



HODDER SERVICE RESERVOIR AND ACCESS WORKS, Slaidburn, Lancashire

**Archaeological Desk-
Based Assessment,
Walkover Survey and
Topographic Survey**



Oxford Archaeology North

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SUMMARY

United Utilities proposed the construction of a new service reservoir, access road and pipeline to the north of Slaidburn, Lancashire (centred on SD 7160 5410). As the scheme affects areas of archaeological potential, Lancashire County Council's Archaeology Service (LCCAS) issued a short brief for a programme of archaeological investigation to be undertaken. As a result, Oxford Archaeology North (OA North) was commissioned to undertake a desk-based assessment and walkover survey of the area. Based on the results of these two phases a work, OA North was also commissioned to undertake topographic surveys of six sites.

A study area, approximately 500m in diameter and centring on the pipeline and access track, was investigated for potential archaeological remains. Various sources were consulted including the Historic Environment Record (HER), the County Record Office (CRO) and published and unpublished materials held in the library of OA North. A walkover survey was conducted along a 200m-wide corridor centred on the pipeline easement in order to relate the landscape and environment to the results of the desk-based assessment.

In total, 36 sites were identified. Of these, 27 were previously recorded in the HER and a further seven were identified from cartographic sources, with the remaining two sites identified during the walkover survey. The majority of the sites comprised limestone quarries and associated kilns (Sites **18-23**, **28**, **29**, **31** and **32**). Six areas of ridge and furrow were recorded (Sites **03** to **08**), and four holloways/trackways (Sites **09**, **10**, **30** and **34**). Other agricultural features included three field boundaries (Sites **11**, **12** and **36**) and two small stone enclosures/folds (Sites **16** and **17**). Four sites relating to Stocks Reservoir were identified (Sites **24** to **27**). Other sites included two bridges (Sites **14** and **15**), two standing buildings (Sites **02** and **33**), a culvert (Site **13**), a pair of gateposts (Site **35**), and the suggested site of a medieval settlement (Site **01**). The majority of the sites are clearly post-medieval in date, with only the supposed settlement of Hammerton (Site **01**) being medieval in date, although no remains have yet been identified.

The evidence collected during the desk-based assessment and walkover survey suggests that there is potential for previously unknown archaeological remains to exist within the area of proposed works. Two areas of ridge and furrow (Sites **04** and **05**) will be directly impacted by the development, as the access road runs through both these sites. The old field boundaries (Sites **11** and **36**) and the hollow way (Site **34**), will also be directly impacted upon by the proposed access road. The possible quarry (Site **20**) may also be impacted upon as it lies in close proximity to the proposed new access road. The proposed pipeline should not affect the remaining sites within the study area.

As a result of the desk-based and walkover survey phases of work it was considered appropriate to conduct a topographic survey the sites which had been identified as at risk (Sites **04-05**, **11**, **20**, **34** and **36**), and the results of this are also presented in this report. It is recommended that a watching brief is undertaken during all topsoil stripping activities within the development area.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank United Utilities for commissioning the project. Thanks are also due to Ken Davies of Lancashire County Archaeological Service, and the staff at the Historic Environment Record and the County Record Office in Preston for their assistance with this project.

Vix Hughes undertook the desk-based assessment and walkover survey, and Andy Bates and Kathryn Levey the topographic survey. Vix Hughes and Andy Bates compiled the report, and Mark Tidmarsh produced the illustrations. Alison Plummer managed the project, and also edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 United Utilities have proposed the construction of a new service reservoir, access road and pipeline to the north of Slaidburn, Lancashire (centred on SD 7160 5410; Fig 1). As the scheme affects areas of archaeological potential, Lancashire County Archaeology Service (LCAS) issued a short brief for a programme of archaeological assessment to be undertaken. In response, Oxford Archaeology North (OA North) was commissioned by United Utilities to undertake a desk-based assessment, walkover survey and topographic survey of the route.
- 1.1.2 The proposed works involve several elements, all of which have the potential to impact on archaeological remains. The new Hodder Service Reservoir has an overall footprint of 140m by 70m, with an area of 9800m². The new pipeline will extend for a length of 550m and the new access road has an overall length of 835m. Although the precise location of the site compound is unknown at this juncture, the probable area is estimated as being 34m by 128m, totalling 4352m², and was subject to the assessment.
- 1.1.3 The desk-based assessment comprised a search of both published and unpublished records held by the Historic Environment Record (HER) and the Lancashire County Record Office (LCRO). In addition, a walkover survey was undertaken for the area of the proposed development, in order to relate the results of the desk-based assessment to the landscape and surroundings. As a result of these two phases of work, LCAS requested a topographic survey be completed for six sites, which will be directly effected by the development. This report sets out the results of the desk-based assessment, walkover survey and topographic survey in the form of a short document outlining the findings, followed by an assessment of the impact of the proposed development.

2. METHODOLOGY

2.1 PROJECT BRIEF

2.1.1 LCAS issued a short statement to United Utilities outlining a programme of archaeological work to be undertaken in advance of development works at the site of Hodder Service Reservoir. The project brief was adhered to in full, and the work was consistent with the relevant standards and procedures of the Institute of Field Archaeologists, and generally accepted best practice.

2.2 DESK-BASED ASSESSMENT

2.2.1 A study area, measuring approximately 500m in diameter centred on the pipeline, was investigated for potential archaeological remains. Various sources were consulted; these included the Historic Environment Record (HER) and cartographic resources held by the County Record Office (CRO), located in Preston. Published and unpublished materials held in OA North's own library were also examined. The results of the desk-based assessment and walkover survey (*Section 2.3* below) were collated into a gazetteer (*Section 4*).

2.2.2 **Historic Environment Record (HER) Preston:** the Lancashire County Historic Environment Record (HER) in Preston has an extensive database of all known archaeological sites in the county. A record, including grid reference and description, was obtained for the various sites within the defined area and from immediately outside the area. It also holds a library of published and unpublished documentation for consultation.

2.2.3 **County Record Office (CRO), Preston:** is the main source of primary information, including maps, plans, documents and aerial photographs, for the site and the surrounding area. It was visited primarily to consult documents specific to the sites within the study area. Historic maps of the study area, including any Tithe Maps and Ordnance Survey (OS) maps, were also examined. Particular emphasis was placed upon early cartographic evidence, which has the potential to inform medieval and post-medieval occupation and land-use of the area. A search was made for any relevant historical documentation, particularly regarding the use of the area, drawing on the knowledge of the archivists. Several secondary sources and archaeological or historical journals were also consulted and the results of this have been incorporated into the historical background (*Section 3.2*).

2.2.4 **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. These were consulted where necessary.

2.3 WALKOVER SURVEY

- 2.3.1 Following the desk-based assessment, a 'Level 1' walkover survey (Appendix 1) was undertaken, to relate the existing landscape to the research findings. This encompassed a 200m corridor centred on the pipeline easement, walked in a systematic fashion. All archaeological features identified during the walkover were recorded using relevant OA North *pro forma*, and their locations accurately mapped using manual survey techniques that tied in new features to features already shown on the relevant Ordnance Survey map.
- 2.3.2 A photographic record was undertaken, utilising a 35mm camera producing both colour slides and monochrome prints, and additional digital photographs were taken for presentation purposes. These were recorded on *pro forma* sheets.

2.4 TOPOGRAPHIC SURVEY

- 2.4.1 The topographic survey of six sites was completed using a Leica TCR400 total station (TST). The digital survey data was transferred into a CAD system. Hachured drawings were completed in the field, where appropriate, with such detail transferred onto the raw survey data within the CAD system. This survey was subsequently located with reference to the National Grid.

2.5 ARCHIVE

- 2.5.1 A full professional archive has been compiled in accordance with current IFA and English Heritage guidelines (English Heritage 1991). The paper and digital archive will be deposited in the County Record Office in Preston, on completion of the project.

