CARDINGTON SHEDS – POND 2
SHORTSTOWN
BEDFORD

ARCHAEOLOGICAL MITIGATION

Albion archaeology

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Contents

List of Tables

List of Figures

All figures are bound at the back of the report.

Preface

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The project was commissioned by Dr Isabel Lisboa of archaeological consultants, Archaeologica Ltd, on behalf of their client Fosbern Manufacturing Ltd. The project was monitored on behalf of the Local Planning Authority by Vanessa Clarke, Senior Archaeological and HER Officer of Bedford Borough Council.

The fieldwork was undertaken by Marcin Koziminski (Project Supervisor), assisted by Gary Manning, Gareth Shane, Juha-Matti Vuorinen and Catie Watts (Assistant Supervisors). The samples were processed by Anna Rebisz-Niziolek. This report has been prepared by Gary Edmondson (Project Manager), Marcin Koziminski and Jackie Wells (Finds Officer). The plan was digitised and figures produced by Marcin Koziminski with contributions from Joan Lightning (CAD Technician). All Albion projects are under the overall management of Drew Shotliff (Operations Manager).

Albion Archaeology would like to thank Dr Isabel Lisboa for her commission and assistance during implementation of the project.

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Key Terms

Throughout this document the following terms or abbreviations are used:

Agent/Client	Dr Isabel Lisboa of Archaeologica Ltd for Fosbern Manufacturing Ltd
CI*f*A	Chartered Institute *for* Archaeologists
DA	Development area
LPA	Local Planning Authority
SAO	Bedford Borough Council's Senior Archaeological and HER Officer
WSI	Written Scheme of Investigation

Non-Technical Summary

Planning permission was granted by Bedford Borough Council (planning ref 15/00730/MAF) for the construction of an attenuation pond with associated infrastructure and landscaping on land to the east of Cardington Shed 1, Shortstown, Bedford. As the development area was within an archaeologically sensitive landscape, the Bedford Borough Council's Senior Archaeological and HER Officer (SAO) advised that a programme of archaeological mitigation works should be undertaken. This was in accordance with the National Planning Policy Framework. *Albion Archaeology was commissioned by Archaeologica Ltd on behalf of their clients, Fosbern Manufacturing Ltd, to undertake the archaeological works.*

The roughly oval footprint of the pond covered an area of c. 1.8 ha, on the south-east margin of Shortstown, approximately 250m to the east of Cardington Sheds. The mitigation works were undertaken in August 2016, revealing early-middle Iron Age activity comprising elements of enclosure systems and an associated droveway for the later system. These remains form a component of the contemporary landscape, with early-middle Iron Age settlement activity being revealed to the north and north-west of the current site in the 2011 and 2012 evaluation works.

The initial early-middle Iron Age phase is represented by an enclosure with associated activity in the west of the Pond 2 site. The subsequent phase saw a change in utilisation of the area, with the creation of a droveway defined by parallel flanking ditches and associated enclosures to the east. The presence of the droveway and enclosures, together with occasional post holes and pits, as well as paucity of artefacts, suggests that the area was peripheral to the settlement focus. It was probably used for a variety of activities, principally livestock grazing and management. The investigation provided a limited insight into the spatial arrangement and economy of the early-middle Iron Age occupation.

Traces of the medieval landscape are defined by a number of cultivation furrows extending intermittently across the area. These are on several contrasting alignments representing several groups of cultivation strips or 'lands' within the open fields.

Modern remains associated with the RAF Cardington site provide an interesting insight into military-related activities during World War II, with elements of a 'Nissen' hut-type structure and a barrage balloon mooring 'T7 cradle bed' being identified. The form and layout of the latter correspond with written sources of the period.

The features and deposits have been fully analysed for this report. No additional analysis or publication is deemed necessary. This report will be uploaded onto the OASIS website (reference no. albionar1-258380). The project archive will be deposited with The Higgins Art Gallery and Museum, Bedford (accession no. BEDFM 2016.52).

1. INTRODUCTION

1.1 Project Background

Planning permission (15/00730/MAF) was granted by Bedford Borough Council for the construction of an attenuation pond with associated drainage infrastructure and landscaping on land to the east of Cardington Shed 1, Shortstown, Bedford.

The development area (DA) lies within an archaeologically sensitive landscape. For this reason the Bedford Borough Council's Senior Archaeological and HER Officer (SAO) advised that "*no development shall take place until an archaeological mitigation strategy has been submitted to and approved in writing by the Local Planning Authority"* (condition 5). This advice was in accordance with Paragraph 141 of the National Planning Policy Framework (DCLG 2012).

A Written Scheme of Investigation (WSI) (Lisboa 2016) was produced detailing the scope of archaeological mitigation works.

Albion Archaeology was commissioned by Archaeologica Ltd on behalf of their clients, Fosbern Manufacturing Ltd, to undertake the archaeological works.

1.2 Site Location and Geology

The DA is located at the south-east margin of Shortstown, to the east of the A600 trunk road, *c.* 3km from the centre of Bedford, centred at grid reference TL 0860 4680 (Figure 1). The site is located approximately 250m east of Cardington Sheds, to the south of a roadway, having a roughly oval form in plan and covering an area of *c.* 1.8 ha. Situated immediately to the south of the modern access road, the DA lies on a fairly even ground at *c.* 28m OD, with the land sloping gently down to the south-east, towards a minor watercourse at *c.* 26m OD. At the time of the mitigation in August 2016, this area comprised open grassland.

Sheet 203 of the British Geological Survey (2010) shows a complex pattern of geological deposits in the vicinity of the DA, with an extensive band of the Stoke Goldington Member (2nd terrace) of the Ouse Valley Formation, extending NE-SW across the DA. However, in the northern part of the DA, this is interrupted by an outcrop of the Peterborough Member of the Oxford Clay Formation. A thin tapering tongue of head deposit, composed of undifferentiated clay extends north-eastwards to the vicinity of the former airship sheds.

1.3 Archaeological Background

The area surrounding the DA is known to contain extensive areas of buried archaeological remains comprising Iron Age and Roman rural settlement and ceremonial remains to both the north and south (Lisboa 2010). This includes extensive, long-lived boundary ditches and an Iron Age cremation cemetery to the north of the DA. Early Iron Age features were found to the south of the DA in the course of a watching brief (HER 18237).

The area immediately to the north-west and north of the DA was evaluated in 2011 and 2012 respectively as CS1766 (Albion 2011) and CS1931 (Albion 2012) (Figure

2). The 2012 evaluation revealed an early-middle Iron Age focus of activity on slightly elevated and free-draining ground — this site does not appear to be a continuation of an area of early Iron Age activity revealed in the south-west part of the 2011 evaluation. Apart from the early-middle Iron Age activity, the 2012 evaluation provided evidence for later utilisation of this area in the early Saxon period. Peripheral late Iron Age activity was revealed to the north-east, defining the margin of the contemporary settlement identified further to the east, beyond the disused railway line.

Traces of medieval cultivation furrows survived intermittently across the area north of Pond 2 (Figure 2). These corresponded to cultivation strips depicted on historical maps of the pre-enclosure landscape. Other features in this area were post-medieval to modern in date.

A geophysical survey (magnetometry) was undertaken for the area of Pond 2 (Bartlett 2012 and 2014). Much of the site was dominated by areas of intense magnetic 'noise' that could possibly be attributed to the presence of clinker and magnetic hardcore material within the site. This suggests the DA was an area of disturbed ground with dense scatters of magnetic debris, while large dipoles probably indicate the presence of substantial pieces of buried scrap metal (Figure 3). The areas of 'noise' included the northern edge of the pond area towards the access road, which probably defines areas of hard-standing.

Several possible linear anomalies were visible in the greyscale plot towards the north and west of the survey area (**A**, **G** and **H** on Figure 3). As these did not correspond to boundary features on the 1794 map, they may indicate earlier land divisions.

1.4 Historical Maps

A number of maps of the area are available, capturing the change from the strips of the open field to the enclosure of the land in the early 1800s. Apart from the construction of the railway in 1857, there was little subsequent change until 1916, when the Admiralty took over the site to build airships.

1.4.1 The 1794 map of Cardington

This map is transcribed in the Parish Survey (Bedfordshire Planning Department 1985). The map depicts a dense arrangement of cultivation strips in the area of the pond (Figure 4). The majority of the DA is within Short Bennel and Long Bennel Furlongs, which have strips aligned NW-SE and NE-SW, whilst Cross Furlong / Urchin's Furlong, have strips on a roughly perpendicular alignment. These probably correspond to medieval furrows.

1.4.2 The 1808 Enclosure map

This map indicates the result of enclosure, with the DA being within a large landholding owned by Samuel Whitbread, extending from the road in the west (A600) all the way to Cardington village in the east.

1.4.3 1881 First edition Ordnance Survey map

This map indicates that the large enclosure shown on the previous map had been subdivided, with several large land parcels extending eastwards from the road corresponding to the current A600. The DA is bisected by an angled trackway, the line of which appears to correspond with the change in the alignment of furrows depicted previously. Part of the trackway also follows the parish boundary. The railway was constructed in 1857, defining the eastern limit of the RAF Cardington site.

1.5 Project Objectives

The general objectives of the investigation of Pond 2 were to:

- determine the location, nature, date and extent of any archaeological remains;
- determine the artefactual and environmental potential of the archaeological deposits encountered;
- determine the integrity and state of preservation of any archaeological features or deposits present;
- assess the impact of previous land-use on the site;
- produce a site archive for deposition with the Bedford Museum and to provide information for accession to the Bedford HER;
- enter the information onto OASIS database.

