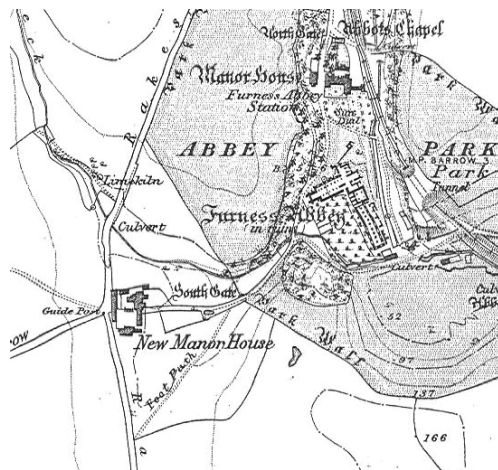


**GEOPHYSICAL SURVEYS  
OF LAND AT  
MANOR FARM,  
MANOR ROAD,  
BARROW-IN-FURNESS,  
CUMBRIA**



**GEOPHYSICAL SURVEY REPORT**

**SP. No: 1385/11**

**31/01/2011**

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# NORTH PENNINES SURVEY CIC

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## *Quality Assurance*

This report covers works as outlined in the brief for the above-named project as issued by the relevant authority, and as outlined in the agreed programme of works. Any deviation to the programme of works has been agreed by all parties. The works have been carried out according to the guidelines set out in the Institute for Archaeologists (IfA) Standards, Policy Statements and Codes of Conduct. The report has been prepared in keeping with the guidance set out by North Pennines Survey CIC on the preparation of reports.

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## SUMMARY

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In January 2011, North Pennines Survey, commissioned by Story Land and Development, undertook geophysical surveys of land adjacent to Manor Farm, Manor Road, Barrow-in-Furness (centred on Ordnance Survey grid reference SD 1258 7148), prior to a proposed residential development at the site. The archaeological work was required as the proposed development lies immediately to the southwest of Furness Abbey, which is designated a Scheduled Ancient Monument, as well as being within an important medieval landscape.

The objective of the geophysical surveys was to determine the presence/absence, nature and extent of potential archaeological features within the study area, and the presence/absence of any known modern features within the survey area, which may affect the results. The results of the geophysical survey were to be used to inform the locations of trenches in the subsequent trial trench evaluation of the proposed development area, and help to inform the need for further archaeological mitigation at the site.

A medieval village known as Sellergarth is believed to have been located in or in close proximity to the proposed development area, until it was cleared in the 16<sup>th</sup> century. The proposed development area may also have been cultivated during the medieval period. Place name evidence suggests that it may have been an open area of land where archery was practiced. The survey area is depicted on 1<sup>st</sup> 6" Edition Ordnance Survey map of 1851, which shows it was originally part of a larger field immediately to the south of Manor Farm.

Geomagnetic surveys covering 2.66ha of land were conducted covering the area of the proposed new development. The surveys detected a number of modern features, including an electricity cable and a drain, which is visible as an earthwork crossing the survey area.

A number of linear anomalies were also detected, which are interpreted as possible soil-filled features associated with a former foot path. This foot path originally ran from Abbey Park to Newbarns to the southwest. Two possible field boundaries were also detected which may have origins in the medieval period, given the close proximity of the site to Furness Abbey and the deserted medieval village.

A trial trench evaluation is to be undertaken of the proposed development area, prior to any development taking place. It is recommended that these trenches be positioned to target both the linear geophysical anomalies detected, and also to test areas apparently devoid of archaeological features.

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## ACKNOWLEDGEMENTS

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North Pennines Survey would like to thank Daniel Barton of Story Land and Development, for commissioning the project, and for all assistance throughout the project.

The geophysical surveys were undertaken by Angus Clark and Kevin Mounsey. The report was written and illustrated by Martin Railton, NPS Project Manager, and was edited by Matthew Town.

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## 1 INTRODUCTION

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### 1.1 CIRCUMSTANCES OF THE PROJECT (FIGURE 1)

