

APPENDIX 1: PROJECT DESIGN

1. INTRODUCTION TO THE PROJECT

- 1.1.1 Oxford Archaeology North (OA North) has been invited to provide supervision and enablement for a community archaeology survey and excavation project of three longhouses in the Duddon Valley (Tongue House A and B, and Long House Close). This is to be undertaken on behalf of the Duddon Valley Local History Group and in conjunction with the National Trust and the Lake District National Park Authority and financed by Heritage Lottery Fund. OA North would provide supervision and guidance for a community survey and excavation of the longhouses.
- 1.1.2 This is part of a long standing community project which has already been involved in both detailed and identification surveys throughout the Duddon Valley, and the results of which have been widely disseminated (DVLHG 2009; Matthiessen *et al* 2013). The survey programme identified a number of longhouses that warranted further investigation, and is a class of monument that has rarely been subject to detailed excavation. The wider aim of the project is to involve local people and to provide training in excavation for three of the sites and the survey of four sites.
- 1.1.3 OA North would provide supervision of volunteers undertaking detailed geophysical surveys of each of the three sites, and would entail both resistivity and magnetometry surveys. OA North would also undertake excavations of each site over three seasons. A principal aim of the project is to involve the local community as widely as possible, and to provide new information on the wealth of archaeological remains in the area. This will entail providing presentations to the volunteers and getting them directly involved in undertaking field surveys and also the excavations. There would be the provision of interpretation panels and the project would entail presentations to schools. Ultimately the results would be disseminated in reports, and publications and in updated records for the Lake District National Park Authority Historic Environment Record and the National Trust SMR.

2. AIMS OF THE PROGRAMME

- 2.1.1 The primary aims of the project are as defined in the project brief and are as follows:
- To encourage local volunteers to gain an understanding of the history of the area through survey and excavation. The volunteers will learn techniques of surveying and excavation and provide them with a clear understanding of the archaeological processes.
 - The information collated will be able to be used for interpretation purposes to inform local communities and visitors in the catchment.
- The objectives of the project are as follows:
- To excavate part of each long house site with the help of local volunteers to obtain evidence for dates of construction (charcoal, pottery, other artefacts etc) from secure contexts undamaged by bracken.
 - To look for evidence of stock husbandry (livestock types and numbers) associated with each structure.
 - To look for any evidence of crop-growing in the vicinity of the structures.
 - To investigate deposits from secure contexts within and around the structures for palaeo-environmental evidence of foods (*eg* seeds, grains, bones etc) eaten by the former inhabitants.
 - To obtain evidence from pollen and other deposits in peat beds to indicate the nature of the environments surrounding the structures when they were in use.
- 2.1.2 **Community Aims:** the project aims to seek a wide community involvement in the research and investigation of areas within the Lake District National Park, and to foster a wider community awareness of the rich cultural heritage in the local landscapes. It is intended to use the present

project as a means of training volunteers, and others in the wider community, in archaeological survey and excavation techniques. Great emphasis will be placed on the virtue of survey techniques and to encourage a legacy of skills within the community. The project will therefore provide a capacity for further archaeological and historical research in the area. The project will involve local schools and community organisations, and will entail visits to local schools and to provide teaching packs for the schools.

3. METHODOLOGY

3.1 Project Preparation

3.1.1 At the outset there will be a process of liaison between OA North, DVLHG, The National Trust, and the Lake District National Park Authority staff. This will entail defining the output formats for incorporation into the HER, and having at least one field visit to examine the known archaeology and refine the project methodology. At the same time a project surveyor will establish survey control across each of the respective sites in advance of the main survey using survey grade GPS.

3.2 Interpretation Banners

3.2.1 It is proposed to produce a series interpretation banners which could be used at public events, and workshops. In the course of the project it is proposed that two Roller Banners, and one fabric banner be created, and at the end of the project a legacy Roller Banner be created to commemorate the results of the whole project. The Roller Banner can be free standing and quickly set up at events; they are, however, only intended for internal display. The fabric banner is a waterproof banner than can be erected against walls, and is intended for longer term display. In addition it is also proposed to produce an A3 poster that will advertise the project and can be put up around the area and would be appropriate for external display. The roller banners / fabric banner would be produced at the outset and over the course of the project. They would have limited amounts of text and a small number of large photographs, and would be similar to those used at Sizergh Castle albeit some would be on vertical roller banners rather than A0 format (see below). There would be one banner to describe long houses generally, another to provide information about the project and present the initial survey results and finally there would be one to summarise the previous work of the Duddon Valley History Group. There would also be an A3 poster that would provide a general introduction to the project and would provide contact details. It would be printed either on full weather proofed fabric or on glossy paper which has limited weather resilience.

3.3 Schools and General Outreach

3.3.1 There will be a process of interaction with the local schools as part of the projects outreach. The first stage will be a presentation to the five schools at the outset of the project and prior to any visit to site, then it is anticipated that there will be a site visit from the schools in the course of the project. This outreach phase would be undertaken by a member of staff with experience of schools presentations. On the day of the site visit, there will be support from the DVLHG to supervise the children and provide additional instruction. On completion of the project a final presentation will be established for the schools as a follow up and will reinforce the learning experience from the excavation. It is anticipated that there will be 10 days of schools supervision and presentation per year.

3.3.2 **Transport:** it is anticipated that the school children will be taken by minibus to the start of the track up to the Seathwaite Tarn and from there they will walk up to the sites. The costs do not allow for the for the hire of a minibus to transport the children to the start of the UU track.

3.4 Archaeological Skills Workshop

3.4.1 The first stage of the project will be a skills workshop that will be undertaken at a local hall and would be intended to train volunteers in excavation and survey techniques. It would entail a power point presentation and then a practical demonstration of archaeological methods outside the hall or on adjacent ground. The workshops will have an important need to provide valuable training in advance of the fieldwork, but also serve as an introduction to the archaeologically uninitiated and

therefore should, above all be enlightening and entertaining. There will be a mixture of experienced archaeological volunteers, who have been involved in comparable community projects in the past and also there will be those who have had no previous experience; the workshops will aim to provide training for both. This will be achieved by providing a variety of techniques on the workshop day so that there will always be some aspect that even the more experienced volunteers can benefit from. As there will be three workshops, one for each season of fieldwork, there will be introduced a variety of techniques in the later workshops so that the body of experienced volunteers will continue to be engaged and enthused. In the later workshops this will include a brief presentation of the results from the earlier phase of the project. Although there will be powerpoint presentations, the emphasis of the workshops will be upon the practical demonstrations, and to increase variety it may be appropriate for one or two of the more experienced participants to lead demonstrations in the later seasons. The themes and subjects for the later workshops will develop out of the first season of fieldwork, and it would be inappropriate to propose them at the outset as part of the present project design. It is, however, possible to define the subjects for the first workshop.

3.4.2 **First Workshop:** the first workshop will start with a brief power point presentation to introduce the participants (and potential participants) to the project and provide them with a guide as to what the project will do, and also will introduce them to the sites. This would outline the range of techniques available to the archaeologist, before addressing in detail the methods that will be undertaken by the participants. This would include an introduction to the theory and practices of archaeological excavation, palaeoenvironmental analysis, finds processing, and survey techniques. This would be followed up by demonstrations and instruction in geophysical survey, site planning, and instrument survey. The survey techniques would include a total station with pen computer (to display the results), and survey grade GPS. There may also be an introduction to the aerial photogrammetric modelling and would allow participants to create their own models based upon photos taken with a photographic mast. The aim would be to introduce the participants to the proposed programme but also to raise interest and enthusiasm. Experience of previous launch events (eg at Holwick and Windermere Reflections) was that these attract lots of people, lots of interest and set the project off to a good start.

3.4.3 It is anticipated that the workshops would be delivered over a Saturday prior to the start of the programme and will require three OA North staff, in order to provide sufficient variety of technique and also to provide more personal instruction. The potentially large numbers of attendees will demand that they are split into smaller groups and the activities will be staggered to allow full use of the day and provide for more individual instruction by the professional archaeologists.

3.5 Detailed Surveys

3.5.1 It is intended that this survey process serve as a training exercise for the volunteers, so the survey techniques will be devised to be easy to understand, and will allow for plotting in the field, is easily affordable by volunteers, but at the same time will provide training in a variety of techniques to present the range of techniques available. This will include the use of some outdated technologies, which will have a significant impact on productivity, but this will be off-set by the use of more current techniques that will enable detailed 3D recording. It is proposed to undertake a range of different survey techniques which will be varied to meet the needs of each long house structure. The general techniques are: theodolite and disto topographic survey, photogrammetry survey from a UAV (drone), magnetometry survey, resistivity survey, palaeoenvironmental survey (coring), and probing survey. Described below are the general techniques and a further section will outline how each will be applied for each long house.

3.5.2 **Topographic Survey:** it is understood that the physical remains have already been recorded, but there is a need to record the wider topography to set the context for the base survey. This will be done by a range of techniques and will be intended to provide as much training as possible in survey techniques, but is also intended to provide an accurate and general survey of the wider landscape. To survey the immediate environs it is proposed to use a theodolite and disto which is cheap and easy to use equipment, and is a technique which can potentially be used by the group following the end of the present project. In conjunction with this a photogrammetric survey will

be undertaken of the wider area using specialist UAV equipment. The two will be combined to create the final survey results.

- **Theodolite / Disto Survey:** the use of a theodolite / disto has been found to be very effective during earlier surveys. The theodolite measures angles and the disto measures the distances and then the data is drawn up in the field by volunteers using an accurate film based protractor and ruler. This allows the volunteers to be involved in all stages of the process.
 - **Photogrammetric Recording:** it is proposed to record the sites and general environs by means of aerial photography, which, using specialist photogrammetric software, can be used to create accurate three dimensional models of the site and topographic surfaces. For large landscapes there are two methods available, the first is to use a UAV, which is a small multi-engined model helicopter and provides photography from any altitude up to approximately 200m height. The alternative is to use a mast with a camera mounted on top. The latter is not effective at recording large areas, but can be undertaken by the volunteers, and allows them to get involved in the photogrammetric process using inexpensive equipment. In practice it is proposed to use both techniques. Survey control is introduced to the photographs by the placement of survey control targets across the site which are located by means of survey grade GPS or total station.
 - The photogrammetric processing is undertaken using Agisoft software which provides detailed modelling using the overlap of up to 120 photographs, and creates a very detailed DTM (Digital Terrain Model) across the site. The photographs are then digitally draped over the model to create an accurate three dimensional model of the ground surface. The primary output, however, is an accurate two dimensional image which can be used to generate accurate plans or profiles.
 - **Survey Control:** it is proposed that survey control be introduced to the sites by means of a high accuracy survey type differential GPS where possible. This can achieve accuracies of +-20mm, and will ensure that the survey is accurately located onto the Ordnance Survey National Grid. If at any of the sites there is no mobile reception (necessary to provide corrections for the GPS) then the control will be established by means of a total station.
- 3.5.3 **Magnetometry Survey:** magnetometry is not the best technique for recording rocky landscapes, or where there is the potential for bedrock near the surface; however it is very effective for the identification of hearths. It is therefore proposed to undertake a rapid survey of the interiors of each of the long houses, but which will also extend some way beyond the extent of each long house.
- 3.5.4 The detailed magnetic survey will be carried out using a Bartington Grad601-2 gradiometer which has an internal data logger. Data will be collected in zig-zag mode over a half grid (15m x 30m), the magnetic data will be collected at 0.25m intervals on profiles 1m apart (3600 readings per grid). The instrument is easy to use and handle and the basic survey operations and technique can be easily explained to volunteers.
- 3.5.5 **Resistivity Survey:** the resistance survey is most effective at identifying stone structures; however, it can be masked, and the results confused, by the proximity of natural stones and bedrock. It is anticipated that it will only provide useful results at a selected number of long house sites and the survey will therefore concentrate on those sites.
- 3.5.6 The detailed resistance survey will be carried out using a Geoscan RM15 resistance meter, which has an internal data loggers. Data will be collected in zig-zag mode over 30m by 30m grids, the resistance survey data will be collected at 1m intervals on profiles 1m apart (900 readings per grid). The instrument is easy to use and handle and the basics of survey operation and technique can be easily explained to volunteers.
- 3.5.7 **Survey Control:** the survey grids will be staked out and surveyed using either an RTK GPS system or total station to Ordnance Survey co-ordinates to at least 0.05m accuracy. Bamboo canes will be placed at grid node points and survey ropes and canes will be used to mark out the survey traverses.
- 3.5.8 All data will be downloaded immediately following collection using specialist survey software and will be minimally processed where applicable. Raster images will be exported, usually in .png or .jpg

format for presentation and dissemination. These images will be imported into CAD software and overlain on a geo-referenced base plan. An interpretation of the anomalies will be presented in CAD and a non-technical summary and discussion of the results will be included in a report which will accompany the interpretation.

- 3.5.9 It is proposed that much of the survey area will be surveyed by an experienced geophysicist prior to project participants and casual visitors' involvement in order to allow for some final example data to be available for viewing at the commencement of the project. The survey will be carried out in accordance with English Heritage guidelines (2008) and IFA standards (2010).
- 3.5.10 **Coring Survey:** a process of environmental coring will be undertaken by experienced palaeoenvironmentalists within and around the area of each long house, macrofossils and pollen. A rapid process of probing will be used to examine stratigraphy of the soils in the environs of each long house to identify any significant deposits, particularly peat, that would warrant more detailed coring. This will be undertaken using a gouge auger and the depth, type, and preservation of the waterlogged stratigraphy will be recorded on *pro-forma* record sheets, and the survey will seek to record the character of the underlying stratigraphy. The sediment stratigraphy will be recorded using the terminology and procedures outlined by Troels-Smith (1955). If good peat deposits are identified then a core will be undertaken with a Russian Corer which has the capability of taking clean and secure deposits and will be appropriate for radio carbon dating. The cores will be located, both spatially and in altitude, by means of survey grade GPS. Samples will be taken from the top and bottom to facilitate radio carbon assay. Selected sampling will be undertaken within the longhouse to investigate for the potential for charcoal deposits related to a hearth; however, this will entail a limited number of core holes as there is a need to limit disturbance to the buried soil deposits.
- 3.5.11 **Analysis of Cores:** an assessment will be undertaken of selected cores taken with the Russian corer, and will be in addition to the recording of the deposits in the field. This will entail taking small samples of peat will from significant levels in the core. These will be examined microscopically in the laboratory for plant macrofossils to confirm the field identification and some will be assessed for pollen sampling. Larger samples from basal deposits will be assessed for radiocarbon dating to provide inception dates for the waterlogged deposits.
- 3.5.12 **Probing:** it is proposed to undertake probing at the site and will entail the use of a steel probe to identify stone elements below the ground. It is particularly effective at tracing structures which have a limited surface expression, and where there is a need to establish where and how they continue. Where stone elements are identified the edges will be defined with the probe and then marked on the ground with a survey arrow. The process is continued until the whole outline of a wall or stone structure is defined by survey arrows. The arrows are then surveyed using a survey grade GPS to record the extent of the buried stone features. It is proposed to use the technique at selected sites where it is considered that there is uncertainty about the form of visible structures and where the technique will be profitable.
- 3.5.13 **Proposed Survey Strategies for each Long House Site:** each long house is different and the survey needs of each site is correspondingly different. The survey strategies have been devised for each site in order to provide the most informed and effective range of techniques. At each site there will be a need to clear the vegetation from the site to allow a detailed understanding of the site and topography; however, the extent of the vegetation clearance will again depend on the needs of the site.
- **Tongue House A:** the site has very clear visual remains, bedrock and natural boulders close to the surface and is associated with a field system that is fairly extensive. The main topographic survey of the immediate environs around the long house, will be undertaken using the theodolite and disto as that provides the best training potential. The wider area, containing the field system, will be surveyed by means of the photogrammetry using a drone. This will also record the wider topography and will generate contours. The bedrock is too close to the surface to make resistivity an effective technique, but magnetometry will be used to search for a hearth within the structure. There is a possible peat deposit in the immediate environs of the site and it is proposed to use gouge and Russian corers to explore this deposit.

- **Tongue House B:** the site has very clear visual remains, bedrock and natural boulders close to the surface and is associated with a field system that is fairly extensive. The main topographic survey of the immediate environs around the long house, will be undertaken using the theodolite and disto as that provides the best training potential. The wider area, containing the field system, will be surveyed by means of photogrammetry using a drone. This will also record the wider topography and will generate contours. The bedrock is too close to the surface to make resistivity an effective technique, but magnetometry will be used to search for a hearth within the structure. There is a possible peat deposit below the site, and adjacent is an area that looks as though it may have been improved in the past. It is proposed to use gouge and Russian corers to explore this peat deposit and to also undertake a stratigraphic survey, using the gouge auger, to establish the character of the area of improved ground. There is limited potential for probing.
- **Long House Close:** the site is a large enclosure and a group of at least two long houses; it has a mixture of clear visual remains and some which are apparently obscured. There is the potential to explore remains beyond the limits of the main house enclosure. The main aim of the survey will be to identify the character and form of the buried components of the structures, and it is therefore proposed to use a programme of probing and resistivity survey to explore the extent of the site, and to trace the continuations of surface features which seemingly extend below the surface. A magnetometry survey will also be undertaken to examine the potential for hearths within the long houses. As the emphasis will be on the investigative element of the survey, it is proposed to undertake all of the topographic survey by photogrammetry.

3.6 Excavation

- 3.6.1 OA North will supervise the excavation of the long houses, and will entail the excavation of areas of sufficient size to be able to be excavated and completed over the course of 16 working days, including three weekends. In practice the area will be dependent upon the numbers of participants, and it is anticipated that this will entail a flexible approach, whereby smaller areas will be opened initially and can then be expanded or additional areas opened as the work progresses. It is proposed to excavate one long house each year over three years.
- 3.6.2 It is proposed to excavate three of the four sites, and the decision as to which of the sites is not excavated should be informed by the survey programme; however, for practical and planning purposes there is a need to have some guide as to which of the four sites will be excavated in the first year. It is proposed that this site should be Tongue House Close A, because it is conveniently near to the Seathwaite Tarn track, and because it is a logistically straight forward site to excavate. It is proposed to make an aperture through the field wall separating it from the track, and it would be sensible that the survey and excavation of this site be undertaken as close as possible to minimise the time that the aperture is open.
- 3.6.3 The following section outlines a methodology for the undertaking of excavations of the long houses. The emphasis for the excavation will be upon providing training, and providing a valuable experience for the participants, rather than undertaking extensive areas of excavations to tight timetables. While it is important that all areas opened are fully excavated, the extent of the excavation areas will be defined so as to ensure that the participants can comfortably complete these areas within the time allowed. At the end of the excavation the excavations areas will be backfilled and the turf will be relaid.
- 3.6.4 It is anticipated that there will be two professional archaeologists supervising the excavations and surveys, and that there will be a ratio of four or five participants for every professional.
- 3.6.5 **Site Preparation and Preliminary Survey:** prior to the commencement of any work, a risk assessment will be compiled by the OA North Project Director. The initial element of the fieldwork will comprise the establishment of survey control using survey grade GPS. Gazebos / tents will be erected on site to provide cover immediate to the site and a mobile welfare unit, including portable toilets, will be established at the closest point to the excavations. It is proposed to use a groundhog welfare unit, which is a towable trailer and can be taken along rough tracks using a 4x4 vehicle,

- and therefore the unit can be located as close as possible to each excavation area. Netlon fencing will be erected around the excavation areas in order to keep sheep out.
- 3.6.6 **Turf Clearance and Excavation:** at the outset the turf will be carefully removed from the excavation areas by manual techniques and the turf will be stored separately from the spoil and adjacent to the excavation on terram.
- 3.6.7 All excavation will be carried out using manual techniques. Spoil from the excavation will be stored at a location adjacent to each site. Structural remains will be cleaned to define their extent, nature, form and, where possible, date. It should be noted that no archaeological deposits will be entirely removed from the site. It is not anticipated that excavation in any of the trenching will proceed below a depth of 1.2m, although should this be considered necessary, then the trench will be widened sufficiently to allow the sides to be stepped in or battered back to a safe angle of repose.
- 3.6.8 All information identified in the course of the site works will be recorded stratigraphically, using a system adapted from that used by the Centre for Archaeology Service of English Heritage. Results of the evaluation will be recorded on *pro-forma* context sheets, and will be accompanied with sufficient pictorial record (plans, sections and both black and white and colour photographs) to identify and illustrate individual features. Primary records will be available for inspection at all times.
- 3.6.9 Samples will be taken from within the house sites to enable phosphate analysis and will be undertaken alongside the excavation programme. This work will be undertaken by the participants under the guidance of a palaeoecologist.
- 3.6.10 A full and detailed photographic record of individual contexts will be maintained and similarly general views from standard view points of the overall site at all stages of the evaluation will be generated. Photography will be undertaken using digital photography and will be undertaken throughout the course of the fieldwork. Photographs records will be maintained on special photographic *pro-forma* sheets.
- 3.6.11 **Planning:** the precise location of all archaeological structures encountered will be surveyed by a combination of manual techniques using a planning frame or using a total station. All survey drawings will be completed by manual draughting techniques on site. This process will ultimately generate scaled plans within an AutoCAD system, which will then be refined by manual draughting by local community volunteers. The drawings will be generated at an accuracy appropriate for 1:20 scale, but can be output at any scale required. Sections will be manually drafted as appropriate at a scale of 1:10. All information will be tied in to Ordnance Datum. On completion of the excavations aerial photographs will be taken of each site using a photographic mast.
- 3.6.12 **Backfilling:** the excavation areas will be manually backfilled by OA North and the participants, and the turfs will be relaid.
- 3.6.13 **Finds policy:** finds recovery and sampling programmes will be in accordance with best practice (following current Institute of Field Archaeologists guidelines) and subject to expert advice in order to minimise deterioration. OA has close contact with Ancient Monuments Laboratory staff at the University of Durham and, in addition, employs in-house artefact and palaeoecology specialists, with considerable expertise in the investigation, excavation, and finds management of sites of all periods and types, who are readily available for consultation.
- 3.6.14 Finds storage during fieldwork and any site archive preparation will follow professional guidelines (UKIC). Emergency access to conservation facilities is maintained by OA North with the Department of Archaeology, the University of Durham. Samples will also be collected for technological, pedological and chronological analysis as appropriate.
- 3.6.15 Human remains are not expected to be present, but if they are found they will, if possible, be left *in situ* covered and protected. If removal is necessary, then the relevant Home Office permission will be sought, and the removal of such remains will be carried out with due care and sensitivity as required by the *Burials Act 1857*.