The specific objectives of the investigation were to determine:

- the origin and nature of the geophysical anomalies;
- if the early and early-middle Iron Age activity identified to the north and north-west during the 2011 and 2012 evaluation works extended southwards into the Pond 2 area;
- if there was any evidence for prehistoric or Roman occupation of the site;
- if Saxon remains, relating to the origins of the current settlement, were present;
- if medieval or early post-medieval remains were present.

The project had the potential to add to knowledge and understanding of the utilisation of this part of the valley of the River Great Ouse.

2. ARCHAEOLOGICAL MITIGATION METHODOLOGY

The mitigation works were undertaken between 20th July and 12th August 2016. The Pond 2 area was stripped by a mechanical excavator fitted with a flat-edged ditching bucket and operated by an experienced driver under the supervision of an archaeologist. The deposits were removed down to either the top of possible archaeological remains or undisturbed geological strata, whichever was encountered first. The only exception was machine excavation of a segment through a deep archaeological feature; this was done with the consent of the SAO and the archaeological consultant.

The deposits and any potential remains were noted, cleaned, excavated by hand and recorded using Albion Archaeology's *pro forma* sheets. All deposits were recorded using a unique recording number sequence commencing at 1.

Throughout the project the standards set out in the following documents were adhered to:

- CI*f*A's *Code of Conduct* (2014)
- CI*f*A's *Standards and Guidance for Archaeological Excavation* (2014)
- Albion Archaeology's *Procedures Manual for Archaeological Fieldwork and the Analysis of Fieldwork Records* (2001)
- Historic England's *Management of Research Projects in the Historic Environment* (2015)
- Historic England's *A Guide to the Theory and Practice of Methods, from. Sampling and Recovery to Post-excavation* (second edition 2011)

The site was visited twice by the SAO. Additional investigation was requested following the second site visit. Once the investigation had been completed, the area was handed over to the building contractor with the consent of the SAO.

The project archive will be deposited with The Higgins Art Gallery and Museum, Bedford (accession no. BEDFM: 2016.52).

3. SUMMARY OF RESULTS

3.1 Introduction

A total four chronological Phases were identified ranging in date from the early-middle Iron Age to the modern era (Figure 5). Of the 259 context assigned during fieldwork, 227 were assigned to one of the Groups of contexts forming parts of the same feature or structure which were assigned to "general" context numbers; these commenced at 300. Phases represent a distinct chronological period of contemporary activity, e.g. early-middle Iron Age droveway and enclosure system.

The text which follows is structured by chronological period and either general (Gen) number or by individual feature or deposit context numbers [***]/(***), if a more detailed description was required. The majority of archaeological features and deposits contained no dating evidence. However, on the basis of stratigraphy and their form and spatial patterning, the majority were assigned to one of the phases as detailed in Appendix 1.

3.1.1 Overburden

Overburden deposits had a combined thickness of up to 0.7m. The friable dark brown-grey sandy silt topsoil (1) was up to 0.4m thick; its thickness suggests that this deposit was a former cultivation soil. It overlay mid-grey-brown, clay-silt subsoil (2), which ranged in thickness from 0.2 and 0.4m.

3.1.2 Geology

The compact mid-grey-orange gravelly sand afforded a clear contrast with the archaeological features.

3.2 Phase 1: Pre-droveway Early-Middle Iron Age Enclosure

Intermittent traces of a large rectangular enclosure were revealed in the west of the DA, measuring *c.* 140m x 65m+ on a roughly E-W axis (Figure 6 – red features). The eastern and western enclosure boundaries, Gen [132] and Gen [325/326] respectively, were truncated by droveway flanking ditches from the subsequent phase. Ditch Gen [324] marked the enclosure's northern extent, whilst the southern boundary was not identified within the stripped area. Ditches Gen [132] and Gen [324] survived intermittently; they were up to 0.7m wide, with concave profiles measuring less than 0.25m deep. The western ditch Gen [325] was more substantial, ranging from 0.75–0.9m wide with a concave to V-shaped profile up to 0.4m deep; the later re-definition of the ditch Gen [326] shared similar characteristics (Figure 6: image 1; Figure 9: sections 2–4). Fill (191) of ditch [190] of Gen [325] contained a small quantity of early-middle Iron Age pottery (Table 2).

Internal activity comprised several pits of uncertain function that were scattered within the enclosure. These were sub-circular to sub-oval in plan and ranged from 0.45–1.1m in diameter with concave to near-vertical profiles measuring 0.1–0.55m deep (Figure 7: image 1; Figure 8: image 3; and Figure 9: section 1). The largest pit [202] was situated in the west of the enclosure, extending 2m by 1m, but it only survived to a depth of 5cm. Additionally, pit [213] was truncated by the enclosure's

western boundary, whereas pit [226] was situated just beyond the boundary (Figure 5).

A cluster of four post holes [111], [113], [115] and [117] formed a tight arc, in the east of the enclosure, with elements less than 1m apart centre to centre (Figure 7: image 2). These may have formed part of a larger structure of uncertain form and function. The post holes ranged from 0.3–0.4m across and were 0.1m deep.

Approximately 23m west of the post holes, a short NW-SE aligned ditch Gen [319] was revealed, extending *c.* 4m by up to 1.1m wide, with an asymmetrical profile, 0.25m deep. Another NW-SE aligned ditch [187] was located immediately to the north-west of the enclosure and is thought to have been associated. The ditch had a U-shaped profile that was over 0.5m wide and 0.3m deep.

Water pit [206] was identified at the western end of the northern boundary ditch Gen [324]. It was a long-lived feature that was re-cut as [211]. The roughly triangular pit [206] was 7.0m by 5.8m in plan, with an asymmetric V-shaped profile that was in excess of 1.25m deep (Figure 8: image 4; and Figure 9: section 5). The asymmetrical profile, comprising a very steep south-east side, with a more gradually sloping north-west side (incorporating a step near the top) would suggest the water pit was accessed from the north-west.

Circular pit [211] was dug roughly through the centre of the infilled earlier water pit (Figure 8: image 4; and Figure 9: section 5) and may define a well shaft — marking a change from the earlier water pit. It was 1.05m across, with the depth greater than 1.3m; the sides were vertical with the north-west side being undercut due to collapse of material from the earlier pit — possibly as the lining of the shaft decayed.

Both features were infilled by alternate deposits derived from slumping of the sides and natural silting of adjacent deposits formed in waterlogged conditions. Naturally accumulated layer (225) sealed both features and marked the end of this activity. Fill (207) of the earlier pit produced a small quantity of abraded animal mandible fragments (Table 2). An ecofact sample <6> from (212) of the later pit contained a small mammal bone fragment, unworked burnt stone with thermal cracking, together with a small quantity of charcoal.

3.3 Phase 2: Early–Middle Iron Age Droveway and Associated Activity

A variety of features, distributed across the DA, were assigned to this Phase (Figure 6 – green features). Extending some 175m NE-SW across the western part of the DA, was a droveway identified by a pair of flanking ditches spaced *c.* 10–12m apart (Figure 10: image 5). The northern ditch Gen [315] was 0.45–0.7m wide and 0.15–0.3m deep, whilst the southern ditch [126]/Gen [314] was considerably more substantial at 0.75–1.4m wide and 0.3–0.5m deep (Figure 12: sections 6, 8 and 9). The southern ditch also showed evidence for maintenance, with ditch [126] being re-cut by Gen [314]. The flanking ditches shared similar concave to V-shaped profiles and were infilled by homogenous material derived from silting of the unstable upper soil profile, as indicated by the darker deposits which contrasted with the adjacent geological strata. Fill (186) from segment [185] of the northern ditch Gen [315] contained an abraded sherd of an early-middle Iron Age vessel together with a small

amount of amorphous fired clay. An ecofact sample <4> from this deposit yielded a moderate quantity of very small charcoal flecks; occasional fragments of charred seed were also present.

Southern droveway flaking ditch Gen [314] was truncated by perpendicular gully Gen [320], aligned NW-SE in the south-west part of the site (Figure 10: image 6). The gully merged with the droveway ditch and would appear to respect it. This gully was in turn, truncated by the northern continuation of another gully Gen [321], on a NNE-SSW alignment. Both gullies were 0.5–0.7m wide, with concave profiles up to 0.15m deep. They are considered to be sequential redefining of land parcels in the area immediately to the south of the droveway.

A possible hearth [167] was revealed in the area between gully Gen [321] and the southern flanking ditch of the droveway Gen [314]. It had an irregular form in plan and was *c*. 0.9m long and 0.2m deep, with a series of burnt *in-situ* and eroded deposits (Figure 11: image 8). An ecofact sample <5> from the uppermost fill (171) contained only occasional charcoal flecks, accompanied by burnt stone and clay fragments. This material has no analytical potential.

Fragments of a rectangular enclosure were identified in the east of the DA, immediately to the east of the droveway; the enclosure extended *c.* 130m by at least 46m. The eastern and western enclosure boundaries, Gen [302] and Gen [312] respectively, were truncated by post-medieval remains. Ditch Gen [311] defined the northern boundary, whilst the southern boundary was not identified within the site. It is possible that northern ditch Gen [311] also defined a second enclosure to the north, which continued beyond the northern limit of the DA. A short ditch [81] aligned NW-SE may have been a sub-division for this postulated enclosure. Ditches [81], Gen [302] and Gen [312] comprised shallow truncated profiles up to 0.55m wide and 0.19m deep, surviving intermittently. Ditch Gen [311] was more substantial measuring up to 0.9m wide and 0.4m deep. All of the ditches shared similar concave to V-shaped profiles.