- 1.1.1 In January 2011, North Pennines Survey undertook geophysical surveys of land at Manor Farm, Manor Lane, Barrow-in-Furness, Cumbria, at the request of Story Land and Development. This work follows consultation between the client and Andrew Davison, Inspector of Ancient Monuments, North West Region, English Heritage, and Jeremy Parsons, Historic Environment Officer, Cumbria County Council Historic Environment Service (CCCHES). The archaeological work was required as the proposed development lies immediately to the southwest of Furness Abbey, which is designated a Scheduled Ancient Monument, as well as being within an important medieval landscape (Figure 1). The archaeological work was undertaken in accordance with a North Pennines Survey project design (Railton 2010), which was submitted to, and approved by CCCHES. This was in line with government advice as set out in the DoE Planning Policy Guidance on Archaeology and Planning (PPG 16) and its successor PPS5: *Planning for the Historic Environment* (Policy HE6).
- 1.1.2 The proposed development area comprises two fields of pasture on the northwest side of Barrow-in-Furness (Figure 1). This area is to the south of Manor Farm, bounded by Manor Road to the north, Rating Lane to the west, Furness Abbey precinct to the northeast, and a college to the south (Figure 2), centered on Ordnance Survey grid reference NGR SD 1258 7148.
- 1.1.3 Furness Abbey or St. Mary of Furness is a former Cistercian monastery which was founded in 1123 and was once the second wealthiest and most powerful monastery in the country (after Fountains Abbey in North Yorkshire). It was believed that archaeological remains could survive at the site, including sub-surface evidence for medieval or later activity in the form of cut features, such as ditches and pits, route ways, boundary features and small buildings.
- 1.1.4 The objective of the geophysical surveys was to determine the presence/absence, nature and extent of potential archaeological features within the survey area, and the presence/absence of any known modern features within the survey area, which may affect the results.
- 1.1.5 This report outlines the results of the geophysical surveys undertaken, and includes an interpretation of the geophysical survey results, in light

of the archaeological and historical background of the site, with recommendations for further work where necessary.



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## 2 METHODOLOGY

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### 2.1 PROJECT DESIGN

2.1.1 A project design was submitted by North Pennines Survey in response to a request by Story Land and Development, for a geophysical survey of the study area. Following acceptance of the project design by Jeremy Parsons, Historic Environment Officer, Cumbria County Council Historic Environment Service, North Pennines Survey was commissioned by the client to undertake the work. The project design was adhered to in full, and the work was consistent with the relevant standards and procedures of the Institute for Archaeologists (IfA 2002 & 2010), and English Heritage Guidelines (English Heritage 2008).

### 2.2 GEOPHYSICAL SURVEYS

2.2.1 *Technique Selection:* geomagnetic survey was selected as the most appropriate technique, given the non-igneous environment, and the expected presence of cut archaeological features at depths of no more than 1.5m. This technique involves the use of hand-held gradiometers, which measure variations in the vertical component of the earth's magnetic field. These variations can be due to the presence of sub-surface archaeological features.

2.2.2 *Field Methods:* the geophysical study area measured 2.66ha divided into 2 separate fields (Areas 1-2). A 30m grid was established in each area, and tied-in to known Ordnance Survey points using a Trimble 3605DR Geodimeter total station with datalogger.

2.2.3 Geomagnetic measurements were determined using a Bartington Grad601-2 dual gradiometer system, with twin sensors set 1m apart. It was expected that significant archaeological features at a depth of up to 1.5m would be detected using this arrangement. The survey was undertaken using a zig-zag traverse scheme, with data being logged in 30m grid units. A sample interval of 0.25m was used, with a traverse interval of 1m, providing 3600 sample measurements per grid unit. The data were downloaded on site into a laptop computer for processing and storage.

2.2.4 *Data Processing:* geophysical survey data were processed using ArchaeoSurveyor II software, which was used to produce 'grey-scale' images of the raw data. Positive magnetic anomalies are displayed as dark grey, and negative magnetic anomalies are displayed as light grey.

A palette bar shows the relationship between the grey shades and geomagnetic values in nT.

- 2.2.5 Raw data were processed in order to further define and highlight the archaeological features detected. The following basic data processing functions were used:

*Despike*: to locate and suppress random iron spikes in the gradiometer data.

*Clip*: to clip data to specified maximum and minimum values, in order to limit large noise spikes in the geophysical data.

*Destagger*: to reduce the effect of staggered gradiometer data, sometimes caused by difficult working conditions, topography, or operator error.

*Interpolate*: to match the traverse and sample intervals in the gradiometer data.

- 2.2.6 **Interpretation**: three types of geophysical anomaly were detected in the gradiometer data:

*positive magnetic*: regions of anomalously high or positive magnetic data, which may be associated with the presence of high magnetic susceptibility soil-filled features, such as pits or ditches.

*negative magnetic*: regions of anomalously low or negative magnetic data, which may be associated with features of low magnetic susceptibility, such as stone-built features, geological features, land-drains or sub-surface voids.

*dipolar magnetic*: regions of paired positive and negative magnetic anomalies, which typically reflect ferrous or fired materials, including fired/ferrous debris in the topsoil, modern services, metallic structures, or fired structures, such as kilns or hearths.

- 2.2.7 **Presentation**: the grey-scale images were combined with site survey data and Ordnance Survey data to produce the geophysical survey plans. Colour-coded geophysical interpretation diagrams are provided, showing the locations and extent of positive, negative, dipolar, geomagnetic anomalies, and areas of anomalously high or low resistance.

- 2.2.8 An archaeological interpretation diagram is provided, which is based on the interpretation of the geophysical survey results, in light of the archaeological and historical background of the site.

- 2.2.9 Trace plots of the unprocessed geophysical data are available if required.

