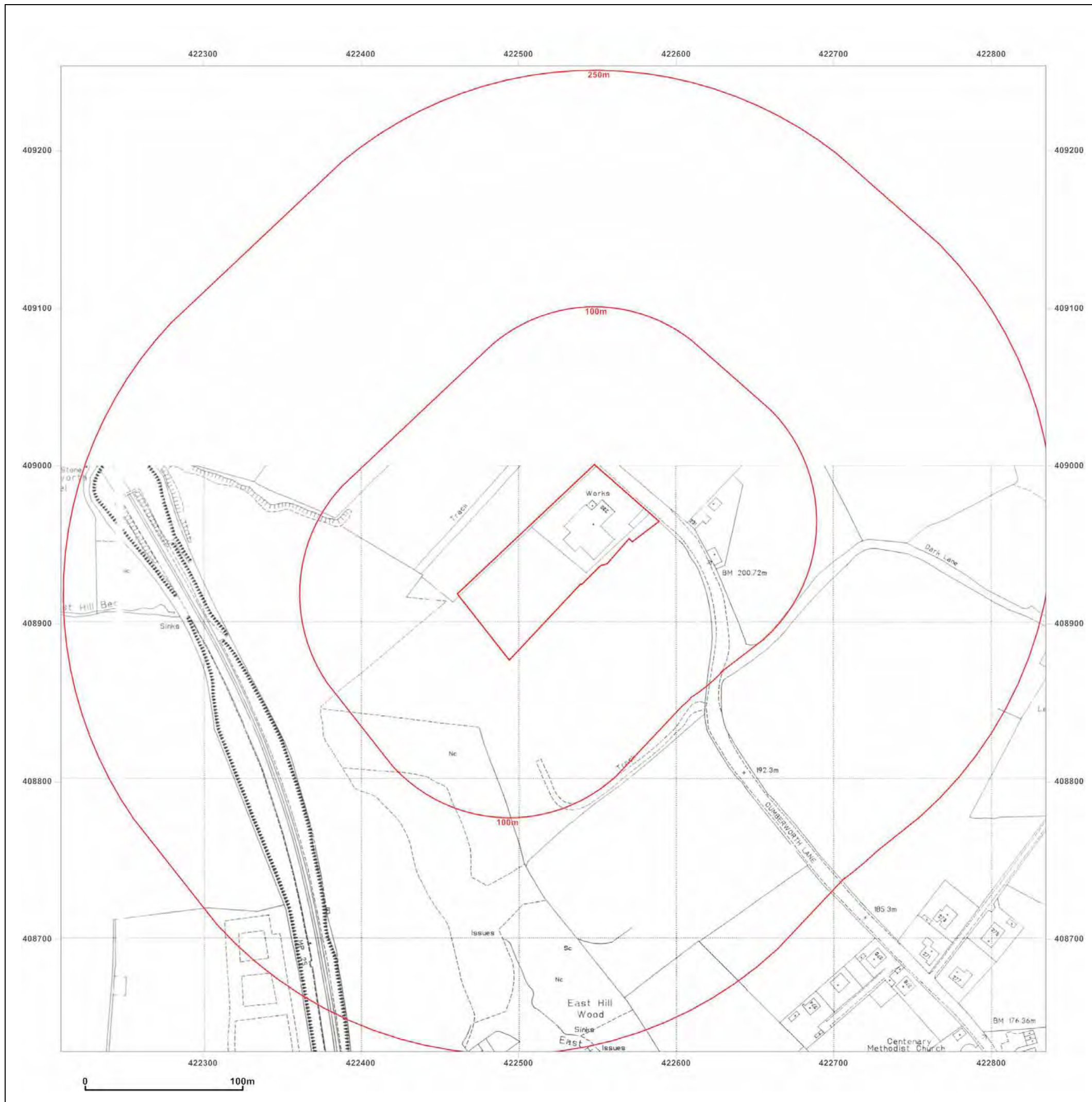


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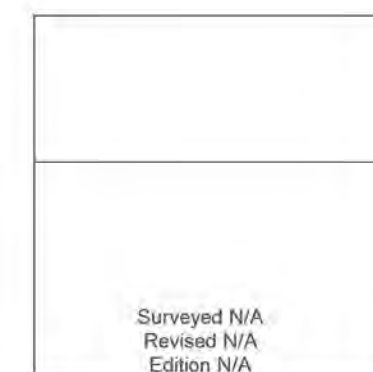
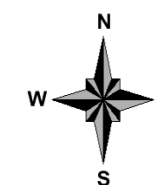
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Map Name: National Grid

Map date: 1995

Scale: 1:2,500

Printed at: 1:2,500



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Edition N/A  
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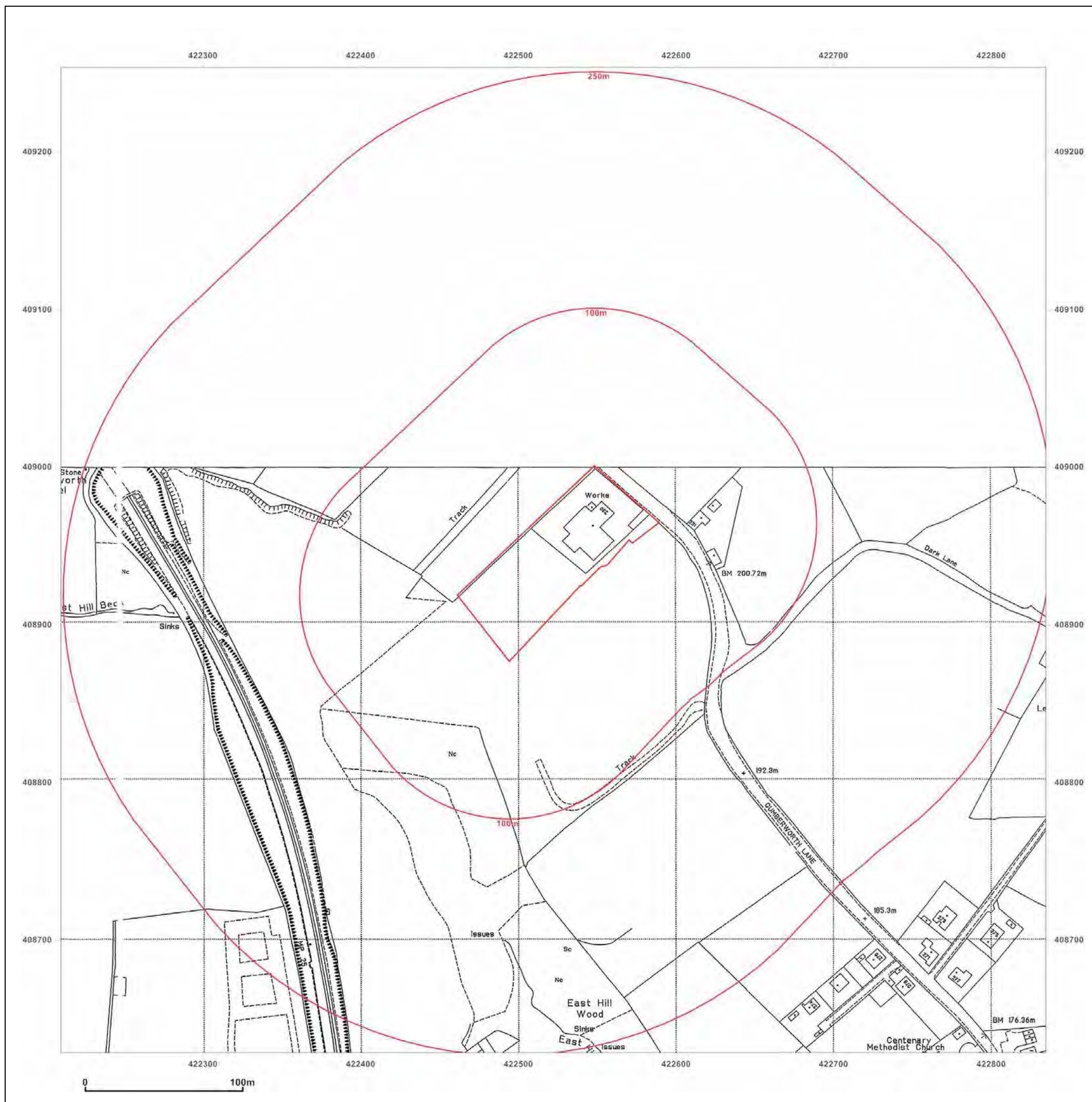
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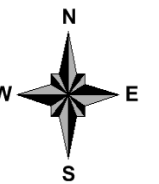
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Grid Ref: 422522, 408941

