

BMM 01

**An Archaeological Desk Based Assessment and Walk
Over Survey of RNAD Broughton Moor, Cumbria**

Client: Allerdale Borough Council

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Summary

Headland Archaeology Ltd were commissioned to undertake an archaeological assessment of the now decommissioned Royal Naval Armaments Depot, Broughton Moor, Cumbria, as part of a feasibility study being carried out for Allerdale Borough Council.

The assessment identified a total of twenty-four sites in and around the depot. Most of these date to the 19th Century or later and relate to mines that occupied the site before the construction of the depot in 1938. Earlier land use is represented by the presence of a medieval field system and areas of ridge and furrow. A possible artificial mound was also identified.

The depot itself has been extensively recorded by the Royal Commission on the Historical Monuments of England. The mining sites and field system have been recorded by the Ordnance Survey. Therefore no further work is recommended for these sites. In the event of the possible mound being threatened by development then further work is recommended.

1 INTRODUCTION

This report details the results of an archaeological assessment, comprising a desk based assessment and site walk-over, of the former Royal Navy Armaments Depot (RNAD) at Broughton Moor, Cumbria. The work was undertaken on behalf of Allerdale Borough Council as part of a feasibility study on possible future development.

The work followed a Project Design agreed with Cumbria County Council's archaeology section.

The fieldwork was carried out on 6th and 7th November 2001. The weather was mixed with intermittent heavy showers.

2 SITE LOCATION, DESCRIPTION AND BACKGROUND (fig.1)

The site is located to the west of Great Broughton, Cumbria (NGR: NY 3059 5317) on the northern side of the Derwent Valley.

The survey area contains approximately 434 ha of land. This is variously occupied by pasture/rough grazing, gorse, broadleaf and conifer plantations, some areas of which have already been felled. The ground rises gently to the north, from 60 to 110 m OD and the underlying geology is glacial till overlying sand and mud stone.

Until the 1860s the site was occupied by fields and woodland, the latter being concentrated around the Holdens and Flemiggs Gills in the south of the site. The First Edition Ordnance Survey (OS 1867) shows spoil heaps and buildings relating to small scale coal extraction. Mining has been a part of the local economy since the medieval period, as demonstrated by documentary evidence of a mine in Great Broughton in 1437 (Winchester 1987, 121).

In 1873 Buckhill Colliery was opened with associated beehive coke ovens, gasometer and reservoirs. A railway was built to link the colliery to the Cleator and Workington Junction Railway (Northern Extension). The large spoilheap in the centre of the site is the most visible remainder of the colliery, with everything but the reservoirs and railway having been demolished to make way for the depot. Ribton Wood was planted in the early 1920s.

The colliery went out of business in 1932 and six years later the site was acquired by the Ministry of Defence for use as a Royal Naval Armaments Depot (RNAD). This was centred on the disused colliery and utilised the existing rail links. The depot included 132 asbestos magazines and various sheds, stores, laboratories and ancillary structures linked by a narrow gauge railway.

During the Second World War the depot was extended to cope with the extra demand. The now demolished Camerton Smallpox/Isolation Hospital was acquired and further magazines, stores, laboratories and ancillary buildings were built.

There was only one major incident during the depot's wartime service. This involved the accidental detonation of a 'Hedgehog' anti-submarine mortar round, killing eleven and wounding a further seventy.

After the War the Royal Navy continued to use the depot with few major changes until 1963, when it was transferred to the Federal Republic of Germany for the storage of naval munitions.

In 1977 the United States Navy took over the depot, using it to store munitions for their fleet in the Norwegian Sea. In 1981 it became a NATO establishment and remained so until its closure in 1992.

3 OBJECTIVES

The objectives of the archaeological assessment were to collate existing information on the archaeology of the site and as far as possible determine the survival, quality, extent and importance of any archaeological remains within the area. In particular to consider the topography and geology in order to assess the potential for prehistoric remains.