## 2.3 ARCHIVE

- 2.3.1 The data archive for the geophysical survey has been created in accordance with the recommendations of the Archaeology Data Service (ADS 2001). This archive is currently held at the company offices at Nenthead, Cumbria.
- 2.3.2 One copy of the final report will be deposited with the County Historic Environment Record, where viewing will be available on request. The project is also registered with the Online Access to the Index of archaeological investigationS (OASIS), where a digital copy of the report will be made available.
- 2.3.3 The OASIS reference for this project is **northpen3-92073**.

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## 3 BACKGROUND

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### 3.1 LOCATION AND GEOLOGICAL CONTEXT

- 3.1.1 Barrow-in-Furness lies within the West Cumbrian Coastal Plain, a narrow belt of country between the coast and the high fells of the Lake District (Countryside Commission 1998). The town is situated at the extreme southwest tip of Cumbria, The modern town of Barrow-in-Furness is on the south-western side of the Furness peninsula, located opposite Walney Island and separated from it by the Walney Channel, to the north of Morcambe Bay. Furness Abbey, which is immediately to the northeast of the site, is located in a narrow valley to the northeast of Barrow, approximately 3km from the town centre. The site lies at a height of approximately 30m AOD.
- 3.1.2 The proposed development area lies immediately adjacent to the monastic precinct and the approach road to Furness Abbey, which follows the shape of the northernmost field of the study area. The Park Wall, which forms the boundary of the monastic precinct and is Scheduled as part of the Furness Abbey complex, runs along the northeast side of the proposed development area, with the remains of a gateway into the precinct to the north. The development area forms a block of land south of Manor Road, which comprised two pastoral fields at the time of the survey (Figure 2).
- 3.1.3 The underlying geology of the area comprises sandstone of the Sherwood Sandstone Group overlain by glacial till deposits (BGS 2001). Soils in the vicinity comprise well-drained reddish course loamy soils, known as Eardiston 1 soils (SSEW 1980).

### 3.2 HISTORICAL CONTEXT

- 3.2.1 *Introduction:* this historical background is compiled mostly from secondary sources, and is intended only as a brief summary of historical developments specific to the study area. A desk-based assessment of the proposed development area has been undertaken by North Pennines Archaeology (Wooler 2011), as summary of which is presented here. References to the Cumbria Historic Environment Record (HER) are included where known.
- 3.2.2 *Prehistoric:* the earliest traces of human occupation in the Furness area are to be found in a string of coastal sites, the largest being at the North End of Walney Island; similar sites occur at Drigg and Eskmeals, at Haverigg in Millom, at Sandscale and Roanhead, and seven sites from North to

South of Walney. These sites are mainly in sand dunes alongside shingle beaches; the rubbish left by these peoples suggests that at first they lived the wandering life of hunters and food collectors, rather than farmers. They collected flint nodules from the shingle and chipped them into tools and weapons. It would appear that the earliest occupants were during the Mesolithic period (c.10, 000 to 6000BC); the microliths, the type implements of the Mesolithic Age, have been found on Walney (Barnes 1968, 8).

- 3.2.3 A perforated pebble/mace head was found '10ft below the surface' in Croslands Park in 1891, and was classed as Mesolithic (HER No. 2296), and a scatter of flints were recovered from a field to the south-east of the proposed development area, east of Barrow Sixth Form College, and recorded as Mesolithic (HER No. 3204). Other findspots of prehistoric tools include a stone axe of Neolithic date, which was found at Dane Avenue, located to the west of Furness General Hospital, in 1936 (HER No. 2268), and a further stone axe which was apparently '*on the premises of Manor Farm in 1859 and may have been found there or near there*' (HER No. 2292). The exact findspot of this axe is unknown; it was presumed that it was found near Manor Farm when it was reported in 1899 (Gaythorpe 1899, 168). Despite the exact provenance of this find being unknown, it could represent prehistoric activity within close proximity to the proposed development area.
- 3.2.4 *Roman*: there is very little evidence for Iron Age or Roman activity near the proposed development area, although it is possible that iron deposits in Furness were utilised during the Iron Age and Romano-British periods. The only known evidence for Roman activity within a 1km radius of the proposed development area is a find of Roman coins in 1978 in the vicinity of Furness Abbey (HER No. 19096). Two of the coins were found together, the other two were found separately a short distance away. Writing with regard to these coins, David Shotter noted that the circumstances of discovery, as well as the disparity of the coin-types themselves, would appear to argue against them having derived from a hoard; it is even possible that the coins do not represent ancient loss at all, although four other Roman coins have been found within the vicinity of the abbey itself, and were reported in Transactions in 1916 (Shotter 1979, 147-148). Although the discovery of Roman coins at Furness Abbey may indicate the presence of a nearby Romano-British site, it should be noted that monks did on occasion themselves collect antiquities (Shotter 1995, 75).
- 3.2.4 *Medieval*: the earliest evidence for the area around what is now known as Barrow-in-Furness comes from the Domesday Book, completed by order

of William the Conqueror in 1086. Furness was entered under 'Agemundreness' (Amounderness) in the West Riding of Yorkshire, the bulk of Furness being in the Manor of *Hougun*. *Hougun*, or Low Furness Manor, had been part of the possessions of the great Earls of Northumbria from the time of Canute; from 1038 to 1055 Siward the Dane held the Earldom, then Tostig the Saxon was appointed to the Earldom and so succeeded to Hougun Manor.