Map Name: 1:10,000 Raster

Map date: 2002

Scale: 1:10,000

Printed at: 1:10,000



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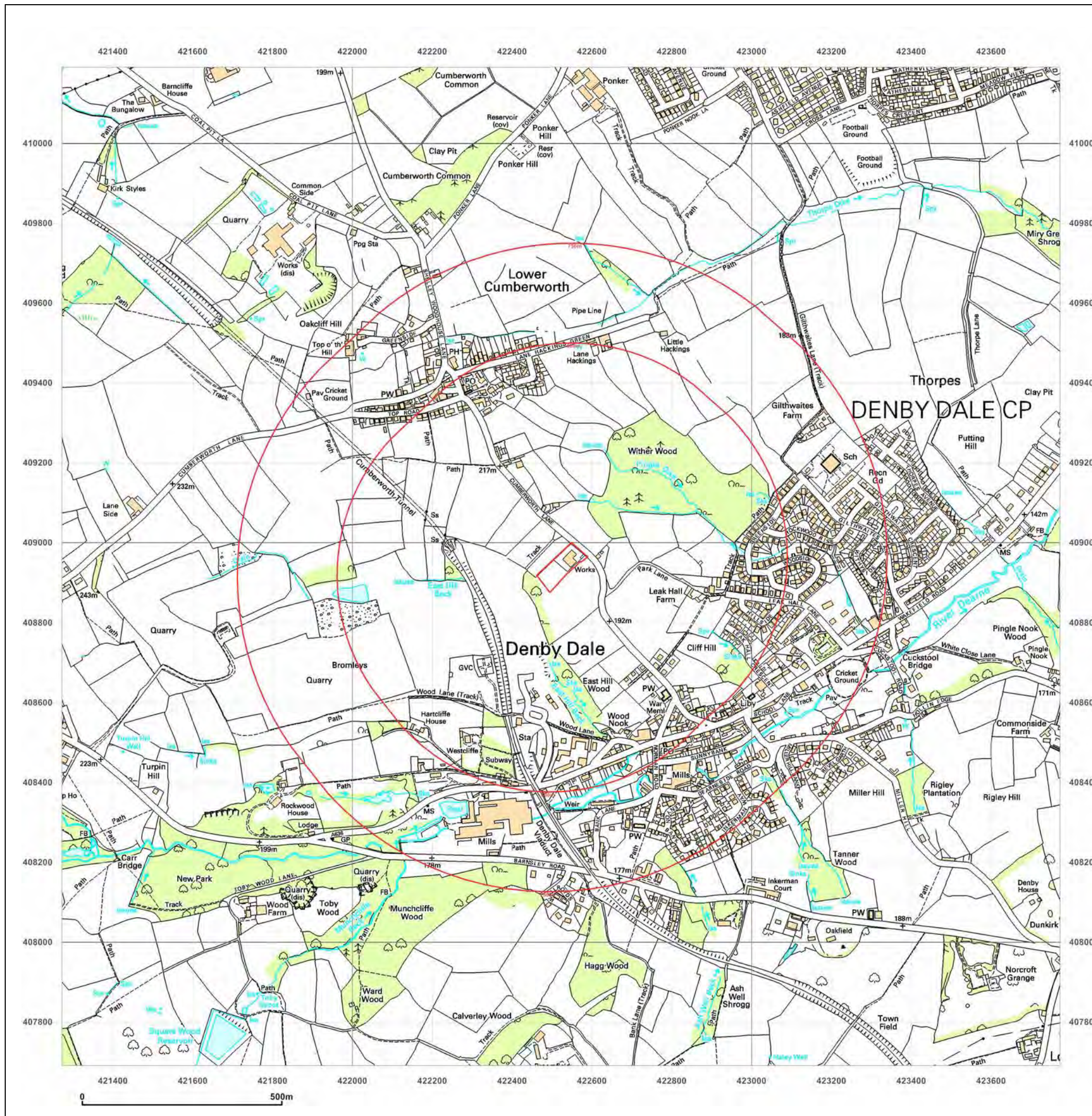


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**Report Ref:** EMS-275279\_370984  
**Grid Ref:** 422522, 408941

**Map Name:** National Grid

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**Scale:** 1:10,000

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**Map date:** 2014

**Scale:** 1:10,000

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## **APPENDIX J: GROUNDSURE REPORTS**



EmapSite

Masdar House,  
Eversley, RG27 ORP

Report Reference: EMS-275279\_370985

Your Reference: EMS\_275279\_370985

Report Date 8 Nov 2014

Report Delivery Method: Email - pdf

## GroundSure Geoinsight

Address: Cumberworth Lane 230,Denby Dale ,HD8 8PR,

Dear Sir/ Madam,

Thank you for placing your order with GroundSure. Please find enclosed the **GroundSure GeoInsight** as requested.

If you would like further assistance regarding this report then please contact the emapsite customer services team on 0118 9736883 quoting the above report reference number.

Yours faithfully,

emapsite customer services team

Enc.  
GroundSure GeoInsight



# Contents Page

Overview of Findings.....	5
1 Geology.....	8
1.1 Artificial Ground Map.....	8
1 Geology.....	9
1.1 Artificial Ground.....	9
1.1.1 Artificial/ Made Ground.....	9
1.1.2 Permeability of Artificial Ground.....	9
1.2 Superficial Deposits and Landslips Map.....	10
1.2 Superficial Deposits and Landslips.....	11
1.2.1 Superficial Deposits/ Drift Geology.....	11
1.2.2 Permeability of Superficial Ground.....	11
1.2.3 Landslip.....	11
1.2.4 Landslip Permeability.....	11
1.3 Bedrock and Faults Map.....	12
1.3 Bedrock, Solid Geology & Faults.....	13
1.3.1 Bedrock/ Solid Geology.....	13
1.3.2 Permeability of Bedrock Ground.....	13
1.3.3 Faults.....	13
1.4 Radon Data.....	15
1.4.1 Radon Affected Areas.....	15
1.4.2 Radon Protection.....	15
2 Ground Workings Map.....	16
2 Ground Workings.....	17
2.1 Historical Surface Ground Working Features derived from Historical Mapping.....	17
2.2 Historical Underground Working Features derived from Historical Mapping.....	18
2.3 Current Ground Workings.....	19
3 Mining, Extraction & Natural Cavities Map.....	22
3 Mining, Extraction & Natural Cavities.....	23
3.1 Historical Mining.....	23
3.2 Coal Mining.....	24
3.3 Johnson Poole and Bloomer.....	24
3.4 Non-Coal Mining.....	24
3.5 Non-Coal Mining Cavities.....	24
3.6 Natural Cavities.....	25
3.7 Brine Extraction.....	25
3.8 Gypsum Extraction.....	25
3.9 Tin Mining.....	25
3.10 Clay Mining.....	25
4 Natural Ground Subsidence.....	26
4.1 Shrink-Swell Clay Map.....	26
4.2 Landslides Map.....	27
4.3 Ground Dissolution Soluble Rocks Map.....	28
4.4 Compressible Deposits Map.....	29
4.5 Collapsible Deposits Map.....	30
4.6 Running Sand Map.....	31
4 Natural Ground Subsidence.....	32
4.1 Shrink-Swell Clays.....	32
4.2 Landslides.....	32
4.3 Ground Dissolution of Soluble Rocks.....	32
4.4 Compressible Deposits.....	33
4.5 Collapsible Deposits.....	33
4.6 Running Sands.....	33
5 Borehole Records Map.....	34
5 Borehole Records.....	35