4 METHODS

4.1 Desk Based Assessment

A search was made of the Cumbria Sites and Monuments Record (SMR) and relevant maps held by the Cumbria Records Office were consulted. The search of the SMR extended to a distance of 1 km from the depot's perimeter.

4.2 Walk Over Survey

The walk over survey involved a systematic visual inspection of the depot for upstanding archaeological remains and surface indications of sites. Identified sites were recorded and, where possible, photographed.

5 RESULTS (Figure 2)

5.1 Desk Based Assessment

No listed or scheduled sites lie within the study area.

Cumbria SMR held records of a total of six sites (Table 1), including the depot itself, within the site.

Headland Number	Description	NGR	Significance
1	Railway	NY 0459 3151 –	Local

		0660 3151	
2	Colliery	NY 0435 3275	Local
3	Colliery	NY 0580 3200	Local
4	Colliery	NY 0460 3170	Local
5	Mine, ridge and furrow and tramway	NY 0700 3175	Local
6	Armaments depot	NY 0590 3170	Regional

Table 1: Cumbria SMR sites within RNAD Broughton Moor

The SMR held details of a further seven sites outside the depot that had a bearing on the archaeological potential of the land within the depot (Table 2).

Headland Number	Description	NGR	Significance
8	Standing stone	NY 0500 3330	Local
9	Deserted Medieval Village (DMV)	NY 0500 3070	Regional
10	Standing stone	NY 0528 3326	Local
11	Deserted Medieval Village (DMV)	NY 0610 3050	Regional
12	Cropmark	NY 0740 3050	Regional
13	Quarry/Settlement	NY 0590 3330	Local
14	Ridge and furrow	NY 0385 3337	Local
15	Ridge and furrow	NY 0408 3334	Local

Table 2: Cumbria SMR sites outside RNAD Broughton Moor

Three additional sites within the development area were noted on the Ordnance Survey maps. The first (Headland Site 15) is a series of strip fields in the east of the depot. This pattern of narrow fields is typical of medieval field systems and these fields probably relate to Broughton deserted medieval village. The hedges and low banks defining these fields were in fair condition, though the hedges have ceased to be maintained.

A small mound, Headland Site 16, appears on the 1864 edition, but not on later editions. A field boundary appears to be dog-legged in order to avoid it, suggesting that the mound predates the enclosure of the land and the medieval field system (Headland Site 15). This was not identified during the walk-over survey.

The third site (Headland Site 17) comprised a set of spoil heaps, a small building and a square pond. The building and pond do not appear on subsequent maps and could not be located during the walk-over survey.

Two further areas of spoil heaps were identified (Headland Sites 18 and 19) on later OS maps.

An Historic Buildings Survey of the depot was carried out by the Royal Commission on the Historical Monuments of England (RCHME) in 1997 (Thomas 1997).

5.2 Walk-Over Survey

The walk-over survey identified two previously unrecorded sites: Headland Sites 19 and 20, a sharply defined rectangular platform and a small brick and cement built furnace. Both are of limited significance and are likely to date to the late 19th Century or later.

Ridge and furrow was identified in several fields, mostly in the eastern corner of the depot (Headland Site 23).

It was not possible to effectively survey the area surrounding Camerton Grange in the west of the site, as the woodland was very dense. Similarly areas planted with conifers within the depot could not be walked due to the density of trees.

6 DISCUSSION

6.1 Statement of Significance

A total of twenty-four sites of cultural heritage interest were identified within the study area. Only the sites within the depot are considered here. Of these, twelve relate to Broughton's late 19th Century mining industry. Given their late date and the frequency of such sites these are of limited local significance.

Of the remaining sites in the depot, the medieval field system (Headland Site 15), and the ridge and furrow (Headland Site 23) are judged to be of local significance. Both these sites are not uncommon in the locality and neither are outstanding examples, having been disturbed by the construction of the depot. The possible mound's significance (Headland Site 16) cannot be assessed without intrusive evaluation.

This leaves the depot itself (Headland Site 6). This is considered to be of regional significance as the buildings within it are neither unusual nor particularly well preserved, but the depot as a whole has played a significant part in the region's post-war history.

