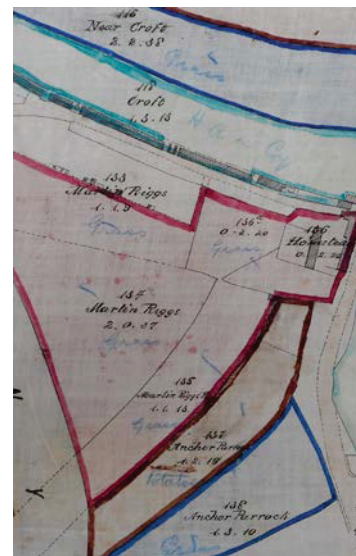


LAND OFF LONDON ROAD, LINDAL-IN-FURNESS, CUMBRIA

Archaeological Desk-Based Assessment



Client: Minerva Heritage

NGR: 325141 475647

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October 2017



Greenlane Archaeology Ltd,
Lower Brook Street,
Ulverston, Cumbria, LA12 7EE

Tel: 01229 588 500
Email: info@greenlancearchaeology.co.uk
Web: www.greenlancearchaeology.co.uk

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Non-Technical Summary

Prior to the submission of a planning application for a proposed residential development on land off London Road, Lindal-in-Furness, Greenlane Archaeology was commissioned to carry out an archaeological desk-based assessment. This examines the known and unknown archaeological resource of the surrounding area and was carried out through the examination of both primary and secondary sources, including the Cumbria Historic Environment Record. A site visit was also carried out in order to make a brief assessment of the current condition of the site and identify any potential constraints to further archaeological work.

The site comprises a triangle of land bounded by London Road to the west, the railway to the south-east and with the A590 to the north. It is in an area dominated by industrial remains of the post-medieval period primarily connected with iron mining.

The mapping evidence shows the site originally formed part of a number of fields that were gradually modified, in part due to the creation of the railway, to form the present single field. Until the mid-19th century the area was largely agricultural in nature, but it soon became heavily industrialised with extensive iron mines to the east and north and an iron ore crushing works to the north-east. The majority of the fields making up the current site were acquired or already owned by the Duke of Buccleuch by the 1870s at which point they were leased to Harrison Ainslie Company, who operated a blast furnace in Ulverston. A single mine shaft shown on a map of 1891 presumably represents their attempt to mine this land, but it clearly did not last very long. Also within the study area is an enclosure revealed in aerial photographs of arguably prehistoric origin, and the site of a Civil War battle fought in 1643, although the exact location is not known.

An assessment of the significance and potential of the site with regard both known and unknown archaeological remains suggests that although no archaeological finds or features are known from within the proposed development area, there is clearly, based on the known archaeology of the wider area, the potential for such remains to be present. These are likely to be industrial and connected to the mining and processing of iron ore in the 19th century, but earlier remains could also be present. The nature of the development would mean that any remains that were present would be adversely affected, and it is considered that the most efficient means of assessing whether anything of archaeological interest is present would be geophysical survey, although research in the archives to identifying any plans associated with a former mine shaft close to the site would also be of use.

Acknowledgements

Greenlane Archaeology would like to thank Minerva Heritage for commissioning the project, and Chris Healey at Minerva for his information about the project. Additional thanks are due to the staff of Cumbria Archive Centre in Barrow-in-Furness (CAC(B)) for help with accessing their archives and Mark Brennand, Lead Officer Historic Environment and Commons, for providing access to the information held in the Historic Environment Record.

The project was managed and carried out by Dan Elsworth and Tom Mace who also wrote the report. The illustrations were produced by Tom Mace, and the report was edited by Jo Dawson.

1. Introduction

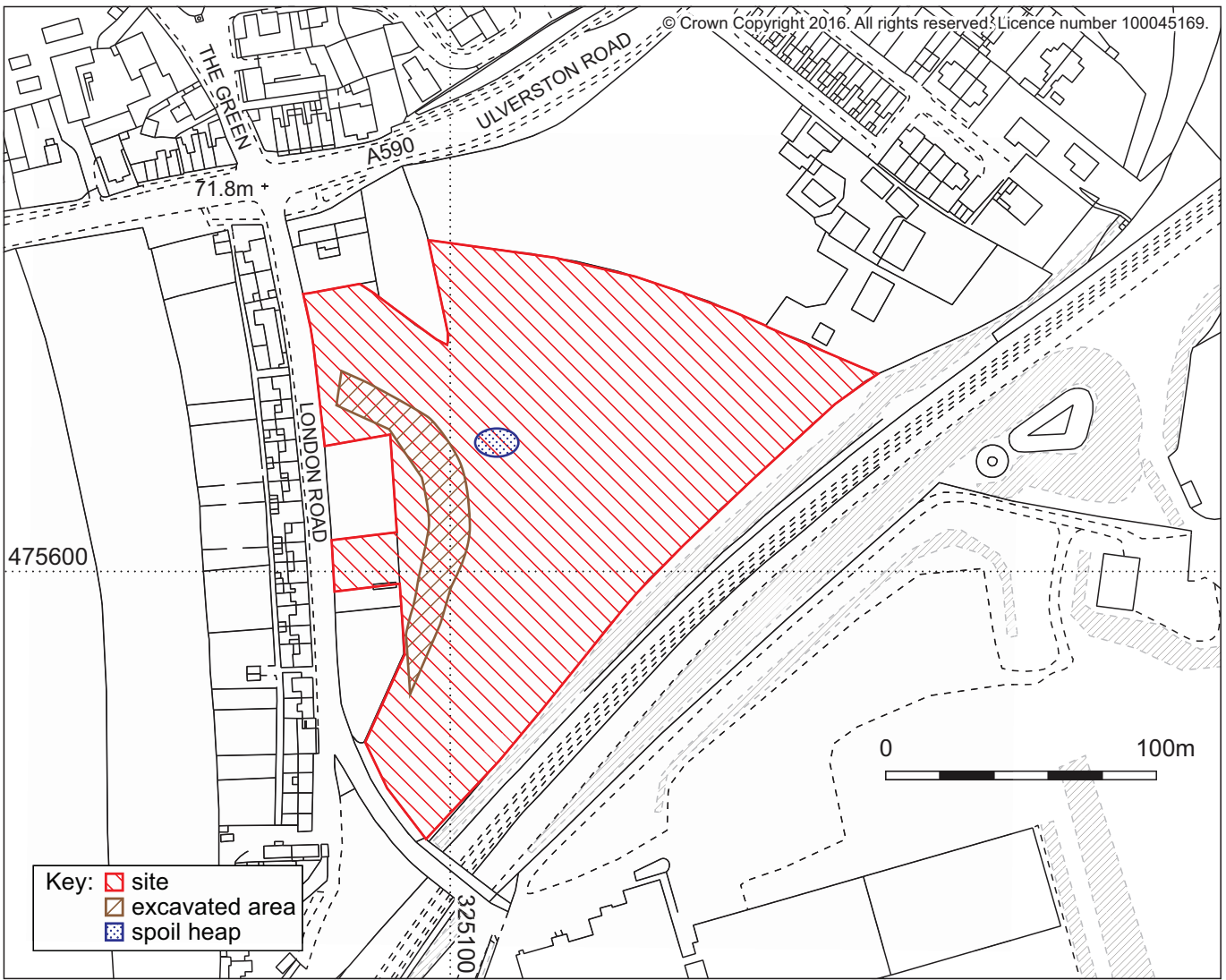
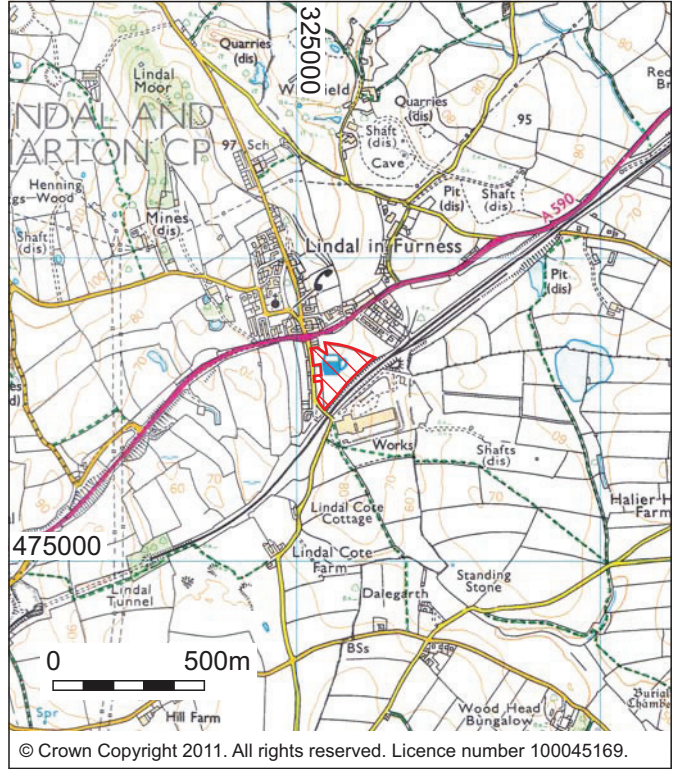
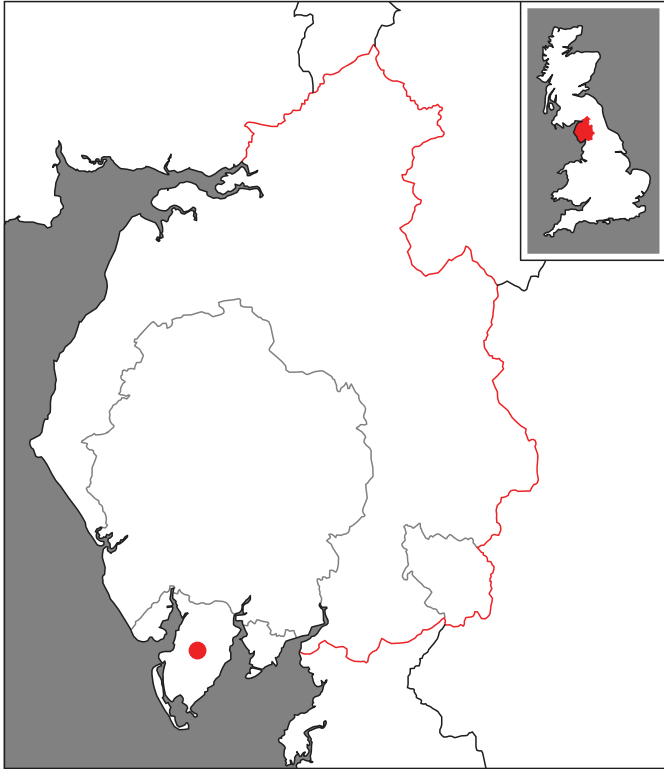
1.1 Circumstances of the Project