Internal activity within the enclosure was sparse. Two small isolated pits [47] and [66] were identified in the north-east and south-west parts of the enclosure respectively. They ranged in size from circular (0.35m across and 0.16m deep) to oval (1.82 m long by 1.35m wide, and up to 0.48m deep) (Figure 12: section 10), with concave profiles. The fill of pit [47] contained a moderate quantity of very abraded and leached pottery that was broadly dated to the Iron Age period. Another small pit [83] between ditches [81] and Gen [311] was probably associated with the postulated enclosure extending beyond the northern confines of the DA.

Irregular, but roughly circular quarry pit [85] was recorded in the vicinity of pit [66]. It was up to 6.4m across and had an uneven profile measuring less than 0.7m in depth (Figure 12: section 7); it was infilled by a combination of deliberate backfilling and natural silting. A fairly large and deep post pit [88], 0.8m in diameter and 0.65m) was cut into the fills of the quarry pit; however, its function remains uncertain.

A short NE-SW aligned ditch Gen [307] *c.* 5.7m long was identified in the south-east part of the enclosure. It was up to 1.35m wide and 0.45–0.6m deep, with an asymmetrical profile (Figure 12: section 11).

Water pit [91] was located in the south-west of the enclosure, with which it is assumed to have been associated. The roughly circular feature was 2.85m across, with a steep-sided profile to the limit of investigation, at a depth of 1.4m (Figure 11: image 7; Figure 12: section 12). A series of naturally derived fills were revealed, with the lowest exposed fill (92) forming in wet conditions, as indicated by the horizontal upper boundary. This was followed by slumping of the sides into a dry cavity. The main fill (93) accumulated during dry conditions and contained a small quantity of undiagnostic, but possibly Iron Age shelly pottery (Table 2). This deposit, as well as the uppermost fill (94), contained small quantities of animal bone. In addition, a very small quantity of charcoal flecks and a fragment of a small mammal bone were recovered from sample <2> from the main fill (93); this material has no analytical potential.

3.4 Phase 3: Medieval / Post-medieval Agricultural Landscape

A series of furrows characteristic of medieval and later arable cultivation were identified intermittently across the majority of the DA (Figure 13). In the east of the DA, furrows Gen [300] followed a NW-SE alignment. Further to the west, a series of similarly aligned furrows Gen [317] were revealed. Immediately south of these, another array of furrows Gen [318] was recorded on a contrasting NE-SW alignment. The furrows were generally *c.* 5–8m apart and 1–3m wide; their characteristic wide shallow profiles were filled with mid-grey-brown to mid-orange-brown clay silt (Figure 14: image 9).

A series of ditches appear to define the subsequent enclosure of the medieval open fields. A NE-SW aligned ditch Gen [303] and ditch Gen [310] on a perpendicular alignment were identified in the central-east part of the DA. They would probably have intersected a short distance to the south of the limit of excavation. Another NE-SW aligned ditch Gen [313] was stratigraphically later than furrows Gen [317] and the Phase 2 enclosure ditch Gen [312]; it possibly served as a later field sub-division associated the land parcel to the east. These boundary ditches were up to 0.8m wide and 0.3m deep with concave to V-shaped profiles (Figure 14: image 10). Fill (19) of ditch segment [18] of boundary Gen [303] contained an undated pottery sherd and a fragment of window glass; the latter is considered to be an intrusive artefact derived from the adjacent modern structure Gen [304].

Spatial arrangement of the revealed agricultural landscape seems to correspond to the field system depicted on the 1794 pre-enclosure map (Figure 4). Furrows Gen [300] and Gen [317] match the alignments of the Long Bennel Furlong and Short Bennel Furlong respectively; furrows Gen [318], forming a corner of a field, may reflect the remains of the Urchin's Furlong. However, the distinctive field corner is displaced in relation to the pre-enclosure map (Figure 4). It remains uncertain whether this is a mapping error.

3.5 Phase 4: Modern Activity

A series of land drains Gen [305] extended across the entire site and relate to its former agricultural use. A number of these had been inserted into furrows (Figure 14: image 9), utilising the existing depressions to assist drainage of the land in the post-medieval to modern period.

Three concentric arrays of sub-rectangular and sub-square pits were revealed in the centre-east part of the DA; these formed part of a circular structure *c.* 380m east of Shed 2. The outermost circle Gen. [306] was formed by at least twelve, but possibly up to twenty-four, sub-square and sub-rectangular pits that were *c.* 6.5–7.5m apart at *c.* 27.5m radius (90ft), whilst circle Gen. [308] was formed by a similar number of sub-square pits arranged *c.* 3m apart at *c.* 11.5m radius (38ft); the innermost structure Gen [327] was represented by four surviving pits. All pits were approximately 0.6m by 0.6m to 0.6m by 1.2m in plan and were backfilled with mixed debris. Sub-circular pit [309] constituted the centre point of the structure and was up to 1.6m diameter. The structure is thought to have probably formed a T7 Cradle Bed for mooring barrage balloons during World War II, as depicted in the *"Barrage Balloon Manual"* (p. 37)[1] (Figure 15). The central pit Gen [309] served as the 'central anchorage block', whilst structure Gen [327] corresponds with eight 'snatch blocks' forming an octagon. Pits Gen [308] seem to have served as a mooring circle at 37ft radius (11.28m), whereas the outer structure Gen [306] can be described as 'tail guy circle' of a 90ft radius (27.43m) that was used to manoeuvre a moored barrage balloon against the wind. Images of such structures are shown in photographs from that period, e.g. in "*Balloons at War"* (Christopher 2004, p. 103).

Approximately 70m to the north-east, an east-west aligned, sub-rectangular structure Gen. [304] was revealed. It was 21.5m long by 8.8m wide within the confines of the DA and continued beyond the limit of the excavation; it consisted of twenty-five sub-square structural pits measuring *c.* 0.5–0.6m across (Figure 16: image 11). These remains resemble the foundations for a 'Nissen' hut-type structure that was originally designed during World War I and was used extensively during World War II. Some distance to the south near the limit of investigation were modern pits Gen [301]; excavation of one of these revealed a fragment of a wooden crate in the base (Figure16: image 12).

In the west of the site a NE-SW aligned trench Gen [322] was revealed with three associated brick structures Gen [323] that were set into it at right angles. The trench appeared to have been machine-excavated prior to backfilling with a mixed grey clay deposit.

Other modern activity comprised a sub-rectangular pit [10] and a post hole [45] in the east.

3.6 Summary

The results of the mitigation works on Pond 2 offer a marked contrast to the findings of the 2011 and 2012 evaluation works. There does not appear to be a continuation

[1] http://www.bbrclub.org/Barrage%20Balloon%20Manual%20Pages%2037%20to%2040.htm accessed 10/10/2016

of the early and early-middle Iron Age settlement activity revealed to the north and north-west of the current site.

The geophysical survey results show only a low-level correlation with the results of the investigation, which may be due to the presence of modern hardcore debris within the overburden.

The early-middle Iron Age period is represented by two phases of activity. The initial phase comprises the enclosure of the landscape, with associated activity in the west of the Pond 2 site. The subsequent phase saw a change in utilisation of the area — a droveway with associated enclosures to the east were constructed. The presence of the droveway and enclosures, together with sparse associated activity — indicated by the presence of occasional pits, post holes, quarrying and water pits — together with a paucity of artefacts, suggests a peripheral area, mainly utilised for livestock grazing and management together with other low-level activity. The site is clearly situated some distance from a settlement focus, which was probably located within the site of the 2012 evaluation.

The investigation provides a limited insight into the spatial layout and economy of the early-middle Iron Age occupation of the area. The sequence of development has mainly been determined by stratigraphic and spatial relationships of the features, due to the lack of artefacts. This indicates changes to the organisation of the landscape over time.

Traces of the medieval landscape are defined by a number of cultivation furrows extending intermittently across the area. These correlate to the depiction of the pre-enclosure landscape on historical maps.

Modern remains associated with the RAF Cardington site, particularly relating to the barrage balloon mooring and 'Nissen' hut-type structure provide an interesting insight into military-related activities during World War II and correspond with written sources from that period.

The features and deposits have been fully analysed for this report. No additional analysis or publication is deemed necessary. This report will be uploaded onto the OASIS website (reference no. albionar1-258380). The project archive will be deposited with The Higgins Art Gallery and Museum, Bedford (accession no. BEDFM 2016.52).

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5. APPENDIX 1

5.1 Introduction

The contextual data were analysed in order to establish a coherent spatial and chronological framework. A total of 227 of the 259 contexts were assigned to chronological Phases. Groups of contexts forming parts of the same features or structures were assigned to "general" numbers [300-onwards]. These hierarchical associations relate to coherent groups of related contexts such as droveway ditches, enclosure ditches, post holes, structures, buildings and pits (Table 1).