6.2 Archaeological Potential

The earliest archaeological sites visible on the surface are medieval in date. There is

a possibility that there are sub-surface remains dating to the Romano-British and prehistoric periods. However, there is little positive evidence of activity in the area in these periods and this contrasts strongly with the area immediately to the south, between Brigham and Eaglesfield, where there have been frequent chance finds of prehistoric and Roman material. Although this may partially be due to the greater likelihood of finds being made during quarrying than mining, given the intensive occupation of the site in the 20th Century, the dearth of finds probably does reflect less intensive occupation of the area during the prehistoric period.

The west of the depot has been used for commercial forestry and it is unlikely that any archaeological deposits have remained undisturbed in these areas. More localised disturbance has been caused by the depot's buildings and infrastructure. The eastern half of the depot presents the greatest likelihood of archaeological preservation as evinced by the presence of the medieval field system and ridge and furrow. However, the lack of finds in the general area suggests that the potential for buried archaeology, even in this area, is low.

7 RECOMMENDATIONS

The sites of cultural heritage interest within the depot can be split into four categories, which are dealt with in detail below. With the exception of Site 16, no further work is recommended.

RNAD Broughton Moor: The RCHME carried out an Historic Building Survey of the depot in 1997 (Thomas 1997). In addition to the records made for this survey the MoD/Admiralty took extensive aerial photographs (APs) of the depot for camouflage testing and hold original plans and similar records. An extensive documentary and photographic record therefore exists, and no further work is recommended.

Collieries: Given their late date the collieries are adequately recorded by the OS maps and no further work is recommended.

Medieval to post-medieval ridge and furrow: These cultivation traces were recorded during the walk-over survey, appear on aerial photographs held by Cumbria SMR, and will also appear on APs held by English Heritage. No further work is recommended.

Medieval field system: The medieval field system has been extensively damaged by the depot and has been mapped by the OS. The related settlements lie outside the depot. As such no further work is recommended.

Prehistoric and Romano-British Archaeology: There is one possible site within the depot that may relate to these periods. Site 16, a mound shown on OS 1867, is respected by the field system and therefore predates it. Other than this one possible site, there is very little evidence of prehistoric activity in the area and none of Romano-British activity. This suggests that the area saw only limited activity in these periods and that the potential for unknown sites to be disturbed by development is equally limited. It is recommended that, in the event of Site 16 being threatened with

disturbance, a trial trench be excavated to ascertain the presence/absence of archaeological deposits.

8 ACKNOWLEDGEMENTS

The fieldwork was carried out by Richard Conolly and Ross Murray and managed by Simon Stronach. Laura Speed prepared the illustrations. Helena Smith of Cumbria County Council provided curatorial assistance.

APPENDIX 1: SOURCES CONSULTED

Cumbria Sites and Monuments Record

Cumbria SMR held records of a total of six sites (listed below), including the depot itself, within the site.

Cumbria SMR No. 10968:	Railway
Cumbria SMR No. 10976:	Colliery
Cumbria SMR No. 15194:	Colliery
Cumbria SMR No. 15195:	Colliery
Cumbria SMR No. 16635:	Mine, tramway and ridge and furrow
Cumbria SMR No. 17402:	Armaments depot

Of the sites listed in the surrounding area eight are judged relevant to the site. Site specific entries in the SMR such as collieries and pits that have no bearing on the archaeological potential of the study area have been omitted.

Cumbria SMR No. 781:	Standing Stone
Cumbria SMR No. 821:	Deserted medieval village
Cumbria SMR No. 845:	Standing Stone
Cumbria SMR No. 3696:	Deserted medieval village
Cumbria SMR No. 4401:	Cropmarks
Cumbria SMR No. 16640:	Quarry/settlement
Cumbria SMR No. 16698:	Ridge and furrow
Cumbria SMR No. 16699:	Ridge and furrow