1.1.1 Prior to the submission of a planning application for a proposed residential development on land off London Road, Lindal-in-Furness, Cumbria (centred on NGR 325141 475647), Greenlane Archaeology was approached by Minvera Heritage (hereafter 'the client') to provide an archaeological desk-based assessment for the site. The work was undertaken in September and October 2017.

1.2 Location, Geology, and Topography

1.2.1 The site is situated to the south-east of the main part of the village of Lindal, and forms a roughly triangular area bounded by London Road and the allotments running along it on the west side, the railway on the south-east side and a smaller field to the north beyond which is the A590 running approximately north-east/south-west. The larger settlements of Dalton-in-Furness and Ulverston lie approximately 2km to the south-west and 2.5km to the north-east respectively. The site lies at approximately 60m above sea level (Ordnance Survey 2011; see Figure 1).

1.2.2 The solid geology comprises carboniferous limestone (Moseley 1978, plate 1), which is overlain by glacial deposits of boulder clay (Countryside Commission 1998, 71-72). The landscape is generally dominated by outcropping limestone, visible in places as limestone pavement (Countryside Commission 1998, 71), and while most is divided by hedges or stone walls for grazing (*op cit*, 73) much of the area immediately around the site is scarred by the effects of extensive post-medieval and earlier iron mining.



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Figure 1: Site location

2. Methodology

2.1 Desk-Based Assessment

2.1.1 The desk-based assessment was carried out in accordance with the guidelines of the Chartered Institute for Archaeologists (CIfA 2014a). This principally comprised an examination of early maps of the site and published secondary sources. A number of sources of information were used during the desk-based assessment:

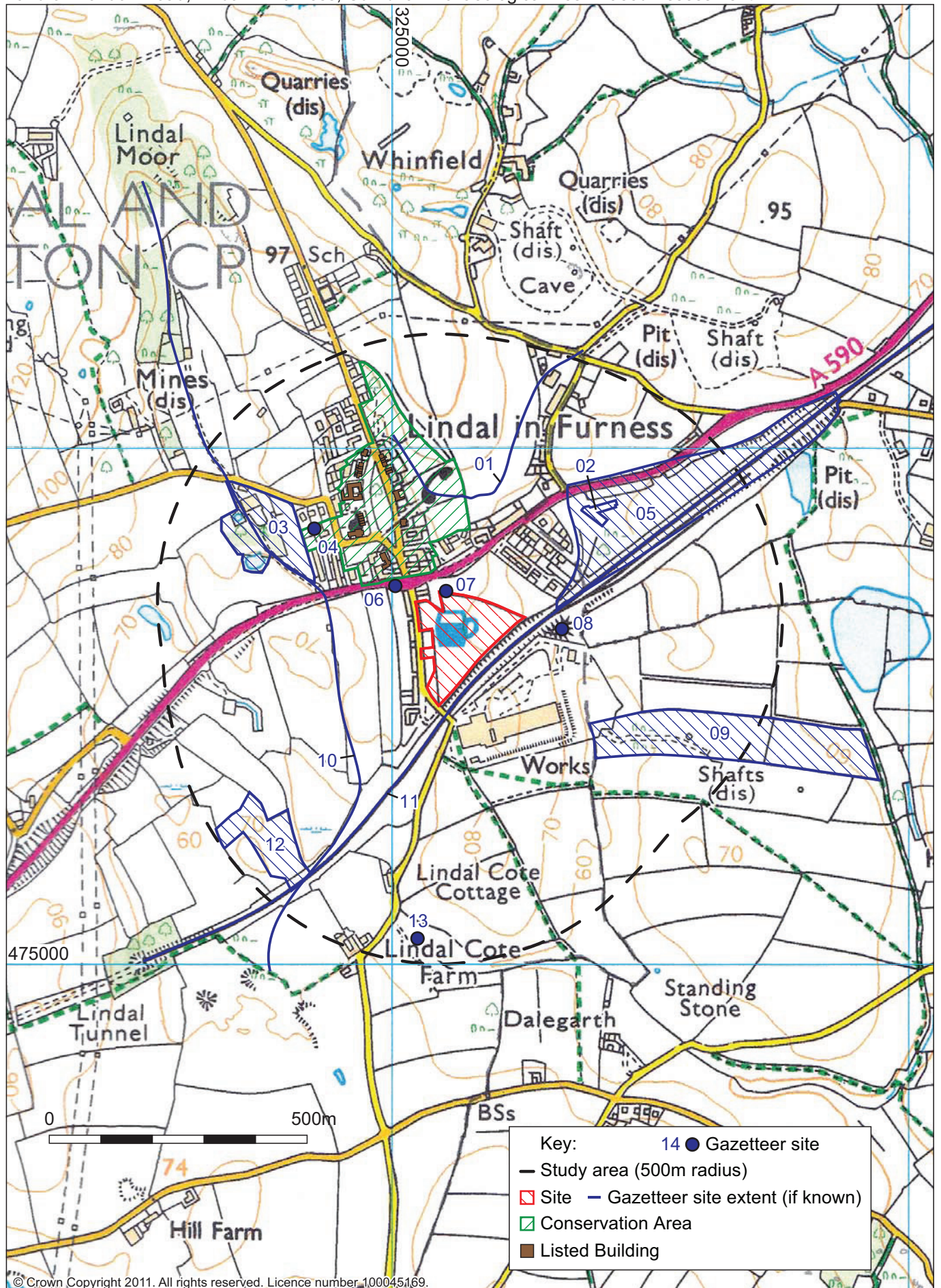
- **Cumbria Historic Environment Record (HER):** this is a list of all the known sites of archaeological interest within the county, which is maintained by Cumbria County Council and is the primary source of information for an investigation of this kind. All of the known sites of archaeological interest within approximately 500m of the proposed development were examined; each identified site comes with a grid reference, description and source and any additional information which was referenced was also examined as necessary. In addition, unpublished reports of archaeological investigations in the vicinity of the site were examined;
- **Cumbria Archive Centre, Barrow-in-Furness (CAC(B)):** primary sources, in particular Ordnance Survey and other maps, were consulted;
- **Greenlane Archaeology library:** additional secondary sources were examined to provide information for the site background.