6 Estimated Background Soil Chemistry.....36

7 Railways and Tunnels Map.....37

7 Railways and Tunnels.....38

    7.1 Tunnels .....38

    7.2 Historical Railway and Tunnel Features .....38

    7.3 Historical Railways.....40

    7.4 Active Railways.....40

    7.5 Railway Projects.....40

# Overview of Findings

The GroundSure GeoInsight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Shallow Mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and GroundSure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

## Section 1:Geology

1.1 Artificial Ground	1.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	Yes
	1.1.2 Are there any records relating to permeability of artificial ground within the study site* boundary?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?	No
	1.2.2 Are there any records relating to permeability of superficial geology within the study site boundary?	No
	1.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	1.2.4 Are there any records relating to permeability of landslips within the study site boundary?	No
1.3 Bedrock, Solid Geology & Faults	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records relating to permeability of bedrock within the study site boundary?	Yes
	1.3.3 Are there any records of faults within 500m of the study site boundary?	Yes
1.4 Radon data	1.4.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level
	1.4.2 Is the property in an area where Radon Protection Measures are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary

## Section 2:Ground Workings

	On-site	0-50m	51-250	251-500	501-1000
2.1 Historical Surface Ground Working Features from Small Scale Mapping	0	1	25	Not Searched	Not Searched
2.2 Historical Underground Workings from Small Scale Mapping	0	1	6	1	16
2.3 Current Ground Workings	0	0	2	3	20

## Section 3:Mining, Extraction & Natural Cavities

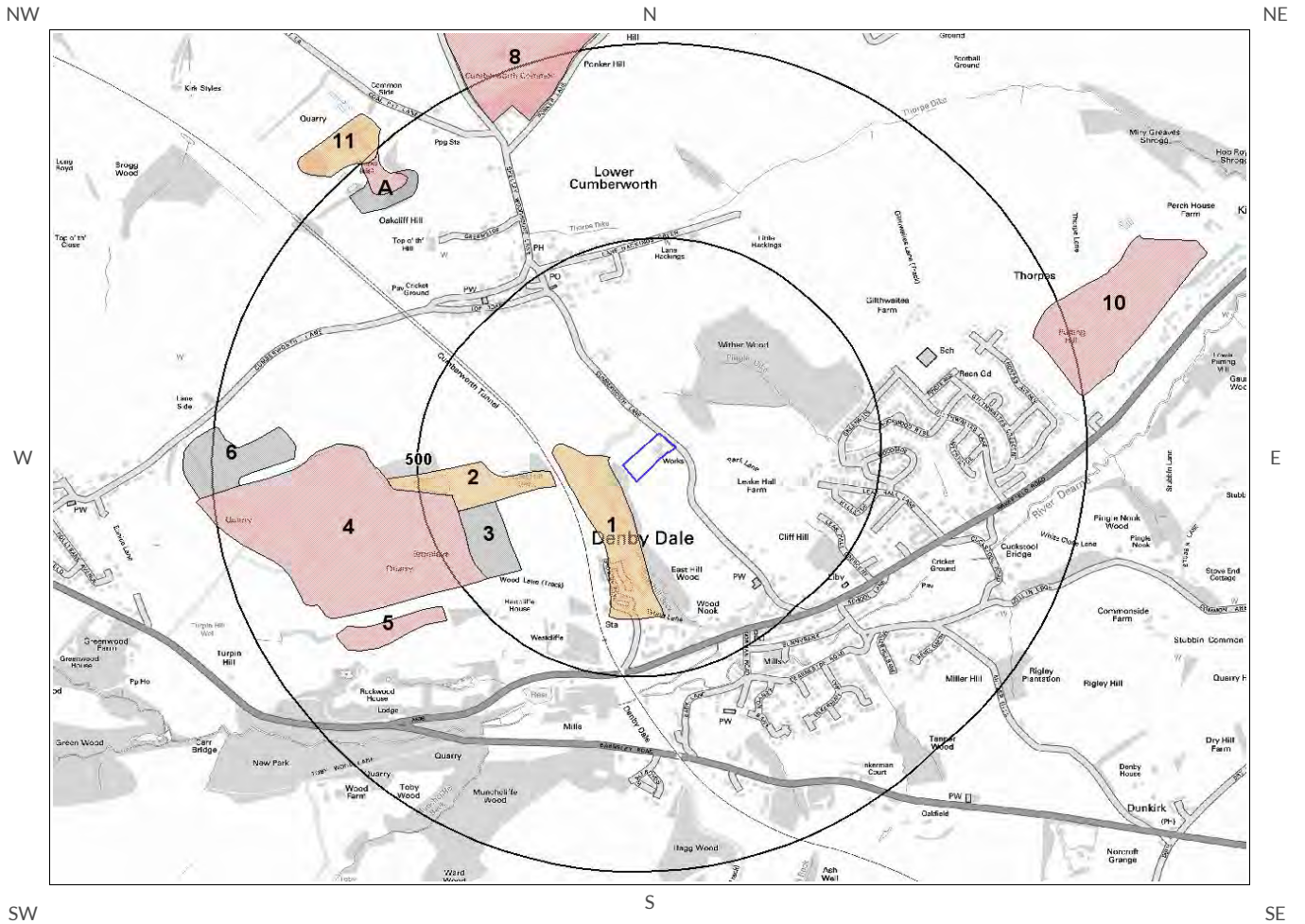
	On-site	0-50m	51-250	251-500	501-1000
3.1 Historical Mining	0	1	0	1	13

Section 3: Mining, Extraction & Natural Cavities					
	On-site	0-50m	51-250	251-500	501-1000
3.2 Coal Mining	1	0	0	0	0
3.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
3.4 Non-Coal Mining	0	0	0	0	0
3.5 Non-Coal Mining Cavities	0	0	0	3	1
3.6 Natural Cavities	0	0	0	0	0
3.7 Brine Extraction	0	0	0	0	0
3.8 Gypsum Extraction	0	0	0	0	0
3.9 Tin Mining	0	0	0	0	0
3.10 Clay Mining	0	0	0	0	0
Section 4: Natural Ground Subsidence					
	On-site				
4.1 Shrink Swell Clay	Very Low				
4.2 Landslides	Very Low				
4.3 Ground Dissolution of Soluble Rocks	Negligible				
4.4 Compressible Deposits	Very Low				
4.5 Collapsible Deposits	Very Low				
4.6 Running Sand	Very Low				
Section 5: Borehole Records					
	On-site	0-50m	51-250		
5 BGS Recorded Boreholes	0	0	15		
Section 6: Estimated Background Soil Chemistry					
	On-site	0-50m	51-250		
6 Records of Background Soil Chemistry	4	1	5		
Section 7: Railways and Tunnels					
	On-site	0-50m	51-250	251-500	
7.1 Tunnels	0	0	1	Not Searched	
7.2 Historical Railway and Tunnel Features	0	0	32	Not Searched	
7.3 Historical Railways	0	0	0	Not Searched	
7.4 Active Railways	0	0	3	Not Searched	

Section 7:Railways and Tunnels	On-site	0-50m	51-250	251-500
7.5 Railway Projects	0	0	0	0

# 1 Geology




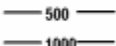




## 1.1 Artificial Ground Map



Artificial Ground Legend



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	Site Outline		Made Ground (undivided)		Disturbed Ground (undivided)
	Search Buffers (m)		Worked Ground (undivided)		Landscaped Ground (undivided)
			Infilled Ground		Reclaimed Ground



