



Lime Kiln Plantation, Burton-in-Kendal, Cumbria

Archaeological Landscape Survey



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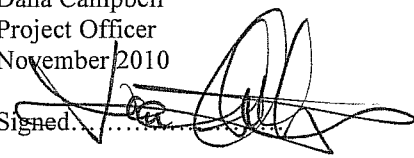
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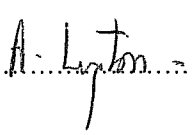
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CONTENTS

SUMMARY	2
ACKNOWLEDGEMENTS.....	3
1. INTRODUCTION.....	4
1.1 Circumstances of Project	4
2. METHODOLOGY.....	5
2.1 Desk-Based Assessment	5
2.2 Topographic Survey.....	6
3. HISTORICAL BACKGROUND	7
3.1 Introduction.....	7
3.2 Location, Topography and Geology	7
3.3 Historical Background	8
3.4 Map Regression Analysis	11
4. SURVEY RESULTS	15
4.1 Introduction.....	15
4.2 Archaeological Landscape Description	15
5. CONCLUSIONS.....	18
5.1 Discussion	18
5.2 Recommendations.....	19
6. BIBLIOGRAPHY	20
6.1 Primary Sources	20
6.2 Cartographic Sources	20
6.3 Secondary Sources	20
APPENDIX 1: PROJECT BRIEF	22
APPENDIX 2: PROJECT DESIGN.....	25
APPENDIX 3: SITE GAZETTEER.....	30
ILLUSTRATIONS	40

SUMMARY

A planning application was submitted by Dalton Hall Business Park to Cumbria County Council to develop the area now known as the Lime Kiln Plantation (SD 545 762) into a woodland burial site (Planning Application No SL/03/2145). To better inform this application, and in response to a project brief from Cumbria County Council (CCC), Oxford Archaeology North (OA North) was commissioned to undertake a desk-based assessment and an historic landscape survey of the development site.

Because the development site is in an area of known archaeological importance, with three Scheduled Monuments within its immediate vicinity, and nine sites recorded by the Cumbria Historic Environment Record, it was anticipated that the historic landscape survey would provide a record of the preserved archaeological resource in this area and inform the potential future locations of burials.

The desk-based assessment identified nine sites of archaeological and historical interest within the study area and environs, including three scheduled monuments. The development site was part of a village green of Dalton Village, which had its origins before the fourteenth century, with elements of it abandoned at some point after the mid-nineteenth century. Surrounding the settled areas is an historical landscape that was focused on pastoral farming pursuits and industrial (limestone) production and processing.

The survey identified 28 features of archaeological interest within the confines of the development site alone, of which some relate to pinfold field plots, seemingly depicted on the 1694 map, and others were elements belonging to Dalton Village. There were also a number of limestone quarries and at least one lime kiln.

It is recommended that the woodland burial avoid the south-western part of the proposed development area which has the greatest archaeological potential.

ACKNOWLEDGEMENTS

OA North would like to thank Francis Mason-Hornby of the Dalton Hall Business Centre for commissioning the project and for considerable guidance and assistance throughout. Thanks are also due to Jeremy Parsons at the Cumbria County Council (CCC) and the staff of the Cumbria County Record Office in Kendal. Particular thanks and acknowledgement is due to Dr Richard Newman, who kindly shared the results of his extensive research into Dalton village.

Mark Storey and Jamie Quartermaine carried out the historic landscape survey and interpreted its results. Documentary and cartographic research was undertaken by Alastair Vannan and Dana Campbell. The illustrations were produced by Anne Stewardson. This report was written by Dana Campbell and Jamie Quartermaine, who also managed the project.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 It has been proposed that the wooded area known as the Lime Kiln Plantation (SD 545 762) (Fig 1), 1.3km east-south-east of Burton-in-Kendal, be developed as a woodland burial site (Planning Application No SL/03/2145). In order to inform this planning application, and in response to a project brief from Cumbria County Council (Cumbria County Council 2010), Oxford Archaeology North (OA North) was commissioned to undertake an historic landscape survey of the land at Lime Kiln Plantation. The work was commissioned by the Dalton Hall Business Centre, and was carried out in August 2010.
- 1.1.2 The study area is within an area of known archaeological and historical importance, as immediately to the south is a scheduled monument called the ‘Dalton Deserted Medieval Village’ (HER 2525; SM 35030), which includes the remains of part of an abandoned village and is a site of regional and national importance. Post-medieval industrial activity is evidenced by known former quarries and lime kilns, both from within the study area and its immediate environs.
- 1.1.3 Because of these known monuments, and the high potential for other surviving archaeological features in this area, a condition was placed on planning consent requiring a scheme of archaeological work to be undertaken at the development site. By developing this area as a burial ground, buried archaeological features are at risk of being disturbed, and it was anticipated that this historic landscape survey would inform the future placement of burials to minimise this risk. The project design (*Appendix 2*) and project brief (*Appendix 1*) defined the parameters for a desk-based assessment to examine the historic context for the site and an English Heritage Level 2 survey (English Heritage 2007) to provide a record of the extant surface archaeological resource.

2. METHODOLOGY

2.1 DESK-BASED ASSESSMENT

- 2.1.1 The desk-based study provided the basis for an assessment of the nature and significance of the known archaeological and historical remains in the proposed development site. This served as a guide to the archaeological potential of the study area, and informed the historic landscape survey. The locations of the statutory and non-statutory sites within the development site were identified and collated into a gazetteer (*Appendix 3*), and are plotted on Figure 2.
- 2.1.2 The desk-based study acknowledges that a significant amount of primary research had been undertaken by Dr Richard Newman (Newman and Newman in prep), who has very kindly shared his research with OA North and, as such, has provided an invaluable assessment of the history of Dalton village and the heritage within the study area. The present historical assessment is heavily based upon the work of Richard and Caron Newman.
- 2.1.3 All relevant sources of primary / secondary information on the history of the study area were consulted, and included the Cumbria Historic Environment Record, the Cumbria County Record Office (Kendal), containing primary archives, and grey literature and secondary sources available at the offices of OA North.
- 2.1.4 The principal sources of information consulted were historical and modern maps of the study area, although published and unpublished secondary sources were also reviewed. The study has focused on the proposed development area, although information from the immediate environs has been summarised in order to place the results of the assessment into context. Emphasis was placed on the early cartographic evidence relating to this area, as this was seen as essential to determining the development of the landscape and, in particular, the extent of the former Dalton village.
- 2.1.5 ***Cumbria County Historic Environment Record (HER):*** the Historical Environment Record (known formerly as the Sites and Monuments Record), is maintained by the Cumbria County Council, and holds records of known archaeological sites within the county, as both paper and digital information. A record, including grid reference and description, was obtained for all sites within the defined area and for the immediate environs.
- 2.1.6 ***Cumbria County Record Office, Kendal:*** the County Record Office in Kendal was contacted to consult historic maps of the study area, and relevant Ordnance Survey (OS) mapping.
- 2.1.7 ***Lancashire County Record Office, Preston (LRO):*** the County Record Office in Preston was also consulted in order to examine the OS First Edition mapping for the study area. Historically, the development site was just outside the county boundary of Westmorland, therefore county OS mapping for the area is held by Lancashire County Council.
- 2.1.8 ***Oxford Archaeology North:*** OA North has an extensive archive of secondary sources relevant to the study area, as well as numerous unpublished client reports on work carried out both as OA North, and, in its former guise of Lancaster University Archaeological Unit (LUAU). These were consulted where necessary.

2.2 TOPOGRAPHIC SURVEY

- 2.2.1 A Level 2b survey (OA North 2002) of the sites identified by the appraisal, which is equivalent to English Heritage Level 2 (English Heritage 2007), and provides for an outline record of the archaeological detail in conjunction with a record of the local topography.
- 2.2.2 **Instrument Survey:** survey control was established over the site by closed traverse and internally was accurate to +/- 30mm; the control network was located onto the Ordnance Survey National Grid by recording topographic features and by use of Global Positioning Survey (GPS), which in the woods provided accuracy's of +/- 0.5m.
- 2.2.3 The surface features were surveyed by EDM tacheometry using a total station linked to a data logger, the accuracy of detail generation being appropriate for a 1:500 output. The digital data was transferred onto a portable computer for manipulation and subsequent incorporation into a CAD base. The archaeological detail was drawn up in the field as a dimensioned drawing on the plots with respect to survey markers. The survey drawings were generated within a CAD system and were merged with existing topographic data, and historical data.
- 2.2.4 **Site Gazetteer:** the descriptive data was directly input on site into a palm computer, for subsequent incorporation into Access 97. The database included mandatory fields: HER No, Survey Ref no, Site Name, NGR, Site Description, Monument Type, period, and condition. The description incorporates a provisional interpretation of the function and purpose of a site, where possible, and provides a provisional interpretation of the site's chronology where possible.
- 2.2.5 **Photographic Survey:** a photographic archive was generated in the course of the field project, comprising landscape and detailed photography and was undertaken using a digital SLR camera, and black and white film camera. The photography was recorded on photographic *pro-forma* sheets which showed the subject, orientation and date.

2.3 PROJECT ARCHIVE

- 2.3.1 **Archive:** the results of the fieldwork formed the basis of a full archive to professional standards, in accordance with current English Heritage guidelines (1991). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. The digital data was collated in a CAD system (AutoCAD 2004), and incorporated scanned historical mapping.

3. HISTORICAL BACKGROUND

3.1 INTRODUCTION

3.1.1 The following section presents a summary of the historical and archaeological background of the general area. This is presented by historical period, and has been compiled in order to place the study area into a wider archaeological context.

Period	Date Range
Palaeolithic	30,000 – 10,000 BC
Mesolithic	10,000 – 4000 BC
Neolithic	4000 – 2,200 BC
Bronze Age	2,200 – 700 BC
Iron Age	700 BC – AD 43
Romano-British	AD 43 – AD 410
Early Medieval	AD 410 –1066
Late Medieval	1066 –1540
Post-medieval	1540 – c1750
Industrial Period	c1750 – 1901
Modern	Post-1901

Table 1: Summary of British archaeological periods and date ranges

3.2 LOCATION, TOPOGRAPHY AND GEOLOGY

3.2.1 The study area comprises a triangular-shaped area of plantation, which is situated 1.3km east-south-east of Burton-in-Kendal, and immediately south of the present day hamlet of Dalton, and about 0.6km north-east of the present Dalton Hall (Fig 1). It is at the boundary between a gently undulating, predominantly agricultural landscape characterised by small, irregular, ancient enclosures to the west, and a more dramatically sloping, rocky and heavily wooded area to the east. Formerly an area of village green, the development site is now heavily wooded, and includes an earlier plantation in the south-west corner, from where plantings expanded out to cover the remainder of the study area. The area slopes upwards from the south-west to the north-east.

3.2.2 The surface geology is predominantly limestone, with relatively little soil cover. Small outcrops are common, and in the south-west corner of the study area is a small area of exposed limestone pavement. It is this geological character, that has resulted in the land-use history evident for this area, as limestone quarrying and processing is well-evidenced within the proposed development site and its immediate environs.

3.3 HISTORICAL BACKGROUND

- 3.3.1 The following assessment presents a summary of the historical and archaeological background of the study area and its immediate surroundings, organised according to historical period (Table 1). It outlines the major historical developments and changes in land-use, highlighting those developments that have impacted significantly on this area and, particularly, those that have resulted in the preserved scheduled monuments. It relies heavily upon the extensive research of Richard and Caron Newman (Newman and Newman in prep).
- 3.3.2 **Prehistoric / Roman Periods:** there are no known prehistoric sites within or in the immediate vicinity of the study area; however, one of the more prominent earthworks near the study area is an enclosure (HER 2524; SM 35031) that has been identified in both the HER description and the Scheduled Monument description as being of Iron Age or Romano-British date. Referred to as the Russell Farm Settlement, the site is located just north of the study area, on what is currently Russell Farm, in the present hamlet of Dalton. In the light of the primary research by Richard Newman, this monument should perhaps be classed as a component of the medieval settlement at Dalton, and is further discussed within the medieval section (*Section 3.3.9*).
- 3.3.3 **Medieval:** in the medieval period Dalton township can be best characterised as a scattered arrangement of small, nucleated settlements, often simply farmsteads, situated in a manner that would take best advantage of pasture, arable land and woodland. Old Dalton Hall, the manorial *caput*, would have been at the centre and heart of the township (Newman and Newman in prep). Dalton was recorded in the Domesday Book (Faull and Stinson, 1986), and had a name that referred to a township set within a valley; in 1086 it was held by the crown but by the twelfth century it had passed to the de Croft family (Farrer and Brownbill 1914; Smith 1967).
- 3.3.4 The earliest pertinent mapping (Machells map (CRO WPR/10 Misc)) of 1694 shows two centres of the village; the present day hamlet of Dalton, just to the north of the study area, and a settlement to the south of the study area (which is scheduled (SM 35030) and called the 'Dalton Deserted Medieval Village'). The northern settlement area seems to have been surrounded by an expanse of common waste or pasture (CRO WPR/10 Misc), with a certain amount of enclosed land connecting the farmsteads and structures. Analyses of the available historic mapping suggests that the process of enclosure continued through the late medieval period, but this was to gain pace significantly only later in post-medieval times (Newman 2009).
- 3.3.5 To the south of Old Dalton Hall were a series of farmsteads, associated with enclosures called Mark Farm and Noble Farm; these were seemingly abandoned at some date before the Machell 1694 map (CRO WPR/10 Misc) with the abandonment probably linked to the establishment of a deer park to the south of Dalton Old Hall. The extensive 500 acre deer park was established after a licence was granted to de Croft in 1372 (Farrer and Brownbill 1914, 185); it protected a patch of ancient woodland, Dalton Park Wood, and incorporated the boundaries of ancient enclosures as part of its own perimeter. Part of the park, 200 acres of it, had previously been an arable, farmed landscape, and 'would have represented a significant reduction in Dalton's arable acreage, ...it suggests that some former tenanted lands were being converted into a demesne holding of the manor [and]

the most likely explanation for this is that there had been some mid-fourteenth century depopulation of Dalton township that allowed a change in land management' (Newman and Newman in prep). Tradition, and nineteenth century accounts, tell of the abandonment of a (presumed medieval) village (HER 2525; SM 35030) in this area due to plague; said to be near Dalton Old Hall, which tradition tells us was depopulated by 'a plague which then raged in England' (Bulmer 1885, 646). It is perhaps, therefore, tempting to ascribe such a depopulation, and the abandonment of these farmsteads, to the Black Death in the latter half of the fourteenth century.