- 3.6.16 Any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996.

3.7 Post-excavation Work

- 3.7.1 An archive for the project will be prepared during and immediately following the fieldwork programme for and a summary forwarded to the LDNPA Historic Environment Record. The results of the excavation will form the basis of a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Research Projects in the historic Environment*, 2006). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. The deposition of a properly quantified, ordered, and indexed project archive in an appropriate repository is considered an essential and integral element of all archaeological projects by the Institute for Archaeologists.
- 3.7.2 An interim report will be compiled at the end of each season of excavation. It will present, summarise, and interpret the results of the programme. It will include an index of archaeological features identified in the course of the project, with an assessment of the site's development. It will incorporate appropriate illustrations, including copies of the site plans and section drawings all reduced to an appropriate scale.
- 3.7.3 An assessment of the samples will be undertaken on the fauna, the palaeoenvironment for waterlogged plant remains, and for phosphate analysis. It is considered that there is considerable potential to better understand the activities within the longhouses by means of phosphate and microfossils analysis.
- 3.7.4 Initial finds processing will, as far as possible, be carried out on site. This may involve the initial processing and cataloguing of finds, cross-checking site records, preparing phase plans, and checking all drawings. Participants will be encouraged to contribute any fresh research information, which may be incorporated into the final report.

3.8 Interim Report Production

- 3.8.1 **Interim Report:** the interim report will present, summarise, and interpret the results of the programme detailed in Stages 3.6 above, and will include the following:
- a front cover to include the NGR and the client;
 - the dates on which the fieldwork was undertaken;
 - acknowledgements and the names of all contributors to the project, including all the volunteers;
 - a description of the project and methodology;
 - a summary of the historical background to settlement in the specific areas;
 - results of the geophysical survey
 - results of the coring programme
 - results of the excavation work
 - specialist reports on the assessment of the samples and artefactual assessment
 - a complete bibliography of sources from which data has been derived;
 - presentation of the completed topographic survey mapping
 - a copy of this project design, and indications of any agreed departure from that design;
 - a gazetteer of all identified monuments and historic features;
 - a list of the archive contents;

- 3.8.2 The report will incorporate appropriate illustrations, including copies of the site plans, and detailed survey plans of each longhouse, 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.
- 3.8.3 **Final Report:** the final report will incorporate all the results of the earlier seasons of work and also will include a landscape assessment to set the wider context for the house sites
- 3.8.4 **Popular Report:** a reduced version of the final report will be compiled, which will be heavy on illustrations and photographs and will be approximately 25 pages in length and in A4 format. Although based on the final report, it will be subject to desk-top publishing design, and will include a well designed cover to improve the visual appearance. It will be commercially printed and it is anticipated that there would be an output of 50 copies. While this will be adequate to present the results to the group it will not be a glossy published booklet and will not be appropriate for publication or commercial sale.
- 3.8.5 **Editing and submission:** the report will be subject to the OA North's stringent editing procedure; then a draft will be submitted to the client and Lake District National Park for consultation. Following acceptance of the report, six bound copies of the report (and digital copy) will be submitted to the LDNPS HER. A summary of the work will be provided for OASIS.

3.9 Other Matters

- 3.9.1 **Access and Welfare:** access for the sites will be negotiated with the land owners by DVLHG. Access to the sites for excavation will allow for the use of a 4x4 vehicle to gain access. Welfare facilities will be provided for the staff and volunteers. It is proposed to use a ground hog welfare unit, which can be towed to the site behind a 4 x 4 vehicle.
- 3.9.2 **Site Conditions:** all the sites have considerable vegetation cover and this will need to be cleared in advance of the survey particularly, but also in advance of the excavation programme. The extent of the vegetation clearance will need to be agreed with DVLHG in advance, so that sufficient of the area will be exposed during the aerial and ground surveys.
- 3.9.3 **Health and Safety:** full regard will be given to all constraints 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. Risk assessments are undertaken as a matter of course for all projects, and will anticipate the potential hazards arising from the project. A very careful risk assessment will be undertaken in conjunction with the client.
- 3.9.4 **Insurance:** insurance in respect of claims for personal injury to or the death of any members of the public in the course of the project will be covered by OA North, who has insurance cover which complies 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. The insurance cover is as follows:
- £10 million public liability
 - £10 million employers liability
 - £5 million professional indemnity

4. WORK TIMETABLE

- 4.1 The proposed timetable is defined in the brief and is reproduced below:
- Spring 2016, 10 days survey
 - Spring 2016, Preparation of survey reports
 - Summer 2016, Schools outreach
 - Summer 2016, Training Workshop - 1 day

- Summer 2016, Excavation of long house - 16 days
- Summer 2016 Production of interim excavation report
- Summer 2017, Schools outreach
- Summer 2017, Training Workshop - 1 day
- Summer 2017, Excavation of long house - 16 days
- Summer 2017 Production of interim excavation report
- Summer 2018, Schools outreach
- Summer 2018, Training Workshop - 1 day
- Summer 2018, Excavation of long house - 16 days
- Summer 2018, Production of final report

5. RESOURCES

5.1 OA North Project Team

- 5.1.1 The excavation will be directed by Jeremy Bradley (Project Officer) and the survey will be undertaken by Peter Schofield (Project Officer), under the guidance of the project manager, Jamie Quartermaine. The OA North element of report production will be split between Peter and Jeremy.
- 5.1.2 *Project Management:* the project will be under the project management of Jamie Quartermaine, BA Surv Dip MIFA FSA (OA North Project Manager) to whom all correspondence should be addressed. Jamie is a very experienced landscape surveyor, who has undertaken or managed literally hundreds of surveys throughout Northern England since 1984, and has considerable experience of working on similar projects to that proposed. He has managed a major recording programme of Lyme Park, Cheshire, and very detailed surveys of the South West Fells including areas such as Barnscar and Burnmoor. He has also undertaken surveys of Lowther Park, Cumbria, Rufford Park, Lancashire and has also managed the recording programme of Lathom Hall and Park, Lancashire and the survey of the Forest of Bowland for United Utilities. He has been a project manager since 1995 and has managed over 350 very diverse projects since then, which are predominantly survey orientated, but of all periods from the Palaeolithic to the twentieth century.
- 5.1.3 Jamie is a qualified land surveyor (Topographic Sciences Diploma Glasgow University) and has an exhaustive knowledge and understanding of surveying techniques. He regularly runs training courses in survey techniques and has the expertise to devise a variety of survey techniques for training volunteers.
- 5.1.4 *Excavation Director:* the excavations will be directed by **Jeremy Bradley** BA Hons (OA North Project Officer) who has a wide range of archaeological experience, gained over the last 20 years, on both rural and urban sites, and on evaluations and open-area excavation, including large infra-structure projects such as the Wasdale (2012) pipeline. Other projects Jeremy has directed include three campaigns of field work at Furness Abbey Presbytery between 2009-11 and other medieval sites such as Clitheroe Castle sites and Penrith New Squares. Jeremy's chosen area specialism is the medieval period, particularly the study of medieval pottery in the North West. Work on medieval pottery has included a significant assemblage from a pottery production site at Samlesbury, Lancashire and urban assemblages from Carlisle, both of which have been published. Jeremy worked as a Project Officer for Humber Field Archaeology between 1999-2005, which involved supervising all levels of archaeological excavation, post-excavation analysis on sites in Hull, east Yorkshire and North Lincolnshire.
- 5.1.5 *Project Surveyors:* the survey will be undertaken by **Peter Schofield** (OA North Project Officer). Peter works full time on landscape surveys across the north-west. He has undertaken surveys at Hardknott Forest, Cumbria, Hartley Fold Estate, Cumbria, Ennerdale Valley, West Cumbria, a major programme of landscape survey across nine upland areas in North Wales, Little Asby Common for

the Friends of the Lake District, and the Holwick and Force Garth surveys, Teesdale. With the exception of Jamie Quartermaine, he is our most experienced landscape archaeologist.

APPENDIX 2: POLLEN CORING LITHOLOGY

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Gouge Core – reconnaissance survey		
Borehole No.	Palaeo-site 1 Long House Close			
Easting	-			
Northing	-			
GL ELEV (m aOD)	300m +	Logged by	Mairead Rutherford	
Total depth (m)	1.10	Date	13.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0	0.57	-	-	No recovery (moss)
0.57	0.64	peat	-	Dark brown humified peat
0.64	0.90	clay	gradual	Very fine grey brown silty clay
0.90	1.10	-	-	No recovery. Gravel at base

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Gouge Core – reconnaissance survey		
Borehole No	Palaeo-Site 2 Tongue House A	Note: ‘middle of boggy area’ adjacent to Tongue House A site. This core showed peat was present, so a transect was established, with this core as the midpoint.		
Easting	-			
Northing	-			
GL ELEV (m aOD)	?	Logged by	Mairead Rutherford	
Total depth (m)	1.5	Date	13.3.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0	1.0	-	-	No recovery (moss)
1	1.5	peat	-	Brown humified fibrous peat. Rock at base

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Gouge Core transect – 5m north from core P3 below		
Borehole No.	Palaeo-Site 2 Tongue House A			
Easting	-			
Northing	-			
GL ELEV (m aOD)	?	Logged by	Mairead Rutherford	
Total depth (m)	0.90	Date	13.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0	0.90	-	-	No recovery (moss). Rock at 0.90m

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Gouge Core transect – 10m north from core P3		
Borehole No.	P1 (2) Tongue House A			
Easting	-			
Northing	-			
GL ELEV (m aOD)	?	Logged by	Mairead Rutherford	
Total depth (m)	0.80	Date	13.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0	0.80	-	-	No recovery (moss). Rock at 0.80m

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Gouge Core transect – 5m south from core P3		
Borehole No.	P4 (1) Tongue House A			
Easting	-			
Northing	-			
GL ELEV (m aOD)	?	Logged by	Mairead Rutherford	
Total depth (m)	1.10	Date	13.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0	0.70	-	-	No recovery (moss)
0.70	1.02	peat	-	Brown humified mossy peat with small wood fragments towards base
1.02	1.10	-	No recovery	Rock at 1.10m

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Gouge Core transect – 10m south from core P3		
Borehole No.	P5 (2) Tongue House A			
Easting	-			
Northing	-			
GL ELEV (m aOD)	?	Logged by	Mairead Rutherford	
Total depth (m)	1.10	Date	13.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0	0.50	-	-	No recovery (moss)
0.50	0.90	peat	-	Very fibrous brown mossy peat
0.90	1.10	-	-	No recovery; rock at 1.10m

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Gouge Core transect –core P3		
Borehole No.	P3 Tongue House A			
Easting	-			
Northing	-			
GL ELEV (m aOD)	?	Logged by	Mairead Rutherford	
Total depth (m)	1.60	Date	13.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0	1.10	-	-	No recovery (moss).
1.10	1.60	peat	-	Brown humified fibrous peat. Rock at 1.60m.

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Gouge Core transect – 5m west from core P3		
Borehole No.	P8 (2) Tongue House A			
Easting	-			
Northing	-			
GL ELEV (m aOD)	?	Logged by	Mairead Rutherford	
Total depth (m)	1.70	Date	13.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0	1.20	-	-	No recovery (moss)
1.20	1.70	peat	-	Brown humified peat, wood fragments; rock at base

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Gouge Core transect – 10m west from core P3		
Borehole No.	P9 (3) Tongue House A			
Easting	-			
Northing	-			
GL ELEV (m aOD)	?	Logged by	Mairead Rutherford	
Total depth (m)	1.20	Date	13.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0	0.70	-	-	No recovery (moss)
0.70	1.20	peat	-	Brown humified fibrous peat; rock at base

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Gouge Core transect – 5m east from core P3		
Borehole No.	P7 (1) Tongue House A			
Easting	-			
Northing	-			
GL ELEV (m aOD)	?	Logged by	Mairead Rutherford	
Total depth (m)	1.50	Date	13.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0	1.00	-	-	No recovery (moss)
1.00	1.30	peat	-	Brown fibrous peat
1.30	1.35	clay	gradual	Brown, wet, organic peaty clay
1.35	1.50	-	-	No recovery, gravel at base

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Gouge Core transect – 10m east from core 2		
Borehole No.	P6 (2) Tongue House A			
Easting	-			
Northing	-			
GL ELEV (m aOD)	?	Logged by	Mairead Rutherford	
Total depth (m)	1.50	Date	13.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0	0.70	-	-	No recovery (moss)
0.70	0.80	peat	-	Brown fibrous peat
0.80	1.20	peat + clay	gradual	Brown fibrous peat and light brown silty clay; rock at base

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Gouge Core reconnaissance survey – middle of ‘boggy area’ adjacent to Tongue House B. This core showed peat was present, so a transect was established with this core as the starting point		
Borehole No.	Palaeo-Site 3 Core 3 Tongue House B			
Easting	-			
Northing	-			
GL ELEV (m aOD)	?	Logged by	Mairead Rutherford	
Total depth (m)	1.15	Date	13.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0	0.20	peat	-	Light brown, fibrous mossy peat
0.20	0.45	peat	gradual	Dark brown/black fibrous peat
0.45	0.50	-	-	No recovery
0.50	0.70	peat	-	Brown fibrous peat
0.70	1.00	-	-	No recovery
1.00	1.15	peat	-	Brown, then blacker fibrous peat. Rock at 1.15m

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Gouge Core transect – 5m west from core 3		
Borehole No.	Palaeo-Site 3 Core 2 Tongue House B			
Easting	-			
Northing	-			
GL ELEV (m aOD)	?	Logged by	Mairead Rutherford	
Total depth (m)	1.10	Date	13.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0	0.50	-	-	No recovery (moss).
0.50	1.10	peat	-	Brown fibrous peat, rock at 1.10m

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Gouge Core transect – 10m west from core 3		
Borehole No.	Core 1 Tongue House B			
Easting	-			
Northing	-			
GL ELEV (m aOD)	?	Logged by	Mairead Rutherford	
Total depth (m)	0.50	Date	13.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0	0.50	-	-	No recovery (moss). Rock at 0.50m

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Gouge Core transect – core 4		
Borehole No.	Core 4 Tongue House B			
Easting	-			
Northing	-			
GL ELEV (m aOD)	?	Logged by	Mairead Rutherford	
Total depth (m)	1.00	Date	13.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0	0.50	-	-	No recovery (moss)
0.50	1.00	peat	-	Very wet, sloppy, fibrous peat; rock at 1m

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Gouge Core transect – 5m east from core 3		
Borehole No.	Core 5 Tongue House B			
Easting	-			
Northing	-			
GL ELEV (m aOD)	?	Logged by	Mairead Rutherford	
Total depth (m)	0.50	Date	13.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0	0.50	-	-	No recovery (moss)
0.50	1.00	peat	-	Very wet, sloppy, fibrous peat; rock at 1m

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Russian core – sample collection Target peat at the bottom of the profile, beneath the upper mossy peat which may represent possible recent growth. A duplicate sample was also collected from 0.80-1.20m. Sub-samples for pollen assessment were taken at 1.20m and 1.32m		
Borehole No.	2 Tongue House A			
Easting	324298			
Northing	497527			
GL ELEV (m aOD)	260m	Logged by	Mairead Rutherford	
Total depth (m)	0.50	Date	13.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0.85	1.33	peat	-	Dark brown, fibrous peat with silty clay

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Russian Core – sample collection Target peat at the bottom of the profile, beneath the upper mossy peat which may represent possible recent growth. An attempt was made to sample 0-0.50m but the recovery was very poor and consisted of very wet, sloppy fibrous organics that failed to stay intact		
Borehole No.	2S (1) Tongue House A			
Easting	324298			
Northing	497520			
GL ELEV (m aOD)	256m	Logged by	Mairead Rutherford	
Total depth (m)	0.50	Date	14.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0.50	0.74	Moss peat	-	Dark brown/black, very wet, fibrous mossy peat.
0.74	1.00	peat	-	Light to dark brown fibrous peat with clay

BOREHOLE RECORDING SHEET				
SUMMARY DETAILS				
Site code	L10953	Russian core – sample collection An attempt was successfully made to collect the entire sequence from 0-1.15m. Sub-samples for pollen assessment were taken from 0.24m, 0.40m, 0.60m, 0.64m, 0.72m, 0.80m, 1.00m and 1.12m		
Borehole No.	Palaeo-Site 3 Tongue House (B)			
Easting	324232			
Northing	497837			
GL ELEV (m aOD)	285			
Total depth (m)	1.15	Logged by	Mairead Rutherford	
		Date	14.4.16	
COMPOSITE LITHOLOGICAL LOG				
Depth (m)		Keyword	Upper contact	Description
From	To			
0	0.20	moss	-	Fresh moss, light brown, wet, roots, very fibrous
0.20	0.38	peat	gradual	Dark brown/black fibrous, mossy peat
0.38	c 0.68	peat	gradual	Variably light to darker brown fibrous peat
c 0.68	1.15	peat	gradual	Dark brown /black fibrous peat with clay