Phase	Chronological period	Feature / Gen. No.	Description	No. of contexts
1	Early-middle Iron Age (pre-droveway activity)	102	Pit	2
		111 to 117	Post holes	8
		132	Enclosure ditch	2
		138, 140	Two pits	5
		151	Pit	2
		155	Pit	2
		157	Pit	2
		172	Pit	3
		181	Pit	2
		183	Pit	2
		187	Ditch	3
		196 to 200	Three pits	6
		202	Pit	3
		206	Water pit – earlier phase	6
		211	Well shaft – re-cut	6
		213	Pit	3
		225	Layer sealing water pits	1
		226	Pit	2
		319	Short ditch	7
		324	Enclosure ditch	5
		325	Enclosure ditch –earlier phase	8
		326	Enclosure ditch – re-cut	7
2	Early-middle Iron Age (droveway with associated activity)	47	Pit	2
		66	Pit	3
		81	Enclosure ditch	2
		83	Pit	2
		85	Quarry pit	3
		88	Post pit	3
		91	Water pit	7
		126	Droveway ditch – earlier phase	2
		167	Possible hearth	5
		302	Enclosure ditch	5
		307	Short ditch	9
		311	Enclosure ditch	6
		312	Enclosure ditch	5
		314	Droveway ditch – re-cut	15
		315	Droveway ditch	11
		320	Gully	5
		321	Gully	3
3	Post-medieval	300	Furrows	7
		303	Boundary ditch	7
		310	Boundary ditch	9

Phase	Chronological period	Feature / Gen. No.	Description	No. of contexts
		313	Boundary ditch	3
		317 and 318	Furrows	2
4	Modern	1	Topsoil	1
		2	Subsoil	1
		10	Sub-rectangular pit	2
		45	Post hole	2
		301	Two sub-rectangular pits	5
		304	Sub-rectangular 'Nissen' hut-type structure	1
		305	Land drains	1
		306	Outer circular mast structure – 'tail guy circle'	1
		308	Mooring circle structure	5
		309	'Central anchorage block' pit	1
		316	Sub-rectangular/-square pits in the west of DA	1
		322	Trench	1
		323	Three brick structures within trench	1
		327	Octagonal structure	1
	Total			**227**

Table 1: Summary of archaeological features by chronological Phase

6. APPENDIX 2 – ARTEFACTS AND ECOFACTS SUMMARY

6.1 Introduction

A small assemblage of pottery, non-ceramic objects and animal bone was recovered from eleven deposits across Phases 1–4 (Table 2).

Phase	Feature No.	Description	Finds Summary
1	206	Water pit	Animal bone (39g)
	211	Water pit – recut	Animal bone (1g)
	325	Ditch	Pottery (8g)
2	47	Pit	Pottery (81g)
	91	Water pit	Pottery (7g); animal bone (73g)
	315	Droveway ditch	Pottery (15g); fired clay (12g); animal bone (1g)
3	303	Boundary ditch	Pottery (2g); window glass (15g)
4	02	Subsoil	Copper alloy button; lead alloy vessel repair
	10	Sub-rectangular pit	Pottery (2g)
	301	Two pits	Tarmac (34g)
	308	Mooring circle structure	Pottery (13g); concrete kerb stone (790g)

Table 2: Finds Summary by Phase and Feature

6.2 Ceramics

The pottery assemblage comprises 39 hand-collected body sherds (94g), and a further 34g deriving from the sieved residues of an environmental sample. Pottery survives in very poor condition, and is highly fragmented, reflected in a mean sherd weight of only 2g. Fabric types were classified in accordance with the Bedfordshire Ceramic Type Series (Table 3), although identification was hampered by the pottery's poor preservation and undiagnostic nature.

Fabric code	Common name	No. Sherd	Wt. (g)
Iron Age			
F03	Grog and sand	1	15
F29	Coarse sand	4	8
F	Non-specific Iron Age	30+	81
Modern			
P45	Transfer-printed earthenware	1	2
P100	Refined white ware	1	13
UNID	Miscellaneous undatable	2	9

Table 3: Pottery type series

6.2.1 Phases 1–3

Early-middle Iron Age pottery assigned to Phase 1 was collected from ditch [325] and comprises four coarse sand-tempered sherds (fabric F29: 8g) representing one vessel. A grog and sand tempered sherd (F03: 15g) and two amorphous sandy fired clay fragments (12g) derived from Phase 2 droveway ditch [315]. Indeterminate shell-tempered sherds (81g) representing a single vessel were collected from pit [47]. All are highly battered and leached, although a few have the suggestion of faint scoring, indicating a possible middle Iron Age date.

Two unidentified sherds (9g), probably of Iron Age date, were collected from Phase 2 water pit [91] and Phase 3 boundary ditch [303].

6.2.2 Phase 4

Modern pottery (15g) collected from pit [10] and mooring circle structure [308] respectively comprises single sherds of transfer-printed earthenware with dark blue geometric decoration, and refined white ware.

6.3 Non-ceramic Artefacts

The fill of Phase 3 boundary ditch [303] contained an intrusive piece of clear, colourless modern window glass (15g). Metal-detected finds from subsoil (2) are a domed, circular copper alloy livery or blazer button of 19th–20th-century date, and an undatable lead alloy waisted vessel repair plug (42g).

Modern features [301] and [308] associated with barrage balloon mooring respectively yielded a piece of tarmac (34g) and a sizeable concrete kerb stone fragment (790g), neither of which were retained.

6.4 Ecofacts

Twenty-eight animal bone fragments (114g) derived from Iron Age water pits [206] / [211], [91] and droveway ditch [315]. All are highly fragmented (mean fragment weight 4g) and survive in poor condition. Diagnostic elements are limb bone and mandible fragments, some of the latter deriving from a dog; also recovered were miscellaneous small mammal remains and a possible otolith.