- 3.3.6 ***'Dalton Deserted Medieval Village'***: a medieval settlement was documented at Dalton in 1334/1336 from the Lay Subsidy Rolls (SM 35030), but the extent of the medieval village is uncertain. It is evident from the Machell Map (1694) that the southernmost element of the village (the scheduled area called the 'Dalton Deserted Medieval Village' (HER 2525, SM 35030)) had developed by the late seventeenth century, but the date and mechanism for its formation can only be conjectured. Newman and Newman (in prep) believe that the settlement been encroached from the waste of the village green, but the date at which this occurred cannot be determined with any reliability and could be late medieval or even early post-medieval. Certainly, this southern settlement area was still developing between the seventeenth and nineteenth centuries (Newman and Newman in prep), although it was evidently in decline during the nineteenth century.
- 3.3.7 The abandonment of this settlement is, though, better documented. It was still a functioning settlement, or part of a settlement, as late as the 1820 tithe map (CRO WPR 10/1/4/19), and was only abandoned at some point between that date and the OS First Edition 25" map of 1891. The most recent house to have been built at this site was erected between 1837 and 1865, and is now a standing ruin (Newman and Newman in prep; Newman 2009, 229). While the settlement may potentially have had its origins in the medieval period its desertion was clearly of later post-medieval date.
- 3.3.8 This monument is scheduled and has been accorded three separate areas of protection; the main part, that adjacent to the southern boundary of the study area (Area A), survives as the fragmentary remains of buildings, enclosures, field boundaries, trackways and lynchets (MPP23/AA12085/1). Further south, half way between the main part of the monument and the site of Dalton Old Hall (not shown on figure), are the remains of additional buildings, with field boundaries and evidence of an open field system on all sides (Area C). The majority of the earthworks survive in good condition.
- 3.3.9 ***Russell Farm Enclosure***: the Russell Farm enclosure (HER 2524; SM 35031) is a large sub-circular enclosure, containing a double-oval of boulders, with additional enclosures on its south and west sides, measuring approximately 63m by 43m in total (MPP23/AA12135/1). On the north side, the perimeter of the large enclosure comprises two rows of rough boulders, c 1.6m wide. A likely entrance, flanked by large boulders, is on its south-eastern side, while the remains of a possible structure of uncertain character is to be found on the north-eastern side. To the south and west of the large sub-circular enclosure is a trackway, and on the opposite side of this trackway are two smaller, stone-walled, sub-rectangular enclosures. Another trackway separates these two enclosures from another group, enclosures of a far more fragmentary nature, on the western side of the large sub-

circular enclosure containing the double-oval. The monument was interpreted by Tom Clare, former Cumbria County Archaeologist, as a Romano-British settlement, that was then re-used as a village pound for the medieval settlement. Newman and Newman (in prep) suggests that there is no positive evidence to indicate that the site was prehistoric, but ‘...rather it seems to be a communal stock controlling area of likely medieval origin’ (*ibid*). Seemingly marked on the estate map of 1694 (CRO WPR/10 Misc), the double oval stone-built enclosure is located in the approximate centre of the settled area. Based on this map ‘*This attribution seems highly likely given that it appears to have been a functional part of the settlement in 1694 and appears to be physically connected to an outgang that led up on the common waste of Dalton Crag. Stock appear to have entered the settlement from the waste through the outgang and into the double oval enclosure. On the west side of the double oval are probable stockades and a droveway leading out into the common arable field. The features seem to relate to a control system that allowed cattle to be brought in from the common waste and then let out on the common arable lands in order to manure them*’ (Newman and Newman in prep).

- 3.3.10 This interpretation, based largely on intra-settlement spatial relationships, is indirectly supported by those areas with a relatively high proportion of common pasture during the medieval period; the Cumbria HLC records over 40% of medieval Dalton township as being predominantly uncultivable common waste (Newman and Newman in prep).
- 3.3.11 ***Post-Medieval Industrial Activity:*** during the post-medieval period, the study area and its surrounding environs can be characterised as a largely pastoral landscape, that was subject to a gradual process of enclosure, with a local industry that was focused on the quarrying and processing of limestone. There are four other known post-medieval monuments within the study area or in its immediate vicinity. These monuments exemplify the nature of landscape use and industrial activities in the area at the time, comprising three lime kilns and one farmstead. Representing the only known HER monument within the study area is Henridding Quarries and Lime Kiln (HER 17472), which is in the south-west corner of the area and survives as a ‘confusing jumble of soil, natural stone and cut stone, crowned by trees’. Only one individual element of the lime kiln can be clearly delineated, and is an arc of heavily-calcined bowl lining, projecting about 0.4m from the north-western part of the western quarry bank. This, as well as the size of the mound, suggests a relatively large kiln, despite the fact that no other structural features can be distinguished. The OS First Edition 25” mapping (1891) also records a quarry at this location, with related quarries to the east and south.
- 3.3.12 To the south-east of the study area are the remains of another kiln and related quarry, which is confusingly also named Henridding Lime Kiln (HER 17473). This kiln has survived exceptionally well and the rear of it is preserved to its full height, including its coping stones, as well as the access chamber and bowl, which was lined with relatively large sandstone blocks (HER 17473 description).
- 3.3.13 North of the study area, just to the east of the Russell Farm Enclosure (*Section 3.3.10*), are the remains of the Stone Wood Lime Kiln (HER 17469). Its state of preservation does not appear to be as good as that of the Henridding Lime Kiln; however, the arch of the access chamber is visible above the surface of the mound, suggesting that the remains of the structure survive below ground. The

current condition of the monument is described as ‘ruinous and overgrown’ (HER 17469 description).

- 3.3.14 **Other Post-Medieval Monuments:** the only non-industrial post-medieval monument in the immediate vicinity of the study area is the former Home Farm for Dalton Hall (HER 17002), located due west of the study area, which is a planned model farmstead. This listed building complex was the object of a building survey undertaken by OA North, prior to the conversion of some of the former, unused, farm buildings into commercial office space (OA North 2006). The complex was constructed in *c* 1863, but built according to an older, retrospective eighteenth century design (OA North 2006, 15). Since then, and despite having been a functional farm for 150 years, the buildings were subjected to few alterations. The design consisted of buildings oriented around a central, enclosed, courtyard. The watering of cattle was facilitated by a carefully planned arrangement of downspouts and troughs in the courtyard, all fed by rainwater collected on the roofs of the farm buildings (HER 17002 description; OA North 2006, 9).
- 3.3.15 In addition, post-medieval pottery was recovered from another earthwork (called Dalton Park Earthworks, HER 6517), located between the Home Farm and Dalton Old Hall in Dalton Park, as part of a watching brief undertaken during the laying of a pipeline. The monument consisted of field boundaries, including banks and ditches and trackways, that were recorded by the HER description as having an unknown date. Two other known monuments of unknown date are found in the immediate vicinity of the study area, although these sites have received only cursory examinations. Both named Dalton Mound (HER 16517 and 16518), and both to the east of the study area, were recorded by Tom Clare, then Cumbria County Archaeologist; however, field investigators in 2000 could not locate them (HER 16517 description).

3.4 MAP REGRESSION ANALYSIS

- 3.4.1 **Introduction:** the following presents an overview of the development of the study area and its immediate environs based on analysis of the available historic maps. It highlights only those maps which provide clues as to land-use change over time, or best illustrate what historical or archaeological features may be found within the study area and its immediate environs.
- 3.4.2 Historic mapping which has been consulted as part of this assessment, but cannot be included in the following map regression analysis for reasons of scale, accuracy, or for an inadequate level of detail include: a reproduced engraving of Lancashire according to the Domesday Survey (Faull and Stinson 1986), an engraved map for Gregson’s Fragments of Lancashire 1598 (Gregson 1821), Saxton and Ryther’s 1576 map of Westmorland and Cumbria (Saxton 1579), Speed’s map of Westmorland and Kendle of 1610 (Humble 1611-12), Jansen’s 1646 map of Cumbria and Westmorland (Jansson 1646), and an 1822 engraved map of the Lakes of Cumbria, Westmorland and Lancashire (Mogg 1822).
- 3.4.3 **Map of 1694, redrafted as a Trespass Map of 1730 (CRO WPR/10 Misc) (Fig 3):** this map is of exceptional interest (Fig 3); created by the late seventeenth century antiquarian Thomas Machell as part of a history of the barony of Kendal (Newman and Newman in prep, 2). It represents Dalton township, permitting the

identification of individual properties, which can be correlated with modern mapping. The northern part of this map depicts a settlement area that corresponds with the present day hamlet of Dalton, with a double oval feature, that was possibly the village pound (*Section 3.3.9*), and which is featured just south of these houses. South of the double oval feature is an area that appears to be comprised of open space with only a few buildings, an area characterised as a village green (Newman and Newman in prep), with additional buildings and structures flanking its eastern and western sides. Only a few structures appear to be represented in this area, and most of what is depicted seem to be ‘stone-footed earthworks’ (Newman and Newman in prep, 2). The curvilinear boundary that is the southern edge of the study area is clearly identifiable on this map, and within it is a double oval feature that is labelled ‘Pinfolds’. To the south of this boundary, are two groups of buildings that correspond broadly to the location of the southern part of the village that is referred to in the Scheduled Monument description as the ‘Dalton Deserted Medieval Village’ (HER 2525; SM 35030).

- 3.4.4 To the west of the study area, the map shows an enclosed landscape, with a series of small, rectangular, and other somewhat irregular fields. This area of enclosure was drawn in detail, up to the historic boundary between Westmorland and Lancashire; west of the boundary, towards Burton, the map is largely featureless, except for an unembellished line of buildings on a north/south axis, capped with a church at their northern end. To the east of Dalton’s settlement areas, and an area covering much of the study area, the map shows an area of waste labelled as Dalton Common. To the south of the southern part of the village and centred on Dalton Old Hall is an area of larger, more regular enclosures, labelled Dalton Enclosed Lands (CRO WPR/10 Misc).
- 3.4.5 *Yates map of the county of Lancashire 1786* (Harley 1967): although Dalton, and more specifically the study area, is depicted as largely featureless at this scale, relatively little can be gleaned from this 1786 map. Dalton is drawn as a featureless zone of waste without trees. At least one building, corresponding to the present day Dalton hamlet, is marked. To the south of the study area is another smaller area of waste (shown as four squared blocks), which corresponds to the area of what had previously been marked as Dalton Enclosed Lands, and the purported ‘Deserted Medieval Village’. Dalton Old Hall is clearly labelled as ‘Hall’.
- 3.4.6 The historic boundary between Westmorland and Lancashire is clearly shown, and west of the study area follows the edge of the area of small, strip-like enclosures perfectly. The significance is that if the country boundary was established at the time that Lancashire became a recognisable entity in the late twelfth century then this would suggest that the fields of Burton and Dalton were in existence at that time (Newman and Newman in prep).
- 3.4.7 The site of Henridding Quarry and Lime Kiln (HER 17472 or 17473) is marked as ‘Hen Ridding’, and is to the south-east of the study area in a zone of waste. The precise location to which this label refers, however, is not clear at this scale (Harley 1967).
- 3.4.8 *Map of the county Palatine of Lancashire, 1818 (Greenwood et al 1818)*: at this scale no settlement detail is provided, save for a small cluster of buildings that correspond to the current location of the present day Dalton hamlet, and a cluster of buildings, labelled erroneously as ‘Dalton’, to the south-east of the study area,

and also to the south-east of where the Henridding Quarry and Lime Kiln complex was located. There is small patch of woodland corresponding to the south-west corner of the study area (Greenwood *et al* 1818), and is the earliest indication of the establishment of woodland across the study area. Dalton Old Hall (Labelled ‘Dalton Hall’) is also clearly shown, and is surrounded by parkland.

- 3.4.9 ***A map of the county Palatine of Lancaster, 1828 (Hennet 1829) (Fig 4)***: at this scale, the study area is shown as largely featureless. For the first time, however, the road running south-west to north-east, which defines the western boundary of the study area, is depicted. A settlement cluster corresponding to the present hamlet of Dalton is marked prominently, as is a small cluster of buildings corresponding to the present Rose and Woodside Cottages. ‘Henridding’ is again shown as a scattered cluster of buildings surrounded by an area of common waste. A small area of woodland is shown to the west of the south-western corner of the study area, but there is none depicted within the area.
- 3.4.10 ***Ordnance Survey First Edition 6” to one mile map of 1847 (map sheet 19) (Fig 5)***: although shown at a greater level of detail than previously depicted, the study area itself appears to have changed little since the 1818 map (*Section 3.4.8*). However, in contrast to the 1828 map, the south-west corner of the study area is shown as woodland, labelled ‘Lime Kiln Plantation’, while the remainder of this triangle is shown as predominantly waste. Within this wooded area, ‘Limestone Quarry’ and ‘Limekiln’ are clearly labelled, and correspond to the location of the Henridding Lime Kiln (HER 17472). Enclosure boundaries are depicted for the first time within the study area; one defines the extent of the Lime Kiln Plantation, and a second small rectilinear plot is shown to its immediate north. A straight boundary line extends north-east / south-west between this plot and the road marking the north-eastern edge of the study area.
- 3.4.11 The Woodside and Rose Cottages are clearly shown just west of the study area (but are not labelled by name), and among the Woodside Cottage buildings was one labelled as ‘Ruin’, and a small patch of woodland labelled ‘Crow Trees’. Further west, the small, strip-like enclosures are still recognisable, and the historic boundary between Westmorland and Lancashire follows their outline. Just north of the Woodland Cottages and the ruin is depicted a rectangular area of waste, identified as a village green (Newman and Newman in prep). To the north of this, just south of the present hamlet of Dalton, is another small area of woodland that had previously not been shown on historic mapping. This, in addition to the large expanse of woodland to the east of the study area, demonstrates how the area has been progressively planted with woodland.
- 3.4.12 The area of the former Henridding Lime Kiln (HER 17473 and 17472) to the south-east of the study area, which had been clearly marked as woodland on the 1828 map, is on this map labelled as ‘Harry Wood’, and is labelled ‘Limestone Quarry’.
- 3.4.13 To the south of the study area, in the area of the southernmost part of former Dalton village, are depicted a few roofed buildings amongst irregular enclosures, and indicates that elements of this part of the village were still not deserted at this relatively late date. Several small areas of woodland or planted orchards are also represented on this map, surrounding a sub-rectangular enclosure; these are visible today as small irregular and rounded enclosures or earthworks.

- 3.4.14 ***Ordnance Survey First Edition 25" to one mile map of 1891 (map sheet 19.6)*** (***Fig 6***): within the study area, very little landscape development seems to have occurred since the previous map. The area of plantation has expanded to include the small rectangular plot, and the boundary linking it to the north-eastern side of the study area has fallen out of use. The remainder of the study area is shown as having a scatter of trees across an area of waste land.
- 3.4.15 Little development is apparent to the west of the study area; the Rose Cottages and Crow Trees are labelled, unlike the previous 1847 map, but the Woodside Cottages are not. The small patch of woodland to the north of the former, medieval, village green is labelled as 'New Orchard Wood' for the first time. In between these two areas, the small rectangular area of former village green is now represented as being wooded.
- 3.4.16 The most notable change to this landscape from the previous, 1847 edition mapping is that the former standing structures to the south of the study area, corresponding to the purported 'Deserted Medieval Village', are either not depicted or shown as a ruin. The small patches of woods are still shown, but the sub-rectangular enclosure that they had surrounded on the previous map are no longer shown.

4. SURVEY RESULTS

4.1 INTRODUCTION

4.1.1 A Level 2b survey was undertaken of the approximately triangular-shaped Lime Kiln Plantation. The documentary study has demonstrated that the area was essentially a village green at the time of the 1694 survey (CRO WPR/10 Misc). The main centres of the village were to the south and to the north of the area, and were linked by a road, with associated ribbon development, which corresponds with the present day road that extends through Rose Cottages and Crow Trees. The road that defines the western edge of the study area did not appear until the 1828 Hennet map. The detailed descriptions of the identified features are presented within *Appendix 3* and a summary of the identified archaeological features is presented below (Fig 7).

4.2 ARCHAEOLOGICAL LANDSCAPE DESCRIPTION

4.2.1 The survey essentially reinforces the desk-based assessment that indicated that there were some remains that related to the adjacent deserted village to the south, comprising mainly field boundaries, but also later extraction and woodland management features.

4.2.2 **Boundary Features:** some of the identified boundaries are represented on the First edition map 25" map of 1891 (Sites **08-11, 25**) (Fig 8), but these are the latest survival of a field system that evidently has an earlier origin. The boundaries have two distinct characters, those formed of earthen and stone banks and those formed of large boulders. Examples of the former are depicted on the OS maps, whereas the latter had evidently fallen out of use by the time of the OS mapping. The boulder or orthostatic boundaries are unusual features in that they comprise alignments of very large boulders, some up to a metre across, but which have little soil or small stone matrix. If it was not for the fact that these large stones are artificially aligned then they could be mistaken for natural outcropping as there is a general scatter of stones of similar size across the study area. Examples of similar boundaries have been identified within the area of the deserted village to the south, suggesting that these were early boundaries that related to the former village.

4.2.3 The boulder / orthostatic boundaries are: **01, 02, 07, 27** and **28**; they are typically short and include a number of small structures (Fig 9). Site **02** is a small rectilinear enclosure *c* 6m across, with a small adjacent sub-circular structure that is *c* 4.5m across. There are no internal features, or internal terracing within these structures, and the erratic positioning of the large stones means that they were not stock proof; it is therefore unclear as to what purpose these two small features served. Site **01** is a comparable rectilinear structure disturbed by a later track (Site **26**); it is formed of an alignment of large boulders and is seemingly open to the west, though it is not apparent if that reflects later disturbance.

