



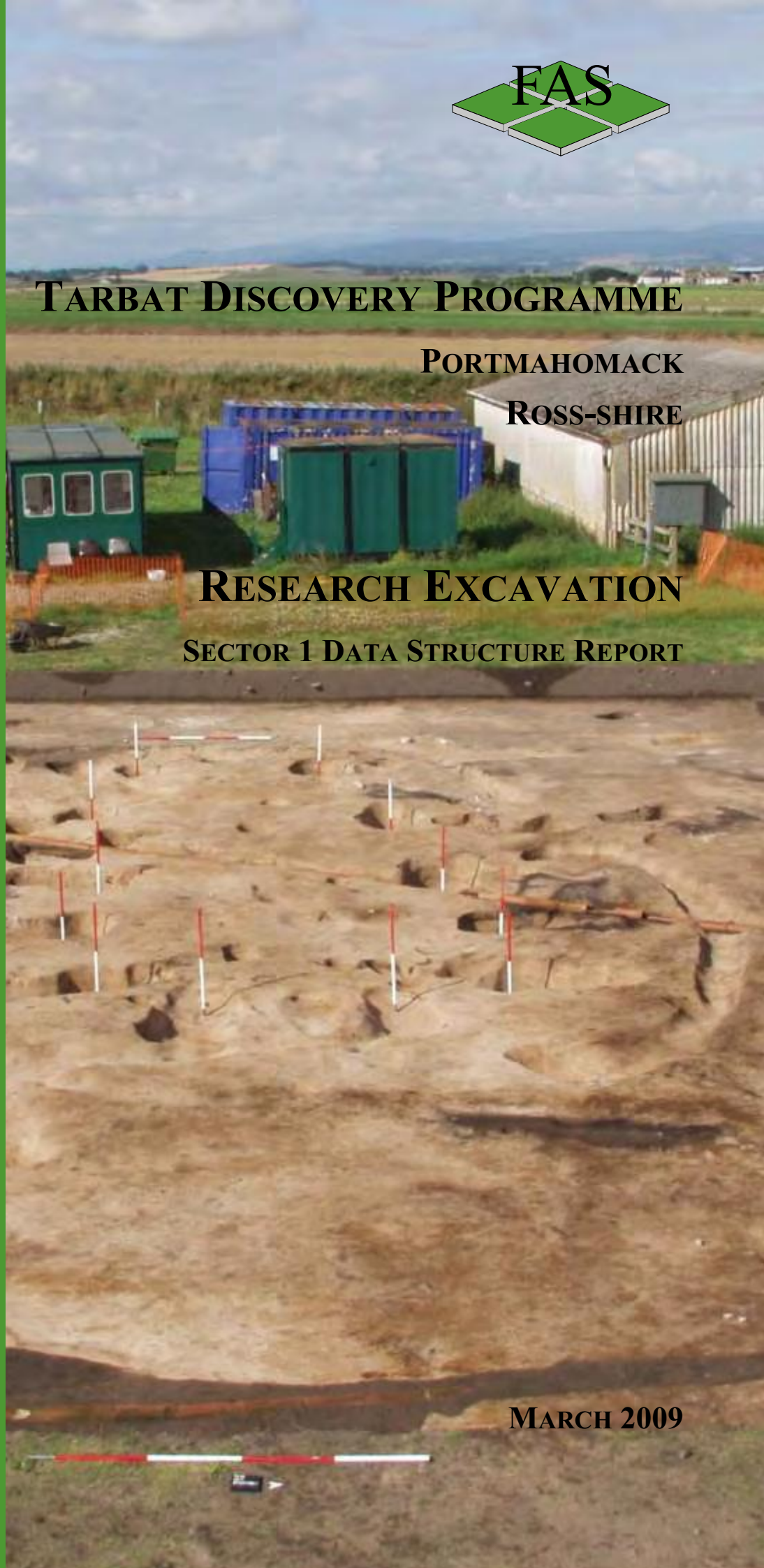
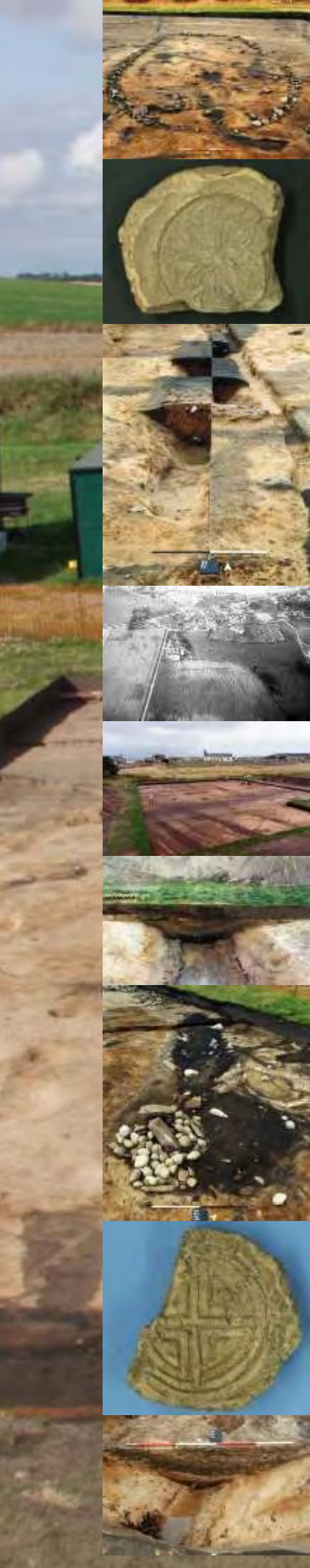
TARBAT DISCOVERY PROGRAMME