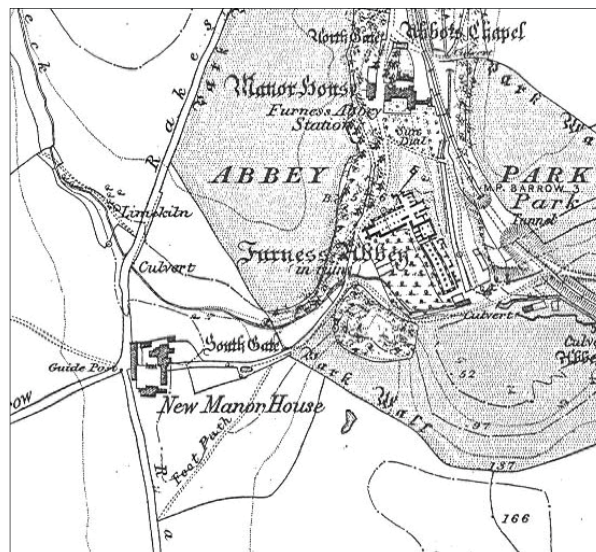
- 3.2.5 Under the Normans, Stephen, Count of Boulogne and Mortain, later king of England, gave certain lands in Amounderness to the Abbey of Savigny in Normandy in 1124, and a monastery was founded at Tulketh near Preston. In 1127 these lands were exchanged for territory in Furnes and the Abbey of St Mary was founded (Barnes 1968, 24). Furness Abbey was the first and most important foundation of the Svigniac Order in the British Isles. In 1147 the entire congregation of Savigny was incorporated into the much larger and more powerful Cistercian Order. Furness thus became a Cistercian monastery and part of an international order of formidable strength (Wood 1998, 23).
- 3.2.6 Considerable plots of ground near the Abbey were brought into cultivation and made into farms or 'granges' and occupied by an inferior class of monastic inmates, known as 'converts' who acted as farm labourers under the supervision of the monks. As well as establishing their granges, and profiting from their dairy and sheep farms, the monks of Furness Abbey were also involved in the extraction of iron ore and in the salt making industry. However, there is no evidence for any iron ore extraction sites within close proximity to the proposed development area. Closest to Furness Abbey, were the salt pans at Mustard Haw, Salthouse (Leach 1987, 60).
- 3.2.7 At the beginning of the reign of Henry VIII [early 16<sup>th</sup> century], Alexander Banks was Abbot of Furness. He seemingly decided to construct a large deer park around the Abbey, and, taking advantage of a period of agricultural depression, he recovered as much arable land in the vicinity as he could. A number of farms were taken by the Abbey, including part of a settlement known as Sellergart, which was apparently cleared on tenants, and the whole village destroyed on the 16<sup>th</sup> December 1516 (Leach 1987, 66).
- 3.2.8 In the English Heritage publication 'Furness Abbey' an extract from a 1775 estate map (now in a private collection) shows the Abbey buildings, as well as the Park Wall. To the west, just outside the line of the Park Wall, is a field which is seemingly labelled 'Mr Atkinson's Seller Butts'. This field appears to be that in which the proposed development is

locate, possibly suggesting that the former village of Sellergarth was located in or in close proximity to the proposed development area. It is interesting to also note that the element 'butts' often refers to open areas of land where archery was practiced.