4.2.4 Structure **27** is an anomalous rectilinear feature comprising a series of short boundary sections formed of large boulders, and is seemingly butted by conventional wall/bank boundaries **11** and **25**. It appears to be the surviving

element of a former enclosure, built of large boulders, which was then incorporated into a long north-west/south-east boundary (Sites **11** and **25**).

- 4.2.5 The wall / bank boundaries form a fairly cohesive system, which is only partly depicted on the OS First Edition 1847 map, and suggests that elements of it had dropped out of use by the mid-nineteenth century. The boundaries are uniform in character, contain substantial amounts of stone and also earthen banks, and it is presumed that they were formerly stock proof. Boundaries **03** and **05** form a sub-rectangular field that in plan extends up against the road defining the western side of the plantation. The northern boundary of the field, and the western end of boundary **03** is very indistinct, and has accordingly been depicted with a dashed line. The long boundary **10**, **11** and **25** converges with boundary **03**, but does not actually merge, leaving a c3m gap between them at the northern end, contrary to the depiction on the OS mapping. This would appear to be a funnelled outgang to guide the movement of stock into the northern rectangular field formed by boundaries **08**, **09** and **03**. Boundary **16** is a short section of wall/bank converging with the corner of the **08/09** field; however, the area around the corner of the **08/09** field was too overgrown to be able to discern an actual join. Converging with the south-western end of this section of boundary was a short section of boulder boundary (Site **28**) but there was no evidence of an extant join. This boundary is depicted on the OS First Edition map (1847), but not on the OS First Edition 25" map (1891).
- 4.2.6 The overall system, comprising two fields and a funnelled outgang, had an essentially agricultural function, but parts of this complex had gone out of use by the time of the OS First Edition, when the south-western part of the site had been planted with trees, and the boundaries **25**, **11**, **10** and **03** had been used to define the edge of the plantation. By the time of the First Edition OS 25" map (1891) the northern field (defined by boundaries **08** and **09**) had been incorporated into the plantation
- 4.2.7 **Quarrying and Industrial Working:** a significant number of the sites identified within the study area were related to quarrying and processing, and varied from small quarry sites to very large quarries. The smaller sites (Sites **14**, **17**, **19** and **20**; Fig 10) were typically small hollows in the ground, and were invariably not associated with large spoil mounds, and would imply that there was no selectivity about the quality of stone that was being extracted; the stone was probably being used for dry-stone walling or non-critical applications. Some of these quarries had obvious entrances but as often as not they were simply hollows in the ground.
- 4.2.8 By contrast there were the larger quarries (Sites **04**, **06** and **22**), which were very large extraction hollows and were extracting limestone on an industrial scale. The largest of these (Site **04**; Fig 11) was depicted on the OS First Edition 6" map (1847), but by the time of the First Edition 25" map (1891) it was depicted as Old Quarry indicating that it had been abandoned by that date. It was extremely deep, in places it was up to 3.5m deep, and was 54m x 34m in size. It had large spoil heaps around the northern and western sides indicating that there was considerable discrimination being exercised in the quality or character of the stone being extracted. The purpose for the quarry is indicated by the label on the OS First Edition map (1847) and also the name of the plantation, which is Lime Kiln Plantation. The lime kiln referred to on the OS First Edition 6" map (1847), was not referred to on the First Edition 25" map (1891), and perhaps suggests that the

kiln was not very evident to the OS surveyors when they were producing the latter map. Certainly, the kiln was difficult to identify during the present survey, but was eventually revealed as a heavily calcined, sub-circular top of the flue set into the large bank at the western end of the kiln, of which only the top 0.3m was visible; the lower part of the kiln had become obscured by collapse from the bank. The need to supply limestone for the lime kiln would certainly explain why there were such large spoil heaps as the process of lime burning demands that the blocks are of fairly uniform size and quality so that a uniform firing is experienced by all of the kiln charge. Smaller blocks would be broken up till they were of an appropriate size and smaller lumps would be discarded hence the spoil heaps (Johnson 2002).

- 4.2.9 The Site **22** quarry is an extensive area of erratic quarrying, comprising a substantial number of quarry hollows that amalgamated into one large expanse of extraction. There are some small spoil mounds, indicating refining of the limestone extracted but not on the scale that was being practised at the Site **04** quarry. A large quarry extends across the south-western tip of the quarry (Site **06**) and effectively obscures the line of road that would have extended between that leading south to the former Dalton Hall and that leading to the northern part of the Dalton village past the present Crow Trees and Rose Cottage. The road is shown on the (CRO WPR/10 Misc) map (Fig 12) and would have cut across the western tip of the plantation, but because of the considerable disturbance from the quarry it is not clear if part of the present earthworks reflect the line of a former hollow way.
- 4.2.10 Site **21** comprises a series of small artificial hollows set into a scarp slope; their form is somewhat uncertain but they have the appearance of the scars from former kilns that were utilising the natural topography. Such kilns can be either small lime sod kilns (Johnson 2002), given the abundance of limestone in the area, or potash kilns.
- 4.2.11 **Woodland Features:** a plantation was established across the south-western part of the triangular study area at some time before the OS First Edition 6" mapping and has since expanded, until it now extends across the whole area. The area has been subject to some relatively recent woodland management and is reflected in a select number of later features. The eastern part of the site is occupied by a regularly planted woodland plantation (Site **13**), which contrasts with the erratic woodland growth elsewhere on site. There are a number of tracks through the wood which are characterised by corridors that are absent of trees and subtle ditches at their margins, as well as vehicle tracks through the middle (Sites **15**, **26**, and **29**). However, tracks **23** and **24** are well-defined hollow-ways that vary in width from 2m to 3.4m and have a pronounced dipped hollow. They are in line with each other, extend east/west down the slope, and were probably linked, but there was no observed connection between them. They contrast with the other tracks in that they do not mark tree free corridors, and were probably of an earlier date.

5. CONCLUSIONS

5.1 DISCUSSION

- 5.1.1 The survey follows on from a significant body of research undertaken by Richard and Caron Newman into the history and archaeology of the Dalton village, and has demonstrated that the township has considerable antiquity and longevity. It was first recorded in the Domesday Book (Faull and Stinson 1986); elements of it were abandoned in the nineteenth century and the northern part of the extended village is still occupied. The all important Machell map (1694; CRO WPR/10 Misc) shows that the study area at that date was essentially an area of common village green between the southern and northern parts of the village, which were linked by two roads. The westernmost of these extends to the west of the study area extending through the present day Rose Cottages and Crow Trees settlements, which approximately correspond with houses shown on the historic map. The easternmost of these roads is more uncertain and appears to extend north/south through the middle of the study area and when the historic 1694 map is geo-referenced onto the present survey map (Fig 13) it would appear that the line of the historic road corresponds with the approximate line of Boundaries **03** or **07**. The 1694 map CRO WPR/10 Misc) shows a double oval feature which corresponds closely with the location of the two fields recorded by the present study (defined by boundaries **03**, **05**, **08** and **09**), and is labelled 'Pinfolds' on the 1694 map. The implication is that the road or track was a droveway that took stock off the waste land to the east and fed them through the funnel arrangement into the fields which were seemingly related to the historic pinfolds.
- 5.1.2 Given the correlation between the observed features and the Machell 1694 map (CRO WPR/10 Misc) it is possible to establish a basic phasing of the identified archaeological resource. The earliest extant features were probably the small sections of boulder formed boundary (Sites **01**, **02**, **07**, **28**, and **27**) of which Boundary **07** may have edged the line of the former trackway, given that it is on the correct orientation and in approximately the correct position. The two small structures (Site **02**) would have also been in the approximate position of the former routeway.
- 5.1.3 The secondary stage of development was the establishment of the two fields or pinfolds (Sites **03**, **05**, **08-11** and **25**), which incorporated a funnelled outgang that would have taken stock off the waste land to the east. This was seemingly in place by the time of the 1694 map and was referred to as 'Pinfolds'.
- 5.1.4 The next stage of development was a period of industrial extraction and processing characterised by large limestone quarries (Sites **04**, **06** and **22**), as well as one definite limekiln (Site **04**) and a further possible kiln (Site **06**). This industrial working was in place by the time of the OS First Edition map (1847) and had gone out of use by the time of the OS First Edition 25" map (1891).
- 5.1.5 Finally the area was developed as a plantation which occurred in stages with the south-western part of the study area planted first as early as 1818, and the last being the area on the north-east side of the study area (Site **13**).

5.2 RECOMMENDATIONS

- 5.2.1 The survey has identified a significant archaeological resource scattered across mainly the south-western part of the area. Some of this relates to the southern part of the former village of Dalton, of which part has been scheduled, demonstrating its considerable archaeological importance. It is recommended that the establishment of woodland burials be undertaken in areas that are remote from the identified remains and, in particular, to the north of the line of boundaries **05**, **03**, **10**, **11**, and **25** (Fig 14). Identified archaeological remains, particularly the boundaries, within the area to the north of this line should also be avoided.

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APPENDIX 1: PROJECT BRIEF

Site: Lime Kiln Plantation, Burton-in-Kendal

Grid Reference: SD 545 762 (centred on)

Scope of Development: burial ground within an overall application area of 12.25ha

Planning Application No.: SL/03/2145

1.1 *Detailed proposals and tenders are invited from appropriately resourced, qualified and experienced archaeological contractors to undertake the archaeological project outlined by this Brief and to produce a report on that work. The work should be under the direct management of either an Associate or Member of the Institute for Archaeologists, or equivalent. The specification must include:*

- A description of the recording system to be used
- Details of key project staff, including the names of the project manager, site supervisor and any other specialist sub-contractors to be employed
- Details of on site staffing, expressed in terms of person days
- A projected timetable for all site work and post excavation work

1.2 Any significant variations to the specification must be agreed by Cumbria County Council's Historic Environment Service (CCCHES) in advance. No fieldwork may commence until the specification has been approved by CCCHES.

PLANNING BACKGROUND

2.1 CCCHES has been consulted by Francis Mason-Hornby and South Lakeland District Council regarding a proposed scheme to establish a woodland burial ground at Lime Kiln Plantation, Burton-in-Kendal.

2.2 The scheme affects an area of archaeological interest and is located between two Scheduled Monuments (SM nos. 177 & 382).

2.3 Because of the high archaeological potential of the site, a condition has been placed on planning consent requiring a scheme of archaeological work to be undertaken at the site. The first phase of this work will be an archaeological landscape survey to assess the nature and potential of the earthworks within the site. The burials can be placed to avoid any significant archaeological remains identified in the survey. This Brief deals solely with this phase. Any archaeological features identified in the survey which will be unavoidably disturbed by the burials will need to be recorded. This recording will require the production of another Brief from this office.

ARCHAEOLOGICAL BACKGROUND

3.1 The Scheduled Monument of Dalton medieval village (SAM 382) survives as an area of substantial earthwork remains immediately to the south of the application area. 18th century estate maps indicate that the extent of the medieval village may have included the site.

3.2 100m to the north of the site is the Scheduled Monument of an enclosure of probable Roman or medieval origin (SAM 177). A prehistoric burial located in the vicinity (Historic Environment Record no. 18994) shows the potential for archaeological remains to survive from that period as well.

SCOPE OF THE PROJECT

Objectives

4.1 To gather sufficient information to establish the location, extent, character, period, and condition of the surviving archaeological and historical features within the area of the proposed burial ground.

4.2 To provide an accurate identification survey of recognised archaeological and historic features.

Desk-Based Assessment

- 4.3 A desk-based assessment of the existing resource, to be undertaken before any work commences on site. This should include an assessment of primary and secondary maps and documents relating to the site, to set the survey results in their geographical, topographical, archaeological and historical context. Records and aerial photographs held by the County Historic Environment Record and County Records Office in Kendal. Where possible, contact should be made with Dr Richard Newman, Environmental Planning Manager at the County Council, to discuss the cartographic evidence for the site.

Fieldwork

- 4.4 A topographic survey of the site. This should include a close spaced walkover of the site recording any surface features of archaeological interest and areas of potentially significant disturbance. The location and extent of all archaeological and historical features should be established using an appropriate Global Positioning System (GPS). Accuracy of +/- 1m of the OS National Grid is required.
- 4.5 *A written description should be made of each archaeological or historical feature noted.*
- 4.6 A photographic record should be made of each feature with an appropriate scale included in each view. Photographs of specific features should be in digital and monochrome print formats. General landscape photographs showing features in their setting need only be digital. Digital images should be provided, unenhanced or otherwise manipulated, on CD.
- 4.7 Any loose finds should be recorded on the surface.
- 4.8 *Areas **not** affected by the proposed burial ground need not be included in the survey. Areas of limestone pavement and outcropping should be excluded from the survey.*

Reporting

- 4.9 The archaeological work must result in a report which should include as a minimum:
- ❖ A site location plan, related to the national grid
 - ❖ A front cover/frontispiece which includes the planning application number and the national grid reference of the site
 - ❖ A concise, non-technical summary of the results
 - ❖ A date when the project was undertaken and by whom
 - ❖ A description of the methodology employed and work undertaken
 - ❖ The results of the desk-based assessment
 - ❖ Plans at an appropriate scale related to the national grid showing: the location and position of features and finds of archaeological interest; the total survey area; and areas within the overall application area that have not been included in the survey
 - ❖ A description and interpretation of the archaeological and historical features identified contained within a gazetteer
 - ❖ A list of, and dates for, any finds recovered
 - ❖ A photographic record of any features of archaeological and historical interest
 - ❖ A description and interpretation of the archaeological deposits identified
 - ❖ A list of, and dates for, any finds recovered
 - ❖ A description of any environmental or other specialist work undertaken and the results obtained
- 4.10 *Three copies of the report should be deposited with the County Historic Environment Record (HER) within two months of completion of fieldwork. This will be on the understanding that the report will be made available as a public document through the HER.*

Publication

- 4.11 A summary report should be submitted to a suitable regional or national archaeological journal within one year of completion of fieldwork. If archaeological remains of significance are identified, one or more full reports should also be submitted to a suitable journal or other publication in due course.
- 4.12 *Cumbria HER is taking part in the Online Access to Index of Archaeological Investigations (OASIS) project. The online OASIS form at <http://www.oasis.ac.uk/> must therefore also be completed as part of the project. Information on projects undertaken in Cumbria will be made available through the above website, unless otherwise agreed.*

ARCHIVE

- 4.13 An archive must be prepared in accordance with the recommendations in Brown (2007). Arrangements must be made for its long term storage and deposition with an appropriate repository.
- 4.14 The landowner should be encouraged to transfer the ownership of finds to a local or relevant specialist museum. The museum's requirements for the transfer and storage of finds should be discussed before the project commences.
- 4.15 *CCCHES must be notified of the arrangements made.*

PROJECT MONITORING

- 5.1 One weeks notice must be given to CCCHES prior to the commencement of fieldwork.

FURTHER REQUIREMENTS

- 6.1 It is the archaeological contractor's responsibility to establish safe working practices in terms of current health and safety legislation, to ensure site access and to obtain notification of hazards (eg. services, contaminated ground, etc.). **The County Historic Environment Service bears no responsibility for the inclusion or exclusion of such information within this brief or subsequent specification.**
- 6.2 Care must be taken in dealing with human remains and the appropriate Ministry of Justice and environmental health regulations followed. CCCHES and the local Coroner must be informed immediately human remains are discovered.
- 6.3 The involvement of CCCHES should be acknowledged in any report or publication generated by this project.

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APPENDIX 2: PROJECT DESIGN

1 INTRODUCTION

1.1 CONTRACT BACKGROUND

- 1.1.1 Francis Mason-Hornby of the Dalton Hall Business Centre has invited Oxford Archaeology North (OA North) to submit a project design for a programme of historic landscape survey of land at Lime Kiln Plantation, Burton in Kendal, Cumbria (SD 545 762). The proposed programme is in accordance with a project brief by Cumbria County Council and is intended to inform a planning application for a woodland burial site (Planning ap no SL/03/2145).