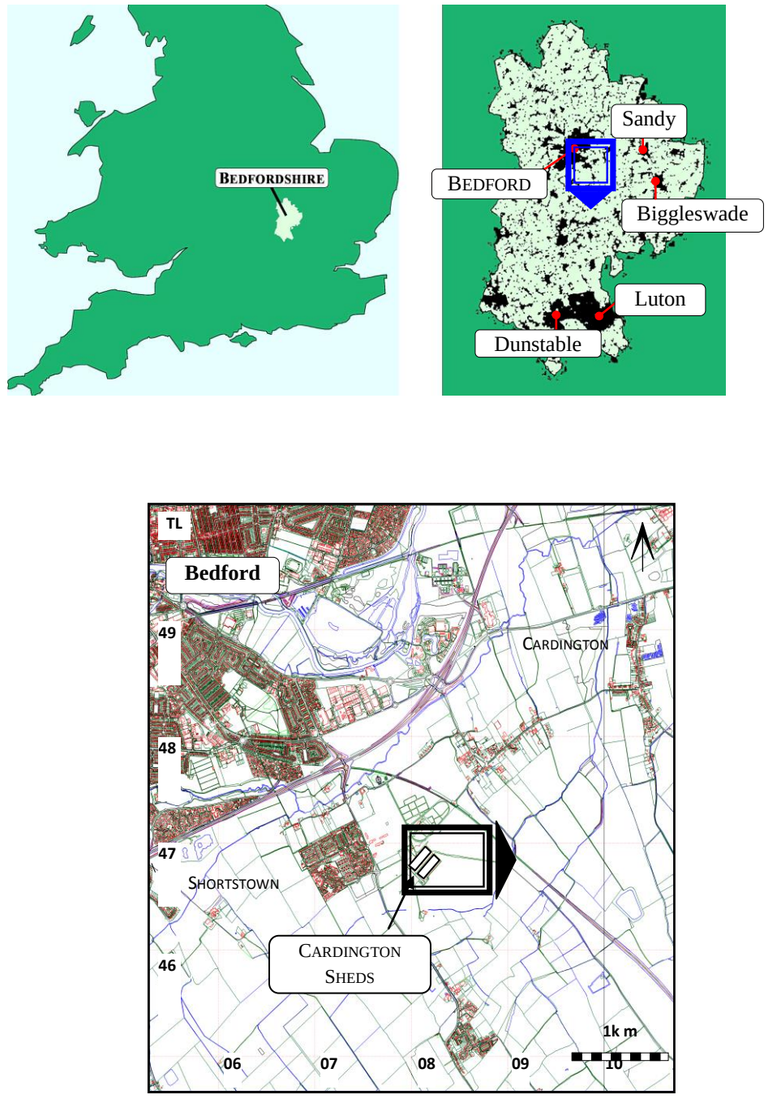


Figure 1: Site location

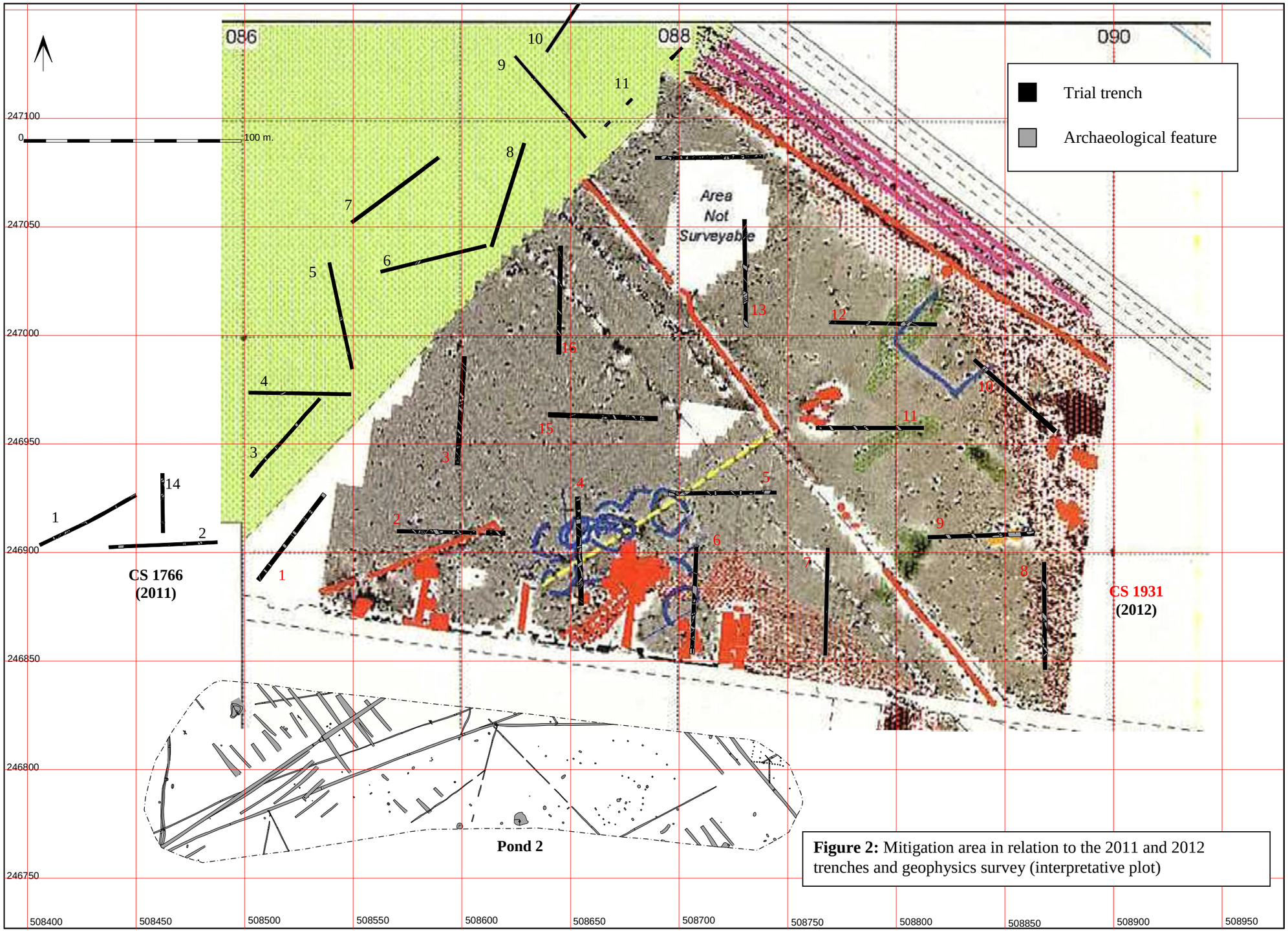


Figure 2: Mitigation area in relation to the 2011 and 2012 trenches and geophysics survey (interpretative plot)

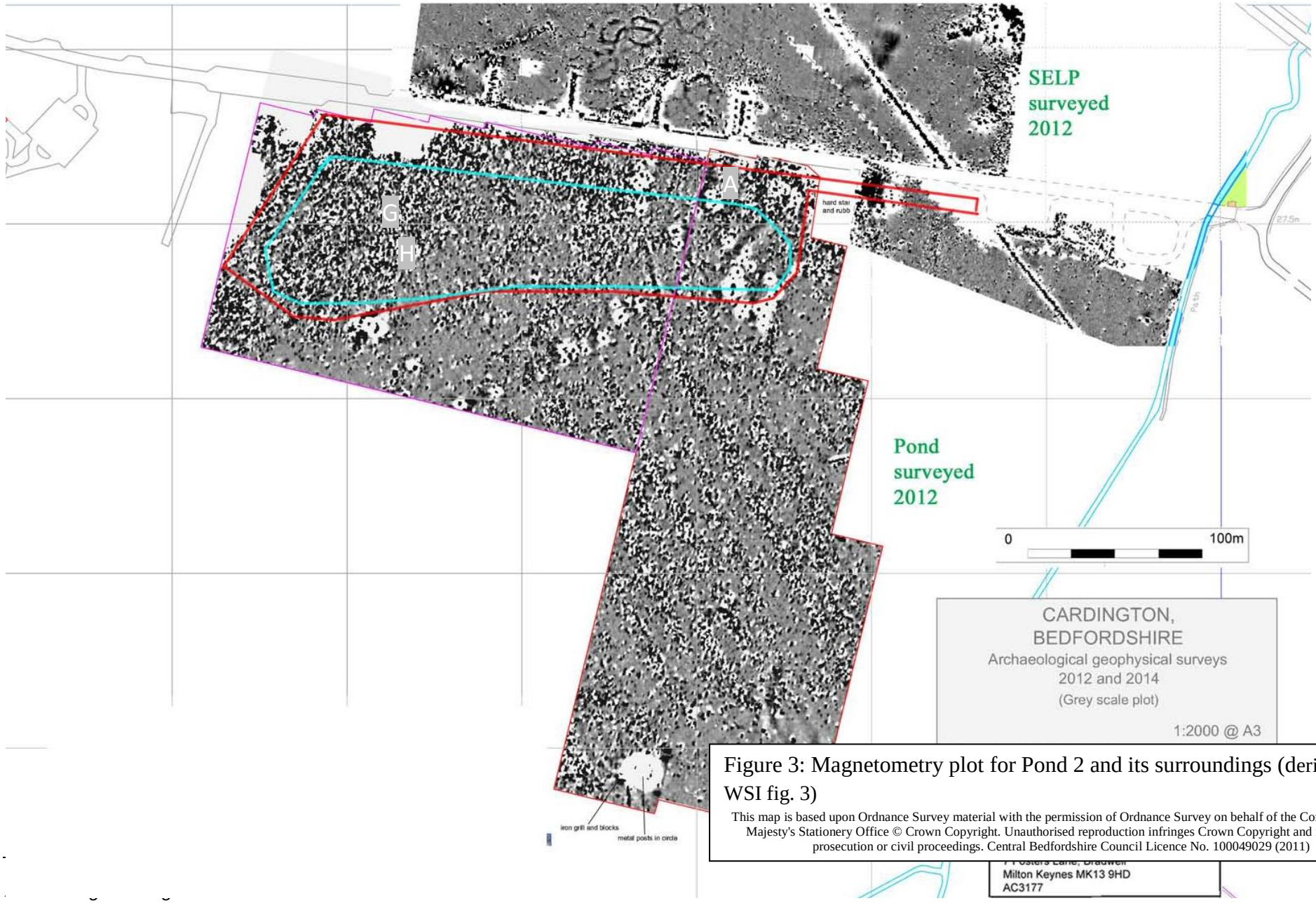


Figure 3: Magnetometry plot for Pond 2 and its surroundings (derived from WSI fig. 3)

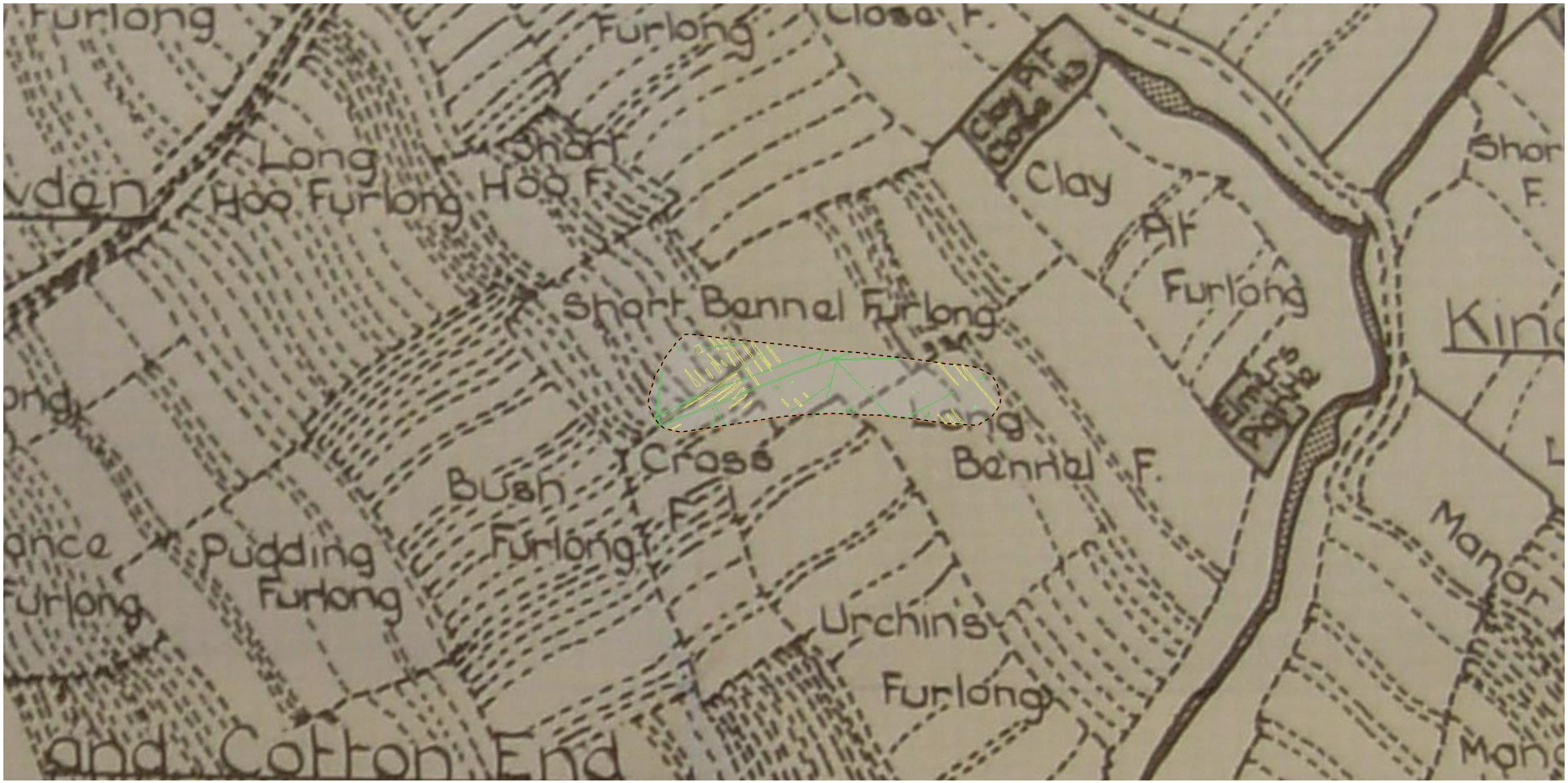


Figure 4: Transcription of 1794 map with Pond 2 overlaid.
(medieval cultivation furrows are shown in yellow within the pond area)