- 3.2.9 Furness was one of the first of the major monasteries to be dissolved by Henry VIII. The deed of surrender was signed by the abbot, the prior and 28 monks on the 9<sup>th</sup> April 1537 (Wood 1998, 29).
- 3.2.10 *Post-medieval and Modern:* in 1540 the Furness Abbey site was leased to Sir Thomas Curwen and passed to his son-in-law, John Preston, in 1546. A manor house and associated buildings were constructed at the site by c.1671. The site of the abbey remained in the Preston family for several generations. It then passed by marriage to the Lowthers and finally to the Cavendishes. From the late 17<sup>th</sup> century, the manor house was occupied by a variety of tenants. In the second half of the 18<sup>th</sup> century the building was in decline, having been leased out for agricultural and other purposes. During the 1780s, however, some refurbishment of a part of the building was undertaken, to allow the Cavendish family the occasional visit to the site (Wood 1998, 31).
- 3.2.11 Industrialisation in the early 19<sup>th</sup> century saw increased production at the Furness iron mines. By the beginning of June 1846, a railway was completed between Dalton and Barrow to transport the iron ore, passing immediately to the east of Furness Abbey (Cumbrian Railways Association 1996, 6-7). The Cavendishes sold the Furness Abbey property to the railway company, and during the 1850s and 1860s the building was substantially remodelled to become the Furness Abbey Hotel to the designs of Lancaster architect Edward Paley.
- 3.2.12 New Manor Farm, located on the opposite side of Manor Road to the proposed development area, was constructed by the mid-19<sup>th</sup> century, as John Case is listed as a farmer there in 1851 (Mannex & Co 1851, 410 and 419). The Listed Building description for the present Manor Farm suggests that it was constructed c.1845, probably as a replacement for the earlier farmstead on the site of the old manor house (later to become the Furness Abbey Hotel, and now partly surviving as the Abbey Tavern) when the Furness Railway was constructed.
- 3.2.13 The 1<sup>st</sup> 6" Edition Ordnance Survey map of 1851 shows the extent of Abbey Park and the area of the proposed development to the south of Manor Farm (labeled New Manor House). This was originally a single large field with a road leading from the south gate of the Abbey Park to Manor Farm (Plate 1). Manor Road was constructed to the south of Manor Farm, between 1851 and the production of the revised edition

Ordnance Survey map of 1873, bisecting the northern part of this field. This road now forms the northern boundary of the proposed development area. The southern field boundary has retained the same shape as the original field, as has the boundary along Rating Lane to the west.

- 3.2.14 A foot path is depicted on the 1<sup>st</sup> 6" Edition Ordnance Survey map of 1851 crossing the proposed development area, aligned northeast to southwest. This ran from the south gate of the Abbey Park to Newbarns, a settlement located c.1km to the southwest. This settlement is now part of the modern Barrow-in-Furness.
- 3.2.15 20<sup>th</sup> century Ordnance Survey maps illustrate the spread of urbanisation from Barrow in a northerly direction towards the proposed development area on Manor Road.
- 3.2.16 The early 20<sup>th</sup> century saw the first systematic excavations and archaeological assessment of the Furness Abbey site, under the direction of Sir William St John Hope. In 1923, Lord Richard Cavendish placed the ruins in the guardianship of the state. The then Office of Works set in motion a major programme of restoration. This work was accompanied by a general 'tidying up' of the site, involving the burial of fallen architectural fragments, removal of some post-monastic features and further excavations, so that more of the abbey buildings were uncovered and displayed. Except for part of its north wing, the former Furness Abbey Hotel was demolished in 1953 following bomb damage in 1941. Its site is now occupied by the present car park and museum, opened in 1982 (Wood 1998, 36).



**Plate 1:** Extract from the 1<sup>st</sup> 6" Edition Ordnance Survey map of 1851



### 3.3 PREVIOUS ARCHAEOLOGICAL WORK

- 3.3.1 Numerous excavations and investigations have occurred in the immediate area around Furness Abbey from early 20<sup>th</sup> century onwards. A summary of the more recent investigations is provided below.
- 3.3.2 *Furness Abbey 1985*: an excavation was undertaken by the Cumbria and Lancashire Archaeological Unit in July 1985 in advance of building work between the museum and the railway. Although limited to a small area (30 sq m), the excavation revealed an intriguing sequence involving four stone structures which dated from the medieval monastic occupation to the present. The earliest feature was a well-constructed drain 1.5m wide of local red sandstone ashlar (HER No. 2269 file).
- 3.3.3 *Abbey Park Cottage, Furness Abbey – Building Recording and Tree Ring Analysis*: an archaeological investigation of the Custodians Cottage (located to the south of the abbey, see Plate 21) was undertaken by English Heritage in 1988. The work consisted of a survey of the fabric, tree-ring dating and limited evaluation excavation in advance of proposed refurbishment works (which did not occur until 2000 due to an arson attack). The building was found to date to the second half of the 15<sup>th</sup> century. Although used as a field barn in the late 18<sup>th</sup> century, it had originally been constructed as a domestic residence, held by the lords of the manor or prosperous yeomen, and may have housed one of the abbot's senior lay retainers or officials (HER Report Ref: 6/04/1343).
- 3.3.4 *West Lodge, Abbey Road – Watching Brief*: an archaeological watching brief was undertaken by Cumbria County Council during groundworks for a new garage at West Lodge in 1999. Footings and a top soil were observed, but no finds or features noted (HER Report Ref: 6/CCC/99/WEL).
- 3.3.5 *Dalton to Roose Greenway – Archaeological Desk-Based Assessment*: prior to the construction of a new 'greenway' or cycle path leading from Furness Abbey to Roose, AOC Archaeology Group undertook an archaeological desk-based assessment in 2006. The proposed greenway was planned to originate within the grounds of the 12<sup>th</sup> century Furness Abbey, and run alongside Mill beck through the Vale of Nightshade and the grounds of Parkhouse Farm, a 17<sup>th</sup> century listed building. The assessment revealed that the proposed greenway had been an important route from the abbey to Barrow from at least the 15<sup>th</sup> century. The majority of the route was primarily given over to pastoral farming in recent history. A settlement at Roose was established from at least as early as the 12<sup>th</sup> century when it is listed as a grange (farm) (HER Report Ref: 6/06/1606).