1.2 HISTORICAL BACKGROUND

- 1.2.1 The proposed woodland burial site is just to the north of the Dalton Medieval Village which was first documented in 1334/6 and was abandoned in the nineteenth century before the OS First Edition map of 1847. The earthworks of the former village include tracks, ridge and furrow, cultivation terraces, field boundaries / lynchets, enclosures, and at least two buildings. The remains of abandoned nucleated settlement is rare in Cumbria and the site is of considerable importance; as a consequence it has been scheduled (SM no 382). Eighteenth century estate maps suggest that the development site will be within the extent of the former village. An enclosure of probable Roman or medieval date is located near to the north of the site (SM 177).

1.3 OXFORD ARCHAEOLOGY NORTH

- 1.3.1 OA North (formerly Lancaster University Archaeological Unit) has considerable experience of the evaluation, survey and excavation of sites of all periods, having undertaken a great number of small and large scale projects during the past 19 years. One of its particular specialisms is in the sphere of landscape recording and assessment. OA North has the professional expertise and resource to undertake the project detailed below to a high level of quality and efficiency. OA North and all its members of staff operate subject to the Institute of Field Archaeologists (IFA) Code of Conduct.
- 1.3.2 OA North has undertaken a large number of upland landscape surveys for a variety of clients (both private and national agencies such as English Heritage and Royal Commission on the Historical Monuments of England (RCHM(E)) and employs a qualified surveyor (James Quartermaine, BA, DipSurv, MIFA) who has many years (since 1984 in the region) experience of the identification and survey of upland landscapes, having worked closely with the RCHM(E) and the Lake District National Park Authority on a large number of projects. To date OA North has undertaken archaeological field surveys of over 1000sqkm of upland landscapes and has recorded over 35,000 field monuments.
- 1.3.3 Since 1982 OA North has been undertaking extensive upland landscape surveys throughout Northern England. Surveys include the Lake District National Park Survey, the Torver Common surveys (Lake District), Haweswater and Thirlmere estate surveys (Lake District), 200sqkm of the Nidderdale AONB (for NYCC), most of the Forest of Bowland AONB (Lancashire), most of the Arnsdale / Silverdale AONB, and a multitude of smaller landscape projects which include the Otterburn Range surveys in the Lake District National Park.
- 1.3.4 Recently OA North has undertaken a major programme of upland identification survey across the uplands of North Wales, on behalf of the Royal Commission of the Ancient and Historical Monuments of Wales (RCAHMW). This has entailed the survey of 220sqkm of unenclosed upland, and has recorded over 3,200 monuments.
- 1.3.5 OA North has undertaken numerous surveys of medieval villages, both extant and abandoned. Notable examples include Melkinthorpe and Oddendale, in Cumbria and Wrathmel and Rufford in Lancashire.

2. OBJECTIVES

- 2.1 The primary purpose of the project is to inform the planning process for the proposed woodland burial site. The aims of this initial project are defined in the project brief as follows:
- to collate pertinent cartographic, relevant documentary evidence and secondary sources;

- to provide an accurate level 1 survey of all visible features, landscape elements and monuments;
- to gather sufficient information to establish the location, extent, character and condition of the surviving archaeological and historical features within the development site.

2.2 The following programme has been designed to provide an accurate archaeological survey of the study area, set within its broader landscape context.

3. METHODS STATEMENT

3.1 The following work programme is submitted in line with the objectives of the archaeological work summarised above. It is divided into three elements, desk based research (including aerial photographs), archaeological field survey, and reporting.

3.2 DOCUMENTARY STUDY

3.2.1 **Documentary and cartographic material:** the data generated during the desk-based study will provide the basis for an assessment of the nature and significance of the known surface remains. It will also serve as a guide to the archaeological potential of the study area.

3.2.2 It is recognised that a significant amount of work has already been undertaken into the archaeology of the study area, and in particular the former Dalton village. To this end it is proposed to contact Dr Richard Newman to establish what work has previously been undertaken.

3.2.3 This work will address the range of potential sources of information, and will include an appraisal of the Cumbria Sites and Monuments Record, as well as appropriate sections of County histories, early maps, and such primary documentation (tithe and estate plans etc.) as may be available. Particular emphasis will be upon the early cartographic evidence which has the potential to inform the eighteenth and nineteenth occupation and land-use of the area, and will be essential to determining the development of the landscape and the extent of the former village. The study will recover any pertinent secondary sources that relate to previous investigations at the site.

3.2.4 Any photographic material lodged in the County Historic Environment Record (Kendal) or County record Offices (Kendal) will also be studied. Published documentary sources will also be examined and assessed. It will examine photographs, topographic prints and eighteenth and nineteenth century antiquarian histories and topographic guides. The study will examine place and field name evidence for the site and its environs.

3.2.5 This work will involve visits to the following repositories:

- Cumbria Sites and Monuments Record
- Cumbria County Record Office (Kendal)
- Local Studies Library
- Private Archives

3.2.6 **Geology and Topography:** a rapid compilation of geological (both solid and drift), pedological, topographical, and palaeoenvironmental information will be undertaken, using information available from the Ordnance Survey and ADAS. This will not only set any archaeological features in context but also serves to provide predictive data, that will increase the efficiency of the field investigation.

3.2.7 **Aerial Photography:** a survey of the extant air photographic cover will be undertaken. Aerial photographic collections to be consulted will include obliques and verticals held by the National Monuments Record, based in Swindon, the Cambridge University Collection of Air Photographs and photographs held by the County SMR.

3.2.8 **Archive:** where possible good copies of the plans, maps and illustrative material will be obtained from the sources; they will be illustrated within the final report and held within the project archive. Where possible large format copies of maps and plans will be obtained from the Record Offices.

3.3 FIELD SURVEY METHODOLOGY

- 3.3.1 The survey will be undertaken as an enhanced Level 1 type survey (details of OA North's survey levels are contained in *Appendix 1*) and will examine only the area that will be directly affected by the woodland burial proposals. The field survey study area is approximately 13ha, and comprises woodland. Areas of limestone pavement and outcropping will be excluded from the survey. The sites already identified by the documentary study will be checked and recorded at the same level of consistency as other newly discovered monuments. The survey will involve four elements: Reconnaissance, Mapping, Description and Photography.
- 3.3.2 **Reconnaissance:** the reconnaissance will consist of close field walking, varying from 10m to 30m line intervals dependent on visibility and safety considerations. The survey will aim to identify, locate and record archaeological sites and features on the ground and thus all sites noted will be recorded. The extent of any areas where there is no access will be defined on maps and depicted on the CAD mapping. All sites identified from the documentary study will be investigated. The survey of the foreshore will be restricted to periods of low tide, and the survey programme will be adjusted to fit in with the tide timetable.
- 3.3.3 **Survey Mapping:** a Satellite Global Positioning System (GPS) will be utilised to satisfy the Level 1 survey requirements. GPS uses electronic distance measurement along radio frequencies to satellites to enable a positional fix in latitude and longitude which can be converted mathematically to Ordnance Survey national grid. The GPS is a Leica 1200 differential survey instrument, which uses Smartnet corrections from local base stations transferred through a mobile phone. This means that the instrument can provide a locational accuracy of +/- 0.03m, and provides for a quick and effective means of recording the position and extent of sites. However, in woodland the accuracy technique typically degrades to +/- 1m. The GPS techniques will be used to record the extent of the site which internally stores the survey data and is then output as GIS shape files and will be imported directly into a GIS system (ArcMap 9.2).
- 3.3.4 **Site Description and Assessment:** the key to economy of survey is being able to compile a descriptive record for each site in a fast and accurate manner, which can be implemented in all weather conditions. It is proposed that the data be directly input on site into a palm computer, which is within a weatherproof case. The data will be incorporated into an Access 97 compatible database. The data will be backed up daily onto a portable computer running Access 97. The proposed system has the advantage that it can be input in adverse weather conditions, unlike conventional pro-forma sheets, and saves on the subsequent transcription of the data into the database; however, it is slightly slower to create the entry in the field by comparison with a conventional pro-forma.
- 3.3.6 The input into the system will be guided by a proforma to ensure uniformity and consistency of input. Each category of significance will be given high, medium or low scores in the field. These values will be averaged to provide an overall grade for the site at the data analysis stage. It will include mandatory fields: HER No, Survey Ref no, Site Name, NGR, Site Description, Monument Type, period, condition, threats, management recommendations, and photo reference.
- 3.3.7 The description will incorporate a provisional interpretation of the function and purpose of a site, where possible, and similarly will provide a provisional interpretation of the site's chronology where possible.
- 3.3.8 **Photographic Survey:** a photographic archive will be generated in the course of the field project, comprising landscape and detailed photography. Detailed photographs will be taken of all sites using a scale bar. All photography will be recorded on photographic pro-forma sheets which will show the subject, orientation and date. The photography will be primarily undertaken using a digital camera and will allow the incorporation of a digital image of specific sites into the Access database form (as required). The use of photography in this way considerably enhances the usability of a database and greatly assists the analysis of the landscape. This digital archive will be backed up using archivally stable black and white 35mm format photography which will be maintained to archival standards.
- 3.4 PROJECT ARCHIVE**
- 3.4.1 **Archive:** the results of the fieldwork will form the basis of a full archive to professional standards, in accordance with current English Heritage guidelines (Management of Archaeological Projects, 2nd edition, 1991). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. This archive

will be provided in the English Heritage Centre for Archaeology format, both as a printed document and digitally.

3.4.2 **Digital Presentation:** the digital data will be collated in a CAD system (AutoCAD 2004). This powerful system can be output in a variety of formats compatible with all major GIS and CAD software packages. In particular it can output in MapInfo format and in AutoCAD DXF and DWG formats. The database will be compiled in Access 97 format, as this provides good backwards and forwards compatibility with other versions of the software.

3.4.3 **Site Gazetteer:** the site descriptions and characterisations input in the field to the site PDA will be processed and combined with the records from the Cumbria HER. Once the digital gazetteer has been collated and edited, it will be output as an Access Report and input directly into a Microsoft Word format. This data will then be formatted and topped and tailed within word to produce the gazetteer volume for the survey project.

3.5 REPORTING

3.5.1 The report will present, summarise, and interpret the results of the programme detailed above, and will include a full index of archaeological features identified in the course of the project. The report will consist of an acknowledgements statement, lists of contents, summary, introduction summarising the brief and project design and any agreed departures from them. The report will identify the significance of the archaeological and architectural evidence and will include the following:

- An historical background of the study area, examining its origins and development
- Results of the archaeological survey, presented in conjunction with the survey mapping and documentary data
- An interpretative account of the archaeology of the landscape presented from its inception to the present.

3.5.2 The report will identify areas of archaeological importance, and will examine their level of preservation and fragility. The report will also include a complete bibliography of sources from which the data has been derived, and a list of further sources identified during the programme of work. It will have an appendix gazetteer of sites and designed elements which will be based directly upon the project database.

3.5.3 The report will incorporate appropriate illustrations, including copies of the site plans, and landscape survey mapping, all reduced to an appropriate scale. The site mapping will be based upon the CAD base. The report will be accompanied by photographs and historic illustrations illustrating the principal elements of the landscape.

3.5.4 **Editing and submission:** the report will be subject to the OA North's stringent editing procedure and two bound and one unbound copies of the report will be submitted to the client, and one to the Cumbria HER. In addition to the paper copies of the report digital copies of the report and drawings will be submitted in PDF format. The final drawings will be in AutoCAD 2004 format.

3.5.5 Primary archival material, such as negatives and historical mapping will be submitted to the appropriate museum.

3.6 PUBLICATION / DISSEMINATION

3.6.1 A short summary publication will be produced on the results of the study for inclusion in the *Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society*. This will be intended for a non-specialist reader and will include photographs and drawings. An online summary will be compiled in OASIS form.

3.7 CONFIDENTIALITY

3.7.1 The report is designed as a document for the specific use of the Client, for the particular purpose as defined in the project brief and project design, and should be treated as such; it is not suitable for publication as an academic report, or otherwise, without amendment or revision. Any requirement to revise or reorder the material for submission or presentation to third parties beyond the project brief and project design, or for any other explicit purpose, can be fulfilled, but will require separate discussion and funding.

4. OTHER MATTERS

4.1 ACCESS

- 4.1.1 It is assumed that OA North will have unrestricted pedestrian access to the study area for the duration of the survey.

4.2 HEALTH AND SAFETY

- 4.2.1 Full regard will, of course, be given to all constraints (services) during the survey, as well as to all Health and Safety considerations. The OA North Health and Safety Statement conforms to all the provisions of the SCAUM (Standing Conference of Unit Managers) Health and Safety manual, as well as the OA Health and Safety Statement. Risk assessments are undertaken as a matter of course for all projects, and will anticipate the potential hazards arising from the project.

4.3 INSURANCE

- 4.3.1 The insurance in respect of claims for personal injury to or the death of any person under a contract of service with the Unit and arising in the course of such person's employment shall comply with the employers' liability (Compulsory Insurance) Act 1969 and any statutory orders made there under. For all other claims to cover the liability of OA North in respect of personal injury or damage to property by negligence of OA North or any of its employees there applies the insurance cover of £10m for any one occurrence or series of occurrences arising out of one event.

4.4 PROJECT MONITORING

- 4.4.1 OA North will inform the client of all significant developments, and any potential departures from the agreed programme will be discussed and agreed with them prior to implementation.

5. WORK TIMETABLE

- 5.1 The phases of work will comprise:

5.1.1 **Desk Top Study:** a ten day period is required to collate all the available data.

5.1.2 **Field Survey:** one day will be required for the field survey

5.1.3 **Archive and Reporting:** fifteen days would be required to complete this element.

6. OUTLINE RESOURCES

6.1 STAFFING

6.1.1 The project will be under the management of **Jamie Quartermaine** (OA North Project Manager) to whom all correspondence should be addressed. He will monitor the progress of the project ensuring adherence to all agreed programmes and timetables. He will also provide technical back-up, advice, and will have editorial control over the compilation of the full report. Jamie Quartermaine will provide advice on the landscape survey and has many years experience of surveying upland landscapes, particularly in the Lake District and Yorkshire Dales National Parks.

6.1.2 The field survey will be led by **Peter Schofield** BA who has considerable experience of field survey work, including prehistoric landscapes, and has undertaken considerable survey work throughout Cumbria and was a team leader on the recent major survey of the Northern Welsh Uplands. He undertook the recent surveys for the National Trust at Ennerdale in West Cumbria, and also at St Catherine's, Windermere. He has recently completed a major boundary survey of an MOD training area, Holcombe Moor, in South Lancashire which has enabled us to develop GIS methodologies for analysing the results of the boundary survey.

APPENDIX 3: SITE GAZETTEER

Site Number 01
Site Name Lime Kiln Plantation, Stone-built structure
NGR 354422 476081
Ref no -
Site Type Possible structure
Period Medieval / post-medieval ?
Source Archaeological Survey
Description This site comprises a north/south aligned stone wall, c 13.5m long. There is, at the northern extent, a right-angled return and another short length of east/west aligned wall. All wall fragments are composed of large local stone, similar to that exposed in the stone outcrops. It is located within the field defined by banks 03 and 05 and is within the area depicted as having pinfolds on the 1694 map (CRO WPR/10 Misc).

Site Number 02
Site Name Lime Kiln Plantation, Stone-built structure
NGR 354411 476076
Ref no -
Site Type Possible structure
Period Medieval / post-medieval ?
Source Archaeological Survey
Description A possible stone-built structure: 6m east to west, 6.5m north to south. The wall lengths survive only as a single course, of generally large stones (0.3-0.1m).



Plate 1: Site 02, stone-built structure

Site Number 03
Site Name Lime Kiln Plantation, Field Boundary
NGR 354400 476096
Ref no -
Site Type Boundary wall / bank
Period Medieval / post-medieval ?
Source Archaeological Survey
Description The south-east corner of a well-defined field boundary of an enclosure or field, 32m west to east then 87m south to north and 1.5m wide. In places it is a wall footing, and in others a stone filled bank.