Appendix 3: Context List for Tongue House A

Context Number	Description
Trench 1	
1000	Turf
1001	Rubble
1002	Rubble
1003	Rubble, east wall
1004	Rubble, south cell
1005	Hearth surround, north cell
1006	Hearth, north cell
1007	Hearth, south cell
1008	Stone-lined structure aligned north-west-south-east
1009	Drain
1010	Subsoil
1011	Drain
1012	Dark silt layer
1013	Dark silt layer, within structure 1008
1014	Internal dividing wall, aligned north-east-south-west
1015	Rubble
1016	Rubble internal (northern cell)
1017	Organic lens within hearth 1007
1018	Wall aligned north-west-south-east, north cell
1019	Wall aligned north-west-south-east
1020	Cobbled surface, north cell
1021	Fill of soakaway
1022	Wall aligned north-west-south-east, north cell
1023	Dark brown layer, south-west corner of structure 1008
1024	Foundation for wall 1014
1025	Blocking within north-east threshold of cross-passage
1026	Cobbling within cross-passage
1027	Soakaway
1028	Cobbled layer, below 1020
1029	Cobbles within cross-passage
1030	Layer, below 1004
1031	Cobbled surface in 1008
1032	Layer below 1000 , in testpit north of the structure
1033	Cobbled surface in west end of cross-passage
1034	Natural geology, same as 1052
1035	Layer beneath 1031
1036	Cobbled surface in the entrance between walls 2003 and 3002
1037	Layer above 1031

Context Number	Description
1038	Layer below cobbles 1028
1039	Pre-building layer
1040	Fill of palaeochannel 1041
1041	Palaeochannel
1042	Foundation layer below wall 1018
1043	Fill of palaeochannel 1063
1044	Foundation layer within threshold
1045	Layer below the structure
1046	Possible posthole, proved natural
1047	Drain
1048	Drain
1049	Drain
1050	Fill of palaeochannel 1051
1051	Palaeochannel
1052	Natural geology
1053	Natural geology
1054	Foundation layer, same as 1042
1055	Fill of palaeochannel 1056
1056	Palaeochannel
1057	Natural geology
1058	Wall aligned north-east-south-west, southern cell
1059	Wall aligned north-west-south-east, southern cell
1060	Wall aligned north-east-south-west, northern cell
1061	Boundary wall, aligned east-north-east/west-south-west
1062	Natural geology, comprising 1034 , 1038 , 1052 , 1053 and 1057
1063	Palaeochannel
1064	Rubble around structure
1065	Enclosure wall east of structure
1066	Enclosure wall aligned north-east/south-east
1067	Enclosure wall west of 1061
1068-1999	Not used
Trench 2	
2000	Turf
2001	Levelling layer
2002	Possible cobbled surface
2003	Boundary wall aligned north-west-south-east
2004	Subsoil
2005	Drain
2006	Foundation for wall 2003
2007-2999	Not used
Trench 3	
3000	Turf

Context Number	Description
3001	Subsoil
3002	Boundary wall
3003-3999	Not used
Trench 4	
4000	Turf
4001	Subsoil
4002	Outer boundary wall

Appendix 4: Context List for Tongue House B

Context Number	Description
<i>3001</i>	Peaty turf/topsoil packed with tenacious rhizome
<i>3002</i>	Levelling layer, redeposited natural material
<i>3003</i>	External walls of the structure
<i>3004</i>	Floor across northern third of the building
<i>3005</i>	Natural geology - clayey silt
<i>3006</i>	Building
<i>3007</i>	Threshold
<i>3008</i>	North wall – part of <i>3006</i>
<i>3009</i>	East wall – part of <i>3006</i>
<i>3010</i>	South wall – part of <i>3006</i>
<i>3011</i>	West wall – part of <i>3006</i>
<i>3012</i>	Possible blocking in the west wall
<i>3013</i>	West wall (south) – part of <i>3006</i>

Appendix 5: Context List for Long House Close

Context Number	Description
1000	Turf/topsoil
1001	Natural geology
1002	Rubble/collapse
1003	Rubble/collapse
1004	Rubble/collapse
1005	Rubble/collapse
1006	Rubble/collapse
1007	Rubble/collapse
1008	Rubble/collapse
1009	Rubble/collapse
1010	Rubble/collapse
1011	Eastern half of Building 1016
1012	Wall aligned east-west (Building 1016)
1013	Wall aligned north-south (Building 1016)
1014	Wall aligned east-west (Building 1016)
1015	Wall aligned north-south (Building 1016)
1016	Building
1017	Enclosure aligned east-west
1018	Wall aligned east-west (Structure 1017)
1019	Wall aligned east-west (Structure 1017)
1020	Hearth within Building 1016
1021	Rubble
1022	Surface, east end 1016
1023	Surface
1024	Western wall of Building 1016
1025	Flagstone surface in Building 1016
1026	Cobbled surface
1027	Fill of 1028
1028	Drain
1029	Layer, east end structure 1017
1030	Rubble from wall 1031
1031	Boundary wall aligned north-south
1032	Revetment aligned north-east-south-west
1033	Rubble layer
1034	Revetment aligned north-south
1035	Rubble layer
1036	Surface
1037	Occupation layer within Building 1016
1038	Rubble, from wall 1018

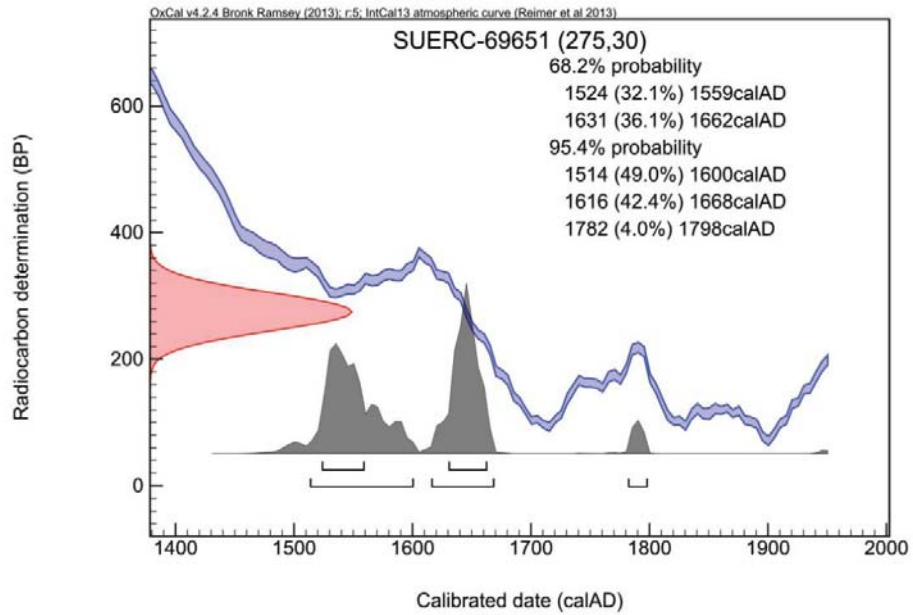
Context Number	Description
1039	Cobbled surface
1040	Natural deposit
1041	Wall aligned north-south (Structure 1017)
1042	Boundary wall aligned north-south
1043	Rubble
1044	Stone surface
1045	Layer above surface 1044
1046	Surface below walls (Building 1016)
1047	Surface below walls (Building 1016)
1048	Surface below walls (Building 1016)
1049	Layer
1050	Stakehole, south of Building 1016
1051	Fill of 1050
1052	Hearth-like structure
1053	Cobbled layer
1054	Rubble/collapse associated with Building 1016
1055	Structure, possible internal filling
1056	Rubble layer
1057	Surface
1058	Possible stone kerb
1059	Fill within 1052
1060	Hearth
1061	Fill of 1060
1062	Shallow gully
1063	Fill within kerb 1058
1064	Possible hearth
1065	Hearth deposit
1066	Not used
1067	Wall foundation (Building 1016)
1068	?Modern? wall (Testpit 3)
1069	Layer
1070	Layer
1071	Later surface
1072	Western enclosure wall
1073	Layer beneath wall 1018
1074	Layer beneath wall 1019
1075	Rubble layer, south-west of wall 1018
1076	Layer/surface, south-west of wall 1018
1077	? Possible pit
1078	Layer/surface, north-east of wall 1019
1079	Stony layer below 1073
1080	Layer/surface, north-east of wall 1019

Context Number	Description
<i>1081</i>	Layer/surface
<i>1082</i>	Stone kerb defining north-western edge of site
<i>1083</i>	Deposit butting kerb <i>1082</i>
<i>1084</i>	Deposit butting kerb <i>1082</i>
<i>1085</i>	Upper fill of kerb and stones in pit <i>1087</i>
<i>1086</i>	Lower fill of pit <i>1087</i>
<i>1087</i>	Pit
<i>1088</i>	Deposit bounded or below walls <i>1018</i> and <i>1041</i>
<i>1089</i>	Silt deposit within Testpit 1
<i>1090</i>	Silt deposit within Testpit 2
<i>1091</i>	Surface within Testpit 3
<i>1092</i>	Layer butting south-west edge of kerb <i>1082</i>
<i>1093</i>	Layer butting north-west edge of kerb <i>1082</i>
<i>1094</i>	Surface / layer in Testpit 4
<i>1095</i>	Fill of <i>1096</i> in Testpit 2
<i>1096</i>	Pit or stonehole in Testpit 2
<i>1097</i>	Natural geology in Testpits 1 and 2
<i>1098</i>	Layer/surface, north-east of wall <i>1019</i>
<i>1099</i>	Cut for platform, eastern edge

Appendix 6: Radiocarbon Dates

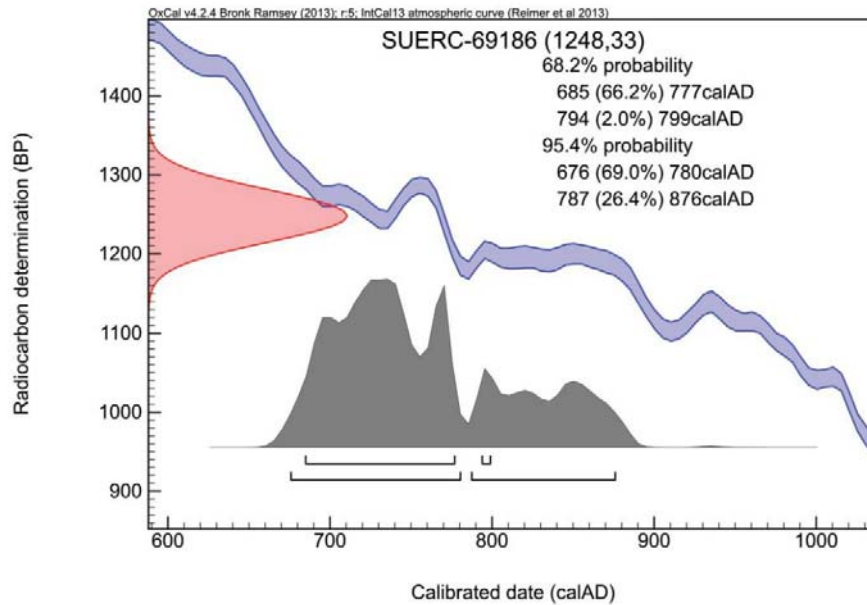
A6.1 Tongue House A

Calibration Plot



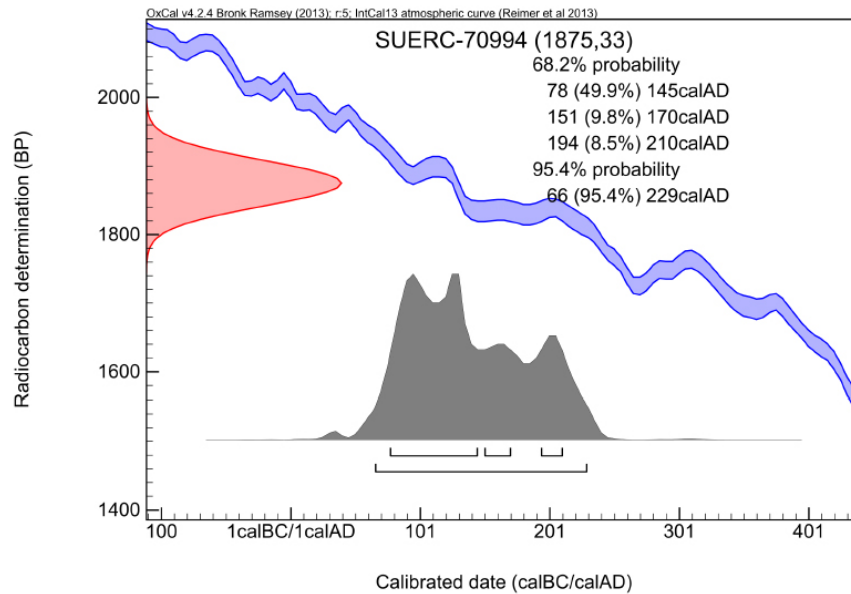
Calibration plot for radiocarbon date of an alder/hazel roundwood fragment from cobble layer **1028**

Calibration Plot



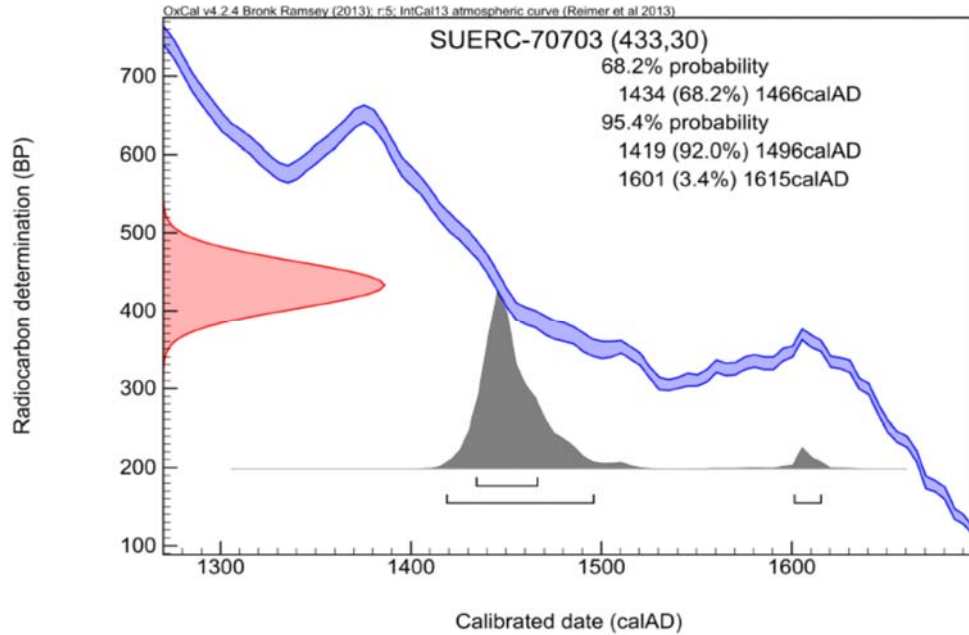
Calibration plot for radiocarbon date of an oak sample from fill (**1021**) of soakaway **1027**

Calibration Plot

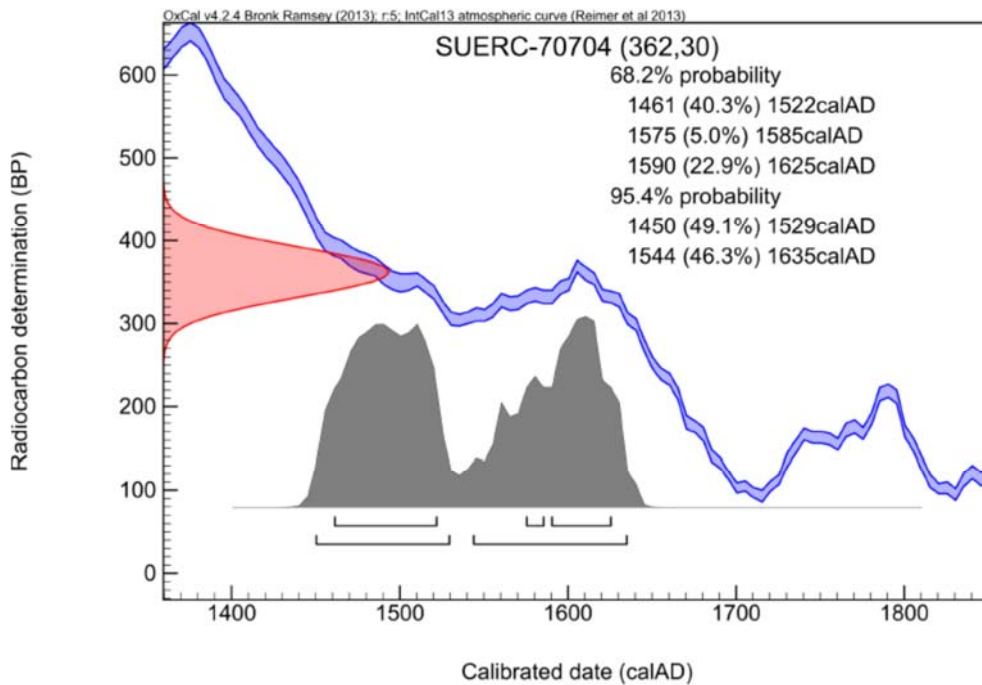


Calibration plot for radiocarbon date of a birch sample from fill (**1021**) of soakaway **1027**

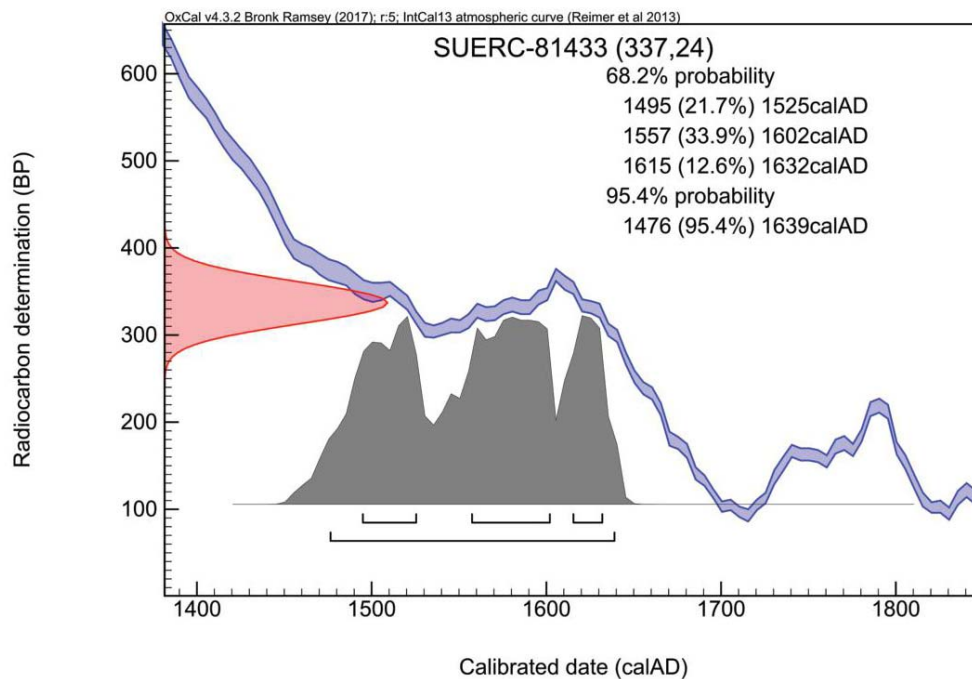
A6.2 Tongue House B



Calibration plot for radiocarbon date for peat (humic acid fraction) from Palaeo-Site 3 (Tongue House B, at 0.71-0.72m)

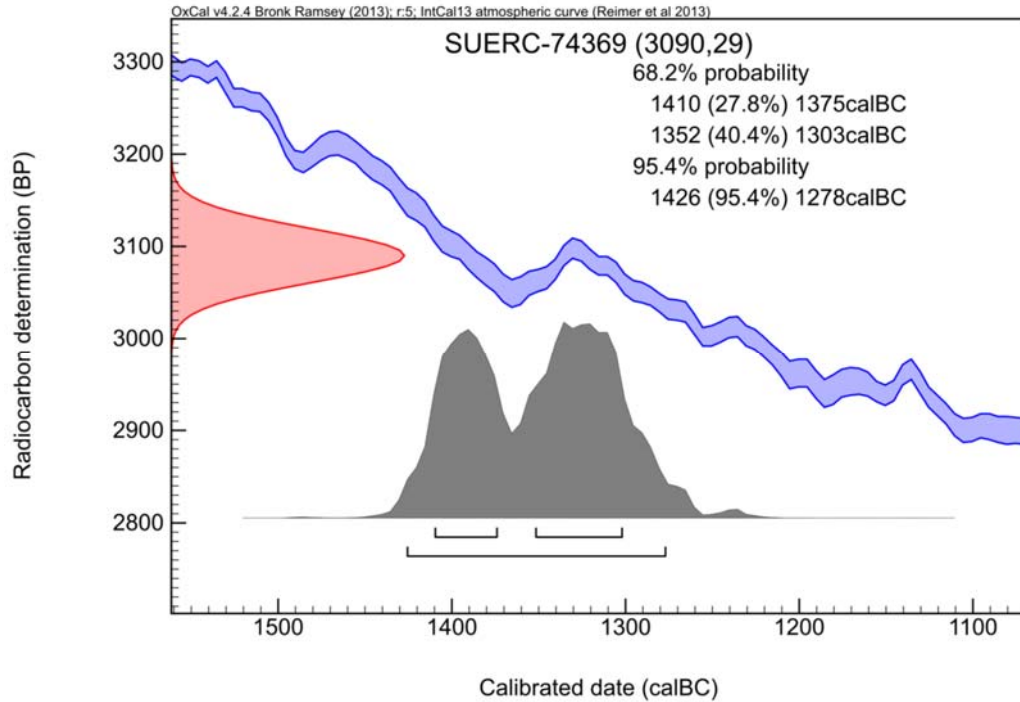


Calibration plot for radiocarbon date for peat (humic acid fraction) from Palaeo-Site 3 (Tongue House B, at 0.71-0.72m).