- 3.3.6 *Abbots Wood, Furness Abbey – Watching Brief:* in 2007 Oxford Archaeology North (OAN) undertook a watching brief during the construction of a small car park off Manor Road, to the east of the abbey, and during the repair of existing footpaths within Abbots Wood. The remains of a drystone wall were revealed during the works, and although no dating evidence was retrieved, it was suggested that the wall was of post-medieval date due to the fact that it contained re-used worked stone, possibly derived from the post-dissolution robbing of the abbey structure itself (HER Report Ref: 6/07/1734).
- 3.3.7 *Barrow Sixth Form College – Archaeological Desk-Based Assessment:* AOC Archaeology Group undertook a desk-based assessment in 2007 in advance of the proposed construction of new college buildings. The assessment concluded that development did not take place on the site until the late 1970s and the construction of the Sixth Form College. Prior to this, it was suggested that the land was used for agricultural purposes. It was recommended that the south-east section of the site should be the subject of further archaeological work to assess the nature and extent of potential below ground archaeological deposits (HER Report Ref: 6/07/2177). [This site is immediately to the south of the proposed development area, to date no further archaeological work has been undertaken at the Sixth Form College]
- 3.3.8 *Furness General Hospital – Archaeological Desk-Based Assessment:* in advance of the proposed redevelopment of land at Furness General Hospital, NPA undertook a desk-based assessment. The research revealed that there was the potential for archaeological remains to survive on the site due to its proximity to Furness Abbey (NPA 2007).
- 3.3.9 *Furness Abbey Cottage, Abbey Approach – Watching Brief:* an archaeological watching brief was conducted by Greenlane Archaeology Ltd in 2008 during groundworks for an extension to the existing Grade II listed property. The building was constructed in c.1873 for the Furness Railway Company, on the site of an earlier property. Originally the cottage had a coach house to the north which was demolished between 1956 and 1983. The walls of this former building were revealed during the watching brief. No earlier features were noted (HER Report Ref: 6/08/1977).
- 3.3.10 *Furness Abbey Visitors Centre Car Park – Watching Brief:* a watching brief was maintained by Greenlane Archaeology Ltd in 2009 during the excavation of a utility trench within the Scheduled area of Furness Abbey, located between the standing remains of a medieval gatehouse and the site of the former Furness Abbey Hotel which was built on the site of a medieval hall. Apart from a small area of 18<sup>th</sup> or 19<sup>th</sup> century

made ground for access to the hotel, the trench largely followed existing service trenches and no significant deposits were noted (HER Report Ref: 6/09/2127).

- 3.3.11 *Furness Abbey Presbytery- Archaeological Evaluation*: an evaluation was undertaken by Oxford Archaeology North in 2009 within the abbey cemetery, immediately to the east of the ruins of the presbytery. Major structural cracks had appeared in the masonry of the north and south walls of the presbytery, the cause of which was unknown. During repair work in the 1920s it was discovered that the foundations consisted of oak piles and many of the walls had suffered shrinkage due to insufficient foundations. In order to investigate the possible underlying cause of the structural problems, an evaluation was required abutting the foundations of the east presbytery wall. This took the form of a single evaluation trench measuring 2m by 8m. Three phases of activity were identified; Phase 1 was pre-15<sup>th</sup>/16<sup>th</sup> century; Phase 2 belonged to the construction of the 15<sup>th</sup> century presbytery and after; and Phase 3 included 19<sup>th</sup> and 20<sup>th</sup> century work. The earliest remains comprised the top two courses of a possibly more substantial wall which lay directly below the east wall of the presbytery. The foundations for the east wall of the extension to the presbytery were found to consist of timber planks or a raft lying directly above a stone wall. It was not clear if the wall was contemporary or the remains of an earlier structure. The timber foundations, as noted in the 1920s in walls that had suffered subsidence, may have caused the structural damage, possibly due to fluctuating ground water levels (HER Report Ref: 6/09/2078).
- 3.3.12 *Dalton to Roose Greenway – Watching Brief*: during the construction of the greenway, or cycle path, through the grounds of the Scheduled Monument of Furness Abbey, Oxford Archaeology North (OAN) undertook an archaeological watching brief. For the majority of the length of the section through Amphitheatre Field, located to the south of the abbey, no features of archaeological significance were revealed. At the northern end of the greenway, however, before it joined the road, archaeological remains were uncovered in the form of a cobbled track running north-west to south-east. The direction of the track may have led to the abbey or taken a course around the western side. No secure dating evidence was retrieved to suggest when the track was in use, although it is not sure on early Ordnance survey mapping, suggesting it may have pre-dated the middle of the 19<sup>th</sup> century (HER Report Ref: 6/09/2053).