Plate 2: Site 03, field boundary wall

Site Number	04
Site Name	Henridding Quarries and Lime Kiln, Burton in Kendal
NGR	476100 354300
Ref no	HER 17472
Site Type	Quarry and Lime Kiln
Period	Post-med
Source	HER, Archaeological Survey

Description A large road-side quarry and lime kiln. The surviving evidence of the lime kiln is limited to a poorly preserved arc of cut stones, projecting slightly from the north-west part of the mound, which is heavily calcined reflecting the condensing of lime. The state of preservation prevents any other observations on the structure or size of this kiln. The quarry was extremely deep, in places, being up to 3.5m deep, and was 54m x 34m in size. It had large spoil heaps around the northern and western sides indicating that there was considerable discrimination being exercised in the quality or character of the stone being extracted.

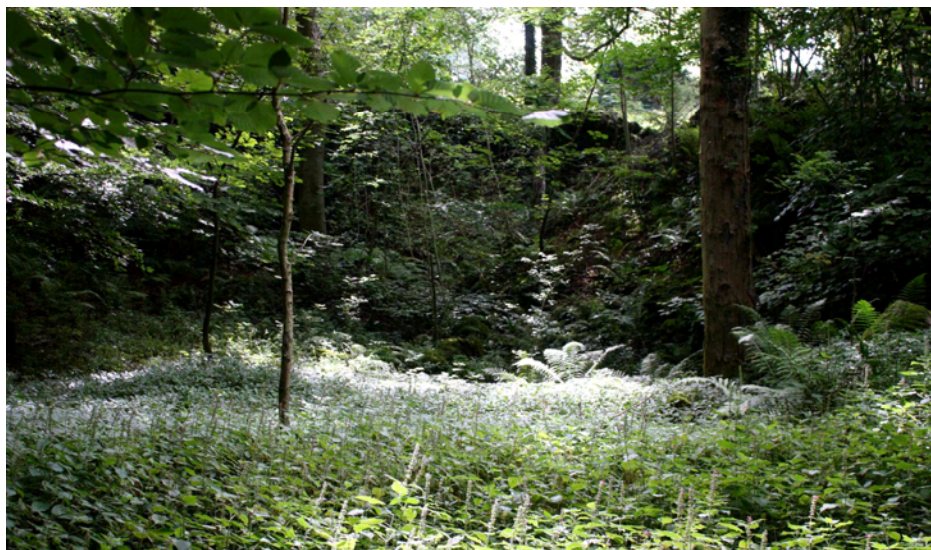


Plate 3: Site 04, Henridding Quarry



Plate 4: the curved, calcined flue of the Site 04 lime kiln

Site Number	05
Site Name	Lime Kiln Plantation, Field Boundary
NGR	354312 476091
Ref no	-
Site Type	Boundary wall
Period	Medieval / post-medieval ?
Source	Survey
Description	A north-west to south-east aligned stone boundary wall or bank. It continues the line of the Site 03 boundary line and is probably a part of the same feature; however, this survives as a stone-filled bank rather than wall remains of Site 03.



Plate 5: Site 05, Field boundary

Site Number	06
Site Name	Lime Kiln Plantation, Trackway
NGR	354232 476100

Ref no -
Site Type Trackway / quarry
Period Medieval / post-medieval ?
Source Archaeological Survey
Description A sunken area at the south-west corner of the study area, which may be in part an area of quarrying, but which may also incorporate elements of an earlier hollow-way linking two sections of routeway shown on the 1694 map (CRO WPR/10 Misc).

Site Number 07
Site Name Lime Kiln Plantation, Field Boundary
NGR 354232 476100
Ref no -
Site Type Boundary wall
Period Medieval / post-medieval ?
Source Archaeological Survey
Description The remnants of a stone-built boundary wall, 28m long and 2.2m wide, squarely conjoining the surrounding boundary wall of the wood (and edge of the study area). The wall was made of large, similar blocks of limestone with little evidence of a bank in between. The general character of this boundary wall is similar to the features of the village remains to the south of the woods.



Plate 6: Site 07, orthostatic field boundary

Site Number 08
Site Name Lime Kiln Plantation, Field Boundary
NGR 354388 476255
Ref no -
Site Type Boundary wall
Period Medieval / post-medieval ?
Source Historic maps; Archaeological Survey
Description Debris of stone-built wall / bank feature (average 2.4m wide). The whole length of the boundary feature wall is overgrown and often obscured. The line of the boundary bank is marked on the First Edition 6" (1847) and First Edition 25" OS maps (1891). See also Sites 09-11.

Site Number	09
Site Name	Lime Kiln Plantation, Field Boundary
NGR	354418 476226
Ref no	-
Site Type	Boundary wall
Period	Medieval / post-medieval ?
Source	Historic maps; Archaeological Survey
Description	The debris of a stone-built wall / bank boundary (average 2.4m wide). The whole length of the wall is overgrown and is often obscured. The line of the boundary bank is walls marked on the First Edition 6" (1847) and First Edition 25" OS maps (1891). See also Sites 08, 10-11 .

Plate 7: Site **09**, Field Boundary

Site Number	10
Site Name	Lime Kiln Plantation, Field Boundary
NGR	354414 476178
Ref no	-
Site Type	Boundary wall
Period	Medieval / post-medieval ?
Source	Historic maps; Archaeological Survey
Description	The debris of a stone-built wall / bank boundary (average 2.4m wide). The whole length of the wall is overgrown and often obscured. The line of the boundary bank is walls marked on the First Edition 6" (1847) and First Edition 25" OS maps (1891). See also Sites 08-09, 11 .

Site Number	11
Site Name	Lime Kiln Plantation, Field Boundary
NGR	354461 476108
Ref no	-
Site Type	Boundary wall
Period	Medieval-post-medieval ?

Source Historic maps; Archaeological Survey
Description The debris of a stone-built wall / bank boundary (average 2.4m wide). The whole length of the wall is overgrown and often obscured. The line of the boundary bank is walls marked on the First Edition 6" (1847) and First Edition 25" OS maps (1891). See also Sites **09-10**.



Plate 8: Site **11**, Field boundary

Site Number 12
Site Name Lime Kiln Plantation, Ditch
NGR 354680 476075
Ref no -
Site Type Drain
Period Post-medieval ?
Source Archaeological Survey
Description A surviving 40m length (2m wide, 0.3m deep) of a probable ditch, parallel to the eastern boundary wall. The ditch has been largely in-filled by soil and is now overgrown.

Site Number 13
Site Name Lime Kiln Plantation, Plantation
NGR 354650 476110
Ref no -
Site Type Plantation
Period Medieval / post-medieval ?
Source Archaeological Survey
Description An expansive area of plantation (possible coppiced) with well-organised rows, uniformly laid 1.1m apart, in groups of 25 rows, with a 2.5m wide gap (a possible trackway) between the groups.

Site Number 14
Site Name Lime Kiln Plantation, Plantation
NGR 354441 476252
Ref no -
Site Type Quarry
Period Post-medieval
Source Archaeological Survey
Description A small quarry, up to 1.5m deep, set into a slope. An entrance is visible at the south-eastern end, but there was no exposed outcrop. Adjacent to this small quarry, at its north-west

end, is a possible bank defined by large, detached stones, and which is a possible continuation of Site 16.

Site Number 15
Site Name Lime Kiln Plantation, Plantation
NGR 35442 476304
Ref no -
Site Type Trackway
Period Post-medieval
Source Archaeological Survey
Description A routeway through the wood, defined by a gap in the planting of the woodland, and with evidence of vehicular erosion. Slight banks at its edges indicate that this was an old trackway.

Site Number 16
Site Name Lime Kiln Plantation, Plantation
NGR 354477 476296
Ref no -
Site Type Bank boundary
Period Medieval / post-medieval ?
Source Archaeological Survey
Description A prominent, well defined bank with large stones protruding. There are indications of a slight ditch on the north-west side which may have been truncated by the routeway 15. An area of very large stone blocks possibly reflects a south-eastern return (Site 28), but there is little indication of a soil matrix in-between the stones.

Site Number 17
Site Name Lime Kiln Plantation, Plantation
NGR 354498 476304
Ref no -
Site Type Quarry
Period Post-medieval
Source Archaeological Survey
Description A small, localised quarry, up to 1.5m deep, with no indication of an entrance.

Site Number 18
Site Name Lime Kiln Plantation, Plantation
NGR 354501 476282
Ref no -
Site Type Bank boundary and trackway
Period Medieval / post-medieval ?
Source Archaeological Survey
Description A small, linear bank and trackway, linked into the north-eastern end of Bank 16, and presently defines the edge of an historic track.

Site Number 19
Site Name Lime Kiln Plantation, Plantation
NGR 354505 476265
Ref no -
Site Type Quarry
Period Post-medieval
Source Archaeological Survey
Description A large and substantial quarry of an irregular, 'dumb-bell' shape, which is up to 2m deep. Its access point seems to have been at the south end.

Site Number 20
Site Name Lime Kiln Plantation, Plantation
NGR 354448 476483
Ref no -
Site Type Quarry
Period Post-medieval
Source Archaeological Survey
Description A small quarry set into the northern corner of the wood, up to 1.5m deep, possibly for providing raw material for dry stone walling. The quarry is edged to the west by the present dry-stone wall.

Site Number 21
Site Name Lime Kiln Plantation, Plantation
NGR 354447 476102
Ref no -
Site Type Kiln ?
Period Post-medieval
Source Archaeological Survey
Description A substantial, possibly natural, spur into which a number of hollows have been cut. The hollows have the appearance of kilns (possibly potash or lime), and are c 3m across, and open out to the south-west. No masonry was evident, but the hollows are clearly artificial in origin.

Site Number 22
Site Name Lime Kiln Plantation, Plantation
NGR 354476 476073
Ref no -
Site Type Quarry
Period Post-medieval
Source Archaeological Survey
Description An extensive area impacted by quarrying activities, comprising a number of irregular hollows reflecting that an erratic process of extraction occurred at this site. The quarry is edged to the north-east by Boundary 25, and the quarry evidently post-dates the boundary. It reflects the assimilation of a number of different extraction events comprising intercutting hollows. There are some limited spoil heaps associated indicating that there was selective removal of stone from the site.

Site Number 23
Site Name Lime Kiln Plantation, Plantation
NGR 354426 476073
Ref no -
Site Type Hollow-way
Period Post-medieval
Source Archaeological Survey
Description A section of hollow-way extending east/west down the slope. Hollow-way 26 does not connect with this feature, but may have been related as their terminal ends are orientated towards each other.

Site Number 24
Site Name Lime Kiln Plantation, Plantation
NGR 354351 476089
Ref no -
Site Type Hollow-way

Period Post-medieval
Source Archaeological Survey
Description This section of hollow-way follows the same line as that of **23**, and is likely to have been part of the same feature.

Site Number 25
Site Name Lime Kiln Plantation, Plantation
NGR 354500 476084
Ref no -
Site Type Boundary bank
Period Medieval / post-medieval ?
Source Archaeological Survey
Description This monument is largely similar to **11**, and has a similar make up. It is a wall / bank with large amounts of stone material, one that is ill defined at the south-east end. It is covered with modern overburden and debris.

Site Number 26
Site Name Lime Kiln Plantation, Plantation
NGR 354368 476124
Ref no -
Site Type Plantation track
Period Post-medieval
Source Archaeological Survey
Description A woodland track, characterised by a corridor devoid of trees, with slight banks to its edges. The trackway is similar to Site **15**. It seemingly cuts boundary **03/05**.

Site Number 27
Site Name Lime Kiln Plantation, Plantation
NGR 354466 476101
Ref no -
Site Type Wall boundary / structure
Period Medieval / post-medieval ?
Source Archaeological Survey
Description The remains of a small, irregularly-shaped structure comprising large boulder-type boundaries, which are alignments of large stones with no obvious small stones or soil matrix. The structure is seemingly abutted by boundaries **11** and **25**.



Plate 9: Site **27**, orthostatic walled structure

Site Number	28
Site Name	Lime Kiln Plantation, Plantation
NGR	354476 476339
Ref no	-
Site Type	Wall boundary
Period	Medieval / post-medieval ?
Source	Archaeological Survey
Description	An alignment of large boulder-type stones, converging towards the south-western terminus of Bank 16 . This is possibly an early boundary line.



Plate 10: Site **28**, orthostatic boundary

Site Number	29
Site Name	Lime Kiln Plantation, Plantation
NGR	354421 476168
Ref no	-
Site Type	Hollow-way
Period	Medieval / post-medieval ?
Source	Archaeological Survey
Description	A narrow hollow-way, c 3m in width, extending from the east side of the boundary bank 09 / 10 , but one that becomes discontinuous and ill defined to the east of its extent. It appears to correspond with a trackway depicted on the Machell 1694 map (CRO WPR/10 Misc).

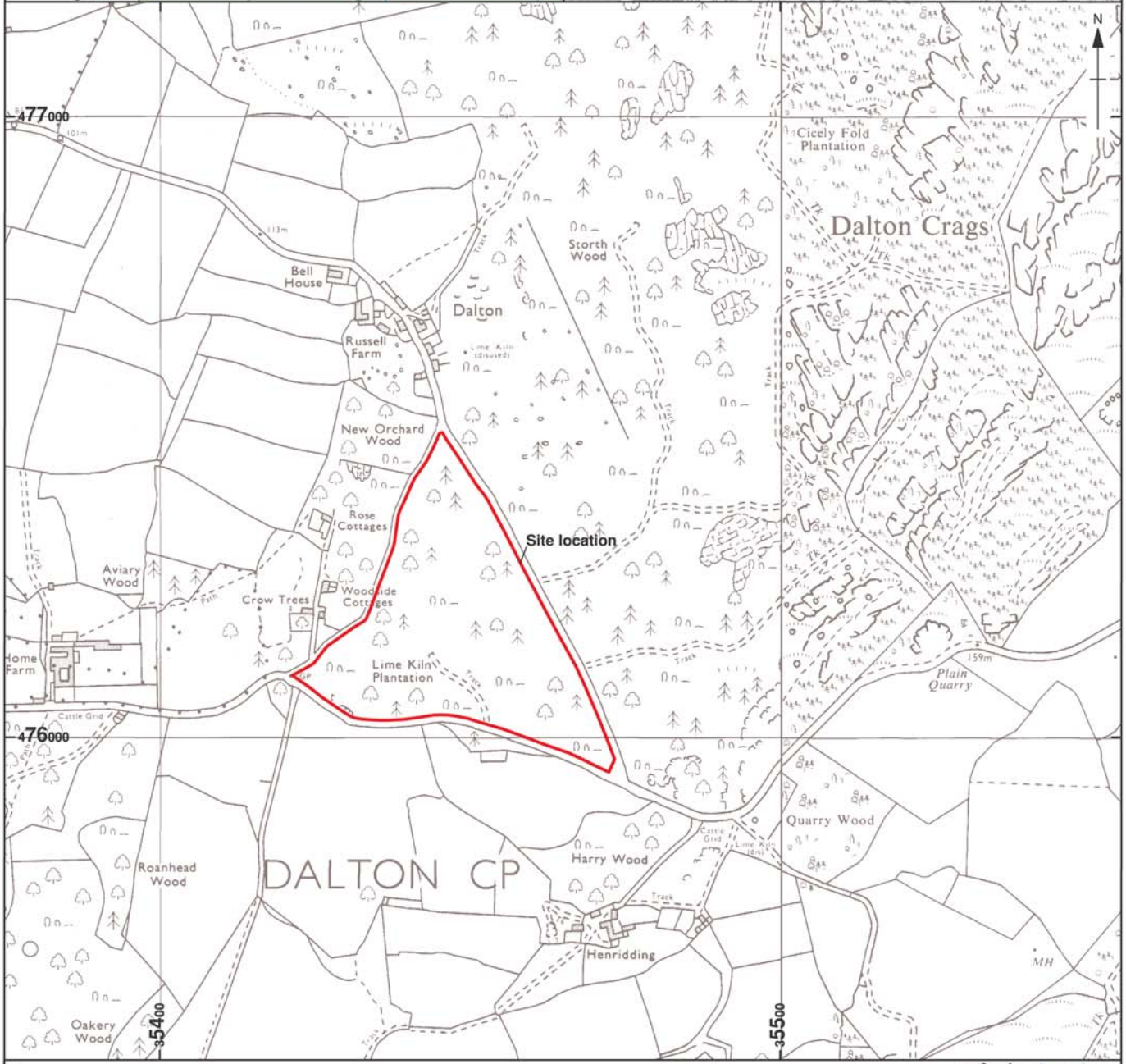
ILLUSTRATIONS

FIGURES

- Figure 1: Site location
- Figure 2: Location of all monuments with records in the Cumbria HER
- Figure 3: Dalton Estate map, 1694
- Figure 4: Hennet's map of Lancashire, 1829
- Figure 5: Ordnance Survey First Edition 6" to 1 mile map, 1847
- Figure 6: Ordnance Survey 25" to 1 mile map, 1891
- Figure 7: Archaeological Survey
- Figure 8: Archaeological features superimposed on the Ordnance Survey 25" to 1 mile, 1891 map
- Figure 9: Detail of south-western area of archaeological survey
- Figure 10: Detail of central area of archaeological survey
- Figure 11: Detail of northern area of archaeological survey
- Figure 12: Archaeological features compared with the landscape survey undertaken in 1970
- Figure 13: Archaeological survey superimposed on the Machell map, 1694
- Figure 14: Suggested area for excluding burials