2.2 Site Visit

2.2.1 A brief site visit was carried out on 3rd October 2017, primarily with the intention of better understanding the development of the site, but also to inform the documentary evidence revealed during the desk-based assessment. In addition, the presence of any features, finds, or deposits of possible archaeological interest were noted. Digital photographs of areas of interest were also taken, primarily for use as illustrations in this report. Any areas where there were constraints to further archaeological work were noted.

2.3 Archive

2.3.1 A comprehensive archive of the project has been produced in accordance with the project design, and current CIfA guidelines (CIfA 2014b). The paper and digital archive and a copy of this report will be deposited in the Cumbria Archive Centre in Barrow-in-Furness at a suitable time on completion of the project. A copy of this report will be provided for the client, and a copy will be retained by Greenlane Archaeology. In addition, at a suitable time a digital copy will be provided for the Cumbria Historic Environment Record, and a record of the project will be made on the OASIS scheme.



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Figure 2: Gazetteer site plan

3. Results

3.1 Introduction

3.1.1 A total of 12 sites of archaeological interest are recorded on the HER within the study area (Figure 2; summarised in Table 1 below). One further site that was not previously recorded, a mine shaft recorded on historic mapping, was also identified during the desk-based assessment (**Site 07**). Almost all of these sites are post-medieval in date; the date of the smithy (**Site 06**; HER No: 17302) is given as 'unknown', but it is almost certainly also post-medieval in date. The earthworks recorded in aerial photographs (**Site 12**) are of unknown date but are likely to range from late prehistoric to medieval. Sites included in the gazetteer that relate to periods of the study area's history are individually mentioned in the site history (see *Section 4* below).

Site No.	Type	Period	Site No.	Type	Period
01	Mineral railway	Post-medieval	08	Reservoir	Post-medieval
02	Ore store	Post-medieval	09	Mine	Post-medieval
03	Mine	Post-medieval	10	Mineral railway	Post-medieval
04	Miner's changing house	Post-medieval	11	Railway	Post-medieval
05	Gasworks	Post-medieval	12	Earthworks	Prehistoric-medieval
06	Smithy	Post-medieval	13	Battlefield	Post-medieval
07	Mine shaft	Post-medieval			

Table 1: Summary of sites of archaeological interest within the study area

3.1.2 There are also 10 Listed Buildings within the study area as outlined in Table 2. All are Listed Grade II and located around 'The Green', around which the majority of the village is situated. They are also also within the Conservation Area for Lindal which covers much of the area of Lindal-in-Furness to the north of the A590 (Figure 2).

List Entry No.	Name	Grade
1201087	High Farmhouse, 23, The Green	II
1218927	9-12, The Green	II
1218933	24-28, The Green	II
1201086	7 and 8, The Green	II
1201088	Lindal Moor farmhouse and attach farm buildings, 29, The Green	II
1218943	Bucleuch Hall, The Green	II
1218941	30-34, The Green	II
1201090	Low Farmhouse, The Green	II
1021089	Church of St Peter, The Green	II
1218949	Drigg and Irton Church farmhouse and attached barn, The Green	II

Table 2: Listed Buildings present within the study area (from north to south)

3.2 Desk-Based Assessment

3.2.1 The results of the desk-based assessment have been used to produce two separate elements. Firstly all sites of archaeological interest recorded within the study area were compiled into a gazetteer (*Appendix 1* and shown in Figure 2). The gazetteer is used to assess the general type of historic landscape that makes up the study area, contribute to the compilation of the general history of the site (see *Section 4*) and, more importantly, identify sites that are likely to be affected by the proposed development. The significance of each of these sites and the degree to which they are likely to be affected is considered in *Section 5* and from this recommendations for further work are produced.

3.2.2 The second purpose of the desk-based assessment is to produce a background history of the site. This is intended to cover all periods, in part to provide information that can be used to assess the potential of the site (particularly for the presence of remains that are otherwise not recorded in the study

area), but more importantly to present the documented details of any sites that are known (see Section 4).

3.3 Map and Image Regression

3.3.1 **Introduction:** although there are early, typically county-wide, maps that include the area, they are generally very small scale and are not included in this section as they are not detailed enough to be useful in understanding the development of the proposed development site. The most useful maps for understanding the development of the site date from the mid-19th century onwards.

3.3.2 **Tithe map, 1842:** Lindal and Marton are within the parish of Dalton. The tithe map for the area shows that the site lies to the south of the main east/west road through Lindal and to the east of the main north/south thoroughfare (CAC(B) BPR/1/1/3/1/2 1842; Plate 1). The proposed development area occupies parts of three fields, numbered B36, B38 and B39, details of which are recorded in the accompanying schedule (CAC(B) BPR/1/1/3/1/1 1842; summarised in Table 3). None of these names suggest anything of archaeological interest, although plots B34 and B35, which are just outside the proposed development area, are both named 'Anchor Parrock' – while the origin of this is uncertain and it might perhaps relate to the presence of a smithy making anchors nearby or even land belonging to Anchorites, the public house to the north is called the Anchor Inn and so they presumably belonged to it, although it is not known which was named first.

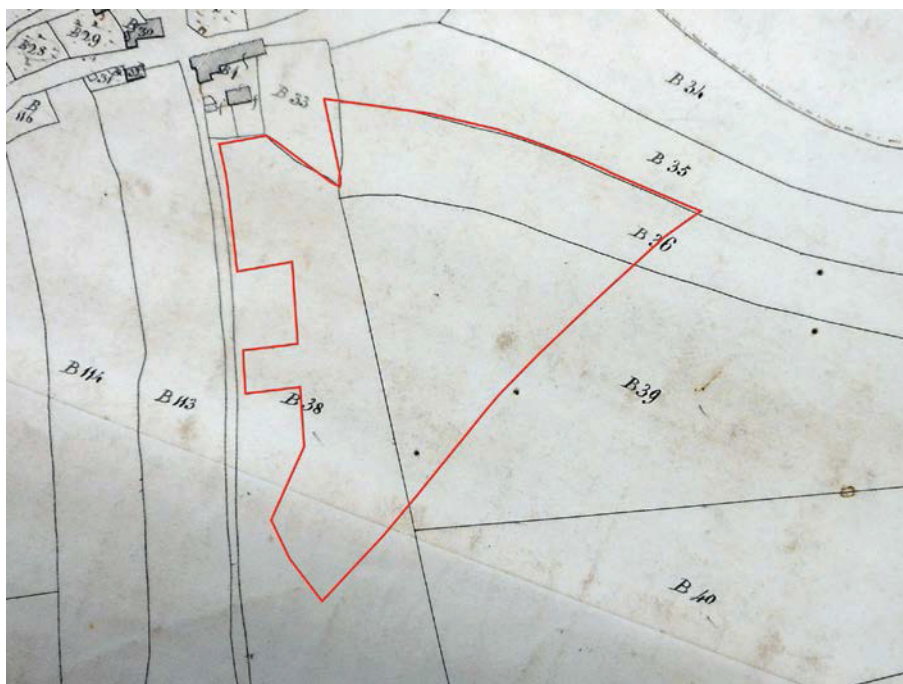


Plate 1: Extract from the tithe map of 1842 (CAC(B) BPR/1/1/3/1/2 1842)

No.	Name	Owner	Occupier	Description
B36	Marton Rigg Parrock	William Atkinson Trustees	William Atkinson	Arable
B38	Marton Rigg	George Huddleston	Thomas Ashburner	Arable
B39	Marton Rigg	George Huddleston	Thomas Ashburner	Arable

Table 3: Details extracted from the tithe schedule for Lindal, 1842 (CAC(B) BPR/1/1/3/1/1 1842)

3.3.3 **Ordnance Survey, 1850:** this is the earliest available detailed plan of the site (Plate 2). It shows much the same information as the tithe map; however, a small area appears to be fenced off in the corner of the east/west field at the north end of the site and there is a track across the centre of the area, aligned approximately east/west at its west end until approximately midway across the area at which point it turns to the south-east (Plate 2; cf. Plate 1).