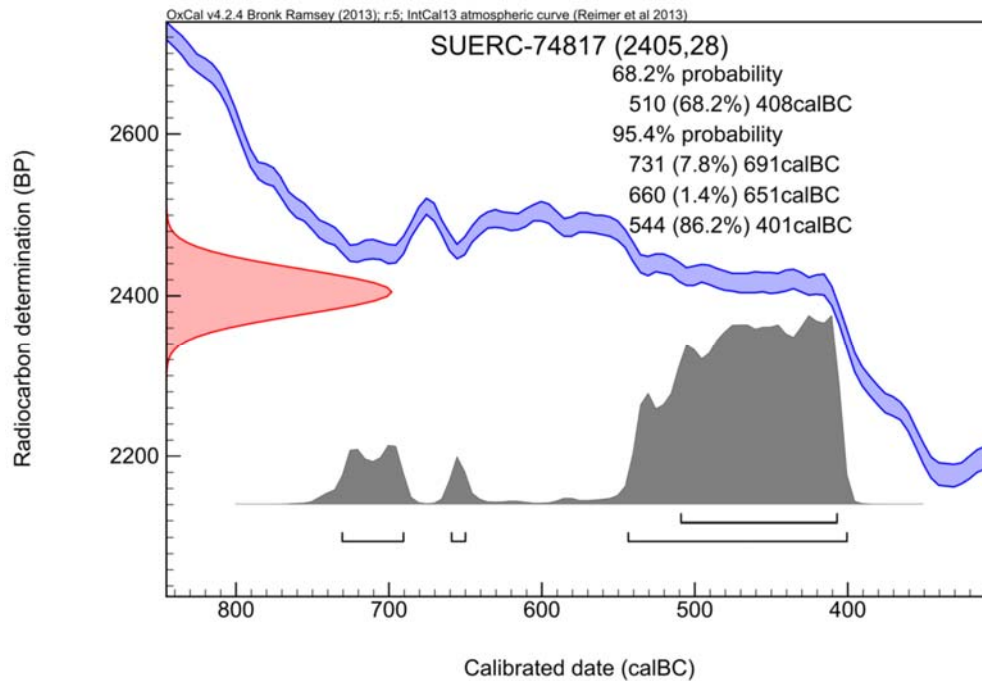


Calibration plot for radiocarbon date of an indeterminate charred twig fragment from enclosure wall **3002**

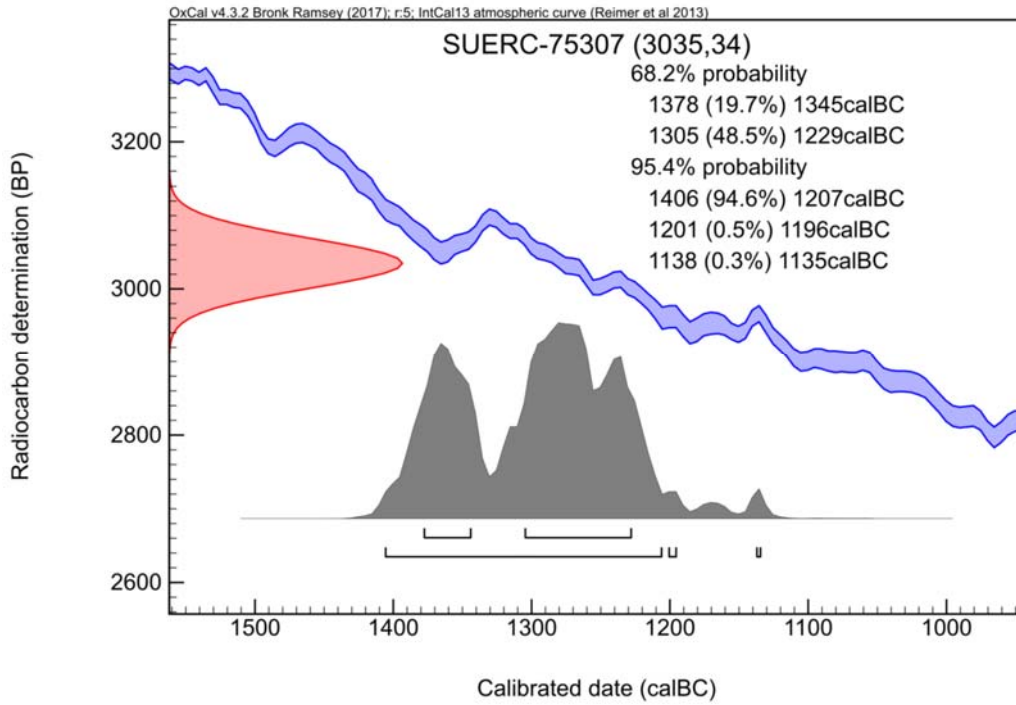
A6.3 Long House Close



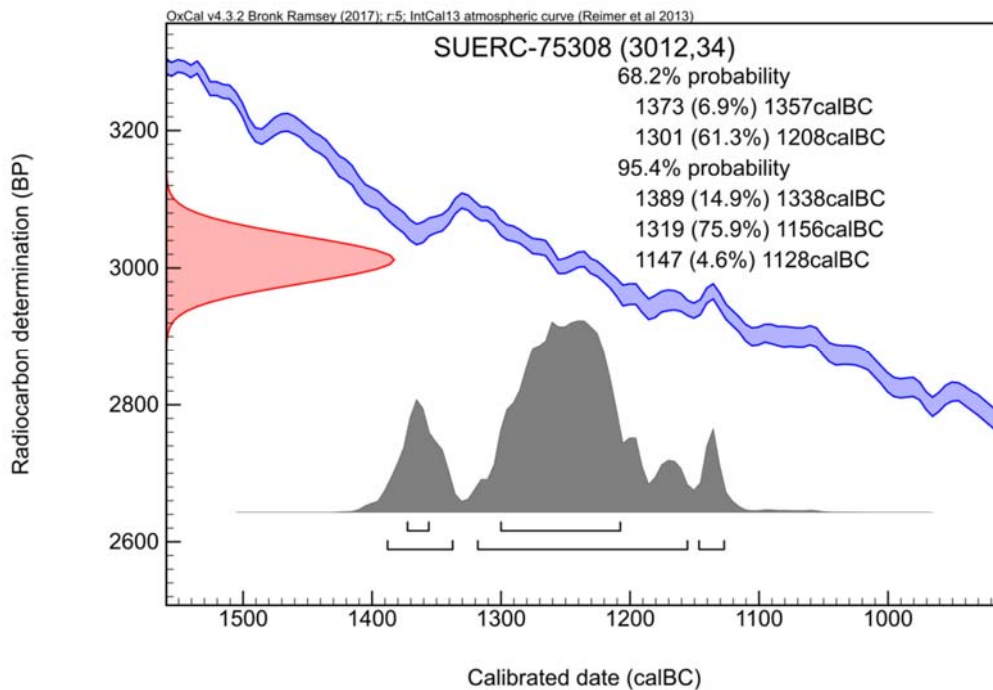
Calibration plot for radiocarbon date of an alder sample from fill **1059**, possible hearth **1052**



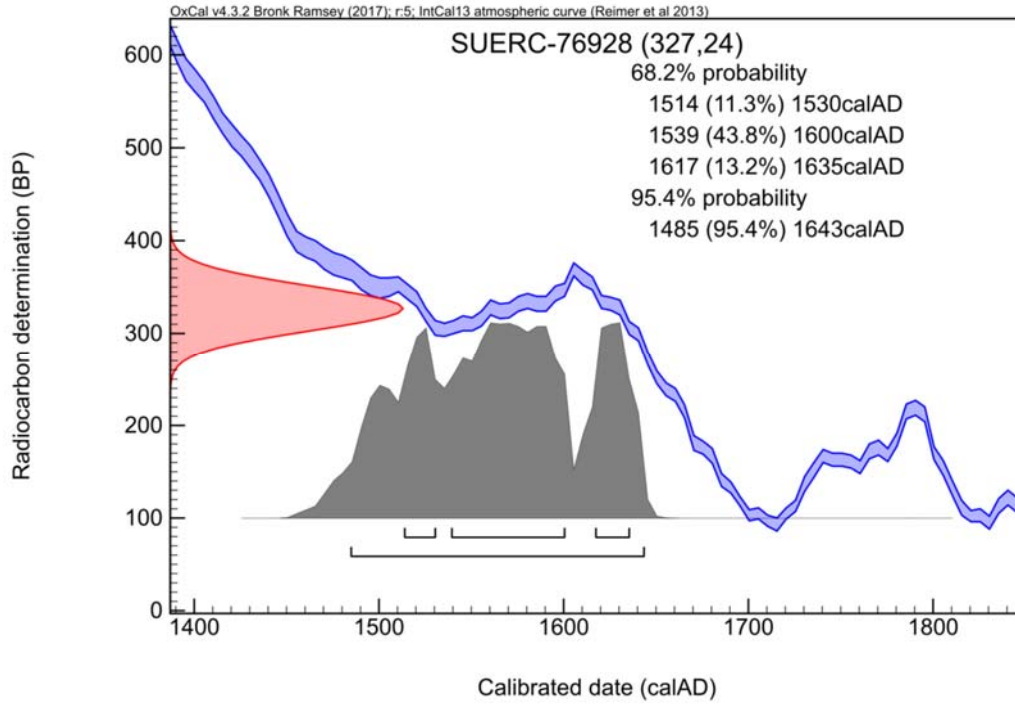
Calibration plot for radiocarbon date of a hazel sample from fill of hollow **1062**



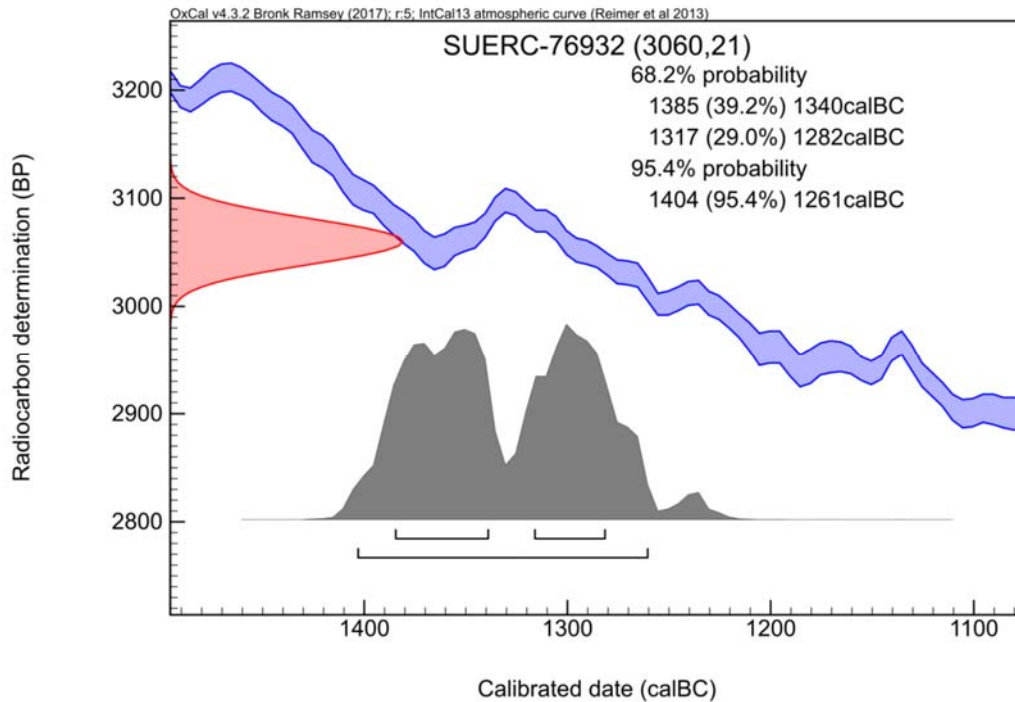
Calibration plot for radiocarbon date of a hazel roundwood fragment from fill **1061**, hearth **1060**



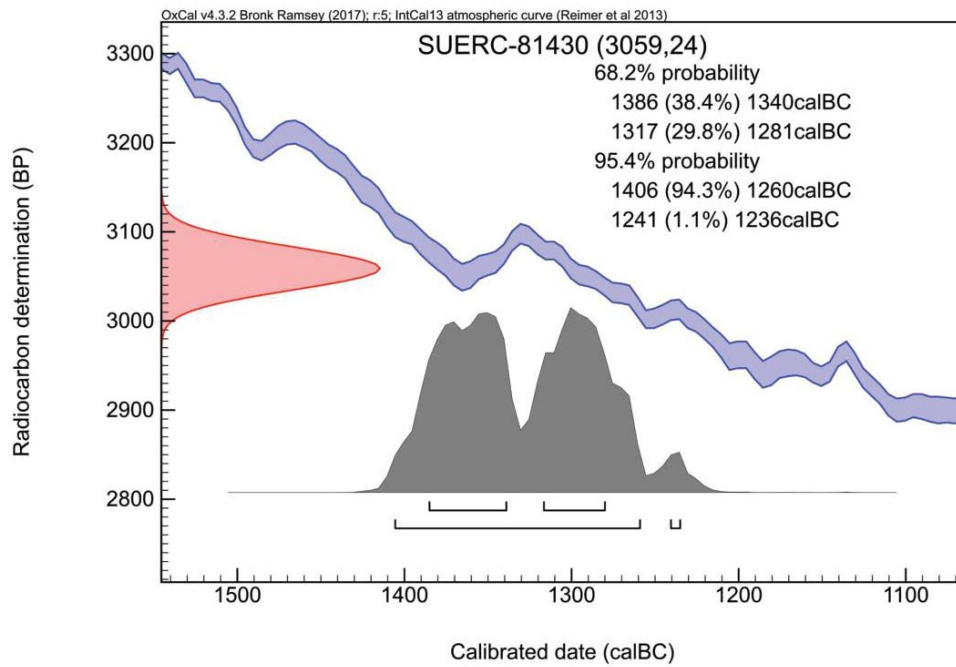
Calibration plot for radiocarbon date of charred hazelnut shell fragment from layer **1053**



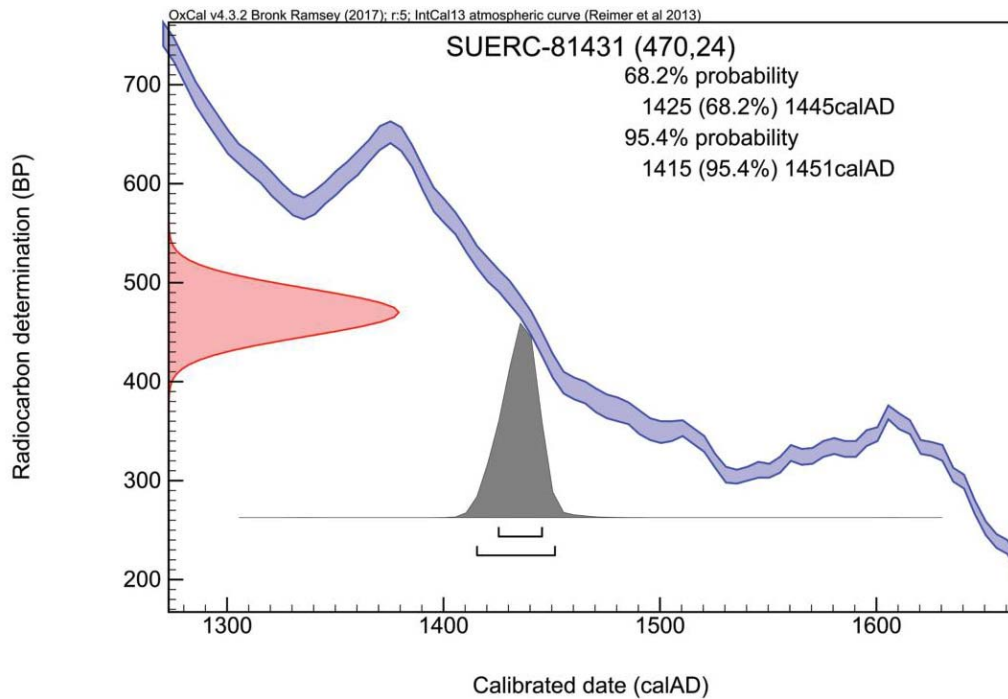
Calibration plot for radiocarbon date of hawthorn-type roundwood from layer **1037**



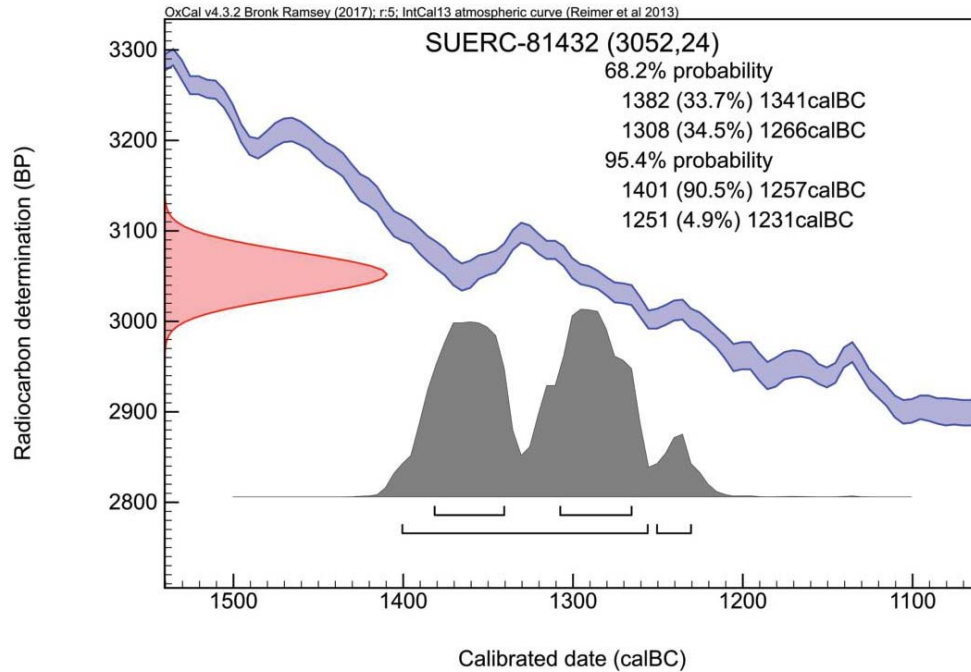
Calibration plot for radiocarbon date of an oak twig fragment from layer **1045**