3. RESULTS

3.1 LOCATION, TOPOGRAPHY AND GEOLOGY

- 3.1.1 The proposed works are located immediately south of the present Stocks Reservoir and 1.75km north of Slaidburn, Lancashire (centred on SD 7160 5410; Fig 1). The pipeline route lies to the east of Phynis and Wood House Gate, and to the west of Hammerton Hall. The proposed route runs along the western side of the River Hodder, to what will be the new Hodder Service Reservoir. A new access road follows this same route, with a branch to the west to connect the system to the public highway (unnamed) north out of Slaidburn. The area is part of Slaidburn parish and district, which is now in Lancashire but was historically part of West Yorkshire. The Forest of Bowland and the manor of Slaidburn were originally in the Hundred of Blackburn (Mitchell 2004, 20), historically both parts of Lancashire.
- 3.1.2 The landscape around the site consists of the moorland heights of the Bowland Fells to the west and Gisburn Forest to the east. Tributaries of the River Hodder interrupt the landscape. The unimproved upland areas are interspersed with the more fertile pastoral grasslands (Countryside Commission 1998). The area of the Bowland Fells is designated as an Area of Outstanding Natural Beauty (AONB).
- 3.1.3 The underlying upland geology consists of sandstones and shales of the Millstone Grit formation, laid down by riverine condition of the Carboniferous Period (345-280 million years ago). These have been shaped by later glaciations and are overlain by thick deposits of glacial and post-glacial till and boulder clays, with pockets of post-glacial peat throughout (*ibid*; Middleton *et al* 1995). Overlying the drift geology, the soil in the area is of the Brickfield 2 association, which are cambic stagnogley soils (Ordnance Survey 1983).

3.2 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 3.2.1 **Prehistoric Period:** although nothing from this period has been identified within the immediate vicinity of the study area, there is clear evidence of man's activity during the prehistoric period in the area to the south-west, where several enclosures are known in the Dunnaw area. At Bowgrave Meadow, Slaidburn, Pendle Archaeological Group investigated a reasonably extensive mound of cobbles. The form of the remains and the associated finds were suggestive of a burial cairn (Edwards 2000). In addition, further to the south near Chipping, the site of Bleasdale Circle, dating to *c* 2200 BC, indicates further prehistoric activity in the surrounding area (Middleton 1996, 53).
- 3.2.2 By the later Iron Age the area seems to have been part of the land occupied by the Brigantes tribe (Cunliffe 1991). No sites attributed to this period are known in the area but there is a dearth of evidence throughout the North West

generally, highlighting the difficulty in recognising a distinct 'Iron Age' culture. However, hillforts dating to the later prehistoric period are known at Portfield, near Whalley (Beswick and Coombs 1986), and at Ingleborough (Haselgrove 1996).

- 3.2.3 **Roman:** to the west of the study area there is a known Roman Road, which effectively joins the forts of Ribchester to the south and Low Borrow Bridge, Tebay, to the north (7c Margary 1973, 377-382). The road is described as having a visible *agger* crossing fields either side of the River Hodder. No further Roman remains are known within this area.
- 3.2.4 **Early Medieval:** little is known of Yorkshire and Lancashire in the early medieval period, although it seems that the North of England, in general, fragmented into numerous small 'kingdoms' before the growing power of the Anglian kingdom of Northumbria began the process of coalescence (Newman, RM 1996, 93). The early medieval origins of the area are traceable through local place names. The name Slaidburn is of probable Old English derivation, meaning sheep-pasture stream from *slaeget* and *burna*. The name Hamerton, again from Old English (*hamor* and *tun*), may derive from the personal name of the owner, or from a place where hammers were made (Smith 1961). It is presumed that the names relate to the expansion of the English kingdom of Northumbria in the seventh century AD. Other names such as gill, thwaite, fell, beck, Bu (meaning cattle), and Pen (meaning hill), indicate influences resulting from Norse settlement in the late first millennium AD (Kenyon 1991).
- 3.2.5 **Later Medieval:** prior to the Norman Conquest, the Forest of Bowland seems to have formed part of the holding of Earl Tostig, brother of Harold Godwinson (Mitchell 1971). In the early twelfth century the Forest was held by Roger de Poitou, until Henry I granted it to Robert de Lacy in 1102 (Farrer 1902, 383-3). Hammerton is listed as a vill in the Forest of Bowland, in the Domesday survey of 1086 (Higham 1985, 119). Slaidburn is referred to in the thirteenth century as 'Sclatbournewarde' (Mitchell 2004, 31), and during the same century the Forest of Bowland appears to have been owned by John de Lacy (*op cit*, 121).
- 3.2.6 Documentary references highlight the presence of a settlement at Hammerton (Site **01**) (Beresford 1954, 238). The earliest examples are the 1377 and 1379 Poll Taxes for the Staincliffe Wapentake in Yorkshire (Fenwick 2005), with the former recording the constable for Hammerton as Robertus del Grene, and the *probi homines* (good men) as Johannes Piper and Willelmus Jackson. Two years later, the 1379 Poll Tax records 18 people eligible to pay in Hammerton. There is a possibility that Hammerton settlement became deserted, as were the nearby sites of Easington and Battersby, although their abandonment may relate to a change in settlement pattern rather than depopulation of the area (Newman R 1996, 119).
- 3.2.7 Hammerton Hall (Site **02**) is a Grade II* Listed Building (Plate 2), and a building is first depicted in a similar location on Saxton's 1577 map (Plate 1). The hall was the home of the '*de Hamerton*' family (Mitchell 2004, 57), and the hall and lands remained in the Hammerton family for about 300 years,

until Sir Stephen de Hammerton joined in the Pilgrimage of Grace of 1536. This was the protest against Henry VIII's proposed Dissolution of the Monasteries, and as a result Sir Stephen was executed for treason in 1537. Henry VIII passed the forfeited lands to Ralph Greenacres in 1545 (Greenwood and Bolton 1955, 72), who subsequently sold them to Oliver Beres in 1547. The hall remained in the Beres family until the late seventeenth century when it was sold to the Chetham family, and then to the King-Wilkson family in 1824, with whom ownership currently rests (www.slaidburn.org.uk).

- 3.2.8 Several deeds and leases refer to the property as including a water-powered corn mill in the seventeenth century, presumably located on the River Hodder. In addition to a corn mill, there was a hunting lodge at Stephen Park, 3.5km to the north-east of Hammerton Hall. The current Stephen Park farmhouse was built in 1662 on the site of the hunting lodge belonging to the Hammertons (Dixon and Dixon 1992, 121).
- 3.2.9 **Post-Medieval:** there was some increase in settlement within the Forest of Bowland, as the medieval forest laws had become largely defunct by the late seventeenth century (Rackham 1998, 172). Although the majority of land for settlement had been enclosed by 1850 (Stansfield 2006), the Industrial Revolution had only a limited impact on the Forest of Bowland, unlike the remainder of Lancashire and Yorkshire. The area lacked coal reserves and had no fast flowing river valleys of a type sufficient to supply the power required for the textile industries. Flax processing, however, is known from the Newton area to the south-west (Higham 1989). There is limited evidence for the use of water-powered mills, mostly for grinding corn, and an example is known in Slaidburn in 1609 (Rothwell 1990, 35). The builders of turnpike roads, canals and railways also largely ignored the Forest of Bowland, and thus it remained essentially rural in character and economy.
- 3.2.10 The Tithe schedule (1844) lists most of the study area as pastoral and meadow, but the overall economy was mixed, with the main crop in the mid-nineteenth century being oats (PR 3035/4/1). In 1844, the land within the area of direct impact of the proposed works was owned by Thomas Wigglesworth, and leased to James Proctor. Messrs Wrights and Wilson owned the remainder, with their tenant being Henry Hindle (PR 3035/4/1). The fields had no significant names but did include Turnip Field, Jackson Field, Round Meadow, Well Field and Wood Top. Most of the names result from the use of the land, although Jackson Field suggests someone of that name was once associated with it. The area was certainly turned over to agriculture as evidenced by the ridge and furrow still visible (Sites **03-08**; Plates 3 and 4).
- 3.2.11 There is plentiful evidence from surviving remains, such as landscape features, maps and documentary sources, to demonstrate the effects of the lime industry in the area (Sites **18-21**, **23**, **28-29**, and **31-32**; Plate 6). Limestone was quarried either for use as a building material (Marshall and Davies-Shiel 1977, 159) or to produce lime (calcium oxide), which had numerous uses including lime wash and lime mortar.
- 3.2.12 **Modern Day:** the most significant change and development in the area was the construction of Stocks Reservoir (Site **27**). Initially agreed in 1912, the work

was not undertaken until 1923, with works extending over nine years at a cost of £1,400,000 (Clitheroe Advertiser and Times 1932). The reservoir was opened on the 9th July 1932 by Prince George (Mitchell 2004, 132; Rothwell 1990). During the building of the reservoir a temporary settlement called Hollins was constructed for the workers. This included living accommodation for between 330 and 500 workmen or ‘navvies’. There were fifteen wooden huts, each allotted a housekeeper responsible for the catering and upkeep of the place. The workmen slept in cubicles with a communal living space. Apparently, each hut had a garden at the front and back in which vegetables were grown. Effectively Hollins was a small temporary community. Contemporary accounts, such as those found in the Blackpool Gazette, described it as having a main street and side streets, which had been named, shops and stores, a hospital, electric lighting, a water supply, sewerage scheme and even a cinematic theatre. The works also involved the construction of a 3-foot gauge railway for the removal and import of goods and waste (Mitchell 2004, 132).