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## 4 THE GEOPHYSICAL SURVEYS

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### 4.1 INTRODUCTION (FIGURE 2)

- 4.1.1 The geophysical surveys were undertaken between 19<sup>th</sup> and 20<sup>th</sup> January 2011. Geomagnetic survey was undertaken over 2 separate areas (Areas 1-2) within the study area (Figure 2). Each area was subdivided by field boundaries consisting of stone walls and hedges, some of which incorporated post and wire fences (Plate 1). These fences produced strong dipolar magnetic anomalies around the periphery of the survey areas, particularly along the northern and southern edges of the study area.
- 4.1.2 Small discrete dipolar magnetic anomalies were detected across the whole of the study area. These are almost certainly caused by fired/ferrous litter in the topsoil, which is typical for modern agricultural land. These anomalies are indicated on the geophysical interpretation drawings, but not referred to again in the subsequent interpretations.

### 4.2 AREA 1 (FIGURES 3-5)

- 4.2.1 Area 1 was situated within a long narrow field on the north side of the study area, aligned approximately east to west, running parallel with Manor Road. The survey area measured 0.43ha, and covered an area of sloping ground with elevations increasing from 28.5m OD in the central part of the field to 35m OD at the west end.
- 4.2.2 The Park Wall of Furness Abbey ran along the east end of the survey area. Post and wire fences were present along the north and south sides of Area 1. These fences produced strong dipolar magnetic anomalies along the northern and southern edges of the study area.
- 4.2.3 A strong dipolar linear magnetic anomaly was detected on the east side of Area 1, aligned north to south. This was almost certainly due to the presence of an electricity cable.
- 4.2.4 Further dipolar magnetic anomalies were detected in the central part of the survey area, in an area of low-lying and waterlogged ground. It is possible that these are due to the presence of fired/ferrous material in the topsoil.
- 4.2.5 A linear negative magnetic anomaly was detected crossing the central part of the survey area, aligned northeast to southwest, which was also detected in Area 2. This is believed to be a drain, which was visible as an earthwork crossing the study area.

4.2.6 A number of weak positive linear magnetic anomalies were detected at the east side of Area 1, aligned northeast to southwest, which are interpreted as possible land drains or soil-filled furrows.

### 4.3 AREA 2 (FIGURES 3-5)

4.3.1 Area 2 was situated in a larger field to the south of Area 1. The survey area measured 1.75ha, and covered an area of sloping ground with elevations increasing from 30m OD at the northwest corner of the field to 40m OD at the southeast side.

4.3.2 The Park Wall of Furness Abbey ran along the northeast corner of the survey area. Post and wire fences were also present along the north and south sides of Area 1. These fences produced strong dipolar magnetic anomalies along the northern and southern edges of the survey area.

4.3.3 An electricity pylon was present towards the centre of Area 2, which was excluded from the geophysical survey. However, the pylon produced a strong magnetic field in this area. A number of other strong discrete dipolar magnetic anomalies were detected in this area, which are probably fired/ferrous materials in the topsoil.

4.3.4 A linear negative magnetic anomaly was detected crossing the central part of the survey area, aligned northeast to southwest, similar to that detected in Area 1. This is believed to be a stone drain, which was visible as an earthwork crossing the study area.

4.3.5 A linear positive magnetic anomaly and two weak positive magnetic anomalies were also detected crossing the central part of the survey area, aligned northeast to southwest. These anomalies correspond to the location of a former foot path depicted on the 1<sup>st</sup> 6" Edition Ordnance Survey map of 1851.

4.3.6 Two positive linear magnetic anomalies were detected, aligned northwest to southeast, which appeared to terminate in the location of the former footpath. These are interpreted as possible soil-filled boundary ditches. These appear to define a rectangular area within the central part of Area 2 measuring 55m northeast to southwest, and c.90m northwest to southeast, which may relate to an early field system.

4.3.7 A weak positive magnetic anomaly was also detected crossing the northern part of the survey area, aligned northeast to southwest, which appeared to be a continuation of similar features detected in Area 1. These are interpreted as possible land drains or soil-filled furrows.

#### 4.4 DISCUSSION

- 4.4.1 Following comparison of the positive linear anomalies detected with historic mapping of the site, it is possible to suggest that the remains of a post-medieval foot path survive sub-surface within the central part of the survey area. This foot path is depicted on the 1<sup>st</sup> 6" Edition Ordnance Survey map of 1851 crossing the proposed development area, aligned northeast to southwest. This originally ran from the south gate of the Abbey Park to Newbarns, a rural settlement located c.1km to the southwest.
- 4.4.2 Two other positive linear anomalies were detected to the east which seem to respect this footpath, and may be associated with an early field system of post-medieval or earlier date. A number of other weak linear anomalies were also detected which could potentially relate to soil-filled furrows of post-medieval or medieval date.
- 4.4.3 A drain was also detected, which cuts across the course of the post-medieval foot path, and is believed to be relatively recent.