PLATES

- Plate 1: Site **02**, stone-built structure
- Plate 2: Site **03**, field boundary wall
- Plate 3: Site **04**, Henridding Quarry
- Plate 4: The curved, calcined flue of the Site **04** lime kiln
- Plate 5: Site **05**, Field boundary
- Plate 6: Site **07**, orthostatic field boundary
- Plate 7: Site **09**, Field Boundary
- Plate 8: Site **11**, Field boundary
- Plate 9: Site **27**, orthostatic walled structure
- Plate 10: Site **28**, orthostatic boundary



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Figure 1: Site location

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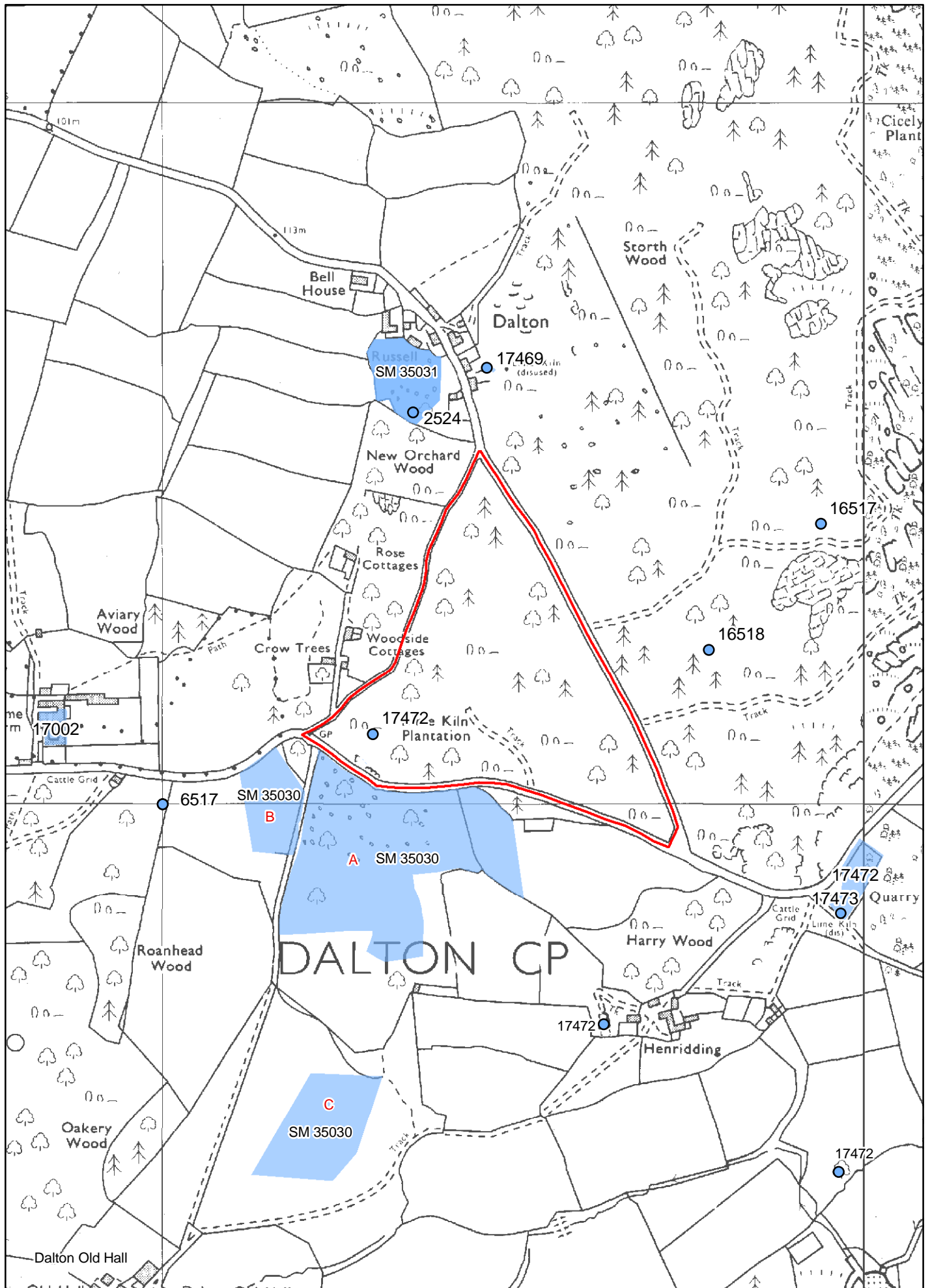
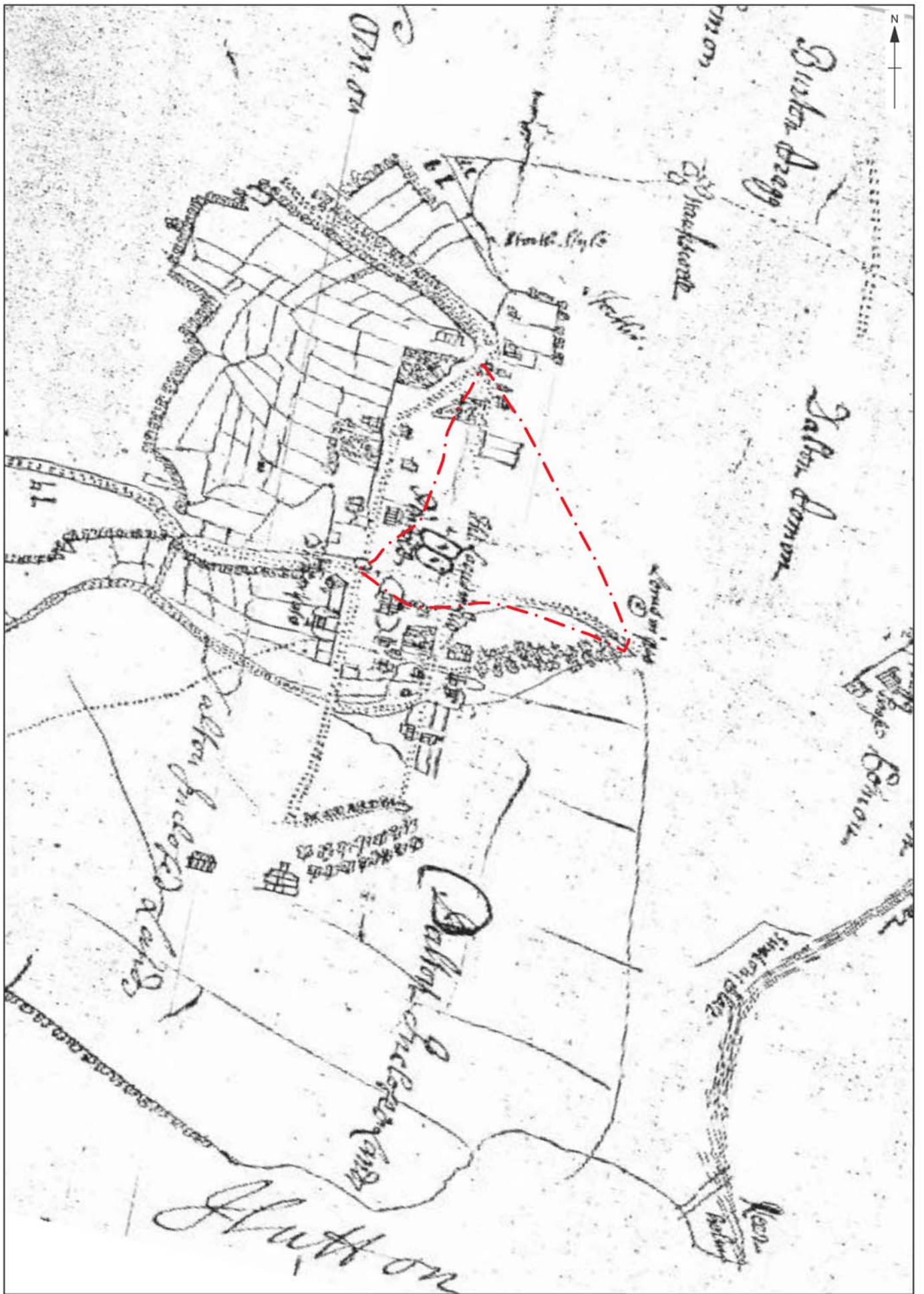


Figure 2: Location of all monuments with records in the Cumbria HER and Scheduled monuments



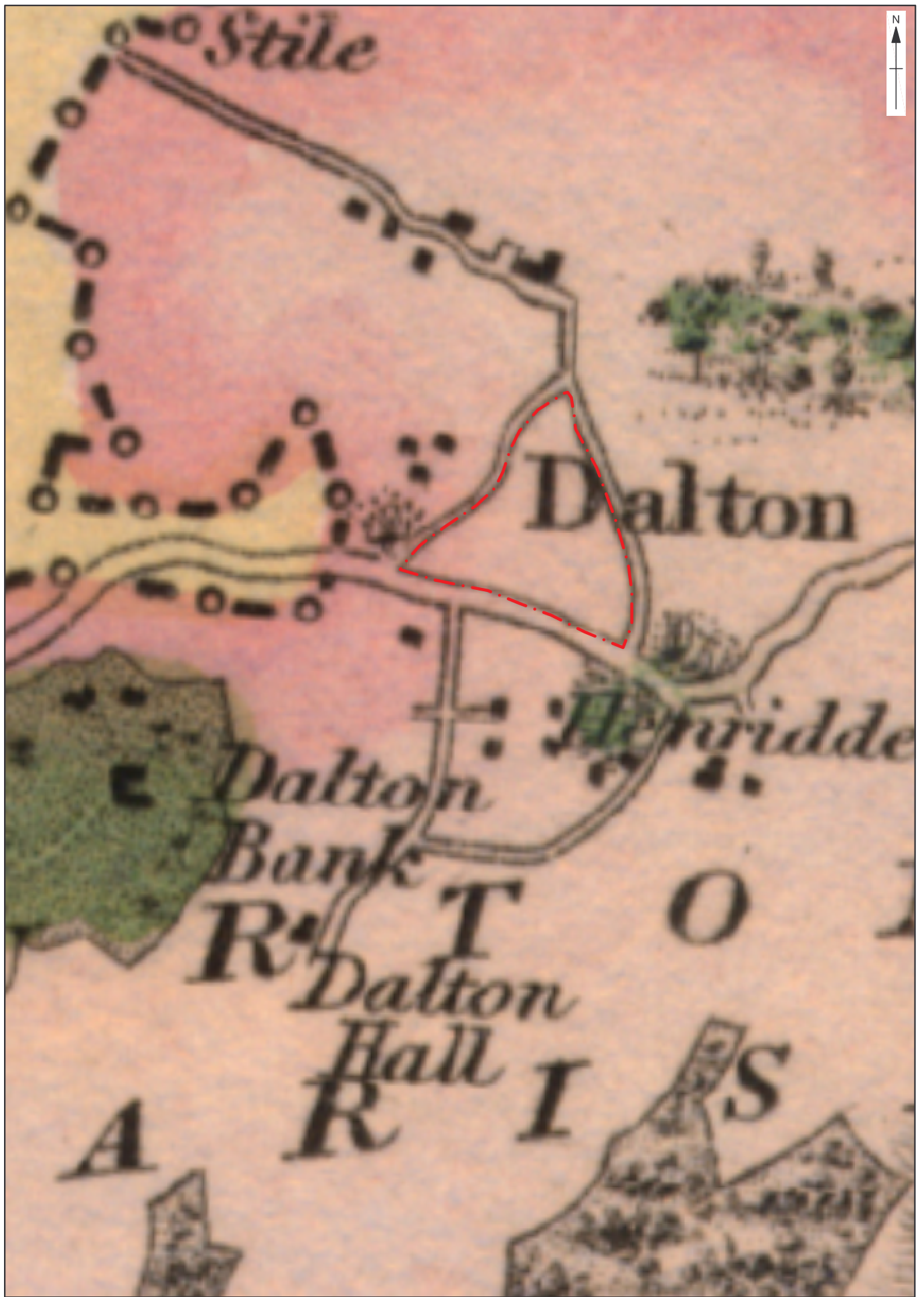
 Study area


0 250 m
approx. 1:10,000 @ A4

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Figure 3: Dalton Estate map, 1694



 Study area

0 250 m
approx. 1:10,000 @ A4

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Figure 4: Hennet's map of Lancashire, 1829