# 1 Geology

## 1.1 Artificial Ground

### 1.1.1 Artificial/ Made Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:086

Are there any records of Artificial/Made Ground within 500m of the study site boundary? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	30.0	SW	MGR-MGRD	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	172.0	W	MGR-MGRD	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
3	325.0	W	WGR-OPEN	WORKED GROUND (UNDIVIDED)	VOID
4	419.0	W	WMGR-MGRD	INFILLED GROUND	ARTIFICIAL DEPOSIT

---

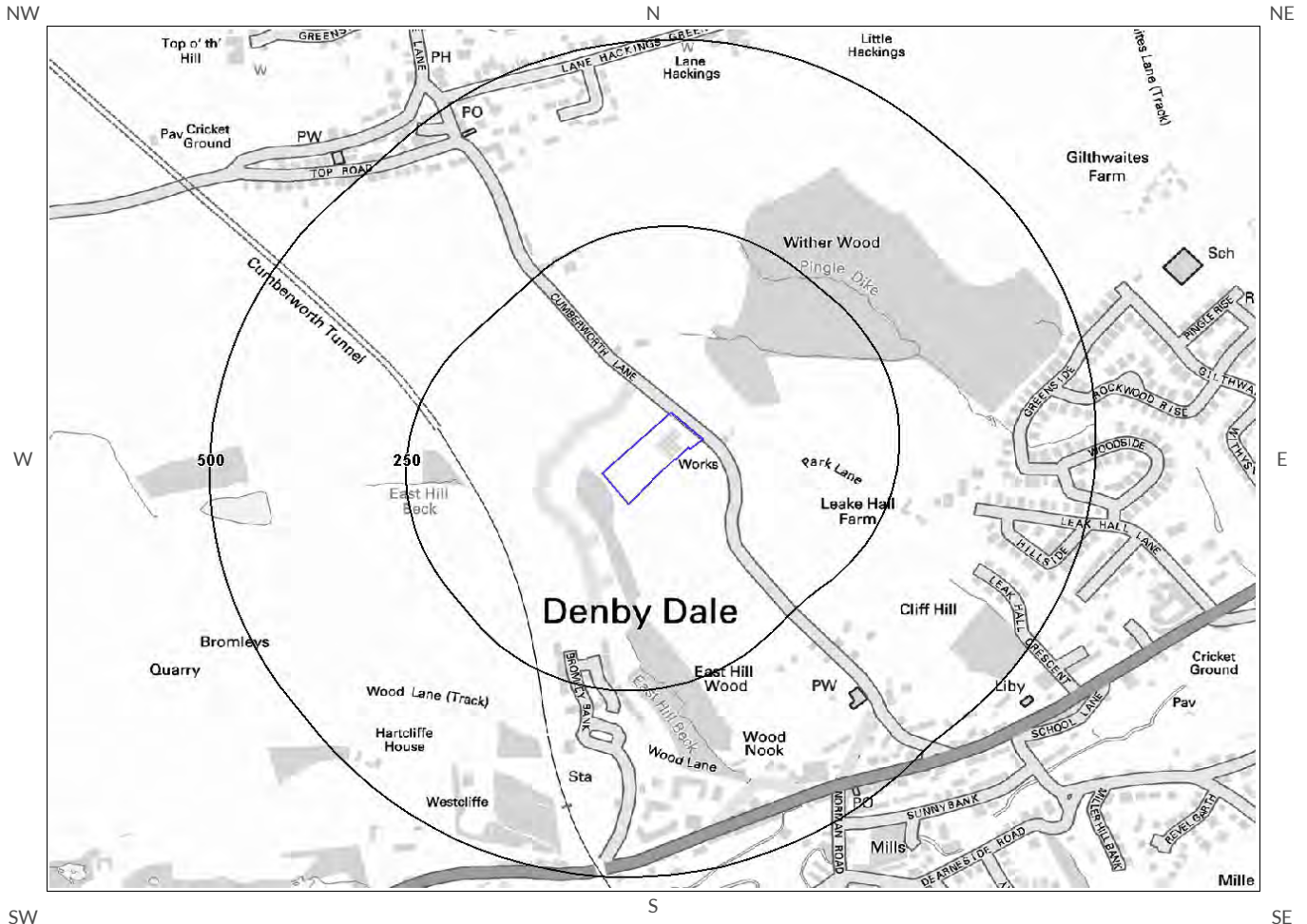
### 1.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

---

# 1.2 Superficial Deposits and Landslips Map



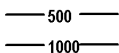
Superficial Deposits and Landslips Legend



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Site Outline



Search Buffers (m)

# 1.2 Superficial Deposits and Landslips

## 1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? No

Database searched and no data found.

---

## 1.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? No

Database searched and no data found.

---

## 1.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

---

## 1.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site\*\* boundary? No

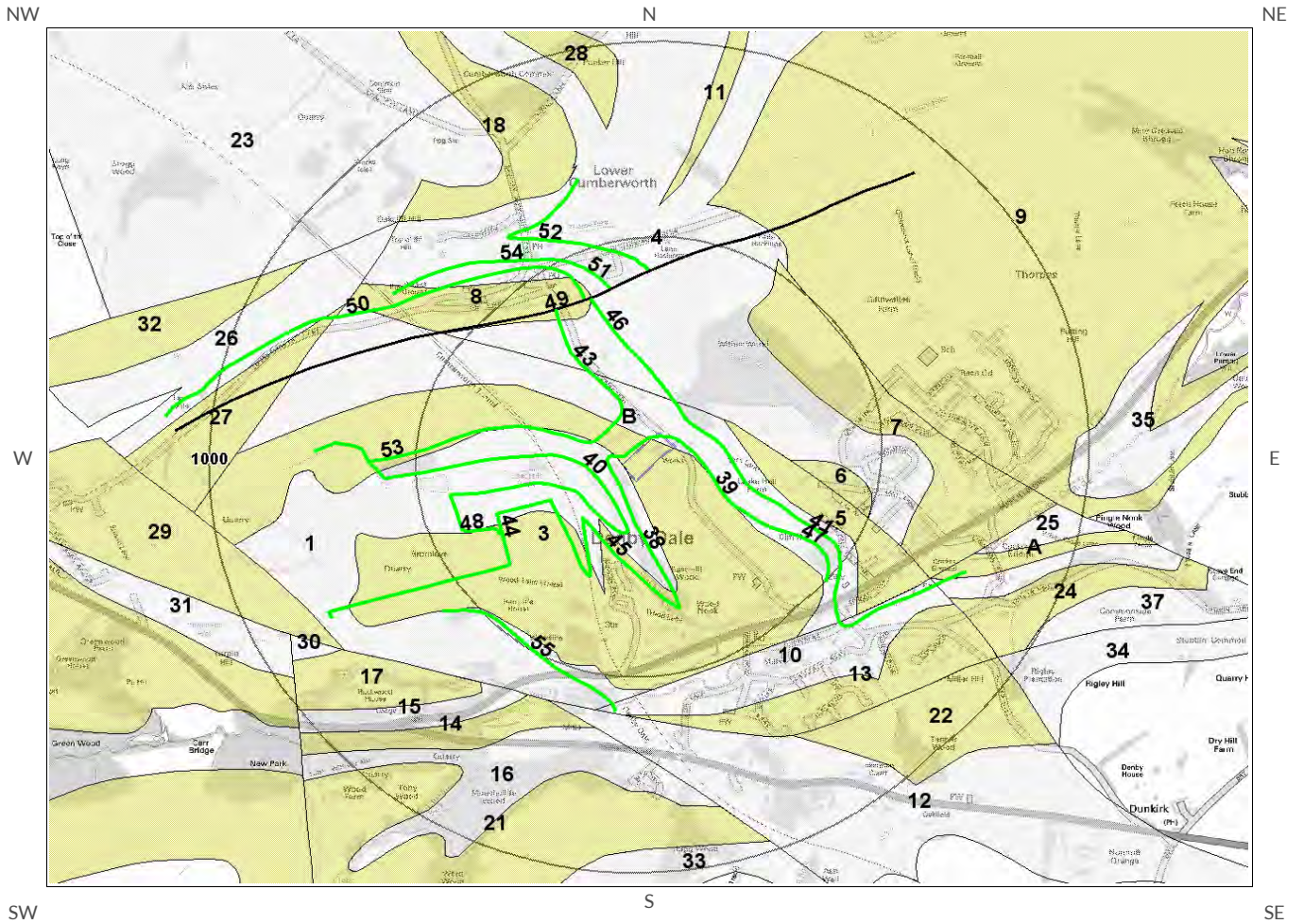
Database searched and no data found.