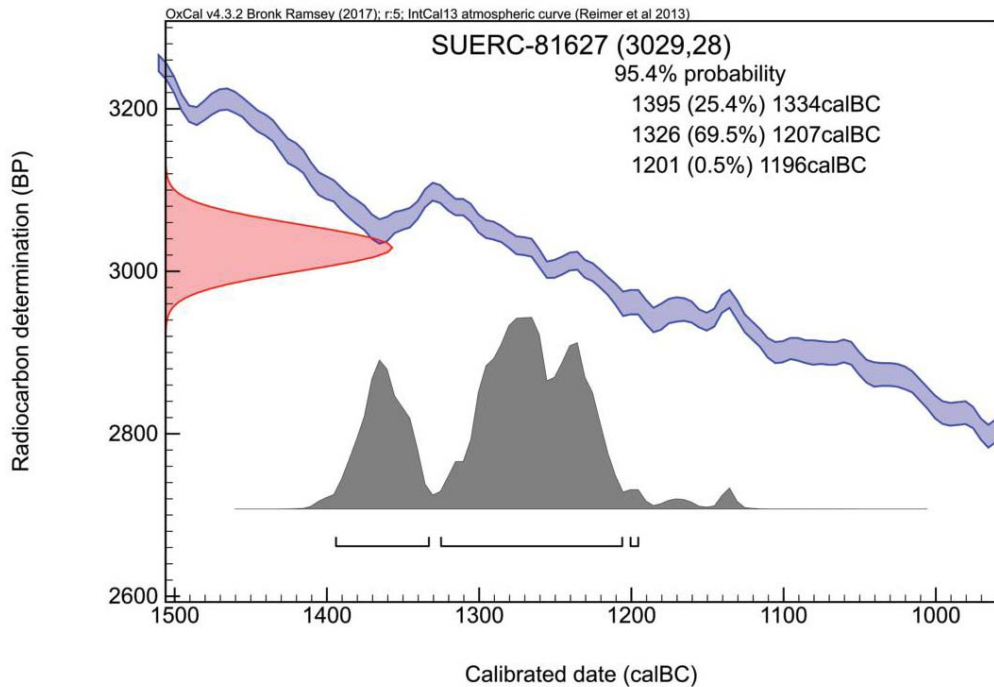
Calibration plot for radiocarbon date of an alder/hazel sample from layer **1073** (under wall **1018**)



Calibration plot for radiocarbon date of a hawthorn-type sample from fill **1086**, pit **1087**



Calibration plot for radiocarbon date of alder/hazel sample from deposit **1093**



Calibration plot for radiocarbon date of a hazel sample from layer **1090** (within TP2)

Appendix 7: Pollen counts from Palaeo-Site 3

Tongue House		A	A	B	B	B	B	B	B	B	B
Preservation		Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed
Potential		Yes	Yes	Yes	Yes	Yes	Yes	Possible	Yes	Yes	Yes
Depth (m)		1.32	1.20	1.12	1.00	0.80	0.72	0.64	0.60	0.40	0.24
Trees/Shrubs											
<i>Alnus</i>	Alder	39	25	11	12	18	3	2	6	3	1
<i>Betula</i>	Birch	5	2	12	10	13	5	3		1	1
<i>Quercus</i>	Oak	8	8	6	11	4	6	2	5	2	2
<i>Corylus avellana</i> -type	Hazel-type	32	47	49	35	28	8		1	4	
<i>Fagus</i>	Beech				1				1		1
<i>Fraxinus</i>	Ash						1				
<i>Ilex</i>	Holly		1		1	1					
<i>Pinus</i>	Pine			1						1	2
<i>Ulmus</i>	Elm	1						1			3
Rosaceae	Wild roses		2		1						
<i>Salix</i>	Willow						1			1	
<i>Calluna</i>	Heather	2	1	8	8	7	6	4	2	1	2
<i>Empetrum</i>	Crowberry				1	1					
Crops											
Cerealia	Cereal-type							1			
Herbs											
Apiaceae	Carrot family	1	4		1	1				1	
Asteraceae	Daisy family				1		1			1	
Brassicaceae	Cabbage family								2	1	1
<i>Centaurea nigra</i>	Common knapweed					1			1		
<i>Cirsium</i> -type	Thistles	1									
Cyperaceae	Sedges		1			1	17	4	14	9	
Fabaceae	Pea family	1									
<i>Filipendula</i>	Meadowsweets		2		2	1					
<i>Melampyrum</i>	Cow-wheats				1						
<i>Plantago lanceolata</i>	Ribwort plantain	1				1	4	5	9	5	4
<i>Plantago</i> spp	Plantains						2	2		1	
Poaceae	Grasses	9	9	12	12	23	31	14	54	49	94
<i>Polygala</i>	Milkworts									1	
<i>Potentilla</i> -type	Cinquefoils		4		4	7	10	9	8	21	1

Tongue House		A	A	B	B	B	B	B	B	B	B
Preservation		Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed
Potential		Yes	Yes	Yes	Yes	Yes	Yes	Possible	Yes	Yes	Yes
Depth (m)		1.32	1.20	1.12	1.00	0.80	0.72	0.64	0.60	0.40	0.24
Ranunculaceae	Buttercups		1	1		2				1	
Rubiaceae	Bedstraws					1	2	1		1	
<i>Rumex</i> spp	Docks/Sorrels	1	1	2		1	2	3	5	6	
<i>Succisa pratensis</i>	Devil's bit scabious	1	1	3	1	1			1		
<i>Taraxacum</i> -type	Dandelion-type	1	1	1		1			1	1	
<i>Teucrium</i> -type	Germanders	1									
	Indeterminate herbs	4	4	4	1	0	2		1	1	0
	Total land pollen	108	114	110	103	113	101	52	110	112	112
	Number of traverses	2	2	1	1	1	16	14	3	4	5
<i>Lycopodium</i>	Exotic	1	2	3	1	0	8	4	4	6	8
Ferns and Mosses											
<i>Dryopteris</i>	Buckler-ferns	1	9				2				
<i>Polypodium</i>	Polypodies	10	7	5	1	3	1				
<i>Pteridium</i>	Bracken	3	1	3		2	13	8	46	15	12
Pteropsida	Monolete ferns	36	44	13	6	17	1		14		
<i>Sphagnum</i>	Bog moss spores					1	3	5	15	35	
<i>Selaginella</i>	Lesser Clubmosses								2	1	
Aquatics											
<i>Lemna</i>	Duckweed								1		
Algae											
<i>Pediastrum</i> spp	Colonial alga									1	
Microscopic charcoal		5	7	3	42	13	2	2	0	10	19
NPP*											
Fungal spores indeterminate		1	1				3				
<i>Gelasinospora</i> HdV-1						3					
<i>Glomus</i> -HdV-207		1	1			1			2		
<i>Sordaria</i> HdV-55A/B			1			3	6	1	6	4	4
<i>Sporomiella</i> HdV-113							4	1			

Tongue House		A	A	B	B	B	B	B	B	B	B
Preservation		Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed
Potential		Yes	Yes	Yes	Yes	Yes	Yes	Possible	Yes	Yes	Yes
Depth (m)		1.32	1.20	1.12	1.00	0.80	0.72	0.64	0.60	0.40	0.24
HdV-18		2								1	
HdV-11			3								
HdV-4			1								
HdV-25				2	1						
<i>cf</i> <i>Byssothecium circinans</i> HdV-16A						4					
HdV-16C						1					31
Broken grains		5	6	2	1	4	1	1		2	
Concealed grains		7	7	2	8	6	5		8	10	1
Crumpled grains		5	4	5	2	3	3	2	5		2
Corroded grains		1									
Diatoms									Abundant	Common	Common

*NPP = non-pollen palynomorphs

List of Figures

- Figure 1 Site location
- Figure 2 Field system around Tongue House A and B, and Long House Close
- Figure 3 Contour view of Tongue House A landscape
- Figure 4 Hillshade view of Tongue House A landscape
- Figure 5 Contour view of Tongue House B landscape
- Figure 6 Hillshade view of Tongue House B landscape
- Figure 7 Field system local to Tongue House A
- Figure 8 Field system local to Long House Close
- Figure 9 Detailed survey of Long House Close
- Figure 10 Magnetic anomalies at Tongue House A
- Figure 11 Magnetic anomalies at Tongue House B
- Figure 12 Magnetic anomalies at Long House Close
- Figure 13 Tongue House A and enclosure
- Figure 14 Tongue House A excavated
- Figure 15 Phase 1 of Tongue House A
- Figure 16 Phase 2 of Tongue House A
- Figure 17 Tongue House A, detailed plan
- Figure 18 Excavated features at Tongue House B
- Figure 19 Long House Close: prehistoric features
- Figure 20 Plans and sections of features at Long House Close
- Figure 21 Pit **1096** in Testpit 2
- Figure 22 Long House Close: later features
- Figure 23 Location of pollen cores at Tongue House A and B

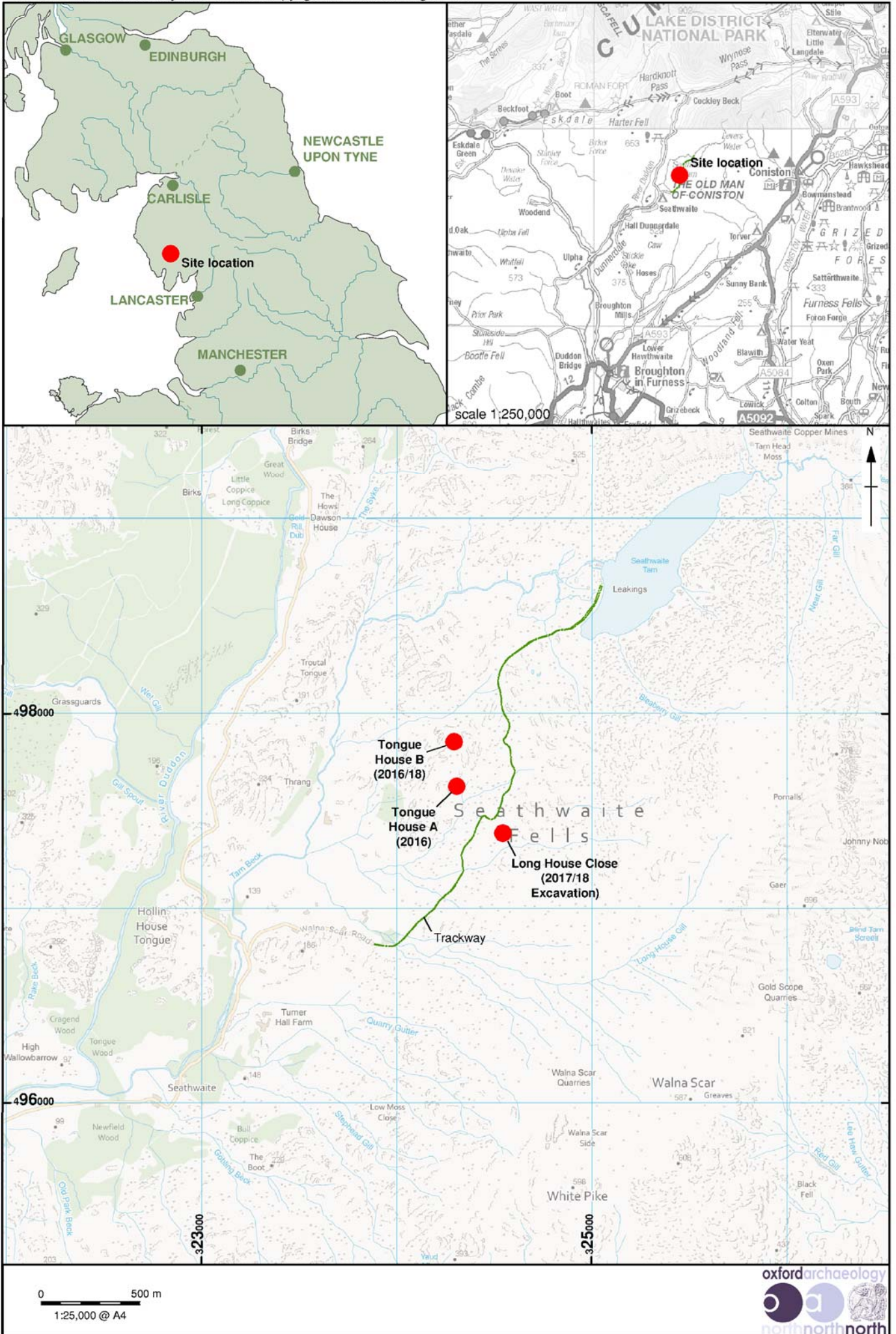
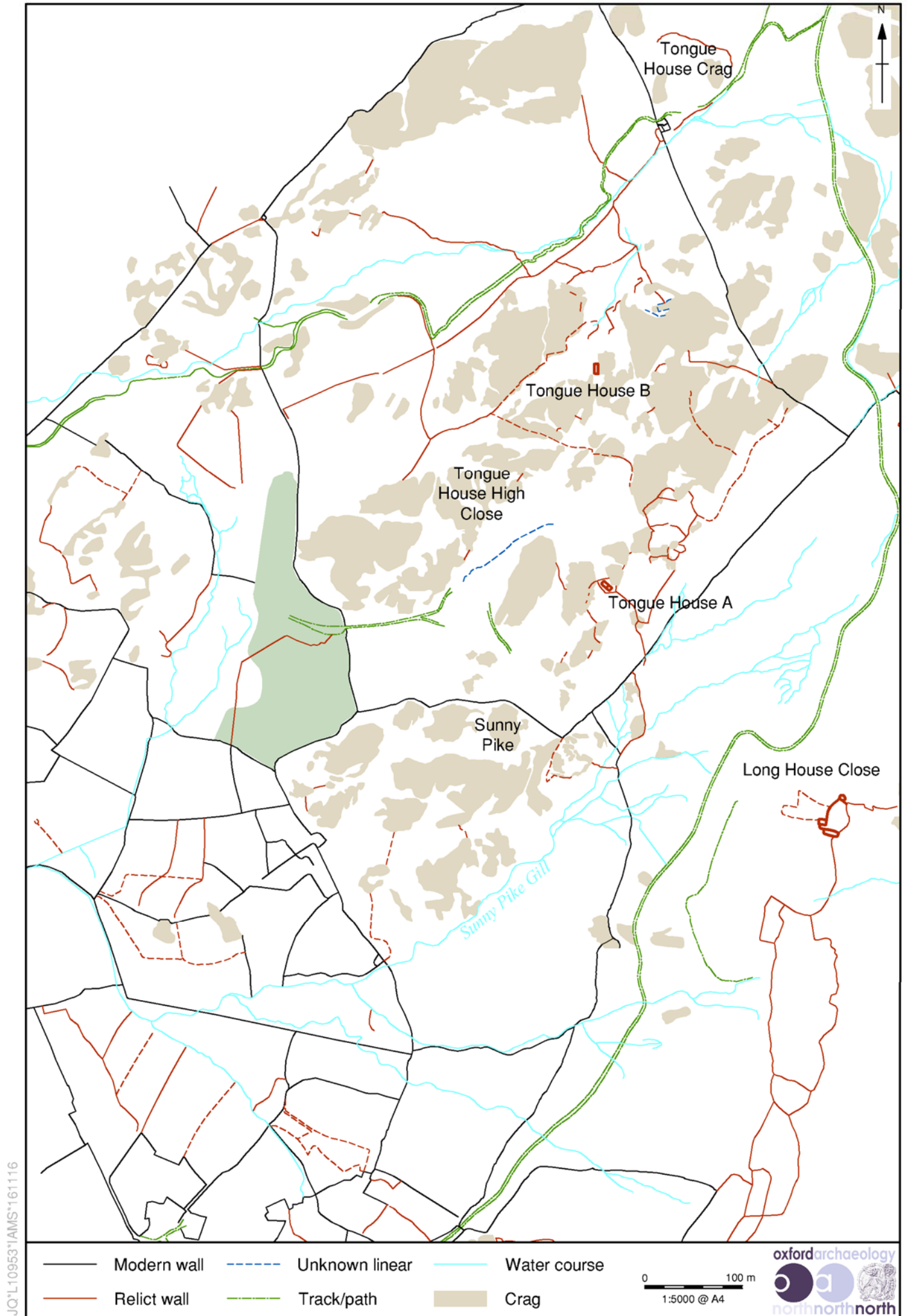