3.3 MAP REGRESSION ANALYSIS

- 3.3.1 **Saxton 1577**: this map is very general and provides very little detail, but does illustrate main routes and topographical features, such as the River Hodder (Plate 1). Although stylised, it does depict the village of Slaidburn to the south as being quite significant in size, and set out around a crossroads. Hammerton Hall (Site 02) is also shown on the eastern side of the River Hodder. No other features are shown in the area of the proposed works.
- 3.3.2 **Speed 1610**: this map is virtually identical to Saxton’s, but has less detail. Slaidburn is represented by one building but Hammerton Hall is not shown.
- 3.3.3 **Lang’s Map of Lands in Slaidburn 1765 (DDB/84/1)**: this map is in full colour, to scale, and with a north arrow. It clearly shows the village of Slaidburn and the associated fields, and would appear to have been drawn up for field ownership since there is no building detail. The roads and the River Hodder are shown but the map does not extend into the area of the proposed works.
- 3.3.4 **Township of Slaidburn Tithe Map 1844 (PR 3035/4/1)** (Fig 3): this hand-drafted map has a north arrow and is to scale. The various topographic features, such as the road system, buildings and River Hodder correspond closely to those of today. Several unlabelled quarry sites are depicted. The fields are numbered and relate to the schedule, where the field names are recorded. The field boundaries, for the most part, correspond to the modern Ordnance Survey mapping. This demonstrates relatively little change in the field system in the intervening period, although some of the fields appear to have been amalgamated, and the dividing boundaries scrubbed out. The area of woodland/plantation around Phynis also remains little changed from 1844 to the present day.
- 3.3.5 **Ordnance Survey First Edition 1850** (Fig 4): the Ordnance Survey 1:10,560 map provides a clear and detailed depiction of the area. It shows roads, tracks,

the River Hodder, wooded areas, buildings and settlements. The map demonstrates that some of the field boundaries reflect the contours of the land. The field layout remained the same as seen on the earlier Tithe Map, with very few field amalgamations or new boundaries (Sites **11** and **36**; Plate 5 and 9). The map does show the locations and relative sizes of several limestone quarries and associated lime kilns (Sites **18, 19, 20, 21, 23, 28, 29, 31** and **32**).

- 3.3.6 **Ordnance Survey Later Editions:** few changes are apparent in the late nineteenth century. The period between 1910 and 1932 saw large-scale changes in the area now occupied by Stocks Reservoir (Site **27**), north-east of the study area. The flooding of the area resulted in the loss of field systems, Stocks hamlet and other settlements. As a result of the construction of the reservoir several changes were made to the field pattern to the east of Phynis. Elsewhere within the study area there were few other noticeable changes.

3.4 ARCHAEOLOGICAL INTERVENTIONS

- 3.4.1 No archaeological interventions have taken place within the easement of the pipeline. The area was examined previously as part of the 1997 North West Water's Forest of Bowland Estate (LUAU 1997).

3.5 WALKOVER SURVEY

- 3.5.1 A systematic walkover survey was undertaken during March 2007, along a 200m-wide corridor centred on the proposed pipeline route. The known HER sites were subject to an inspection and in addition to this two further sites were identified during the survey (Sites **35-36**; Plates 8 and 9). Full details have been included in the gazetteer (*Section 4*). The walkover survey encompassed four fields (Fig 2). Fields 1 and 2 were unimproved pasture and Fields 3 and 4 had suffered twentieth century disturbance relating to the construction of Stocks Reservoir.
- 3.5.2 **Field 1:** ridge and furrow features (Sites **05** and **11**) and a field boundary (Site **36**) were recorded within this field. A possible quarry (Site **20**) and a hollow way with plashed/laid trees (Rackham 1997) along the fringe (Site **34**) were observed on the boundary between Fields 1 and 2.
- 3.5.3 **Field 2:** this field was located to the east of Field 1. It contained a large area of ridge and furrow (Site **04**).
- 3.5.4 **Field 3:** a pair of gate posts (Site **35**) was located south of the wood near the site of the proposed new reservoir, but not within the area of proposed works. The extreme eastern side of Field 3 had been disturbed during installation of water pipes relating to Stock Reservoir in the 1920s and 30s, visible as a line of access and inspection hatches within the field (Plate 10).
- 3.5.5 **Field 4:** this was located east of Field 3. It had also been disturbed in the early twentieth century and contained no archaeological features.

3.6 TOPOGRAPHIC SURVEY

- 3.6.1 A topographic survey was conducted on six sites identified during the desk-based assessment and walkover survey. These included two sites of ridge and furrow (Sites **04-05**), two former field boundaries (Sites **11** and **36**), a hollow way (Site **34**), and a possible quarry site (Site **20**). Each was surveyed using a total station as detailed in *Section 2* above. The results of the survey are presented in Figure 5. Some additional descriptive text was added to the Site Gazetteer (*Section 4*) as a result of this survey.
- 3.6.2 **Site 04 and 05:** these sites comprise two areas of ridge and furrow identified during the walkover survey. Each measures 3m to 3.5m between the constituent strips, and appear approximately straight except where they reflect the shape of the field boundaries. Both areas of ridge and furrow are characteristic of horse-ploughing, and are probably land drainage features created during the post-medieval period.
- 3.6.3 **Site 11:** this site comprises a shallow ditch aligned north-north-west/south-south-east, which had been identified by the desk-based assessment and walkover survey as part of a former field boundary. This feature still serves as a land drain, with an active culvert exiting the ditch at its northern extent and flowing into the adjacent stream.
- 3.6.4 **Site 36:** this shallow ditch aligned north-east/south-west, was identified by the desk-based assessment and walkover survey as part of a former field boundary. In common with Site **11**, this still serves as a land drain. The culvert within the ditch was collapsed in places, exposing the drain inside.
- 3.6.5 **Site 20:** an area of quarrying activity. Three quarries were identified (Fig 5), varying in size from 7m by 8.8m to 21m by 13m, and reaching depths of 2-3m. Each extraction appears to have been cut into the natural geology of the hillside to access underlying millstone grit.

4. GAZETTEER OF SITES

Site number	01
Site name	Hamerton
NGR	SD 72000 53700
Site type	Site of settlement
Period	Medieval
HER No	1117
Sources	HER, documentary
Description	The site of the lost village of Hamerton. It was first mentioned in the Domesday Book (Beresford 1954, 238) and last in 1379 (<i>ibid</i>). One farm was mentioned in the 1821 census (<i>ibid</i>).
Assessment	The site lies outside the development and will not be affected by the development.

Site number	02
Site name	Hammerton Hall
NGR	SD 71878 53761
Site type	Building, extant
Period	Early Post-medieval
HER No	1113
Sources	HER, Listed Building,
Description	Hammerton Hall is an Elizabethan mansion of E-plan, now divided into two dwellings. Its southern frontage retains a 16/17th century appearance but the remainder of the building has been modernised. A photograph (GP AO-63-212-1) alluded to in an obscure HER reference shows the south-east aspect. Listed Building Information as follows:- SD 75 SW EASINGTON 10/38, Hammerton Hall 16.11.1954 - II* House, probably c.1600, with east cross-wing added C19th. Slobbered rubble with sandstone dressings and slate roof. E-plan. 2 storeys with attic. On each side of the central porch, on both floors, is a 6-light mullioned window with outer chamfer, inner hollow chamfer, and hood. The left-hand cross-wing has the remains of a chamfered surround, with a hood, now containing a modern door and window. On the 1st floor is a window similar to those flanking the porch. The 3-light attic window has an ogee head and hood. The gable has a coping, and the west wall has a large projecting stack with offsets. The right-hand (east) cross-wing has punched quoins. On the ground floor is a window of 3 large lights with chamfered stone surround and mullions, with a hood. On the 1st floor is a window similar to those flanking the porch, but with 3 mullions only remaining. The attic has a blocked 3-light window matching that to the other wing and either reconstructed or a copy. The gable has a coping. The gabled porch oversails on the 1st floor with a cyma moulding. This floor has an ovolo-moulded mullioned and transomed window, with 12 lights, all blocked, at the front, and 6 lights on each return wall, with some blocked. Above is a 5-light attic window matching those to the wings, and a gable coping. The outer doorway is moulded with a Tudor-arched head and hood. The inner doorway is chamfered with a similar head. An early door of studded vertical planks remains. Central range of rear has some double-chamfered windows on each floor, mostly blocked. Interior. At the left of the passage immediately inside the front door, now partly covered by a later stair, is a doorway in a timber partition with ogee doorhead, and a plank door, split horizontally and with early hinges. Other internal walls are formed by wattle-and-daub panels in timber framing, by vertical framed panelling, and by square panelling with plain chamfered rails and muntins. The east cross-wing has softwood beams, but a doorway leading into it on the 1st floor, from the central part of the house, is of chamfered stone with a Tudor-arched head. The west cross-wing has, in its front room, a wide chamfered fireplace with segmental head. A door leading to the rear room has a deep hollow moulding and a Tudor-arched head. In the central section, to the east of the cross-wing, is a spiral stone stair.

