Land East of Moor Lane South
Ravenfield
Rotherham
South Yorkshire

RB2019/0894 & RB2021/1532

Targeted Archaeological Strip, Map and Record

05.34.21

OASIS Id: maparcha1-506590

MAP Archaeological Practice

Land East of Moor Lane South
Ravenfield
Rotherham
South Yorkshire

Targeted Archaeological Strip, Map and Record Excavation

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Non-technical Summary

A Targeted Archaeological Strip, Map and Record Excavation was carried out by MAP Archaeological Practice Ltd., on land east of Moor Lane South, Ravenfield, Rotherham, South Yorkshire between June and July 2022.

The work was carried out on behalf of Redrow Homes, in order to fulfil Condition 36 attached to the outline permission for the erection of a residential development with associated infrastructure (RB2019/0894 & RB2021/1532).

The Targeted Archaeological Strip, Map, and Record Excavation was the final phase of fieldwork at the site, which has previously comprised of a Geophysical Survey and Trial Trenching Evaluation. The Trial Trenching had confirmed the presence of archaeological features highlighted in the Geophysical Survey, including a probable droveway and appending enclosures, and as such the Targeted Strip, Map and Record Excavation was carried out in order to assess relationships between features and to allow for the retrieval of Optical Stimulated Luminescence Samples, which will aid the dating of features, which otherwise produced little in the way of dating evidence.

The excavations have shown that droveway diches likely formed the earliest phase of this site followed by the addition of appending enclosures and later a trackway. Optically Stimulated Luminescence suggest the establishment of the droveway took place during the Bronze Age,

potentially utilising earlier features, with modification and the addition of appending enclosures occurring during the late Iron Age and Romano-British period. This date for later modification is consistent with Romano-British pottery which was recovered from the enclosure ditches.

1. Introduction

1.1 This report sets out the results of a Targeted Archaeological Strip, Map and Record Excavation, which was carried out by MAP Archaeological Practice Ltd. on land east of Moor Lane South, Ravenfield, South Yorkshire (centred on SK 49021 93442) between June and July 2022.

1.2 The Targeted Archaeological Strip, Map and Record Excavation was recommended by South Yorkshire Archaeological Service, after a programme of Archaeological Trial Trenching, carried out in 2021, confirmed the presence of archaeological features which had been indicated in the results of a Geophysical Survey.

1.3 Condition 36 attached to the outline permission (RB2019/0894) states that;

Part A (pre-commencement)

No development, including any demolition and groundworks, shall take place until the applicant, or their agent or successor in title, has submitted a Written Scheme of Investigation (WSI) that sets out a strategy for archaeological investigation and this has been approved in writing by the Local Planning Authority. The WSI shall include:

- *The programme and method of site investigation and recording.*
- *The requirement to seek preservation in situ of identified features of importance.*
- *The programme for post-investigation assessment.*
- *The provision to be made for analysis and reporting.*
- *The provision to be made for publication and dissemination of the results.*
- *The provision to be made for deposition of the archive created.*
- *Nomination of a competent person/persons or organisation to undertake the works.*
- *The timetable for completion of all site investigation and post-investigation works.*

Part B (pre-occupation/use)

Thereafter the development shall only take place in accordance with the approved WSI, and the development shall not be brought into use until the Local Planning Authority has

confirmed in writing that the requirements of the WSI have been fulfilled or alternative timescale agreed.

1.4 The work was carried out in accordance with the recommendations of the National Planning Policy Framework (2021) on 'Archaeology and Planning' and according to a Written Scheme of Investigation (2022) which was prepared by MAP Archaeological Practice Ltd and approved by South Yorkshire Archaeology Service.

1.5 MAP Archaeological Practice Ltd. is a Chartered Institute for Archaeologists Registered Organisation. The status is awarded to organisations who can demonstrate commitment to professional standards, competence, and expertise in the sector.

1.6 MAP adhered to the general principles of both the CIfA 'Code of Conduct' (2021) and 'Standard and Guidance for Archaeological Excavation' (2020) throughout the project.

1.7 The site code for the project was MAP 05.34.21.

1.8 All maps within this report have been produced from the Ordnance Survey with permission of the Controller of His Majesty's Stationary Office, Crown copyright. License AL50453A). With additional mapping data derived from OpenStreetMap. (https://www.openstreetmap.org/copyright).

1.9 All work was funded by Redrow Homes.

2. Site Description

2.1 The site, which measures approximately 14.49ha is located to the south of Ravenfield Common, approximately 5km east of Rotherham Town Centre (NGR SK 49021 93442, Fig. 1). The site is bounded by agricultural land to the south and east, to the north by residential properties and to the west by Moor Lane South.

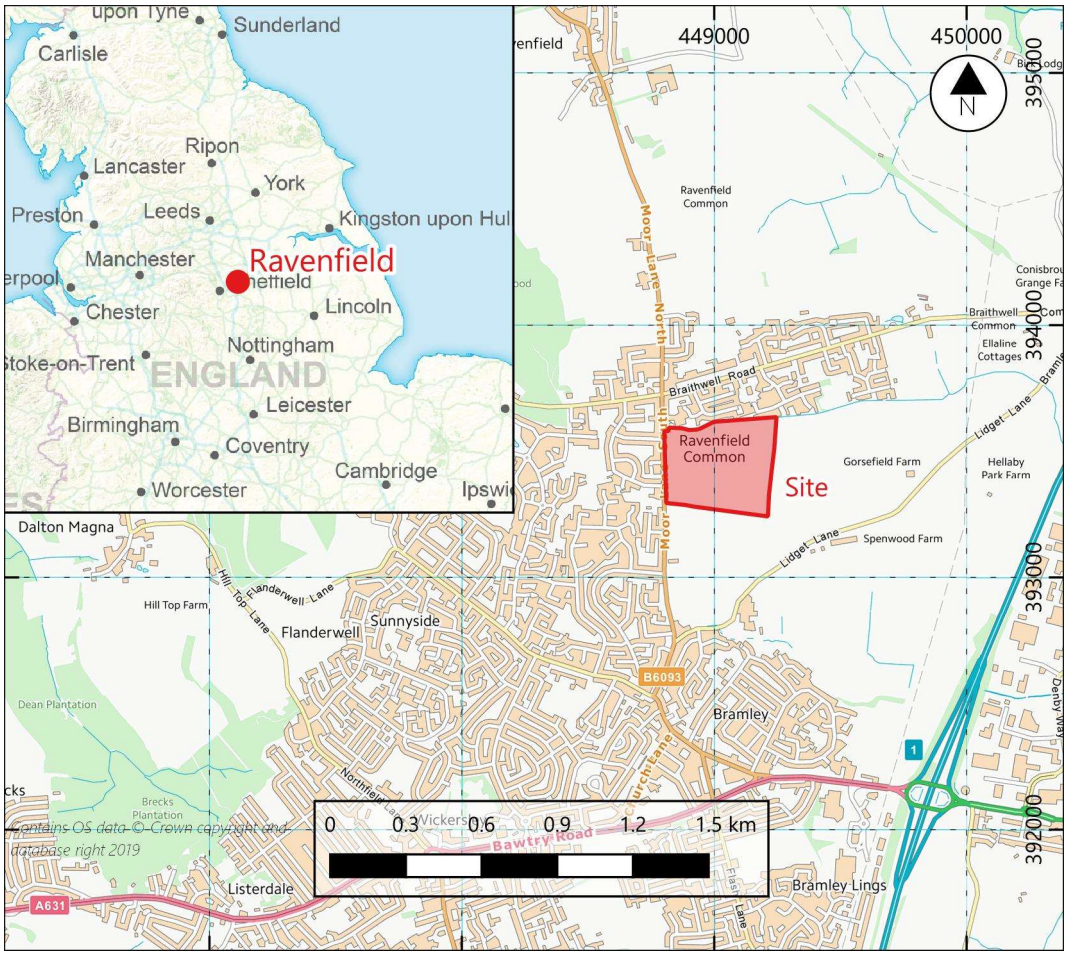

Figure 1. Site Location 1:30,000 @ A4.

2.2 At time of excavation the site consisted of a single recently harvested field.

2.3 The site sits on bedrock geology of predominantly Ravenfield Rock sandstone with Pennine Upper Coal Measures present in the north-eastern corner (British Geological Survey, 2022). The soils of the site are described as slowly permeable, seasonally wet, acid loamy and clayey soils (Soilscapes, 2022).

3. Archaeological and Historical Background

3.1 Extensive cropmarks of presumed Iron Age and/or Romano-British enclosure systems have been identified through aerial photography in the vicinity and within the site (Historic England Research Record 1433039).

3.2 An Environmental Statement, comprising Archaeology and Cultural Heritage was submitted in support of the 2019 planning application (Sidebottom. 2015). The report assessed the impact development within the site boundary may have on known archaeological and cultural heritage assets, and concluded that *'buried features may still survive below the plough-soil and such is likely to be severely affected by the proposed development'* (Ibid).

3.3 A Geophysical Survey was carried out at the site in 2018 by Archaeological Research Services Ltd. The survey identified an 'extensive buried agricultural landscape' which comprises a trackway and 'brickwork' style field systems (ARS. 2018), which have been interpreted as being of late-prehistoric or Romano-British date. Trial Trenching was recommended by South Yorkshire Archaeology Service in order to assess the significance and condition of the anomalies.

3.4 Such field systems have been extensively identified through aerial photography, which was particularly pioneered by Derrick Riley during the 1970's. Riley noted that the brickwork style field systems were most commonly found in the Sherwood Sandstone areas of South Yorkshire and Nottinghamshire and believed that, because of their size, the enclosures were probably used as pasture for livestock rather than arable agriculture (South Yorkshire Archaeological Service & Historic England, 2021).

3.5 A programme of Archaeological Evaluation by Trail Trenching was carried out in 2021. The Evaluation confirmed the presence of archaeological features highlighted in the Geophysical Survey, including a probable droveway, trackway and appending enclosures.

A lack of material culture meant that conclusions relating to the date and function of the features could not be made.

4. Aims and Objectives

4.1 In accordance with the '*Standard and Guidance for Archaeological Excavation*' (CIfA, 2020) the aims of the Archaeological Excavation to:

- Examine the archaeological resource within a given area or site within a framework of defined research objectives;
- To seek a better understanding of the resource;
- To compile a lasting record of the resource; and
- To analyse and interpret the results of the excavation and disseminate them

4.2 Based on the archaeological deposits which were encountered during evaluation, the site has the potential to inform the following research questions regarding the Iron Age and Romano-British periods in South Yorkshire.

- Can we characterise different types of Iron Age and Romano-British field systems in different landscape zones?
- What were the economic, social, or political roles of Iron Age and Romano-British field systems?
- Can the dates of Iron Age and Romano-British field systems inception and disuse/abandonment, be established with any greater accuracy?
- What were the economic, social, or political roles of linear trackways?

4.3 The objective of the Targeted Strip, Map and Record Excavation was to further characterise archaeological features which had been identified in the results of the Geophysical Survey and Trial Trenching. The work would assess key relationships between features and obtain samples to be submitted for Optically Stimulated Luminescence dating.

5. Methodology

5.1 Excavation

5.1.1 The Targeted Archaeological Strip, Map and Record Excavation totalled 3000sqm and was divided into six areas of investigation, positioned across the site in order to allow for the excavation of junctions between previously identified archaeological features.

5.1.2 All six areas of the Targeted Archaeological Strip, Map and Record Excavation were located and levelled using a Trimble GPS Rover.

5.1.3 Topsoil was removed by a 360° tracked mechanical excavator, fitted with a toothless bucket, operating under close archaeological supervision. Machining ceased at the top of either archaeological or natural formed deposits, depending upon which was located soonest. The exposed surfaces were cleaned by shovel, hoe, or trowel as appropriate, and all subsequent excavations were carried out by hand.

5.1.4 For the purpose of finds retrieval, soil from both the machine stripping and hand excavations was visually scanned.

5.1.5 All work was carried out in line with the Chartered Institute for Archaeologists *'Code of Conduct'* (2021) and *'Standard and Guidance for Archaeological Field Excavation'* (2020).

5.2 On-site Recording

5.2.1 All archaeological deposits were recorded according to correct principles of stratigraphic excavation using Diggit Archaeology, a digital recording system which is compatible with the MOLA recording system. All indices were produced using MAP's pro forma sheets. A total of one hundred and forty-four separate contexts were recorded.

5.3 Plans and Sections

5.3.1 The full extent of all archaeological deposits was recorded in plan on drawing film at an appropriate scale (generally 1:20 or 1:50 for plans and 1:10 for sections). All drawings were

located and levelled using a Trimble GPS rover, in order to tie to the Ordnance Survey National Grid. There were one hundred and ten drawings.

5.4 Photographic Record

5.4.1 Sixty-nine black and white film photographs formed the basis of the photographic archive with a supplementary digital photographic archive consisting of one hundred and forty-seven high-resolutions digital images taken in both RAW and JPEG formats.

5.5 Finds

5.5.1 Finds were processed in accordance with current standards and guidance. All finds were cleaned, identified, assessed, dated (where possible), marked (where appropriate), and properly packed and stored according to national guidelines. In total there were eighteen finds.

6. Results (Plates 7-35)

6.1 Strip, Map and Record Areas

6.1.1 All excavation areas contained a topsoil consisting of a mid-brownish-grey sandy silt, and a light-orangey-yellow fine sand subsoil. All areas had a natural deposit consisting of a light/mid-orangey-brown coarse sand.

6.2 Phase 1

6.2.1 Phase 1 is represented by a north-west to south-east aligned droveway, observed in Areas 1-5, comprising of eastern and western ditches separated by a nominal gap of between six and seven metres, with no evidence of a surface/construction material between them, although this may have been lost due to truncation by later agricultural activity. OSL dating has enhanced the stratigraphic relationships as It has indicated an initial period of infilling occurring within the western ditch from the Neolithic-Bronze Age and Bronze Age to Iron Age within the eastern ditch.

6.2.2 Droveway Ditch West seen in Areas 2, 3 and 4, comprised of two stretches of ditch divided by a small possible entrance way. The northern of two was identified within Area 2 as Segments [305], [387] and possible terminal [396]; seen again in evaluation trench 3 as segment [104] to the north-west. Each segment had a 'U' shaped profile, measuring between 0.88m and 1.14m wide and 0.44m and 0.60m deep. Segment [305] was filled by a single fill mid-orangey-brown fine sand and segments [387] and [396] both have an upper fill of light-orangey-brown fine silty sand and a lower fill of mid-orangey-brown fine sand. Samples taken from these segments produced no flotted material. Terminal segment [396] appeared terminate within, and was truncated by, the northern edge of the later Phase 3 southern Trackway feature [398]=[391]; A further truncation 3m to the north by the northern Trackway feature [383] was also observed at segment [387].

6.2.3 The southern section of Droveway Ditch West, was identified in Areas 2, 3 and 4 and consisted of terminus [389] to the north-west and segments [378], [381], [401], [403], [419] and [428] to the south-east; this feature had not been previously observed in the evaluation. All segments were seen to have sharp sides with a flat base as their profiles, measuring between 1.18m and 1.63m wide and 0.35m and 0.85m deep. Segments [389], [378], [403] and [428] were observed to have a single fill of light to mid-orangey-brown fine silty sand whereas segments [381], [401] and [419] had an upper fill of mid-orangey-brown fine silty sand and a lower fill of light-orangey-brown fine silty sand. Terminal segment [389], appearing to be truncated by the southern edge of the Phase 3 trackway feature [391]=[398], was seen 1.7m south-east of terminal [396], allowing for a possible opening between the two stretches. To the south-east in Area 3 this feature would by partially clipped by an appending Phase 2a's Enclosure C and D at segments [419] and [433], and again at its distal segment [428] it was truncated by the terminus of the phase 2b modification of Droveway Ditch West. Environmental samples recovered a small amount of charcoal containing *Quercus* (oak) from segments [378], [381], [401] and [403] with [381] also containing *Corylus* (hazel) charcoal. An OSL sample (lab code GL22061) taken from the fill of segment [381] returned a date of between 3760 BC and 2310 BC,

suggesting a potentially Neolithic date for the establishment of features within the site boundary.

6.2.4 Droveway Ditch East, seen in Areas 3 and 4, was excavated as two apparent terminals extending either side of segment [155] in evaluation trench 22. A further terminal [436] (opposing segment [408]) provided an opening east out of the droveway; and extended south-east as segment [423]. Likely facilitating some form stock management off the droveway and into a precursor of the enclosure system seen later, and possibly associated with the Evaluation segment [175] in trench 24.

6.2.5 The profiles of Terminal Segments [408] and [414], were 'U' shaped, measuring between 1.14m and 2m wide and 0.35m and 0.52m deep; deeper and narrower to the south-east. Both were filled by a single fill of light to mid-orangey-brown fine silty sand. Although terminating, Segment [414] was marginally truncated by later Phase 2a Enclosure A corner [410]=[412], appearing to assume and maintain the eastern section of droveway to the north-west. The environmental samples only produced a small amount of charcoal containing *Alnus* (alder) from Segment [414].

6.2.6 The profile of the opposing terminal, Segment 436 and continuing as segment [423] were also 'U' shaped, measuring between 1.10m and 1.55m wide by 0.47 and 0.50m deep. Both were filled by a single fill of light-orangey-brown fine silty sand. The environmental samples produced a small amount of charcoal containing *Quercus* (oak) from segments [436] and [439] and a small amount of *Alnus* (alder) charcoal from segment [423]. Pit [421] was also seen within segment [423], however no relationship was obtained as it was only seen as the segment was excavated. An OSL sample (lab code GL22060) taken from the fill of [436] returned a date of between 1770 BC and 400 BC; marking it as stratigraphically and chronologically distinct from what would appear to be a continuation as Segment [439] (Phase 2b) in Area 5.

6.3 Phase 2a

6.3.1 Phase 2a represents at least four Enclosures that appended outwardly from either side of Droveway, with a partial modification/adaptation of Droveway Ditch East noted to form Enclosure A. Dating obtained from OSL suggests these features are allowed to infill between 250BC-AD300 (from two samples, lab codes GL22062 & GL22058); with 3rd or 4th Century dates recovered from the pottery assemblage. The differing or broad ranges likely resulting from the relative depth and locations of the samples and finds within the matrix of the sedimented fill.

6.3.2 Within Areas 1, 2 and 3, Enclosure A and its modification of Droveway Ditch East was observed and excavated as segments [345], [353], [372], [376], [406], [410] and [412]; with the reestablishment of Droveway Ditch East continuing north-west as segment [120] in trench 3 of the evaluation and the enclosure proper extending north-east as [118], [122] and [126] in trenches 4, 7 and 15. The ditch measured between 1.12m and 2.30m wide and 0.38m and 0.79m deep, with a 'U' shaped profile and filled by a single mid-yellowish-brown or mid-orangey-brown fine sand or fine sandy silt fill; ditch segment [406] was seen to have a natural slump material of light-brownish-orange silty sand. Seen as a large scale reestablishment/maintenance of the Droveway Ditch East, and the insertion of Enclosure A, fill contexts within Segment [372] appeared to be contemporary with no sign of subsequent maintenance of either droveway or enclosure; this would suggest that both were established at the same point and latterly abandoned at the same point. These fills consisted of a top fill of mid-greyish-brown fine sand, a middle fill of mid-orange fine sand and a basal fill of a very light-orangey-grey fine sand. To the south-east, in Area 3, segment [410]=[412] formed the southern corner of this enclosure, truncating the seemingly abandoned/infilled droveway feature. Dating consisted of rim and base pottery sherds, located in segment [345], suggesting a 3rd to 4th Century date at present, however the pottery although not abraded, could entirely be residual. Environmental samples obtained from these segments produced some material, [410]=[412] produced a small amount of charcoal containing *Alnus* (alder) and [353] produced a small amount of charcoal containing *Quercus* (oak) and *Corylus avellana* (hazel) nutshell. An OSL sample (lab code

GL22062) taken from the fill of segment [410] returned a date of between 250 BC and AD 160.

6.3.3 To the south-east in Area 5, a ditch forming Enclosure B was observed to extend north-east from Droveway Ditch East as segment [442], continuing as [141] and [144] in trenches 13 and 12 of the evaluation; this ditch is also latterly truncated by Phase 2b's reestablishment of the droveway. Segment [442] had a wide, flat based profile and measured 2.05m wide by 0.43m deep. The ditch was filled by two fills: a light-orangey-brown fine sand and a mid-brown fine silty sand. Sampling recovered a small amount of *Quercus* (oak) charcoal. The continuation of Enclosure Ditch B observed within Trenches 12 and 13 suggested a narrowing of the ditch, forming a more rounded profile whilst the depth remained generally consistent. An apparent adjoining north-west south-east geophysical anomaly was not observed in Trench 13, it is possible this may have been lost to truncation caused by agricultural activity.

6.3.4 Appending to the west edge of Droveway Ditch West were a series of enclosure ditches forming Enclosures C and D, with the possibility of other enclosures beyond to the south-west; these features appear to have openings facilitating the possibility of stock management within themselves.

6.3.5 Enclosure C was formed of three lengths of ditching with at least two openings: one along the south-eastern side opening into the adjacent Enclosure D; and another opening along the south-western side, into an apparent space to the west.

6.3.6 The south-eastern stretch was seen in Areas 3 and 6, comprising of a north-east terminus [416], segment [393], evaluation segment [215] observed in Trench 21, and a south-west terminus [343]. These measured between 1.15m and 1.96m wide and 0.40m and 0.52m deep, segment [393] had a 'V' shaped profile whereas the other three had a wide rounded profile. Each segment was filled by a single fill of mid/light-orangey-brown fine silty sand. Terminal [416] was seen to clip the edge of Droveway Ditch West, as it continued south-

west it would terminate again as terminal [343] to form an opening with an opposing terminal segment [317]. The environmental samples obtained from segments [343] and [393] contained a small amount of charcoal containing *Quercus* (oak).

6.3.7 From Terminal [317] a single ditch would continue to form the south-east corner of Enclosure C, excavated as segments [317], [324], Corner [366], [362], [357] and [339]. This feature was observed to turn south-west forming a partition between two spaces west of Enclosures C as evaluation segment [180] in Trench 20, continuing south-west this feature was excavated as segments [311], [313], [333], [335], and evaluation segment [195] in Trench 19. These measured between 1.00m and 2.00m wide and 0.28m and 0.63m deep, had a mix of 'U' and 'V' shaped profiles, some displaying a slightly stepped side and were all filled by a single fill of mid-yellowish-brown or light-orangey-brown fine sand or fine sandy silt. A single base and rim sherd of Reduced Ware (greyware) dating to the 3rd Century recovered from segment [335]. Most of the segments from this feature contained carbonised remains, retrieved from the environmental samples, and contained a mix of *Quercus* (oak), *Betula* (birch) and *Maloideae* (apple/hawthorn/whitebeams) charcoal; Segment [366] also contained a singular *Corylus avellana* (hazel) nutshell. An OSL sample (lab code GL22058) taken from the sill of segment [339] returned a date of between 40 BC and AD 300. A partial re-cut of the south-east corner was identified within segments [357], [362] and [366]. Segments [355], [360] and [364] were all seen to have a rounded profile, however re-cut [364] had a slight step to the Northern side. They measured between 0.85m and 1.22m wide and 0.25m and 0.43m wide and were all filled by a single fill of light orangey brown. No environmental material was recovered from these three segments however five Reduced Ware (greyware) body sherds, 1 Vesicular rim sherd and one Calcite-grit Ware body sherd were recovered from (363) of [364], dating between the 3rd and 4th Century. Later truncation of this feature was observed in the form of a single length of Phase 3 trackway ditch and two Phase 2b pits: [331] and evaluation pit [182].

6.3.8 Forming an opening within the south-western side of Enclosure C, close to evaluation segment [180], terminal segment [315] extended north-west out of Area 6 and would continue as evaluation segments [198] in trench 18 and [102] in trench 1. Terminal [315]

measured 1.20m wide by 0.34m in depth. It had a wide 'U' shaped profile and was filled by a single fill of light-yellowish-brown fine sand; with no finds recovered it did however have a small amount of *Quercus* (oak) charcoal.

6.3.9 Enclosure D was seen in Areas 4 and 6 appending south-westerly from Droveway Ditch West squaring towards Enclosure C, at its north-western extent. It was excavated as two terminals [351] and [433] in this work and two segments in the evaluation [173] and [206]. At segment [433], in Area 4, it had a wide shallow profile that measured 1.42m wide by 0.32m deep, filled by a singular fill of mid-yellowish-brown fine sand; this would then continue as [173] in trench 23. South-west beyond trench 23 the Geophysical Survey suggested a continuation of this feature, though not observed within Trench 27, the interpretation suggests that the enclosure corners on a north-westerly course towards evaluation segment [206] in trench 21, becoming terminal segment [351] in Area 6. Terminus [351] had a wide rounded profile, measuring 1.18m wide by 0.28m in depth and was filled by a single fill of light-yellowish-brown sandy silt. The fill of both terminals contained no finds and only a small amount of *Quercus* (oak) present in [433] and *Betula* (birch) charcoals present in both samples.

6.3.10 Within Area 6 three distinct pits [320], [327] and [368] were observed to be clustered near to openings related to Enclosures C and D; a fourth and fifth pit, [211] and [213] also located near to the opening between the two enclosures, were seen during the evaluation, are deemed to be of akin.

6.3.11 Pit [320] located at the opening between Enclosures C and D had a 'U' shaped profile, measured 0.81m wide and 0.65m deep and consisted of two fills, (318) and (319). Fill (318) consisted of a light-greyish-brown sandy silt and (319) light -yellowish-brown silty sand, neither contained any finds or environmental material.

6.3.12 Pit [322=327] was entirely obscured/truncated by the terminal segment [317=324] had a 'U' shaped profile and measured 0.50m wide and 0.29m deep and was filled by a single fill of very light-yellowish-brown fine silty sand and contained no datable material.

6.3.13 Located at the corner segment [366] of Enclosure C, Pit [368] had a rounded profile and measured 0.83m wide by 0.30m deep. It was filled by a single fill of a light-greyish-brown fine sand. The full extent of the pit was hard to establish as heavy animal burrowing had taken place in vicinity of the pit. The pit contained 2 body sherds of Vesicular Ware , dating to the 3rd to 4th century (appendix 8), but no environmental remains. Although containing pottery from the Roman period both features were heavily disturbed by animal burrowing and therefore the pottery may have been displaced.

6.4 Phase 2b

6.4.1 Phase 2b represents a stratigraphically later period of partial maintenance and re-use, specifically of the Droveway Ditches, whilst also clipping Enclosure D of Phase 2a, as it re-cut Droveway Ditch West.

6.4.2 Later modification of Droveway Ditch East was identified within Area 5 and consisted solely of an intersection segment [439] being stratigraphically earlier than the Phase 2a Enclosure B feature [442]; this feature apparently continued as evaluation segments [196] in trench 34 and [167] in trench 35. The segment had a 'U' shaped profile and measured between 2.80m wide and 0.90m deep, with an upper fill of light-orangey-brown fine silty and a basal fill which was distinctly lighter in hue. The environmental sample produced a small amount of charcoal containing *Quercus* (oak).

6.4.3 The modified form of Droveway Ditch West was identified within Area 4 and consisted of a terminal [431] and segment [426]; apparently continues in the evaluation as [208] in trench 26, [192] in trench 34, and finally as [170] in trench 35. The two segments both had a wide 'U' shaped profile with a stepped western side and measured between 1.65m and 1.70m wide and 0.54m and 0.66m deep. Both segments were observed to have an upper fill of light-yellowish-brown fine silty sand with [426] having a lower fill of mid-yellow-brown fine sand and [431] a light-pinkish-brown fine sand. Terminal [431] was seen to

subsume the earlier Droveway Ditch form [428] but clip the appending Enclosure D. No carbonised material was recovered from either segment.

6.4.4 Three pits appear in this phase, noted to have direct relationships with Phase 2 enclosures (Pit [331] and evaluation Pit [182]), with Pit [421] being potential associated with later insertion/adaptation of the Phase 1 Droveway at segment [423].

6.4.5 Pit [331] was cut into ditch segment [333] of Enclosure C, it had a rounded profile and measured 0.40m wide and 0.20m in depth. The pit was fill by three distinct fills: (328) a mid-brownish-orange coarse sand, (329) a light-greyish-blue fine sand and (330) a bright-orange fine sand. No finds were recovered from this feature nor any material from the environmental sample.

6.4.5 During the excavation of Segment [423], Pit [421] was revealed to clip the western side of the segment. Its form measured 0.85m wide and 0.35m deep and was filled by a single fill of very light-orangey brown fine silty sand. With no finds or recoverable sampling material, and it's apparent isolated nature it can only be suggested to be part of this phase; albeit aiding with the arrangement/function of the droveway adaptation.

6.5 Phase 3

6.5.1 Phase 3 solely represents the highlighted feature of a possible trackway (Historic England Research Record 1433039) shown as a north-east south-west alignment cropmark. Although limited datable material was identified during excavation, their stratigraphic relationship has led them to be assigned to the latest phase of activity on the site. These features were only identified within Area 2 with a possible continuation or associated ditch within Area 6.

6.5.2 Trackway Ditch North was represented by three segments in Area 2: [307], [374] and [383]; continuing north-east as evaluation segments [123] in trench 16 and [131] in trench 5, and south-west as segment [105] in trench 17. All segments had a wide rounded profile with a

gradually sloped south-eastern side. These segments measured between 1.44m and 2.30m wide and 0.31m and 0.35m deep and all had a single fill of a mid-brownish-yellow or a mid-yellowish-brown fine sand. Segments [374]=[383] were seen to cut across both droveway and Enclosure A features. The environmental samples from the three segments only produced indeterminate root fragments.

6.5.3 Trackway Ditch South consisted of four segments, [303], [349], [391] and [398]; continuing north-east as evaluation segments [128] in trench 16 and [133] in trench 5, and south-west as segment [109] in trench 17. All segments had a very wide, flat based shallow profile and measured between 1.43m and 2.12m wide by 0.20m and 0.36m deep and were filled with a single fill of light to mid-orangey-brown or mid-brown fine sand. As with Trackway ditch north, this feature as segments [349]=[391]=[398], cut across both droveway and Enclosure A features. The environmental samples from these four segments produced no carbonised material however [303] and [349] did produce some indeterminate root fragments.

6.5.4 A likely continuation of Trackway Ditch north was identified within Area 6 and consisted of three segments: a segment [309], a relationship [337] and a terminus [341]; continuing as segment [191] in trench 19. The segments were seen to have a shallow profile with an irregular base and narrowed and shallowed running North-east, ranging from 1.05m to 0.38m wide and 0.23m to 0.09m deep. Each segment was filled by a single fill of light-orangey or light-yellowish brown silty sand. Segment [337] was observed to cut across the south-westerly appending form of Enclosure C, prior to its termination as [341]. Other features potentially pertaining to this trackway feature were observed within trench 19 though none were present within the wider excavation of Area 6. There were no finds recovered from these segments and only a small amount of *Alnus* (alder) charcoal was recovered from the environmental sample from ditch segment [309].

7. Discussion

7.1. The Targeted Archaeological Strip, Map and Record Excavation on land east of Moor Lane South, Ravenfield, was successful in establishing a stratigraphic and chronological narrative between the droveway and enclosure feature within the development area which had previously been identified by the Geophysical Survey and Trial Trenching. The methodology applied to the targeted excavation was developed in order to achieve a chronology for the features and so junctions of features were targeted, over entrances and any other associated features, which may have allowed for a wider understanding of the purpose of features within the site boundary.

7.2 A single flint scraper was recovered from topsoil and represents the earliest activity on the site, albeit not from an archaeological context. The flint cannot be dated, due to the lack of archaeological context, but comparable implements are frequently found in late Neolithic or Bronze-Age assemblages (Makey. 2022, Appendix 9). The implement was *'far fresher than might be expected'* (Ibid) and indicates Neolithic activity in an area in which assemblages of such date are relatively rare (Ibid).

7.3 The earliest recorded features on the site consisted of two parallel ditches which ran on north-west to south-east orientation across the site. Dates derived from OSL samples suggest that the droveway, or at least part thereof, has its origins in the Neolithic period, with extensive modification during the Bronze Age, and with later modification and the establishment of appended enclosures, during the late Iron Age and Romano-British period. An OSL sample taken from period 3 segment [436] is somewhat of an anomaly, as a Bronze Age date was returned however it is possible that, given the recognised maintenance of the feature, the sample was taken from material derived from the establishment of the droveway.

7.4 Four enclosures were identified within the stripped areas, with the results of the Geophysical Survey suggesting the presence of more within the wider site boundary. The enclosures were appended from the aforementioned droveway and also showed evidence

of continual maintenance and modification. A small assemblage of pottery, dating to the 3rd and 4th centuries AD, was recovered from deposits relating to the latest phase of the enclosures, suggesting a possible lack of maintenance after this date.

7.5 A potential trackway (Historic England Research Record 433039) was recorded running on a roughly north-east to south-west across the site, and was seen to be later in date than the droveway and enclosures. No datable material was recovered from the trackway ditches and as such their placement within the latest phase of activity is based on their associations with other recorded features.

7.6 The targeted excavations produced a relatively small assemblage of archaeological material which may be suggestive of a lack of domestic or industrial activity within the site boundary. Thirteen sherds of pottery dating to the 3rd and 4th centuries AD were recovered from excavated features, in particular the latest phase of Enclosures A, B and C and D. Given the small size of the assemblage no robust conclusions can be reached however the lack of fine wares may be suggestive of a rural landscape (Stephens. 2022) with low level domestic or agricultural activity occurring within the vicinity of the site. The small material assemblage and lack of archaeological features associated with the droveway and appending enclosures suggest that the site was primarily utilised for stock management and movement.

7.7 This lack of archaeological material to date the establishment of the features substantiates the problem of dating field systems discussed within the South Yorkshire Historic Environment Research Framework (South Yorkshire Archaeological Service & Historic England, 2021), which also states that *'even where Romano-British pottery is found in upper ditch fills, this may only date the silting up of ditches, not their original digging. Trying to rigidly separate 'Iron Age' field systems from 'Roman'-period fields is probably futile'*. The results of OSL samples taken during excavation, have however aided the phasing and potential establishment of features within the site boundary, which otherwise would not have been possible. The dates have confirmed that features associated with the droveway

were potentially established much earlier than previously thought, pushing the chronology of the site back into the Neolithic period. Furthermore the samples have allowed periods of maintenance within individual features to be recognised.

7.8 It is likely that the excavated features were concerned with the management and movement of livestock, given the apparent lack of features or environmental material which may otherwise be suggestive of arable activity. Environmental samples taken during excavation contained small quantities of oak, hazel, alder and birch charcoal which is representative of low level burning within the vicinity of the features (Alldritt. 2022). Cereal grains were identified only as indeterminate specimens, considered to be residual (Ibid) and are not considered to be representative of the processing or storage of such material within the immediate vicinity of the site.

7.8 Comparable features are well documented and recorded within the vicinity of Ravenfield and also the wider area, with many, particularly to the east of the site, having been identified though cropmark data which was the subject of a detailed study of cropmarks on the Magnesian Limestone (Roberts *et al*. 2010). Field systems are described by Roberts as being the product of *'incremental evolution, over a period of time, in patterns that have most certainly been influenced by a combination of the natural topography and the rate of previously uncleared land'*. Enclosures identified within the site boundary largely conform to 'mixed field systems' described by Roberts *et al* as fields of varying sized, some of which may be used as settlement enclosures, but also allotments or paddocks, the latter of which seems to be the case in this instance. They also go on to state that *'The axial position of a trackway gives an overall impression of order'*.

7.9 The Bronze Age date derived from Phase 1 droveway has contemporary parallels within the wider South Yorkshire Region, although the Neolithic date achieved from segment [381] is suggestive of earlier activity on the site, with existing features being re-established as a droveway ditch. Work carried out by WYAS in 2018 at Hatfield, north-east of Doncaster, identified a droveway and appending brickwork-style enclosure system which

could not be dated using material culture (WYAS. 2019). Three OSL samples taken from one of the droveway ditches returned dates of between 2071 BC and 1091 BC, between 2131 and 1251BC, and between 321 and 41 BC (Ibid). These dates suggest that the droveway was established and saw periods of maintenance during the Bronze Age with activity continuing into the Iron Age.

7.10 A second comparable site is located ta Dinnington St. John, to the south-east of Rotherham. As with the Ravenfield and Hatfield sites, a droveway and appending enclosure system, which had been assumed during earlier phases of work to be of Iron Age or Romano-British date was identified. Although no Bronze Age material culture was identified OSL samples returned a date range of between 3,690 ± 250 BP to 1,810 ± 80 BP (PCAS. 2023). PCAS (Ibid) state that a Bronze Age ditch ran across the site which appears to have been maintained, or at least are likely to have been visible in the landscape into the early Iron Age when it was established into a double ditched droveway with associated enclosures.