Plate 2: Extract from the Ordnance Survey map of 1850

3.3.4 **Plans, 1874:** plans showing land purchased, apparently by the Duke of Buccleuch, from Pennington Church (CAC(B) BD/BUC/39/44 1874) and Drigg and Irton Church (CAC(B) BD/BUC/40/3/32 1874) do not show the site (Plate 3 to Plate 5). The numbering of nearby fields, prefixed 'B' (see for example Plate 3 and Plate 5), seems to replicate those used on the tithe map (Plate 1). The numbering of the field to the north of the area on one of the maps (138; Plate 4) is also consistently used later on in plans showing ownership (e.g. Plate 7 to Plate 10). The arrangement of fields to the north of the area is unchanged from the Ordnance Survey map of 1850 and the route of the north/south road to the west of the site also remains the same (Plate 2). The route of the road to the west side of the site changes later, presumably with the construction of the railway the approximate route of which is marked on one of the plans (Plate 3).

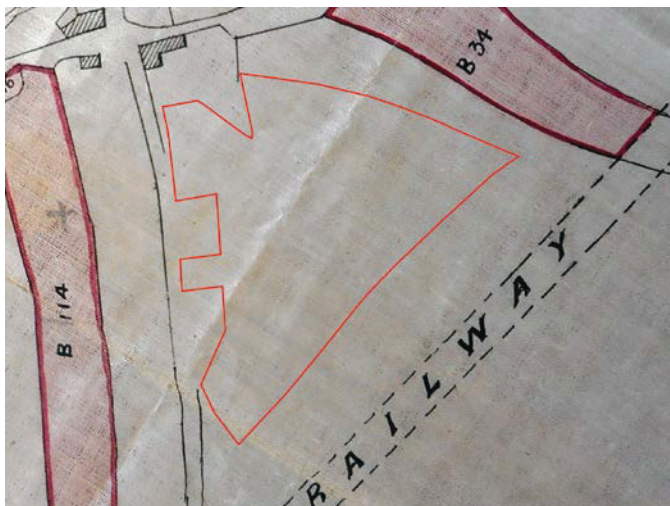


Plate 3: Extract from *Plans Showing Lands Purchased from Pennington Church of 1874* (CAC(B) BD/BUC/39/44 1874), showing the line of railway

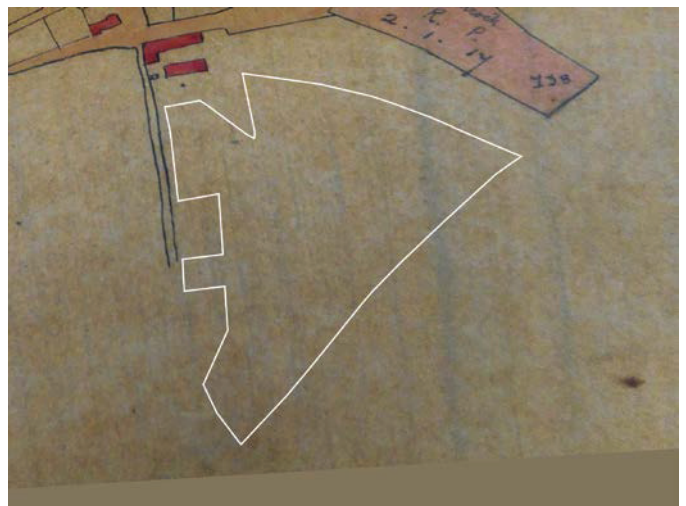


Plate 4: Extract from *Plans Showing Lands Purchased from Pennington Church of 1874* (CAC(B) BD/BUC/39/44 1874)



Plate 5: Extract from Plan Showing Land Purchased from Drigg & Irton Church (CAC(B) BD/BUC/40/3/32 1874)

3.3.5 Estate in the Division of Lindal and Martin in the Parish of Dalton in Furness Belonging to Drigg and Irton Churches, undated (?1850-1874): this undated map shows a similar arrangement of fields at the site as the Ordnance Survey map of 1850, although the small possibly fenced off area in the east/west field at the north end of the site is not shown (Plate 6; cf. Plate 2). The numbering of nearby fields seems to use the one used on ownership and 'purchased land' plans of the 1870s, so it seems likely that this map dates from around then (e.g. Plate 8). The east/west division across the field to the west side of the area is not shown and the route of the road to the west has also not be changed to cross the railway yet, so it probably dates from before 1878 (Plate 6; cf. Plate 8).

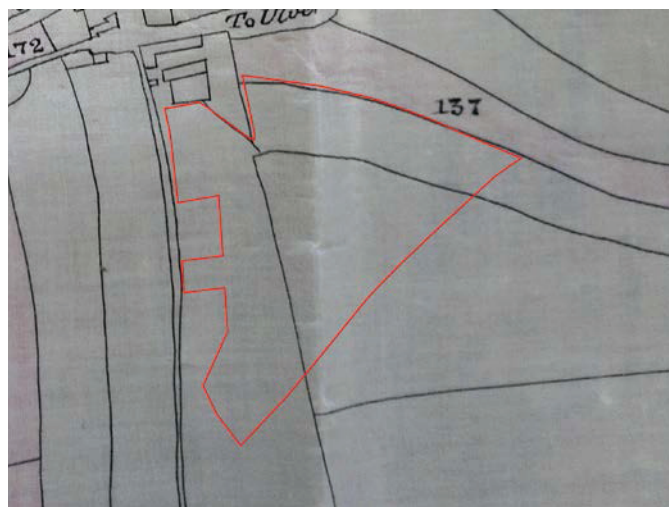


Plate 6: Extract from Estate in the Division of Lindal and Martin in the Parish of Dalton in Furness Belonging to Drigg and Irton Churches (CAC(B) BD/BUC/39/43 nd)

3.3.6 Plan Showing Mines, Acreages, Field Names, Crops, Owners at Lindal, c1870 (after 1874): the route of the north/south road through Lindal has changed on this map relative to the maps of 1874 (Plate 7; cf. Plate 5). On later maps, including those from 1878, the road curls around the south-west end of the area (e.g. Plate 8), and on the Ordnance Survey map of 1891 it is clear that the route of the road bends before it crosses the railway (cf. Plate 11). All of the fields are now named 'Martin Riggs' at this time (CAC(B) BD/BUC/40/3/47 c1870), mirroring the name first recorded in the tithe map (see Section 3.3.2 above). The site occupies parts of plots 133, 134, 135 and 136a all of which are named 'Martin Riggs' (136a has no name but is evidently belongs to the homestead shown to the north-west of the site) to the north-west side of a large swathe of land owned by the railway company, which represents the line of the railway. The area which appeared to be possibly fenced off on the 1850 edition of the Ordnance Survey mapping is clearly marked as a building on this plan (to the north-west corner of plot 135) and,

although it is slightly obscured by writing, a collection of small buildings are also shown in the square section (inside the white area) to the west side of the site (Plate 7; cf. Plate 2).



Plate 7: Extract from *Plan Showing Mines, Acreages, Field Names, Crops, Owners at Lindal of c1870* (CAC(B) BD/BUC/40/3/47 c1870)

3.3.7 **Plan of 1878:** two slightly later plans of the site demonstrate that the land purchased by the Duke of Buccleuch (Plate 8 and Plate 9)) was subsequently leased to Harrison Ainslie and Company, who owned the iron furnace at Newland near Ulverston (Goodall 2001). These show essentially the same information as the plan of c1870 (cf. Plate 7).

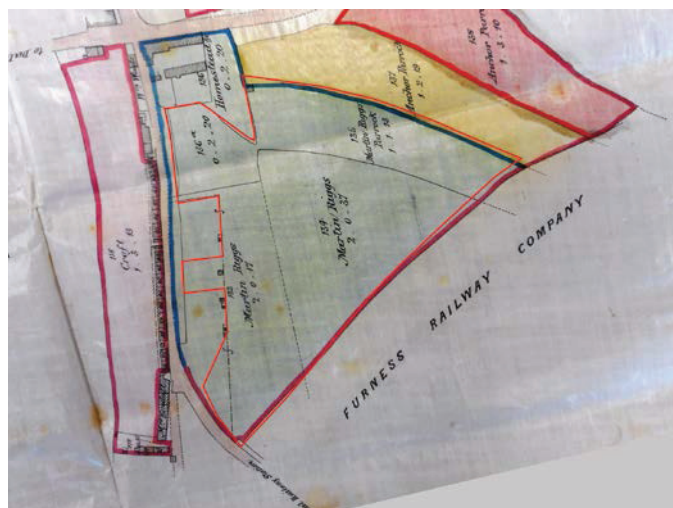


Plate 8: Extract from *Plan of Lands at Lindal the Property of his Grace Duke of Buccleuch of 1878* (CAC(B) BD/BUC/39/28 1878)

Plate 9: Extract from *Plan of Harrison Ainslie and Coy's Royalty of 1878* (CAC(B) BD/BUC/40/5/23 1878)

3.3.8 **Lindal Village, Acreages, Field Names, Ownership, c1880:** the small building at the north end of the area shown on the plans of the area in 1878 is not shown on this plan (Plate 10; cf. Plate 9). Otherwise the site remains unchanged. The name 'Walker' has been pencilled over field 134, so it has perhaps changed ownership by this point. This presumably applied to all of the area coloured in red.