---

---

\* This includes an automatically generated 50m buffer zone around the site

# 1.3 Bedrock and Faults Map



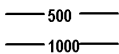
Bedrock and Faults Legend



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Site Outline



Search Buffers (m)

# 1.3 Bedrock, Solid Geology & Faults

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:086

## 1.3.1 Bedrock/ Solid Geology

Records of Bedrock/ Solid Geology within 500m of the study site boundary:

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian (westphalian A)
2B	0.0	On Site	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian (westphalian A)
3	0.0	On Site	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian (westphalian A)
4	90.0	N	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian (westphalian A)
5	135.0	NE	PF-SDST	Penistone Flags - Sandstone	Langsettian (westphalian A)
6	279.0	E	PF-SDST	Penistone Flags - Sandstone	Langsettian (westphalian A)
7	332.0	NE	PF-SDST	Penistone Flags - Sandstone	Langsettian (westphalian A)
8	349.0	NW	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian (westphalian A)
9	490.0	NE	PF-SDST	Penistone Flags - Sandstone	Langsettian (westphalian A)

## 1.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site<sup>+</sup> boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	High	Low
0.0	On Site	Fracture	High	Low

## 1.3.3 Faults

Are there any records of Faults within 500m of the study site boundary? Yes

ID	Distance (m)	Direction	Category Description	Feature Description
38	0.0	On Site	ROCK	Coal seam, observed
39	26.0	E	ROCK	Coal seam, inferred
40	69.0	SW	ROCK	Coal seam, observed
41	69.0	NE	ROCK	Coal seam, inferred
42B	88.0	NW	ROCK	Coal seam, observed
43	126.0	NW	ROCK	Coal seam, inferred
44	159.0	SW	ROCK	Coal seam, observed

\* This includes an automatically generated 50m buffer zone around the site

ID	Distance (m)	Direction	Category Description	Feature Description
45	170.0	SW	ROCK	Coal seam, inferred
46	196.0	N	ROCK	Coal seam, observed
47	317.0	SE	ROCK	Coal seam, observed
48	342.0	SW	ROCK	Coal seam, inferred
49	380.0	NW	FAULT	Fault, inferred, crossmark on downthrow side, throw in metres
50	383.0	NW	ROCK	Coal seam, inferred
51	385.0	N	ROCK	Coal seam, inferred
52	415.0	N	ROCK	Coal seam, inferred
53	476.0	W	ROCK	Coal seam, inferred
54	485.0	NW	ROCK	Coal seam, observed
55	488.0	SW	ROCK	Coal seam, inferred

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as Faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

# 1.4 Radon Data

## 1.4.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level

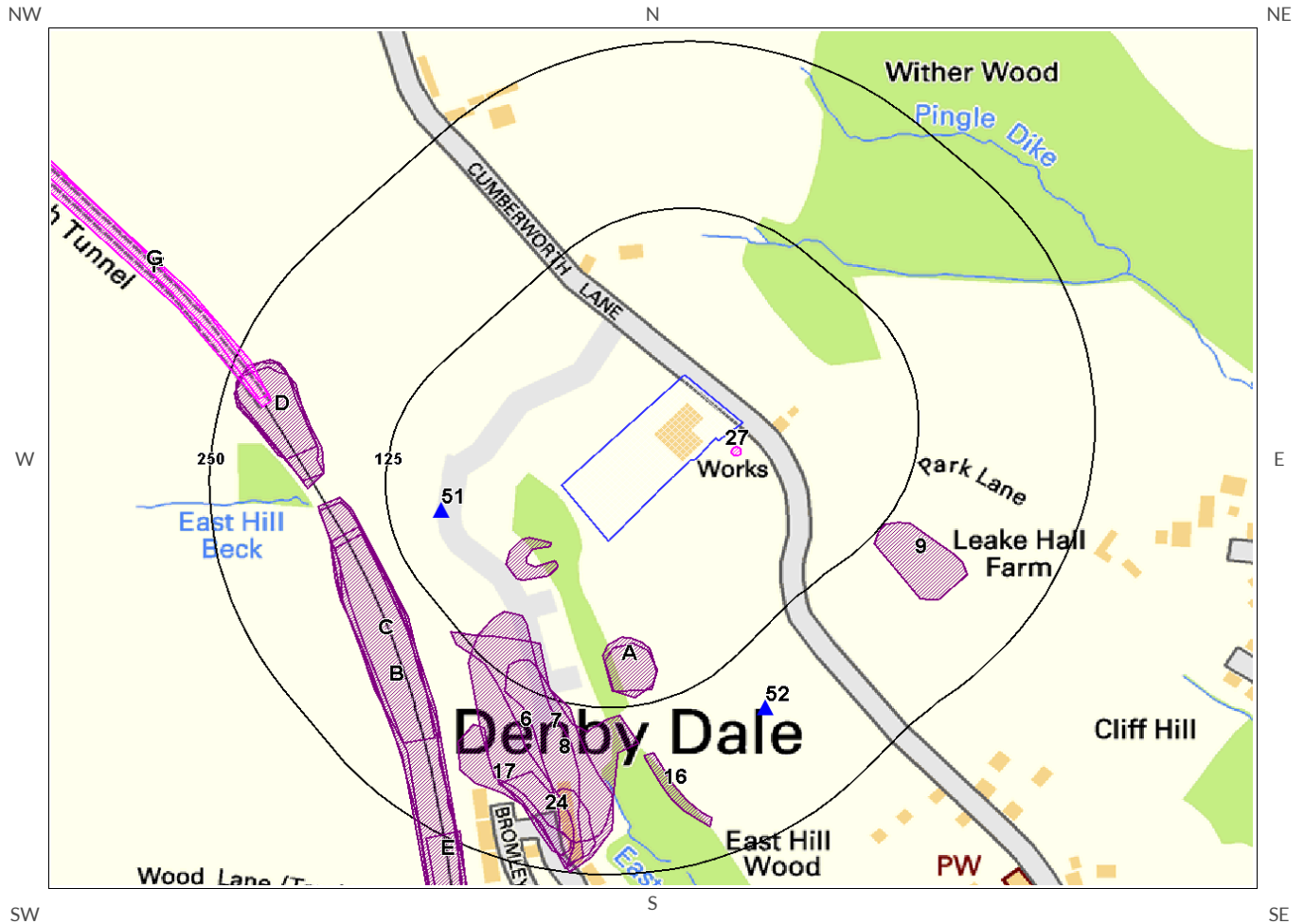
---

## 1.4.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary

---





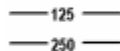
# 2 Ground Workings Map



Ground Workings Legend



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-  Site Outline
-  Historic Surface Ground Workings
-  Historic Underground Workings
-  Current Ground Workings
-  Search Buffers (m)



## 2 Ground Workings

### 2.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on GroundSure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping.