7.11 Archaeological work carried out in advance of development, some 1.8km to the south of the site (HER ID 05752) targeted features had previously been identified in the results of a Geophysical Survey. Although no datable material was recovered, features were interpreted as likely dating to the Iron Age or Romano-British periods (ASWYAS. 1993). Archaeological Evaluation on land south of Barnsley Road, West Melton (MAP. 2022) approximately 10km north-east of the site showed similar characteristics; a series of enclosure ditches appending off a droveway ditch. This site too was of presumed late Iron Age or Romano-British date however no material culture was recovered to allow for a relative date to be assigned to the site. OSL samples were taken from features on the site, predominantly from the droveway ditch, at the time of writing the results are forthcoming but the West Melton site may also have the potential to increase our understanding of the date of establishment and phasing of such landscapes within the South Yorkshire region.

8. Conclusions and Recommendations

8.1 The Targeted Archaeological Strip, Map and Record Excavation has assessed the relationships between the enclosures, trackway and droveway. Samples were retrieved for Optically Stimulated Luminescence in key locations, the results of which will are contained within, and appended to, this report.

8.2 The excavated features produced little material evidence to aid the identification of the *'economic, social, or political roles of Iron Age and Romano-British field systems and trackways'* as outlined in the South Yorkshire Historic Environment Research framework. This lack of material may however be suggestive of a landscape utilised primarily for the control and movement of livestock, rather than supporting arable, industrial or domestic activity. When taking into consideration the earlier than expected establishment of the Phase 1 droveway, the results of the targeted excavation has the potential to inform the following research question within the South Yorkshire Research framework.

> *"How can we establish a higher resolution chronological framework to the Neolithic and Bronze Age? "*

Achieving as close to absolute dates (in this case via OSL samples) removes the need to rely on material culture and stratigraphic relationships to active chronological phasing of sites.

8.3 No further work is recommended in respect of the environmental material recovered from the site. It is considered that *'further excavation work at the site has a low potential to produce any significant quantities of carbonised remains'* (Alldritt. 2022).

8.4 Should any further reporting or publication be deemed necessary it is recommended that the pottery assemblage from the Targeted Strip, Map and Record Excavation by considered alongside material from the Evaluation and two sherds could be illustrated (Stephens. 2022).

8.5 Clifton Park Museum will be contact regarding the deposition of the archive. Archive deposition will be carried out in line with the *'Archive Preparation and Dissemination´* section of the Written Scheme of Investigation.

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10. List of Contributors

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Appendices:	Owain Wells
Illustrations:	Max Stubbings
Editor:	Charlie Puntorno and Max Stubbings
Administration:	Sophie Coy

Trackway

Enclosure A

Area 1

Droveway

Area 2

Area 3

Enclosure B

Enclosure C

Area 6

Enclosure D

Area 4

Area 5

Phase 1
Phase 2a
Phase 2b
Phase 3

N

0 50m

Figure 2
Feature Phase Plan
Scale: Plan 1:1000 @ A3

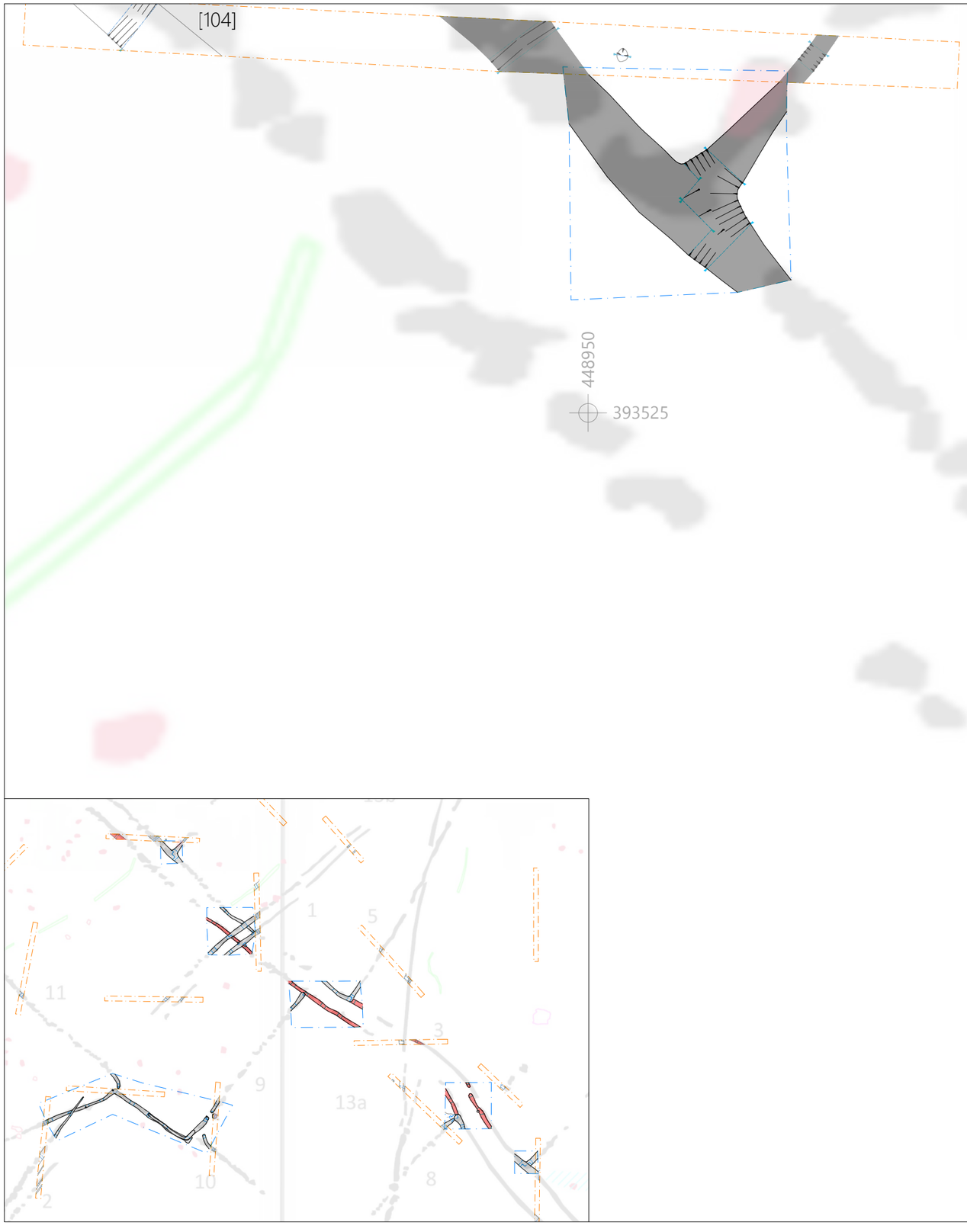


Figure 3
Phase 1
Droveway Ditch West
Areas 1 & 2
Scale: 1:200 @ A3

[389]

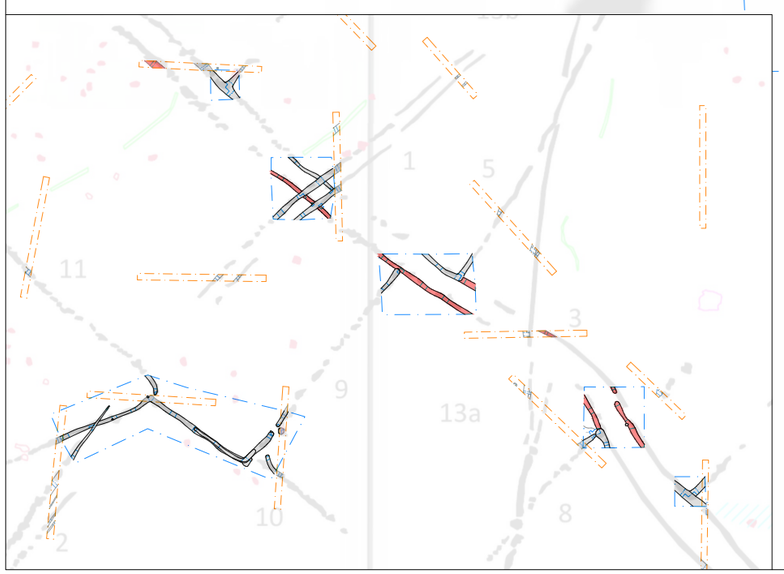
449000
393475

[378]
[419] S.3
[381] S.4
[414]
S.5
[401]

Droveway
Ditches

449050
393475

449025
393450



N
0
10m

Figure 4
Phase 1
Droveway Ditch West and East
Area 3
Scale: 1:200 @ A3

449050
393425

449100
393425

[408]
S.7

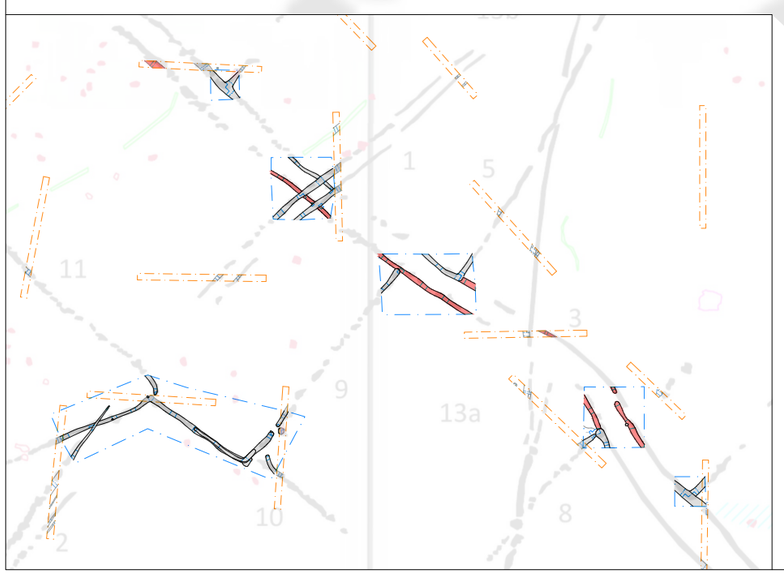
S.6
[403]

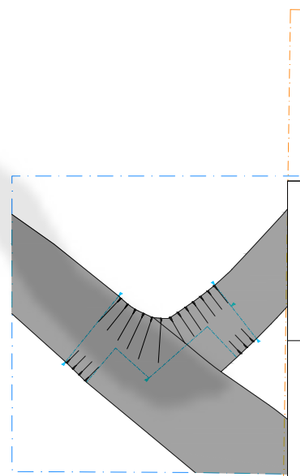
[436]
S.8

[423]

[428]

Droveway
Ditches





N
0
10m

Figure 5
Phase 1
Droveway Ditch West and East
Areas 3 & 4
Scale: 1:200 @ A3

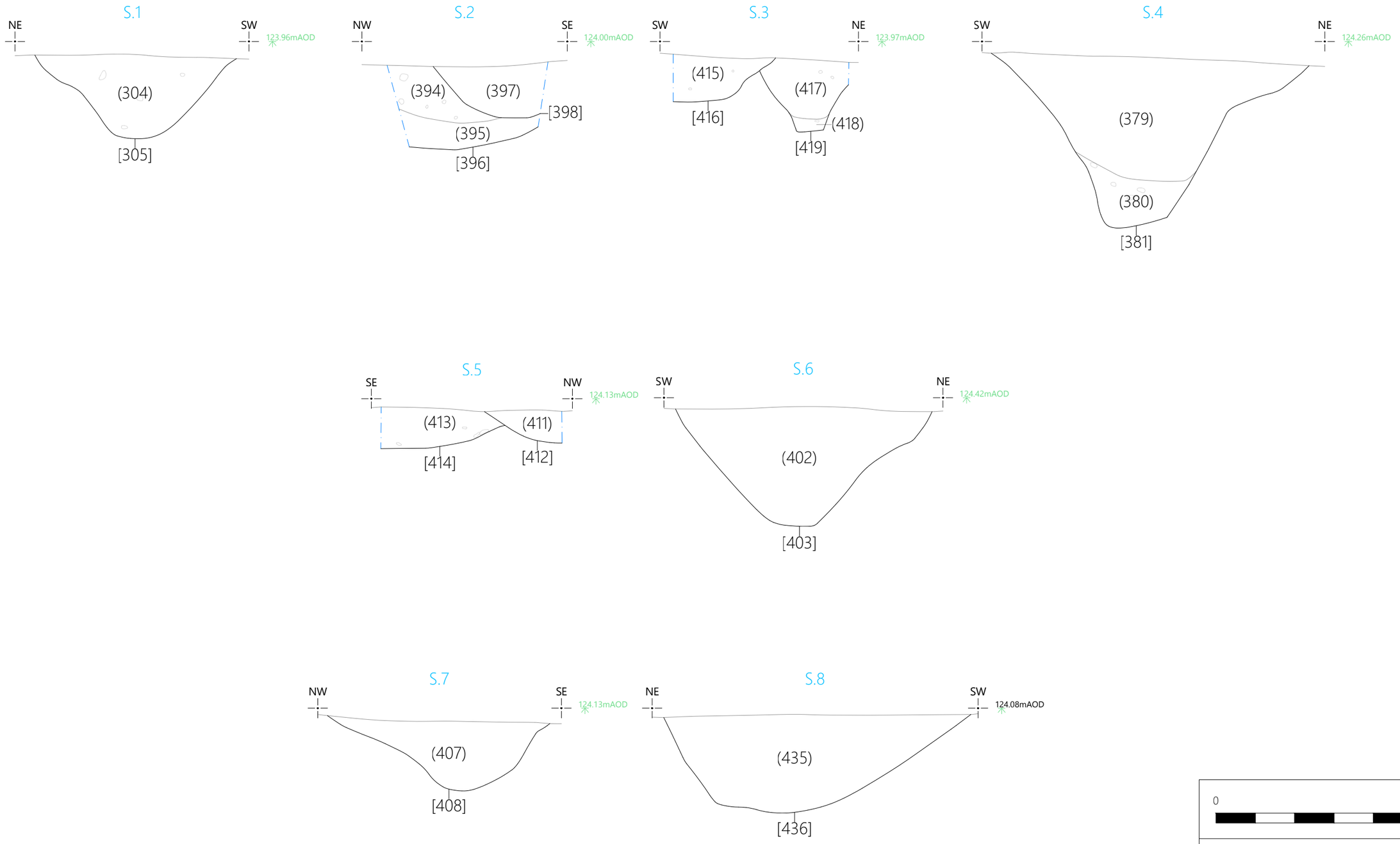


Figure 6
Phase 1
Feature Sections
Scale: 1:20 @ A3

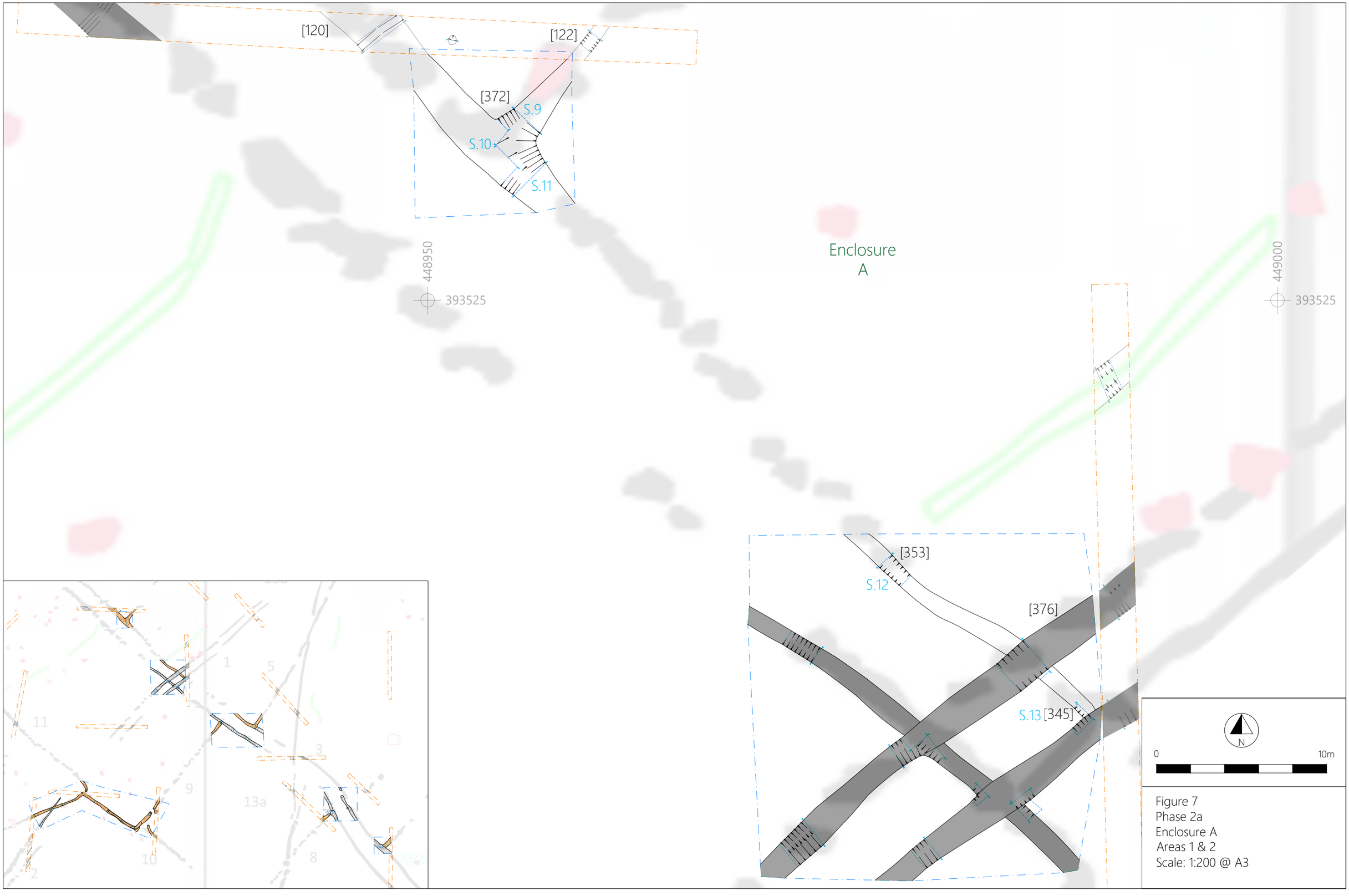


Figure 7
Phase 2a
Enclosure A
Areas 1 & 2
Scale: 1:200 @ A3

Enclosure
A

449000
393475

449050
393475

Enclosure
C

[416]

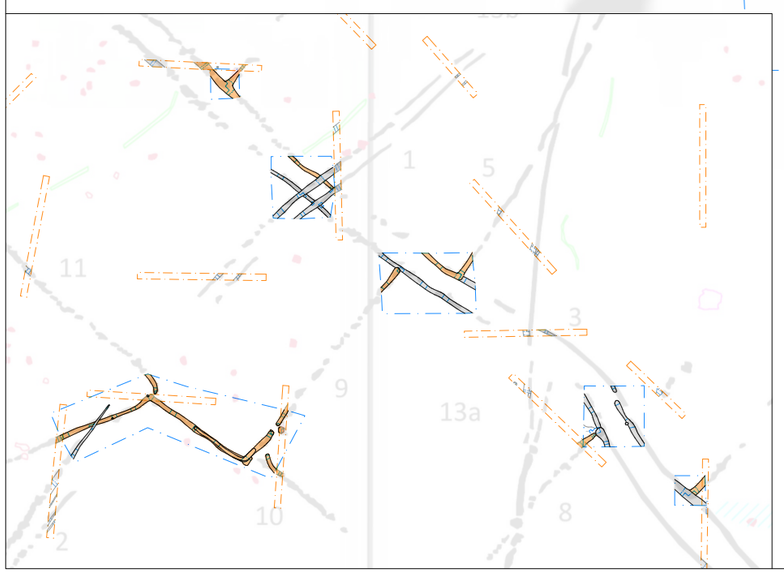
[406]

[412]
S.15

[410]
S.14

S.16

[393]
S.17



N

0 10m

Figure 8
Phase 2a
Enclosure A and C
Area 3
Scale: 1:200 @ A3

449050
393425

Enclosure
D

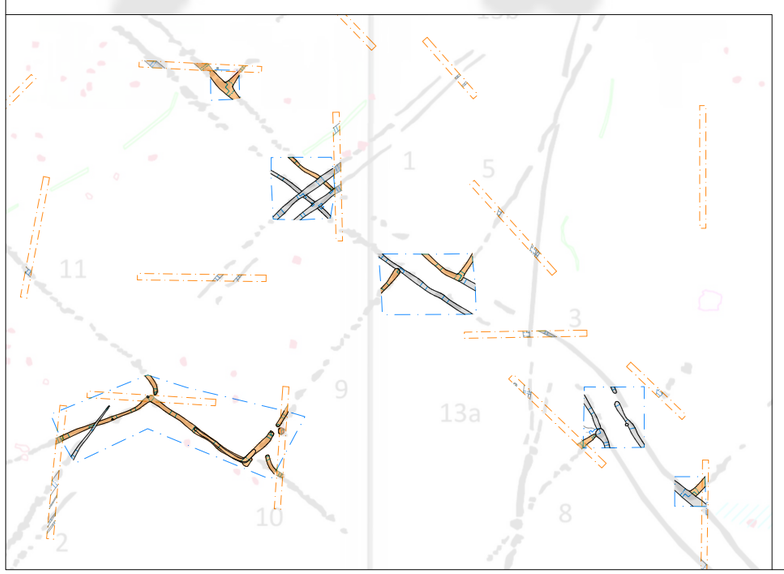
[173]

[433]
S.18

449100
393425

Enclosure
B

S.19
[442]



N
0
10m

Figure 9
Phase 2a
Enclosure B and D
Areas 4 & 5
Scale: 1:200 @ A3

[315]
S.22
S.21
[313]
[180]
448900
393425
448925
393425
448950
393425
Enclosure
C
[335]
[333]
[339]
S.23
[355]
[357]
[195]
[311]
S.20
S.24
[360]
[362]
[364]
[215]
S.29
[343]
[320]
S.28
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S.27
S.30
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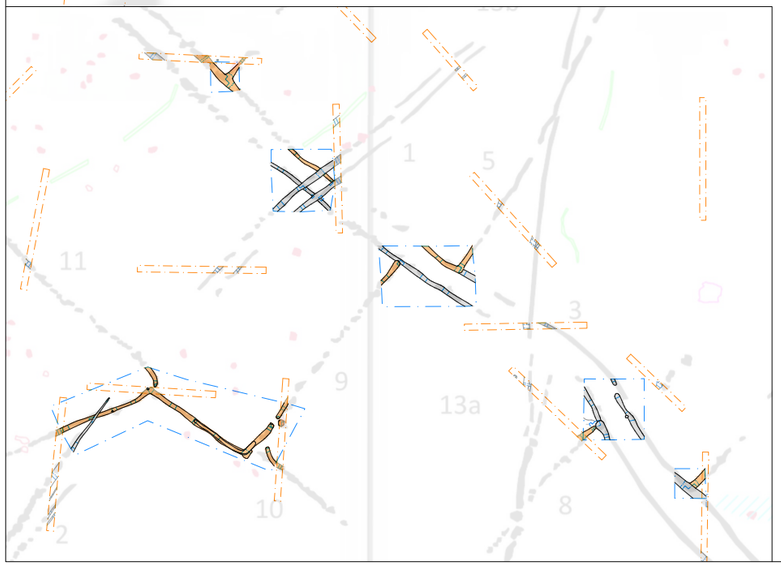
S.25
[368]
S.26
[206]



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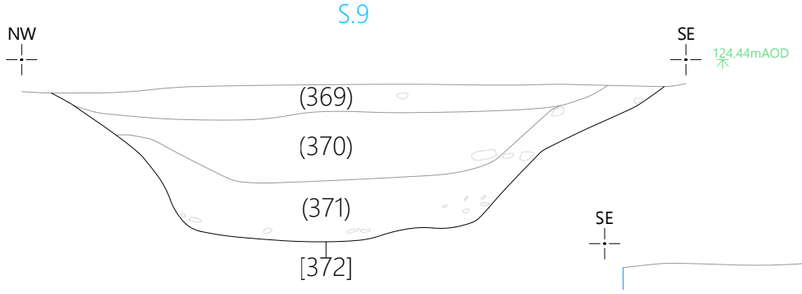
10m

Figure 10
Phase 2a
Enclosure C
Area 6
Scale: 1:200 @ A3

S.9



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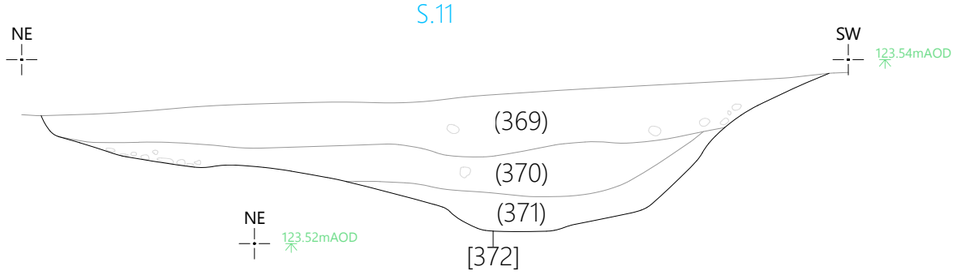

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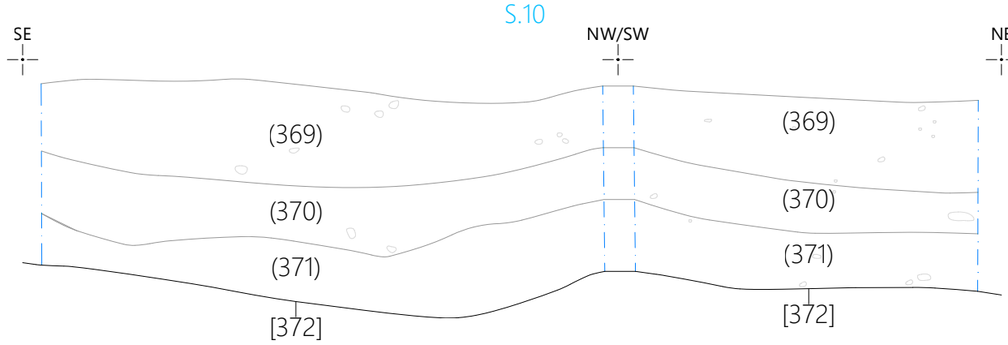

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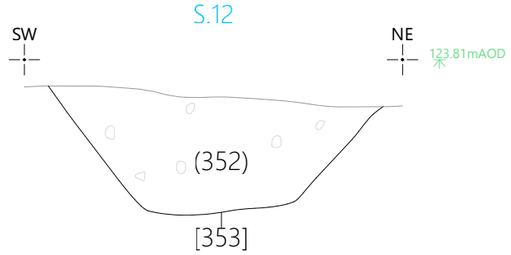

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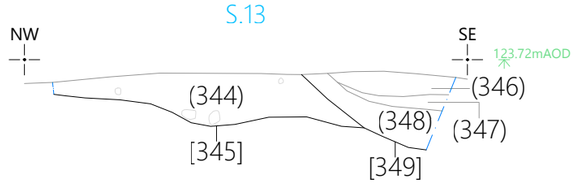

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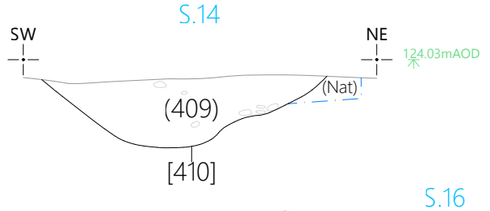

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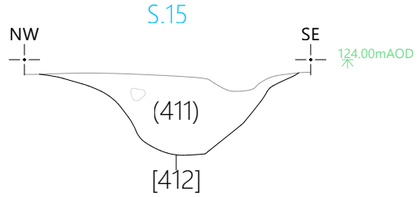

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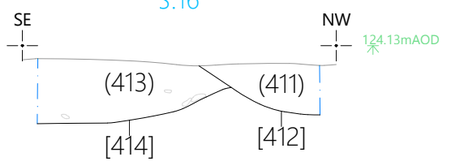

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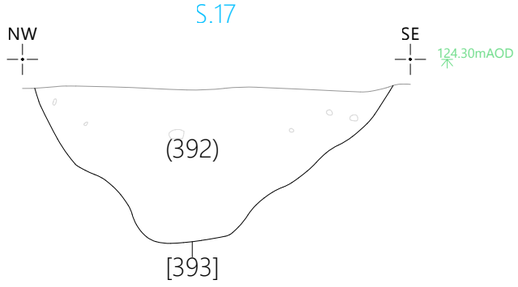

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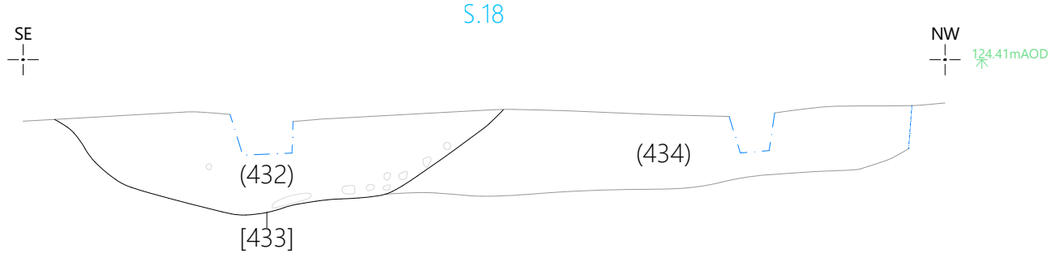

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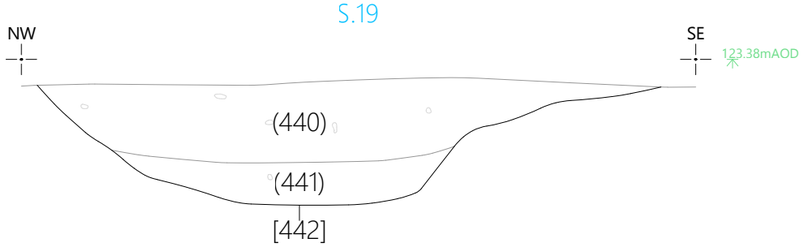

Figure 11
Phase 2a
Feature Sections
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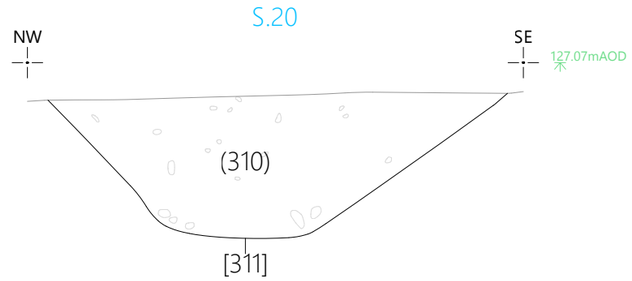
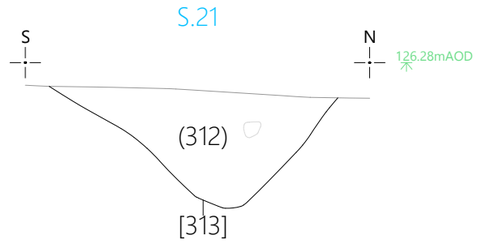
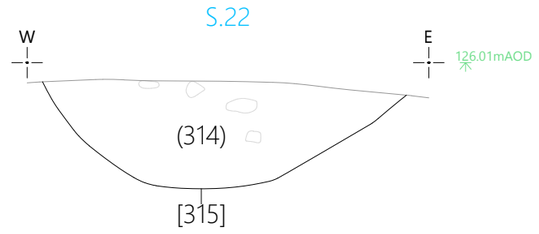
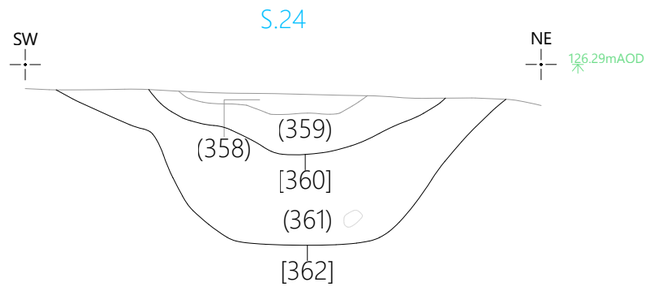
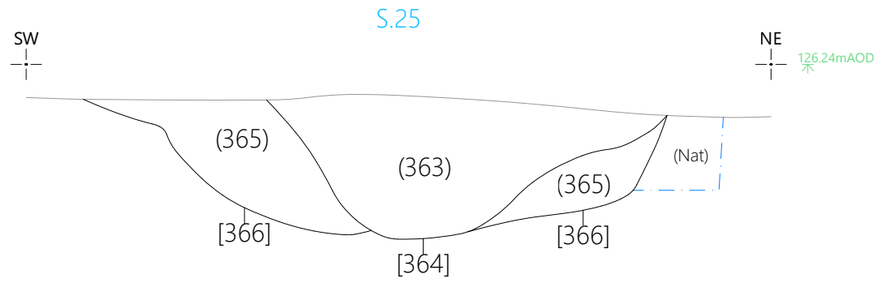
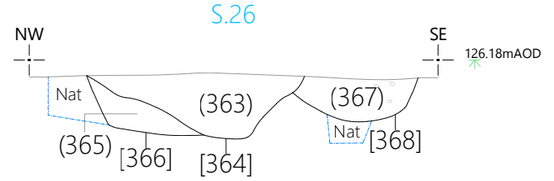


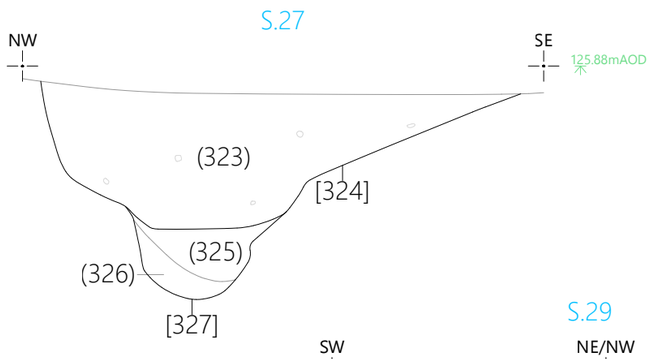


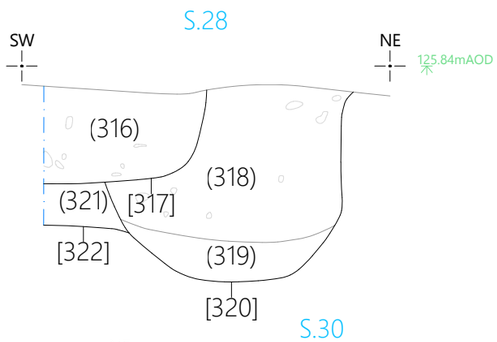


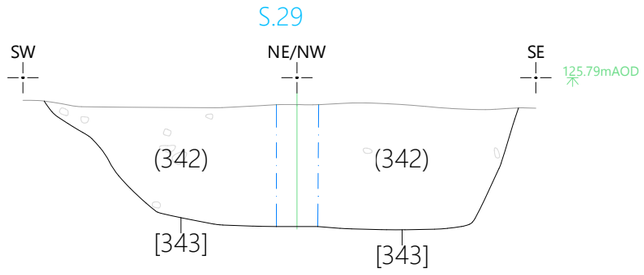












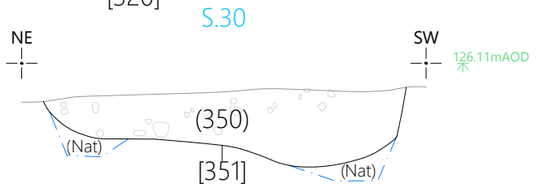


Figure 12
Phase 2a
Feature Sections
Scale: 1:20 @ A3

449050
393425

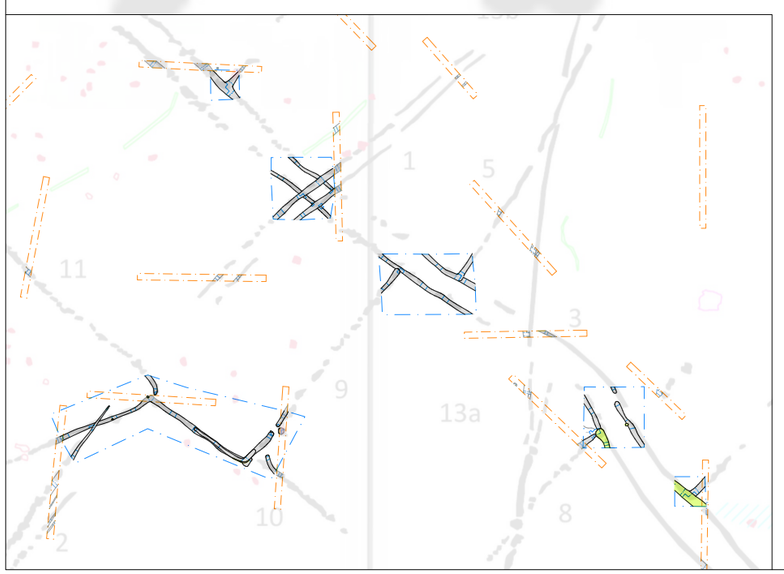
449100
393425

S.31
[431]