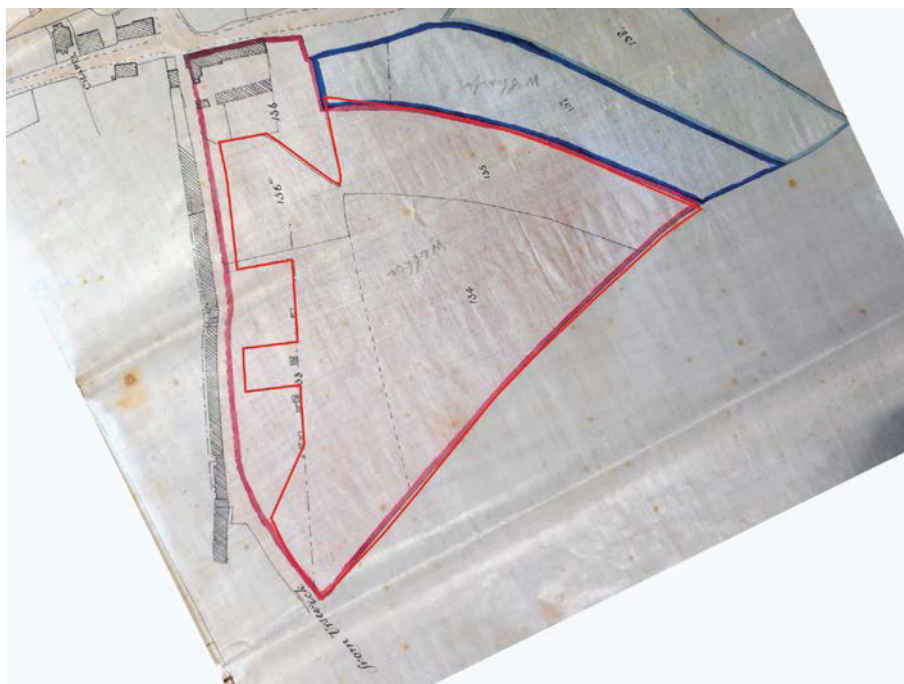


Plate 10: Extract from ‘Lindal Village, Acreages, Field Names, Ownership’ plan of c1880 (CAC(B) BD/UC/40/1/6 c1880)

3.3.9 **Ordnance Survey, 1891:** there have been some changes to the field boundaries by this point and the full extent of the railway is marked, which effectively delimits the south-east edge of the site (Plate 11; cf. Plate 2). An ‘Old Shaft’ (**Site 07**) is marked close to the north edge of the area, near what appears to be a small fenced off area where a building has previously also been shown.

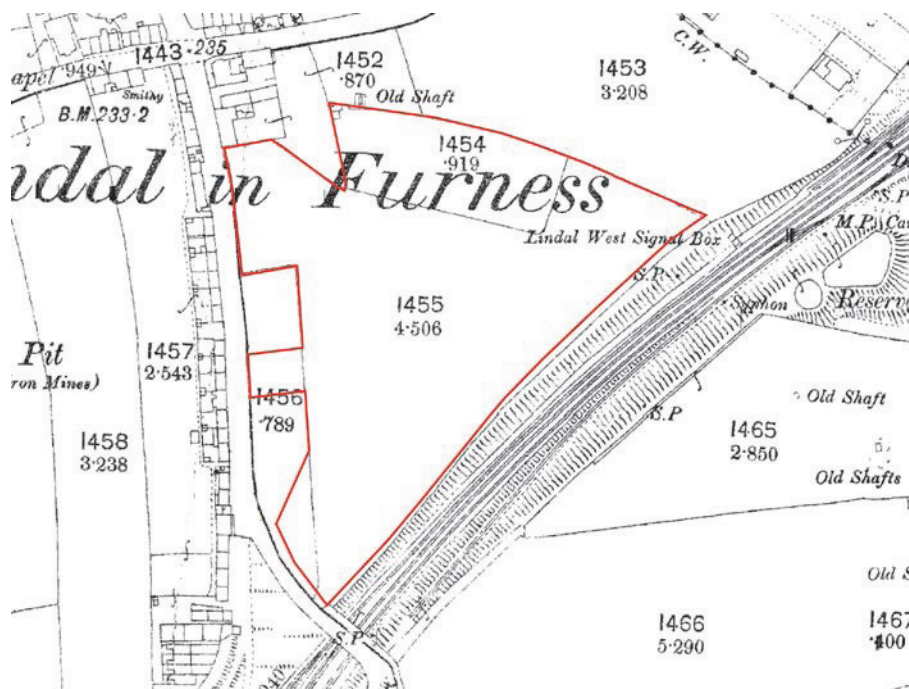


Plate 11: Extract from the Ordnance Survey map of 1891

3.3.10 **Ordnance Survey 1913:** very little has changed between this edition and the 1891 edition of the Ordnance Survey mapping (Plate 12; cf. Plate 11).

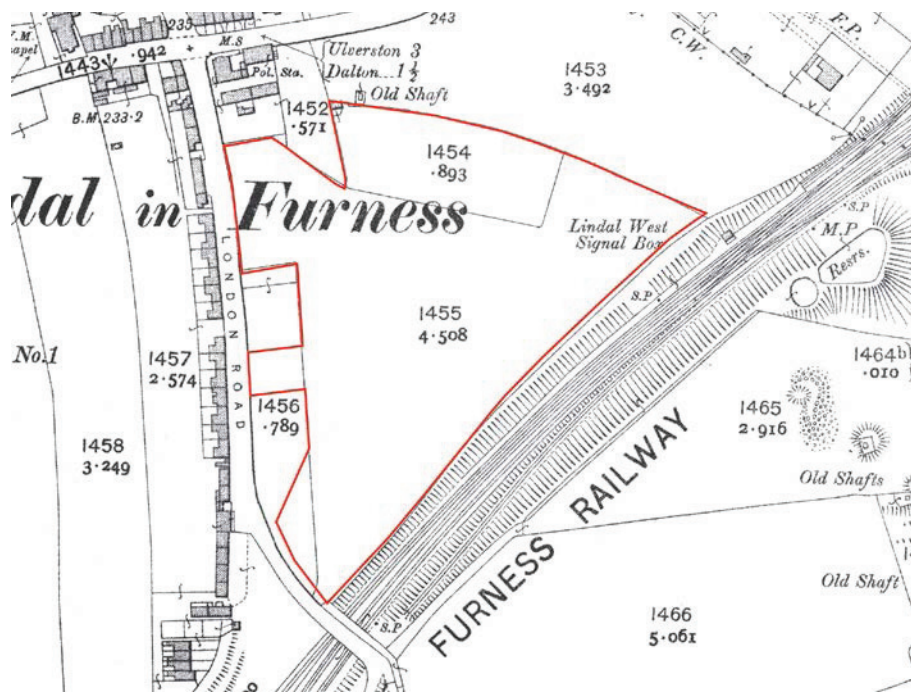


Plate 12: Extract from the Ordnance Survey map of 1913

3.4 Aerial Photographs

3.4.1 Only a single collection of useful aerial photographs of the study area was present in the HER. These were used to identify the earthwork enclosure (**Site 12**) and associated ridge and furrow (CCC 1979).



Plate 13: Earthwork enclosure visible in an aerial photograph, overlain by ridge and furrow (CCC 1979)

3.5 Previous Archaeological Work

3.5.1 No previous archaeological work is recorded within the study area.

3.6 Site Visit

3.6.1 **Site Arrangement and Character:** the site now comprises a single large field, rising up from London Road to the west behind the allotments (Plate 14). It is currently improved grassland, presumably cut for silage or used as pasture (Plate 15). It is bounded by a stone wall to the west along the edge of the allotments, a section of which extends from the north end diagonally to the north-west into the proposed development area (Plate 16). Elsewhere the field is defined by hedges with or without post and wire fences. Access is via a gateway in the north end of the west boundary off London Road (Plate 17).