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## 5 CONCLUSIONS AND RECOMMENDATIONS

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### 5.1 CONCLUSIONS

- 5.1.1 Geomagnetic surveys covering 2.66ha of land have been conducted within 2 pastoral fields to the northwest of Barrow-in-Furness, on land adjacent to Furness Abbey. The surveys were undertaken to cover the proposed location of a new residential development.
- 5.1.2 A medieval village known as Sellergarth is believed to have been located in or in close proximity to the proposed development area, until it was cleared in the 16<sup>th</sup> century. The proposed development area may also have been cultivated during the medieval period. Place name evidence suggests that it may have been an open area of land where archery was practiced. The survey area is depicted on 1<sup>st</sup> 6" Edition Ordnance Survey map of 1851, which shows it was originally part of a larger field immediately to the south of Manor Farm.
- 5.1.3 The geophysical survey recorded a number of modern features, including an electricity cable and a drain, which is visible as an earthwork crossing the survey area.
- 5.1.4 A number of linear anomalies were also detected, which are interpreted as possible soil-filled features associated with a foot path. This foot path originally ran from Abbey Park to Newbarns to the southwest.
- 5.1.5 Two possible field boundaries were also detected which may have origins in the medieval period, given the close proximity of the site to Furness Abbey and the deserted medieval village.

### 5.2 RECOMMENDATIONS

- 5.2.1 A trial trench evaluation is to be undertaken of the proposed development area, prior to any development taking place. It is recommended that these trenches be positioned to target both the linear geophysical anomalies detected, and also to test areas apparently devoid of archaeological features.

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## 6 BIBLIOGRAPHY

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### 6.1 SECONDARY SOURCES

Archaeology Data Service (2001) *Geophysical Data in Archaeology: A Guide to Good Practice*, Arts and Humanities Data Service

Barnes, F (1952) Flint Implements from Plain Furness, *Trans Cumberland Westmorland Antiq and Archaeol Soc*, Second Series LI

Barnes, F (1968) *Barrow and District*, Barrow-in-Furness Corporation

British Geological Survey (2001) *Solid Geology Map: UK North Sheet, 4<sup>th</sup> Edition*

Countryside Commission (1998) *Countryside Character Volume 2: North-west - The character of England's natural and man-made landscape*, Cheltenham

Cumbrian Railways Association (1996) *Furness Railway 150: A History of the Furness Railway, Celebrating One Hundred and Fifty Years of Railways in Furness*, Cumbrian Railways Association

DoE (1990) *Planning Policy Guidance Note No.16: Archaeology and Planning*, Department of the Environment.

English Heritage (1991) *Management of Archaeological Projects (MAP2)*. London: English Heritage

English Heritage (2006) *Management of Research Projects in the Historic Environment*. London: English Heritage

English Heritage (2008) *Geophysical survey in Archaeological Field Evaluation*, Research and Professional Services Guideline No.1, 2<sup>nd</sup> Edition, London

Gaythorpe, H (1899) Prehistoric Implements in Furness, *Trans Cumberland Westmorland Antiq and Archaeol Soc*, First Series XV

Institute for Archaeologists (2002) *The use of geophysical techniques in archaeological evaluations*, IfA Technical Paper No.6, Birmingham

Institute for Archaeologists (2010) *Draft standard and guidance for archaeological geophysical survey*, IfA Draft Guidelines, Birmingham

Leach, A (1987) *A History of Furness Abbey*, Furness Heritage Press

Mannex & Co (1851) *Directory of Westmorland with Lonsdale and Amounderness in Lancashire*

NPA, 2007, *Archaeological Desk-Based Assessment of land at Furness General Hospital, Barrow-in-Furness, Cumbria*, North Pennines Archaeology, Unpublished Report, CP511/07



Railton, M (2011) *Written scheme of investigation for a geomagnetic geophysical survey of land at Manor Farm, Barrow-in-Furness, Cumbria*, North Pennines Survey CIC, Unpublished Project Design

Shotter, D.C.A (1979) Four Roman Coins from Barrow-in-Furness, *Trans Cumberland Westmorland Antiq and Archaeol Soc*, Second Series LXXIX

Shotter, D (1995) Romans in South Cumbria, *Trans Cumberland Westmorland Antiq and Archaeol Soc*, Second Series XCV

SSEW (1980) *Soils of England and Wales: Sheet 4 Eastern England*, Soil Survey of England and Wales

Wood, J (1998) History of the Abbey, in *Furness Abbey*, London: English Heritage

Wooler, F (2011) *Desk-based assessment of land at Manor Farm, Barrow-in-Furness, Cumbria*, North Pennines Archaeology, Unpublished Report CP1385/11

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## APPENDIX 1: FIGURES

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