Assessment The site lies outside the development and will not be affected by the development.
Site number **03**
Site name **Phynis 248**
NGR SD 71450 54450
Site type Earthworks
Period Post-medieval
HER No **12993**
Sources HER, LUAU 1997
Description Ridge and furrow measuring 1.5-2m wide with a height of 0.10m. It is aligned approximately north-east/south-west, extending beyond a former field boundary.
Assessment The site lies outside the development and will not be affected.

Site number **04**
Site name **Phynis 255**
NGR SD 71530 54170
Site type Earthworks
Period Post-medieval
HER No **13000**
Sources HER, LUAU 1997
Description Ridge and furrow in Field 2 measuring 3m to 3.5m wide with a height of 0.10-0.15m. It is aligned east/west, extending beyond a former field boundary. The ridge and furrow is straight and quite regular suggesting a later date. The alignment is concurrent with the direction of the slope so that the earthworks run up and down the slope. These earthworks are characteristic of horse ploughing, and are most likely post-medieval in date created as an aid to drainage.
Assessment The site lies within the development area and will be affected.

Site number **05**
Site name **Phynis 256**
NGR SD 71340 54170
Site type Earthworks
Period Post-medieval
HER No **13001**
Sources HER, LUAU 1997
Description Ridge and furrow in Field 1 measuring 3m to 3.5m wide with a height of 0.05m. It is aligned approximately north-east/south-west, extending beyond the hollow way (Site **11**) to the south to the east of the ditch/bank earthwork representing a former field boundary (Site **36**). These earthworks are characteristic of horse ploughing, and are most likely post-medieval in date created as an aid to drainage.
Assessment The site lies within the development area and will be affected.

Site number **06**
Site name **Phynis 260**
NGR SD 71180 54380
Site type Earthworks
Period Post-medieval
HER No **13005**
Sources HER, LUAU 1997
Description Ridge and furrow measuring 2m wide with a height of 0.20m. It is aligned approximately east/west, and is divided in two the northern field boundary of Field 1.
Assessment The site lies outside the development and will not be affected.

Site number **07**
Site name **Phynis 263**

NGR SD 71290 54480
Site type Earthworks
Period Post-medieval
HER No **13008**
Sources HER, LUAU 1997
Description Ridge and furrow measuring 2m wide with a height of 0.10m. It is aligned approximately east/west.
Assessment The site lies outside the development and will not be affected.

Site number **08**
Site name **Phynis 271**
NGR SD 71440 54700
Site type Earthworks
Period Post-medieval
HER No **13016**
Sources HER, LUAU 1997
Description Ridge and furrow measuring 3m wide with a height of 0.20m. It is aligned east/west across the middle of the field to the west of the railway (Site **24**). It is not present to the west of the 180m contour.
Assessment The site lies outside the development and will not be affected.

Site number **09**
Site name **Phynis 249**
NGR SD 71550 54500
Site type Earthworks
Period Post-medieval
HER No **12994**
Sources HER, LUAU 1997
Description Banks and hollows measuring 10m long and 10m wide, with a height of 0.15m. These are situated in the north-east corner of the field to the immediate north-east of Phynis Farm and are aligned approximately east/west.
Assessment The site lies outside the development and will not be affected.

Site number **10**
Site name **Phynis 250**
NGR SD 71600 54390
Site type Earthworks
Period Post-medieval
HER No **12995**
Sources HER, LUAU 1997
Description Hollow way measuring 3m wide with a height of 1-1.5m. It is aligned approximately north/south. There are gateposts near its northern extent, which allowed entry into the field to the immediate south of the extant access to the Stocks Reservoir, and possibly relate to Site **09**. The northern section of the hollow way was disturbed by the construction works for Stocks Reservoir and no longer appears extant.
Assessment The site lies outside the development and will not be affected.

Site number **11**
Site name **Phynis 259**
NGR SD 71270 54180
Site type Earthworks
Period Post-medieval
HER No **13004**
Sources HER, LUAU 1997

Description Old field boundary within Field 1, noted as a hollow way in the 1997 survey. It measures 4m wide and 0.75-1m in height. It is aligned approximately north/south. Its location seems to correspond to a previous field boundary visible on the First Edition Ordnance Survey. This feature currently serves as a land drain, with an active culvert exiting the ditch from its northern extent, and flowing into the adjacent stream. Two branches of this drainage system were also surveyed during the topographic survey, one feeding into the north/south-aligned former field boundary from the west, and another to the north-east, drawing water from the former field boundary (Fig 5). There is no evidence that these additional linear features, which form part of the drainage system, represent former field boundaries.

Assessment The site lies within the development area and will be affected.

Site number 12
Site name Phynis 269
NGR SD 71650 54740
Site type Earthworks
Period Post-medieval
HER No 13014
Sources HER, LUAU 1997
Description Ditch measuring 4m wide and 1m deep. It is aligned north-east/south-west and lies to the west of a drystone wall. Its southern extent terminates in a culvert.
Assessment The site lies outside the development and will not be affected.

Site number 13
Site name Phynis 270
NGR SD 71600 54710
Site type Structure
Period Post-medieval
HER No 13015
Sources HER, LUAU 1997
Description A culvert-type structure with drystone revetment construction.
Assessment The site lies outside the development and will not be affected.

Site number 14
Site name Phynis 252
NGR SD 71500 54290
Site type Structure
Period Post-medieval
HER No 12997
Sources HER, LUAU 1997
Description A single span, drystone constructed bridge measuring 4m long, 3.5m wide and 2m high. It crosses Phynis Beck south-east of Phynis farm.
Assessment The site lies outside the development and will not be affected.

Site number 15
Site name Phynis 253
NGR SD 71540 54270
Site type Structure
Period Post-medieval
HER No 12998
Sources HER, LUAU 1997
Description A bridge of similar construction to Site 14 but having a shallower arch. It measured 3m wide and 1.9m in height.
Assessment The site lies outside the development and will not be affected.

Site number 16
Site name Phynis 262
NGR SD 71230 54470
Site type Structure
Period Post-medieval
HER No 13007
Sources HER, LUAU 1997
Description An enclosure measuring 15m long by 2m width. It is positioned adjacent to a field wall and appears on the modern Ordnance Survey map. It has no obvious entrance and there is a small amount of rubble (stone and slate) within it.
Assessment The site lies outside the development and will not be affected.

Site number 17
Site name Phynis 714
NGR SD 71617 54497
Site type Structure
Period Post-medieval
HER No 13371
Sources HER, LUAU 1997
Description A sheep pound recorded in 1850. It appears to have been abandoned prior to the construction of Stocks Reservoir.
Assessment The site lies outside the development and will not be affected.

Site number 18
Site name Barn Gill
NGR SD 71850 53530
Site type Site of quarry
Period Post-medieval
HER No 9865
Sources HER, LUAU 1997
Description A limestone quarry shown on the 1850 First Edition Ordnance Survey map. It is not on the current sheet.
Assessment The site lies outside the development and will not be affected.

Site number 19
Site name Phynis 254
NGR SD 71550 54250
Site type Structure
Period Post-medieval
HER No 12999
Sources HER, LUAU 1997
Description A well constructed north-facing limekiln measuring 4m long x 3m wide x 5m in height, with a 2.75m high arch. The inner arch (2m x 1.5m) is filled with rubble and rubbish. The charge-pot has collapsed and its remains are c 4m in diameter x 2m in depth. It is not recorded on the 1844 Tithe Map, nor the 1850 or 1907 Ordnance Surveys, and so is possibly later.
Assessment The site lies outside the development and will not be affected.