Figure 1: Site location

JQ*L10953*AMS*061118



JQ*L10953*1AMS*161116

Figure 2: Field System around Tongue House A and B, and Long House Close

JQ'L10953*AMS*211116

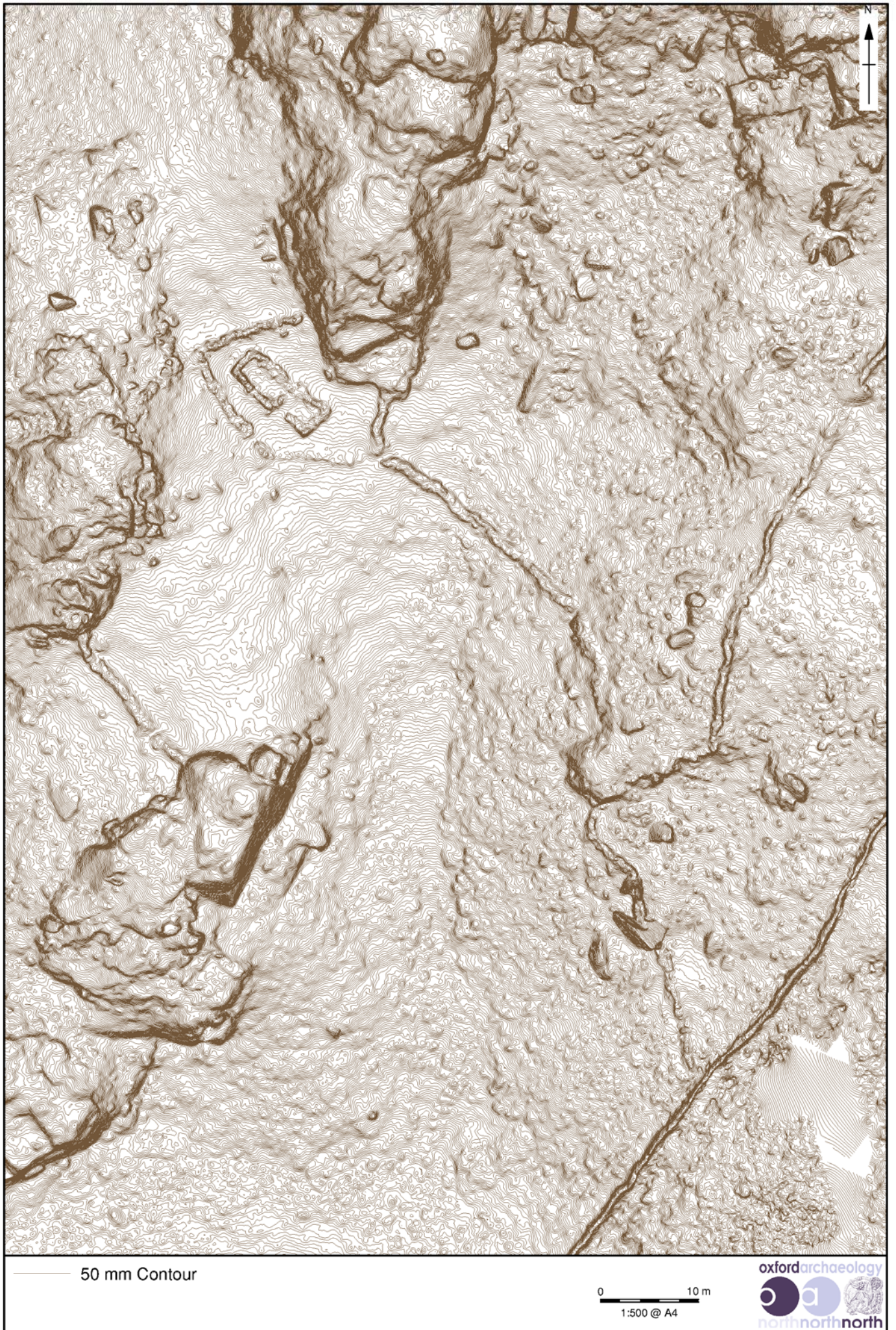


Figure 3: Contour View of Tongue House A Landscape

JQ*L10953*AMS*211116

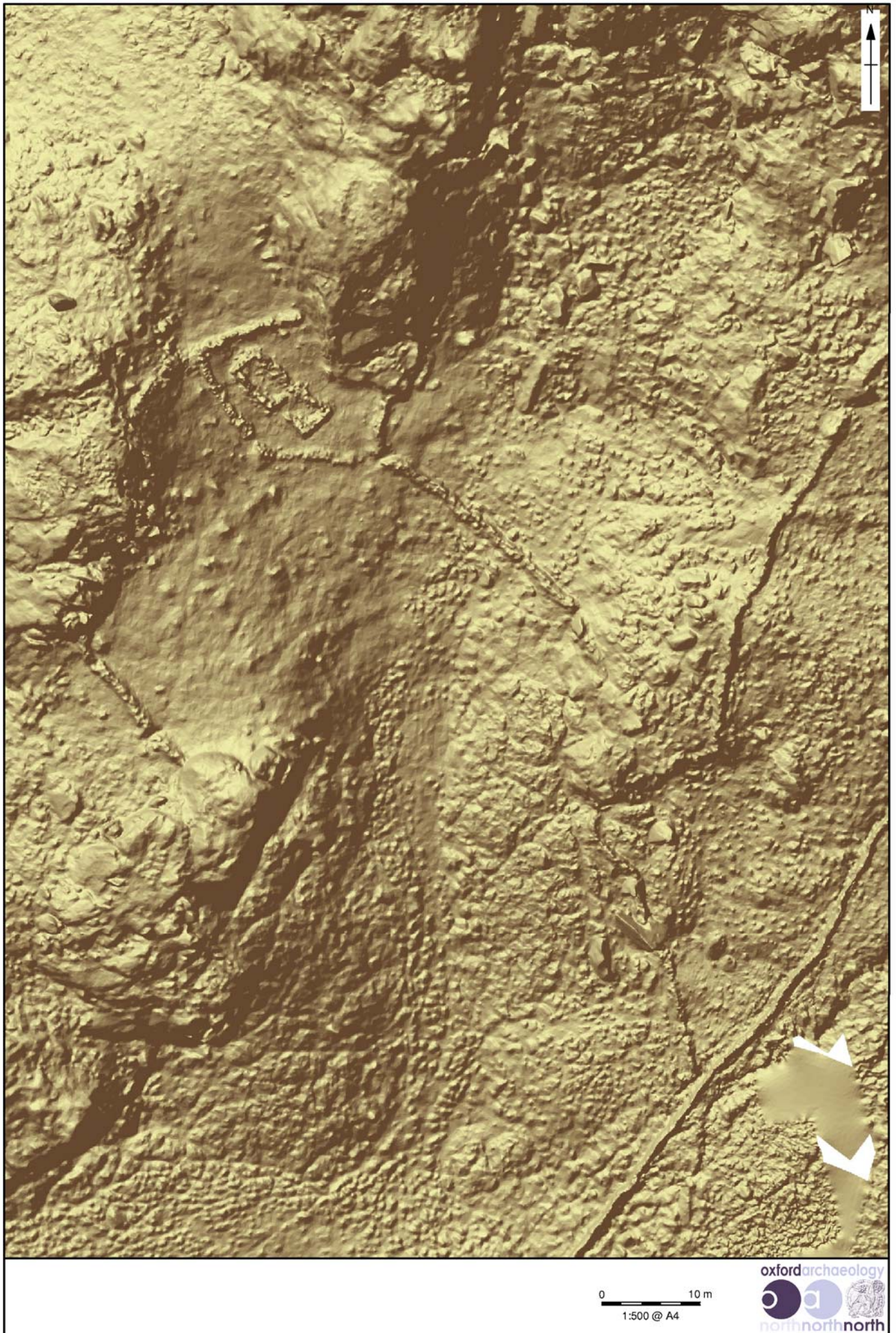


Figure 4: Hillshade View of Tongue House A Landscape

JQ*L10953*AMS*211116

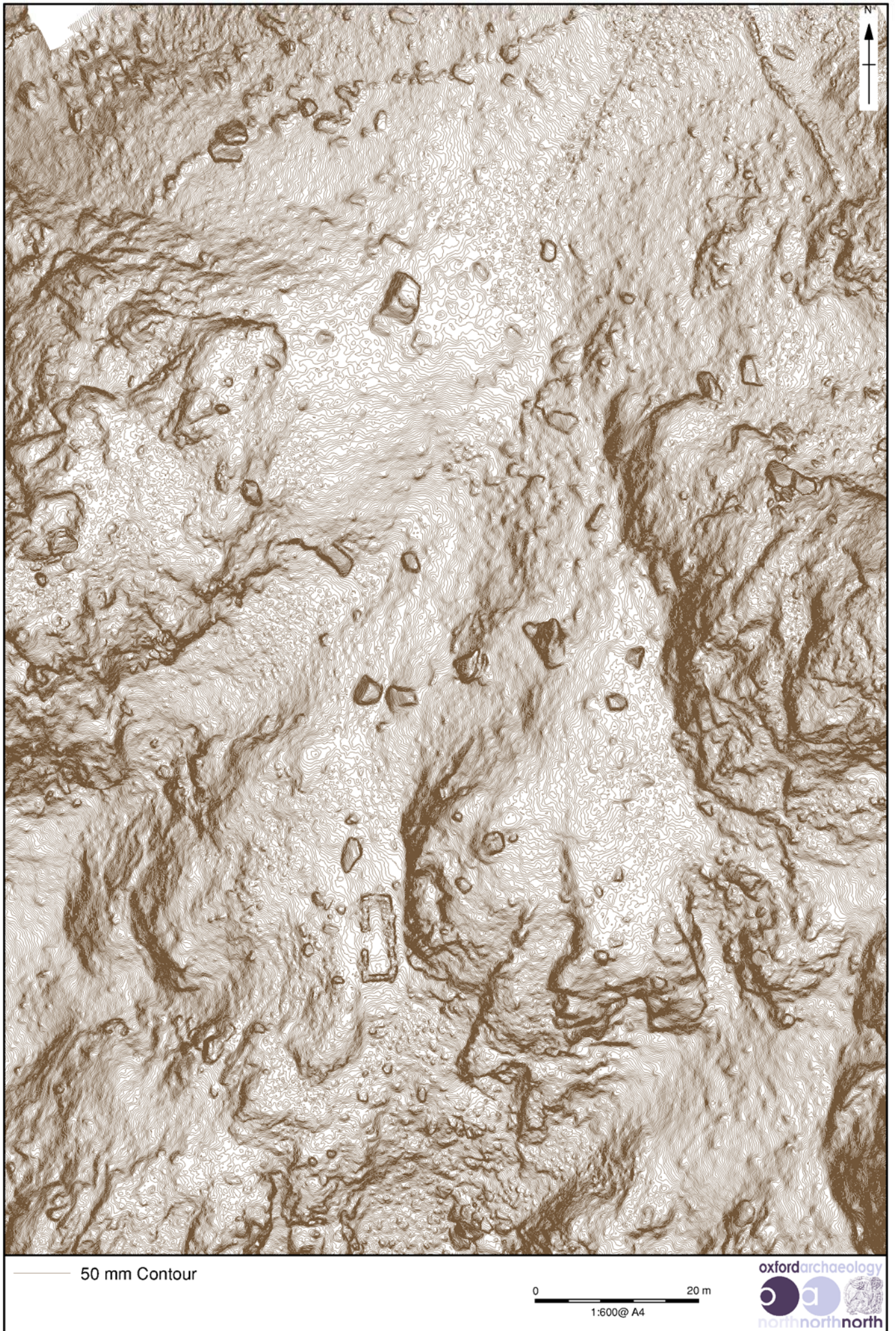


Figure 5: Contour View of Tongue House B Landscape

JQ*L10953*AMS*211116

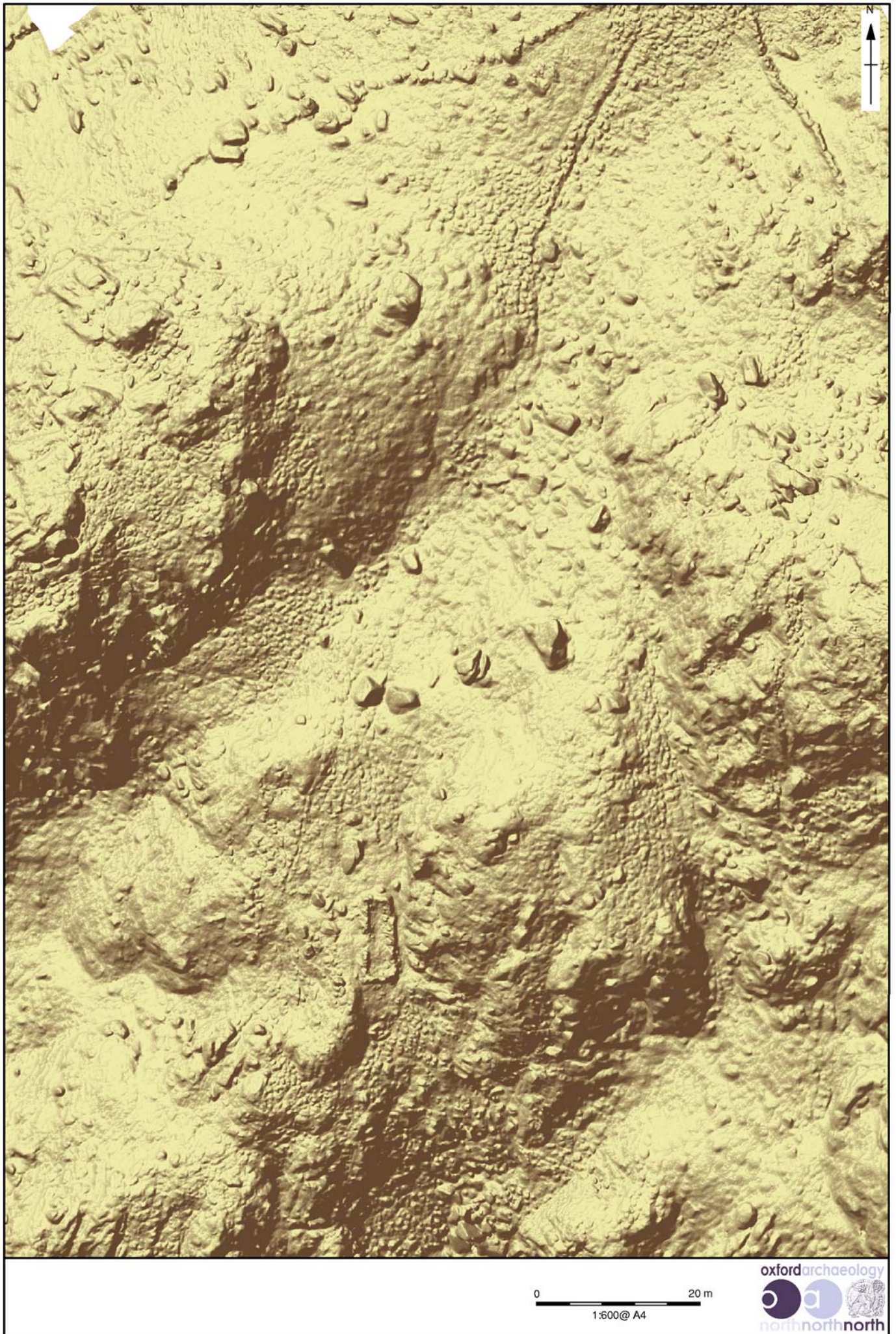