Plate 14 (left): General view of the site from the south-west



Plate 15 (right): General view of the site towards the north-west corner



Plate 16 (left): The section of wall in the north-west corner, viewed from the east



Plate 17 (right): The gateway from London Road, viewed from the west

3.6.2 **Constraints:** along the east side of the allotment boundary the ground had apparently been cut away, forming a shallow area, approximately 0.5m deep, running almost the full length of the wall approximately 10m wide (Plate 18). Immediately east of the north-east corner of the allotment boundary there was a large pile of dumped material, perhaps spoil from the excavation carried out along the wall (Plate 19). In addition it was apparent that some geotechnical test pits had recently been excavated prior to the site visit.



Plate 18 (left): The excavated area along the east side of the allotment boundary, viewed from the north-west

Plate 19 (right): The pile of material dumped in the north-west corner, viewed from the north-east

4. Site History

4.1 Introduction

4.1.1 In order to place the proposed development site in its historical background and archaeological context a brief discussion of the earlier history of its environs is necessary. Information relating to specific sites recorded during the desk-based assessment (see *Section 3* above) is included where relevant.

4.2 Prehistoric Period (c11,000 BC – 1st century AD)

4.2.1 While there is limited evidence for human activity in the county in the period immediately following the last Ice Age, what there is has been found in the southernmost part, on the north side of Morecambe Bay. Excavation of a small number of cave sites has found the remains of animal species common at the time but now extinct in this country and artefacts of Late Upper Palaeolithic type (Young 2002).

4.2.2 The county was clearly more densely inhabited during the following period, the Mesolithic (c8,000 – 4,000 BC), as large numbers of artefacts of this date have been discovered during field walking and eroding from sand dunes along the coast (Cherry and Cherry 2002). Coastal areas and river valleys are notably places where such material is frequently found in the wider region (Middleton *et al* 1995, 202; Hodgkinson *et al* 2000, 151-152; Hodgson and Brennand 2006, 26) and in the area around Morecambe Bay there is generally quite plentiful evidence for activity in this period (Elsworth 1998).

4.2.3 In the following period, the Neolithic (c4,000 – 2,500 BC), large scale monuments such as burial mounds and stone circles begin to appear in the region and one of the most recognisable tool types of this period, the polished stone axe, is found in large numbers across the county, having been manufactured at Langdale in the central Lake District (Hodgson and Brennand 2006, 45). Remains other than monumental structures or stray finds are generally rare but in Furness a number of sites have now been found containing evidence of what might be settlement remains of this date, including two groups of features in the Roose area (Headland Archaeology 2001; OA North 2002) and substantial remains at Stainton Quarry (Matt Town pers comm). In addition, flint finds of various dates, including the Neolithic, have been found during ploughed field walking from the wider area around the site (Evans 2008).

4.2.4 During the Bronze Age (c2,500 – 600 BC) monuments, particularly those thought to be ceremonial in nature, become more common still (see Barrowclough 2010, 105-191), although settlements start to become more readily identified during this period, many of which probably continued to be occupied into the Iron Age and beyond. Stray finds of Bronze Age date are found throughout the county, often deliberately deposited in wetland areas (*op cit*, 169-191).

4.2.5 As mentioned above, it is likely that settlement sites thought to belong to the Iron Age have their origins in this period, although few have been studied in enough detail to ascertain this with any certainty. Sites of this type are recorded typically as crop marks revealed in aerial photographs but they are usually undated and little understood. The classic site of the Iron Age is the hillfort, and while these are not well represented in the immediate area, there was possibly one at what is now the site of a park on the edge of Barrow, and there are others recorded in the local area, for example on Hoad hill near Ulverston (Elsworth 2014), and Skelmore Heads near Urswick, although evidence for activity in the Neolithic was also associated with the latter (Powell *et al* 1963). There is likely to have been a considerable overlap between the end of the Iron Age and the beginning of the Romano-British period and it is evident that in this part of the country, initially at least, the Roman invasion had a minimal impact on the native population in rural areas (Philpott 2006, 73-74). Stray finds are rare from this period, although beehive querns of either Iron Age or Roman date are found fairly frequently in the wider area and were probably made near Urswick (Ingle 1987).

4.2.6 No finds or sites of definite prehistoric date are recorded within the study area, although the earthwork enclosure recorded through aerial photography (**Site 12**) is potentially prehistoric in origin.

4.3 Romano-British to Early Medieval Period (1st century AD – 11th century AD)

4.3.1 There have been occasional finds of Roman coins from the general area (e.g. Shotter 1989), but evidence has yet to be confirmed of settlement in the area from the period. There has been discussion about the likelihood of Roman military occupation in the Cartmel and Furness Peninsulas for some time, and although a good case can be made for a Roman presence the evidence for it is limited and not yet proven (see Elsworth 2007). What is of note is that of the various finds of Roman date that have been discovered in the area, many came from the vicinity of Furness Abbey and Dalton-in-Furness.

4.3.2 The early medieval period is not well represented in the area in terms of physical archaeological remains, which is a common situation throughout the county. The local area as a whole has a complex mixture of place-names of Celtic British, Anglian (Old English), and Norse type suggesting that the early medieval period was a time of dynamic and rapid population change (Edmonds 2013). However, physical evidence for settlement of this date is very limited. Many local place-names demonstrate the mixture of Anglian and Norse influence, such as Dalton, while others, such as Roose and Leece, suggest the late survival of British people (Ekwall 1922; Coates and Breeze 2000, 317). The name 'Lindal' is considered to derive from the Old English *lind* for lime tree and the Norse *dalr* meaning valley (Ekwall 1922, 199 and 207) and so was clearly an area occupied in the early medieval period, although it is possible that the first element was in fact in reference to the growing of flax for the production of linen.

4.3.3 No finds or sites of Romano-British or early medieval date are recorded within the study area, although the earthwork enclosure recorded through aerial photography (**Site 12**) was potentially occupied during the Romano-British period.

4.4 Medieval Period (11th century AD – 16th century AD)

4.4.1 A settlement at Lindal certainly existed in the medieval period proper as it is recorded several times from the beginning of the 13th century onwards (Ekwall 1922, 207). It was at that time a grange of Furness Abbey, although its size is not known. Furness Abbey was founded by Stephen, Count of Boulogne and Mortain, later king of England. In 1124 he gave a site at Tulketh, Preston, to monks of the Savignac order, before granting them land in Furness in 1127 at which point they established a monastic house there (see Farrer and Brownbill 1914 for the following description of the Abbey's history and development). By 1147 the Savignac order had been incorporated into the Cistercian tradition making Furness Abbey the first Cistercian house in England, and further expansion of the site began. The remains of the Savignac monastery are still present above and below ground as well as the more extensive Cistercian monastery, as revealed during recent excavation work carried out as part of recent stabilisation work (Jeremy Bradley pers comm). The monastery grew in prosperity, and at the time of its dissolution in 1537 it was the second richest Cistercian monastery in England. The Abbey had acquired extensive property in the Lake District, Yorkshire, and Lincolnshire and the deep-water port at Piel allowed access and trade with the Isle of Man and Ireland. Sheep farming played an important part in the Abbey's growing wealth, due to the price of wool, as did the continued exploitation of the Furness iron ore deposits, which paved the way for the region's post-medieval development.

4.4.2 No sites or finds of medieval date are recorded within the study area, although some of the earthworks, the ridge and furrow, associated with the enclosure (**Site 12**) are considered to be perhaps of this period.

4.5 Post-medieval Period (16th century AD – present)

4.5.1 After the Dissolution, Furness Abbey was seized by the crown and the land was subsequently granted to the king's minister Thomas Cromwell; two years later it was passed to Sir Thomas Curwen the head of a leading local family (Farrer and Brownbill 1914, 311). Thomas Curwen passed the property to his son-in-law John Preston, and in 1671 the then owner Thomas Preston built a mansion house on the grounds. The effect of the Dissolution on the associated but outlying settlements such as the granges is uncertain, but many evidently survived and became small farms or even hamlets, including Lindal. Throughout the post-medieval period the area's importance as a source of iron ore grew, although the area immediately around Lindal was apparently not exploited as early as some places.