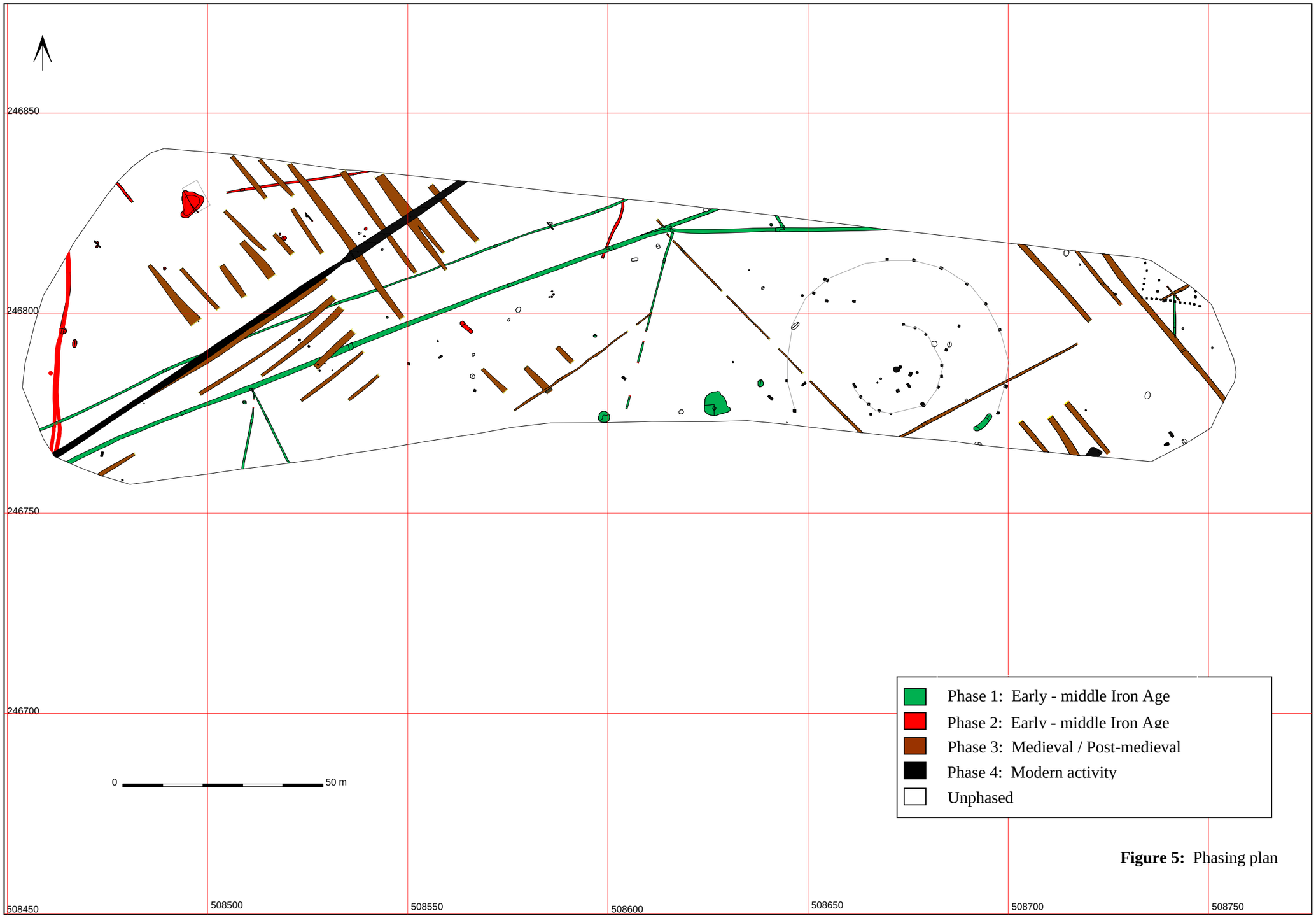


Figure 5: Phasing plan

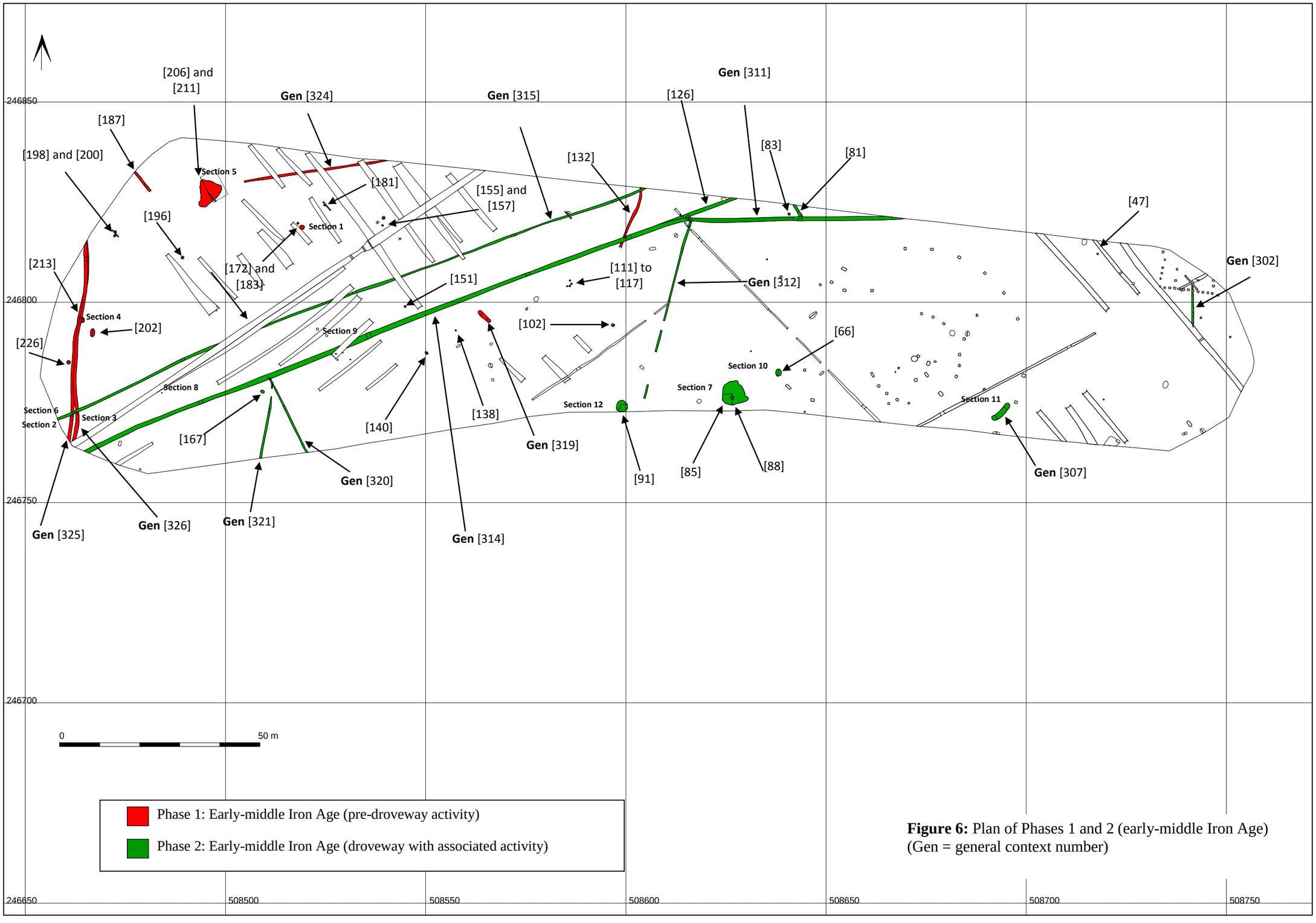


Figure 6: Plan of Phases 1 and 2 (early-middle Iron Age) (Gen = general context number)

Image 1: Sinuous western boundary ditch of enclosure Gen [325] and Gen [326], with pit [213] (scale 40cm in 10cm divisions)