Cartographic and Documentary Sources

- 1770 – 1771 Hodkinson & Donald *Cumberland*
1823 – 1824 Greenwood *Cumberland*
- 1867 Ordnance Survey *Cumberland Sheet XLV 1:10560* (Surveyed 1864)
1867 Ordnance Survey *Cumberland Sheet LIV 1:10560* (Surveyed 1864)
1900 Ordnance Survey *Cumberland Sheet XLV 1:10560* (Surveyed 1864, Revised 1898 – 9)
1900 Ordnance Survey *Cumberland Sheet LIV 1:10560* (Surveyed 1864, Revised 1898 – 9)
1926 Ordnance Survey *Cumberland Sheet XLV 1:10560* (Surveyed 1864, Revised 1923)
1926 Ordnance Survey *Cumberland Sheet LIV 1:10560* (Surveyed 1864, Revised 1923)
1949 Ordnance Survey *Cumberland Sheet XLV 1:10560* (Surveyed 1864, Revised 1923, Additions 1947)
1949 Ordnance Survey *Cumberland Sheet LIV 1:10560* (Surveyed 1864, Revised 1923, Additions 1947)

- Bewley, R.H. 1994 *Prehistoric and Romano-British Settlement in the Solway Plain, Cumbria*. Oxbow Books, Oxford
- Hutchinson, W 1797 *History of the County of Cumberland*. Jollie, Carlisle (Reprinted 1974 EP Publishing Ltd)
- Nicolson, J. & Burn, R. 1777 *The History and Antiquities of the counties of Westmorland and Cumberland*. Reprinted 1976 EP Publishing Ltd.
- Thomas, R. 1997 RNAD Broughton Moor: Historic Building Report. RCHME/English Heritage, Swindon.
- Whellan, W. 1860 *The History and Topography of the Counties of Cumberland and Westmorland*. W. Whellan & Co.
- Winchester, A.J.L. 1987 *Landscape and Society in Medieval Cumbria*. J. Donald, Edinburgh.

APPENDIX 2: SITE GAZETTEER AND CONCORDANCE

Headland Site No.	Cumbria SMR No.	Site type	NGR	Description	Date	Significance
1	10968	Railway	NY 0459 3151 – 0660 3151	Cleator and Workington railway. Embankments and three bridges survive.	19 th Century	Local
2	10976	Colliery	NY 0435 3275	Seatonmore Colliery shown on OS 1864. Also known as Buchan and Number One Pit. Spoil heaps remaining upto 2 m.	Post Medieval	Local
3	15194	Colliery	NY 0580 3200	Buckhill Colliery, first shown on OS 1900. Associated spoil heap, reservoirs, single unroofed building, coal drops and railway remain.	Post Medieval	Local
4	15195	Colliery	NY 0460 3170	Site of Greengill Pit, shown on OS 1864. Spoil heaps remain. Upto 4 m in height.	Post Medieval	Local
5	16635	Mine, ridge and furrow and tramway	NY 0700 3175	Probable mine shafts, tramways and ridge and furrow. Visible on ground (Sub-divided into Headland Sites 20, 21 & 22)	Medieval/Post-Medieval	Local
6	17402	Armaments depot	NY 0590 3170	Royal Naval Armaments Depot 1938 – 1992. Magazines laboratories, stores, light railway etc.	World War II and later.	Regional
7	781	Standing stone	NY 0500 3330	Possible site of standing stone (Recorded on OS 1864). Possibly identical to Site 9.	Unknown	Local
8	821	Deserted Medieval Village (DMV)	NY 0500 3070	Circumstantial evidence for DMV.	Medieval	Regional
9	845	Standing stone	NY 0528 3326	Possible site of standing stone. Possibly identical to Site 7.	Unknown	Local
10	3696	Deserted Medieval Village	NY 0610	Upstanding earthworks noted in 1978.	Medieval	Regional