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

The following Historical Surface Ground Working Features are provided by GroundSure:

ID	Distance (m)	Direction	NGR	Use	Date
1	33.0	SW	422429 408863	Refuse Heap	1967
2A	73.0	S	422509 408782	Unspecified Heap	1951
3A	79.0	S	422510 408782	Unspecified Pit	1948
4A	79.0	S	422510 408782	Unspecified Pit	1903
5A	79.0	S	422510 408782	Unspecified Pit	1891
6	84.0	SW	422435 408728	Refuse Heap	1951
7	91.0	SW	422449 408730	Unspecified Disused Tip	1983
8	106.0	SW	422459 408708	Refuse Heap	1967
9	126.0	SE	422715 408862	Unspecified Ground Workings	1967
10B	141.0	SW	422341 408743	Cuttings	1951
11B	142.0	SW	422348 408729	Cuttings	1983
12B	142.0	SW	422348 408729	Cuttings	1967
13B	143.0	SW	422354 408740	Cuttings	1948
14C	144.0	SW	422335 408804	Cuttings	1891
15C	144.0	SW	422335 408804	Cuttings	1903
16	162.0	S	422538 408691	Unspecified Ground Workings	1951
17	166.0	SW	422427 408691	Refuse Heap	1903
18D	169.0	W	422261 408964	Cuttings	1967
19D	169.0	W	422261 408964	Cuttings	1983
20D	169.0	W	422261 408964	Cuttings	1951
21D	169.0	W	422261 408966	Cuttings	1948

ID	Distance (m)	Direction	NGR	Use	Date
22D	176.0	W	422258 408972	Cuttings	1891
23D	176.0	W	422258 408972	Cuttings	1903
24	181.0	S	422450 408669	Sand Pit	1948
25E	242.0	SW	422381 408619	Cuttings	1891
26E	242.0	SW	422381 408619	Cuttings	1903

## 2.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the GroundSure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? Yes

The following Historical Underground Working Features are provided by GroundSure:

ID	Distance (m)	Direction	NGR	Use	Date
27	11.0	SE	422585 408944	Unspecified Old Shaft	1903
28F	216.0	W	422130 409118	Tunnel	1891
29F	216.0	W	422130 409118	Tunnel	1903
30F	216.0	W	422130 409118	Tunnel	1948
31G	219.0	W	421968 409274	Tunnel	1983
32G	219.0	W	421968 409274	Tunnel	1967
33G	219.0	W	421968 409274	Tunnel	1951
Not shown	399.0	W	422066 408998	Unspecified Old Shaft	1903
Not shown	569.0	NW	421829 409395	Tunnel	1892
Not shown	578.0	NW	421819 409410	Tunnel	1904
Not shown	578.0	NW	421819 409410	Tunnel	1948
Not shown	765.0	N	422334 409739	Unspecified Level	1904
Not shown	819.0	NW	422231 409760	Unspecified Level	1904
Not shown	828.0	NW	421787 409404	Unspecified Old Shaft	1904
Not shown	876.0	NW	421893 409663	Old Coal Pit	1904
Not shown	885.0	N	422299 409854	Unspecified Level	1904

ID	Distance (m)	Direction	NGR	Use	Date
Not shown	907.0	NW	421900 409642	Unspecified Shaft	1904
Not shown	944.0	NW	421747 409545	Unspecified Level	1904
Not shown	947.0	NW	421898 409697	Unspecified Old Shaft	1951
Not shown	949.0	NW	421895 409694	Unspecified Old Shaft	1948
Not shown	949.0	NW	421895 409694	Unspecified Old Shaft	1904
Not shown	991.0	NW	421805 409675	Old Coal Pit	1904
Not shown	991.0	NW	421805 409675	Old Coal Pit	1948
Not shown	998.0	N	422167 409927	Unspecified Level	1904

## 2.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

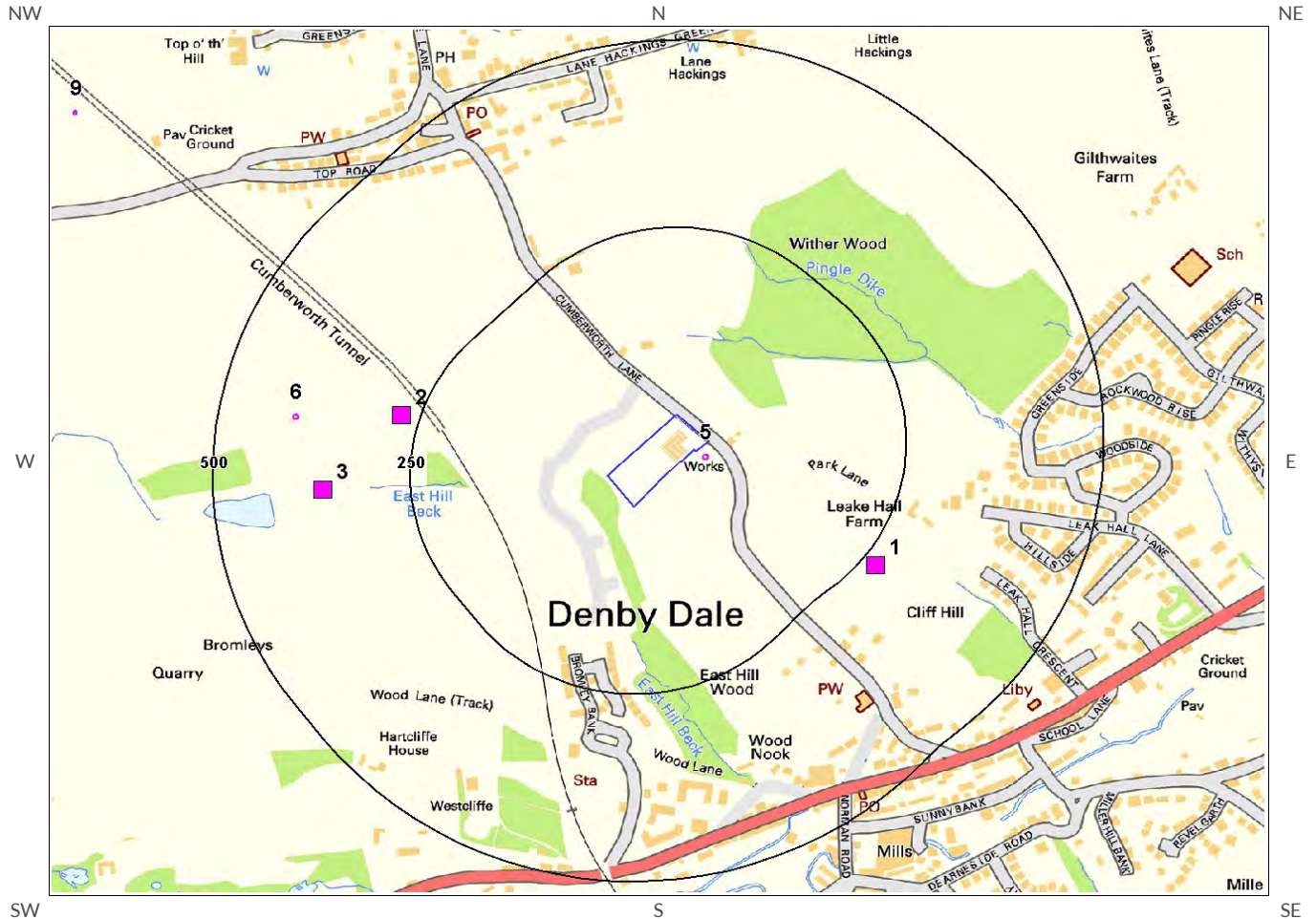
ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
51	88.0	W	422375 408900	Clay & Shale	Bromleys, East of Railway	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
52	167.0	SE	422605 408752	Coal, Deep	Cumberworth Lane Coal Pit	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	431.0	SW	422065 408750	Fireclay	Bromleys Quarry	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Active
Not shown	431.0	SW	422065 408750	Clay & Shale	Bromleys Quarry	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Active
Not shown	461.0	W	422000 408900	Clay & Shale	Bromleys Mine	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	657.0	SW	422130 408330	Sandstone	Hartcliffe Common Quarry	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	756.0	N	422370 409736	Fireclay	Ponker Hill Clay Mines	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	762.0	E	423342 408851	Sandstone	Giltthwaite Lane	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	826.0	N	422234 409765	Fireclay	Ponker Hill Clay Mines	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	834.0	N	422447 409829	Fireclay	Ponker Clay Mine	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	854.0	N	422455 409850	Clay & Shale	Ponker Clay Pit	Working is partly surface and partly underground, working the same bodies for the same commodities	Ceased
Not shown	857.0	W	421605 408960	Clay & Shale	Bromley Quarry	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Active
Not shown	869.0	SW	422038 408137	Sandstone	Toby Wood Quarry	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	870.0	NW	421703 409346	Sandstone	Oakcliff Hill	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	883.0	N	422315 409853	Fireclay	Ponker Hill Clay Mines	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	910.0	NW	421904 409644	Mineral	Cumberworth Brick Yard Shaft	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	933.0	SE	423412 408526	Coal, Deep	Haywood Bottom Coal Pit	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	951.0	NW	421750 409550	Coal, Deep	Oakcliff Hill Mine	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	956.0	NW	421897 409701	Mineral	Cumberworth Brick Yard Shaft	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	972.0	NW	421803 409634	Coal, Deep	Oakcliff Hill Coal Pit	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	984.0	NW	421855 409700	Clay & Shale	Addy's	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	986.0	NW	421763 409615	Coal, Deep	Oakcliff Hill Pits	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	989.0	NW	421722 409576	Coal, Deep	Oakcliff Hill Pits	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	991.0	SW	421851 408123	Sandstone	Toby Wood Quarry	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	992.0	SW	421683 408303	Sandstone	Hartcliff	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased



# 3 Mining, Extraction & Natural Cavities Map



Mining, Extraction and Natural Cavities Legend



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# 3 Mining, Extraction & Natural Cavities

## 3.1 Historical Mining

This dataset is derived from GroundSure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? Yes

The following Historical Mining information is provided by GroundSure:

ID	Distance (m)	Direction	NGR	Details	Date
5	11.0	SE	422585 408944	Unspecified Old Shaft	1903
6	399.0	W	422066 408998	Unspecified Old Shaft	1903
Not shown	765.0	N	422334 409739	Unspecified Level	1904
Not shown	819.0	NW	422231 409760	Unspecified Level	1904
9	828.0	NW	421787 409404	Unspecified Old Shaft	1904
Not shown	876.0	NW	421893 409663	Old Coal Pit	1904
Not shown	885.0	N	422299 409854	Unspecified Level	1904
Not shown	907.0	NW	421900 409642	Unspecified Shaft	1904
Not shown	944.0	NW	421747 409545	Unspecified Level	1904
Not shown	947.0	NW	421898 409697	Unspecified Old Shaft	1951
Not shown	949.0	NW	421895 409694	Unspecified Old Shaft	1948
Not shown	949.0	NW	421895 409694	Unspecified Old Shaft	1904
Not shown	991.0	NW	421805 409675	Old Coal Pit	1948
Not shown	991.0	NW	421805 409675	Old Coal Pit	1904
Not shown	998.0	N	422167 409927	Unspecified Level	1904

### 3.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? Yes

The following Coal Mining information provided by the Coal Authority is not represented on Mapping:

Distance (m)	Direction	Details
0.0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

### 3.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

### 3.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

### 3.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled "Review of mining instability in Great Britain, 1990" PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? Yes

The following Non-Coal Mining Cavities information provided by Peter Brett Associates:

ID	Distance (m)	Direction	NGR	Address	Superficial Deposits	Bedrock Deposits	Extracted Mineral
1	268.0	SE	422800 408800	BAML ROYD, West Yorkshire	-	-	Fireclay
2	273.0	W	422200 409000	HOLLY MINE, West Yorkshire	-	-	Fireclay
3	361.0	W	422100 408900	BROMLEY, West Yorkshire	-	-	Fireclay
Not shown	837.0	N	422300 409800	PONKER HILL, West Yorkshire	-	-	Fireclay

---

### 3.6 Natural Cavities

This dataset provides information based on Peter Brett Associates natural cavities database.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

---

### 3.7 Brine Extraction

This data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

---

### 3.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

---

### 3.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level.

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

---

### 3.10 Clay Mining

This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

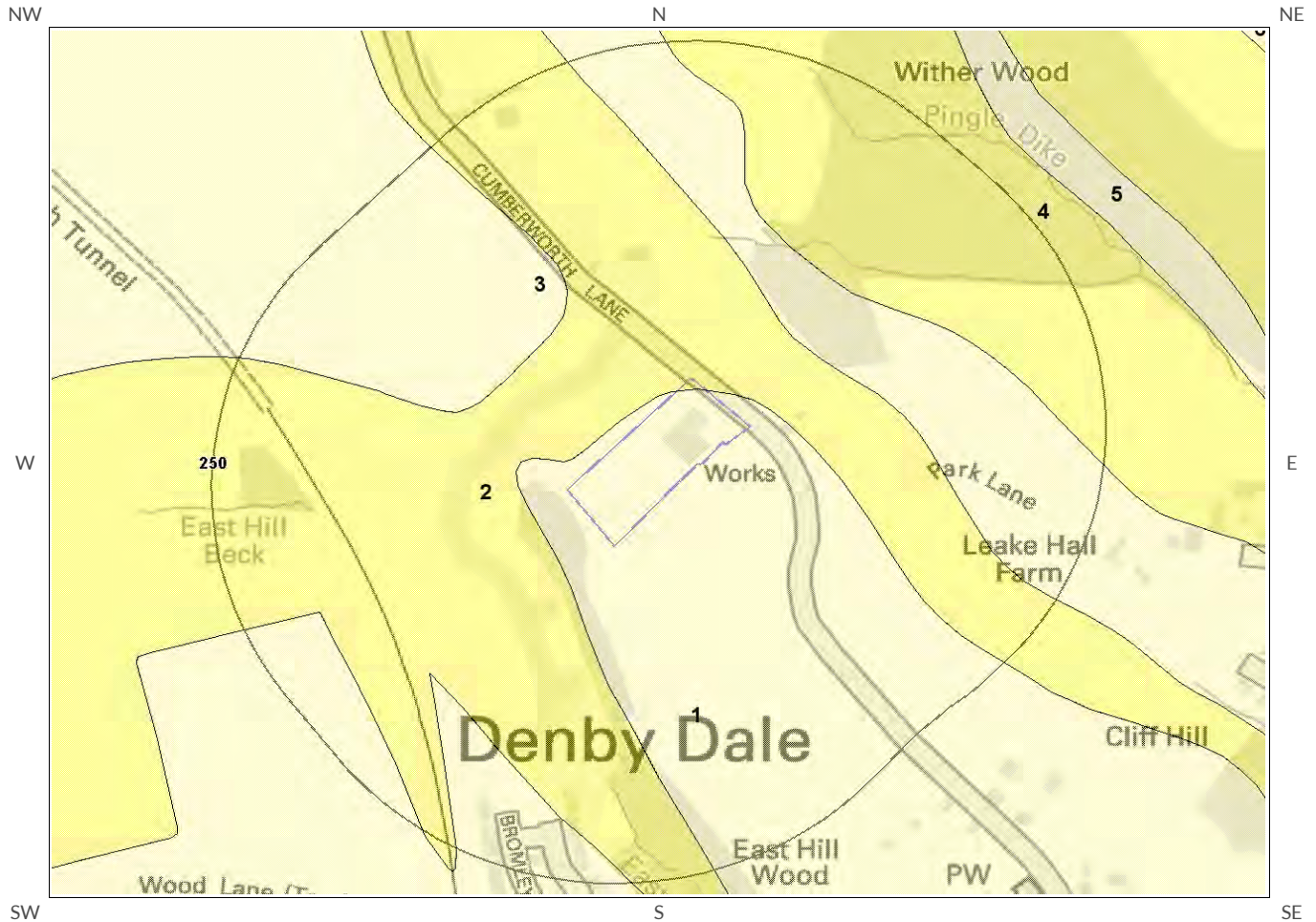
Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