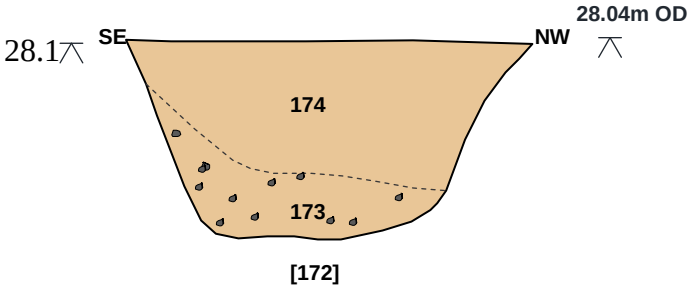
Image 2: Cluster of four shallow post holes [111] to [117] (scale 1m in 50cm divisions)

Figure 7: Selected images 1 and 2 from Phase 1

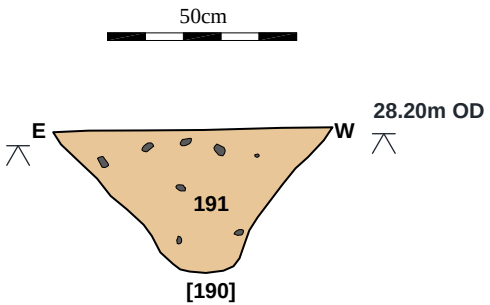
Image 3: Half-section of pit [172] (scale 1m in 50cm divisions)

Image 4: Large water pit [206]/[211] (scale 1m in 50cm divisions)

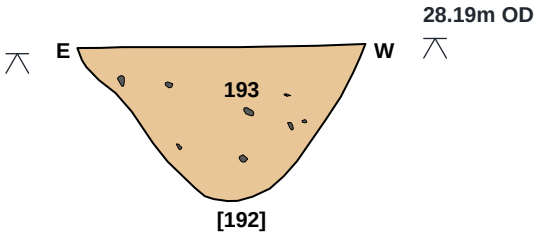
Figure 8: Selected images 3 and 4 from Phase 1



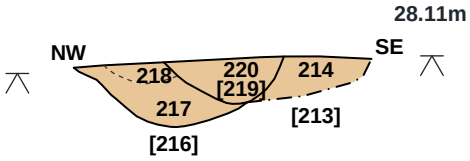
Section 1: Pit [172]



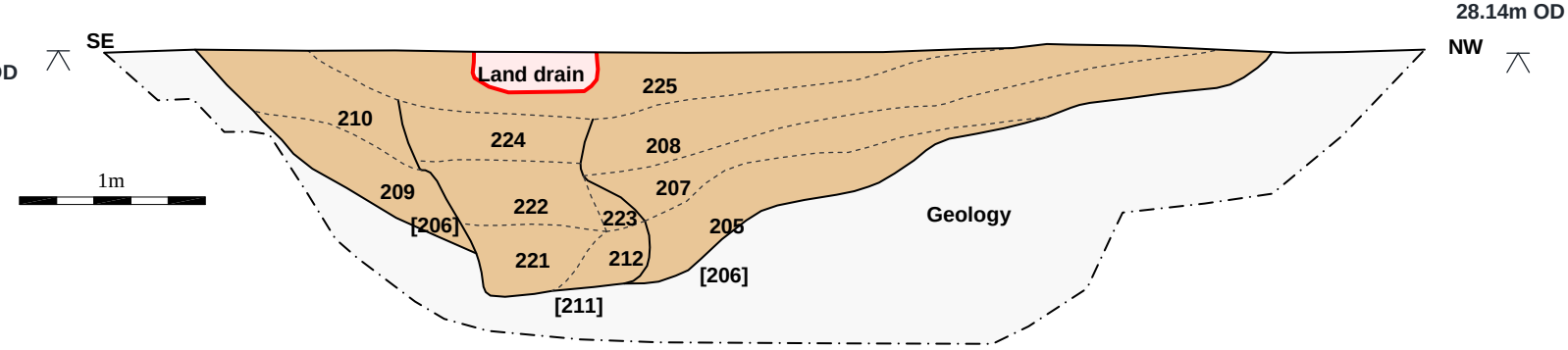
Section 2: Enclosure ditch [190] of Gen [325]



Section 3: Enclosure ditch [192] of Gen [326]



Section 4: Enclosure ditch [216] of Gen [325] with re-cut [219] of Gen [326] and pit [213]



Section 5: Water pit [206] with re-cut [211]

Figure 9: Selected sections from Phase 1
(upper and lower sections displayed at different scales)

Image 5: Looking to the NE along the early-middle Iron Age droveway, defined by the two flanking ditches Gen [314] and Gen [315] – darker linear bands in image. The lighter-coloured, wider central feature is a modern service trench. The earlier redefined enclosure ditch can be seen in the bottom left of the image.

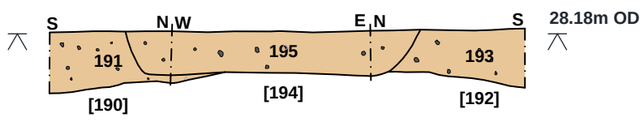
Image 6: Two sequential, obliquely aligned ditches to the south of the droveway, with ditch Gen [320] to the right and Gen [321] to the left

Figure 10: Selected images 5 and 6 from Phase 2

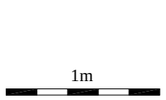
Image 7: Substantial water pit [91], with darker deposits sloping down from the southern (right) edge of the feature (scale 1m in 50cm divisions)

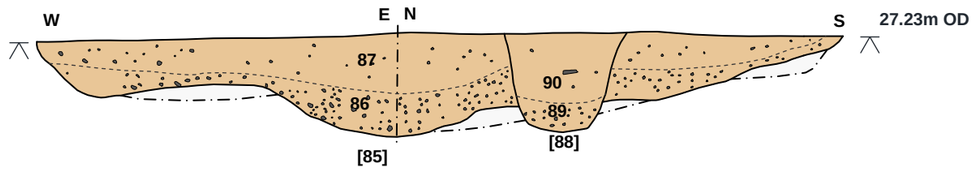
Image 8: Hearth [167], located immediately to the south of the droveway (scale 40cm in 10cm divisions)

Figure 11: Selected images 7 and 8 from Phase 2

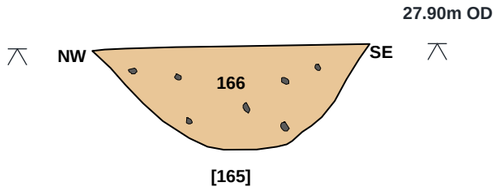


Section 6: Phase 1 enclosure ditches [190/325] and [192/326] truncated by droveway ditch [194]/Gen [315]

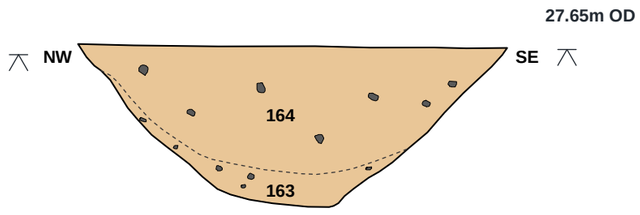




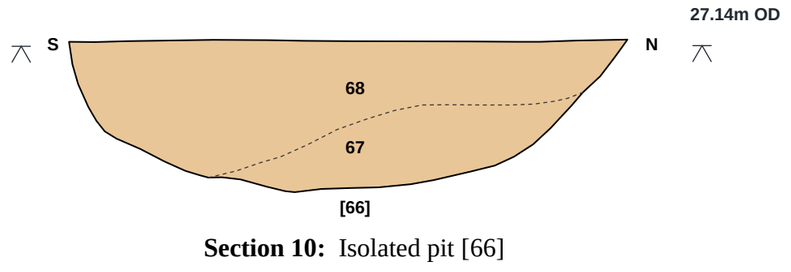
Section 7: Quarry pit [85] truncated by post pit [88]



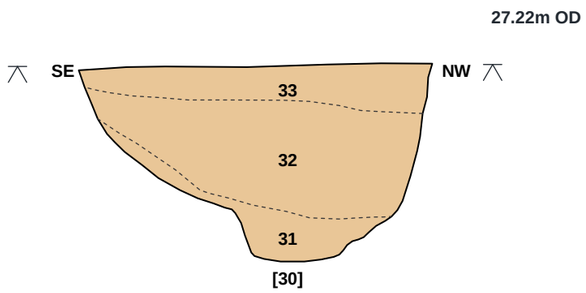
Section 8: Droveway ditch [165]/Gen [314]



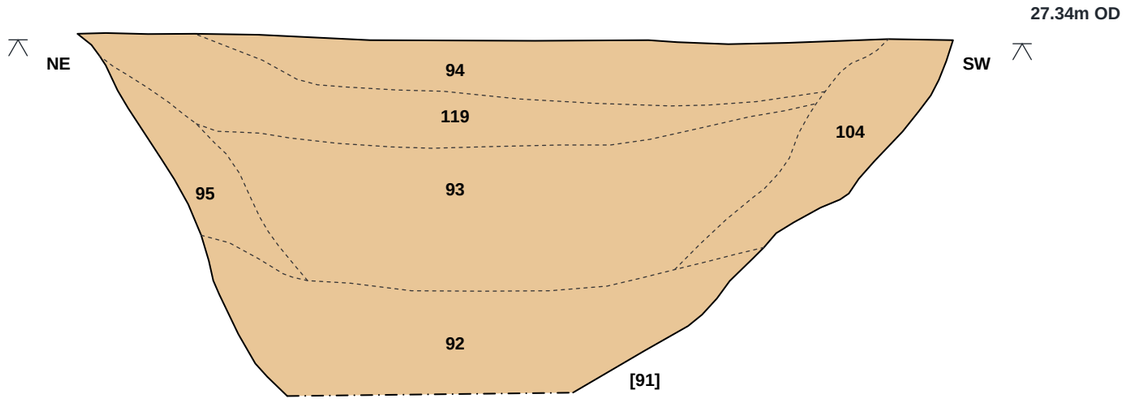
Section 9: Droveway ditch [162]/Gen [314]