		(DMV)	3050			
11	4401	Cropmark	NY 0740 3050	Enclosure and pit alignment appearing as cropmarks.	Unknown	Regional
12	16640	Quarry/Settlement	NY 0590 3330	Possible sub-circular settlement identified on APs. Trial excavation suggests that it is spoil from mining.	Unknown	Local
13	16698	Ridge and furrow	NY 0385 3337	Ridge and furrow identified on APs.	Post Medieval	Local
14	16699	Ridge and furrow	NY 0408 3334	Ridge and furrow identified on APs.	Post Medieval	Local
15	-	Field system	NY 0675 3150	Strip field system. Series of strip fields aligned north-west – south-east. These measure 35 – 40 m in width, though some have been merged to form larger fields. Defined by hedges and banks.	Medieval	Local
16	-	Possible mound	NY 0626 3216	Possible mound shown on OS 1864. Respected by field boundaries. No longer upstanding.	Unknown	Unknown
17	-	Spoil heaps, reservoir and building	NY 0598 3276	Mine-workings shown on OS 1864. Spoil heaps remain. Two large hollows to the north-east are likely to be associated.	Post Medieval	Local
18	-	Spoil heaps and shaft	NY 0390 3230	Spoil heaps and “Old Shaft” shown on OS 1900. Spoil heaps shown on current 1:10000, they are now forested and stand upto 1 m in height.	Post Medieval	Local
19	-	Spoil heaps	NY 0440 3225	Spoil heaps shown on OS 1900 and current 1:10000. Stand to upto 2 m in height.	Post Medieval	Local
20	-	Platform	NY 0657 3208	Sub-rectangular platform on south-east facing slope. Measures approximately 18 by 14 m and stood to a maximum height of 0.75 m. Respects adjacent track shown on OS 1864.	Unknown	Local (if any)

21	-	Furnace	NY 0548 3278	Square brick built chimneyed structure. Hatch on west facing side and open brick-work with probable stoke holes at base. 1.8 x 1.8 x 1.5 m. Possibly for incinerating gunpowder or material from Camerton Grange Smallpox/Isolation Hospital.	Post Medieval	Local (if any)
22	16635	Earthworks/spoil heaps	NY 0695 3160	Area of amorphous heaps (maximum height 0.5 m) probably relating to mining.	Post Medieval	Local (if any)
23	16635	Tramline	NY 0680 3150 – 0570 3100	Tramline visible on ground as track approximately 2 m wide. Iron reinforcing/cross-pieces occasionally visible.	Post Medieval	Local (if any)
24	16635	Ridge and furrow	Various	Ridge and furrow. Respects field boundaries and predominantly on south-east facing slopes. Wavelength of 3 – 4.5 m.	Post Medieval	Local

APPENDIX 3: PHOTO REGISTER

Film no. 1			Film Type: Colour Slide and Colour Print
Shot no.	Site	Direction Facing	Description
1	-	-	ID shot
2	-	-	Gate post
3	24	NW	Ridge and furrow
4	-	SE	Cut stones
5	-	NW	Area of cleared forestry
6	24	NW	Ridge and furrow
7	6	SW	Building
8	6	SW	Building
9	-	S	Spoil heaps
10	6	W	Building
11	6	W	Building
12	6	NE	Building
13	24	NW	Ridge and furrow
14	6	W	Building
15	6	SW	Building
16	6	SW	General
17	6	SW	General
18	6	E	General
19	-	-	Discarded
20	1	E	Bridge
21	6	W	Buildings
22	4	N	Spoilheap
23	4	W	Spoilheap
24	-	-	Discarded
25	2	NE	General
26	2	E	General
27	2	SW	General
28	17	W	General
29	6	N	Building base adjacent to Site 17
30	6	N	Building base adjacent to Site 17
31	17	N	Scoop
32	17	NW	Scoop
33	21	W	Furnace
34	21	N	Furnace
35	21	SE	Furnace
36	21	-	Working shot

Film no. 2			Film Type: Colour Slide and Colour Print
Shot no.	Site	Direction Facing	Description
1	-	-	ID shot
2	20	NW	General
3	1	SE	Embankment