[421]

S.32
[426]

Droveway
Ditches



S.33
[439]

S.34

N

0 10m

Figure 13
Phase 2b
Modified Droveway Ditches
Scale: 1:200 @ A3

[182]

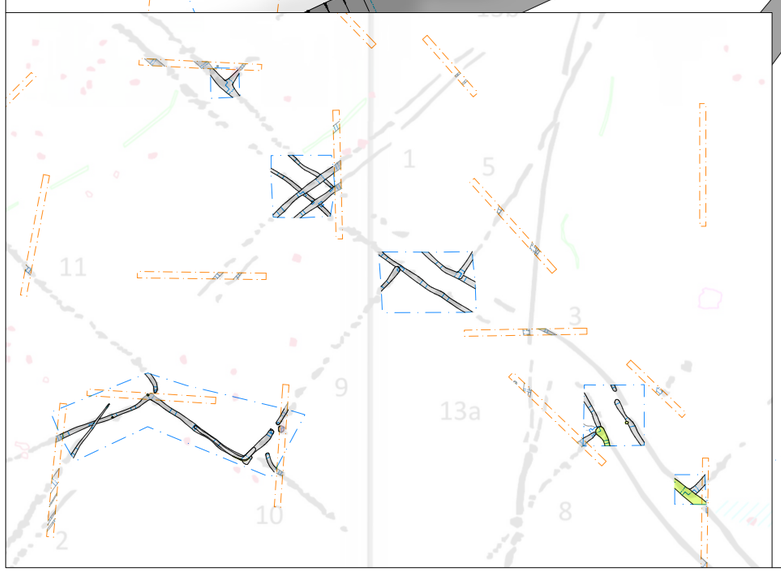
448900

393425

[331]
S.35

448925

393425

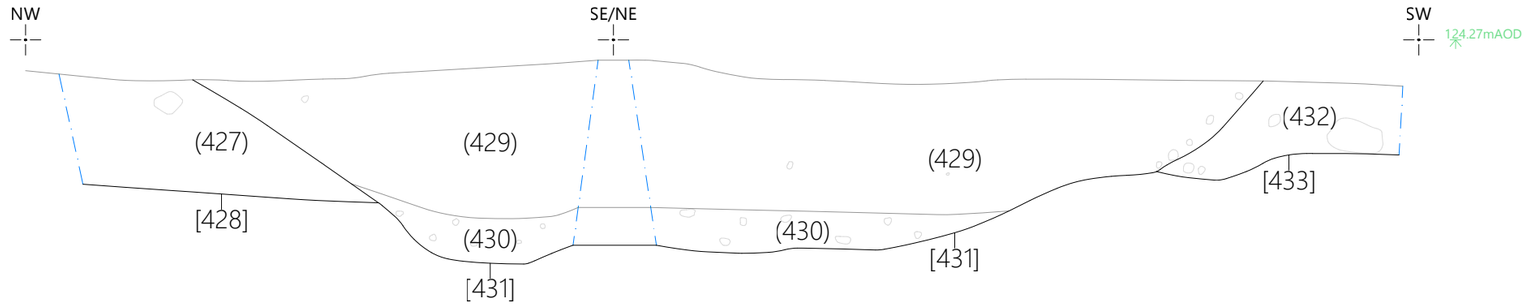


N

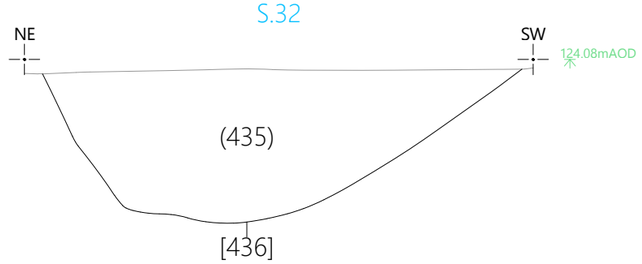
0 5m

Figure 14
Phase 2b
Pit [331]
Area 6
Scale: 1:100 @ A3

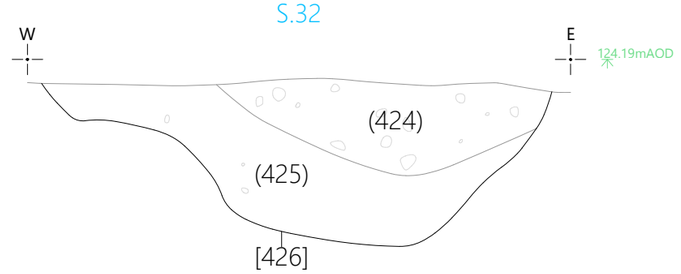
S.31



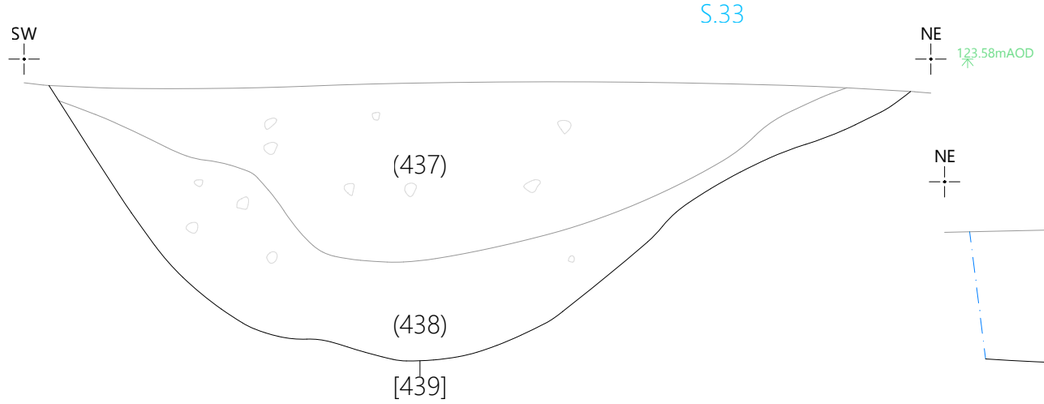
S.32



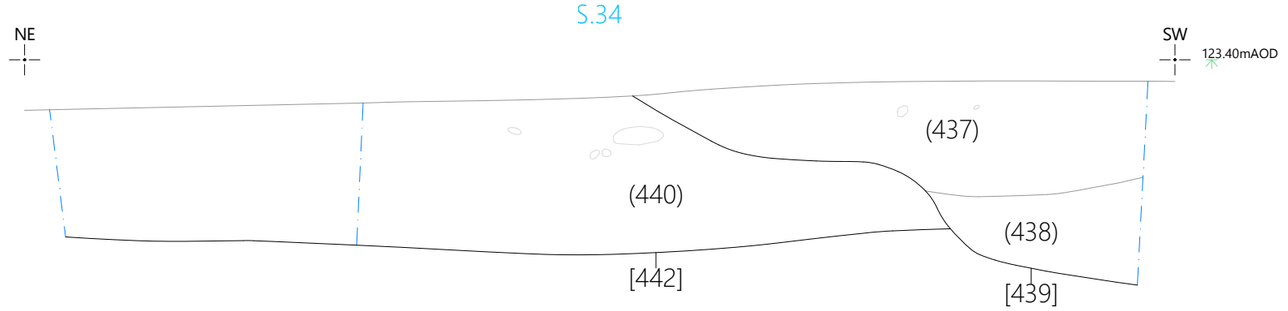
S.32



S.33



S.34



S.35

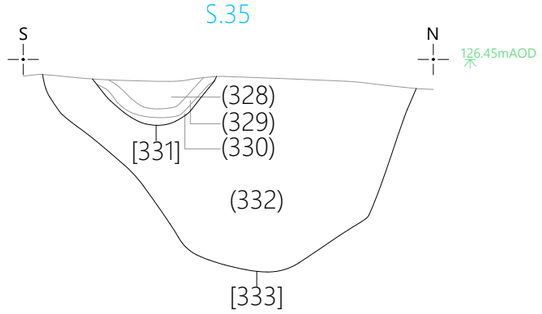


Figure 15
Phase 2b
Feature Sections
Scale: 1:20 @ A3

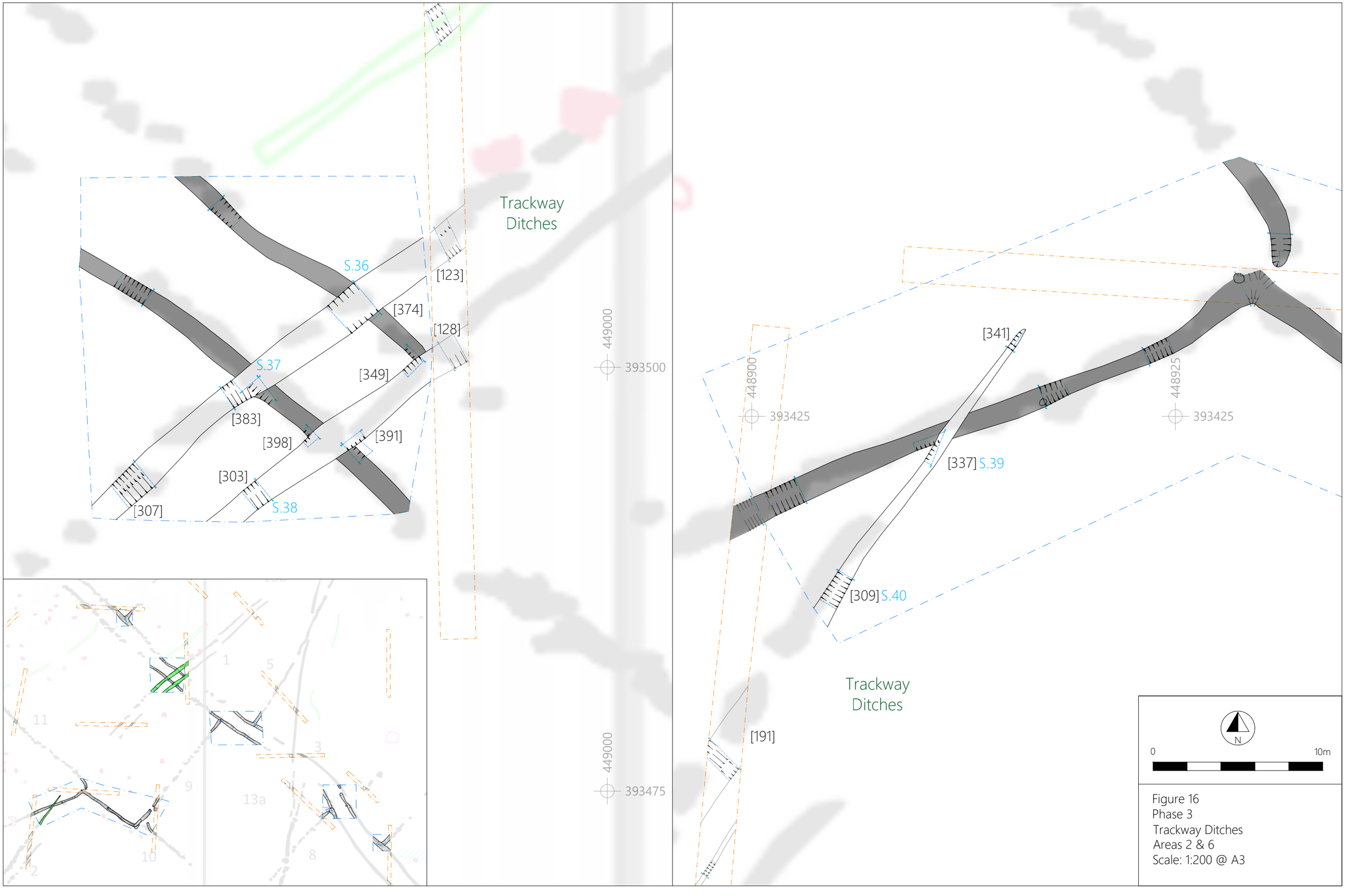


Figure 16
Phase 3
Trackway Ditches
Areas 2 & 6
Scale: 1:200 @ A3

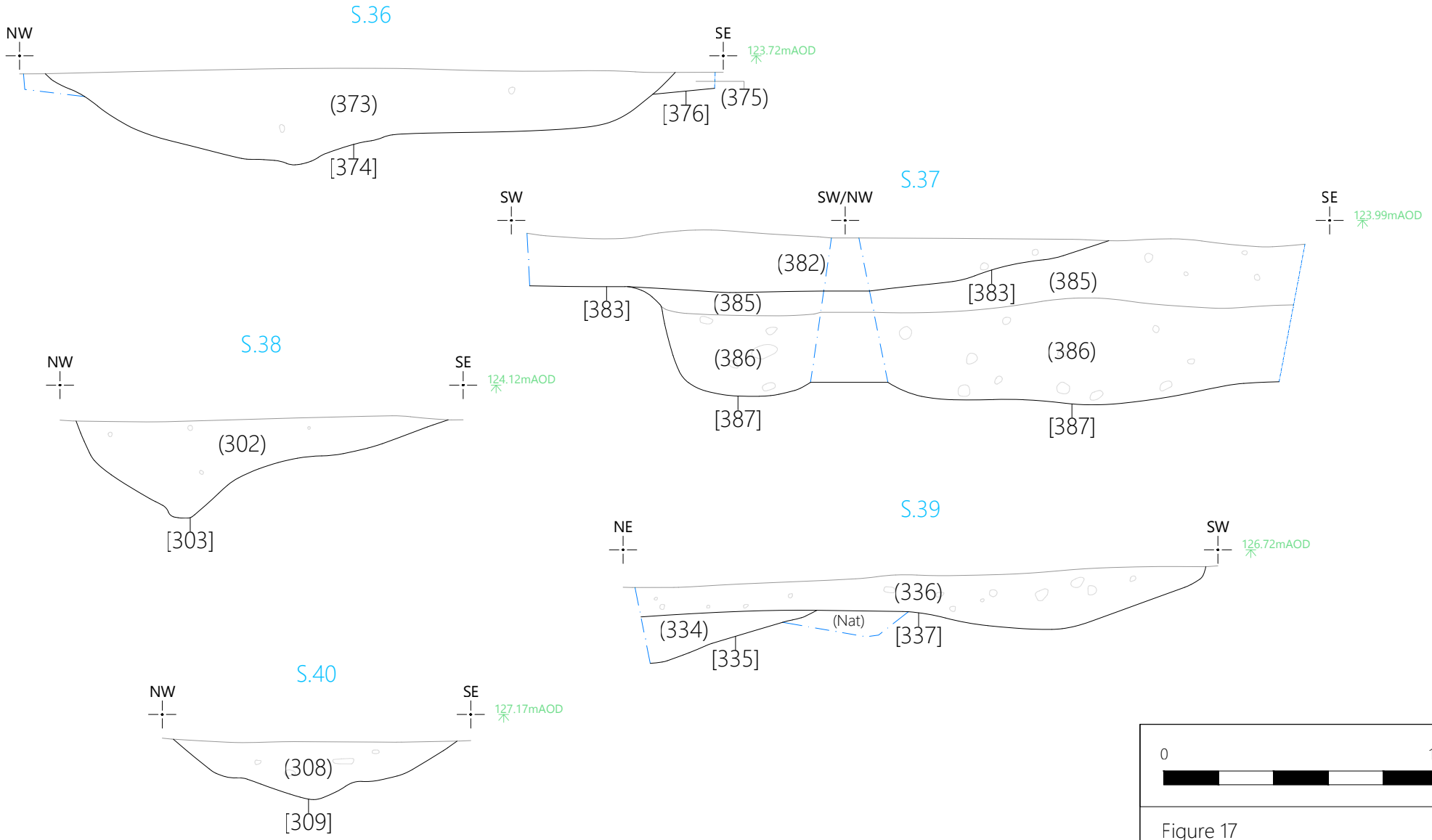


Figure 17
Phase 3
Feature Sections
Scale: 1:20 @ A4

Plate 1: General View of Site, facing North.

Plate 2: General View of Site, facing North.

Plate 3: General View of Site, facing West.

Plate 4: General View of Site, facing East.

Plate 5: General View of Site, facing North-west.

Plate 6: General View of Site, facing North.

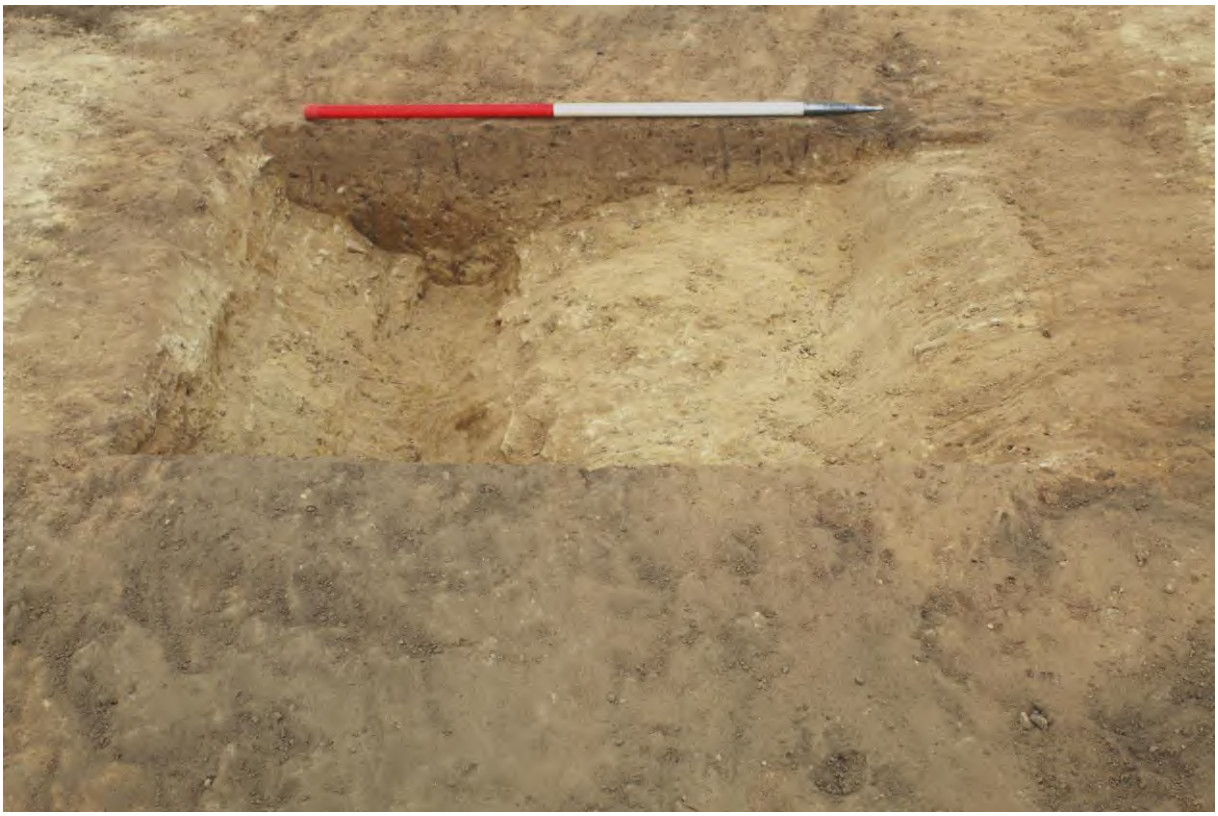


Plate 7: South-west Facing Section of Ditch [303], facing North-east.

Plate 8: South-west Facing Section of Ditch [396] and [398] Relationship, facing North-east.

Plate 9: South-west Facing Section of Ditch [307], facing North-east.

Plate 10: North-west Facing Section of Ditch [305], facing South-east.

Plate 11: North-east Facing Section of Ditch [389] and [391] Relationship, facing South-west.

Plate 12: South-west Facing Section of Ditch [416] and [419] Relationship, facing North-east.

Plate 13: South-east Facing Section of Ditch [381], facing North-west.

Plate 14: South-east Facing Section of Ditch [403], facing North-west.

Plate 15: West Facing Section of Ditch [428] and [431] Relationship, facing East.

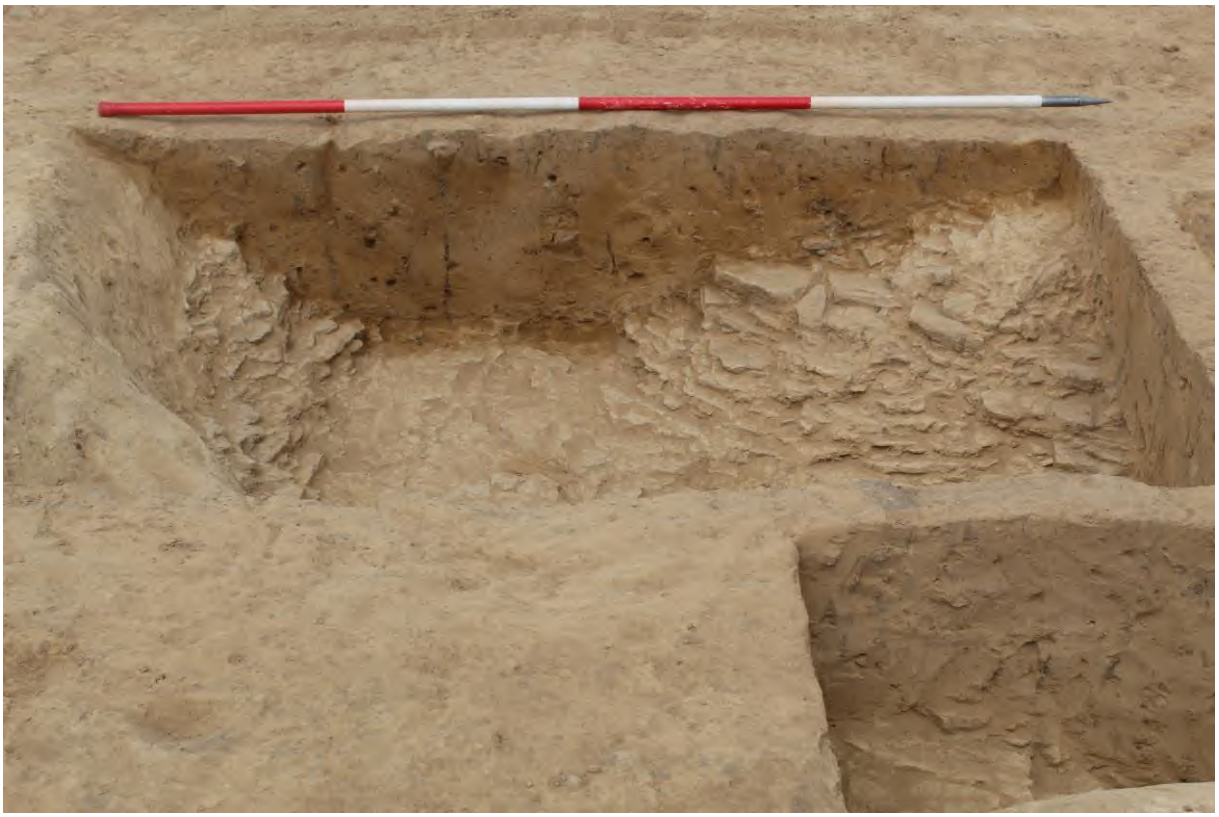


Plate 16: South-east Facing Section of Ditch [410], facing North-west.

Plate 17: North-east Facing Section of Ditch [412] and [414], facing South-west.

Plate 18: Plan of Ditch [410] and [412] , facing North-east.

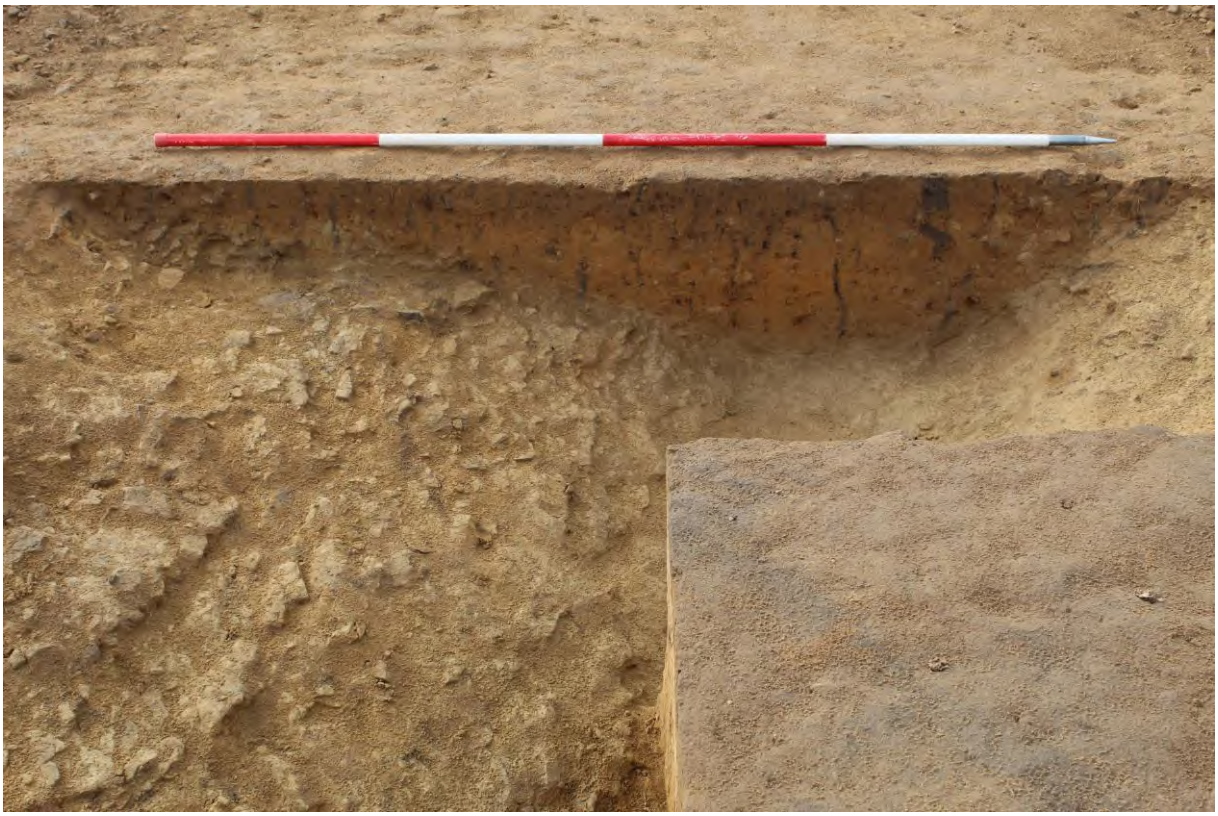


Plate 19: North-west Facing Section of Ditch [372], facing South-east.

Plate 20: South-west Facing Section of Ditch [372], facing North-east.

Plate 21: North-east Facing Section of Ditch [372], facing South-west.

Plate 22: North Facing Section of Ditch [408], facing South.

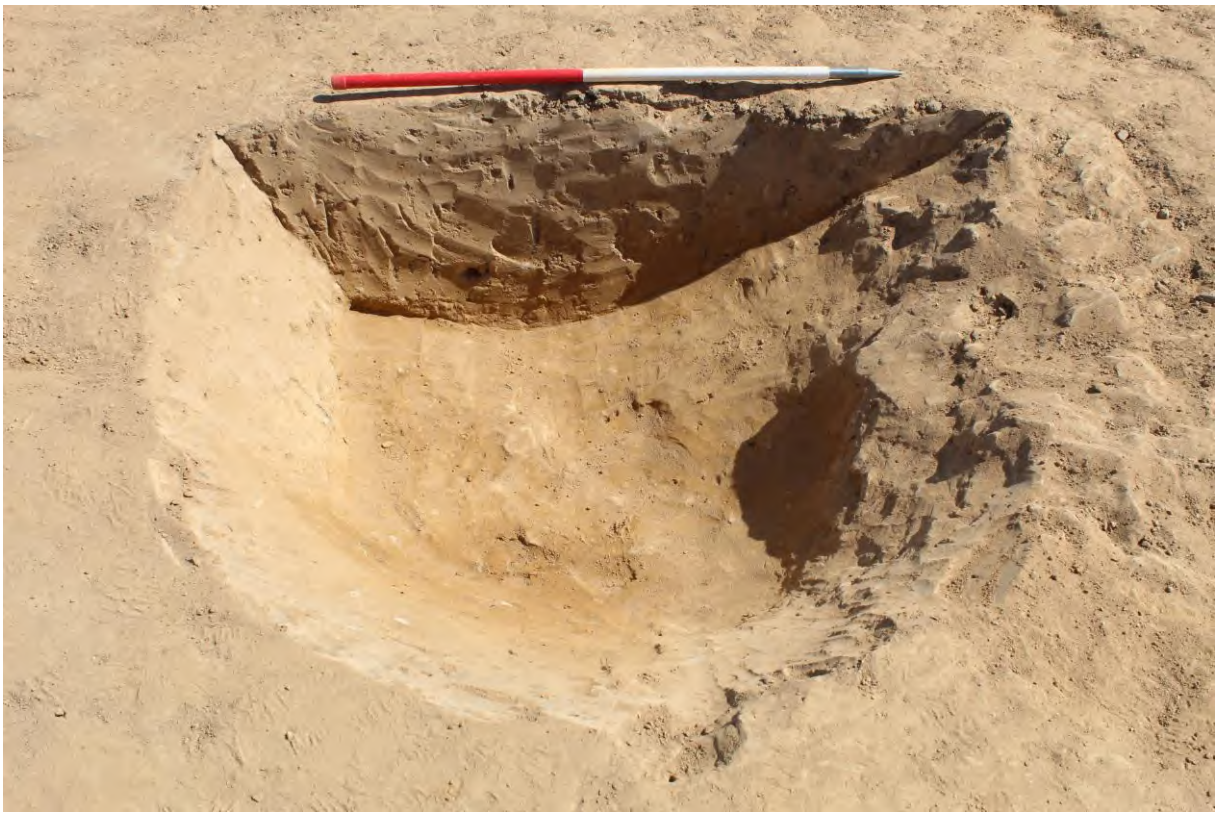


Plate 23: North-east Facing Section of Ditch [436], facing South-west.

Plate 24: South-east Facing Section of Ditch [439], facing North-west.

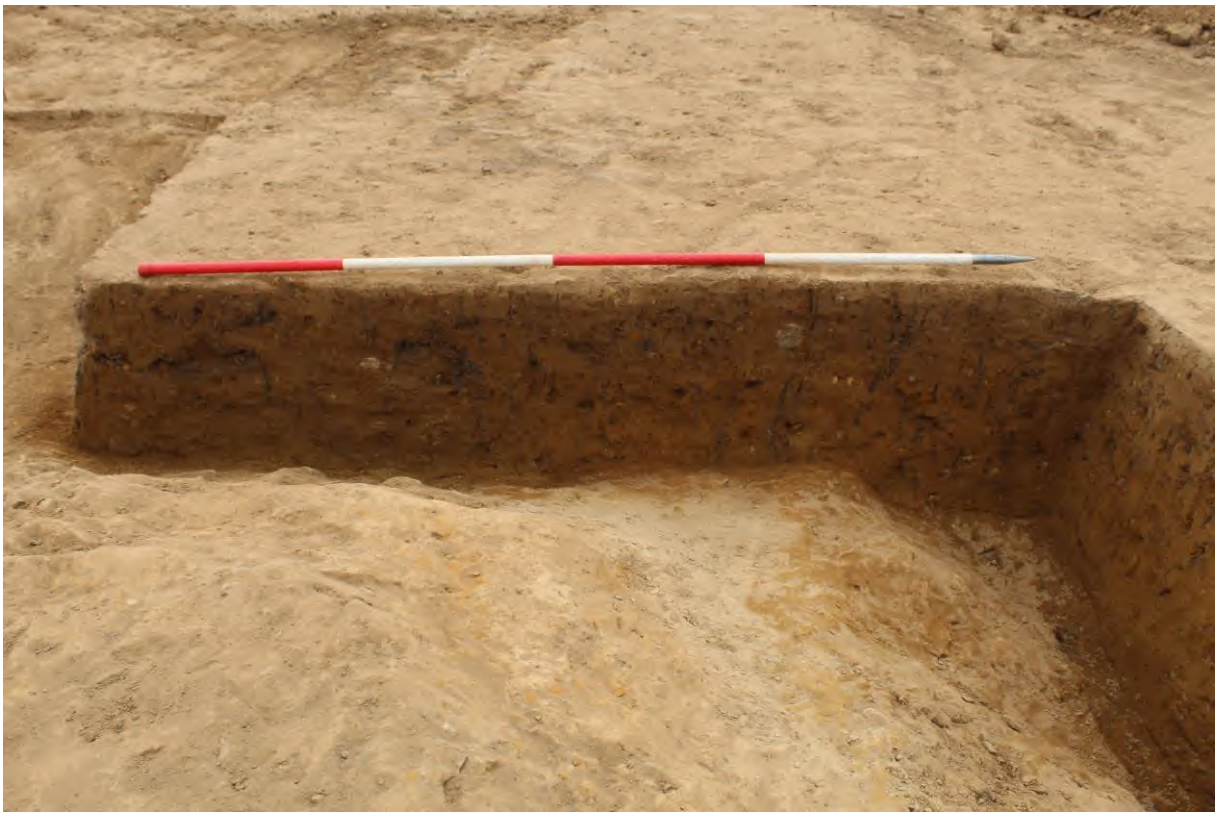


Plate 25: North-west Facing Section of Ditch [439] and [442] Relationship, facing South-east.

Plate 26: South-west Facing Section of Ditch [442], facing North-east.

Plate 27: North-east Facing Section of Ditch [416], facing South-west.

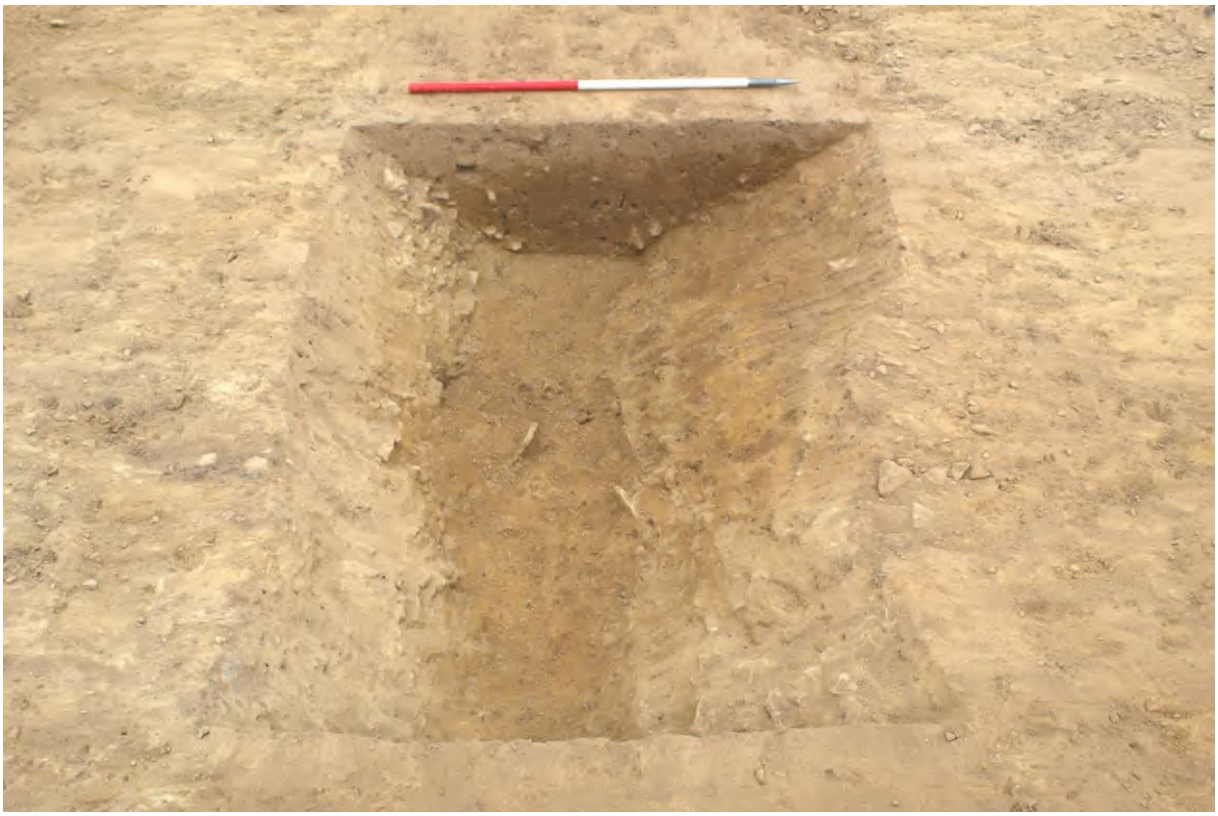


Plate 28: West Facing Section of Ditch [311], facing East.