Section 10: Isolated pit [66]



Section 11: Short ditch [30]/Gen [307]



Section 12: Large water pit [91]

Figure 12: Selected sections from Phase 2
Please note different scales for sections 7 and 8 compared to the rest

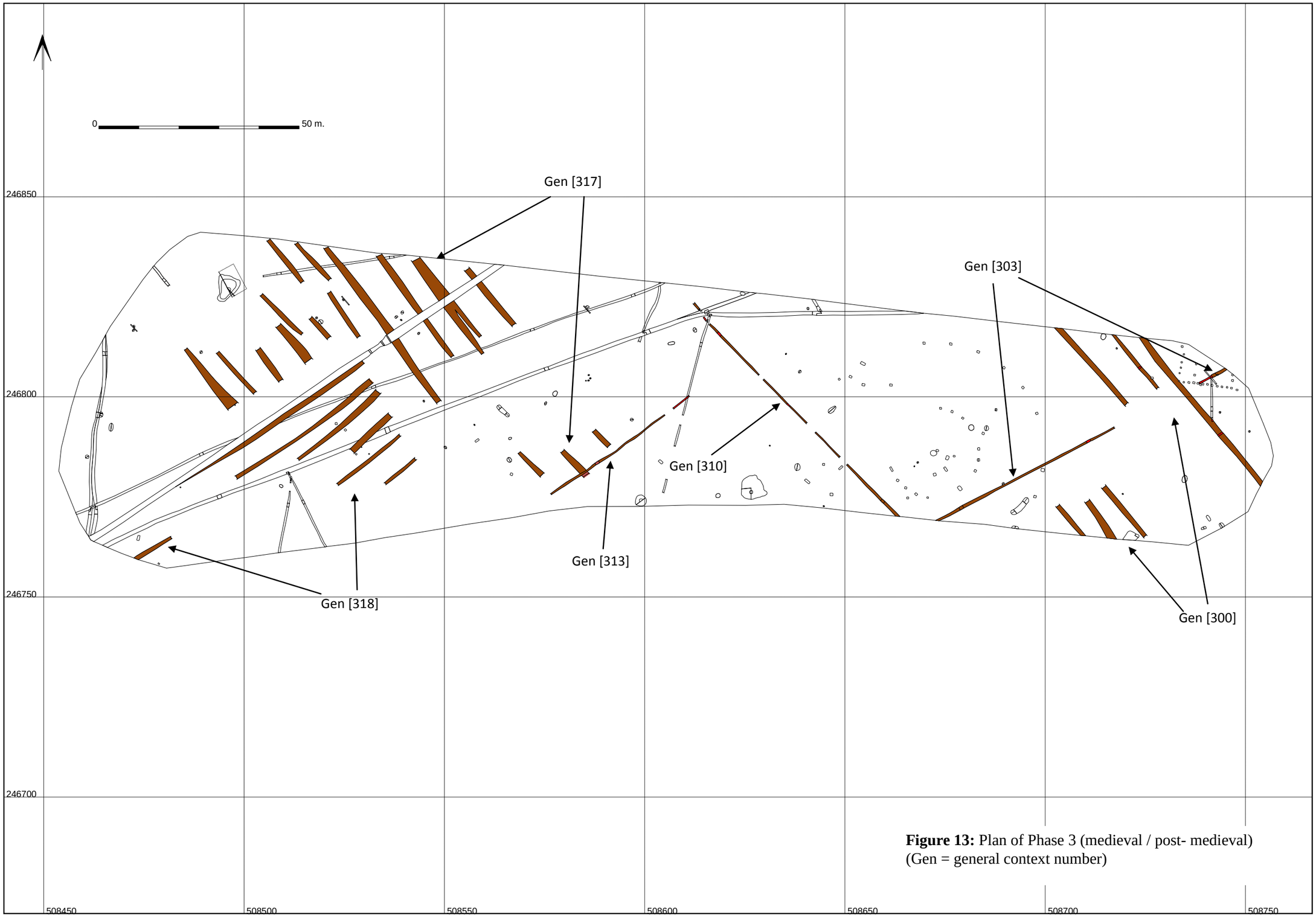
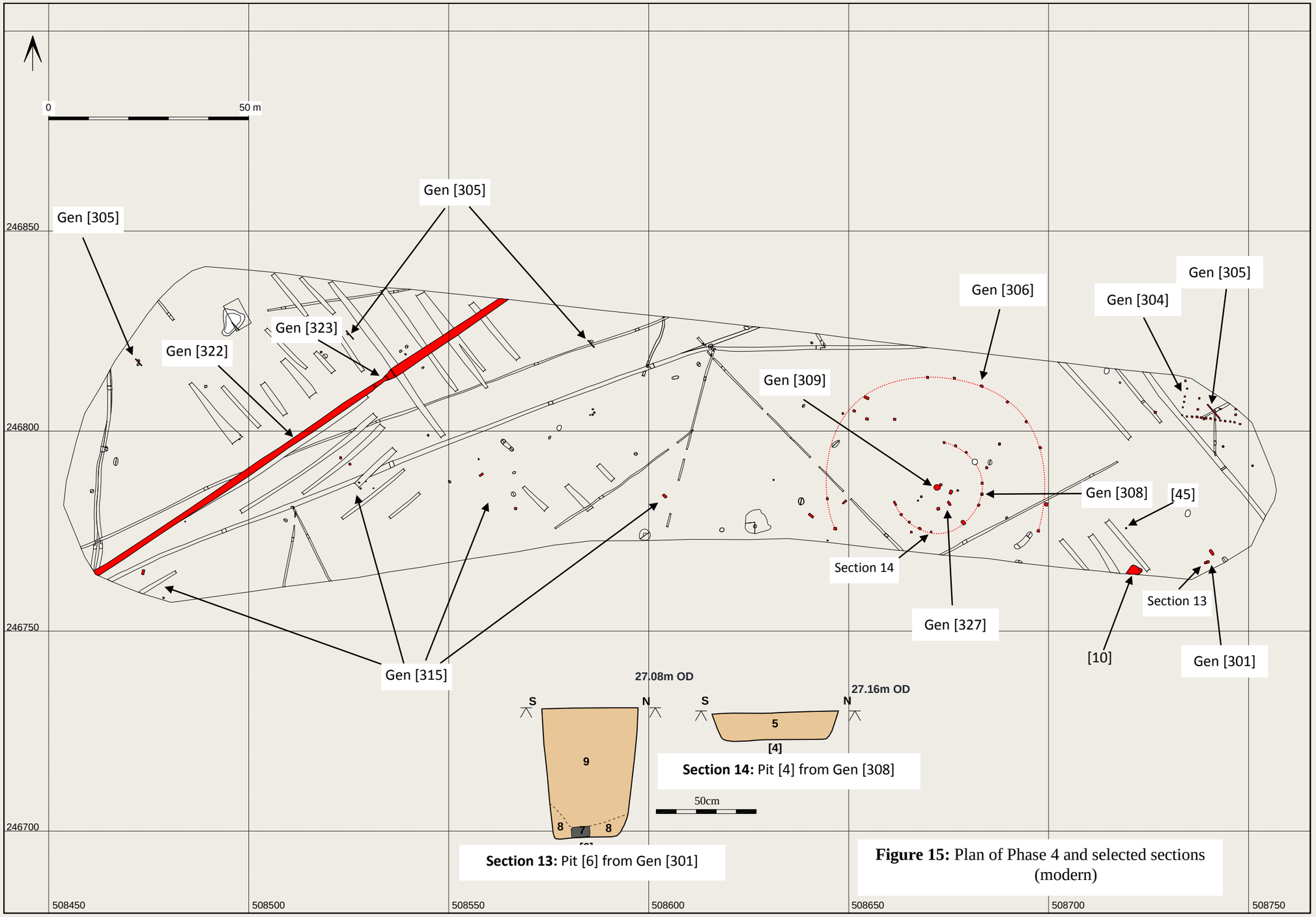


Figure 13: Plan of Phase 3 (medieval / post- medieval) (Gen = general context number)

Image 9: Example of a furrow with a modern land drain pipe inserted into it (scale 1m in 50cm divisions)

Image 10: NW-SE aligned ditch Gen [310] (scale 40cm in 10cm divisions)

Figure 14: Selected images 9 and 10 from Phase 3



Section 13: Pit [6] from Gen [301]

Section 14: Pit [4] from Gen [308]

Figure 15: Plan of Phase 4 and selected sections (modern)

Image 11: 'Nissen' hut-type remains Gen [304], looking to the west (scale 1m in 50cm divisions)

Image 12: Section through modern pit, with a fragment of a wooden crate in the base – one of two pits of Gen [301] (scale 40cm in 10cm divisions.)

Figure 16: Selected images 11 and 12 from Phase 4

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