Figure 6: Hillshade View of Tongue House B Landscape

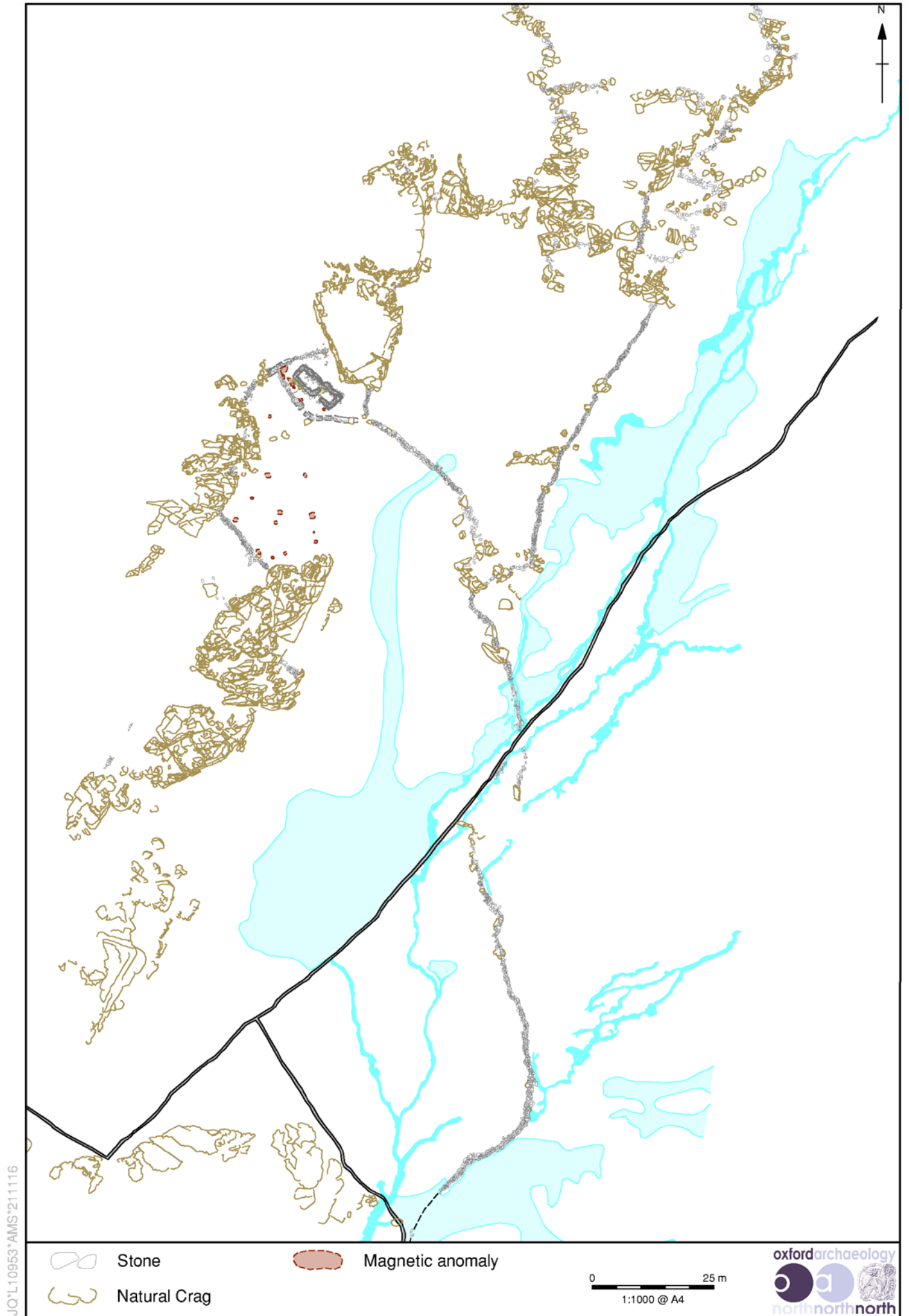


Figure 7: Field System Local to Tongue House A

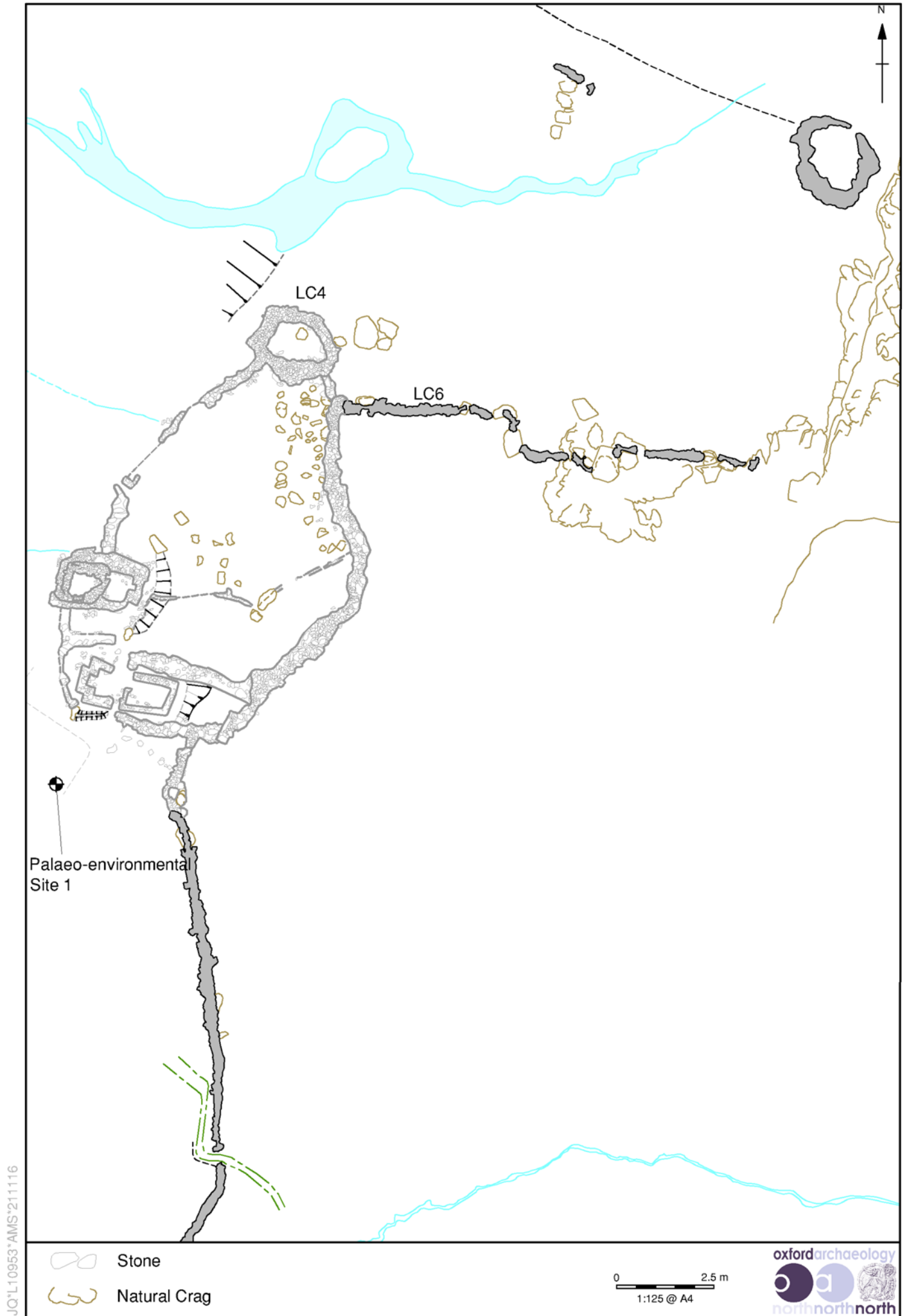


Figure 8: Field System Local to Long House Close

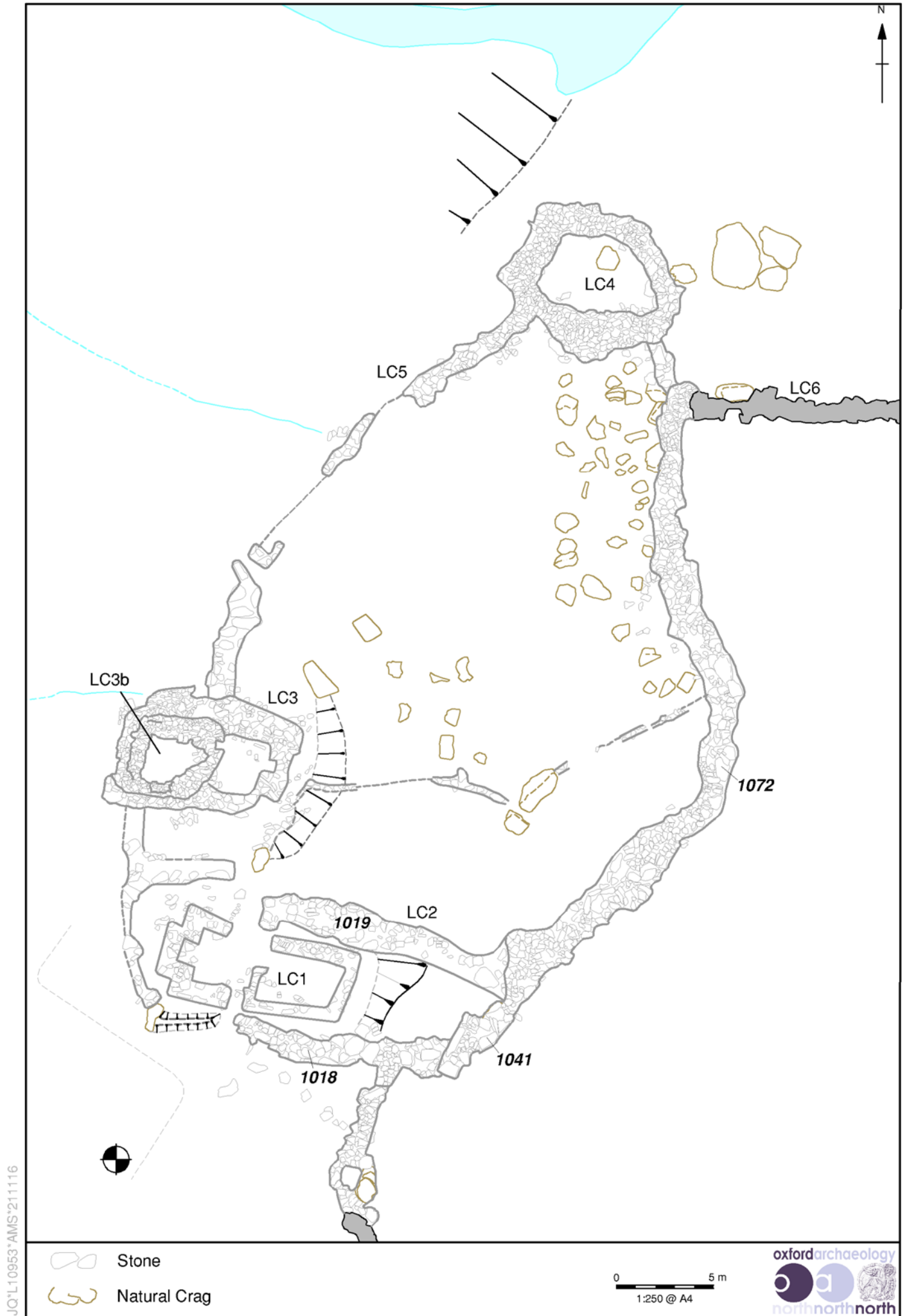


Figure 9: Detailed Survey of Long House Close

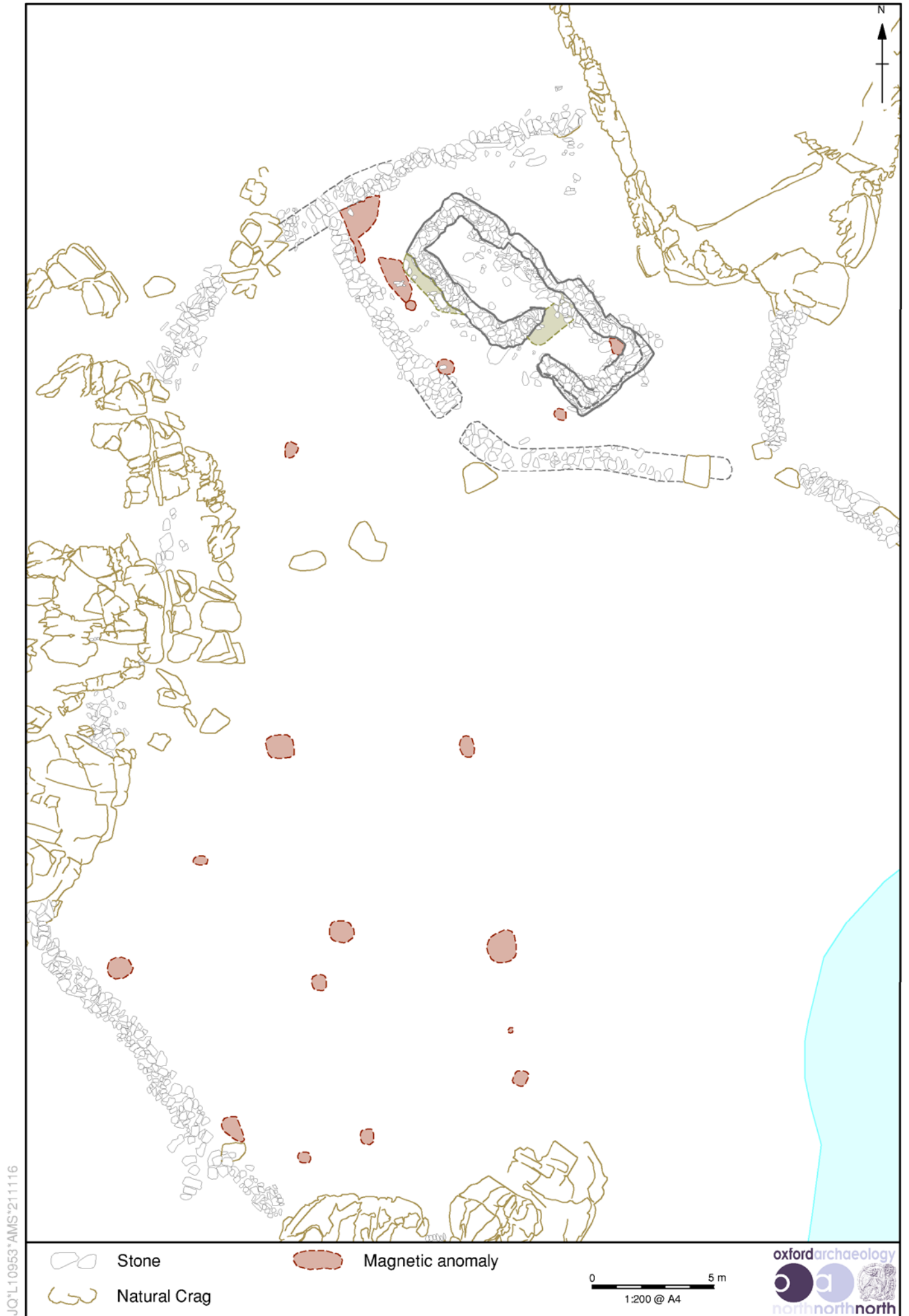


Figure 10: Magnetic Anomalies at Tongue House A

JQ*L10953*AMS*211116

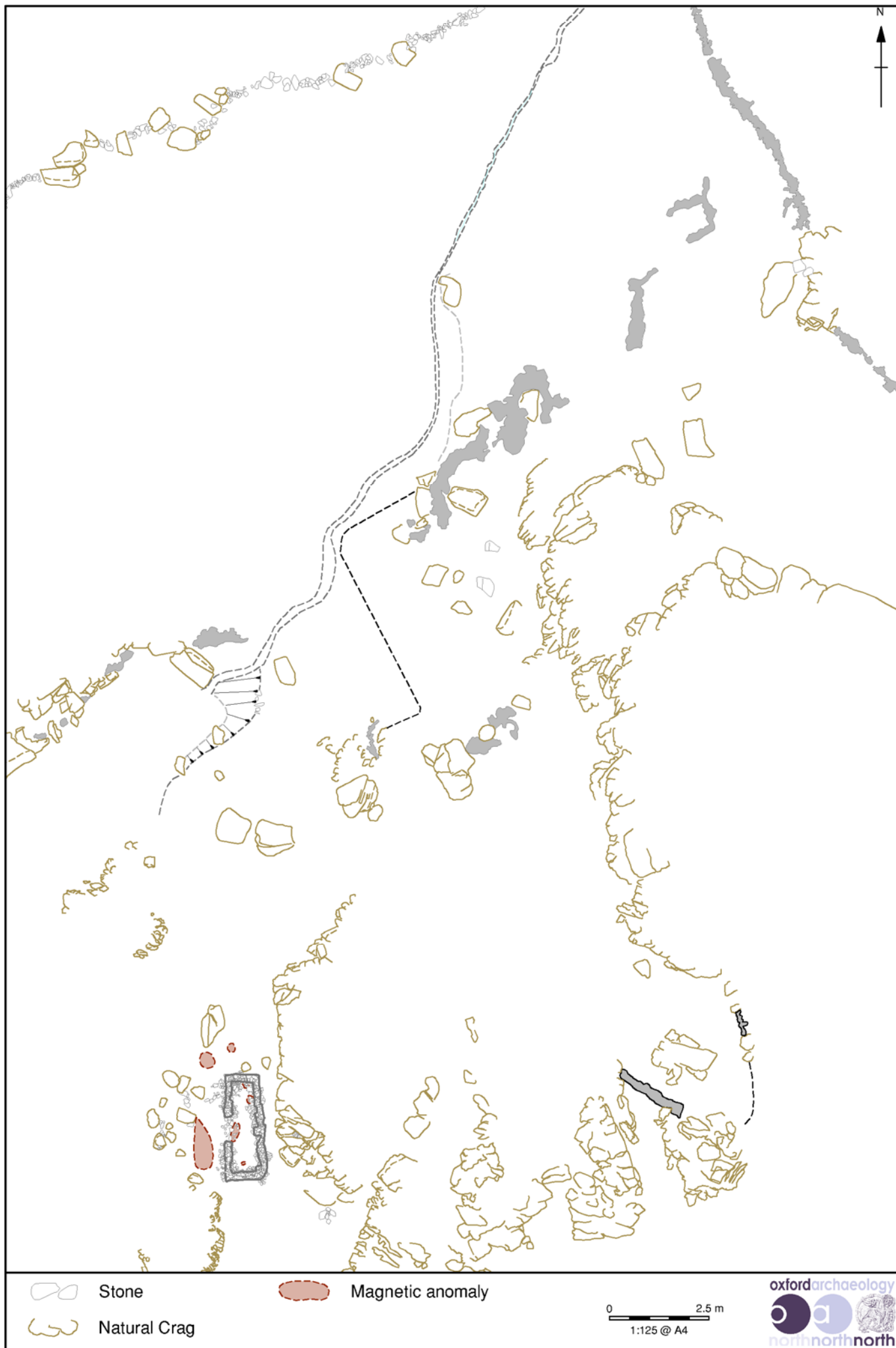
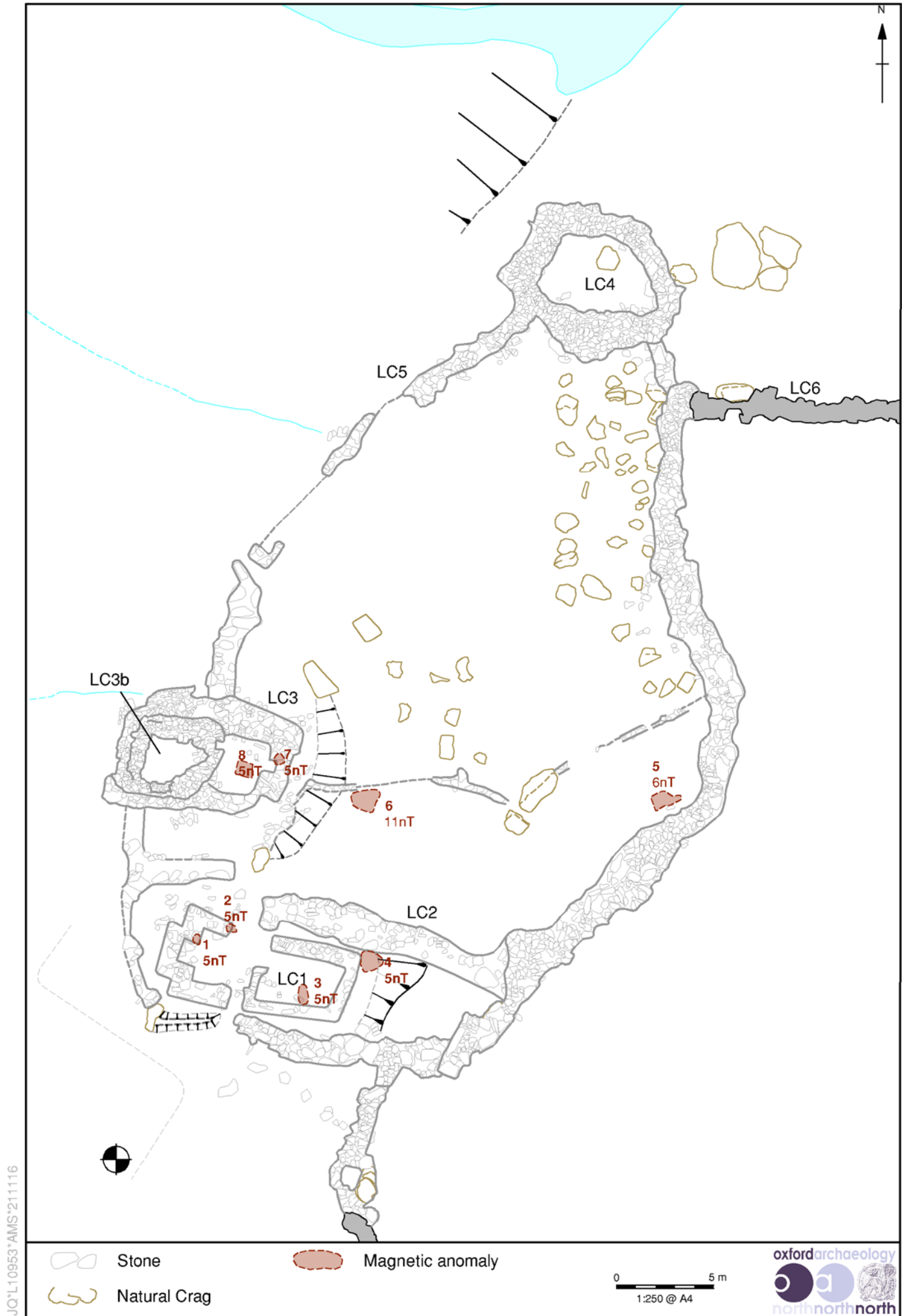