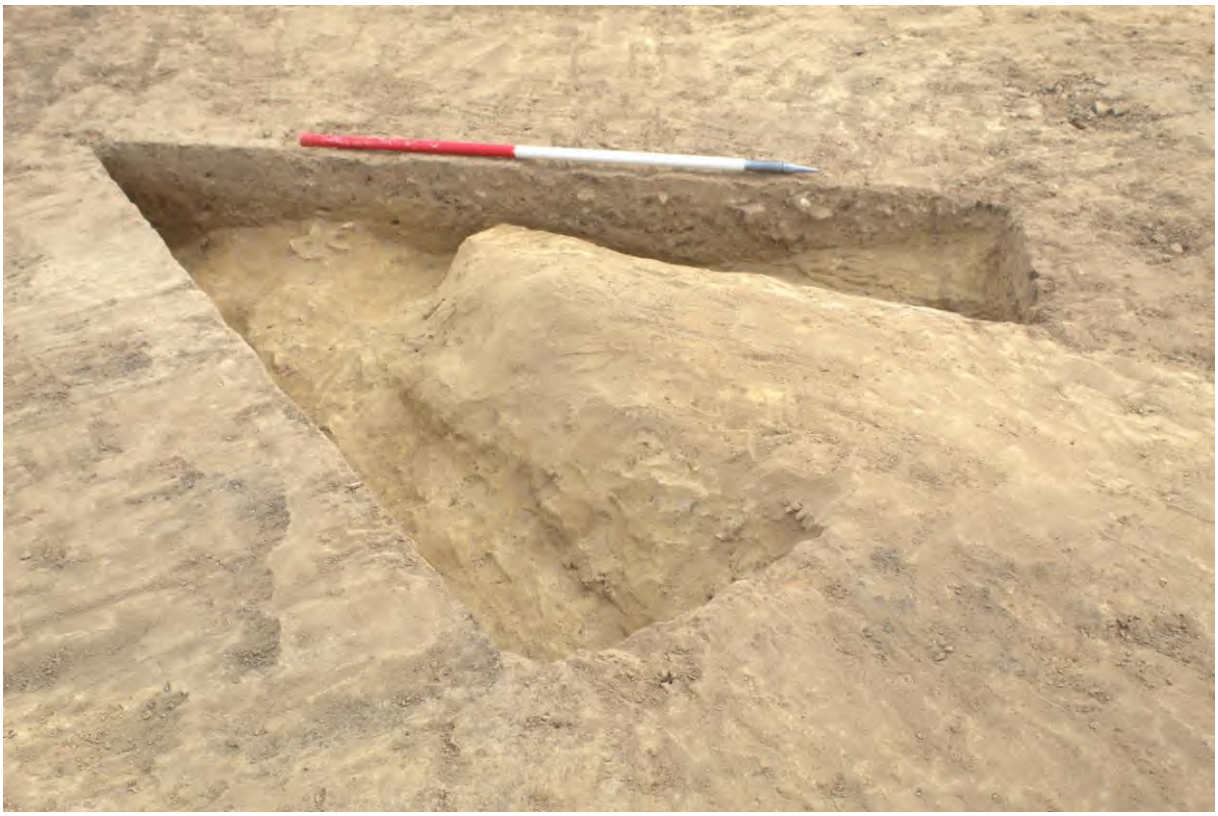


Plate 29:North-west Facing Section of Ditch [335] and [337] Relationship, facing South-east.

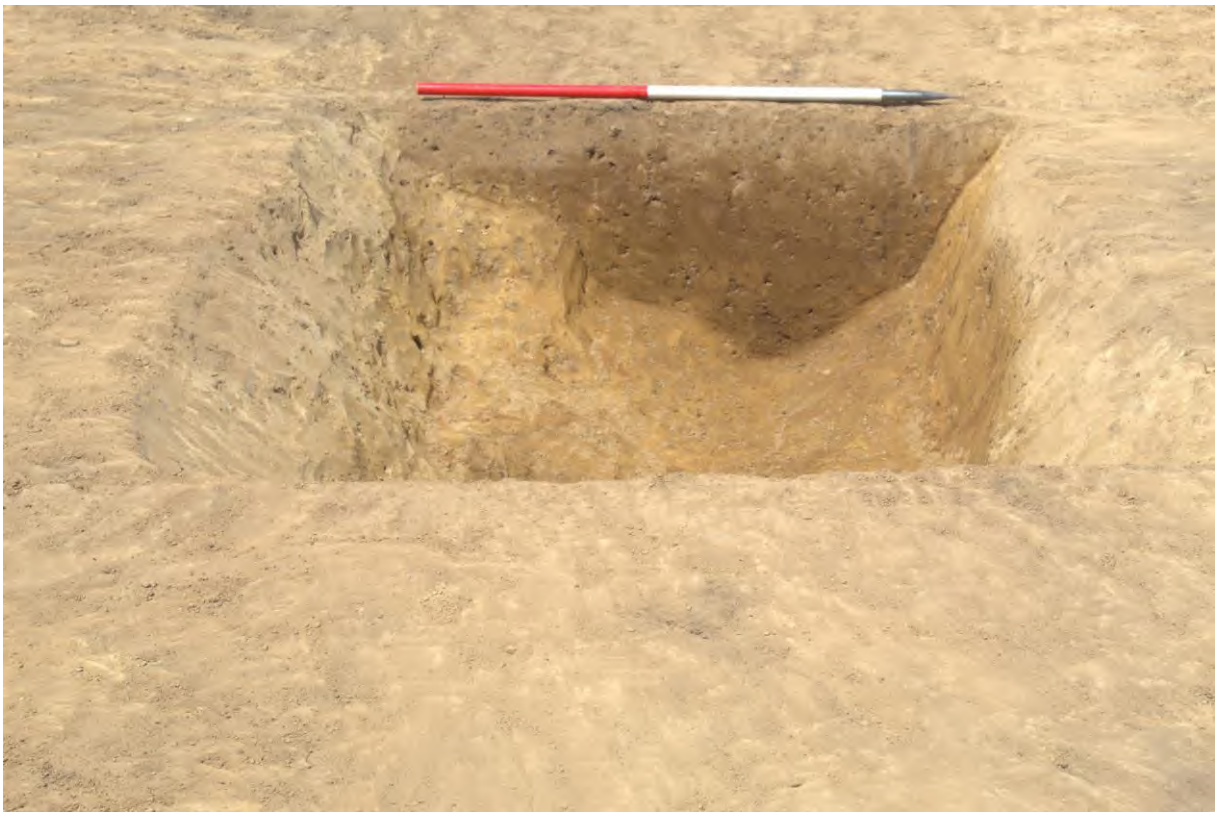


Plate 30: South-east Facing Section of Ditch [339], facing North-west.

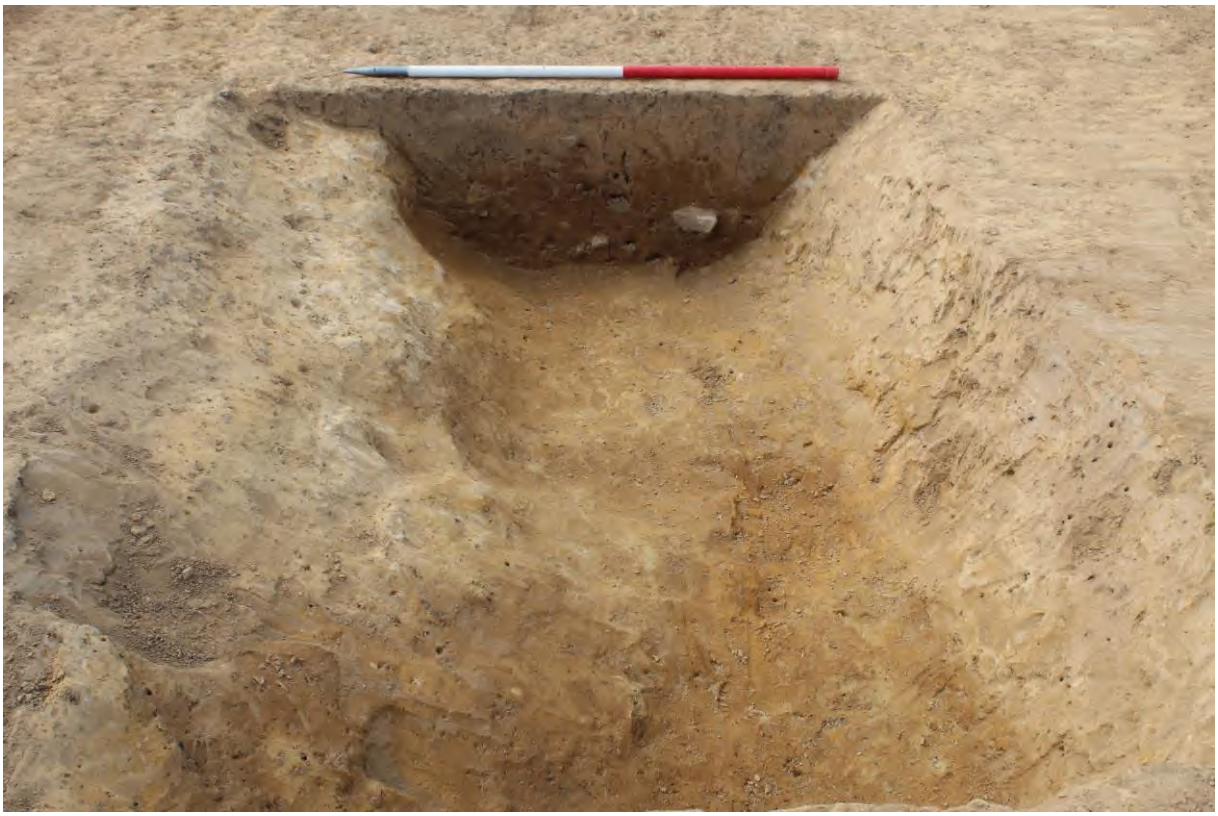


Plate 31: South-east Facing Section of Ditch [362], facing North-west.

Plate 32: South-east Facing Section of Ditch [324] and Pit [327] Relationship, facing North-west.

Plate 33: South-east Facing Section of Ditch [317] and Pits [320] and [322], facing North-west.

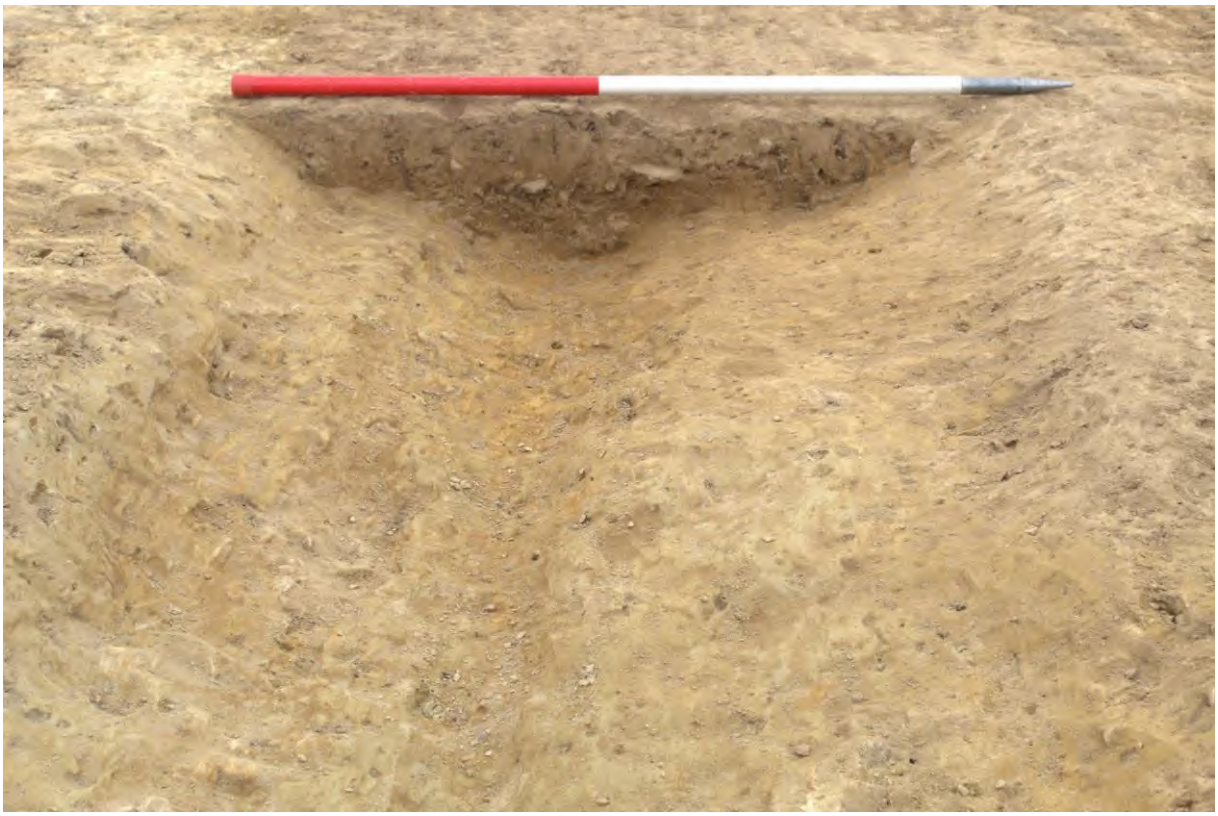


Plate 34: South-west Facing Section of Ditch [309], facing North-east.

Plate 35: West Facing Section of Ditch [315], facing East.

APPENDIX 1

Context Listing

Context no.	Type	Description	Interpretation
300	Layer	Deposit of topsoil. Colour: mid brownish grey. Composition: sandy silt. Compaction: dry, friable. Inclusions: none. Reliability: good.	Topsoil
301	Layer	Deposit of natural. Colour: light orangey yellow. Composition: fine sand. Compaction: dry, firm. Inclusions: frequent sub-angular platy sandstone, evenly distributed. Reliability: good.	Site Natural
302	Fill	Fill of ditch. Colour: mid orangey brown. Composition: medium sand. Compaction: very dry, firm. Inclusions: 1) rare small sub-rounded elongate charcoal, evenly distributed 2) occasional medium sub-rounded platy sandstone pebbles, evenly distributed. Reliability: good.	Single fill of NE-SW trackway ditch, naturally accumulated fill of an abandoned ditch. uncertain date.
303	Cut	Cut of NE-SW ditch. Shape in plan: regular, linear. Break at top: 1) NW: sharp 2) SE: gradual. Sides: 1) NW: steep, concave 2) SE: shallow, convex. Break at base: sharp. Base: rounded.	Cut of a NE-SW trackway ditch, SE of probable contemporary parallel trackway ditch
304	Fill	Fill of ditch. Colour: mid orangey brown. Composition: fine sand. Compaction: very dry, firm. Inclusions: occasional small sub-angular platy sandstone, evenly distributed. Reliability: good.	Single fill of trackway ditch. Natural accumulation of fill after feature was abandoned.
305	Cut	Cut of NW-SE ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: steep, straight. Break at base: 1) NE: sharp 2) SW: gradual. Base: rounded, sloping towards SE.	Cut of trackway ditch.
306	Fill	Fill of ditch. Colour: mid brownish yellow. Composition: fine sand. Compaction: dry, firm. Inclusions: 1) moderate medium sub-rounded platy sandstone, evenly distributed 2) rare flecks of sub-rounded spheroidal charcoal, disturbance, concentrated towards top of feature. Reliability: fair.	Single fill of trackway, likely backfilledthrough natural accumulation as evidenced by sterile nature of fill.
307	Cut	Cut of NE-SW ditch. Shape in plan: regular, linear. Break at top: gradual. Sides: 1) NW: stepped 2) SE: stepped, concave. Break at base: imperceptible. Base: flat.	NE-SW Ditch likely a trackway as it runs parallel to [303]. Seemingly later than [305] as it cuts through it along the surface.

Context no.	Type	Description	Interpretation
308	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine silty sand. Compaction: very dry, firm. Inclusions: occasional small sub-angular platy sandstone, evenly distributed. Reliability: good.	Single fill of NW ditch of possible trackway. Natural accumulation of fill after feature was abandoned.
309	Cut	Cut of NE-SW ditch. Shape in plan: regular, linear. Break at top: 1) NW: sharp 2) SE: gradual. Sides: 1) NE: stepped, straight 2) SE: stepped, concave. Break at base: gradual. Base: rounded.	Cut of possible trackway ditch. NW of linear running parallel see in geophysical survey but outside of striped area.
310	Fill	Fill of ditch. Colour: light yellowish brown. Composition: sandy silt. Compaction: dry, firm. Inclusions: 1) occasional small rounded spheroidal sandstone, evenly distributed 2) occasional flecks of charcoal, evenly distributed. Reliability: good.	Single fill of ditch [311] part of enclosure, which likely was allowed to naturally accumulate after the enclosure fell out of use.
311	Cut	Cut of E-W ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: steep, straight. Break at base: 1) N: gradual 2) S: sharp. Base: flat, sloping towards S.	Cut of ditch enclosure, connected with other ditches in area as seen from geophys.
312	Fill	Fill of ditch. Colour: light yellowish brown. Composition: fine sand. Compaction: dry, malleable. Inclusions: occasional medium rounded spheroidal sandstone, concentrated towards surface, north of centre. Reliability: good.	Single fill of enclosure ditch [113]. Natural accumulation of fill after feature was abandoned.
313	Cut	Cut of E-W ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: steep, straight. Break at base: gradual. Base: rounded.	Cut of enclosure ditch.
314	Fill	Fill of ditch. Colour: light yellowish brown. Composition: fine sand. Compaction: dry, firm. Inclusions: occasional large sub-rounded spheroidal sandstone, concentrated towards centre. Reliability: good.	Single fill of ditch terminus [315]. Natural accumulation of fill after feature was abandoned.
315	Cut	Cut of N-S ditch. Break at top: sharp. Sides: steep, straight. Break at base: gradual. Base: flat.	Cut of enclouser ditch terminus.
316	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine silty sand. Compaction: dry, firm. Inclusions: 1) frequent flecks of sub-rounded spheroidal charcoal, evenly distributed 2) occasional medium sub-angular spheroidal sandstone, evenly distributed. Reliability: good.	Single fill of ditch terminus, same as (323)

Context no.	Type	Description	Interpretation
317	Cut	Cut of NE-SW ditch. Break at top: sharp. Sides: steep, straight. Break at base: gradual. Base: flat.	Cut of latest phase of SW enclosure ditch terminus. Forms the opening of the enclosure, it has two pits pre-dating it as it cuts them in both side s.115 and s.118.
318	Fill	Fill of pit. Colour: light greyish brown. Composition: sandy silt. Compaction: dry, firm. Inclusions: 1) rare flecks of sub-rounded spheroidal charcoal, evenly distributed 2) rare medium sub-rounded spheroidal sandstone, evenly distributed. Reliability: good.	Secondary fill of pit, likely backfilled through natural accumulation as there is no material evidence to the contrary. Use unknown.
319	Fill	Fill of pit. Colour: light yellowish brown. Composition: fine silty sand. Compaction: dry, firm. Inclusions: none. Reliability: good.	Primary fill of pit, backfilled through natural accumulation I.e. wind swept as suggested by its appearance.
320	Cut	Cut of NE-SW pit. Shape in plan: regular, curvi-oval. Break at top: sharp. Sides: vertical, concave, undercut. Break at base: imperceptible. Base: rounded.	Cut of large pit. Earlier than ditch [317] but, later than pit [322]. Use unknown.
321	Fill	Fill of pit. Colour: very light yellowish brown. Composition: fine silty sand. Compaction: dry, friable. Inclusions: rare flecks of sub-rounded spheroidal charcoal, evenly distributed. Reliability: fair.	Single fill of pit, backfilled through natural accumulation/slumped from the natural.
322	Cut	Cut of NE-SW pit. Shape in plan: regular, oval. Break at top: none. Sides: steep, concave. Break at base: gradual. Base: flat.	Cut of pit, part of ledge of feature as seen in plan 117. Earlier than pit [320] and ditch [317].
323	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine silty sand. Compaction: dry, firm. Inclusions: 1) frequent flecks of sub-rounded spheroidal charcoal, evenly distributed 2) occasional medium sub-angular spheroidal sandstone, evenly distributed. Reliability: good.	Single fill of ditch, part of enclosure boundary. Backfilled through aural accumulation and possibly some human action, as suggested by a higher concentration of charcoal flecks but no finds. The fill probably formed when the feature was left open after being abandoned.

Context no.	Type	Description	Interpretation
324	Cut	Cut of NE-SW ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: 1) NW: stepped, concave 2) SE: stepped, straight. Break at base: sharp. Base: rounded.	Cut of ditch, part of large enclosure. Ends shortly into a terminus which lines up opposite with another terminus, leaving an opening to the enclosure in-between. Likely maintained up until its abandonment. There is no evidence so far of what type of agriculture was used. Later than pit [327].
325	Fill	Fill of pit. Colour: very light yellowish brown. Composition: fine silty sand. Compaction: dry, friable. Inclusions: rare flecks of sub-rounded spheroidal charcoal, evenly distributed. Reliability: fair.	Secondary fill of pit, backfilled through slumping as evidenced by its natural appearance. Likely left open and allowed to backfill naturally.
326	Fill	Fill of pit. Colour: light greyish brown. Composition: sandy silt. Compaction: dry, firm. Inclusions: none. Reliability: fair.	Primary fill of pit, likely slumped in from the topsoil of that period as suggested by its appearance in section. Likely occurred sÃ²n after being opened.
327	Cut	Cut of NE-SW pit. Shape in plan: regular, curvi-oval. Break at top: none. Sides: stepped, concave. Break at base: imperceptible. Base: rounded.	Cut of pit, use unknown however, earlier than ditch terminus.
328	Fill	Fill of pit. Colour: mid brownish orange. Composition: coarse sand. Compaction: very dry, cemented. Inclusions: none. Reliability: good.	Third fill of possible natural feature, could be the result of animal burrowing or stone degradation. Very uniform deposit and shape. Could also be the last fill of a small pit. Unknown use or period.
329	Fill	Fill of pit. Colour: light greyish blue. Composition: fine sand. Compaction: very dry, firm. Inclusions: none. Reliability: good.	Second fill of possible pit, containing naturally accumulated fill. It is also possibly a natural feature. Unknown period or use.
330	Lens	Lens of pit. Colour: bright orange. Composition: fine sand. Compaction: very dry, firm. Inclusions: none. Reliability: good.	Earliest fill of possible small pit, which encompasses the entire feature uniformly. Possibly naturally accumulated, if a deliberate feature.
331	Cut	Cut of N-S pit. Shape in plan: regular, circular. Break at top: sharp. Sides: shallow, concave. Break at base: gradual. Base: rounded.	Possible small pit, containing three naturally accumulated fills with no evidence of human activity. It is more probable that the feature is natural, caused by burrowing or degraded stone. Cuts w-e enclosure ditch [333]. No function or period identified

Context no.	Type	Description	Interpretation
332	Fill	Fill of ditch. Colour: mid yellowish brown. Composition: fine sand. Compaction: very dry, firm. Inclusions: none. Reliability: good.	Naturally accumulated fill of enclosure ditch, no finds therefore no period of use
333	Cut	Cut of E-W ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: 1) S: steep, convex 2) N: vertical, straight. Break at base: sharp. Base: uneven.	Cut of w-e probable enclosure ditch, containing naturally accumulated fill after abandonment. Possibly cut by possible small pit [331] although is more likely a natural feature.
334	Fill	Fill of ditch. Colour: mid brownish orange. Composition: fine sand. Compaction: very dry, firm. Inclusions: rare small sub-rounded spheroidal sandstone, evenly distributed. Reliability: good.	Naturally accumulated fill containing one sherd of fragmented Roman pottery
335	Cut	Cut of E-W ditch. Shape in plan: regular, linear. Break at top: gradual. Sides: shallow, concave. Break at base: imperceptible. Base: uneven, sloping towards N.	Cut of w-e enclosure ditch, likely dating to the Romano British period, or later. The ditch is later than ne-sw possible trackway ditch [337], both likely abandoned and filled naturally.
336	Fill	Fill of ditch. Colour: light yellowish brown. Composition: medium sand. Compaction: very dry, firm. Inclusions: none. Reliability: fair.	Naturally accumulated single fill of possible trackway ditch. Possibly Romano British or earlier.
337	Cut	Cut of NE-SW ditch. Shape in plan: regular, linear. Break at top: gradual. Sides: shallow, concave. Break at base: gradual. Base: flat.	Cut of possible trackway ditch which was abandoned, and later partially truncated by w-e possible Romano-British enclosure ditch [335]
338	Fill	Fill of ditch. Colour: mid yellowish brown. Composition: fine sand. Compaction: dry, firm. Inclusions: none. Reliability: good.	Single fill of nw-se enclosure ditch, formed by natural accumulation post ditch abandonment. Unknown exact function, or period of use.
339	Cut	Cut of NW-SE ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: 1) NE: steep, straight 2) SW: stepped, convex. Break at base: gradual. Base: uneven.	Cut of nw-se enclosure ditch. No evidence suggesting secondary use, it was filled naturally after abandonment. Later disturbed by burrowing. No finds therefore no date, or exact function,
340	Fill	Fill of ditch. Colour: mid yellowish brown. Composition: fine sand. Compaction: very dry, firm. Inclusions: none. Reliability: good.	Naturally accumulated single fill of possible trackway ditch terminus, no finds therefore no date or function.

Context no.	Type	Description	Interpretation
341	Cut	Cut of E-W ditch. Break at top: gradual. Sides: shallow, straight. Break at base: sharp. Base: rounded.	Cut of a possible ditch trackway terminus. Very shallow, more gully-like in appearance at the terminal end compared to a deeper appearance c.11m south-west [309]. No evidence of secondary use, or deliberate deposition. No finds therefore no date assigned or exact function.
342	Fill	Fill of ditch. Colour: light orangey brown. Composition: sandy silt. Compaction: dry, firm. Inclusions: 1) moderate flecks of sub-rounded spheroidal charcoal, evenly distributed 2) occasional medium sub-angular spheroidal sandstone, evenly distributed. Reliability: fair.	Single fill of enclosure ditch terminus. Backfilled through natural accumulation as evidenced by the lack of materials I.e. finds, even with charcoal present, this has been observed in the natural though some human action may have occurred. Likely left open at point of abandonment in its final event.
343	Cut	Cut of NE-SW ditch. Break at top: sharp. Sides: steep, straight. Break at base: sharp. Base: flat.	Cut of enclosure ditch terminus. NE terminus of enclosure opposite to SW terminus leaving an opening into the enclosure from the SE of the enclosure. No other features found close to this terminus.
344	Fill	Fill of ditch. Colour: light yellowish brown. Composition: fine sand. Compaction: very dry, cemented. Inclusions: rare small rounded spheroidal sandstone pebbles, evenly distributed. Reliability: fair.	Naturally accumulated single fill of NW SE ditch, truncated by possible droveway ditch. Considerably shallow, containing 2 sherds of possible Romano British pottery, indicating a RB date or later.
345	Cut	Cut of NW-SE ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: steep, straight. Break at base: sharp. Base: sloping towards SE.	Cut of NW, SE-NW droveway ditch, which is considerably more shallow and gully-like compared to c.10m further northeast. Partially truncated by possible trackway ditch 349. No evidence of secondary use.
346	Fill	Fill of ditch. Colour: light brown. Composition: fine sand. Compaction: very dry, loose. Inclusions: none. Reliability: good.	Upper fill of SE possible trackway ditch, possible naturally accumulation after abandonment
347	Fill	Fill of ditch. Colour: dark blackish brown. Composition: fine sand. Compaction: dry, malleable. Inclusions: frequent medium sub-rounded elongate charcoal, evenly distributed. Reliability: good.	Charcoal deposit of possible trackway ditch, fill not observed within other sections from the same ditch.

Context no.	Type	Description	Interpretation
348	Fill	Fill of ditch. Colour: mid brownish yellow. Composition: fine sand. Compaction: very dry, cemented. Inclusions: none. Reliability: good.	Lower fill of possible trackway ditch, possibly formed via backfilling
349	Cut	Cut of NE-SW ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: steep, straight. Break at base: sharp. Base: uneven.	Cut of SE possible trackway ditch containing deliberate fills including a charcoal deposit. The fills are dissimilar to the same feature c.10m se 303. Truncates a ditch containing possible Romano-British pottery.
350	Fill	Fill of ditch. Colour: light greyish brown. Composition: sandy silt. Compaction: dry, firm. Inclusions: 1) occasional flecks of sub-rounded spheroidal charcoal, evenly distributed 2) occasional medium sub-angular spheroidal sandstone, evenly distributed. Reliability: poor.	Single fill of ditch terminus. Likely backfilled through natural accumulation as the feature contains little evidence of human action except for when it was first opened. The feature is relatively shallow in comparison to adjacent ditches. Possible mixed fill due to burrowing.
351	Cut	Cut of NW-SE ditch. Break at top: sharp. Sides: 1) SW: steep, straight 2) NE: shallow, concave. Break at base: 1) SW: sharp 2) NE: gradual. Base: uneven.	Cut of enclosure ditch terminus. The feature heads NW towards NE-SW Ditch, but respects the other feature, therefore the features may be contemporary and still in use.
352	Fill	Fill of ditch. Colour: mid yellowish brown. Composition: fine sand. Compaction: very dry, cemented. Inclusions: occasional small sub-rounded spheroidal sandstone, evenly distributed. Reliability: good.	Single fill of NE driveway ditch, formed by natural accumulation after ditch abandonment. No evidence of reuse. Same fill as (344) further southeast. No period due to lack of finds.
353	Cut	Cut of NW-SE ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: steep, straight. Break at base: sharp. Base: flat.	Cut of NE, NW-SE droveway ditch, which becomes more shallow further southeast. No evidence of secondary use or alterations. Exact function and period unknown.
354	Fill	Fill of ditch. Colour: light yellowish brown. Composition: fine sand. Compaction: very dry, cemented. Inclusions: occasional small rounded spheroidal sandstone, evenly distributed. Reliability: fair.	Naturally accumulated sterile fill of enclosure ditch recut, not containing finds which suggest a date or exact function. Heavily disturbed by burrowing hence lack of sample.

Context no.	Type	Description	Interpretation
355	Cut	Cut of NW-SE ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: steep, concave. Break at base: imperceptible. Base: rounded.	Recut of enclosure ditch which was heavily disturbed by animal burrowing. Dissimilar to the same feature c.8m further northwest [339] which showed no recuts. No exact function or date identified
356	Fill	Fill of ditch. Colour: mid yellowish brown. Composition: fine sand. Compaction: very dry, cemented. Inclusions: occasional small rounded spheroidal sandstone, evenly distributed. Reliability: good.	Naturally accumulated fill of enclosure ditch formed prior to later recut and reuse of ditch. Not sampled due to heavy disturbance caused by burrowing. No period identified
357	Cut	Cut of NW-SE ditch. Shape in plan: regular, linear. Break at top: imperceptible. Sides: 1) NE: steep, convex 2) SW: stepped, convex. Break at base: imperceptible. Base: uneven.	Cut of an enclosure ditch heavily disturbed by burrowing, and recut by [355]. No exact function or date revealed.
358	Fill	Fill of ditch. Colour: mid yellowish brown. Composition: fine sand. Compaction: very dry, cemented. Inclusions: none. Reliability: good.	Upper fill of enclosure ditch recut, formed by natural accumulation over time after ditch abandonment. No date or function revealed
359	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine sand. Compaction: very dry, cemented. Inclusions: none. Reliability: good.	Primary fill of a recut enclosure ditch, formed by natural accumulation post abandonment of feature.
360	Cut	Cut of NW-SE ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: shallow, concave. Break at base: imperceptible. Base: rounded.	Recut of enclosure ditch, containing natural fills suggesting abandonment. Probably contemporary with recut [355]. No exact function revealed
361	Fill	Fill of ditch. Colour: mid yellowish brown. Composition: fine sand. Compaction: very dry, cemented. Inclusions: rare small rounded spheroidal sandstone, evenly distributed. Reliability: good.	Naturally accumulated single fill of primary
362	Cut	Cut of NW-SE ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: 1) SW: stepped, convex 2) NE: steep, straight. Break at base: gradual. Base: flat.	Cut of enclosure ditch, cut by later reuse. No exact function or period identified.
363	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine sand. Compaction: dry, firm. Inclusions: occasional flecks of sub-rounded spheroidal sandstone, evenly distributed. Reliability: poor.	Single fill of ditch corner recut. Natural accumulation of fill after feature was abandoned with some brief periods of possible dumping due to the presence of pottery.

Context no.	Type	Description	Interpretation
364	Cut	Cut of NE-SW ditch. Shape in plan: regular, curvi-linear. Break at top: sharp. Sides: 1) NW: shallow, convex 2) SE: steep, convex. Break at base: imperceptible. Base: rounded.	Re-cut of enclosure ditch. Suggesting a period of maintenance was undertaken.
365	Fill	Fill of ditch. Colour: very light greyish brown. Composition: fine sand. Compaction: dry. Inclusions: occasional small sub-rounded spheroidal sandstone, evenly distributed. Reliability: fair.	Single fill of enclosure ditch corner. Natural accumulation of fill after the feature was abandoned. Heavy disturbance from animal burrowing.
366	Cut	Cut of NE-SW ditch. Shape in plan: regular, curvi-linear. Break at top: sharp. Sides: steep, straight. Break at base: gradual. Base: flat.	Cut of enclosure ditch corner.
367	Fill	Fill of ditch. Colour: very light greyish brown. Composition: fine sand. Compaction: dry, firm. Inclusions: occasional small sub-rounded spheroidal sandstone, evenly distributed. Reliability: poor.	Single fill of possible ditch terminus. Natural accumulation of fill after the feature was abandoned with some possible dumping periods due to the pottery. Very badly disturbed due to animal burrowing.
368	Cut	Cut of NE-SW ditch. Break at top: sharp. Sides: 1) SE: steep, straight 2) NW: shallow, concave. Break at base: 1) SE: sharp 2) NW: imperceptible. Base: rounded.	Possible terminus. Very badly truncated by animal burrowing, very hard to see in plan.
369	Fill	Fill of ditch. Colour: mid greyish brown. Composition: fine sand. Compaction: dry, firm. Inclusions: rare medium sub-angular spheroidal sandstone, evenly distributed. Reliability: good.	Tertiary fill of contemporary ditches [372]. Backfilled through natural accumulation as suggested by its appearance in section, which further suggests it was left open at point of abandonment.
370	Fill	Fill of ditch. Colour: mid orange. Composition: fine sand. Compaction: dry, firm. Inclusions: rare small sub-angular spheroidal sandstone, evenly distributed. Reliability: good.	Secondary fill of contemporary ditches [372]. Backfilled through natural accumulation, possibly by wind blown sand, as suggested by it's appearance.
371	Fill	Fill of ditch. Colour: very light orangey grey. Composition: fine silty sand. Compaction: dry, firm. Inclusions: rare small sub-angular spheroidal sandstone, evenly distributed. Reliability: good.	Primary fill of contemporary ditches. Backfilled through natural accumulation, a silted fill, hence water action. No finds for dating however, an OSL has been taken from this fill.