Site number 20
Site name Phynis 258
NGR SD 71410 54120
Site type Quarry
Period Post-medieval
HER No 13003
Sources HER, LUAU 1997

Description An area of four hollow depressions, possibly limestone quarries. In order from the most northerly depression to the most southerly, they measured 13m x 15m and 2-3m deep; 12m x 9.5m and c 2m deep; 20m x 14m and c 3m deep; and 8m x 7.5m and c 2m deep. None of the depressions are shown on 1844 Tithe map.

Assessment The site lies outside the development and will not be affected.

Site number 21
Site name Phynis 261
NGR SD 71220 54480
Site type Quarry
Period Post-medieval
HER No 13006
Sources HER, LUAU 1997
Description A limestone quarry which measured 15m long, 15m width and had a height of 2m. It was located in the north-west of the field to the west of Phynis Wood. It was reported as being completely overgrown with vegetation in 1997.

Assessment The site lies outside the development and will not be affected.

Site number 22
Site name Phynis 277
NGR SD 71220 54650
Site type Earthwork
Period Post-medieval
HER No 13022
Sources HER, LUAU 1997
Description A quarry-like depression in a coppice to the south of Sagar Barn, measuring 40m x 40m x 22m. A small stream runs from this point to Phynis Beck. Not recorded in 1850 or 1907, and is therefore of unknown origin.

Assessment The site lies outside the development and will not be affected.

Site number 23
Site name Phynis 713
NGR SD 71580 54450
Site type Earthwork
Period Post-medieval
HER No 13370
Sources HER, LUAU 1997
Description Site of a limestone quarry recorded as 'old limestone quarry' in 1850. The quarry workings were lost during earth moving for Stocks Reservoir.

Assessment The site lies outside the development and will not be affected.

Site number 24
Site name Phynis 278
NGR SD 71470 54650
Site type Earthwork/Railway Embankment
Period Post-medieval
HER No 13023
Sources HER, LUAU 1997
Description A large embankment (4m x 1.5m) partially destroyed by reservoir works, marked on the modern Ordnance Survey map as a solid line with dots but appears on the 1850 First Edition Ordnance Survey, and thus dates to at least 1850. This probably formed part of the mineral railway (Phynis 287) from Phynis to Catlow Fell, which terminated at Phynis.

Assessment The site lies outside the development and will not be affected.

Site number	25
Site name	Phynis 251
NGR	SD 71670 54450
Site type	Structures and earthworks
Period	Post-medieval
HER No	12996
Sources	HER, LUAU 1997
Description	An industrial complex site lies to the east of Phynis farm, comprising a large spoil tip of a dark brown mineral (shale?), measuring <i>c</i> 200m x 40m x 4-5m, which was once served by a light railway (see Site 24). A disused square reservoir is shown to the east, and tanks are shown on current Ordnance Survey cartography to the south-west and the north-west of this reservoir. The site was recorded as the filter house by Botwell (1987, 28).
Assessment	The site lies outside the development and will not be affected.

Site number	26
Site name	Phynis 257
NGR	SD 71500 54260
Site type	Structure, ruined
Period	Post-medieval
HER No	13002
Sources	HER, LUAU 1997
Description	A rectangular platform (4m x 2.4m) for a small building comprising ruinous stone foundations, some being squared, and up to 0.5m wide. There is modern window glass, roof slate and Claughton brick on site. There is also a timber-frame lying nearby. Possibly the remains of the mason's shed for the reservoir construction (Botwell 1987, 28).
Assessment	The site lies outside the development and will not be affected.

Site number	27
Site name	Phynis 479
NGR	SD 71820 54490
Site type	Structure
Period	Post-medieval
HER No	13415
Sources	HER, LUAU 1997
Description	A modern dam constructed of squared blocks of quarried stone measuring 400m x 100m x 60m. It is aligned approximately north-west/south-east across the south-west end of Stocks Reservoir. There is a valve tower of stone construction, whereas the sluice to the east is constructed of stone and concrete.
Assessment	The site lies outside the development and will not be affected.

Site number	28
Site name	Jackson Field
NGR	SD 71553 53749 (north quarry) SD 71582 53731 (south quarry)
Site type	Site of earthworks
Period	Post-medieval
HER No	-
Sources	Cartographic
Description	Two limestone quarries within Jackson Field not shown on the 1844 Tithe map are shown on the 1850 First Edition Ordnance Survey. The quarries are located in the fields east of Wood House Gate and west of the River Hodder. Overall dimensions are approximately 31m x 13m for the northern quarry site, and 15m diameter for the southern quarry.
Assessment	The site lies outside the development and will not be affected.

Site number	29
Site name	Wood House Gate north
NGR	SD 71119 53827
Site type	Earthworks
Period	Post-medieval
HER No	-
Sources	Cartographic
Description	A moderate-size quarry to the west-north-west Wood Home Gate, measuring approximately 50m x 45m, located just south of a field boundary, and an east/west aligned track with which it may be associated. Shown on the 1844 Tithe map and subsequent mapping. The site represents a limestone extraction quarry and it could be related to Site 31 .
Assessment	The site lies outside the development and will not be affected.

Site number	30
Site name	Wood House Gate
NGR	SD 70930 53816 to SD 71268 53753
Site type	Earthwork
Period	Post-medieval
HER No	-
Sources	Cartographic
Description	An east/west aligned track following the line of the field boundary to the immediate north, and which may be associated with the limestone quarry Site 29 . The track runs westwards from Wood House Gate towards Croasdale Brook for a distance of 380m.
Assessment	The site lies outside the development and will not be affected.

Site number	31
Site name	Wood House Gate south
NGR	SD 71112 53753
Site type	Earthwork/Structure
Period	Post-medieval
HER No	-
Sources	Cartographic
Description	Quarry with an associated limekiln to the immediate south. The quarry had overall dimensions of 31m by 14m. It is shown on the 1844 Tithe Map and the 1850 First Edition Ordnance Survey mapping through to the present day. The site was for the extraction and processing of limestone and may be related to Site 29 , which lies to the north.
Assessment	The site lies outside the development and will not be affected.

Site number	32
Site name	Hammerton north
NGR	SD 71821 54007
Site type	Earthwork
Period	Post-medieval
HER No	-
Sources	Cartographic
Description	Quarry with an associated limekiln to the immediate north. The quarry had overall dimensions of 50m x 30m. It is shown on the 1850 First Edition Ordnance Survey. The field boundary appears to deviate around the limekiln and quarry, suggesting that these features pre-date the boundary. The site was for the extraction and processing of limestone.
Assessment	The site lies outside the development and will not be affected.

Site number	33
Site name	Slack Barn
NGR	SD
Site type	Building
Period	Post-medieval
HER No	-
Sources	Cartographic
Description	A small barn with an overall size of 23m by 13m, located in the middle of an open field, north-west of Wood House Gate. Shown on the 1850 First Edition Ordnance Survey and subsequent mapping.
Assessment	The site lies outside the development and will not be affected.

Site number	34
Site name	Wood House Gate / Phynis
NGR	SD 71540 54249 to SD 71293 53803
Site type	Earthwork
Period	Post-medieval
HER No	-
Sources	Cartographic
Description	A north/south aligned track following the line of the field boundaries between Wood House Gate and Phynis. The track is approximately 600m long. It is shown on the 1844 Tithe map and the first edition Ordnance Survey 1:10,560 1850. It continues north-east of Phynis and originally joined the embankment (Site 24).
Assessment	The site lies within the specific areas of impact and will be affected by the development.

Site number	35
Site name	Hammertone Gate
NGR	SD 71646 53982
Site type	Structure
Period	Post-medieval
HER No	-
Sources	Walkover Survey
Description	A pair of upright stone gate posts measuring 1.55m x 0.37m x 0.25m, set 1.1m apart. There is a wrought iron gate hung in place. The posts have incised panels with a rustic finish and the tops are rounded. They possibly relate to Hammerton Hall footpaths as seen on the opposite bank of the River Hodder, in which case they are likely to be Victorian in date.
Assessment	The site lies in close proximity but will not be affected by the development.

Site number	36
Site name	Wood House Gate / Phynis
NGR	SD 71339 54077
Site type	Earthwork
Period	Post-medieval
HER No	-
Sources	Walkover Survey, cartographic
Description	A north-east/south-west aligned ditch and bank in Field 1, which comprise the remains of a former field boundary aligned approximately parallel to the hollow way (Site 34) to the east. It is shown on the 1850 First Edition Ordnance Survey. The ditch is approximately 2m wide at the top, 1m at the base and 0.5-0.75m deep. The bank lies to the east of the ditch, and measures 2.5m wide and 0.25-0.35m high. This feature still serves as a land drain, and at one point the culvert within the ditch had collapsed, exposing the drain below.
Assessment	The site lies within the specific areas of impact and will be affected by the development.