---

# 4 Natural Ground Subsidence

## 4.1 Shrink-Swell Clay Map



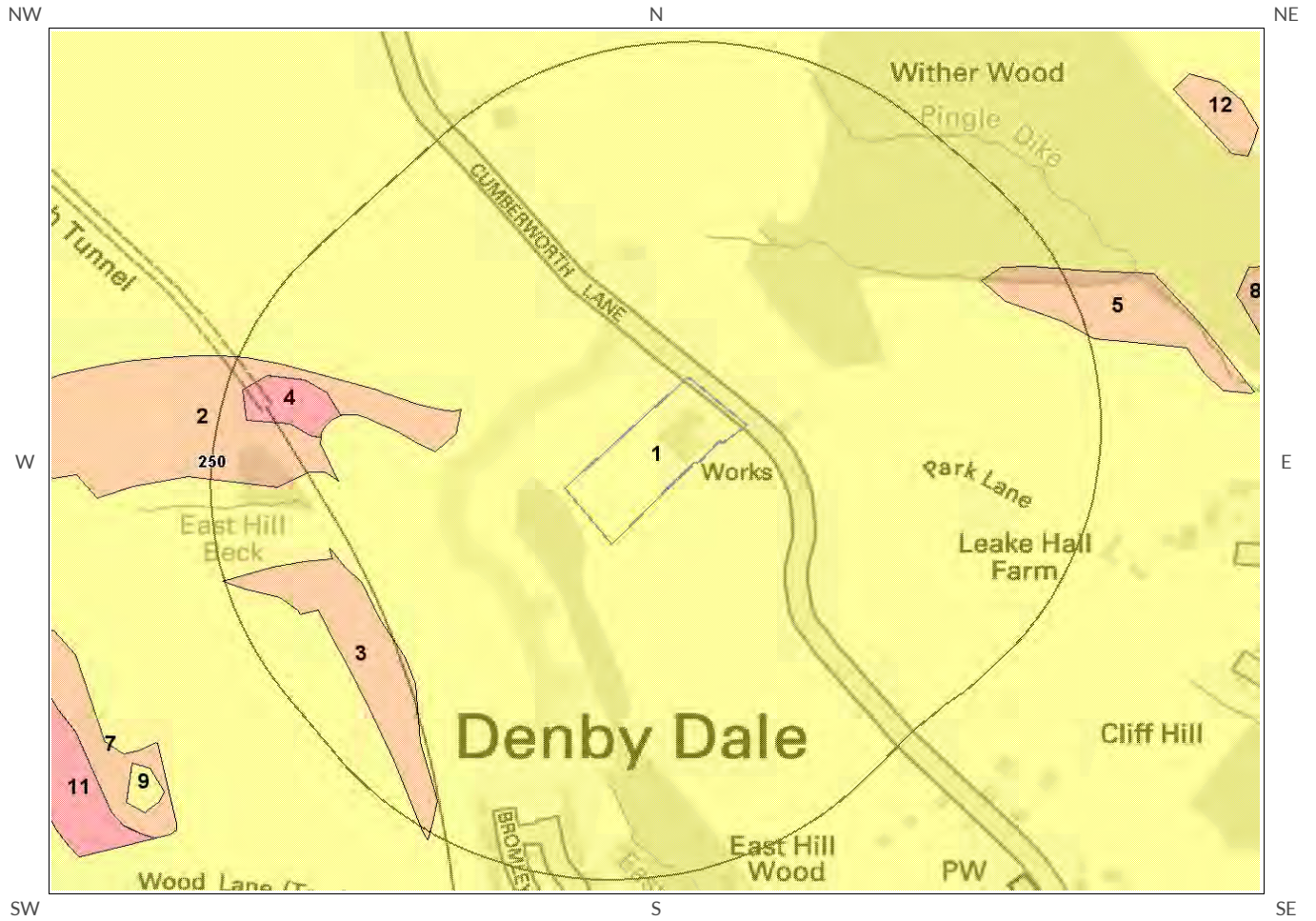
Shrink Swell Clay Legend



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# 4.2 Landslides Map



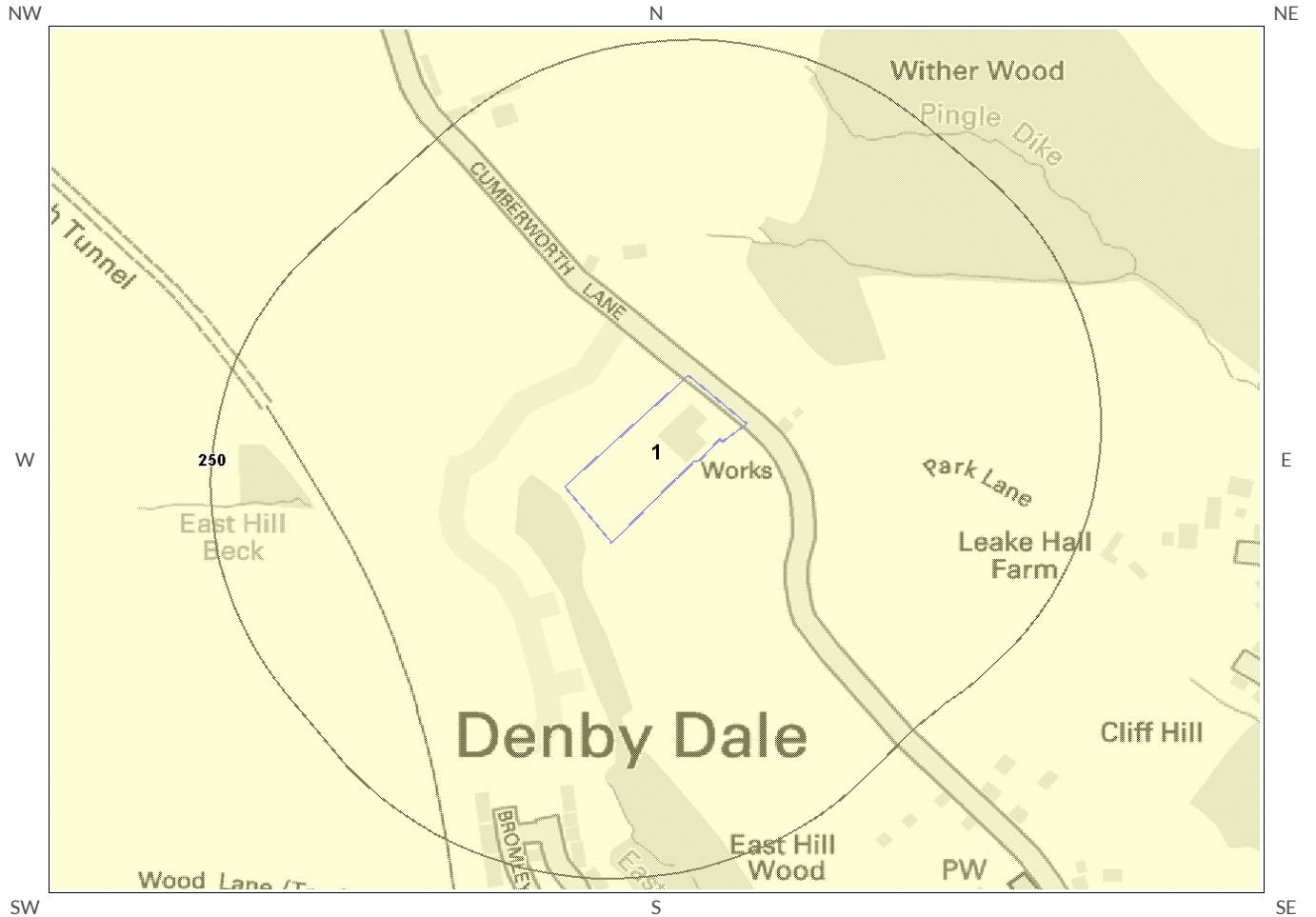
Landslides Legend



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# 4.3 Ground Dissolution Soluble Rocks Map



Ground Dissolution Soluble Rocks Legend



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