Context no.	Type	Description	Interpretation
372	Cut	Cut of ditch. Shape in plan: regular contemporary t intersection. Break at top: sharp. Sides: stepped, convex. Break at base: gradual. Base: flat.	Cut of droveway NE ditch and NE-SW aligned enclosure ditch. From the excavation it is impossible to tell when one starts and the other ends therefore, they are contemporary, this is the same for the fills. Both ditches gradually slope down towards where they intersect. The features are of one phase.
373	Fill	Fill of ditch. Colour: mid yellowish brown. Composition: fine sand. Compaction: dry, firm. Inclusions: 1) moderate small sub-rounded elongate charcoal, concentrated towards nw side 2) rare small sub-rounded sandstone, evenly distributed. Reliability: good.	Naturally accumulated single fill of possible trackway ditch, containing a charcoal deposit concentrated on the northwest side the feature. The feature represents single use and completely truncates north west south east Droveway ditch. No finds present therefore no date or exact function of use.
374	Cut	Cut of NE-SW ditch. Shape in plan: regular, linear. Break at top: gradual. Sides: shallow, straight. Break at base: imperceptible. Base: uneven.	Cut-of possible trackway ditch which truncates northwest to southeast Droveway ditch. The feature shows single primary use with disturbance from burrowing.
375	Fill	Fill of ditch. Colour: mid orangey brown. Composition: fine sand. Compaction: dry, cemented. Inclusions: none. Reliability: poor.	Single fill of of north West to South East Droveway ditch. Naturally accumulated. It is very hard to see due to heavy truncations and animal disturbance.
376	Cut	Cut of NW-SE ditch. Shape in plan: linear.	Cut of northwest to southeast Droveway ditch. The feature has been heavily truncated by a possible trackway ditch, and the reliability is therefore poor. The Droveway ditch became very shallow towards this end, as seen 2 m East [345] compared to 6/8m Northwest [353], possibly due to modern disturbance. No date identified.

Context no.	Type	Description	Interpretation
377	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine silty sand. Compaction: dry, friable. Inclusions: rare medium sub-rounded spheroidal sandstone, evenly distributed. Reliability: fair.	Single homogeneous fill of gully [378]. Natural accumulation after fallen into disuse. Heavy faunalturbation from worms and burrowing bringing charcoal into fill.
378	Cut	Cut of NW-SE ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: steep, straight. Break at base: gradual. Base: rounded.	Cut of sw droveway ditch
379	Fill	Fill of ditch. Colour: mid orangey brown. Composition: fine silty sand. Compaction: dry, friable. Inclusions: rare small sub-rounded spheroidal inclusion. Reliability: good.	The primary fill of a v shaped ditch cut [381] and covers a lower secondary fill (380). This ditch is part of the South West droveway. Possibly naturally accumulated fill.
380	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine silty sand. Compaction: dry, friable. Inclusions: occasional medium sub-rounded spheroidal inclusion, evenly distributed. Reliability: good.	The secondary fill of the feature [381], the South West droveway with occasional medium sized stones. It is a possible slump fill and is covered by (379).
381	Cut	Cut of NW-SE ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: 1) SW: steep, straight 2) NE: stepped, concave. Break at base: gradual. Base: flat.	A V shaped cut ditch with two fills, a primary fill (379) and a slumped fill (380). This cut is part of the South West drove way.
382	Fill	Fill of ditch. Colour: mid brown. Composition: fine sand. Compaction: dry, firm. Inclusions: occasional flecks of rounded spheroidal sandstone, evenly distributed. Reliability: good.	Single fill of possible north-western trackway ditch, formed by natural accumulation after abandonment. No period of use identified.
383	Cut	Cut of E-W ditch. Shape in plan: linear. Break at top: sharp. Sides: stepped, convex. Break at base: gradual. Base: uneven.	Cut of w-e possible trackway ditch representing primary use, which is later than possible droveway ditch. Probably contemporary to southernmost possible trackway ditch[303].
385	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine silty sand. Compaction: dry, firm. Inclusions: none. Reliability: fair.	Naturally accumulated band of fill within a northwestern possible droveway ditch. This fill does not continue further north or south, and was possibly caused by silting and/or disturbance from later truncation. No period of use identified.

Context no.	Type	Description	Interpretation
386	Fill	Fill of ditch. Colour: mid orangey brown. Composition: fine sand. Compaction: dry, firm. Inclusions: frequent medium spheroidal sandstone, evenly distributed. Reliability: fair.	Primary fill of possible droveway ditch formed by natural accumulation after abandonment
387	Cut	Cut of NW-SE ditch. Shape in plan: regular, linear. Break at top: imperceptible. Sides: steep, convex. Break at base: imperceptible. Base: rounded.	Cut of possible north-western droveway ditch. Compared to the same feature c.6m further north [305], this cut is deeper and contains more fills, which could have been caused by the w-e possible trackway ditch [383]. It is probable that the feature terminates c.4m South.
388	Fill	Fill of ditch. Colour: mid orangey brown. Composition: fine sand. Compaction: dry. Inclusions: moderate small rounded spheroidal sandstone, evenly distributed. Reliability: good.	Single homogenous fill of possible north-western Western droveway ditch terminus, formed by natural accumulation after abandonment. Dissimilar fill to possible contemporary droveway ditch (396). Truncated by possible trackway [391]. No period of use
389	Cut	Cut of NW-SE ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: vertical, straight. Break at base: imperceptible. Base: rounded.	Cut of probable Eastern droveway terminus, which prior to truncation by possible trackway ditch [391], formed an entrance around 2-3m. Probably contemporary with [396]
390	Fill	Fill of ditch. Colour: mid brown. Composition: fine sand. Compaction: dry, firm. Inclusions: none. Reliability: good.	Single fill of possible southernmost trackway ditch, formed by natural accumulation. No period of use identified
391	Cut	Cut of NE-SW ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: shallow, straight. Break at base: sharp. Base: flat.	Cut of southernmost possible trackway ditch, which is later than the possible droveway ditch. The ditch shows primary use, and was possibly contemporary to northern trackway ditch [383].
392	Fill	Fill of ditch. Colour: mid orangey brown. Composition: fine silty sand. Compaction: dry, loose. Inclusions: 1) occasional medium sub-rounded spheroidal sandstone, evenly distributed 2) rare flecks of angular elongate charcoal, evenly distributed. Reliability: good.	Single fill of NE-SW running ditch [393] Possible Romano-British in age Like most of site has been truncated by burrowing and root action. Natural accumulation of fill, no evidence of dumping

Context no.	Type	Description	Interpretation
393	Cut	Cut of NE-SW ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: stepped, concave. Break at base: gradual. Base: uneven, sloping towards NE.	Cut of NE-SW enclosure ditch with single fill (392)
394	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine silty sand. Compaction: dry, firm. Inclusions: frequent small rounded sandstone, evenly distributed. Reliability: fair.	Naturally accumulated secondary fill of possible droveway terminus. The fill contains a higher frequency of sandstone, similar to the primary fill identified 3m. Nw in [387]. The fill has been disturbed by later truncation of possible trackway ditch. No period of use identified.
395	Fill	Fill of ditch. Colour: mid orangey brown. Composition: fine sand. Compaction: dry, firm. Inclusions: none. Reliability: fair.	Primary fill of possible droveway terminus, likely filled by natural accumulation due to the lack of human activity identified. No period identified
396	Cut	Cut of NW-SE ditch. Break at top: gradual. Sides: steep, straight. Base: rounded.	Possible terminal droveway ditch cut. The droveway was originally presumed to continue across the trench from [387], although [389] shows a termination and possible entrance. However, due to later truncation by the southernmost possible trackway [389], the full shape in plan is provisional.
397	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine sand. Compaction: dry, firm. Inclusions: rare flecks of sub-rounded spheroidal sandstone, concentrated towards nw side. Reliability: fair.	Naturally accumulated single fill of possible trackway ditch, representing single use and gradual fill after abandonment. No period identified
398	Cut	Cut of NE-SW ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: shallow, concave. Break at base: imperceptible. Base: uneven.	Primary use of a southernmost possible trackway ditch, which is later than the droveway ditch[396]. Probably contemporary with northwestern possible trackway [383] .
399	Fill	Fill of ditch. Colour: mid orangey brown. Composition: fine silty sand. Compaction: dry, firm. Inclusions: rare medium sub-rounded spheroidal inclusion, evenly distributed. Reliability: good.	Main fill of a v shaped ditch [401] and covers (400). Possibly formed by natural accumulation. Likely IA/Romano-British.

Context no.	Type	Description	Interpretation
400	Fill	Fill of ditch. Colour: light brownish orange. Composition: fine silty sand. Compaction: dry, loose. Inclusions: none. Reliability: good.	A small slump fill of [401] covered by (399). No apparent burrowing but frequent rooting and worm action. Likely IA/ROMANO-BRITISH in age.
401	Cut	Cut of NW-SE ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: steep, straight. Break at base: 1) SW: sharp 2) NE: gradual. Base: flat.	A cut of SW droveway NW-SE v shaped ditch with two fills, a primary fill (399) which was sampled and a secondary slump fill on the bottom (400). Likely IA/Romano-British.
402	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine silty sand. Compaction: dry, firm. Inclusions: rare small sub-angular platy sandstone, evenly distributed. Reliability: fair.	Single homogeneous fill of ditch [403]. Fill deposited via natural accumulation after feature fell into disuse. Heavy faunalturbation caused by burrowing and worms.
403	Cut	Cut of NW-SE ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: steep, straight. Break at base: gradual. Base: flat.	Boundary ditch cut into NAT. Running SE NW.
404	Fill	Fill of ditch. Colour: mid orangey brown. Composition: fine silty sand. Compaction: dry, loose. Inclusions: rare sub-angular elongate charcoal, evenly distributed. Reliability: good.	The main fill of an irregular u shape ditch that was disturbed by burrowing. This deposit fills the majority of the cut [406] and was possibly formed from natural accumulation. Likely Romano British in age
405	Fill	Fill of ditch. Colour: light brownish orange. Composition: silty sand. Compaction: dry, loose. Inclusions: none. Reliability: good.	A possible slump fill (visible in the NE side of the section 177). Later covered by (404). Likely Romano British in age.
406	Cut	Cut of NW-SE ditch. Shape in plan: irregular, linear. Break at top: sharp. Sides: 1) SW: steep, straight 2) NE: stepped, concave. Break at base: gradual. Base: uneven.	A U shaped cut with two fills, a small slump fill (405) and a large fill taking up the majority of the cut (404). This cut is part of the North East droveway ditch. There is a sizeable amount of burrowing present as visible on p.178.
407	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine silty sand. Compaction: dry, firm. Inclusions: rare small sub-angular platy sandstone, evenly distributed. Reliability: fair.	Single homogeneous fill of terminating ditch [403]. Natural accumulation of fill after feature fell into disuse.

Context no.	Type	Description	Interpretation
408	Cut	Cut of NW-SE ditch. Break at top: gradual. Sides: steep, concave. Break at base: gradual. Base: rounded.	Terminus of ditch cut into Nat. Terminus shallows gradually.
409	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine silty sand. Compaction: dry, friable. Inclusions: rare small sub-rounded spheroidal sandstone, evenly distributed. Reliability: good.	Single fill of ditch corner Naturally accumulated fill Likely IA/RB. Large amount of burrowing disturbance see DN186.
410	Cut	Cut of NW-SE ditch. Shape in plan: regular, curvi-linear. Break at top: 1) SW: sharp 2) NE: none. Sides: shallow, straight. Break at base: 1) SW: gradual 2) NE: none. Base: flat.	Cut of ditch corner [410] with a single fill (409). As seen on DN186 it is in close proximity to an intersection of a ditch and terminus [412] and [414]. Likely IA/RB in age making up both an enclosure ditch and Droveway Possible burrowing present (see DN186) on the top of the South East corner
411	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine silty sand. Compaction: dry, friable. Inclusions: rare medium sub-rounded spheroidal stone, evenly distributed. Reliability: good.	Single fill of NE-SW Ditch. Naturally accumulated fill. Cut by later SE-NW terminus [414] Likely IA/RB
412	Cut	Cut of NE-SW ditch. Shape in plan: regular, linear. Break at top: 1) NW: gradual 2) SE: sharp. Sides: 1) NW: shallow, convex 2) SE: steep, straight. Break at base: 1) NW: gradual 2) SE: sharp. Base: flat.	A cut forming part of an enclosure ditch running NE-SW and turns north west into the Droveway, as seen in DN186. This ditch truncates [414], a ditch terminus and cuts (413). Likely IA/RB
413	Fill	Fill of ditch. Colour: mid orangey brown. Composition: fine silty sand. Compaction: dry, friable. Inclusions: occasional small sub-angular spheroidal stone, evenly distributed. Reliability: good.	A single fill of ditch terminus running SE-NW. Naturally occurring accumulation of fill. Cut by a perpendicular running ditch [412]
414	Cut	Cut of NW-SE ditch. Break at top: sharp. Sides: steep, straight. Break at base: 1) SW: imperceptible 2) NE: gradual. Base: flat.	A cut of a NW-SE ditch a single fill (413). Truncated by [412] on the NW end, see dn186 Likely IA/Romano-British Droveway ,
415	Fill	Fill of ditch. Colour: mid orangey brown. Composition: fine silty sand. Compaction: dry, friable. Inclusions: occasional medium sub-angular spheroidal stones, evenly distributed. Reliability: good.	Single fill of NE-SW ditch terminus with occasional medium sized subangular stones. Seemingly natural accumulation of fill The cut of the same feature [416] cuts [419], a NW-SE running ditch

Context no.	Type	Description	Interpretation
416	Cut	Cut of NE-SW ditch. Break at top: sharp. Sides: steep, straight. Break at base: imperceptible. Base: uneven.	A cut of a ne-sw enclosure ditch terminus with a single fill. This cuts (417)and [419] to the North East
417	Fill	Fill of ditch. Colour: mid orangey brown. Composition: fine silty sand. Compaction: dry, friable. Inclusions: occasional medium sub-rounded spheroidal stone, evenly distributed. Reliability: good.	The primary fill of NW-SE ditch Seemingly natural accumulation of fill This fill is cut by [416]
418	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine silty sand. Compaction: dry, friable. Inclusions: rare small sub-angular spheroidal inclusion, evenly distributed. Reliability: good.	The secondary slump fill of NW-SE ditch [419]. This fill is covered by the primary fill (417) There's a ditch terminus cutting the upper fill (417) and [419]
419	Cut	Cut of NW-SE ditch. Shape in plan: regular, linear. Break at top: none. Sides: steep, straight. Break at base: sharp. Base: flat.	A v shaped ditch running NW-SE, part of a Droveway with a secondary slump fill, (418) and a larger primary fill (417). Cut by an enclosure ditch terminus [416].
420	Fill	Fill of pit. Colour: light orangey brown. Composition: fine silty sand. Compaction: very dry, firm. Inclusions: moderate medium sub-angular platy sandstone, concentrated towards base. Reliability: fair.	Single homogeneous fill of pit [421]. Natural accumulation. Most sandstone inclusions found towards base/ sides of fill but are seem throughout fill.
421	Cut	Cut of pit. Shape in plan: regular, circular. Break at top: sharp. Sides: steep, straight. Break at base: gradual. Base: rounded.	Cut of pit [421] cutting side of earlier enclosure ditch [421].
422	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine silty sand. Compaction: very dry, firm. Inclusions: moderate medium sub-angular platy sandstone, concentrated towards base. Reliability: fair.	Single homogeneous fill of pit [423]. Natural accumulation. Most sandstone inclusions found towards base/ sides of fill but are seem throughout fill.
423	Cut	Cut of NW-SE ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: steep, straight. Break at base: gradual. Base: rounded.	Cut of NW-SE ditch [423].
424	Fill	Fill of ditch. Colour: light yellowish brown. Composition: fine sand. Compaction: very dry, cemented. Inclusions: moderate small rounded spheroidal sandstone, evenly distributed. Reliability: good.	Secondary fill of droveway ditch , possibly caused by slumping overtime after abandonment. Dissimilar to other sections of the same droveway feature. No period identified
425	Fill	Fill of ditch. Colour: light pinkish brown. Composition: fine sand. Compaction: dry, firm. Inclusions: none. Reliability: good.	Naturally accumulated primary fill of droveway ditch, no period identified
426	Cut	Cut of N-S ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: stepped, convex. Break at base: gradual. Base: uneven.	Cut of southwest droveway ditch containing a stonier fill than previous section.

Context no.	Type	Description	Interpretation
427	Fill	Fill of ditch. Colour: mid pinkish brown. Composition: fine sand. Compaction: dry, firm. Inclusions: rare sub-rounded platy sandstone, evenly distributed. Reliability: good.	Single fill of southwest droveway ditch, naturally formed after abandonment. No period of use identified
428	Cut	Cut of N-S ditch. Shape in plan: regular, linear. Break at top: sharp. Sides: shallow, convex. Break at base: gradual. Base: rounded.	Cut of southwest droveway ditch, representing primary use. Truncated by possible droveway terminus [431]
429	Fill	Fill of ditch. Colour: light yellowish brown. Composition: fine sand. Compaction: dry, firm. Inclusions: occasional medium sub-angular spheroidal sandstone, concentrated towards the west near cut with (432). Reliability: good.	Deep secondary fill of possible southwest droveway terminus, likely formed by natural accumulation post abandonment. No date identified
430	Fill	Fill of ditch. Colour: mid yellowish brown. Composition: fine sand. Compaction: dry, firm. Inclusions: moderate flecks of rounded spheroidal sandstone, evenly distributed. Reliability: good.	Shallow primary fill of southwest droveway ditch, possibly formed by natural soil,ping after abandonment. No finds or date
431	Cut	Cut of N-S ditch. Break at top: sharp. Sides: shallow, convex. Break at base: imperceptible. Base: rounded.	Cut of possible southwest droveway terminus. Possibly represents a secondary phase of the droveway, although the exact function is unclear. The feature truncates the original droveway [428] and possible gully terminus [433].
432	Fill	Fill of gully. Colour: mid yellowish brown. Composition: fine sand. Compaction: dry, firm. Inclusions: occasional small sub-rounded spheroidal sandstone, evenly distributed. Reliability: fair.	Single fill of possible gully terminus, formed by natural accumulation. The feature is heavily disturbed by burrowing and surrounding deposit (434)
433	Cut	Cut of NE-SW gully. Break at top: sharp. Sides: shallow, convex. Break at base: imperceptible. Base: uneven.	Cut of possible gully terminus, representing primary use. The feature was truncated by possible droveway terminus [431], and was heavily disturbed by burrowing.
434	Fill	Fill of spread. Colour: mid brown. Composition: sandy silt. Compaction: dry, malleable. Inclusions: rare flecks of sub-rounded spheroidal sandstone, evenly distributed. Reliability: fair.	Unknown spread across the southwestern part of the area, possibly natural silting, with heavy burrowing combining soil.

Context no.	Type	Description	Interpretation
435	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine silty sand. Compaction: dry, firm. Inclusions: rare small sub-angular platy sandstone, evenly distributed. Reliability: fair.	Single homogeneous fill of ditch terminus [436]. Natural accumulation after feature fallen into disuse.
436	Cut	Cut of NW-SE ditch. Break at top: sharp. Sides: steep, straight. Break at base: gradual. Base: flat.	Cut of terminating enclosure ditch [436].
437	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine silty sand. Compaction: dry, firm. Inclusions: occasional small sub-angular platy sandstone, evenly distributed. Reliability: fair.	Secondary Homogenous fill of droveway ditch [439]. Fill genesis natural accumulation probably accumulated during use or since feature fell into disuse and maintenance of droveway ceased.
438	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine silty sand. Compaction: dry, firm. Inclusions: occasional small sub-angular platy sandstone, evenly distributed. Reliability: fair.	Primary Homogenous fill of droveway ditch [439]. Fill genesis natural accumulation probably accumulated during use or since feature fell into disuse and maintenance of droveway ceased.
439	Cut	Cut of NW-SE ditch. Shape in plan: regular, linear. Break at top: gradual. Sides: steep, straight. Break at base: gradual. Base: rounded.	Droveway ditch [439] truncating earlier enclosure ditch [442].
440	Fill	Fill of ditch. Colour: light orangey brown. Composition: fine sand. Compaction: very dry, firm. Inclusions: moderate small well-rounded spheroidal sandstone, evenly distributed. Reliability: good.	Secondary fill of enclosure ditch, formed by natural accumulation over time. The fill is heavily burrowed and therefore not clear cut.
441	Fill	Fill of ditch. Colour: mid brown. Composition: fine silty sand. Compaction: dry, malleable. Inclusions: rare flecks of rounded spheroidal sandstone, evenly distributed. Reliability: fair.	Primary fill of enclosure ditch, formed by natural silting over time after the ditch was abandoned. Shows no evidence of secondary use, no period identified.
442	Cut	Cut of NE-SW ditch. Shape in plan: regular, linear. Break at top: gradual. Sides: shallow. Break at base: gradual. Base: flat.	Cut of enclosure ditch [442], which is then truncated by later droveway ditch [439].

APPENDIX 2

Black and White Photographic Archive Listing

Frame	Film	Context	Scale	Facing	Description
029	1	-	-	-	ID Shot
030	1	-	2 x 1m	North	General Shot of Area 1
031	1	-	2 x 1m	East	General Shot of Area 2
032	1	-	2 x 1m	East	General Shot of Area 3
033	1	-	2 x 1m	North	General Shot of Area 5
034	1	-	2 x 1m	North-west	General Shot of Area 6
035	1	-	2 x 1m	North	General Shot of Area 4
036	1	(302)-[303]	1m	North-east	Ditch [303]
037	1	(304)-[305]	1m	South-east	Ditch [305]
001	2	-	-	-	ID Shot
002	2	(306)-[307]	1m	North-east	Ditch [307]
003	2	(308)-[309]	1m	North-east	Ditch [309]
004	2	(388)-[389]	1m	South-east	Ditch [389]
005	2	(388)-[391]	1m	South-west	Relationship of ditch [389], ditch [391]
006	2	(310)-[311]	1m	East	Ditch [311]
007	2	(334)-[337]	1m	South-east	Relationship of ditch [335], ditch [337]
008	2	(314)-[315]	1m	North	Ditch [315]
009	2	(312)-[313]	1m	West	Ditch [313]
010	2	(328)-[333]	1m	West	Relationship of pit [331], ditch [333]
011	2	(342)-[343]	1m	North-west	Ditch [343]
012	2	(338)-[339]	1m	North-west	Ditch [339]
001	3	-	-	-	ID Shot
002	3	(340)-[341]	1m	South-east	Ditch [341]
003	3	(316)-[322]	1m	North-west	Relationship of ditch [317], pit [320], pit [322]
004	3	(323)-[327]	1m	North-east	Relationship of ditch [324], pit [327]
005	3	(354)-[357]	1m	South-east	Relationship of ditch [389], ditch [391]
006	3	(352)-[353]	1m	North-west	Ditch [353]
007	3	(358)-[362]	1m	North-west	Relationship of ditch [362], ditch [360]
008	3	(350)-[351]	1m	South-east	Ditch [351]
009	3	(344)-[349]	1m	North-east	Relationship of ditch [345], ditch [349]
010	3	(363)-[368]	2m	North-east	Relationship of ditch [364], ditch [366], ditch [368]
011	3	(373)-[376]	2m	North-east	Relationship of ditch [374], ditch [376]
012	3	(369)-[372]	2m	South-east	Ditch [372]
013	3	(369)-[372]	2m	North-east	Ditch [372]
014	3	(369)-[372]	2 x 1m	South-west	Ditch [372]
015	3	(369)-[372]	2 x 1m	North-west	Ditch [372]
016	3	(377)-[378]	1m	South-east	Ditch [378]
017	3	(382)-[387]	1m	North-east	Relationship of ditch [387], ditch [383]
018	3	(382)-[383]	1m	West	Relationship of ditch [387], ditch [383]
019	3	(379)-[381]	1m	North-west	Ditch [381]
020	3	(415)-[419]	2m	North-east	Relationship of ditch [416], ditch [419]

Frame	Film	Context	Scale	Facing	Description
021	3	(392)-[393]	1m	North-east	Ditch [393]
022	3	(394)-[398]	1m	North-east	Relationship of ditch [396], ditch [398]
023	3	(399)-[401]	1m	South-east	Ditch [401]
024	3	(402)-[403]	1m	North-west	Ditch [403]
025	3	(407)-[408]	1m	South	Ditch [408]
026	3	(407)-[408]	1m	West	Ditch [408]
027	3	(404)-[406]	1m	North-west	Ditch [406]
028	3	(429)-[433]	2m	South	Relationship of ditch [431], ditch [428], gully [433]
029	3	(427)-[431]	1m	East	Relationship of ditch [431], ditch [428], gully [433]
030	3	(409)-[410]	2m	North-west	Ditch [410]
031	3	(413)-[414]	2m	South-west	Relationship of ditch [412], ditch [414]
032	3	(411)-[412]	1m	North-east	Relationship of ditch [412], ditch [414]
033	3	(415)-[416]	2m	South-west	Relationship of ditch [416], ditch [419]
034	3	(424)-[426]	1m	North	Ditch [426]
035	3	(420)-[423]	1m	North-west	Relationship of pit [421], ditch [423]
036	3	(432)-[434]	1m	South-west	Relationship of ditch [431], ditch [428], gully [433]
037	3	(411)-[414]	1m	South-east	Relationship of ditch [412], ditch [414]
001	4	-	-	-	ID Shot
002	4	(435)-[436]	1m	South-west	Ditch [436]
003	4	(435)-[436]	1m	South-east	Ditch [436]
004	4	(437)-[442]	2m	South-east	Relationship of ditch [442], ditch [439]
005	4	(437)-[442]	2m	North-west	Relationship of ditch [442], ditch [439]
006	4	(437)-[442]	2m	North-east	Relationship of ditch [442], ditch [439]
007	4	(437)-[442]	2m	South-east	Relationship of ditch [442], ditch [439]

APPENDIX 3

Digital Photographic Archive Listing

Frame	Context	Scale	Facing	Description
0001	-	-	North	Pre-excavation Shot of Area 1
0002	-	-	North	Pre-excavation Shot of Area 2
0003	-	-	North	Pre-excavation Shot of Area 3
0004	-	-	North	Pre-excavation Shot of Area 4
0005	-	-	North	Pre-excavation Shot of Area 5
0006	-	-	North	Pre-excavation Shot of Area 6
0007	-	-	South-east	General Site Shot
0008	-	2 x 1m	North	General Shot of Area 1
0009	-	2 x 1m	East	General Shot of Area 2
0010	-	2 x 1m	East	General Shot of Area 2
0011	-	2 x 1m	East	General Shot of Area 3
0012	-	2 x 1m	North-west	General Shot of Area 6
0013	-	2 x 1m	South-west	General Shot of Area 6
0014	-	2 x 1m	South-west	General Shot of Area 6
0015	-	2 x 1m	North	General Shot of Area 4
0016	(302)-[303]	1m	South-west	Ditch [303]
0017	(302)-[303]	1m	North-east	Ditch [303]
0018	(302)-[303]	1m	North-east	Ditch [303]
0019	(304)-[305]	1m	South-east	Ditch [305]
0020	(304)-[305]	1m	South-east	Ditch [305]
0021	(306)-[307]	1m	North-east	Ditch [307]
0022	(306)-[307]	1m	North-east	Ditch [307]
0023	(306)-[307]	1m	North-east	Ditch [307]
0024	(306)-[307]	1m	North-east	Ditch [307]
0025	(308)-[309]	1m	North-east	Ditch [309]
0026	(308)-[309]	1m	North-east	Ditch [309]
0027	(388)-[389]	1m	South-east	Ditch [389]
0028	(388)-[391]	1m	South-west	Relationship of ditch [389], ditch [391]
0029	(310)-[311]	1m	East	Ditch [311]
0030	(310)-[311]	1m	East	Ditch [311]
0031	(334)-[337]	1m	South-east	Relationship of ditch [335], ditch [337]
0032	(334)-[337]	1m	South-east	Relationship of ditch [335], ditch [337]
0033	(314)-[315]	1m	East	Ditch [315]
0034	(314)-[315]	1m	East	Ditch [315]
0035	(314)-[315]	1m	North	Ditch [315]
0036	(314)-[315]	1m	North	Ditch [315]
0037	(312)-[313]	1m	West	Ditch [313]
0038	(312)-[313]	1m	West	Ditch [313]
0039	(328)-[333]	1m	West	Relationship of pit [331], ditch [333]
0040	(323)-[324]	1m	South-west	Ditch [324]
0041	(323)-[327]	1m	North-east	Relationship of ditch [324], pit [327]

Frame	Context	Scale	Facing	Description
0042	(316)-[322]	1m	North-west	Relationship of ditch [317], pit [320] and [322]
0043	(316)-[322]	1m	North	Relationship of ditch [317], pit [320] and [322]
0044	(316)-[327]	1m	South-west	Ditch [317] and [324], pit [320], [322] and [327]
0045	(316)-[327]	1m	North-east	Ditch [317] and [324], pit [320], [322] and [327]
0046	(316)-[327]	1m	South-east	Ditch [317] and [324], pit [320], [322] and [327]
0047	(316)-[327]	1m	North-west	Ditch [317] and [324], pit [320], [322] and [327]
0048	(342)-[343]	1m	North-west	Ditch [343]
0049	(338)-[339]	1m	North-west	Ditch [339]
0050	(340)-[341]	1m	South-east	Ditch [341]
0051	(342)-[343]	1m	North-east	Ditch [343]
0052	(354)-[357]	1m	South-east	Relationship of ditch [357], ditch [355]
0053	(354)-[357]	1m	South-east	Relationship of ditch [357], ditch [355]
0054	(358)-[362]	1m	North-west	Relationship of ditch [362], ditch [360]
0055	(352)-[353]	1m	North-west	Ditch [353]
0056	(352)-[353]	1m	North-west	Ditch [353]
0057	(350)-[351]	1m	North-east	Ditch [351]
0058	(350)-[351]	1m	South-east	Ditch [351]
0059	(344)-[349]	1m	North-east	Relationship of ditch [345], ditch [349]
0060	(344)-[349]	1m	North-east	Relationship of ditch [345], ditch [349]
0061	(344)-[349]	1m	North-east	Relationship of ditch [345], ditch [349]
0062	(363)-[368]	2m	North-east	Relationship of ditch [364], ditch [366], ditch [368]
0063	(363)-[368]	2m	North-east	Relationship of ditch [364], ditch [366], ditch [368]
0064	(363)-[368]	2m	North-west	Relationship of ditch [364], ditch [366], ditch [368]
0065	(363)-[368]	2m	South-west	Relationship of ditch [364], ditch [366], ditch [368]
0066	(373)-[376]	2m	North-east	Relationship of ditch [374], ditch [376]
0067	-	1m	North-west	OSL Sample 117
0068	-	1m	North	OSL Sample 119
0069	-	1m	North-east	OSL Sample 120
0070	(314)-[315]	1m	North	Ditch [315]
0071	(350)-[351]	1m	South-east	Ditch [351]
0072	(342)-[343]	1m	North-east	Ditch [343]
0073	(342)-[343]	1m	North-east	Ditch [343]
0074	(316)-[322]	1m	South-west	Relationship of ditch [317], pit [320], pit [322]
0075	(369)-[372]	1m	South-east	Ditch [372]
0076	(369)-[372]	2m	South-east	Ditch [372]
0077	(369)-[372]	2m	North-east	Ditch [372]
0078	(369)-[372]	2m	South-west	Ditch [372]
0079	(369)-[372]	2 x 1m	South-west	Ditch [372]
0080	(369)-[372]	2 x 1m	North-west	Ditch [372]
0081	(369)-[372]	2 x 1m	North-west	Ditch [372]
0082	(369)-[372]	2 x 1m	North-west	Ditch [372]
0083	-	1m	South-west	OSL Sample 121
0084	(377)-[378]	1m	South-east	Ditch [378]
0085	(377)-[378]	1m	South-east	Ditch [378]
0086	(382)-[387]	1m	North-east	Relationship of ditch [387], ditch [383]

Frame	Context	Scale	Facing	Description
0087	(382)-[387]	1m	North-east	Relationship of ditch [387], ditch [383]
0088	(382)-[387]	1m	West	Relationship of ditch [387], ditch [383]
0089	(382)-[387]	1m	South-west	Relationship of ditch [387], ditch [383]
0090	(379)-[381]	1m	North-west	Ditch [381]
0091	(379)-[381]	1m	North-west	Ditch [381]
0092	(379)-[381]	1m	North-west	Ditch [381]
0093	(415)-[419]	2m	North-east	Relationship of ditch [416], ditch [419]
0094	(415)-[419]	2m	North-east	Relationship of ditch [416], ditch [419]
0095	(415)-[419]	2m	North-east	Relationship of ditch [416], ditch [419]
0096	(392)-[393]	1m	North-east	Ditch [393]
0097	(392)-[393]	1m	North-east	Ditch [393]
0098	(392)-[393]	1m	North-east	Ditch [393]
0099	(394)-[398]	1m	North-east	Relationship of ditch [396], ditch [398]
0100	(394)-[398]	1m	North-east	Relationship of ditch [396], ditch [398]
0101	(399)-[401]	1m	South-east	Ditch [401]
0102	(399)-[401]	1m	South-east	Ditch [401]
0103	(402)-[403]	1m	North-west	Ditch [403]
0104	(402)-[403]	1m	North-west	Ditch [403]
0105	(402)-[403]	1m	North-west	Ditch [403]
0106	(407)-[408]	1m	South	Ditch [408]
0107	(407)-[408]	1m	South	Ditch [408]
0108	(407)-[408]	1m	West	Ditch [408]
0109	(407)-[408]	1m	West	Ditch [408]
0110	(404)-[406]	1m	North-west	Ditch [406]
0111	(404)-[406]	1m	North-west	Ditch [406]
0112	(407)-[408]	1m	North-west	Ditch [408]
0113	(427)-[431]	2m	South	Relationship of ditch [431], ditch [428], gully [433]
0114	(427)-[431]	2m	South	Relationship of ditch [431], ditch [428], gully [433]
0115	(429)-[433]	1m	East	Relationship of ditch [431], ditch [428], gully [433]
0116	(429)-[433]	1m	East	Relationship of ditch [431], ditch [428], gully [433]
0117	(429)-[433]	1m	East	Relationship of ditch [431], ditch [428], gully [433]
0118	(429)-[433]	1m	East	Relationship of ditch [431], ditch [428], gully [433]
0119	(409)-[410]	2m	North-west	Ditch [410]
0120	(411)-[414]	2m	South-west	Relationship of ditch [412], ditch [414]
0121	(411)-[414]	1m	North-east	Relationship of ditch [412], ditch [414]
0122	(411)-[414]	1m	North-east	Relationship of ditch [412], ditch [414]
0123	(415)-[416]	2m	South-west	Relationship of ditch [416], ditch [419]
0124	(420)-[423]	1m	South-east	Relationship of pit [421], ditch [423]
0125	(424)-[426]	1m	North	Ditch [426]
0126	(424)-[426]	1m	North	Ditch [426]
0127	(420)-[423]	1m	South-east	Relationship of pit [421], ditch [423]
0128	(427)-[433]	2m	South-west	Relationship of ditch [431], ditch [428], gully [433]
0129	(427)-[433]	1m	South-west	Relationship of ditch [431], ditch [428], gully [433]
0130	(411)-[414]	1m	South-east	Relationship of ditch [412], ditch [414]
0131	(411)-[414]	1m	South-east	Relationship of ditch [412], ditch [414]

Frame	Context	Scale	Facing	Description
0132	(435)-[436]	1m	South-east	Ditch [436]
0133	(435)-[436]	1m	South-west	Ditch [436]
0134	(435)-[436]	1m	South-west	Ditch [436]
0135	(435)-[436]	1m	South-west	Ditch [436]
0136	-	-	-	VOID
0137	(437)-[442]	2m	South-east	Relationship of ditch [442], ditch [439]
0138	(437)-[442]	2m	North-west	Relationship of ditch [442], ditch [439]
0139	(437)-[442]	2m	North-east	Relationship of ditch [442], ditch [439]
0140	(437)-[442]	2m	South-east	Relationship of ditch [442], ditch [439]
0141	(437)-[442]	2m	South-east	Relationship of ditch [442], ditch [439]
0142	-	-	-	VOID
0143	-	1m	South-east	OSL Sample 142
0144	-	1m	North-east	OSL Sample 143
0145	-	1m	South-east	OSL Sample 144
0146	-	1m	North-west	OSL Sample 145
0147	-	1m	South-west	OSL Sample 141