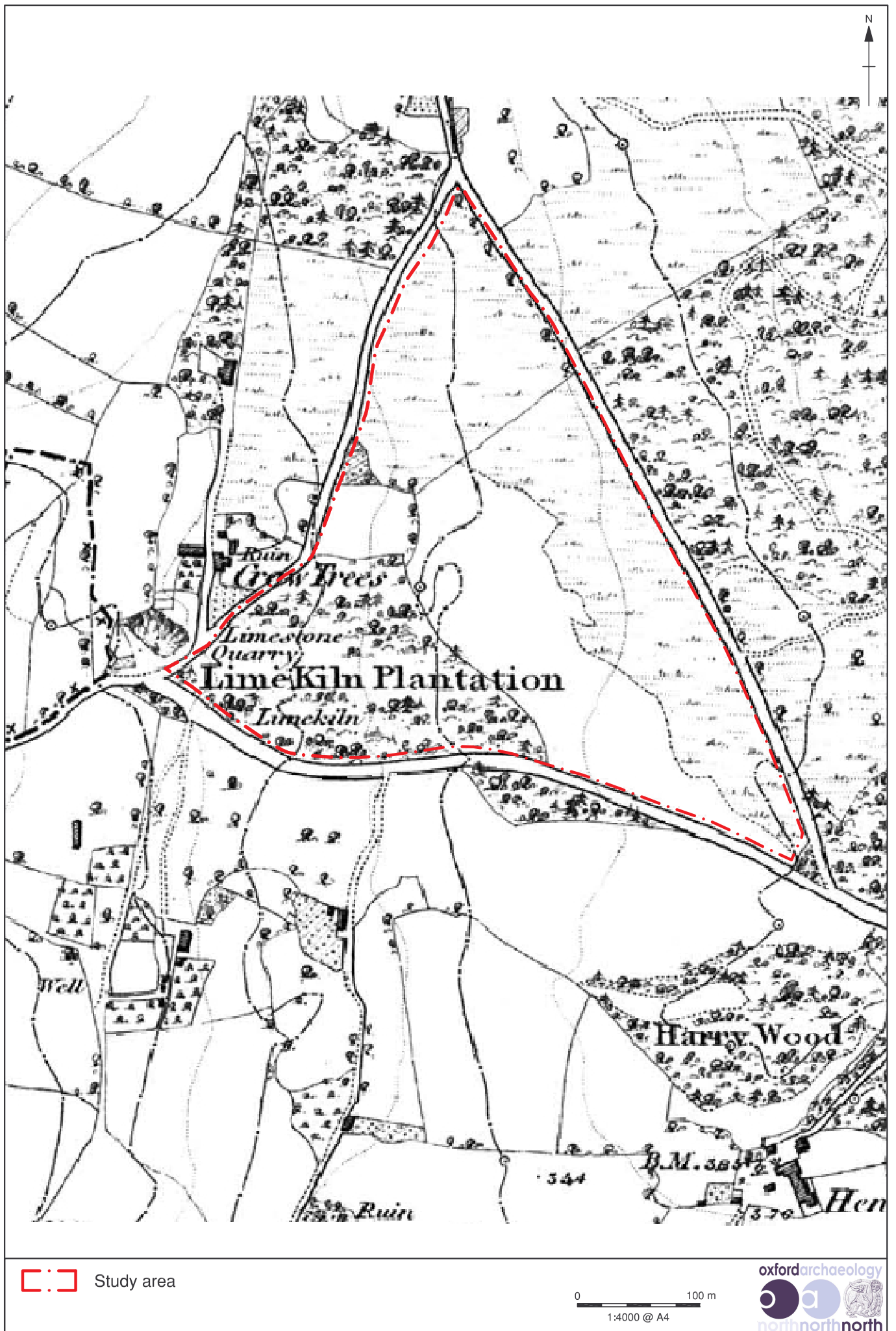


Figure 5: Ordnance Survey first edition 6" to 1 mile map, 1847

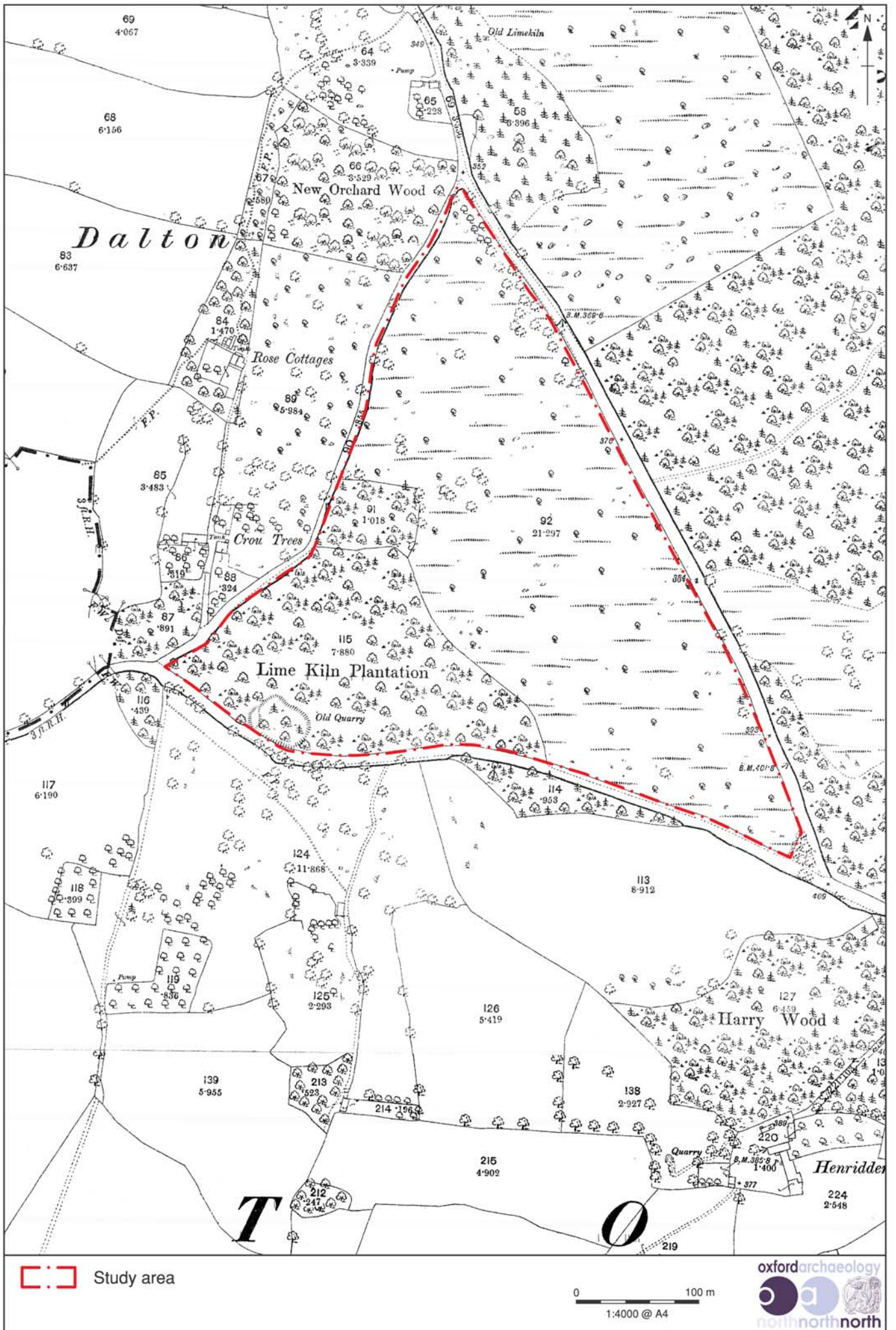
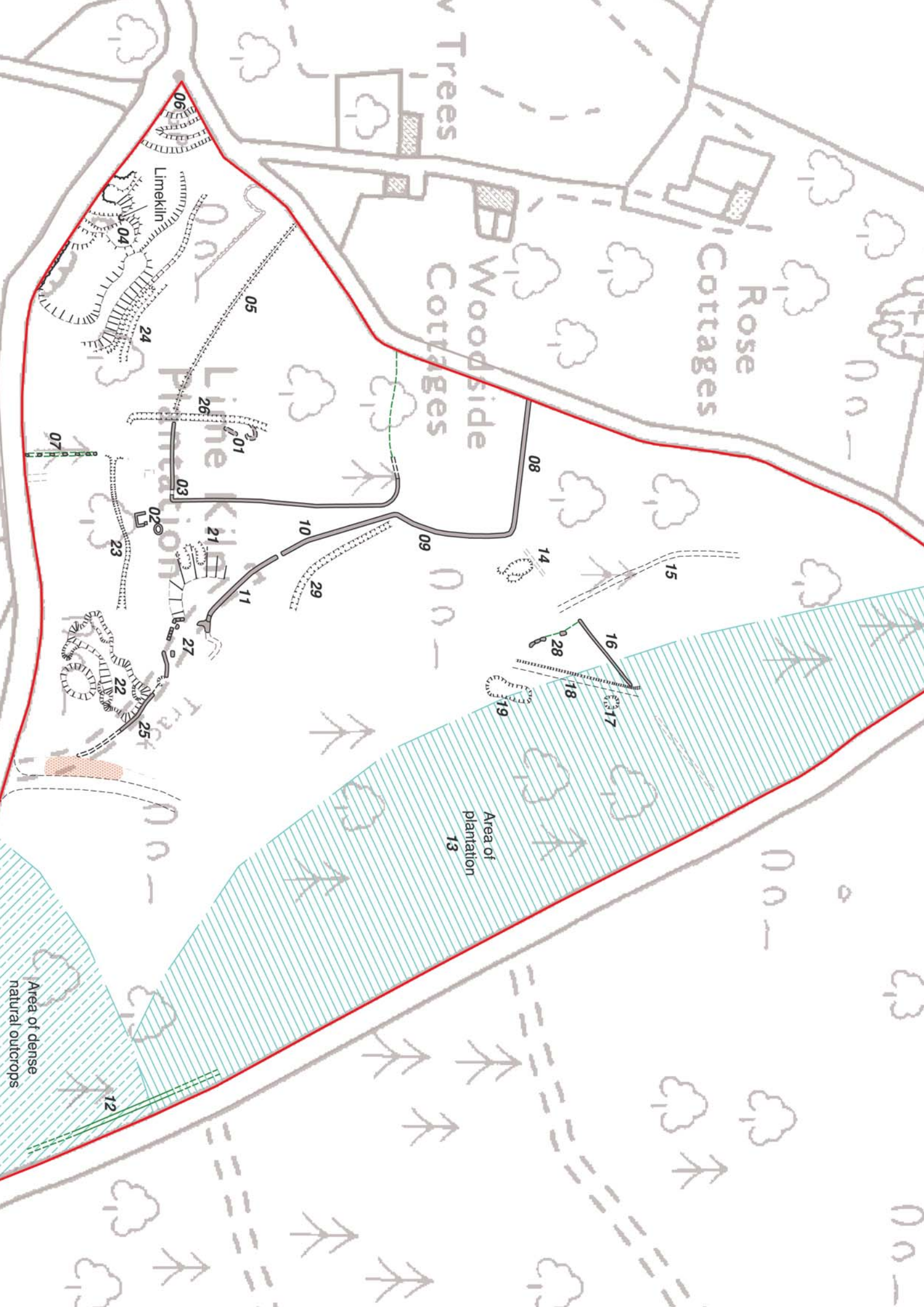
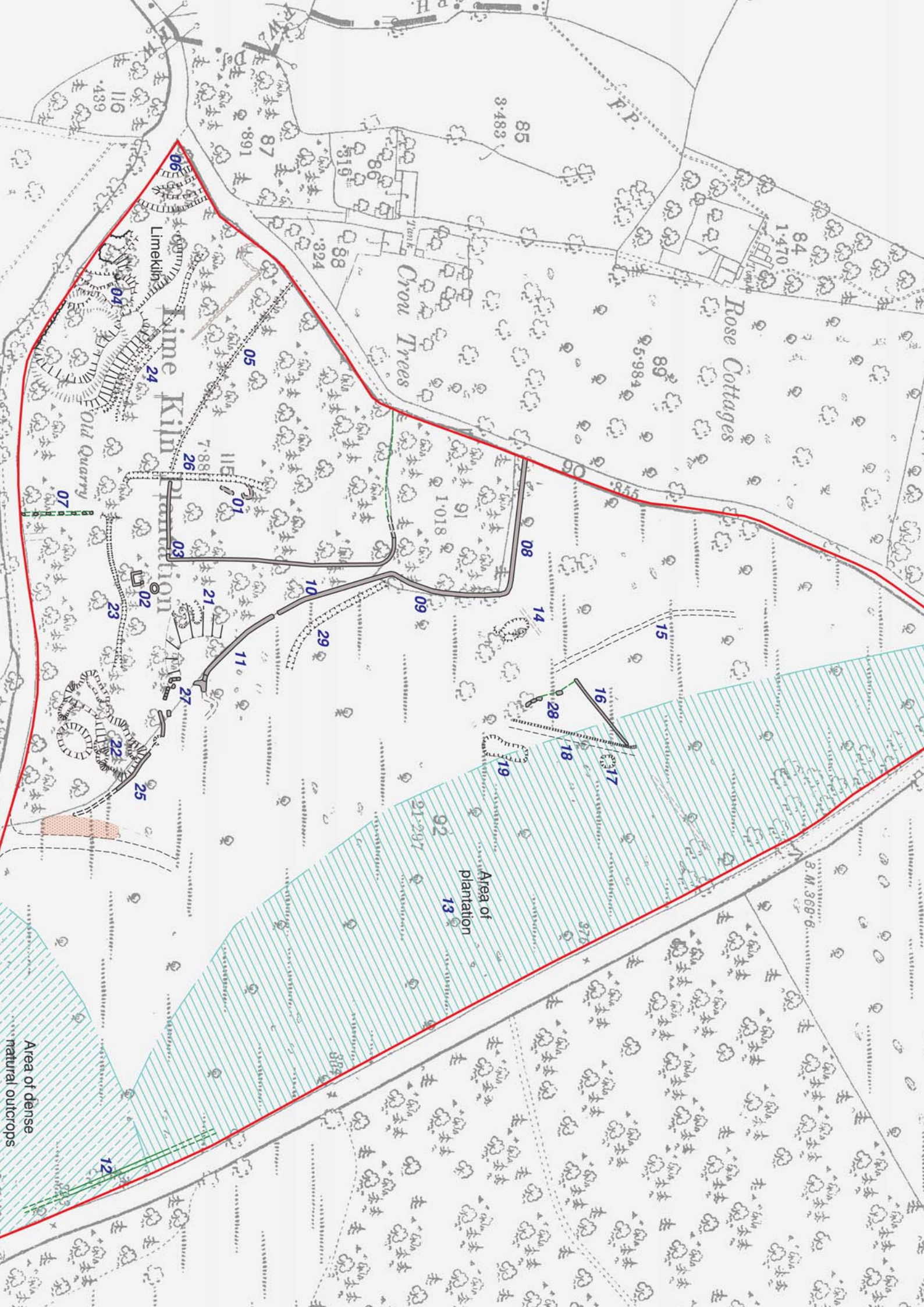


Figure 6: Ordnance Survey 25" to 1 mile map, 1891





Limekiln

Old Quarry

Cron Trees

Rose Cottages

Area of
plantation

Area of dense
natural outcrops

06

24

05

26

03

21

23

27

25

12

87

88

89

90

91

92

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3 M. 369.6

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114

113

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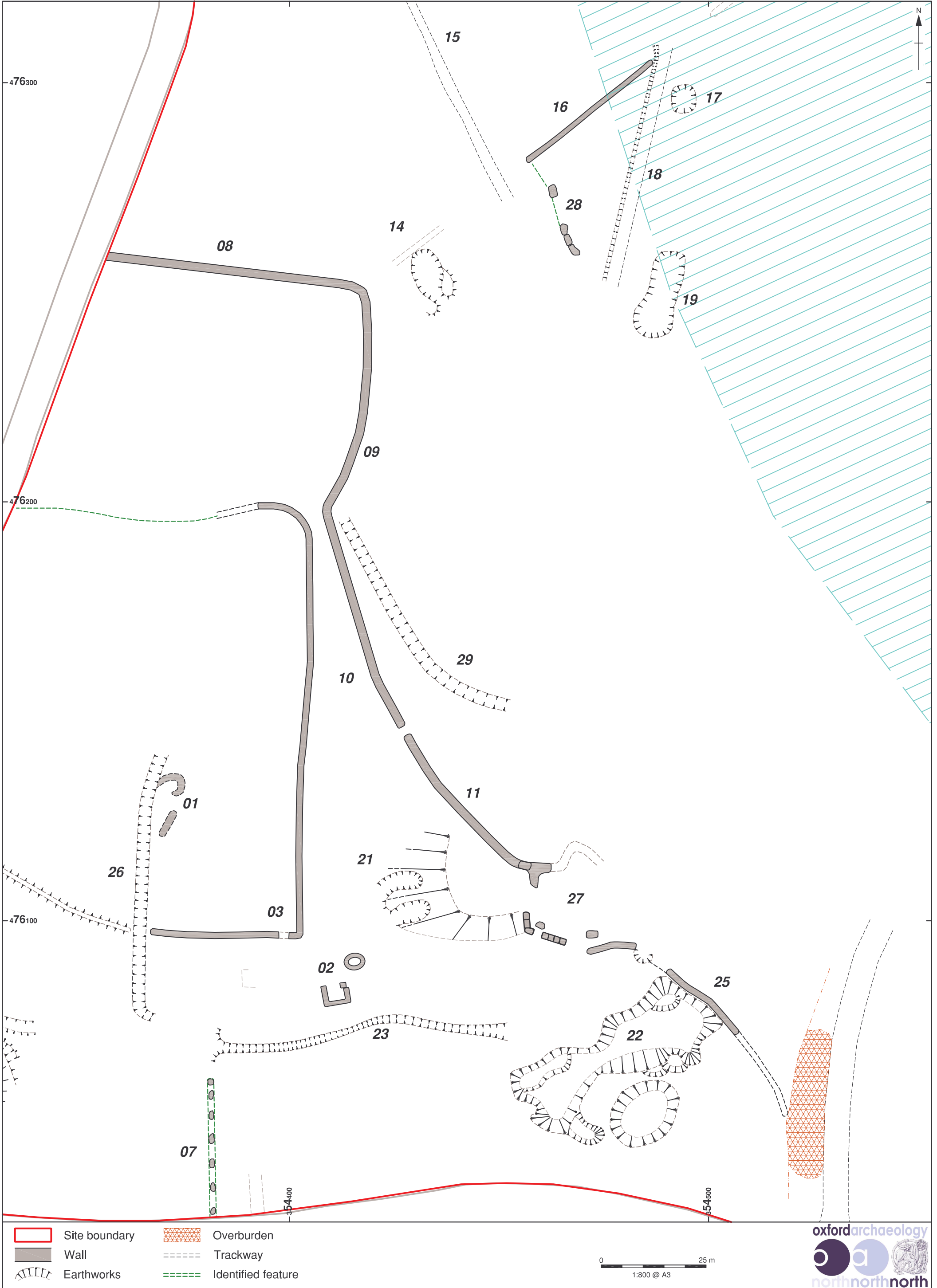