Nevertheless, a large mine, known as Bercune (**Site 09**) was in operation from the middle of the 19th century and Backguards Pit (**Site 03**) was established in the 1880s. A single mine shaft is marked on the Ordnance Survey map of 1891 just to the north of the proposed development area (**Site 07**); it is not known whether this formed part of one of the larger mine complexes nearby as no further plans were identified. However, it was clearly disused by 1891 and was presumably established by the Harrison Ainslie Company following its leasing of land in this area in the 1870s (see *Section 3.3.4* to *3.3.8*). There were other large mines in the Whitriggs area to the north of Lindal that were served by mineral railways passing through the study area (**Sites 01** and **10**) and a number of other structures relating to iron mining are also recorded (**Sites 02** and **04**). Later an extensive iron ore crushing works was created (**Site 02**), partly on the site of the Backguards Pit, which also incorporated a gas works (**Site 05**).

4.5.2 With the exception of the various features relating to the iron mines already mentioned there are two other sites of post-medieval date within the study area, both of which are also connected to the local iron mines; a smithy (**Site 06**) and a reservoir (**Site 08**). More unusual is the site of the Civil War battle (**Site 11**), fought in 1643 near Lindal Cote, although the exact location is uncertain.

5. Discussion

5.1 Introduction

5.1.1 The discussion of the results of the desk-based assessment is in part intended to determine the archaeological significance and potential of any known remains (above or below ground) and the potential for any as yet unidentified remains being present. The system used to judge the significance of the remains identified within the development area, or those thought to have the potential to be present within the development area, is based on the criteria used to define Scheduled Monuments (DCMS 2013, Annex 4; *Appendix 2*). Of the 13 sites of archaeological interest identified within the study area, only one (**Site 07**) is situated close enough to the site to be likely to be affected by any development proposals, although the details of these are, as yet, not determined. However, the proposed development area is situated in an area of known archaeological interest, so there is clearly potential for further remains of archaeological interest to be discovered, which are otherwise unknown at present.

5.2 Significance of Known Resource

5.2.1 No known sites of archaeological interest lie within the proposed development area, although a former mine shaft (**Site 07**) lies immediately to the north of its boundary.

5.2.2 There are a 10 Listed Buildings within the study area, all of which are Listed Grade II. These are all considered to be of local significance and are statutorily protected.

5.3 Potential for Unknown Archaeological Remains

5.3.1 Details of the archaeological remains present within the study area are presented in the results of the desk-based assessment (*Section 3*; *Figure 2*; *Appendix 1*). The potential for as yet unidentified archaeological remains to be present, however, is based on the known occurrence of such remains in the study area and also in the local environs (see *Section 4*). Where there are no remains known within the study area the potential is based on the known occurrence within the wider local area. The degree of potential is examined by period and the results are presented in Table 4 below; in each case the level of potential is expressed as low (L), medium (M), or high (H):

Period	Present in study area?	Potential
Late Upper Palaeolithic	N	L
Mesolithic	N	L
Neolithic	N	L
Bronze Age	N	L
Iron Age	N	L
Roman	N	L
Early Medieval	N	L
Medieval	Y?	M
Post-medieval	Y	H

Table 4: Degree of potential for unknown archaeological remains by period

5.4 Disturbance

5.4.1 While the area surrounding the site has clearly seen some disturbance as a result of extensive iron mining, primarily during the late 19th and early 20th centuries, the proposed development area was apparently not as directly affected, although there was a shaft immediately adjoining the north boundary (**Site 07**). However, the land within the proposed development area has clearly been improved and so will have been ploughed in the past.

5.5 Impact

5.5.1 Given the scale of the site and the need to modify existing ground levels, any deposits, features, or structures of archaeological interest that might be present on site would be likely to be adversely affected.

5.5.2 Of the 10 Listed Buildings recorded within the study area none are likely to be directly affected by any proposed development of the site as they are all located on the opposite side of the A590 within the village of Lindal itself.

5.6 Conclusion

5.6.1 It is clear from the preceding sections that while there are no known sites of archaeological interest within the proposed development area, there is potential for archaeological remains to be present within the site, especially those of relating to the iron mining carried out in the area in the post-medieval period. The extent of these could only be determined by further investigation, the most efficient method of which would be geophysical survey. Further research in the archives might also reveal additional plans showing the extent of any mines associated with the shaft (**Site 07**) although none were identified during the research carried out for this report.

6. Bibliography

6.1 Primary and Cartographic Sources

CAC(B) BD/BUC/39/28, 1878 *Plan of Lands at Lindal the Property of his Grace Duke of Buccleuch*

CAC(B) BD/BUC/39/43, nd *Estate in the Division of Lindal and Martin in the Parish of Dalton in Furness Belonging to Drigg and Irton Churches*

CAC(B) BD/BUC/39/44, 1874 *Plans Showing Lands Purchased from Pennington Church*

CAC(B) BD/BUC/40/1/6, c1880 *Lindal Village, Acreages, Field Names, Ownership*

CAC(B) BD/BUC/40/3/21, 1874 *Plan Showing Land Purchased from Drigg & Irton Church*

CAC(B) BD/BUC/40/3/26, nd *Plan of Crossroads at Lindal with Police Station*

CAC(B) BD/BUC/40/3/47, c1870 *Plan Showing Mines, Acreages, Field Names, Crops, Owners at Lindal*

CAC(B) BD/BUC/40/5/23, 1878 *Plan of Harrison Ainslie and Coy's Royalty*

CAC(B) BPR/1/1/3/1/1, 1842 *Apportionment of the Rent-Charge in Lieu of Tithes in the Parish of Dalton-in-Furness in the County of Lancaster*

CAC(B) BPR/1/1/3/1/2, 1842 *Plan of the Township or Division of Lindal and Marton in the Parish of Dalton and County of Lancaster*

Ordnance Survey, 1850 *Lancashire Sheet 16*, 1: 10,560, surveyed 1846-1847

Ordnance Survey, 1891 *Lancashire Sheet 16.10*, 1: 2,500, surveyed 1888-1889

Ordnance Survey, 1913 *Lancashire Sheet 16.10*, 1: 2,500, revised 1910

Ordnance Survey, 2011 *The English Lakes South-Western Area: Coniston, Ulverston & Barrow-in-Furness*, **OL6**, 1: 25,000

6.2 Secondary Sources

Chartered Institute for Archaeologists (CIfA), 2014a *Standard and Guidance for Historic Environment Desk-Based Assessment*, revised edn, Reading

CIfA, 2014b *Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives*, revised edn, Reading

Cherry, PJ, and Cherry, J, 2002 Coastline and Upland in Cumbrian Prehistory – A Retrospective, *Trans Cumberland Westmorland Antiq Archaeol Soc*, 3rd ser, **2**, 1-20

Countryside Commission, 1998 *Countryside Character, Volume 2: North West*, Cheltenham

Department for Culture Media and Sport (DCMS), 2013 *Scheduled Monuments and Nationally Important but Non-Scheduled Monuments*, <https://content.historicengland.org.uk/content/docs/guidance/scheduled-monuments-policy-statement-dcms>

Edmonds, F, 2013 The Furness Peninsula and the Irish Sea Region: Cultural Interaction from the Seventh Century to the Twelfth, in C Downham (ed), *Jocelin of Furness: Essays from the 2011 Conference*, Donnington, 17-44

Ekwall, E, 1922 *The Place-Names of Lancashire*, Manchester

Elsworth, DW, 1988 *The Mesolithic Around Morecambe Bay*, unpubl dissertation, University of Edinburgh

Elsworth, DW, 2007 The "Streetgate" at Conishead, the "Castellum" at Dalton, and Roman Furness, *Trans Cumberland Westmorland Antiq Archaeol Soc*, 3rd ser, **7**, 31-48

Elsworth, DW, 2014 Hillforts Around Morecambe Bay, in T Saunders (ed), *Hillforts in the North West and Beyond*, Archaeology North West, n ser, **3**, Manchester, 51-60