IMG_0001


IMG_0002


IMG_0003


IMG_0004


IMG_0005


IMG_0006


IMG_0007


IMG_0008


IMG_0009


IMG_0010


IMG_0011


IMG_0012


IMG_0013


IMG_0014


IMG_0015


IMG_0016


IMG_0017


IMG_0018


IMG_0019


IMG_0020


IMG_0021


IMG_0022


IMG_0023


IMG_0024


IMG_0025


IMG_0026


IMG_0027


IMG_0028


IMG_0029


IMG_0030


IMG_0031


IMG_0032


IMG_0033


IMG_0034


IMG_0035


IMG_0036


IMG_0037


IMG_0038


IMG_0039


IMG_0040


IMG_0041


IMG_0042


IMG_0043


IMG_0044


IMG_0045


IMG_0046


IMG_0047


IMG_0048


IMG_0049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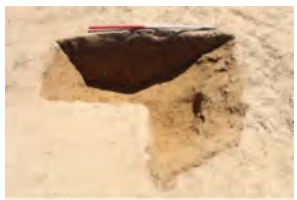
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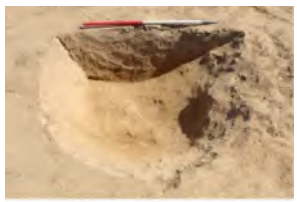
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IMG_0148

APPENDIX 4

Drawing Listing

Drawing	Sheet No.	Scale	Context	Description
100	1	1:10	(302)-[303]	South-west Facing Section of Ditch [303]
101	1	1:20	(302)-[303]	Plan of Ditch [303]
102	1	1:10	(304)-[305]	North-west Facing Section of Ditch [305]
103	1	1:20	(304)-[305]	Plan of Ditch [305]
104	2	1:10	(306)-[307]	South-west Facing Section of Ditch [307]
105	1	1:20	(306)-[307]	Plan of Ditch [307]
106	2	1:10	(308)-[309]	South-west Facing Section of Ditch [309]
107	2	1:20	(308)-[309]	Plan of Ditch [309]
108	2	1:10	(310)-[311]	West Facing Section of Ditch [311]
109	2	1:20	(310)-[311]	Plan of Ditch [311]
110	2	1:10	(314)-[315]	South Facing Section of Ditch [315]
111	3	1:10	(314)-[315]	West Facing Section of Ditch [315]
112	3	1:20	(314)-[315]	Plan of Ditch [315]
113	3	1:10	(312)-[313]	East Facing Section of Ditch [313]
114	3	1:20	(312)-[313]	Plan of Ditch [313]
115	4	1:10	(323)-[327]	South-west Facing Section of Relationship of ditch [324], pit [327]
116	4	1:10	(323)-[327]	North-east Facing Section of Relationship of ditch [324], pit [327]
117	4	1:20	(316)-[327]	Plan of Relationship of ditch [324], pit [327]
118	4	1:10	(316)-[322]	South-west Facing Section Relationship of ditch [317], pit [320], pit [322]
119	5	1:10	(328)-[333]	East Facing Section of Relationship of pit [331], ditch [333]
120	5	1:20	(328)-[333]	Plan of Relationship of pit [331], ditch [333]
121	5	1:10	(334)-[337]	North-west Facing Section Relationship of ditch [335], ditch [337]
122	5	1:20	(334)-[337]	Plan of Relationship of ditch [335], ditch [337]
123	6	1:10	(338)-[339]	South-east Facing Section of Ditch [339]
124	6	1:20	(338)-[339]	Plan of Ditch [339]
125	6	1:10	(340)-[341]	North-west Facing Section of Ditch [341]
126	6	1:20	(340)-[341]	Plan of Ditch [341]
127	6	1:10	(344)-[345]	South-east Facing Section of Relationship of ditch [345], ditch [349]
128	6	1:10	(344)-[349]	South-west Facing Section of Relationship of ditch [345], ditch [349]
129	7	1:20	(344)-[349]	Plan of Relationship of ditch [345], ditch [349]
130	7	1:10	(354)-[357]	North-west Facing Section of Relationship of ditch [357], ditch [355]
131	7	1:20	(354)-[357]	Plan of Relationship of ditch [357], ditch [355]
132	4	1:10	(342)-[343]	South-east Facing Section of Ditch [343]

Drawing	Sheet No.	Scale	Context	Description
133	4	1:10	(342)-[343]	South-west Facing Section of Ditch [343]
134	4	1:20	(342)-[343]	Plan of Ditch [343]
135	3	1:10	(350)-[351]	North-west Facing Section of Ditch [351]
136	3	1:10	(350)-[351]	South-west Facing Section of Ditch [351]
137	3	1:20	(350)-[351]	Plan of Ditch [351]
138	7	1:10	(352)-[353]	South-east Facing Section of Ditch [353]
139	7	1:20	(352)-[353]	Plan of Ditch [353]
140	8	1:10	(358)-[362]	South-east Facing Section of Relationship of ditch [362], ditch [360]
141	8	1:20	(358)-[362]	Plan of Relationship of ditch [362], ditch [360]
142	8	1:20	(363)-[368]	South-west Facing Section of Relationship of ditch [364], ditch [366], ditch [368]
143	8	1:20	(363)-[366]	South-east Facing Section of Relationship of ditch [364], ditch [366], ditch [368]
144	8	1:20	(363)-[368]	Plan of Relationship of ditch [364], ditch [366], ditch [368]
145	9	1:10	(342)-[343]	South-west Facing Section of Ditch [343]
146	9	1:10	(316)-[317]	North-east Facing Section of Relationship of ditch [317], pit [320], pit [322]
147	9	1:20	(342)-[343]	Plan of Ditch [343]
148	9	1:20	(316)-[322]	Plan of Relationship of ditch [317], pit [320], pit [322]
149	10	1:20	(314)-[315]	Plan of Ditch [315]
150	10	1:20	(350)-[351]	Plan of Ditch [351]
151	11	1:10	(369)-[372]	North-west facing Section of Ditch [372]
152	11	1:10	(369)-[372]	North-east facing Section of Ditch [372]
153	11	1:10	(369)-[372]	South-east facing Section Ditch [372]
154	11	1:10	(369)-[372]	South-west facing Section of Ditch [372]
155	12	1:20	(369)-[372]	Plan of Ditch [372]
156	13	1:10	(373)-[376]	South-west facing Section of Relationship of ditch [374], ditch [376]
157	13	1:20	(373)-[376]	Plan of Relationship of ditch [374], ditch [376]
158	14	1:10	(377)-[378]	Plan of Ditch [378]
159	14	1:20	(377)-[378]	South-east facing Section of Ditch [378]
160	15	1:10	(382)-[383]	East facing Section of Relationship of ditch [387], ditch [383]
161	15	1:10	(382)-[387]	South-east facing Section of Relationship of ditch [387], ditch [383]
162	15	1:10	(382)-[387]	South-west facing Section of Relationship of ditch [387], ditch [383]
163	15	1:20	(382)-[387]	Plan of Relationship of ditch [387], ditch [383]
164	16	1:10	(388)-[391]	North-west facing Section of Relationship of ditch [389], ditch [391]
165	16	1:10	(388)-[391]	North-east facing Section of Relationship of ditch [389], ditch [391]
166	16	1:20	(388)-[391]	Plan of Relationship of ditch [389], ditch [391]
167	14	1:10	(392)-[393]	South-west facing Section of Ditch [393]
168	14	1:20	(392)-[393]	Plan of Ditch [393]

Drawing	Sheet No.	Scale	Context	Description
169	13	1:10	(394)-[398]	South-west facing Section of Relationship of ditch [396], ditch [398]
170	13	1:20	(394)-[398]	Plan of Relationship of ditch [396], ditch [398]
171	10	1:10	(402)-[403]	South-east facing Section of Ditch [403]
172	10	1:20	(402)-[403]	Plan of Ditch [403]
173	14	1:10	(407)-[408]	South-west facing Section of Ditch [408]
174	10	1:10	(407)-[408]	South-east facing Section of Ditch [408]
175	10	1:20	(407)-[408]	Plan of Ditch [408]
176	14	1:20	(407)-[408]	South-east facing Section of Plan of Ditch [408]
177	17	1:10	(404)-[406]	Plan of Ditch [406]
178	17	1:20	(404)-[406]	Plan of Ditch [406]
179	17	1:10	(379)-[381]	South-east facing Section of Ditch [381]
180	17	1:20	(379)-[381]	Plan of Ditch [381]
181	18	1:10	(399)-[401]	North-west facing Section of Ditch [401]
182	18	1:20	(399)-[401]	Plan of Ditch [401]
183	18	1:10	(409)-[410]	South-east facing Section of Ditch [410]
184	18	1:10	(411)-[412]	South-west facing Section of Relationship of ditch [412], ditch [414]
185	18	1:10	(413)-[414]	North-east facing Section of Relationship of ditch [412], ditch [414]
186	20	1:20	(413)-[414]	Plan of Relationship of ditch [412], ditch [414]
187	19	1:20	(415)-[419]	South-east facing Section of Relationship of ditch [416], ditch [419]
188	19	1:20	(415)-[419]	Plan of Relationship of ditch [416], ditch [419]
189	19	1:20	(415)-[419]	North-east facing Section of Relationship of ditch [416], ditch [419]
190	19	1:20	(415)-[419]	Plan of Relationship of ditch [416], ditch [419]
191	9	1:10	(424)-[425]	South facing Section of Ditch [426]
192	9	1:20	(424)-[425]	Plan of Ditch [426]
193	22	1:10	(429)-[433]	North facing Section of Relationship of ditch [431], ditch [428], gully [433]
194	22	1:10	(429)-[433]	West facing Section of Relationship of ditch [431], ditch [428], gully [433]
195	23	1:10	(429)-[433]	Plan of Relationship of ditch [431], ditch [428], gully [433]
196	20	1:10	(420)-[423]	North-west facing Section of Relationship of pit [421], ditch [423]
197	20	1:10	(420)-[423]	South-east facing Section of Relationship of pit [421], ditch [423]
198	10	1:20	(420)-[423]	Plan of Relationship of pit [421], ditch [423]
199	20	1:20	(411)-[414]	North-west facing Section of Relationship of ditch [412], ditch [414]
200	20	1:20	(411)-[414]	Plan of Relationship of ditch [412], ditch [414]
201	22	1:10	(432)-[434]	North-east facing Section of Relationship of ditch [431], ditch [428], gully [433]
202	21	1:10	(435)-[436]	North-west facing Section of Ditch [436]

Drawing	Sheet No.	Scale	Context	Description
203	21	1:10	(435)-[436]	South-west facing Section of Ditch [436]
204	24	1:20	(435)-[436]	Plan of Ditch [436]
205	25	1:20	(435)-[436]	Plan of Ditch [436]
206	26	1:10	(437)-[442]	South-west facing Section of Relationship of ditch [442], ditch [439]
207	24	1:10	(437)-[442]	North-west facing Section of Relationship of ditch [442], ditch [439]
208	25	1:10	(437)-[442]	South-east facing Section of Relationship of ditch [442], ditch [439]
209	26	1:20	(437)-[442]	Plan of Relationship of ditch [442], ditch [439]

APPENDIX 5

Sample Listing

Sample	Context	Cut	Type	Volume (L)	Reason	Finds	Flot
100	302	303	Bulk	40	Single fill of ditch containing charcoal	No	Yes
101	304	305	Bulk	40	Single fill of ditch	No	Yes
102	306	307	Bulk	40	Single fill of ditch	No	Yes
103	308	309	Bulk	40	Single fill of ditch	No	Yes
104	310	311	Bulk	40	Single fill of ditch	No	Yes
105	312	313	Bulk	40	Single fill of ditch	No	Yes
106	314	315	Bulk	40	Single fill of ditch	No	Yes
107	332	333	Bulk	40	Single fill of ditch	No	No
108	328	331	Bulk	10	Main fill of possible pit	No	Yes
109	316	317	Bulk	40	Single fill of ditch	No	Yes
110	338	339	Bulk	40	Single fill of ditch	No	Yes
111	342	343	Bulk	40	Single fill of ditch	No	Yes
112	347	349	Bulk	1	Charcoal deposit	No	Yes
113	350	351	Bulk	40	Single fill of ditch	No	Yes
114	352	353	Bulk	40	Single fill of ditch	No	Yes
115	361	362	Bulk	40	Single fill of ditch	No	Yes
116	365	366	Bulk	40	Single fill of ditch corner	Yes	Yes
117	338	339	OSL	-	OSL Dating	No	-
118	301	-	OSL	-	OSL Dating	No	-
119	314	315	OSL	-	OSL Dating	No	-
120	342	343	OSL	-	OSL Dating	No	-
121	371	372	OSL	-	OSL Dating	No	-
122	371	372	Bulk	80	Basal fill of contemporary ditches	No	Yes
123	373	374	Bulk	40	Single fill of ditch	No	Yes
124	377	378	Bulk	40	Single fill of ditch	No	Yes
125	379	381	Bulk	40	Main fill of ditch	No	Yes
126	392	393	Bulk	40	Single fill of ditch	No	Yes
127	382	383	Bulk	40	Basal fill of ditch	No	Yes
128	399	401	Bulk	40	Main fill of ditch	No	Yes
129	402	403	Bulk	40	Single fill of ditch	No	Yes
130	404	406	Bulk	10	Main fill of cut	No	Yes
131	407	408	Bulk	40	Single fill of ditch	No	Yes
132	409	410	Bulk	40	Single fill of ditch corner	No	Yes
133	411	412	Bulk	40	Single fill of ditch	No	Yes
134	422	423	Bulk	40	Single fill of ditch	No	Yes
135	413	414	Bulk	40	Single fill of ditch	No	Yes
136	425	426	Bulk	40	Basal fill of ditch	No	Yes
137	432	433	Bulk	40	Single fill of gully	No	Yes
138	435	436	Bulk	40	Single fill of ditch	No	Yes
139	441	442	Bulk	40	Basal fill of ditch	No	Yes

Sample	Context	Cut	Type	Volume (L)	Reaspon	Finds	Flot
140	438	439	Bulk	40	Basal fill of ditch	No	Yes
141	438	439	OSL	-	OSL Dating	No	-
142	435	436	OSL	-	OSL Dating	No	-
143	380	381	OSL	-	OSL Dating	No	-
144	413	414	OSL	-	OSL Dating	No	-
145	409	410	OSL	-	OSL Dating	No	-

APPENDIX 6

Ravenfield, MAP 05-34-21

Carbonised Plant Macrofossils and Charcoal

Diane Alldritt

1: Introduction

Thirty five environmental sample flots taken during archaeological excavation work at Ravenfield, Area 1 (MAP 05-34-21), were examined for carbonised plant macrofossils and charcoal. Samples were taken from a series of ditch and gully features resulting in low levels of recovery of charcoal and trace finds of cereal grain and hazel nutshell.

2: Methodology

The bulk environmental samples were processed by MAP using a Siraf style water flotation system (French 1971). The samples were 10litres up to 80litres in volume. The flots were dried before examination under a low power binocular microscope typically at x10 magnification. All identified plant remains including charcoal were removed and bagged separately by type.

Wood charcoal was examined using a high powered Vickers M10 metallurgical microscope at magnifications up to x200. The reference photographs of Schweingruber (1990) were consulted for charcoal identification. Plant nomenclature utilised in the text follows Stace (1997) for all vascular plants apart from cereals, which follow Zohary and Hopf (2000).

3: Results

The environmental samples produced small amounts of carbonised remains <2.5ml up to 50ml in volume with the majority of recovery at the lower end, mainly consisting of charcoal fragments <0.5cm to 3.0cm in size. Trace finds of degraded cereal grain and hazel nutshell fragments were also recorded. Modern material was present at <2.5ml mainly root detritus indicating a low degree of bioturbation was possible through the deposits.

Results are given in table 1 and discussed below.

4: Discussion

A series of ditch and gully features sampled across the excavation area produced small quantities of charcoal consisting of a mixture of *Quercus* (oak), *Corylus* (hazel), *Alnus* (alder), *Betula* (birch) and Maloideae (apple / hawthorn / whitebeams) type representative of low level burning activity taking place in the vicinity. Five of the ditch deposits, 303 fill (302), 307 fill (306), 349 fill (347), 374 fill (373), 383 fill (382) also produced twisted root remains probably originating from field clearance work for agriculture and possibly of fairly recent / Post Medieval date. Two samples contained trace find of *Corylus avellana* (hazel) nutshell, in both ditches 353 fill (352) and 366 (365) these were found in amongst oak charcoal and in good condition, possibly recent remains. In ditch 366 the hazel nutshell was only partially carbonised and looked fairly modern or may have been waterlogged. Trace finds of indeterminate cereal grain were recorded from ditch 401 fill (399) and 414 fill (413) probably residual remains and not particularly significant.

5: Conclusion

The environmental samples produced small amounts of carbonised plant remains mainly consisting of charcoal deposits likely to have originated from field clearance work and other probable Post Medieval activity, with some possible residual remains from earlier burning activity in the vicinity also recorded. The presence of trace finds of indeterminate cereal grain and hazel nutshell suggested some residual remains from low levels of burning activity taking place in the area.

Further excavation work at the site has a low potential to produce any significant quantities of carbonised remains.

References

French, D. H., 1971, 'An Experiment in Water Sieving'. *Anatolian Studies 21* 59-64.

Schweingruber, F. H., 1990, *Anatomy of European Woods*. Paul Haupt Publishers Berne and Stuttgart.

Stace, C., 1997, *New Flora of the British Isles*. 2nd Edition Cambridge University Press.

Zohary, D. and Hopf, M., 2000, *Domestication of Plants in the Old World*. 3rd Edition Oxford University Press.

Ravenfield, Area 1	Context	302	304	306	308	310	312
MAP 05-34-21	Sample	100	101	102	103	104	105
	Feature	ditch [303]	ditch [305]	ditch [307]	ditch [309]	ditch [311]	ditch [313]
	Radiocarbon Y/N	N	N	N	Y ch	Y ch	N
	Sample Volume (litres)	40	40	40	40	40	40
	Total CV	20ml	<2.5ml	10ml	<2.5ml	20ml	20ml
	Modern	<2.5ml	<2.5ml	<2.5ml	0	<2.5ml	0
Carbonised Cereal Grain	Common Name						
Indeterminate cereal grain (+embryo)							
Charcoal							
Quercus	oak						5 (0.31g)
Corylus	hazel						
Alnus	alder				1 (0.03g)		
Betula	birch						
Maloideae	apple / hawthorn / whitebeams					2 (0.59g)	
Indeterminate root fragments		3 (1.06g)		1 (0.61g)			
Indeterminate							
Carbonised Wild Resources							
Corylus avellana nutshell							
Other Remains							
Clinker							
Coal							

314	316	332	338	342	347	350	352	361	365	371	373
106	109	107	110	111	112	113	114	115	116	122	123
ditch [315]	ditch [317]	ditch [333]	ditch [339]	ditch [343]	ditch [349]	ditch [351]	ditch [353]	ditch [362]	ditch [366]	ditch [372]	ditch [374]
N	N	Y ch	Y ch	N	N	Y ch	Y hznt	Y ch	Y hznt	N	N
40	40	40	40	40	10	40	40	40	40	80	40
10ml	5ml	10ml	20ml	10ml	30ml	10ml	50ml	40ml	5ml	10ml	30ml
<2.5ml	0	<2.5ml	<2.5ml	0	<2.5ml	<2.5ml	<2.5ml	<2.5ml	<2.5ml	0	0
5 (0.39g)	2 (0.14g)	2 (0.25g)		10 (0.99g)			10 (1.93g)	10 (0.70g)	2 (0.12g)		
		1 (0.10g)				1 (0.14g)					
			1 (0.16g)					1 (0.20g)			
					4 (1.87g)						3 (1.88g)
										2 (0.18g)	
							2 (0.19g)		1 (0.14g)		
										1	

377	379	382	392	399	402	404	407	409	411	413	422
124	125	127	126	128	129	130	131	132	133	135	134
ditch [378]	ditch [381]	ditch [383]	ditch [393]	ditch [401]	ditch [403]	ditch [406]	ditch [408]	ditch [410]	ditch [412]	ditch [414]	ditch [423]
N	Y ch	N	N	N	N	N	N	Y ch	Y ch	Y ch	Y ch
40	40	40	40	40	40	10	40	40	40	40	40
30ml	2.5ml	50ml	10ml	10ml	10ml	<2.5ml	<2.5ml	10ml	15ml	5ml	5ml
<2.5ml	0	<2.5ml	<2.5ml	0	<2.5ml	0	0	<2.5ml	<2.5ml	0	0
				1						1	
10 (3.65g)	1 (0.10g)		5 (0.18g)	1 (0.14g)	5 (0.50g)						
	1 (0.07g)										
								2 (0.31g)	1 (0.32g)	1 (0.30g)	1 (0.18g)
		2 (3.38g)									

425	432	435	438	441
136	137	138	140	139
ditch [426]	gully [433]	ditch [436]	ditch [439]	ditch [442]
N	N	N	N	N
40	40	40	40	40
5ml	<2.5ml	10ml	10ml	5ml
<2.5ml	0	<2.5ml	<2.5ml	0
4 (0.12g)		3 (0.11g)	6 (0.55g)	1 (0.26g)

APPENDIX 7

Context Number	Primary Material	Quantity	Description	Weight
300	Modified chert (flint)	1	1 piece of flint	3.33
363	Pottery	7	7 fragments of pottery	12.5
344	Pottery	2	2 fragments of pottery	13.51
367	Pottery	1	1 fragment of pottery	7.5
334	Pottery	2	2 fragments of pottery	35
363	Pottery	5	5 fragments of pottery	293

APPENDIX 8
Moor Lane South, Ravenfield, Rotherham, West Yorkshire

SK 489 934
(05.34.21)

Pottery Assessment

Introduction and Methods

The pottery assemblage from the excavation at Moor Lane South consisted of 13 sherds, which were washed, quantified, visually examined and assigned to fabric type. The total weight of the assemblage was 326.5g, giving an Average Sherd Weight (ASW) of 25.12g; however, this figure is skewed by the large rim sherd from context 363. The assemblage was of Romano-British date.

Pottery Catalogue

Pottery Codes:

CG	Calcite-gritted ware
RW	Reduced ware ('greyware')
VES	Vesicular ware

Context 334

2 RW base sherds from a bowl/dish

Spot date: C3

Context 344

2 RW 1 rim sherd from a hook-rimmed jar, plus a base sherd

Spot date: C3-4

Context 363

1 VES rim sherd from a large jar

1 CG body sherd

5 RW body sherds

Spot date: C3-4

Context 367

2 VES body sherds

Spot date: Roman

Conclusions

This small assemblage dates to the Romano-British period, the more closely dateable sherds belonging to the 3rd and 4th centuries. Three fabric types are present: Reduced ware, Calcite-gritted ware, and Vesicular ware (which is almost certainly Calcite-gritted ware with the grits leached out).

Given the small size of the assemblage, other conclusions must be tentative, but no fine ware is present (which suggests rural occupation) and the sources are purely regional.

Recommendations

The assemblage should be retained with the rest of the archive. The Reduced ware rim from context 344 and Vesicular ware rim from context 363 should be illustrated in any future report, which should consider this material alongside that from the evaluation.

APPENDIX 9

FLINT

by P. Makey.

A report prepared for MAP Archaeological Practice Ltd (Last Revision 30/11/22).

The flint has been fully catalogued in a Microsoft Excel spread sheet appended.

Topsoil 300 contained a single prehistoric flint. The piece is a flake end scraper that has been manufactured on an irregular cortical flake.

The scraper is in a fresh state and measures 27mm in length, 19mm in breadth and 6.5mm in thickness. Manufactured on an olive grey (Munsell 5Y 4/1) fine grained, till derived flint with a smooth, thin light pale yellowish brown coloured (Munsell 10YR 6/2) cortex on the left hand side.
The flake has been removed from a small cortical flint pebble that was probably less than 35mm in diameter. The piece has been struck by the application of a hard hammer stone and possesses slight traces of pot-prehistoric edge damage. The flint raw material is not local; it is consistent with till derived flint from the North and East Yorkshire coast. The distal (end) and of the flake has received slight; though fine convex pressure flaking, with a retouched length of 13mm, at an angle of 55 degrees. The implement has clear macroscopic traces of use wear. The piece was examined for the possible presence of micro-wear but none was present.

Disscussion.

The flint is not datable, although they are found far more frequently in flint assemblages of later Neolithic / early Bronze Age date. This attribution is also more probable on the basis of flake morphology and size. Scrapers are a common feature of topsoil assemblages where they tend to be comparatively over represented due to their easy recognisability and survivability; being more substantial than thinner flakes. Since scrapers are retouched tools they can be found away from flint knapping sites and although found in numbers on settlement sites individual items can be found away from settlement foci. The implement is a domestic piece that has been used. The state of the piece is far fresher than might be expected. The importance of the Ravenfield, flint is that it indicates that there is a possibility of a Neolithic phase of activity on the site in an area where known Neolithic flint assemblages are relatively rare.

Recommendations.

1 The assemblage is two small for any further analysis. The flint has been catalogued in detail and
no further cataloguing is required for this assemblage

2 The flint does not require illustration.

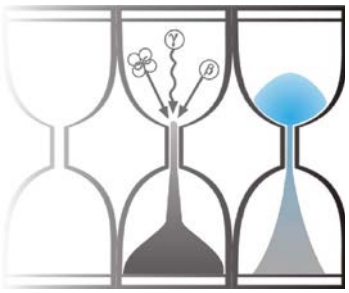
Bibliography.

Munsell Rock-Colour Chart., 1991. The Geological Society of America.
Boulder Colarado, U.S.A. Munsell color.

APPENDIX 10

University of Gloucestershire

Luminescence dating laboratory



Optical dating of sediments: Ravenfield excavations, UK

to

MAP Archaeological Practice

Analysis & Reporting, Prof. P.S. Toms
Sample Preparation & Measurement, Dr J.C. Wood
17 March 2023

Contents

Scope of Report

This is a standard report of the Luminescence dating laboratory, University of Gloucestershire. In large part, the document summarises the processes, diagnostics and data drawn upon to deliver Table 1. A conclusion on the analytical validity of each sample's optical age estimate is expressed in Table 2; where there are caveats, the reader is directed to the relevant section of the report that explains the issue further in general terms.

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Field Code	Lab Code	Overburden (m)	Grain size (μm)	Moisture content (%)	Ge γ-spectrometry (*ex situ*)			β D_r (Gy.ka^{-1})	γ D_r (Gy.ka^{-1})	Cosmic D_r (Gy.ka^{-1})	Preheat (°C for 10s)	Low Dose Repeat Ratio	High Dose Repeat Ratio	Post-IR OSL Ratio
					K (%)	Th (ppm)	U (ppm)							
117	GL22058	0.80	125-180	11	1.72 ± 0.11	8.74 ± 0.55	1.90 ± 0.14	1.49 ± 0.15	0.92 ± 0.11	0.19 ± 0.02	220	1.00 ± 0.03	0.99 ± 0.03	0.99 ± 0.03
118	GL22059	0.83	125-180	9	2.04 ± 0.12	10.67 ± 0.62	1.96 ± 0.14	1.78 ± 0.17	1.10 ± 0.13	0.19 ± 0.02	200	0.98 ± 0.06	0.90 ± 0.06	0.88 ± 0.06
142	GL22060	0.82	125-180	7	1.74 ± 0.11	6.25 ± 0.46	1.51 ± 0.12	1.48 ± 0.15	0.82 ± 0.12	0.19 ± 0.02	220	0.97 ± 0.04	0.95 ± 0.04	0.92 ± 0.04
143	GL22061	1.25	125-180	7	1.83 ± 0.12	5.69 ± 0.45	1.18 ± 0.12	1.48 ± 0.16	0.78 ± 0.12	0.17 ± 0.02	220	0.96 ± 0.05	0.99 ± 0.05	0.95 ± 0.05
145	GL22062	0.90	125-180	7	1.89 ± 0.12	5.94 ± 0.46	1.36 ± 0.12	1.56 ± 0.16	0.83 ± 0.12	0.18 ± 0.02	240	0.95 ± 0.06	0.96 ± 0.06	0.91 ± 0.06

Field Code	Lab Code	Total D_r (Gy.ka^{-1})	D_e (Gy)	Age (ka)	Date
117	GL22058	2.60 ± 0.17	4.92 ± 0.29	1.89 ± 0.17 (0.14)	40 BC – AD 300
118	GL22059	3.07 ± 0.20	398 ± 37	130 ± 15 (13)	-
142	GL22060	2.48 ± 0.17	7.71 ± 1.62	3.11 ± 0.69 (0.67)	1770 BC – 400 BC
143	GL22061	2.44 ± 0.17	12.3 ± 1.5	5.06 ± 0.73 (0.68)	3760 BC – 2310 BC
145	GL22062	2.57 ± 0.18	5.31 ± 0.37	2.06 ± 0.20 (0.17)	250 BC – AD 160

Table 1 D_r, D_e and Age data of submitted samples located at c. 53°N, 1°W, 123-126 m. Age estimates expressed relative to year of sampling. Uncertainties in age are quoted at 1σ confidence, are based on analytical errors and reflect combined systematic and experimental variability and (in parenthesis) experimental variability alone (see 6.0). **Blue** indicates samples with accepted age estimates, **red**, age estimates with caveats (see Table 2).

Generic considerations	Field Code	Lab Code	Sample specific considerations
Absence of *in situ* γ spectrometry data (see section 4.0)	117	GL22058	None
	118	GL22059	None
	142	GL22060	None
	143	GL22061	None
	145	GL22062	None

Table 2 Analytical validity of sample suite age estimates and caveats for consideration

1.0 Mechanisms and principles

Upon exposure to ionising radiation, electrons within the crystal lattice of insulating minerals are displaced from their atomic orbits. Whilst this dislocation is momentary for most electrons, a portion of charge is redistributed to meta-stable sites (traps) within the crystal lattice. In the absence of significant optical and thermal stimuli, this charge can be stored for extensive periods. The quantity of charge relocation and storage relates to the magnitude and period of irradiation. When the lattice is optically or thermally stimulated, charge is evicted from traps and may return to a vacant orbit position (hole). Upon recombination with a hole, an electron's energy can be dissipated in the form of light generating crystal luminescence providing a measure of dose absorption.

Herein, quartz is segregated for dating. The utility of this minerogenic dosimeter lies in the stability of its datable signal over the mid to late Quaternary period, predicted through isothermal decay studies (e.g. Smith *et al.*, 1990; retention lifetime 630 Ma at 20°C) and evidenced by optical age estimates concordant with independent chronological controls (e.g. Murray and Olley, 2002). This stability is in contrast to the anomalous fading of comparable signals commonly observed for other ubiquitous sedimentary minerals such as feldspar and zircon (Wintle, 1973; Templer, 1985; Spooner, 1993)

Optical age estimates of sedimentation (Huntley *et al.*, 1985) are premised upon reduction of the minerogenic time dependent signal (Optically Stimulated Luminescence, OSL) to zero through exposure to sunlight and, once buried, signal reformulation by absorption of litho- and cosmogenic radiation. The signal accumulated post burial acts as a dosimeter recording total dose absorption, converting to a chronometer by estimating the rate of dose absorption quantified through the assay of radioactivity in the surrounding lithology and streaming from the cosmos.

$$\text{Age} = \frac{\text{Mean Equivalent Dose } (D_e, \text{ Gy})}{\text{Mean Dose Rate } (D_r, \text{ Gy.ka}^{-1})}$$

Aitken (1998) and Bøtter-Jensen *et al.* (2003) offer a detailed review of optical dating.

2.0 Sample Preparation

Five sediment samples were collected within opaque tubing and submitted for Optical dating. To preclude optical erosion of the datable signal prior to measurement, all samples were opened and prepared under controlled laboratory illumination provided by Encapsulite RB-10 (red) filters. To isolate that material potentially exposed to daylight during sampling, sediment located within 20 mm of each tube-end was removed.

The remaining sample was dried and then sieved. The fine sand fraction was segregated and subjected to acid and alkaline digestion (10% HCl, 15% H_2O_2) to attain removal of carbonate and organic components respectively. A further acid digestion in HF (40%, 60 mins) was used to etch the outer 10-15 μm layer affected by α radiation and degrade each samples' feldspar content. During HF treatment, continuous magnetic stirring was used to effect isotropic etching of grains. 10% HCl was then added to remove acid soluble fluorides. Each sample was dried, resieved and quartz isolated from the remaining heavy mineral fraction using a sodium polytungstate density separation at 2.68g.cm^{-3}. Twelve 6 mm multi-grain aliquots (*c.* 3-6 mg) of quartz from each sample were then mounted on stainless steel cups for determination of D_e values.

All drying was conducted at 40°C to prevent thermal erosion of the signal. All acids and alkalis were Analar grade. All dilutions (removing toxic-corrosive and non-minerogenic luminescence-bearing substances) were conducted with distilled water to prevent signal contamination by extraneous particles.

3.0 Acquisition and accuracy of D_e value

All minerals naturally exhibit marked inter-sample variability in luminescence per unit dose (sensitivity). Therefore, the estimation of D_e acquired since burial requires calibration of the natural signal using known amounts of laboratory dose. D_e values were quantified using a single-aliquot regenerative-dose (SAR) protocol (Murray and Wintle 2000; 2003) facilitated by a Freiberg Instruments Lexsyg Smart irradiation-stimulation-detection system (Richter *et al*., 2015). Within this apparatus, optical signal stimulation is provided by an assembly of blue laser diodes, filtered to 445±3 nm conveying 50 $mW.cm^{-2}$ using a 3 mm Schott GG420 and HC448/20 positioned in front of each laser diode. Infrared (IR) stimulation, provided by IR laser diodes stimulating at 850±3nm filtered by 3 mm RG 715 and delivering ~200 $mW.cm^{-2}$, was used to indicate the presence of contaminant feldspars (Hütt *et al*., 1988). Stimulated photon emissions from quartz aliquots are in the ultraviolet (UV) range. These were divided from stimulating photons by 2.5 mm Hoya U-340 glass filters, and a Delta BP 365/50 interference filter, then detected by a Hamamatsu UV-VIS (300-650 nm) bi-alkaline cathode photomultiplier. Aliquot irradiation was conducted using a 1.85 GBq $^{90}Sr/^{90}Y$ β source calibrated for multi-grain aliquots of 125-180 μm quartz against the 'Hotspot 800' ^{60}Co γ source located at the National Physical Laboratory (NPL), UK.

SAR by definition evaluates D_e through measuring the natural signal (Fig. 1) of a single aliquot and then regenerating that aliquot's signal by using known laboratory doses to enable calibration. For each aliquot, five different regenerative-doses were administered so as to image dose response. D_e values for each aliquot were then interpolated, and associated counting and fitting errors calculated, by way of exponential plus linear regression (Fig. 1). Weighted (geometric) mean D_e values were calculated, given sufficient mass, from 12 aliquots using the central age model outlined by Galbraith *et al*. (1999) and are quoted at 1σ confidence (Table 1). The accuracy with which D_e equates to total absorbed dose and that dose absorbed since burial was assessed. The former can be considered a function of laboratory factors, the latter, one of environmental issues. Diagnostics were deployed to estimate the influence of these factors and criteria instituted to optimise the accuracy of D_e values.

3.1 Laboratory Factors

3.1.1 Feldspar contamination

The propensity of feldspar signals to fade and underestimate age, coupled with their higher sensitivity relative to quartz makes it imperative to quantify feldspar contamination. At room temperature, feldspars generate a signal (IRSL; Fig. 1) upon exposure to IR whereas quartz does not. The signal from feldspars contributing to OSL can be depleted by prior exposure to IR. For all aliquots the contribution of any remaining feldspars was estimated from the OSL IR depletion ratio (Duller, 2003). The influence of IR depletion on the OSL signal can be illustrated by comparing the regenerated post-IR OSL D_e with the applied regenerative-dose. If the addition to OSL by feldspars is insignificant, then the repeat dose ratio of OSL to post-IR OSL should be statistically consistent with unity (Table 1). If any aliquots do not fulfil this criterion, then the sample age estimate should be accepted tentatively. The source of feldspar contamination is rarely rooted in sample preparation; it predominantly results from the occurrence of feldspars as inclusions within quartz.

3.1.2 Preheating

Preheating aliquots between irradiation and optical stimulation is necessary to ensure comparability between natural and laboratory-induced signals. However, the multiple irradiation and preheating steps that are required to define single-aliquot regenerative-dose response leads to signal sensitisation, rendering calibration of the natural signal inaccurate. The SAR protocol (Murray and Wintle, 2000; 2003) enables this sensitisation to be monitored and corrected using a test dose, here set at 5 Gy preheated to 160°C for 10s, to track signal sensitivity between irradiation-preheat steps. However, the accuracy of sensitisation correction for both natural and laboratory signals can be preheat dependent.

The Dose Recovery test was used to assess the optimal preheat temperature for accurate correction and calibration of the time dependent signal. Dose Recovery (Fig. 2) attempts to quantify the combined effects of thermal transfer and

sensitisation on the natural signal, using a precise lab dose to simulate natural dose. The ratio between the applied dose and recovered D_e value should be statistically concordant with unity. For this diagnostic, 6 aliquots were each assigned a 10 s preheat between 140°C and 240°C.