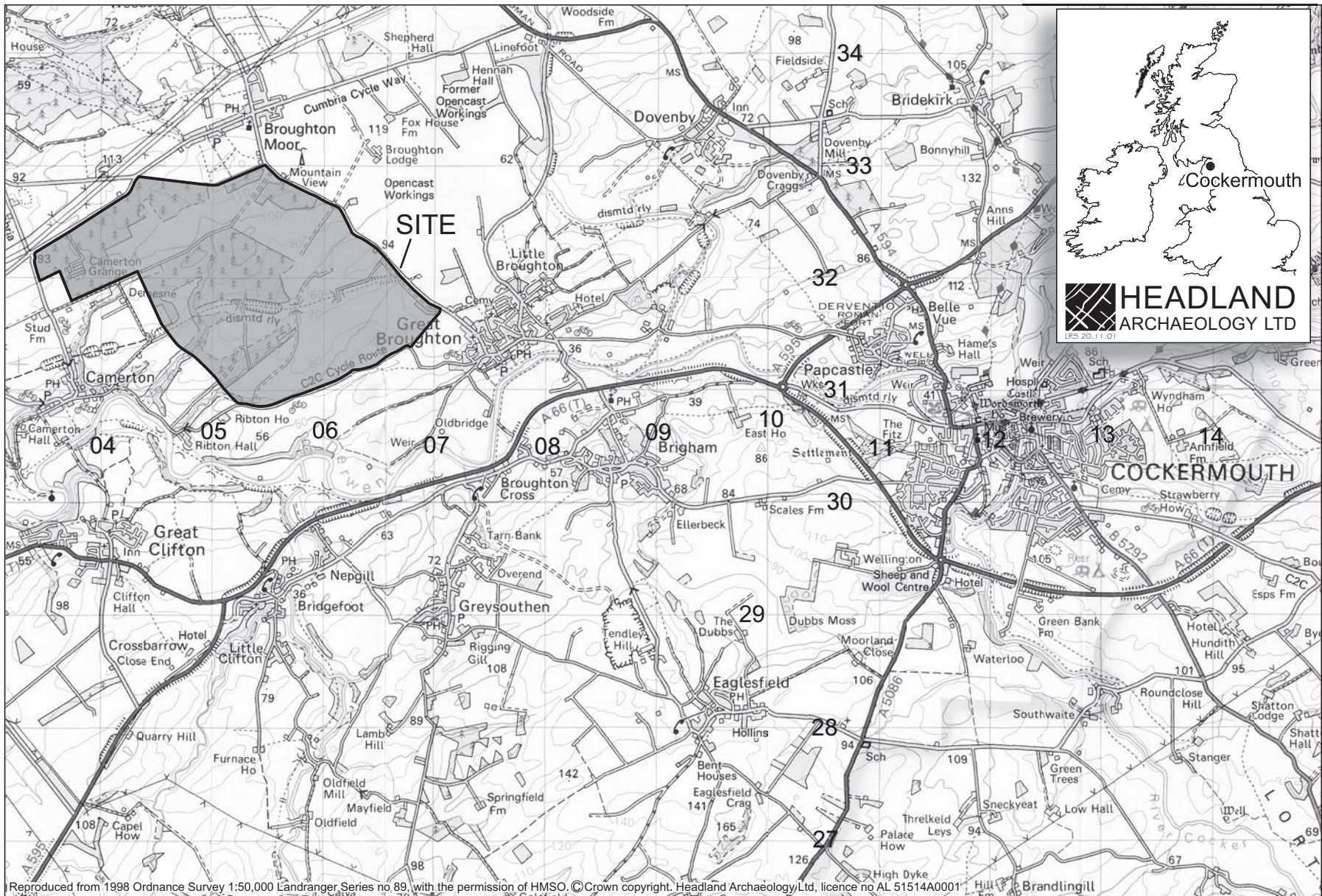
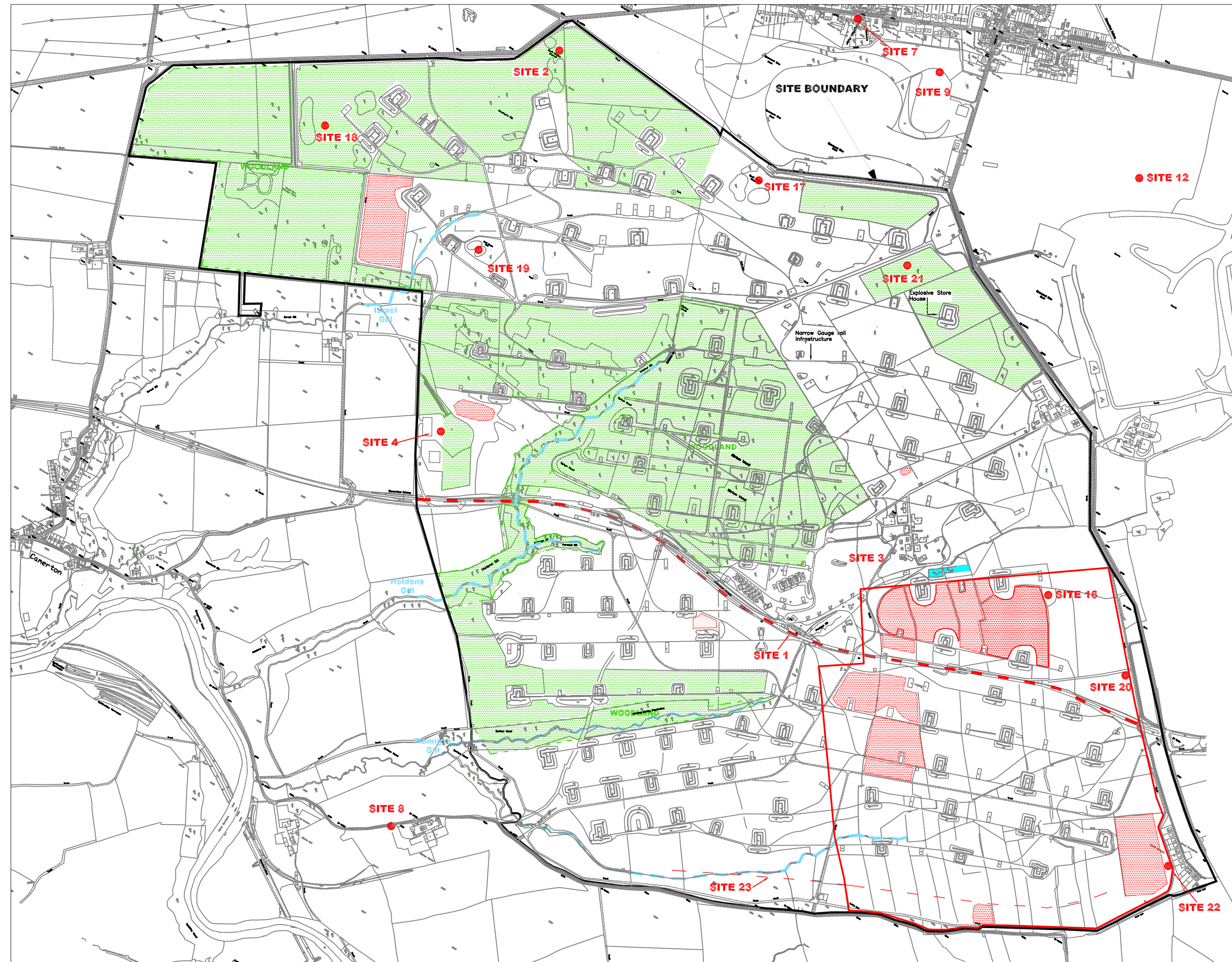







Figure 1. RNAD Broughton Moor: Site location



- KEY
-  Alignment of on-site watercourses (excluding ditches and the like)
 -  Area of forestry (including felled)
 -  Site of Cultural Heritage Interest
 -  Limit of Site 15
 -  Area of ridge and furrow (Site 24)

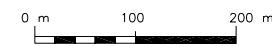


FIGURE 2:
RNAD BROUGHTON
MOOR; SITES OF
CULTURAL HERITAGE
INTEREST

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