- Farrer, W, and Brownbill, J, 1914 *The Victoria History of the County of Lancaster*, **8**, London
- Goodall, I, 2001 *Newland Furnace, Egton with Newland, Cumbria: Survey Report*, English Heritage unpubl rep
- Hodgkinson, D, Huckerby, E, Middleton, R, and Wells, CE, 2000 *The Lowland Wetlands of Cumbria*, North West Wetlands Survey **6**, Lancaster Imprints **8**, Lancaster
- Hodgson, J, and Brennand, M, 2006 The Prehistoric Period Assessment, in M Brennand (ed), *The Archaeology of North West England – An Archaeological Research Framework for North West England: Volume 1 Resource Assessment*, Archaeology North West, **8**, Manchester, 23-58
- Ingle, CJ, 1987 The Production and Distribution of Beehive Querns in Cumbria – Some Initial Considerations, *Trans Cumberland Westmorland Antiq Archaeol Soc*, 3rd ser, **87**, 11-18
- Marshall, JD, and Davies-Shiel, 1969 *The Industrial Archaeology of the Lake Counties*, Newton Abbot
- Martin, L, 1996 *Industrial Archaeology of the Iron Industry in the Low Furness Area*, University of Bradford, unpubl dissertation
- Middleton, R, Wells, CE, and Huckerby, E, 1995 *The Wetlands of North Lancashire*, North West Wetlands Survey **3**, Lancaster Imprints **4**, Lancaster
- Philpott, R, 2006 The Romano-British Period Resource Assessment, in M Brennand (ed), *The Archaeology of North West England – An Archaeological Research Framework for North West England: Volume 1 Resource Assessment*, Archaeology North West, **8**, Manchester, 59-90
- Young, R, 2002 The Palaeolithic and Mesolithic Periods in Northern England: An Overview, in Brooks, C, Daniels, R, and Harding, A (ed), *Past, Present and Future: The Archaeology of Northern England*, Architect Archaeol Soc Durham Northumberland, res rep **5**, 19-36

6.3 Aerial Photographs

Cumbria County Council, 1979 **SD2475/A-I**

Appendix 1: Site Gazetteer

Site Number: 01**NGR:** linear**HER No:** 18328**Sources:** HER; Ordnance Survey 1891; Martin 1996**Designation:** none**Description:** the site of a mineral railway, which intersects maps SD27NE and SD27NW. Part still survives as a trackway but it otherwise does not survive.**Period:** post-medieval

Site Number: 02**NGR:** 325450 475950**HER No:** 4757**Sources:** HER; Ordnance Survey 1891; Marshall and Davies-Shiel 1969, 249-250**Designation:** none**Description:** the site of an iron ore crushing works that produced paint and was still in operation into the 1970s, after which it was almost totally demolished leaving only a few elements remaining, although some of these have also been removed during more recent clearance. It is clearly shown on the Ordnance Survey maps from 1891 onwards. Early maps show that this was located within a much more extensive area of sidings named 'Lindal Ore Depot'.**Period:** post-medieval

Site Number: 03**NGR:** 324750 475850**HER No:** 40778**Sources:** HER**Designation:** none**Description:** Backguards Pit, iron mine. This was located in the Whitriggs area, west of Church Farm and operated by the Barrow Haematite Steel Company from c1885 to c1914. It was taken over by the North Lonsdale Iron and Steel Company in 1917, and finally abandoned in 1924. This was a large pit that had frequent problems with flooding. It was served by a mineral railway (**Site 10**). The engine and pump house are clearly shown on the 2nd edition map but it has now been partially built over.**Period:** post-medieval

Site Number: 04**NGR:** 324850 475850**HER No:** 5592**Sources:** HER; Marshall and Davies-Shiel 1969, 250**Designation:** none**Description:** a miner's "dry" or changing room for Parrock Pit.**Period:** post-medieval

Site Number: 05**NGR:** 325450 475850**HER No:** 18315**Sources:** HER; Ordnance Survey 1891**Designation:** none

Description: site of the Lindal Gas Works. Early maps show that this was located within a much more extensive area of sidings named 'Lindal Ore Depot'.

Period: post-medieval

Site Number: 06

NGR: 325010 475720

HER No: 18317

Sources: HER; Ordnance Survey 1850

Designation: none

Description: site of the Lindal smithy, appears to have been under the line of the modern road.

Period: unknown

Site Number: 07

NGR: 325105 475724

HER No: -

Sources: Ordnance Survey 1891; 1913

Designation: none

Description: an 'old shaft', referring to a mine shaft, is shown on the later Ordnance Survey maps. It is not shown on the earlier map of 1850 or any of the plans of the 1870s so was presumably sunk and out of use within a short period of time but it is not clear which mine it formed part of, if any.

Period: post-medieval

Site Number: 08

NGR: 325320 475650

HER No: 18316

Sources: HER; Ordnance Survey 1891

Designation: none

Description: site of a disused reservoir.

Period: post-medieval

Site Number: 09

NGR: 325550 475550

HER No: 18313

Sources: HER; Martin 1996; Kelly 1998, 95-97

Designation: none

Description: the site of the Bercune Iron Mine, which was operated by the Ulverston Mining Company, established in 1838. It was very productive and they operated it until the 1870s at which point, suffering from financial troubles they sold it on. It was acquired by the Wigan Coal & Iron Company, who operated it until the end of the century, after which Harrison Ainslie Co took on the lease in 1903 and carried out modernisation using electrical equipment. When they went into liquidation in 1914 the mine finally ceased to be used.

Period: post-medieval

Site Number: 10

NGR: linear

HER No: 18340

Sources: HER; Ordnance Survey 1891; Martin 1996

Designation: none

Description: the site of a mineral railway serving the Whitrigg Iron Mine. Most of the land is improved pasture, but the line of the railway can still be traced in places, especially on the south side of the dual carriageway

Period: post-medieval

Site Number: 11

NGR: linear

HER No: 43835

Sources: HER; Ordnance Survey 1891

Designation: none

Description: extant railway named 'Furness Railway' on the Ordnance Survey map of 1891.

Period: post-medieval

Site Number: 12

NGR: 324850 475250

HER No: 4842

Sources: HER; CCC 1979

Designation: none

Description: a rectilinear enclosure defined by earthworks overlain by broad ridge and furrow is evident on an aerial photograph on an area of high ground in an otherwise flat field. The earthworks are still visible on the crest of the hill but are in poor condition and badly damaged by ploughing. The earthworks consist of a roughly rectangular enclosure defined by the remains of a bank and outer ditch, covered by ridge and furrow. There may be a slight platform in the south-western corner and there are also the remains of old field boundaries nearby that might be associated.

Period: prehistoric – medieval

Site Number: 13

NGR: 325000 475000

HER No: 19057

Sources: HER; Barnes 1978, 61-66

Designation: none

Description: there was a Civil War battle fought near Lindal Cote at Lindal-in-Furness in 1643. A Royalist force was assembled in Furness and Cartmel during August and September 1643 to relieve the siege of Thurland Castle by Parliamentary troops under Colonel Rigby. However, Rigby came upon Royalists near Lindal on Sunday 1st October 1643. The Royalists made no serious resistance and some 300 men were taken prisoner. Rigby's men then plundered Dalton and the neighbourhood, returning the same night to Cartmel.

Period: post-medieval

Appendix 2: Significance Criteria

After DCMS 2013

- i) *Period*: all types of monuments that characterise a category or period should be considered for preservation;
- ii) *Rarity*: there are some monument categories which in certain periods are so scarce that all surviving examples which retain some archaeological potential should be preserved. In general, however, a selection must be made which portrays the typical and commonplace as well as the rare. This process should take account of all aspects of the distribution of a particular class of monument, both in a national and regional context;
- iii) *Documentation*: the significance of a monument may be enhanced by the existence of record of previous investigation or, in the case of more recent monuments, by the supporting evidence of contemporary written records;
- iv) *Group Value*: the value of a single monument (such as a field system) may be greatly enhanced by its association with related contemporary monuments (such as a settlement and cemetery) or with monuments of different periods. In some cases, it is preferable to protect the complete group of monuments, including associated and adjacent land, rather than to protect isolated monuments within the group;
- v) *Survival/Condition*: the survival of a monument's archaeological potential both above and below ground is a particularly important consideration and should be assessed in relation to its present condition and surviving features;
- vi) *Fragility/Vulnerability*: highly important archaeological evidence from some field monuments can be destroyed by a single ploughing or unsympathetic treatment; vulnerable monuments of this nature would particularly benefit from the statutory protection which scheduling confers. There are also existing standing structures of particular form or complexity whose value can again be severely reduced by neglect or careless treatment and which are similarly well suited by scheduled monument protection, even if these structures are already listed historic buildings;
- vii) *Diversity*: some monuments may be selected for scheduling because they possess a combination of high quality features, others because of a single important attribute;
- viii) *Potential*: on occasion, the nature of the evidence cannot be specified precisely but it may still be possible to document reasons anticipating its existence and importance and so to demonstrate the justification for scheduling. This is usually confined to sites rather than upstanding monuments.