That preheat treatment fulfilling the criterion of accuracy within the Dose Recovery test was selected to generate the final D_e value from a further 12 aliquots. Further thermal treatments, prescribed by Murray and Wintle (2000; 2003), were applied to optimise accuracy and precision. Optical stimulation occurred at 105ºC in order to minimise effects associated with photo-transferred thermoluminescence and maximise signal to noise ratios. Inter-cycle optical stimulation was conducted at 240ºC to minimise recuperation.

3.1.3 Irradiation

For all samples having D_e values in excess of 100 Gy, matters of signal saturation and laboratory irradiation effects are of concern. With regards the former, the rate of signal accumulation generally adheres to a saturating exponential form and it is this that limits the precision and accuracy of D_e values for samples having absorbed large doses. For such samples, the functional range of D_e interpolation by SAR has been verified up to 600 Gy by Pawley *et al*. (2010). Age estimates based on D_e values exceeding this value should be accepted tentatively.

3.1.4 Internal consistency

Abanico plots (Dietze *et al*., 2016) are used to illustrate inter-aliquot D_e variability (Fig. 3). D_e values are standardised relative to the central D_e value for natural signals and are described as overdispersed when >5% lie beyond $\pm 2\sigma$ of the standardising value; resulting from a heterogeneous absorption of burial dose and/or response to the SAR protocol. For multi-grain aliquots, overdispersion of natural signals does not necessarily imply inaccuracy. However where overdispersion is observed for regenerated signals, the efficacy of sensitivity correction may be problematic. Murray and Wintle (2000; 2003) suggest repeat dose ratios (Table 1) offer a measure of SAR protocol success, whereby ratios ranging across 0.9-1.1 represent effective sensitivity correction. However, this variation of repeat dose ratios in the high-dose region can have a significant impact on D_e interpolation.

3.2 Environmental factors

3.2.1 Incomplete zeroing

Post-burial OSL signals residual of pre-burial dose absorption can result where pre-burial sunlight exposure is limited in spectrum, intensity and/or period, leading to age overestimation. This effect is particularly acute for material eroded and redeposited sub-aqueously (Olley *et al*., 1998, 1999; Wallinga, 2002) and exposed to a burial dose of <20 Gy (e.g. Olley *et al*., 2004), has some influence in sub-aerial contexts but is rarely of consequence where aerial transport has occurred. Within single-aliquot regenerative-dose optical dating there are two diagnostics of partial resetting (or bleaching); signal analysis (Agersnap-Larsen *et al*., 2000; Bailey *et al*., 2003) and inter-aliquot D_e distribution studies (Murray *et al*., 1995).

Within this study, signal analysis was used to quantify the change in D_e value with respect to optical stimulation time for multi-grain aliquots. This exploits the existence of traps within minerogenic dosimeters that bleach with different efficiency for a given wavelength of light to verify partial bleaching. D_e (t) plots (Fig. 4; Bailey *et al*., 2003) are constructed from separate integrals of signal decay as laboratory optical stimulation progresses. A statistically significant increase in natural D_e (t) is indicative of partial bleaching assuming three conditions are fulfilled. Firstly, that a statistically significant increase in D_e (t) is observed when partial bleaching is simulated within the laboratory. Secondly, that there is no significant rise in D_e (t) when full bleaching is simulated. Finally, there should be no significant augmentation in D_e (t) when zero dose is simulated. Where partial bleaching is detected, the age derived from the sample should be considered a maximum estimate only. However, the utility of signal analysis is strongly dependent upon a samples pre-burial experience of sunlight's spectrum and its residual to post-burial signal ratio. Given in the majority of cases, the spectral

exposure history of a deposit is uncertain, the absence of an increase in natural D_e (t) does not necessarily testify to the absence of partial bleaching.

Where requested and feasible, the insensitivities of multi-grain single-aliquot signal analysis may be circumvented by inter-aliquot D_e distribution studies. This analysis uses aliquots of single sand grains to quantify inter-grain D_e distribution. At present, it is contended that asymmetric inter-grain D_e distributions are symptomatic of partial bleaching and/or pedoturbation (Murray *et al*., 1995; Olley *et al*., 1999; Olley *et al*., 2004; Bateman *et al*., 2003). For partial bleaching at least, it is further contended that the D_e acquired during burial is located in the minimum region of such ranges. The mean and breadth of this minimum region is the subject of current debate, as it is additionally influenced by heterogeneity in microdosimetry, variable inter-grain response to SAR and residual to post-burial signal ratios.

3.2.2 Turbation

As noted in section 3.1.1, the accuracy of sedimentation ages can further be controlled by post-burial trans-strata grain movements forced by pedo- or cryoturbation. Berger (2003) contends pedogenesis prompts a reduction in the apparent sedimentation age of parent material through bioturbation and illuviation of younger material from above and/or by biological recycling and resetting of the datable signal of surface material. Berger (2003) proposes that the chronological products of this remobilisation are A-horizon age estimates reflecting the cessation of pedogenic activity, Bc/C-horizon ages delimiting the maximum age for the initiation of pedogenesis with estimates obtained from Bt-horizons providing an intermediate age 'close to the age of cessation of soil development'. Singhvi et al. (2001), in contrast, suggest that B and C-horizons closely approximate the age of the parent material, the A-horizon, that of the 'soil forming episode'. Recent analyses of inter-aliquot D_e distributions have reinforced this complexity of interpreting burial age from pedoturbated deposits (Lombard *et al*., 2011; Gliganic *et al*., 2015; Jacobs *et al*., 2008; Bateman *et al*., 2007; Gliganic *et al*., 2016). At present there is no definitive post-sampling mechanism for the direct detection of and correction for post-burial sediment remobilisation. However, intervals of palaeosol evolution can be delimited by a maximum age derived from parent material and a minimum age obtained from a unit overlying the palaeosol. Inaccuracy forced by cryoturbation may be bidirectional, heaving older material upwards or drawing younger material downwards into the level to be dated. Cryogenic deformation of matrix-supported material is, typically, visible; sampling of such cryogenically-disturbed sediments can be avoided.

4.0 Acquisition and accuracy of D_r value

Lithogenic D_r values were defined through measurement of U, Th and K radionuclide concentration and conversion of these quantities into β and γ D_r values (Table 1). β contributions were estimated from sub-samples by laboratory-based γ spectrometry using an Ortec GEM-S high purity Ge coaxial detector system, calibrated using certified reference materials supplied by CANMET. γ dose rates can be estimated from *in situ* NaI gamma spectrometry or, where direct measurements are unavailable as in the present case, from laboratory-based Ge γ spectrometry. *In situ* measurements reduce uncertainty relating to potential heterogeneity in the γ dose field surrounding each sample. The level of U disequilibrium was estimated by laboratory-based Ge γ spectrometry. Estimates of radionuclide concentration were converted into D_r values (Adamiec and Aitken, 1998), accounting for D_r modulation forced by grain size (Mejdahl, 1979) and present moisture content (Zimmerman, 1971). Cosmogenic D_r values were calculated on the basis of sample depth, geographical position and matrix density (Prescott and Hutton, 1994).

The spatiotemporal validity of D_r values can be considered a function of five variables. Firstly, age estimates devoid of *in situ* γ spectrometry data should be accepted tentatively if the sampled unit is heterogeneous in texture or if the sample is located within 300 mm of strata consisting of differing texture and/or mineralogy. However, where samples are obtained throughout a vertical profile, consistent values of γ D_r based solely on laboratory measurements may evidence the

homogeneity of the γ field and hence accuracy of γ D_r values. Secondly, disequilibrium can force temporal instability in U and Th emissions. The impact of this infrequent phenomenon (Olley *et al*., 1996) upon age estimates is usually insignificant given their associated margins of error. However, for samples where this effect is pronounced (>50% disequilibrium between ^{238}U and ^{226}Ra; Fig. 5), the resulting age estimates should be accepted tentatively. Thirdly, pedogenically-induced variations in matrix composition of B and C-horizons, such as radionuclide and/or mineral remobilisation, may alter the rate of energy emission and/or absorption. If D_r is invariant through a dated profile and samples encompass primary parent material, then element mobility is likely limited in effect. Fourthly, spatiotemporal detractions from present moisture content are difficult to assess directly, requiring knowledge of the magnitude and timing of differing contents. However, the maximum influence of moisture content variations can be delimited by recalculating D_r for minimum (zero) and maximum (saturation) content. Finally, temporal alteration in the thickness of overburden alters cosmic D_r values. Cosmic D_r often forms a negligible portion of total D_r. It is possible to quantify the maximum influence of overburden flux by recalculating D_r for minimum (zero) and maximum (surface sample) cosmic D_r.

5.0 Estimation of Age

Ages reported in Table 1 provide an estimate of sediment burial period based on mean D_e and D_r values and their associated analytical uncertainties. Uncertainty in age estimates is reported as a product of systematic and experimental errors, with the magnitude of experimental errors alone shown in parenthesis (Table 1). Cumulative frequency plots indicate the inter-aliquot variability in age (Fig. 6). The maximum influence of temporal variations in D_r forced by minima-maxima in moisture content and overburden thickness is also illustrated in Fig. 6. Where uncertainty in these parameters exists this age range may prove instructive, however the combined extremes represented should not be construed as preferred age estimates. The analytical validity of each sample is presented in Table 2.

6.0 Analytical uncertainty

All errors are based upon analytical uncertainty and quoted at 1σ confidence. Error calculations account for the propagation of systematic and/or experimental (random) errors associated with D_e and D_r values.

For D_e values, systematic errors are confined to laboratory β source calibration. Uncertainty in this respect is that combined from the delivery of the calibrating γ dose (1.2%; NPL, pers. comm.), the conversion of this dose for SiO_2 using the respective mass energy-absorption coefficient (2%; Hubbell, 1982) and experimental error, totalling 3.5%. Mass attenuation and bremsstrahlung losses during γ dose delivery are considered negligible. Experimental errors relate to D_e interpolation using sensitisation corrected dose responses. Natural and regenerated sensitisation corrected dose points (S_i) were quantified by,

$$S_i = (D_i - x.L_i) / (d_i - x.L_i) \qquad \textbf{Eq.1}$$

where D_i = Natural or regenerated OSL, initial 0.2 s
L_i = Background natural or regenerated OSL, final 5 s
d_i = Test dose OSL, initial 0.2 s
x = Scaling factor, 0.08

The error on each signal parameter is based on counting statistics, reflected by the square-root of measured values. The propagation of these errors within Eq. 1 generating σS_i follows the general formula given in Eq. 2. σS_i were then used to define fitting and interpolation errors within exponential plus linear regressions.

For D_r values, systematic errors accommodate uncertainty in radionuclide conversion factors (5%), β attenuation coefficients (5%), matrix density (0.20 $g.cm^{-3}$), vertical thickness of sampled section (specific to sample collection device), saturation moisture content (3%), moisture content attenuation (2%) and burial moisture content (2.5%, unless direct evidence exists of the magnitude and period of differing content). Experimental errors are associated with radionuclide quantification for each sample by Ge gamma spectrometry.

The propagation of these errors through to age calculation was quantified using the expression,

$$\sigma y\ (\delta y/\delta x) = (\Sigma\ ((\delta y/\delta x_n).\sigma x_n)^2)^{1/2} \qquad \textbf{Eq. 2}$$

where y is a value equivalent to that function comprising terms x_n and where σy and σx_n are associated uncertainties.

Errors on age estimates are presented as combined systematic and experimental errors and experimental errors alone. The former (combined) error should be considered when comparing luminescence ages herein with independent chronometric controls. The latter assumes systematic errors are common to luminescence age estimates generated by means identical to those detailed herein and enable direct comparison with those estimates.

Fig. 1 Signal Calibration

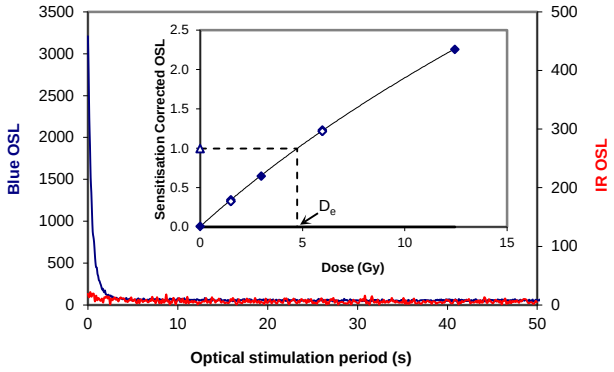


Fig. 2 Dose Recovery

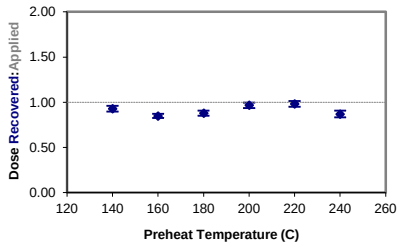


Fig. 4 Signal Analysis

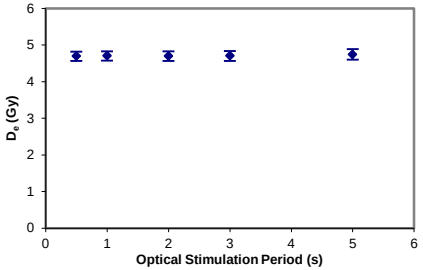


Fig. 3 Inter-aliquot D_e distribution

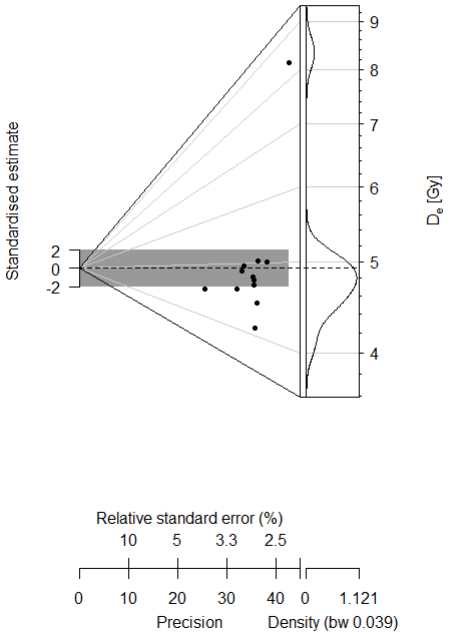


Fig. 5 U Decay Activity

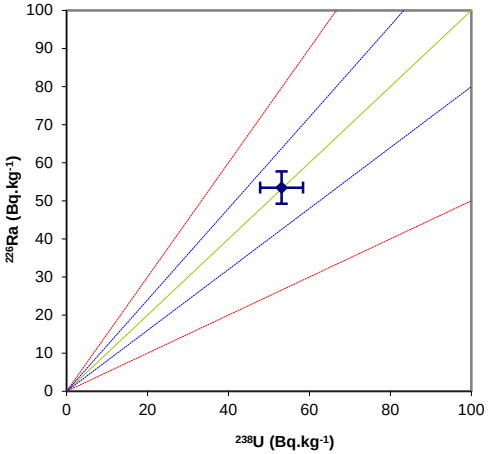


Fig. 6 Age Range

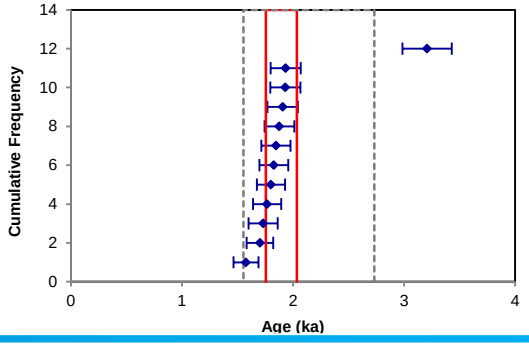


Fig. 1 Signal Calibration Natural blue and laboratory-induced infrared (IR) OSL signals. Detectable IR signal decays are diagnostic of feldspar contamination. Inset, the natural blue OSL signal (open triangle) of each aliquot is calibrated against known laboratory doses to yield equivalent dose (D_e) values. Repeats of low and high doses (open diamonds) illustrate the success of sensitivity correction.

Fig. 2 Dose Recovery The acquisition of D_e values is necessarily predicated upon thermal treatment of aliquots succeeding environmental and laboratory irradiation. The Dose Recovery test quantifies the combined effects of thermal transfer and sensitisation on the natural signal using a precise lab dose to simulate natural dose. Based on this an appropriate thermal treatment is selected to generate the final D_e value.

Fig. 3 Inter-aliquot D_e distribution Abanico plot of inter-aliquot statistical concordance in D_e values derived from **natural** irradiation. Discordant data (those points lying beyond **±2 standardised ln D_e**) reflect heterogeneous dose absorption and/or inaccuracies in calibration.

Fig. 4 Signal Analysis Statistically significant increase in **natural** D_e value with signal stimulation period is indicative of a partially-bleached signal, provided a significant increase in D_e results from **simulated partial bleaching** followed by insignificant adjustment in D_e for simulated **zero** and **full bleach** conditions. Ages from such samples are considered maximum estimates. In the absence of a significant rise in D_e with stimulation time, simulated partial bleaching and zero/full bleach tests are not assessed.

Fig. 5 U Activity Statistical concordance (equilibrium) in the activities of the daughter radioisotope ^{226}Ra with its parent ^{238}U may signify the temporal stability of D_r emissions from these chains. Significant differences (disequilibrium; >50%) in activity indicate addition or removal of isotopes creating a time-dependent shift in D_r values and increased uncertainty in the accuracy of age estimates. A 20% disequilibrium marker is also shown.

Fig. 6 Age Range The Cumulative frequency plot indicates the inter-aliquot variability in age. It also shows the **mean age range**; an estimate of sediment burial period based on mean D_e and D_r values with associated analytical uncertainties. The **maximum influence** of temporal variations in D_r forced by minima-maxima variation in moisture content and overburden thickness is outlined and may prove instructive where there is uncertainty in these parameters. However the combined extremes represented should not be construed as preferred age estimates.

Sample: GL22058

Fig. 1 Signal Calibration

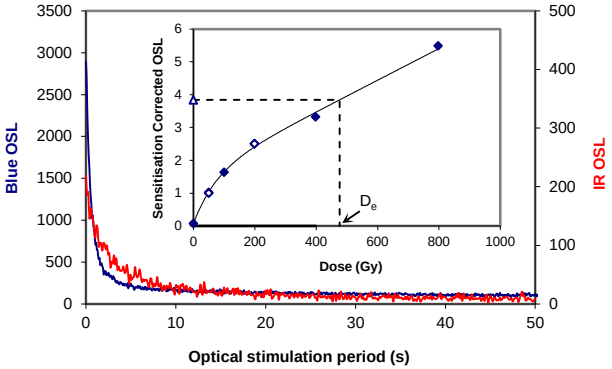


Fig. 2 Dose Recovery

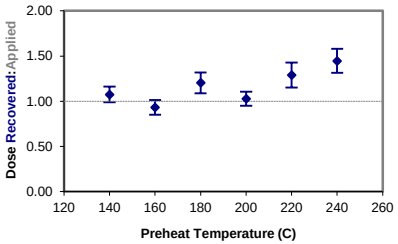


Fig. 4 Signal Analysis

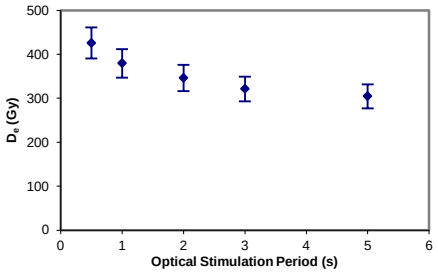
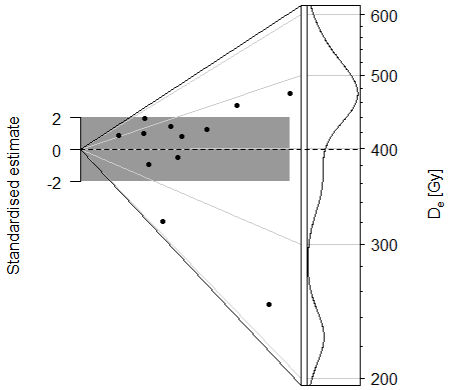


Fig. 3 Inter-aliquot D_e distribution



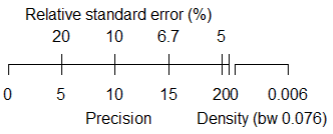


Fig. 5 U Decay Activity

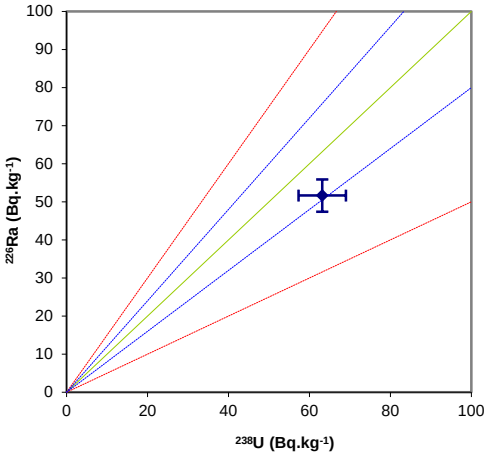


Fig. 6 Age Range

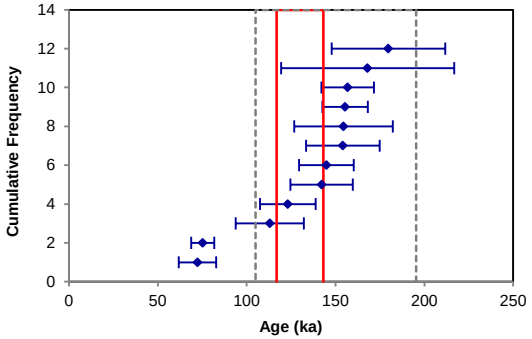


Fig. 1 Signal Calibration Natural blue and laboratory-induced infrared (IR) OSL signals. Detectable IR signal decays are diagnostic of feldspar contamination. Inset, the natural blue OSL signal (open triangle) of each aliquot is calibrated against known laboratory doses to yield equivalent dose (D_e) values. Repeats of low and high doses (open diamonds) illustrate the success of sensitivity correction.

Fig. 2 Dose Recovery The acquisition of D_e values is necessarily predicated upon thermal treatment of aliquots succeeding environmental and laboratory irradiation. The Dose Recovery test quantifies the combined effects of thermal transfer and sensitisation on the natural signal using a precise lab dose to simulate natural dose. Based on this an appropriate thermal treatment is selected to generate the final D_e value.

Fig. 3 Inter-aliquot D_e distribution Abanico plot of inter-aliquot statistical concordance in D_e values derived from **natural** irradiation. Discordant data (those points lying beyond **±2 standardised ln D_e**) reflect heterogeneous dose absorption and/or inaccuracies in calibration.

Fig. 4 Signal Analysis Statistically significant increase in **natural** D_e value with signal stimulation period is indicative of a partially-bleached signal, provided a significant increase in D_e results from **simulated partial bleaching** followed by insignificant adjustment in D_e for simulated **zero** and **full bleach** conditions. Ages from such samples are considered maximum estimates. In the absence of a significant rise in D_e with stimulation time, simulated partial bleaching and zero/full bleach tests are not assessed.

Fig. 5 U Activity Statistical concordance (equilibrium) in the activities of the daughter radioisotope ^{226}Ra with its parent ^{238}U may signify the temporal stability of D_r emissions from these chains. Significant differences (disequilibrium; >50%) in activity indicate addition or removal of isotopes creating a time-dependent shift in D_r values and increased uncertainty in the accuracy of age estimates. A 20% disequilibrium marker is also shown.

Fig. 6 Age Range The Cumulative frequency plot indicates the inter-aliquot variability in age. It also shows the **mean age range**; an estimate of sediment burial period based on mean D_e and D_r values with associated analytical uncertainties. The **maximum influence** of temporal variations in D_r forced by minima-maxima variation in moisture content and overburden thickness is outlined and may prove instructive where there is uncertainty in these parameters. However the combined extremes represented should not be construed as preferred age estimates.

Sample: GL22059

Fig. 1 Signal Calibration

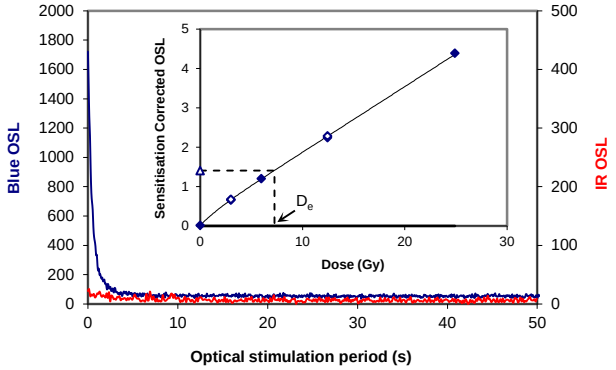


Fig. 2 Dose Recovery

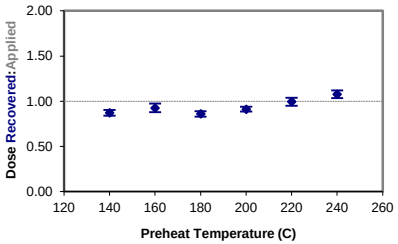


Fig. 4 Signal Analysis

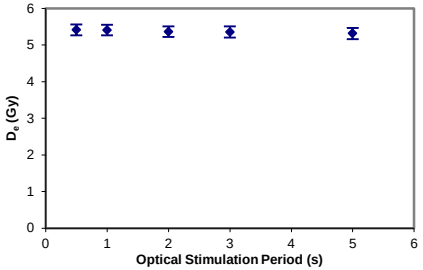


Fig. 3 Inter-aliquot D_e distribution

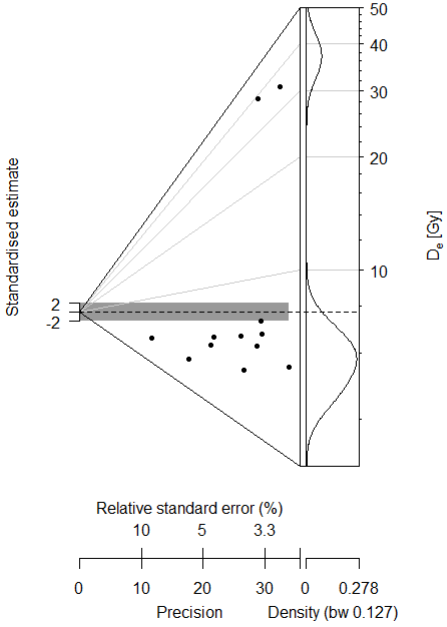


Fig. 5 U Decay Activity

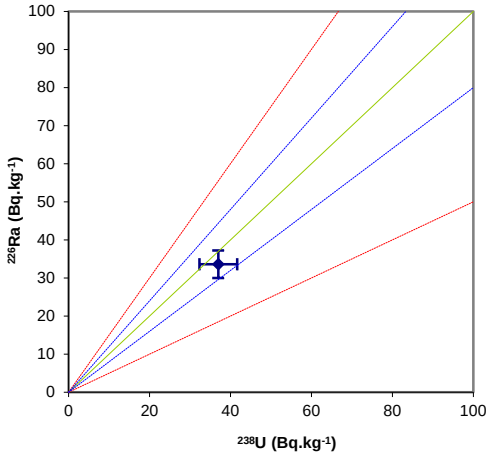


Fig. 6 Age Range

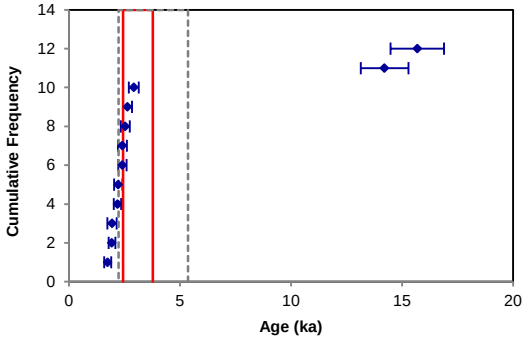


Fig. 1 Signal Calibration Natural blue and laboratory-induced infrared (IR) OSL signals. Detectable IR signal decays are diagnostic of feldspar contamination. Inset, the natural blue OSL signal (open triangle) of each aliquot is calibrated against known laboratory doses to yield equivalent dose (D_e) values. Repeats of low and high doses (open diamonds) illustrate the success of sensitivity correction.

Fig. 2 Dose Recovery The acquisition of D_e values is necessarily predicated upon thermal treatment of aliquots succeeding environmental and laboratory irradiation. The Dose Recovery test quantifies the combined effects of thermal transfer and sensitisation on the natural signal using a precise lab dose to simulate natural dose. Based on this an appropriate thermal treatment is selected to generate the final D_e value.

Fig. 3 Inter-aliquot D_e distribution Abanico plot of inter-aliquot statistical concordance in D_e values derived from **natural** irradiation. Discordant data (those points lying beyond **±2 standardised ln D_e**) reflect heterogeneous dose absorption and/or inaccuracies in calibration.

Fig. 4 Signal Analysis Statistically significant increase in **natural** D_e value with signal stimulation period is indicative of a partially-bleached signal, provided a significant increase in D_e results from **simulated partial bleaching** followed by insignificant adjustment in D_e for simulated **zero** and **full bleach** conditions. Ages from such samples are considered maximum estimates. In the absence of a significant rise in D_e with stimulation time, simulated partial bleaching and zero/full bleach tests are not assessed.

Fig. 5 U Activity Statistical concordance (equilibrium) in the activities of the daughter radioisotope ^{226}Ra with its parent ^{238}U may signify the temporal stability of D_r emissions from these chains. Significant differences (disequilibrium; >50%) in activity indicate addition or removal of isotopes creating a time-dependent shift in D_r values and increased uncertainty in the accuracy of age estimates. A 20% disequilibrium marker is also shown.

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Sample: GL22060

Fig. 1 Signal Calibration

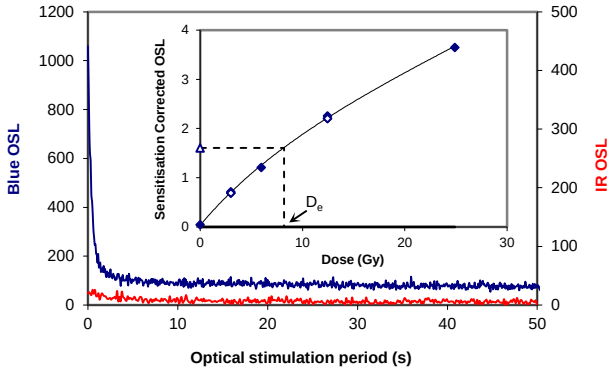


Fig. 2 Dose Recovery

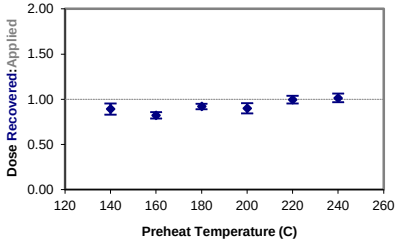


Fig. 4 Signal Analysis

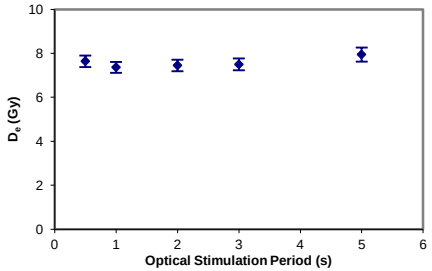


Fig. 3 Inter-aliquot D_e distribution

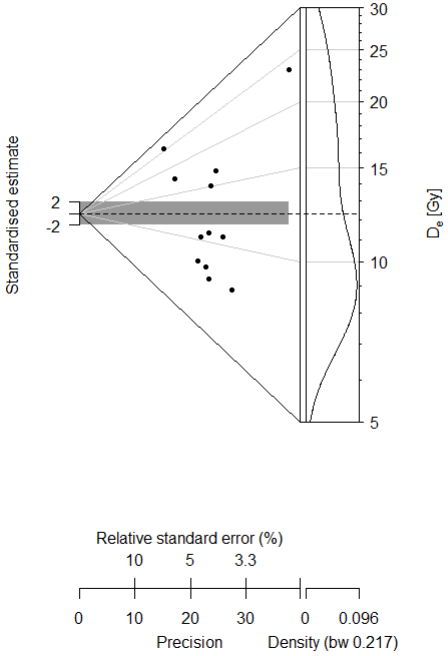


Fig. 5 U Decay Activity

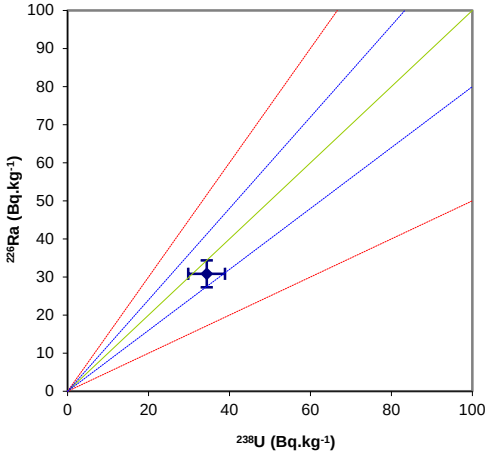
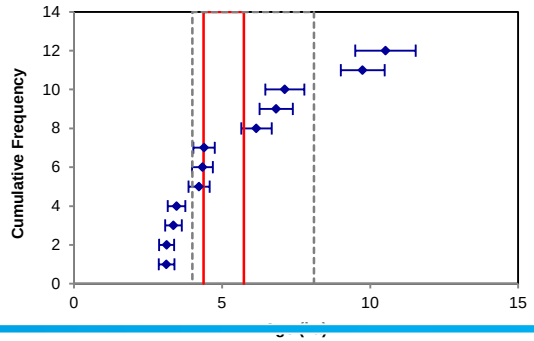


Fig. 6 Age Range



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Sample: GL22061

Fig. 1 Signal Calibration

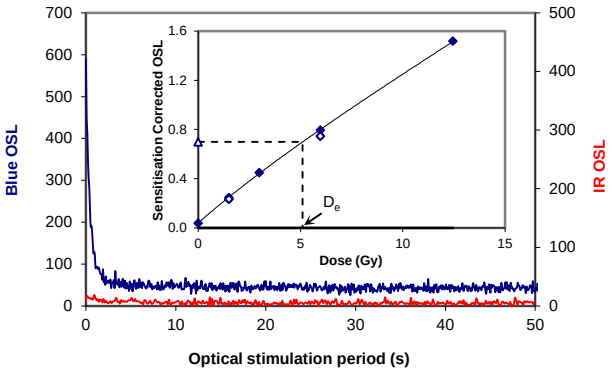


Fig. 2 Dose Recovery

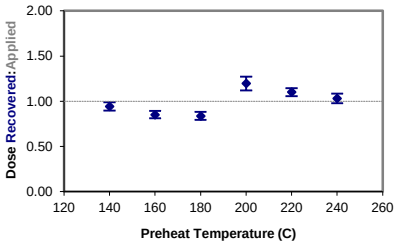


Fig. 4 Signal Analysis

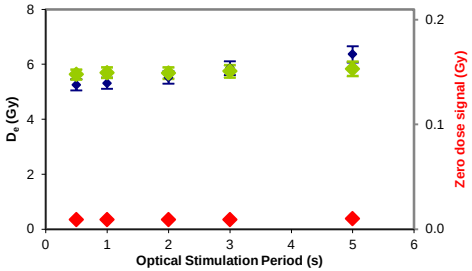
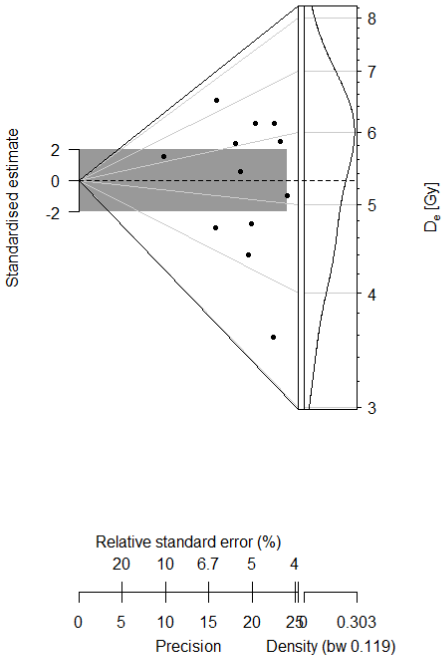


Fig. 3 Inter-aliquot D_e distribution



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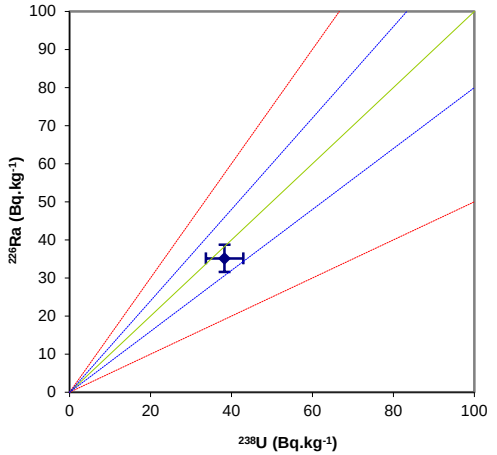
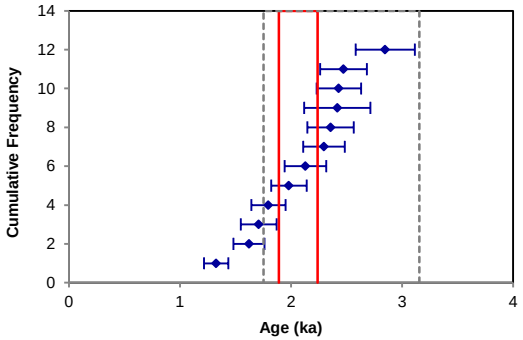


Fig. 6 Age Range



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Sample: GL22062

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Land East of Moor Lane South
Ravenfield
Rotherham
South Yorkshire

Targeted Archaeological Strip, Map & Record
Written Scheme of Investigation

RB2019/0894 & RB2021/1532

MAP Archaeological Practice

Land East of Moor Lane South
Ravenfield
Rotherham
South Yorkshire

Targeted Archaeological Strip, Map & Record
Written Scheme of Investigation

MAP 05.34.21

RB2019/0894 & RB2021/1532

Version	Written/Revision by:	Date:	Checked by:	Date:
A060522	Max Stubbings	06/05/22	Charlie Puntorno	09/05/22

Land East of Moor Lane South
Ravenfield
Rotherham
South Yorkshire
RB2019/0894 & RB2021/1532

WRITTEN SCHEME OF INVESTIGATION:
Archaeological Strip, Map & Record

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Land East of Moor Lane South
Ravenfield
Rotherham
South Yorkshire

RB2019/0894 & RB2021/1532

Written Scheme of Investigation
Archaeological Strip, Map & Record

1 Summary

1.1 This Written Scheme of Investigation (WSI) has been prepared by MAP Archaeological Practice Ltd. on behalf of Redrow Homes and details the methodology for undertaking a scheme of Targeted Archaeological Strip, Map and Record on land to the east of Moor Lane South, Ravenfield, Rotherham, South Yorkshire (Fig. 1).