5. IMPACT AND RECOMMENDATIONS

5.1 OVERVIEW

5.1.1 The majority of the 36 sites identified as a result of the desk-based assessment and walkover survey are agricultural in nature and post-medieval in date. Other sites of this period relate to limestone quarrying and processing, and water management features associated with the construction of Stocks Reservoir. Although documentary evidence suggests Hammerton Hall had medieval origins, no other site of this or any earlier period was identified.

5.2 IMPACT

5.2.1 Two areas of ridge and furrow (Sites **04** and **05**) will be directly impacted by the development, as the access road runs through both these sites. These sites provide information on the post-medieval rural landscape of the area, and Hammerton in particular. The former field boundaries (Sites **11** and **36**) and the hollow way (Site **34**) will also be directly impacted upon by the proposed access road. Site **20**, the possible quarries and wall site, may also be impacted upon, as it lies within close proximity to the new access road. The remaining sites within the study area should not be affected by the proposed pipeline.

5.3 RECOMMENDATIONS

5.3.1 The results of the desk-based assessment and walkover survey showed that a topographic survey of the sites which would be directly impacted upon by the development (*see Section 5.2.1 above*) would be necessary to preserve these sites by record. Preservation by record has been achieved in the case of the ridge and furrow areas (Sites **04** and **05**). It is further recommended that a permanent presence watching brief be maintained during all topsoil stripping activities. In particular the field boundaries (Sites **11** and **36**) and the hollow way (Site **34**) to be affected by the development works should be recorded in section during the watching brief programme in order to achieve full preservation by record.

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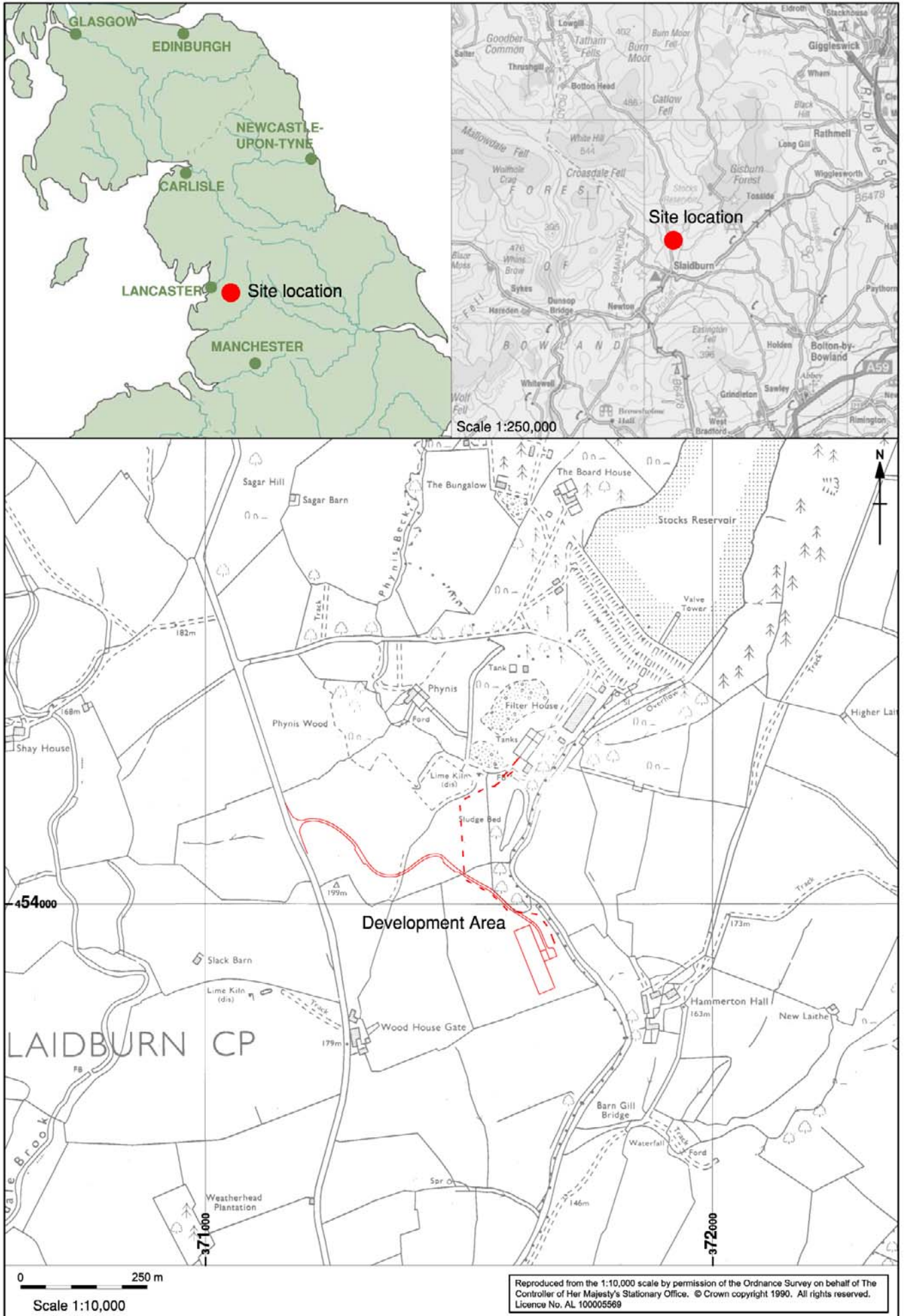