Figure 9: Detail of central area of archaeological survey



Figure 10: Detail of northern area of archaeological survey

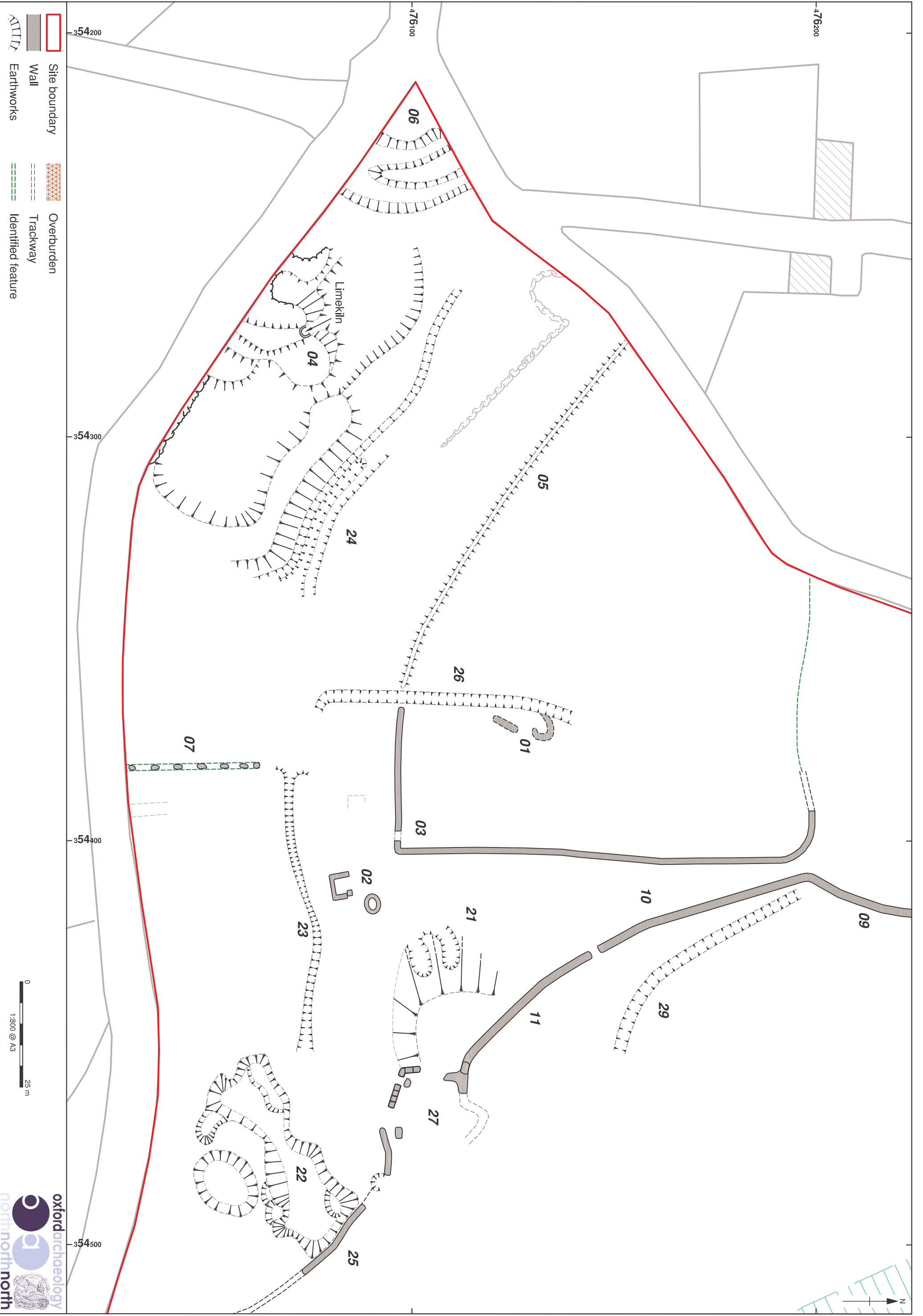
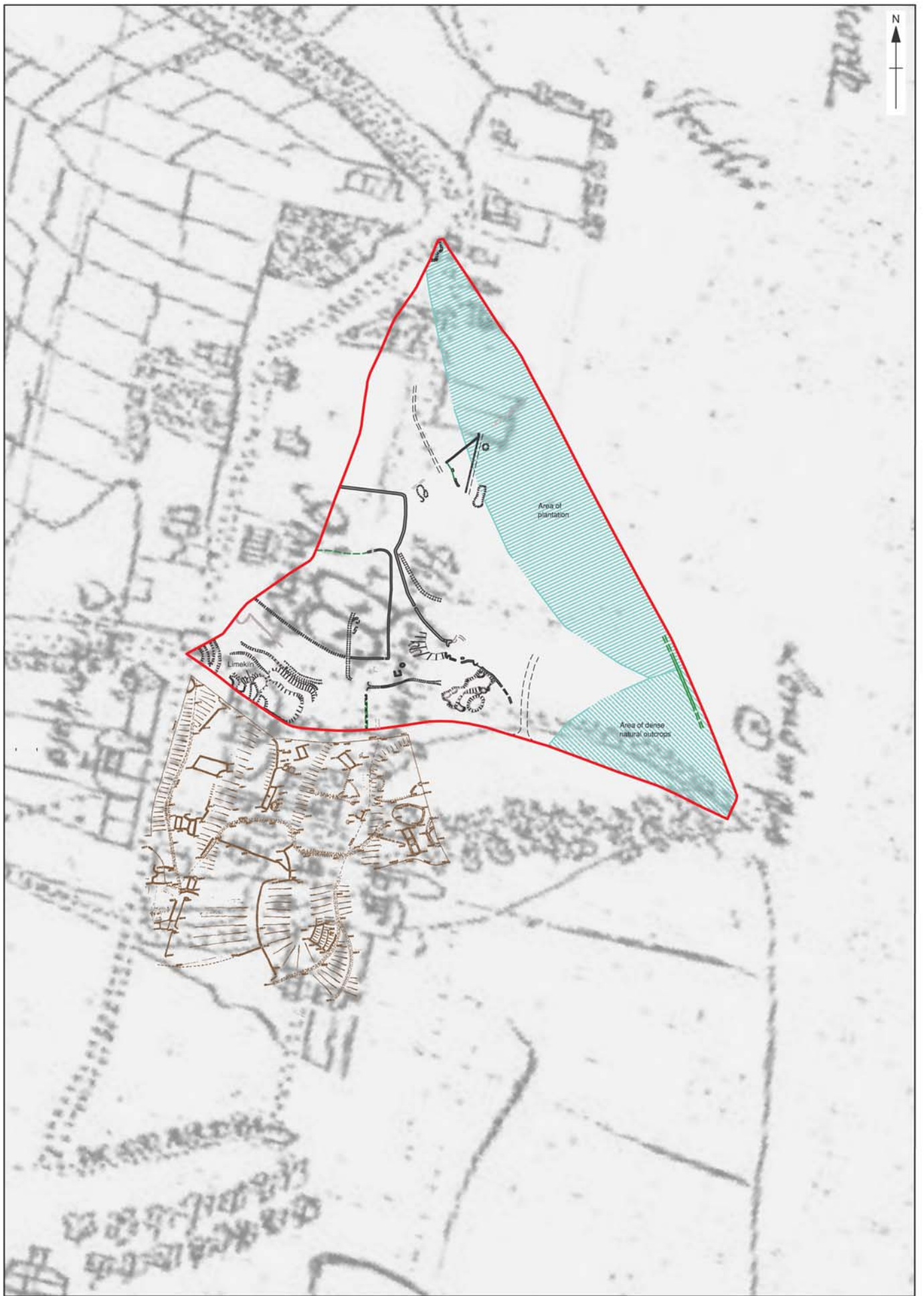


Figure 11: Detail of south-western area of archaeological survey



Site boundary
 Wall

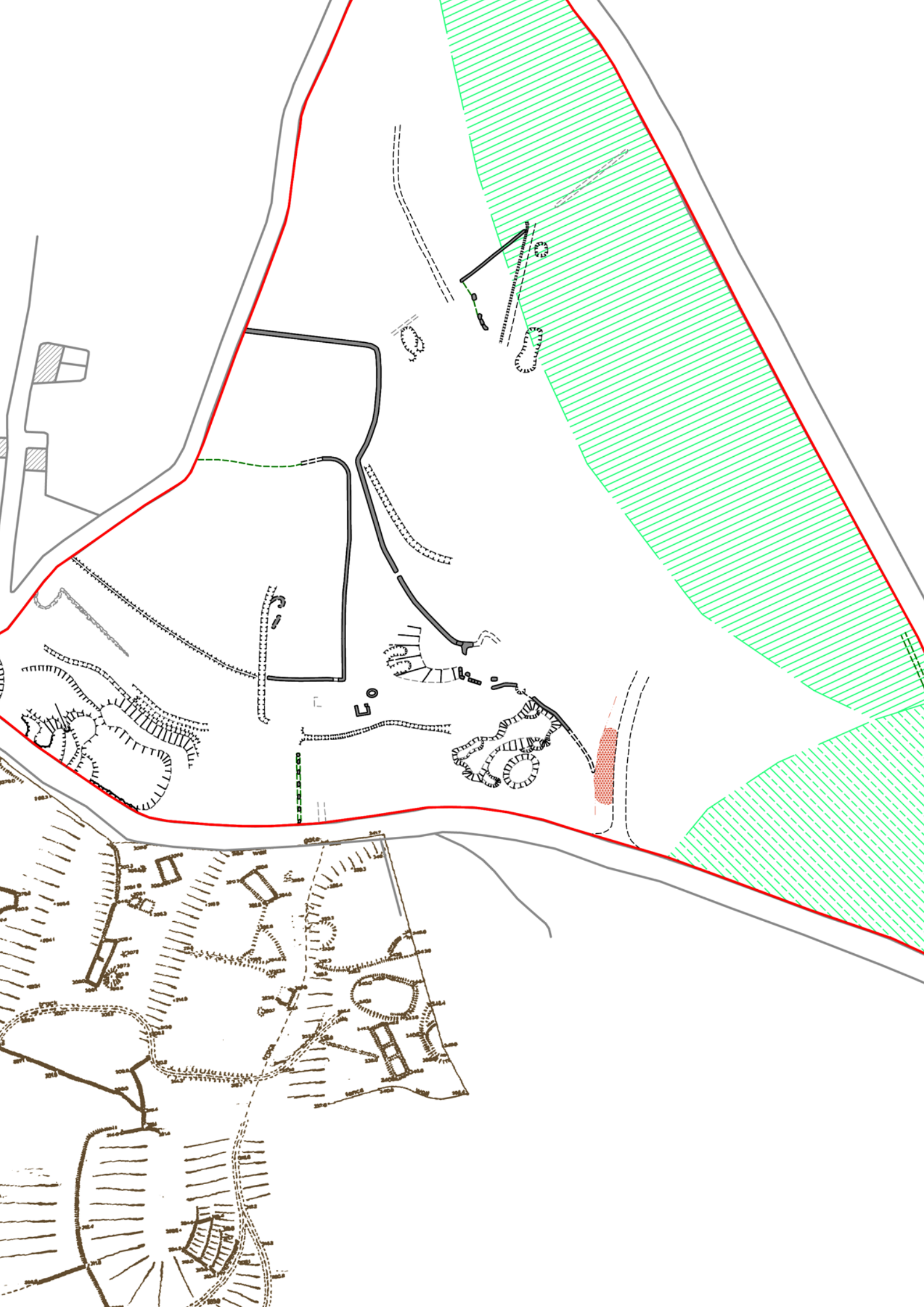
Earthworks
 Landscape survey, 1970

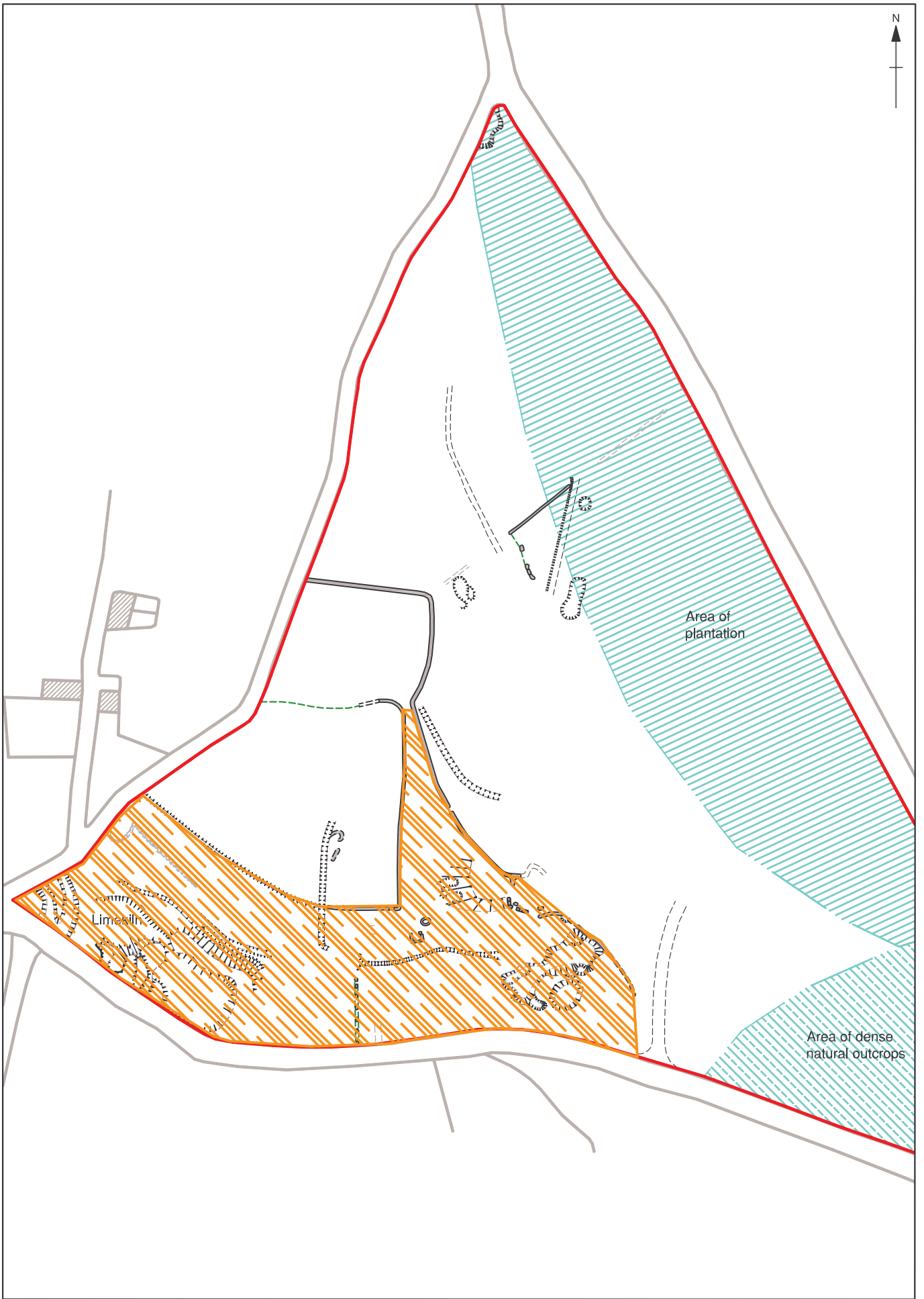
0 ————— 100 m
 1:5000 @ A4



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Figure 12: Archaeological survey superimposed on the Dalton Estate map, 1694





-  Site boundary
-  Wall

-  Earthworks
-  Suggested exclusion zone

0 100 m
1:5000 @ A4



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Figure 14: Suggested area for excluding burials