1.2 In accordance with the recommendations of the National Planning Policy Framework (2021) on 'Archaeology and Planning' the Strip, Map and Record represents the final phase of work on the site which has previously been subject to Geophysical Survey and Evaluation by Trial Trenching.

2. Planning Background and Site Description

2.1 Outline planning permission has been granted, by Rotherham Metropolitan Borough Council, for residential development of up to 320 dwellings, with associated infrastructure (planning reference RB2019/0894). A subsequent application for Reserved Matters for Appearance, Landscaping, Layout and Scale has also been made (planning reference RB2021/1532).

2.2 Condition 36 attached to the outline permission states that

Part A (pre-commencement)

No development, including any demolition and groundworks, shall take place until the applicant, or their agent or successor in title, has submitted a Written Scheme of Investigation (WSI) that sets out a strategy for archaeological investigation and this has been approved in writing by the Local Planning Authority. The WSI shall include:

- *The programme and method of site investigation and recording.*
- *The requirement to seek preservation in situ of identified features of importance.*
- *The programme for post-investigation assessment.*
- *The provision to be made for analysis and reporting.*
- *The provision to be made for publication and dissemination of the results.*
- *The provision to be made for deposition of the archive created.*
- *Nomination of a competent person/persons or organisation to undertake the works.*
- *The timetable for completion of all site investigation and post-investigation works.*

Part B (pre-occupation/use)

Thereafter the development shall only take place in accordance with the approved WSI and the development shall not be brought into use until the Local Planning Authority has confirmed in writing that the requirements of the WSI have been fulfilled or alternative timescales agreed.

2.2 The site, which measures approximately 14.49ha is located to the south of Ravenfield Common, approximately 5km east of Rotherham Town Centre (NGR SK 48900 93430). The site is bounded by agricultural land to the south

and east, to the north by residential properties and to the west by Moor Lane South.

2.3 The site consists of a single field on bedrock geology of predominantly Ravenfield Rock sandstone with Pennine Upper Coal Measures present in the north-eastern corner (BGS. 2021).

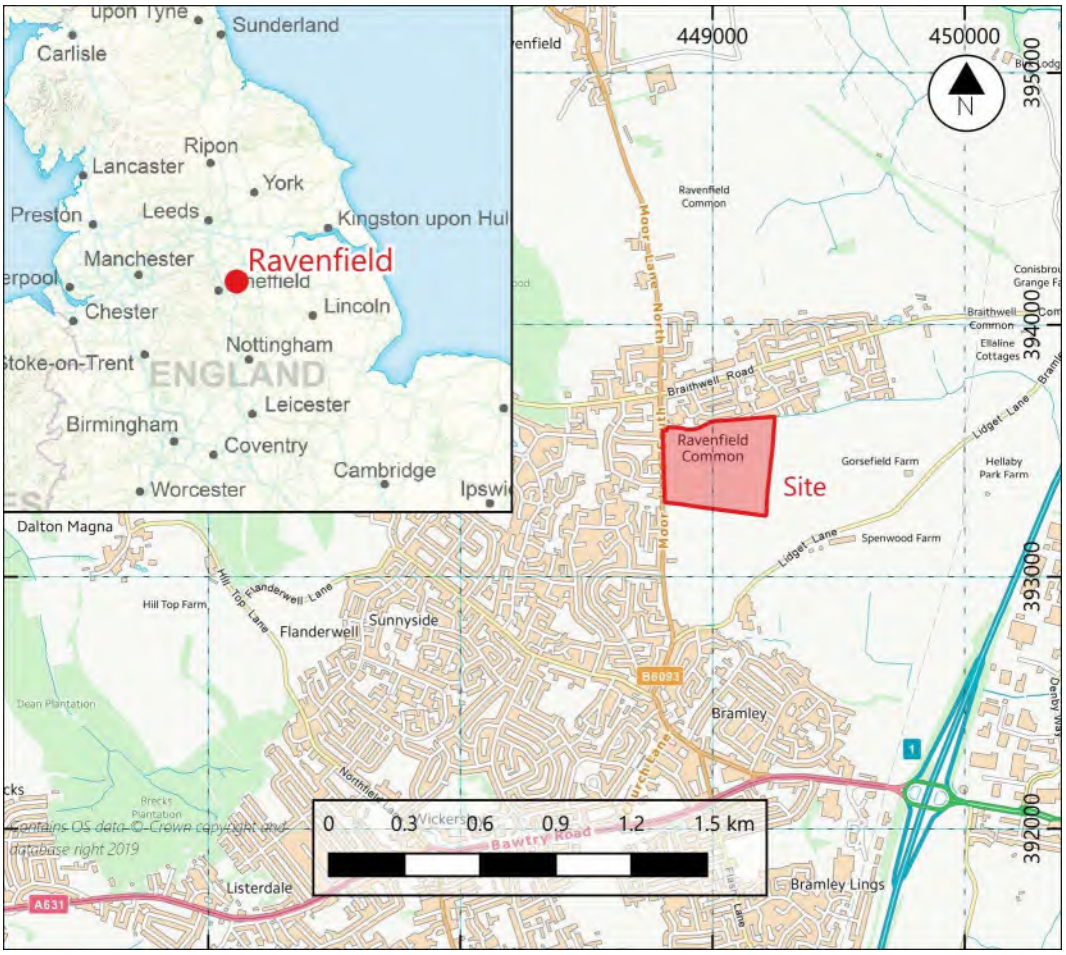

Figure 1. Site Location.

3. Archaeological and Historical Background

3.1 Extensive cropmarks of presumed Iron Age and/or Romano British enclosure systems have been identified through aerial photography in the vicinity and within the site (NMR1433039). Features, which can also be seen on modern satellite imagery appear to show trackways field systems.

3.2 A Watching Brief was carried out by Wessex Archaeology, immediately to the north-west of the site, in advance of the insertion of a storage tank (Wessex Archaeology 2011). No archaeological finds, features or deposits were encountered.

3.3 A Geophysical Survey was carried out at the site in 2018 by Archaeological Research Services Ltd. the survey identified an 'extensive buried agricultural landscape' which comprises a trackway and 'brickwork' style field systems, which have been interpreted as being of late-prehistoric or Romano-British date. Trial Trenching was recommended in order to assess the significance and condition of the anomalies.

3.4 Such field systems have been extensively identified through aerial photography, which was particularly pioneered by Derrick Riley during the 1970's. Riley noted that the brickwork style field systems were commonly found in the Sherwood Sandstone areas of South Yorkshire and Nottinghamshire and believed that, because of their size, the enclosures were probably used as pasture for livestock rather than arable agriculture (South Yorkshire Archaeology Service & Historic England. 2021).

3.4 A programme of Archaeological Evaluation by Trail Trenching was carried out in 2021. The evaluation confirmed the presence of archaeological

features highlighted in the Geophysical Survey, including a probable droveway and appending enclosures. A lack of material culture meant that conclusions relating to the date and function of the features could not be made. As such it was recommended that further work be carried out in order to assess relationships between the enclosures and the droveway (MAP 2021); and also, to retrieve samples for absolute dating techniques, such as Optically Stimulated Luminescence (OSL) in key locations.

4. Aims and Objectives

4.1 In accordance with the 'Standard and Guidance for Archaeological Excavation' (CIfA 2014) the aims of the Archaeological Excavation is to:

- Examine the archaeological resource within a given area or site within a framework of defined research objectives;
- To seek a better understanding of the resource;
- To compile a lasting record of the resource; and
- To analyse and interpret the results of the excavation and disseminate them

4.2 Based on the archaeological deposits which were encountered during evaluation the site has the potential to inform the following research questions regarding the Iron Age and Romano-British periods in South Yorkshire.

- Can we characterise different types of Iron Age and Romano-British field systems in different landscape zones?
- What were the economic, social or political roles of Iron Age and Romano-British field systems?
- Can the dates of Iron Age and Romano-British field system inception and disuse/ abandonment, be established with any greater accuracy?
- What were the economic, social or political roles of linear trackways?

5 Compliance

5.1 MAP will adhere to the general principles of the CIfA Code of Conduct (CIfA 2021) throughout the project, to the CIfA 'Standards and Guidance for Archaeological Excavation (CIfA 2020) and all relevant Historic England guidance.

5.2 All work will be carried out in accordance with chapter 16 of the National Planning Policy Framework (2021) on 'Archaeology and Planning'.

5.3 The work will be monitored under the auspices of South Yorkshire Archaeology Service who will be consulted before the commencement of site works.

5.4 All maps within this report have been produced from the Ordnance Survey with the permission of the Controller of Her Majesty's Stationery Office, Crown Copyright. License No. AL 50453A and also data derived from Open Street Map (https://www.opennstreetmap.org/copyright).

5.5 If human remains are encountered during the course of the work, the excavation, recording and removal of the remains will be carried out under the conditions of, and after the receipt of, licences for the removal of human remains (issued by the Ministry of Justice) and in accordance with the Burial Act (1857), ' Updated Guidelines to the Standards for Recording Human Remains' (Brickley & McKinley. 2017) and CIFA guidelines 'Excavation and Post-Excavation Treatment of Cremated and Inhumed Human Remains (McKinley & Roberts 1993), to ensure that they are treated with due dignity.

5.6 MAP Archaeological Practice is an ISO 9001 accredited organisation (certificate number GB2005425). The award of the ISO 9001 certificate, independently audited by the British Standards Institution (BSI), demonstrates MAP's commitment to providing a quality service to our clients. ISO (the International Organisation for Standardisation) is the most recognised standards body in the world, helping to drive excellence and continuous improvement within businesses.

6 Fieldwork Methodology

6.1 An area totalling 3000sqm is proposed as further mitigation, split between six key areas of investigation; 5no. *Junction* Areas and a singular larger *SMR* Area (Fig 2). The proposed areas target features associated with the droveway, trackway and the enclosure system, with the aim of further characterising, understanding and dating these features. Extension of these areas may be required by SYAS, dependent upon previously unforeseen archaeology inclusive of discreet features or human remains.

6.2 All overburden will be carefully removed by mechanical excavator using a wide toothless blade, under archaeological supervision, to the top of archaeological features or layers, thereafter all excavation will be by hand. Areas of intensive modern disturbance will be given a low priority in excavation. Where practicable, the fills of these features will be removed by mechanical excavator.

6.3 Context recording methodologies and systems will be used. All archaeological deposits will be recorded according to principles of stratigraphic excavation on MAP's *pro forma* sheets, which are compatible

with the MoLAS recording system. The MoLAS recording manual will be used on site where necessary.

6.4 The excavation sampling policy is :

a. A minimum 20% sample of linear features over 5m with all junctions/intersections and corners of linear features investigated and their stratigraphic relationships determined – if necessary, using box sections and all ditch terminals will be examined,

b. An initial 50% sample should be taken of all postholes, but where they are part of a building these should be 100% excavated

c. A 50% sample of pits with a diameter up to 1.5m (where justified, these should be 100% excavated,

d. A minimum 25% sample of all pits over 1.5m in diameter, but this should include a complete section across the pit to record a full profile (where justified, these should be 100% excavated)

e. A 100% sample of stakeholes

f. All funerary contexts, all buildings and all industrial features will be subject to 100% excavation. As noted above, postholes and the enclosing ditches around barrows and roundhouses would be first subject to sample excavation, sectioning and recording, but then will be fully excavated

g. Built structures, such as walls, will be examined and sampled to a degree whereby their extent, form, date, function and relationship to other features and deposits can be established

h. Any in situ building remains will be fully recorded for the extent that they are exposed. Brick and stone samples may be taken if potentially diagnostic of date or function.

6.5 In certain cases, the use of mechanical excavation equipment may also be appropriate for removing deep intrusions (e.g modern brick and concrete floors or footings), or for putting sections through major features after partial excavation (e.g ditches), or through deposits to check that they are of natural origin

6.7 A full written, drawn and photographic record will be made of all material revealed during the course of the excavation. Plans and section drawings will be drawn to a scale appropriate to the excavated feature. All drawings will include heights A.O.D. Black and white film photographs will form the basis of the photographic archive, with colour slides where necessary. Digital photography will only be used to supplement the record.

6.8 A sampling strategy for the recovery for environmental remains has been formulated in accordance with an Environmental Strategy written by an Environmental Consultant (Diane Aldritt, appendix 1) and also follows the guidance of the Association for Environmental Archaeology (1995) and Historic England (2011).

6.9 Soil samples must be taken from all securely stratified deposits using a strategy which combines systematic and judgement sampling, but which also follows the methodologies outlined in the English Heritage (2011) 'Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (Second Edition)' guidance. Positive features will also be sampled; retention of structural material such as bricks will be implemented where necessary. OSL Sampling will also be considered for those features where dating by other methods (for example pottery and artefacts) is uncertain or unavailable; these will be

taken from secure contexts based upon the working understanding of the feature's stratigraphic relationships. The methodology for this will be discussed with Prof. Mark Bateman of Sheffield University. Animal bones will be hand collected, and bulk samples collected from contexts containing a high density of bones. Spot finds of other material will be recovered where applicable. Flotation samples and samples taken for coarse-mesh sieving from dry deposits will be processed at the time of the fieldwork wherever possible, partly to permit variation of sampling strategies, if necessary, but also because processing at a later stage could cause delays.

6.10 All finds (artefacts and ecofacts) visible during excavation will be collected and processed, unless variations in this principle are agreed with the Local Authority. Finds will be appropriately packaged and stored under optimum conditions, as detailed in the RESCUE/UKIC publication First Aid for Finds. In accordance with the procedures outlined in MoRPHE, all iron objects, a selection of non-ferrous artefacts (including all coins), and a sample of any industrial debris relating to metallurgy will be X-radiographed before assessment. Any recording, marking and storage, materials will be of archive quality. We have made an allowance for a minimum three boxes and a contingency for a small finds box in calculating estimates for museums storage grant.

6.11 We will make provision within our excavation strategies, where necessary, for use of shoring, pumps or artificial lighting. Such strategies will also follow for sampling for radiocarbon, archaeomagnetic and/or dendrochronological determinations, as appropriate: where in situ timbers are found to survive in good condition, samples should be taken for dendrochronological assay.

6.12 Arrangements for site access and reinstatement are to be agreed with the commissioning body.

6.13 Health and safety will take priority over archaeological matters. Archaeologists undertaking fieldwork must observe safe working practices; the Health and Safety arrangements must be agreed and understood by all relevant parties before work commences. Risk assessments must be carried out and documented in accordance with Management of Health and Safety at Work Regulations 1999. The Contractor should determine whether this project is covered by Construction (Design and Management) Regulations 2015 and ensure that all requirements under the regulations are met. All archaeologists and visitors to site will comply with necessary precautions regarding COVID-19 as outlined in the RAMS for the site.

6.14 Necessary precautions should be taken over underground services and overhead lines.

6.15 All on site staff hold valid CSCS cards. All Project Officers and Project Managers hold a valid First Aid at Work Certificate and Site Supervisor Safety Training qualifications.

6.16 MAP will provide evidence of all necessary insurances, including Employer's Liability, Professional Liability and Public Liability Cover.

6.17 Site inspections will be arranged with SYAS, to check on progress and prior to completion. Site visits with the Historic England Yorkshire Region Science Advisor will be arranged if necessary.

7. Post Excavation Analysis and reporting

7.1 Upon completion of the excavation, the artefacts, soil samples and stratigraphic information will be assessed as to their potential and significance for further analysis.

7.2 A report will be prepared to include the following:

a) A non-technical summary of the results of the work, Introduction and aims and objectives.

b) An introduction which should include

- the site code/project number
- planning reference number and SMR Casework number
- dates when fieldwork took place
- grid reference

c) An account of the methods and results of the excavation, describing structural data and associated finds and/or environmental data recovered.

d) Interpretation, including phasing of the site sequence and spot-dating of ceramics (Descriptive material should be clearly separated from interpretive statements). This shall be supported by the use of photographs and drawings, to include an overall plan of the site accurately identifying the location of the excavation and indicating the location of archaeological features.

e) A specialist assessment of the artefacts recovered with a view to their potential for further study. Allowance should be made for preliminary conservation and stabilisation of all objects and an assessment of long-term conservation and storage needs.

Assessment of artefacts must include inspection of X-radiographs of all iron objects, a selection of non-ferrous artefacts (including coins), and a sample of any industrial debris relating to metallurgy. A rapid scan of all excavated

material should be undertaken by conservators and finds researchers in collaboration. Material considered vulnerable will be selected for stabilisation after specialist recording. Where intervention is necessary, consideration will be given to possible investigative procedures (e.g glass composition studies, residues in or on pottery, and mineral preserved organic material). Once assessed, all material will be packed and stored in optimum conditions, as described in First Aid For Finds. Waterlogged organic materials should be dealt with, following Historic England documents, Guidelines for the care of waterlogged archaeological leather, and guidelines on the recording, sampling, conservation and curation of waterlogged wood.

f) A specialist assessment of environmental samples taken, with a view to their potential for subsequent study.

Processing of all samples collected for biological assessment, or sub-samples of them, will be completed. Bulk and site-riddled samples from dry deposits should have been processed during excavation, where possible. The preservation state, density and significance of material retrieved must be assessed, following methods presented in Environmental Archaeology and archaeological evaluations, or existing local guidelines, until national guidelines are available. Unprocessed sub-samples must be stored in conditions specified by the appropriate specialists.

Assessments for any technological residues will be undertaken. Samples for dating must be submitted to laboratories promptly, so as to ensure that results are available to aid development of specifications for subsequent mitigation strategies.

g) The results from investigations in archaeological sciences will be included in the Site Archive and presented in the Report. Reports must include sufficient detail to permit assessment of potential analysis. They will include tabulation of data in relation to site phasing and contexts, and must include non-

technical summaries. The objective presentation of data must be clearly separated from interpretation. Recommendation for further investigation (both on samples already collected, and at future excavations) must be clearly separated from the results and interpretation.

h) An assessment of the archaeological significance of the deposits identified, in relation to other sites in the region.

i) A conclusion with recommendations for further post-excavation work, if required.

j) Detailed archive location and destination.

k) Appendices and figures, as appropriate, including a copy of the specification and/or project design.

l) References and bibliography of all sources used

7.3 Copies of the report will be submitted to the commissioning body, the Local Planning Authority and South Yorkshire Archaeology Service.

7.4 We will provide a digital copy of the report in PDF format to the South Yorkshire Historic Environment Record and a record of the work will be lodged with Oasis (maparcha1-506590)

7.5 A Brief, interim report may be required shortly after the completion of fieldwork.

7.6 The following Specialists have been contacted as are available to work on the project:

Pottery - T G Manby (Prehistoric),

M R Stephens (medieval and Post-medieval)

P A Ware (Roman)

Flint - P Makey

Animal Bone – Jane Richardson

Environmental Sampling – Diane Alldritt

OSL - Prof Mark Bateman

Conservation – York Archaeological Trust

Human Remains – York Osteology

Ceramic Building Material – Dr Phil Mills

Clay Tobacco Pipe - M R Stephens

8. Copyright, Confidentiality and Publicity

8.1 Unless the individual/organisation commissioning the project wishes to state otherwise, the copyright of any written, graphic or photographic records and reports rests with MAP.

9. Archive Preparation and Dissemination

9.1 The requirements for archive preparation and deposition must be addressed and undertaken in a manner agreed with the recipient museum: in this instance, the Clifton Park Museum is recommended. The recipient museum will be contacted at an early stage, before submission of the project design and before commencement of fieldwork. In line with the "Archaeological Archive Deposition Policy for Museums in Yorkshire and the Humber", produced by Renaissance Yorkshire, the museum will also be contacted during a mid-point review of the project during which information will be passed to the museum regarding the archive and the proposed timescale for deposition, and following the completion of work.

9.2 Guidance set out in the CIfA Toolkit for Selecting Archives (2019) will be followed, prior to the commencement of fieldwork in order to establish project-specific strategies for the retention or discarding of material. The retention of material will also be discussed with the Clifton Park Museum with regards to the significance and research potential of the archive.

9.3 The site archive, including finds and environmental material, subject to the permission of the relevant landowners, will be labelled, conserved and stored according to the United Kingdom Institute for Conservation (UKIC)'s. Provision will be made for the stable storage of paper records and their long term storage on a suitable medium, such as microfilm, a copy of which should be deposited with the NMR (Historic England). An index to the contents of the archive together with details of its date and place of deposition should be lodged with the HER.

9.4 Archive deposition will be arranged in consultation with the Clifton Park Museum and South Yorkshire Archaeology Service and in accordance with their deposition policy relating to the preparation and transfer of archives. The timetable for deposition shall be agreed on completion of the site archive and narrative.

10. Bibliography

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British Geological Society. Geology of Britain Viewer. Available at; http://mapapps.bgs.ac.uk/geologyofbritain/home.html [accessed 07.06.2021]

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Wessex Archaeology. 2011. Ravenfield, Rotherham, South Yorkshire. Archaeological Watching Brief Report.

South Yorkshire Archaeology Service & Historic England. *South Yorkshire Historic Environment Research Framework*. Web Resource. Available at https://researchframeworks.org/syrf/ [Accessed 25.052021].

11. Best Practice & Scientific Guidance

Archaeological Conservation

Investigative Conservation: Guidelines on how the Detailed Examination of Artefacts from Archaeological Sites can Shed Light on their Manufacture and Use (2008): Officially archived, but available on request.

Guidelines on the X-radiography of Archaeological Metalwork (2006): https://historicengland.org.uk/images-books/publications/x-radiography-of-archaeological-metalwork/

Waterlogged Organic Artefacts: Guidelines on their Recovery, Analysis and Conservation (2018): https://historicengland.org.uk/images-books/publications/waterlogged-organic-artefacts/

Environmental Archaeology

Animal Bones and Archaeology - Recovery to Archive (2019): https://historicengland.org.uk/images-books/publications/animal-bones-and-archaeology/

Deposit Modelling and Archaeology: Guidance for Mapping Buried Deposits (2020): https://historicengland.org.uk/images-books/publications/deposit-modelling-and-archaeology/

Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (Second Edition) (2011): https://historicengland.org.uk/images-books/publications/environmental-archaeology-2nd/

Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record (2015): https://historicengland.org.uk/images-books/publications/geoarchaeology-earth-sciences-to-understand-archaeological-record/

Guidelines for the Curation of Waterlogged Macroscopic Plant and Invertebrate Remains (2008): Currently being revised, but available on request.

Mineralised Plant and Invertebrate Remains: A Guide to the Identification of Calcium Phosphate Replaced Remains (2020): https://historicengland.org.uk/images-books/publications/mineralised-plant-and-invertebrate-remains/

Geophysical Survey

EAC Guidelines for the Use of Geophysics in Archaeology: Questions to Ask and Points to Consider (2016) [Europae Archaeologiae Consilium]: https://historicengland.org.uk/images-books/publications/eac-guidelines-for-use-of-geophysics-in-archaeology/

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Marine Geophysics Data Acquisition, Processing and Interpretation: Guidance Notes (2013): https://historicengland.org.uk/images-books/publications/marine-geophysics-data-acquisition-processing-interpretation/

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Guidance for Best Practice for the Treatment of Human Remains Excavated from Christian Burial Grounds in England (Second Edition) (2017) [Advisory Panel on the Archaeology of Burials in England]: https://www.archaeologyuk.org/apabe/pdf/APABE_ToHREfCBG_FINAL_WEB.pdf

Guidance for the Care of Human Remains in Museums (2005) [Department for Culture, Media and Sport]: https://www.archaeologyuk.org/apabe/pdf/DCMS_Guidance_Human_Remains_in_Museums.pdf

Large Burial Grounds: Guidance on Sampling in Archaeological Fieldwork Projects (2015) [Advisory Panel on the Archaeology of Burials in England]: https://www.archaeologyuk.org/apabe/pdf/Large_Burial_Grounds.pdf

Science and the Dead: A Guideline for the Destructive Sampling of Archaeological Human Remains for Scientific Analysis (2013) [Advisory Panel on the Archaeology of Burials in England]:

https://www.archaeologyuk.org/apabe/pdf/Science_and_the_Dead.pdf

The Role of the Human Osteologist in an Archaeological Fieldwork Project (2018): https://historicengland.org.uk/images-books/publications/role-of-human-osteologist-in-archaeological-fieldwork-project/

Updated Guidelines to the Standards for Recording Human Remains (2017) [Chartered Institute for Archaeologists / British Association for Biological Anthropology and Osteoarchaeology]: https://babao.org.uk/assets/Uploads-to-Web/14-Updated-Guidelines-to-the-Standards-for-Recording-Human-Remains-digital.pdf

Materials Science and Industrial Processes

A Standard for Pottery Studies in Archaeology (2016) [Prehistoric Ceramics Research Group, the Study Group for Roman Pottery and the Medieval Pottery Research Group]: https://historicengland.org.uk/images-books/publications/standard-for-pottery-studies-in-archaeology/

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Archaeometallurgy: Guidelines for Best Practice (2015): https://historicengland.org.uk/images-books/publications/archaeometallurgy-guidelines-best-practice/

Archaeological Evidence for Glassworking: Guidelines for Recovering, Analysing and Interpreting Evidence (2018): https://historicengland.org.uk/images-books/publications/glassworkingguidelines/

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Land Contamination and Archaeology: Good Practice Guidance (2017): https://historicengland.org.uk/images-books/publications/land-contamination-and-archaeology/

Piling and Archaeology: Guidance and Good Practice (2019): https://historicengland.org.uk/images-books/publications/piling-and-archaeology/

Preserving Archaeological Remains: Decision-taking for Sites under Development (2016): https://historicengland.org.uk/images-books/publications/preserving-archaeological-remains/

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APPENDIX 1

Conservation Strategy By Ian Panter of York Archaeological Trust

Artefacts from all categories and all periods will be recovered as a matter of routine during the excavation. When retrieved from the ground finds will be kept in a finds tray or appropriate bags in accordance with First Aid for Finds. Where necessary, a conservator may be required to recover fragile finds from the ground depending upon circumstances.

If waterlogged conditions are encountered a wide range of organic materials may be recovered, including wood, leather and textiles. Advice will be sought from a conservator to discuss optimum storage requirements before any attempt is made to retrieve organic finds and structural timbers from the ground.

After the completion of the fieldwork stage, a conservation assessment will be undertaken which will include the X-radiography of all the ironwork (after initial screening to separate obviously modern debris), and a selection of the non-ferrous finds (including all coins). A sample of slag may also be X-rayed to assist with identification and interpretation. Wet-packed material, including glass, bone and leather will be stabilised and consolidated to ensure their long-term preservation. All finds will be stored in optimum conditions in accordance with First Aid for Finds and Guidelines for the Preparation of Excavation Archives for Long-Term Storage (Walker, 1990).

Waterlogged wood, including structural elements will be assessed following the English Heritage guidelines, Waterlogged wood: sampling, conservation and

curation of structural wood (Brunning 1996). The assessment will include species identification, technological examination and potential for dating.

The conservation assessment report will include statements on condition, stability and potential for further investigation (with conservation costs) for all material groups. The conservation report will be included in the updated project design prepared for the analysis stage of the project.

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APPENDIX 2

Environmental Strategy By Diane Alldrit

The on-site environmental sampling strategy will systematically seek to recover a representative sample of botanical, molluscan (both terrestrial and aquatic), avian and mammalian evidence from the full range of contexts encountered during the excavation. This will enable, at the assessment stage, the possibility for radiocarbon dating material to be obtained, and for an initial analysis of the economic and environmental potential of the site. In order to achieve this, a bulk sample (BS, Dobney *et al* 1992) comprising an optimum size of 40litre of sediment (where possible) should be taken from every stratigraphically secure and archaeologically significant context. In practice it may not always be possible to obtain 28l of sediment from certain features during the assessment stage, for instance from partially excavated pits or post-holes, in which case a single bucket sample, c.10 to 14litre should be taken at the site supervisors discretion. Deposits of mixed origin, for instance topsoil, wall fills and obvious areas of modern contamination, should be avoided where possible, as these will contain intrusive material and not provide secure radiocarbon dates.

All buckets and other sampling equipment must be clean and free of adherent soil in order to prevent cross-contamination between samples. If dry soil is to be stored for any length of time it should be kept in cool, dry conditions, and away from strong light sources. However, it is preferable to process samples as soon as possible after excavation.

Bulk soil samples shall be processed using an Ankara-type water flotation machine (French 1971) for the recovery of carbonised plant remains and charcoal. The

flotation tank should contain a >1mm mesh for collection of the retent or 'residue' portion of the sample (which may contain pottery, lithics and animal / bird bone, in addition to the heavier fragments of charcoal which do not float). The 'flot' portion of the sample, which may include carbonised seeds, cereal grain, charcoal and sometimes mollusc shell, should be captured using a nest of >1mm and >300micron Endicot sieves. Flotation equipment, including sieves, meshes, brushes and so forth must be meticulously cleaned between samples in order to prevent contamination of potential radiocarbon dating material. All material resulting from flotation will be dried prior to microscopic examination. Flotation is not suitable for the recovery of pollen or for processing waterlogged samples, which shall be discussed below.

Where there is potential for waterlogged preservation, shown for instance by the presence of wood and other organic or wet material, then a 5 to 10litre size sample should be taken (GBA sample, Dobney *et al* 1992). This material is to be retained for later processing using laboratory methods to enable the recovery of waterlogged plant material and insects. For assessment purposes a 1litre sub-sample of the organic sediment from each potential waterlogged sample shall be processed using laboratory wash-over methods, and once processed kept wet. All waterlogged samples awaiting processing should be kept damp, preferably stored in plastic sealable tubs, and in cool conditions. Where large waterlogged timbers are recovered these should be stored under refrigerated conditions and an appropriate conservator consulted.

There is the possibility that the waterlogged deposits may require parasite egg analysis. It is proposed that the 'squash' technique is adapted, this would require small lumps of raw sediment approximately 3mm in diameter taken from three separate points from within the sample and homogenised in a little water by shaking. After allowing coarse particles to settle for a few moments, a drop of the supernatant

was removed. This work would be undertaken by either John Carrott or Harry Kenwood if necessary.

If sediment suitable for pollen analysis is encountered, for instance rich organic peaty deposits, or deep ditch sections with organic preservation, the archaeobotanical specialist is to be consulted prior to any sampling taking place. These deposits would require sampling with large kubiena tins and require the specialist to be on-site. Pollen analysis, even at assessment level, would subsequently impose a considerable cost implication should it be carried out.

The specialist is available to provide consultation and advice on the environmental sampling strategy throughout the course of the excavation and during post-excavation processing if required.

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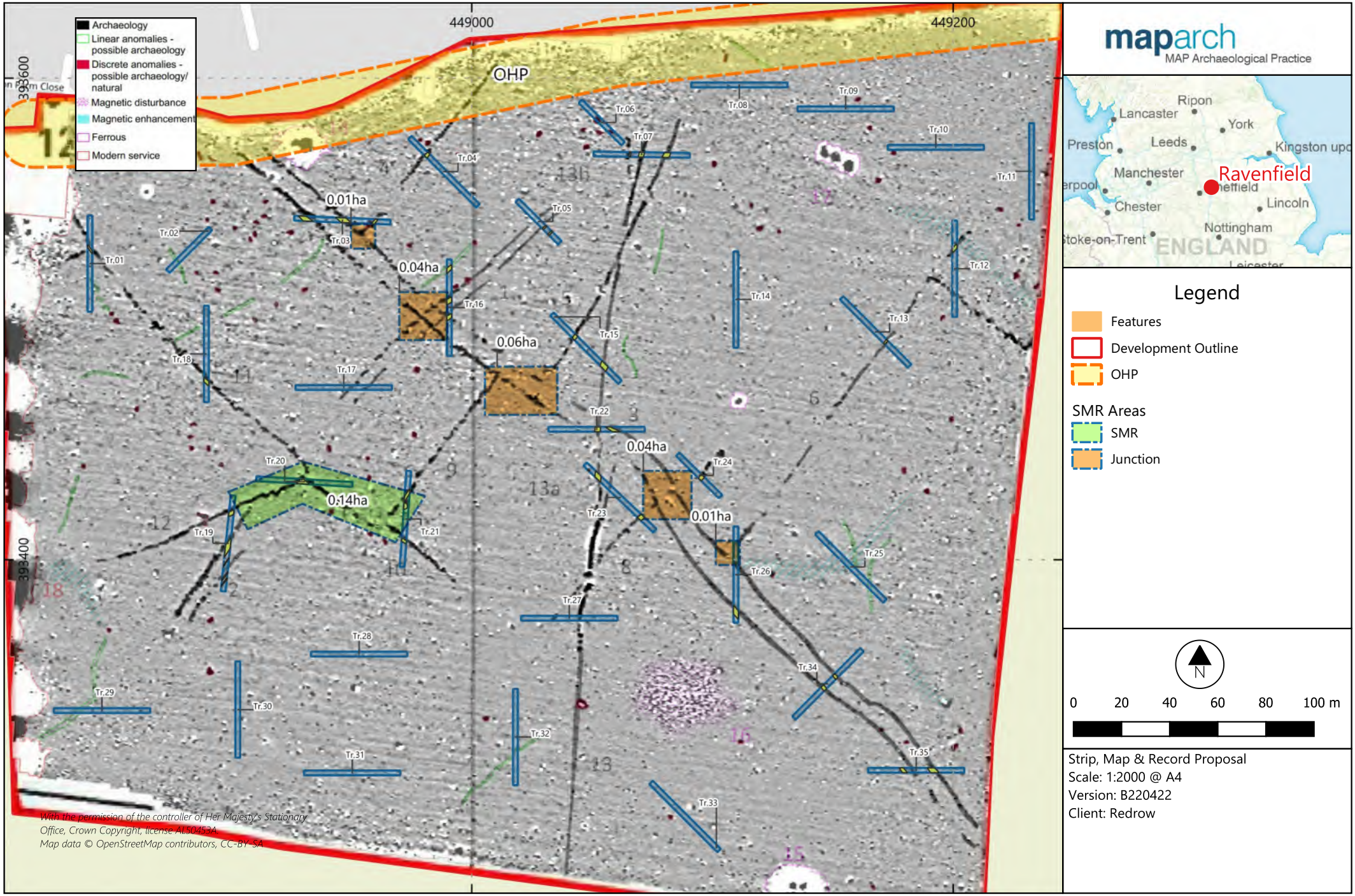

mapArch
MAP Archaeological Practice

Legend

- Features
- Development Outline
- OHP

SMR Areas

- SMR
- Junction

N

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Strip, Map & Record Proposal
Scale: 1:2000 @ A4
Version: B220422
Client: Redrow