Figure 1: Site Location

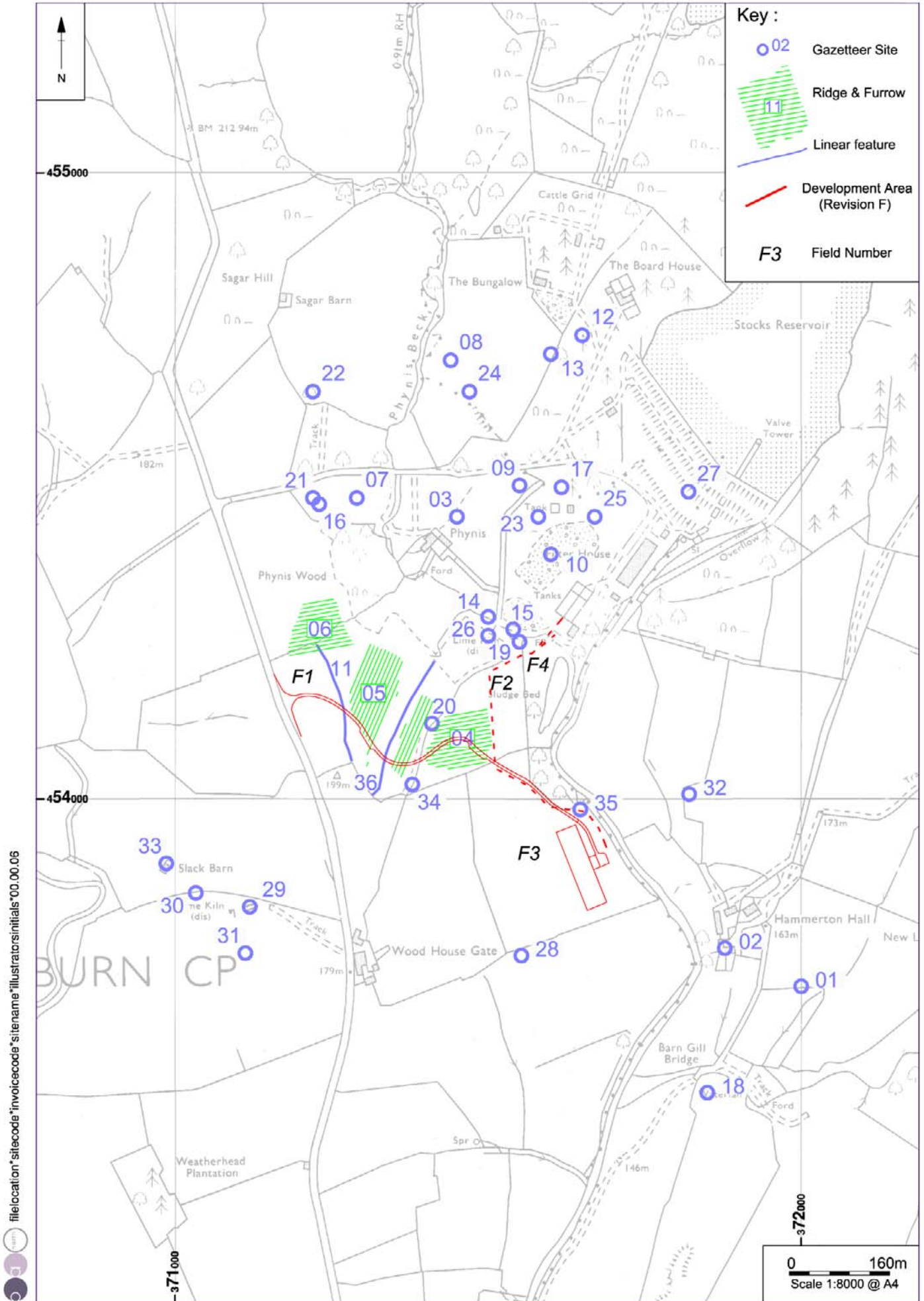


Figure 2: Plan of Gazetteer Sites

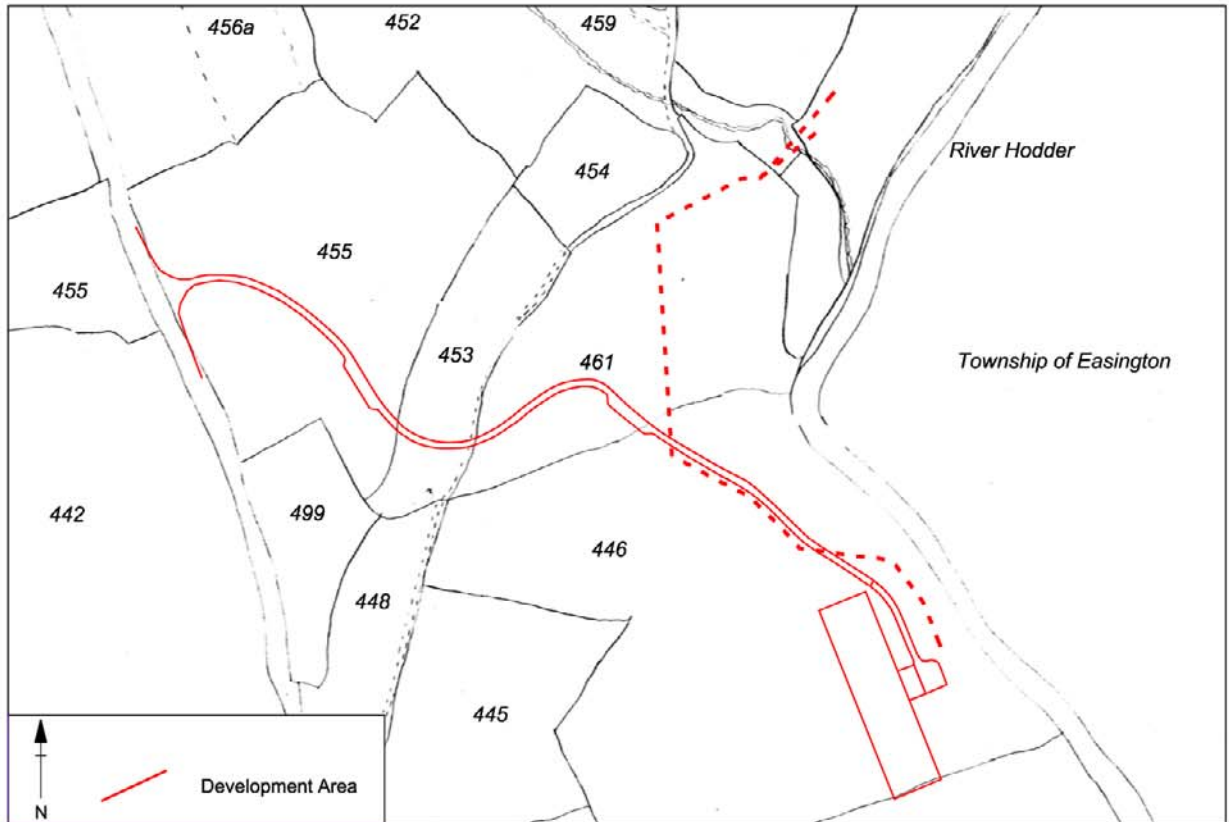


Figure 3: Proposed development area superimposed upon the Tithe map, 1844

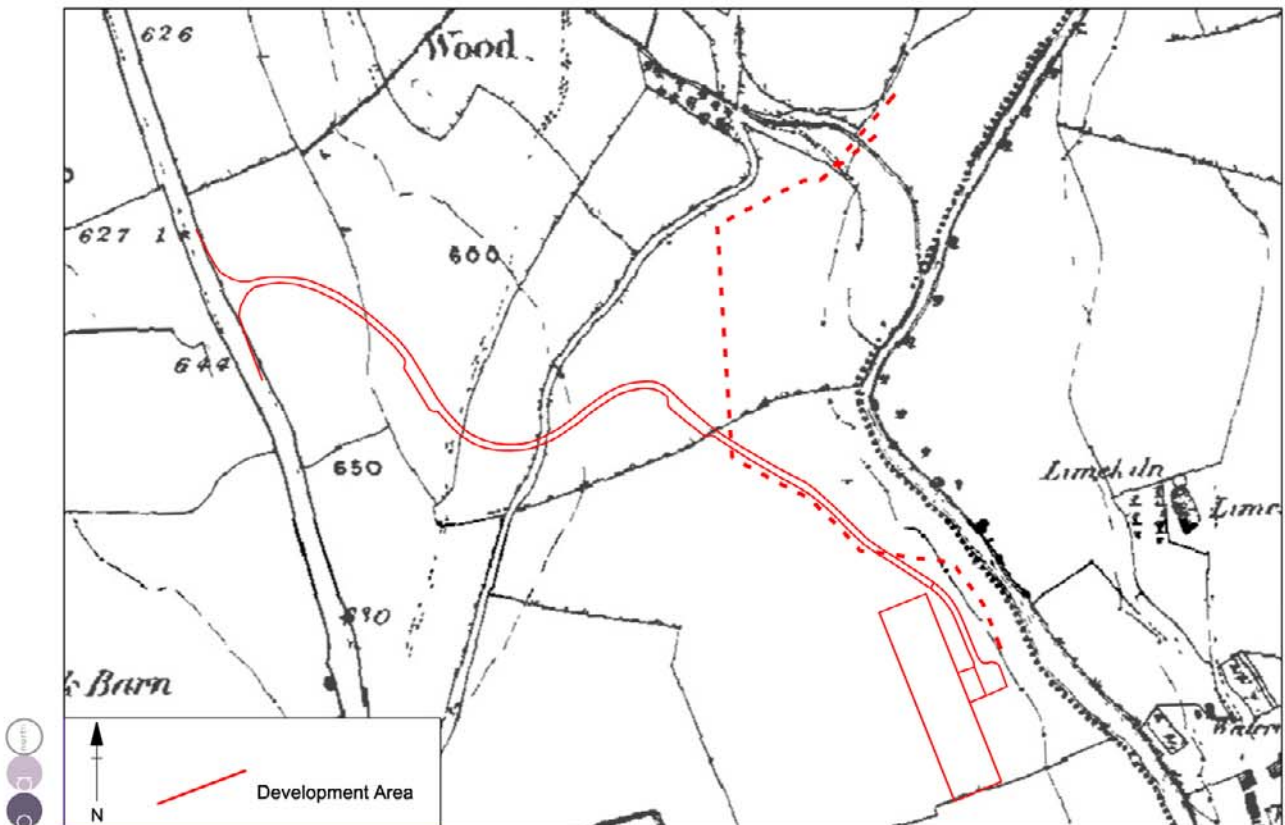


Figure 4: Proposed development area superimposed upon the Ordnance Survey First Edition 6":1 mile map, 1850

7. ILLUSTRATIONS

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- Figure 5: Topographic survey of Sites **04, 05, 11, 20, 34** and **36**

7.2 LIST OF PLATES

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- Plate 2: Hammerton Hall, Site **02** in the distance, looking south-east
- Plate 3: Site **04**, ridge and furrow, looking south-west
- Plate 4: Site **05**, ridge and furrow, looking north
- Plate 5: Site **11**, old field boundary, looking north-east
- Plate 6: Site **20**, possible quarry and field wall, looking south-west
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- Plate 10: General view of the field where the proposed new Hodder Service Reservoir will be sited, with ridge and furrow (Site **04**) in the field beyond, looking north-west