Figure 11: Magnetic anomalies at Tongue House B



JQ*L10953*AMS*211116

Figure 12: Magnetic anomalies at Long House Close



Figure 13: Tongue House A and enclosure



JQ*L10953*AMS*170516

Figure 14: Tongue House A excavated



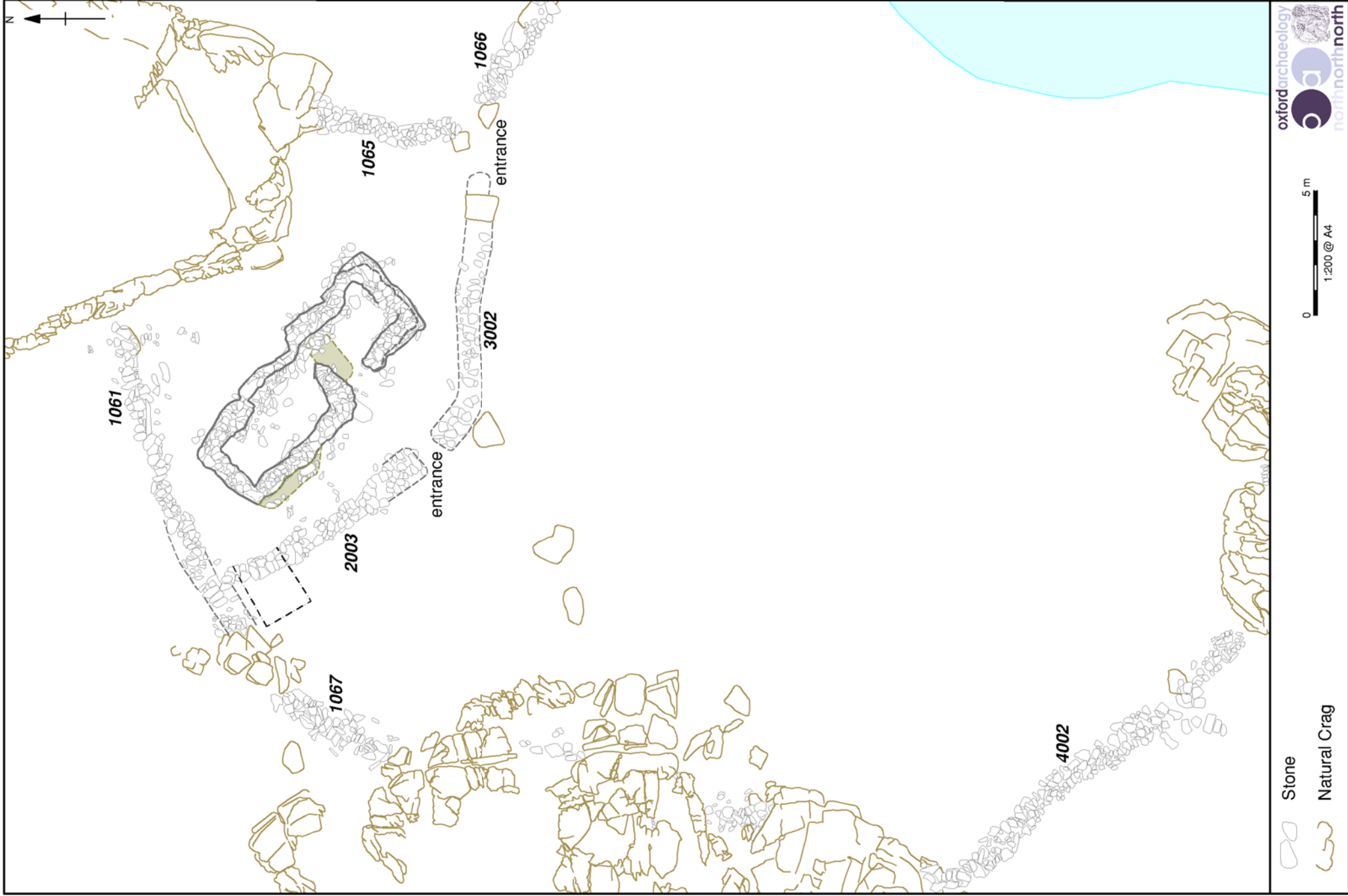
JQ*L10953*AMS*170516

Figure 15: Excavated Tongue House A Longhouse



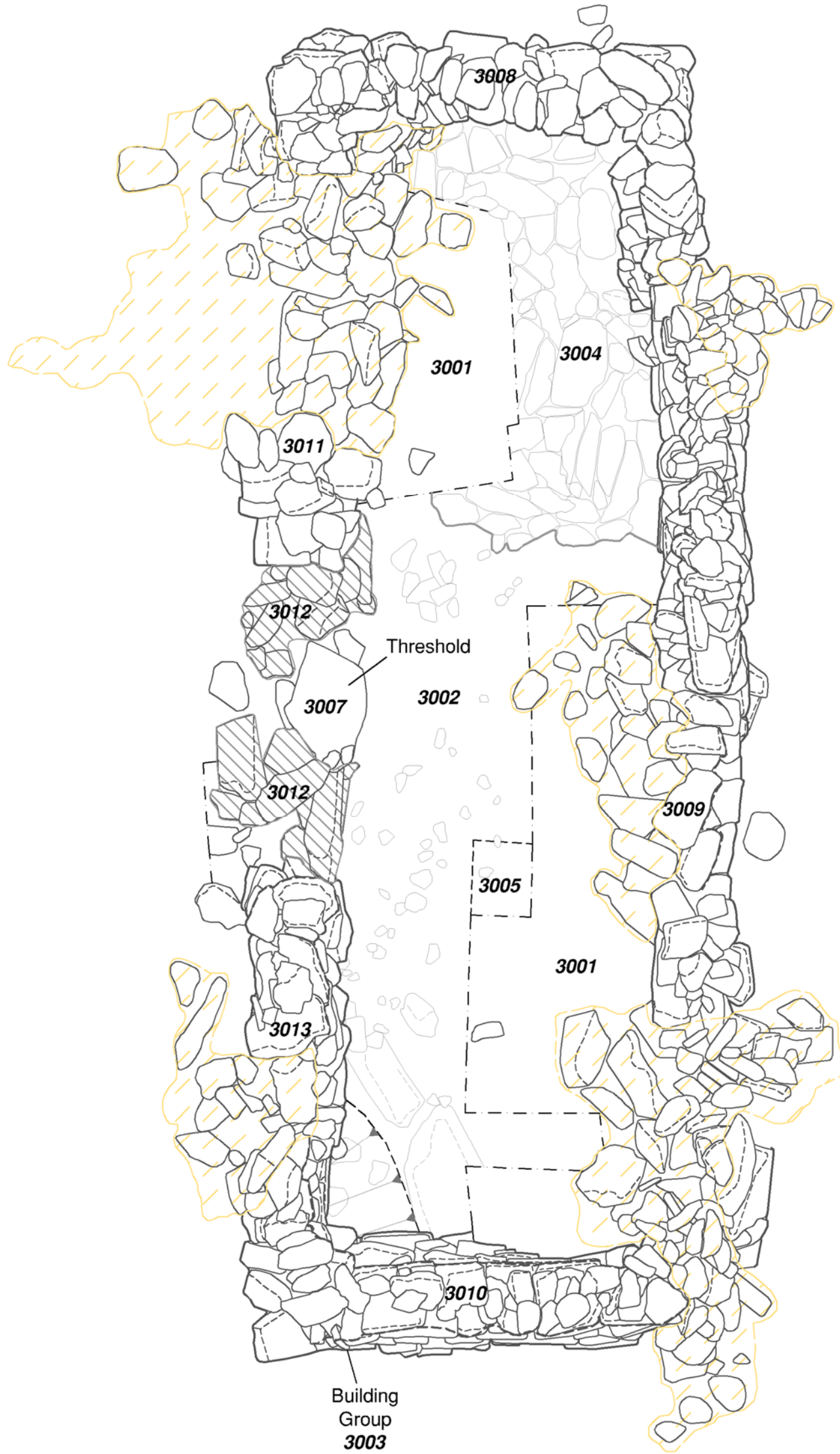
JQ*L10953*AMS*170516





Figure 16: Phase 2 Plan of Tongue House A



JQ*F10953*AMS*211116

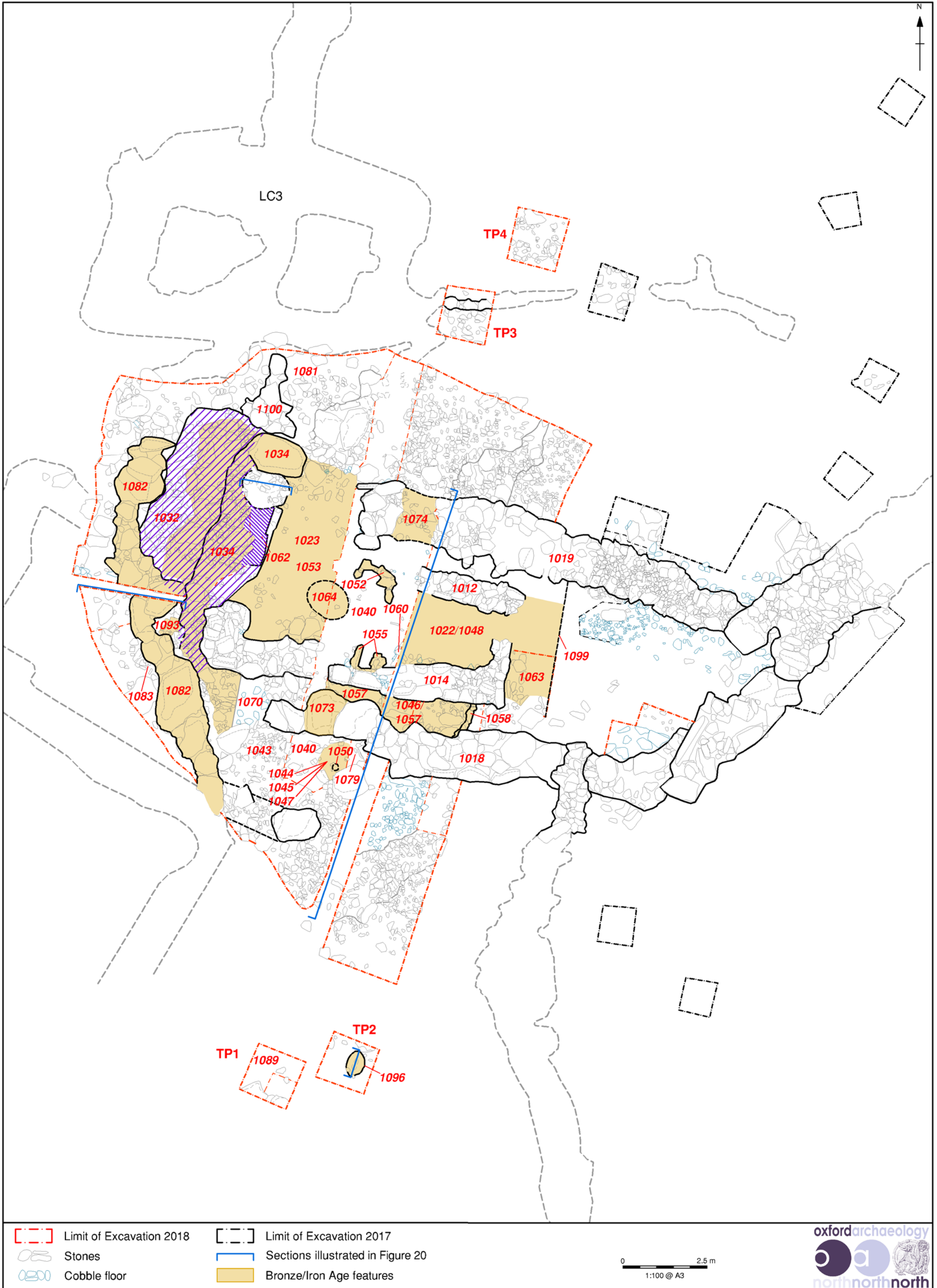
Figure 17: Tongue House A, Detailed Plan



-  Stone
-  Natural Crag
-  Collapse
-  Blocking

0 1 m
1:40 @ A3

Figure 18: Excavated features at Tongue House B



- Limit of Excavation 2018
- Limit of Excavation 2017
- Stones
- Sections illustrated in Figure 20
- Cobble floor
- Bronze/Iron Age features

0 2.5 m
1:100 @ A3

Figure 19: Long House Close: Prehistoric features

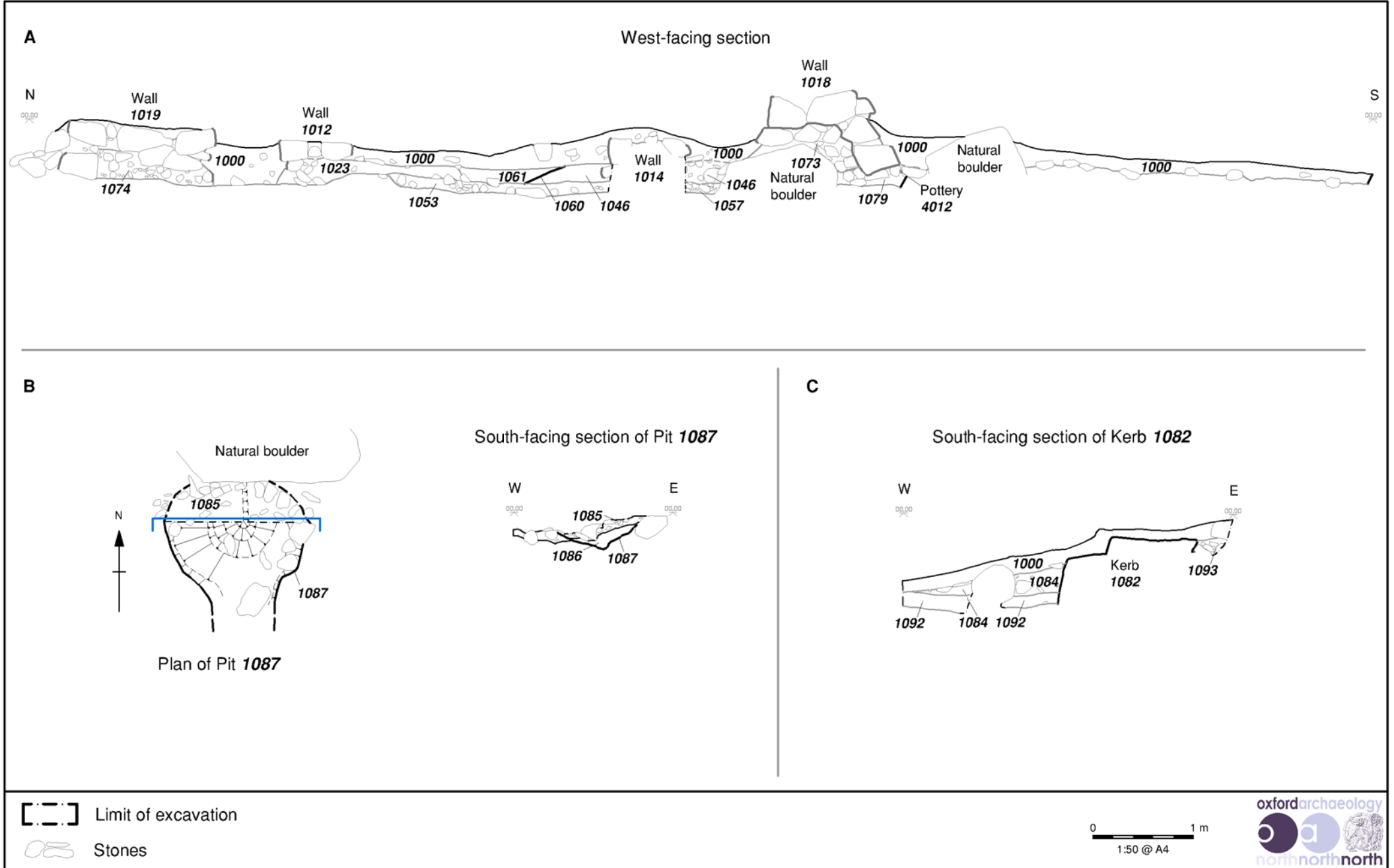


Figure 20: Plans and sections of features at Long House Close

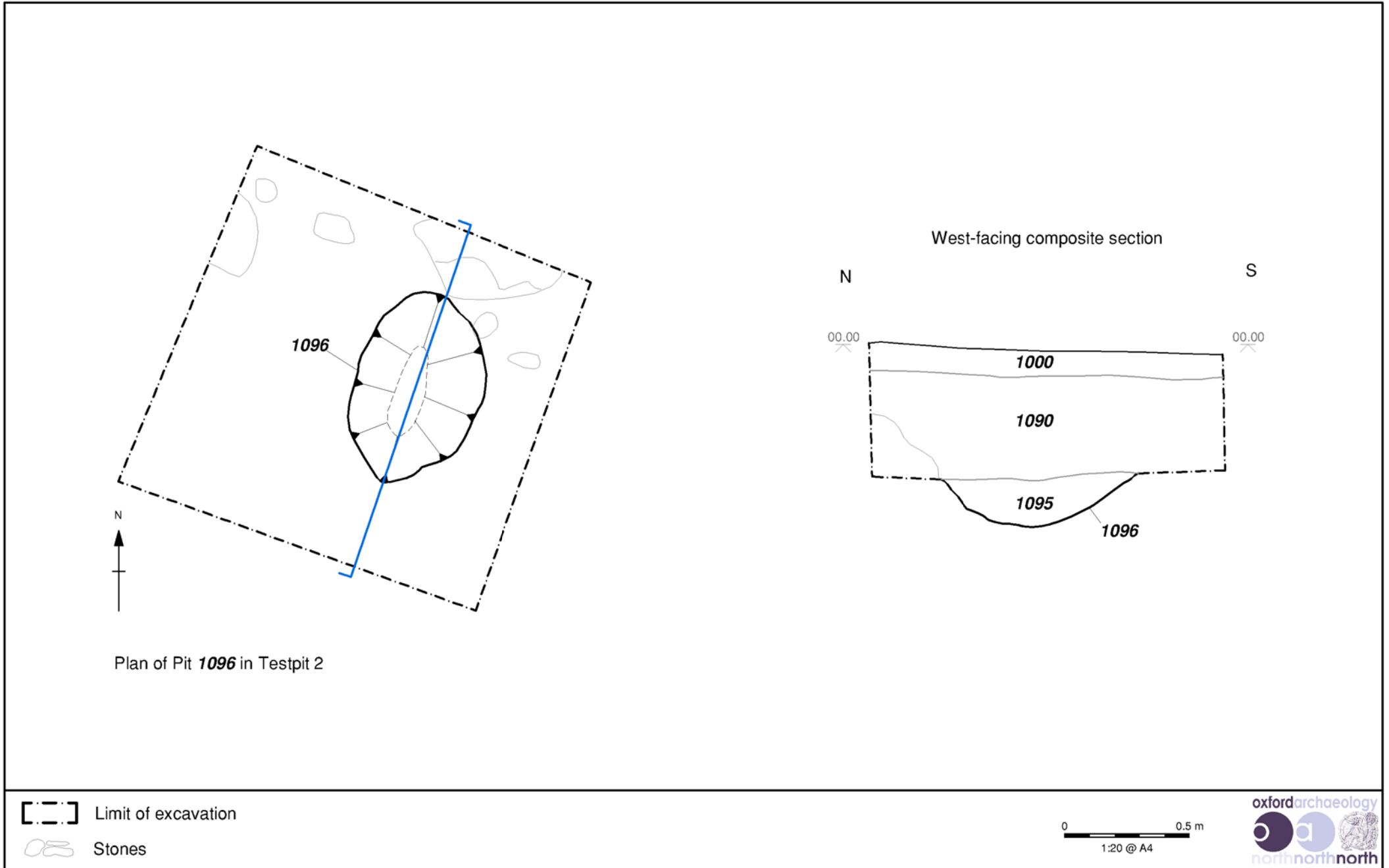


Figure 21: Pit 1096 in Testpit 2



- Limit of Excavation 2018
- Limit of Excavation 2017
- Stones
- Medieval features
- Cobble floor

0 2.5 m
1:100 @ A3

Figure 22: Long House Close: Later features

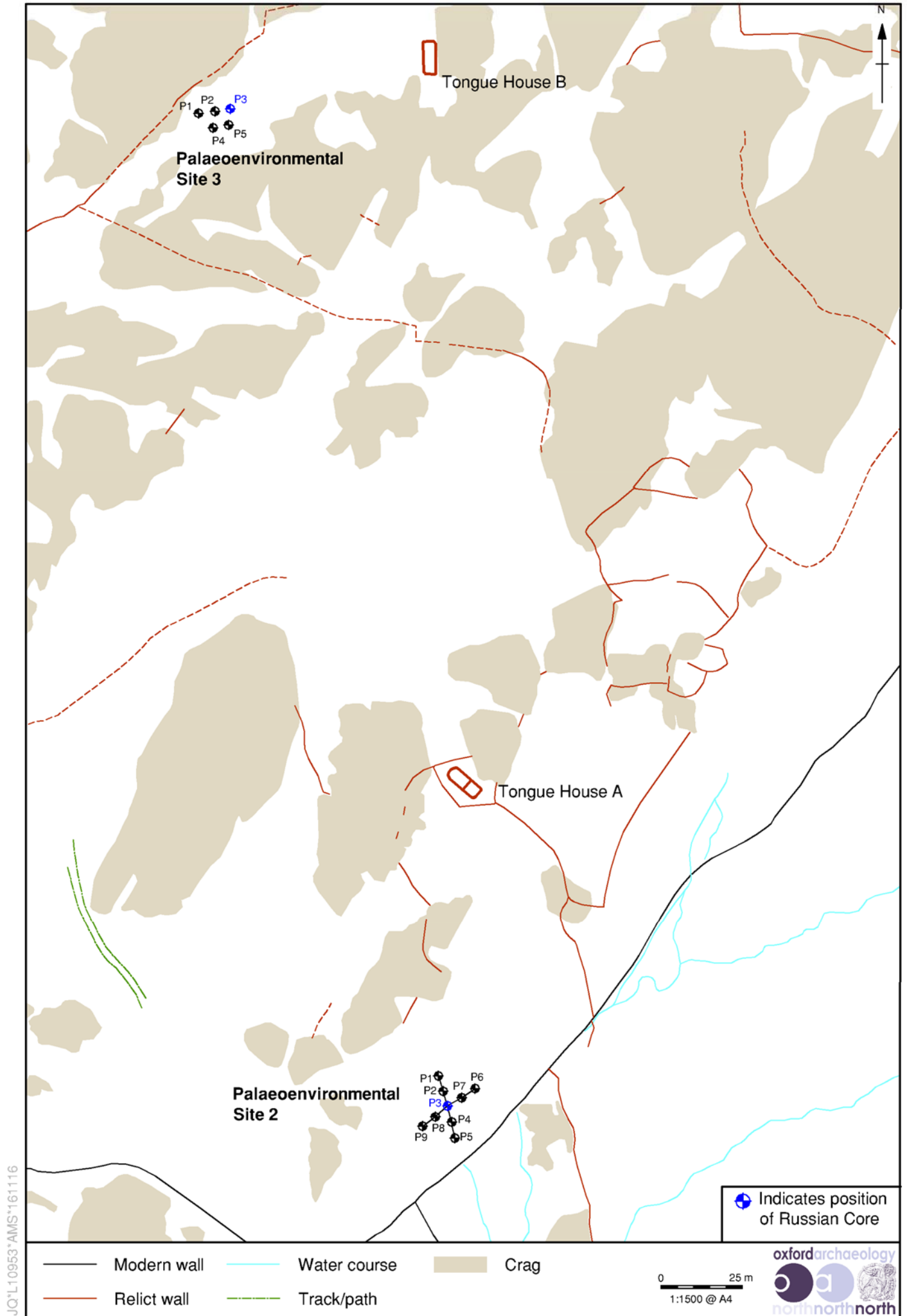


Figure 23: Pollen Cores at Tongue House A and B



**Head Office/Registered Office/
OA South**

Janus House
Osney Mead
Oxford OX20ES

t: +44 (0) 1865 263 800
f: +44 (0) 1865 793 496
e: info@oxfordarchaeology.com
w: <http://oxfordarchaeology.com>

OA North

Mill 3
Moor Lane
Lancaster LA1 1QD

t: +44 (0) 1524 541 000
f: +44 (0) 1524 848 606
e: [oanorth@oxfordarchaeology.com](mailto: oanorth@oxfordarchaeology.com)
w: <http://oxfordarchaeology.com>

OA East

15 Trafalgar Way
Bar Hill
Cambridgeshire
CB23 8SQ

t: +44 (0) 1223 850500
e: [oaeast@oxfordarchaeology.com](mailto: oaeast@oxfordarchaeology.com)
w: <http://oxfordarchaeology.com>



Director: Gill Hey, BA PhD FSA MCIfA
*Oxford Archaeology Ltd is a
Private Limited Company, N^o: 1618597
and a Registered Charity, N^o: 285627*