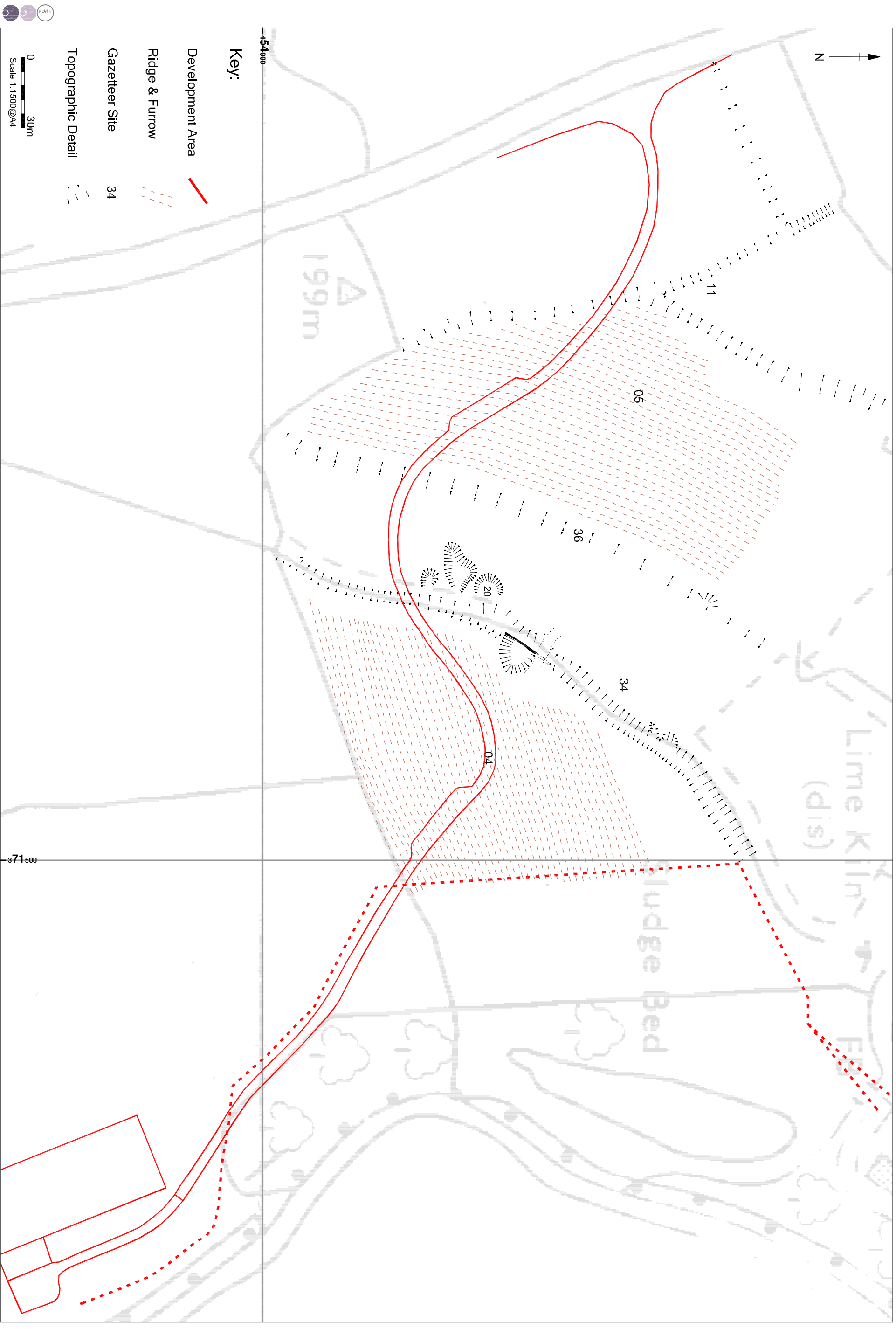


Figure 5: Topographic detail of gazetteer sites 04, 05, 11, 20, 34 and 36



Plate 1: Extract from Saxton's 1577 map showing Hammerton Hall north of Slaidburn



Plate 2: Hammerton Hall, Site 02 in the distance, looking south-east



Plate 3: Site **04**, ridge and furrow, looking south-west



Plate 4: Site **05**, ridge and furrow, looking north



Plate 5: Site **11**, old field boundary, looking north-east



Plate 6: Site **20**, possible quarry and field wall, looking south-west



Plate 7: Site **34**, hollow way, looking south-east



Plate 8: Site **35**, gateposts and gate with water pipes in the background, looking north



Plate 9: Site **36**, old field boundary visible as bank and ditch, looking south-east



Plate 10: General view of the field where the proposed new Hodder Service Reservoir will be sited, with ridge and furrow (Site **04**) in the field beyond, looking north-west

APPENDIX 1: OA NORTH SURVEY LEVELS

This describes the types of survey appropriate for the various stages of archaeological evaluation undertaken in advance of development as practised by the Lancaster University Archaeological Unit. They are based on survey levels defined by the Royal Commission on the Historical Monuments of England (RCHME) and are in accordance with stages of evaluation defined by the Association of County Archaeological Curators (ACAO 1993).

Level 1 Survey (Assessment)

Level 1 represents the minimum standard of record and is appropriate to exploratory survey aimed at the discovery of previously unrecorded sites. Its aim is to record the existence, location and extent of an archaeological site. The emphasis for the recording is on the written description, which should record type and period and would not normally exceed c50 words.

The location and extent of the sites is typically shown on 1:2,500 or 1:10,000 OS maps as requested by the client. The extent of a site is only defined for sites greater than 50m in size and smaller sites are shown as a point. The accuracy of survey is +/- 10m (8 figure grid ref.) and is undertaken without the use of survey instruments.

This is a rapid level of survey (Site Inspection in project design) undertaken alongside a desk top study as part of the site assessment (ACAO 1993, 14). It is an initial site inspection that helps the local planning authority to consider fully the archaeological implications of a planning proposal and also serves as the basis for undertaking and planning further archaeological work on the site.

Level 2 Survey (Evaluation)

Level 2 survey defines the extent of all surface archaeological features on site in relation to the main topographic elements (eg field walls) and accurately defines the extent of the overall archaeological site. It is produced in conjunction with a full objective and interpretative description of the features.

It is undertaken using Total Station survey equipment and is located usually using Global Positioning Survey (GPS) techniques. The internal accuracy is typically +/- 0.05m but is located with respect to the OS National Grid to an accuracy of +/- 1.0m. The survey methodology is designed to facilitate the production of any subsequent Level 3 survey by reusing the Level 2 survey data along with additional contour data. For reasons of economy and overall flexibility the survey is generated using a Computer Aided Design (CAD) system and output on the Unit's A0 plotter.

This is a basic level of survey undertaken alongside trial excavation work as part of the field evaluation (ACAO 1993). It can serve as a mitigation measure for smaller sites with poor surface survival and should be applied to sites of some significance threatened by the development. More complex and archaeologically important sites require a Level 3 survey as mitigation for their destruction. The Level 2 survey defines an archaeological context for any trial excavations and shows the location of the trenches in relation to the surface features. This level is used to assess the archaeological significance of the site and serves as the basis, along with other

evaluation techniques, for the submission of recommendations to the District or County Planning Officer.

Level 3 Survey (Mitigation)

Level 3 survey is a comprehensive record of the archaeological features in relation to the surface topography. It incorporates an interpretative hachure survey alongside a full computer generated model of the ground surface enacted when a full survey is needed in conjunction with excavations or in cases where detailed survey of fragile upstanding earthworks is the only appropriate mitigative measure.

The Level 3 mitigation survey is designed to record the archaeological site as fully as current technology will allow in advance of its destruction. It is applied selectively to sites of particular importance and which have a good survival of surface features.

It is generated by the provision of additional survey data to the Level 2 survey and is of an equivalent level of accuracy ($\pm 0.05\text{m}$). In many cases only a relatively limited amount of additional data is required to upgrade the Level 2 survey to the full surface modelled Level 3 and therefore this can be an economic recording option.

It is generated on CAD, which maintains the original accuracy of the survey data and allows flexibility of drawing output at any scale. The drawing file will record the contour detail at different height separations and the final survey drawings can therefore be tailored to meet any requirements of the client.