PORTMAHOMACK

ROSS-SHIRE

RESEARCH EXCAVATION

SECTOR 1 DATA STRUCTURE REPORT



MARCH 2009



TARBAT DISCOVERY PROGRAMME
PORTMAHOMACK ROSS-SHIRE

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DATA STRUCTURE REPORT
March 2009





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Project Summary

The Tarbat Discovery Programme was initiated in 1993 by Professor Martin Carver as a research project of the Department of Archaeology, University of York, following an invitation by the Tarbat Historic Trust. A monastic site at Portmahomack was predicted from discoveries in the kirkyard of elaborate Pictish sculpture (Class II and III), including a fragment bearing Pictland's only Latin inscription in insular majuscules, and a silver hoard of the late 10th century. In 1984, while undertaking aerial reconnaissance, Barri Jones and Ian Keillar identified a large C-shaped ditched enclosure surrounding the church, overlooking the shelving sand beach with the Dornoch Firth beyond.

The evaluation was funded by a grant from Highland Council and subsequent major sponsorship has come from the Tarbat Historic Trust, the University of York, Ross and Cromarty Enterprise, the Highland Council, the Heritage Lottery Fund, European Regional Development Fund, the National Museums of Scotland and Historic Scotland.

Evaluation of the site was undertaken during 1993 to 1995 using geophysical and topographic survey, and test trenches. A Project Design (*PD*) was issued in 1995 (Carver 1995) which included excavation and survey. The excavation comprised an inverted T-shaped sample of c.0.6ha within the enclosure (Sector 1 and 2), an area to the north (Sector 3) and the interior of the church (Sector 4). The bar of the T-sample ran approximately east-west (140m in length) and spanned the large NE-SW orientated ditch identified by Jones and Keillar, including the areas immediately within and without the ditch. This area was allocated Sector 1 (Intervention 11 and Intervention 25). The T-shape was completed by a transect orientated approximately north-south, allocated Sector 2 (93m in length)(Intervention 14 and Intervention 24), which began at the northernmost limit of the glebe at Tarbatness Road, on the highest ground available and as close as possible to the kirkyard of Tarbat Old Church, and reached to Sector 1 at its southernmost limit. The mapping of Sector 1 and 2, and the excavation of Sector 1, was completed successfully in 2003.

As well as the T-shaped sample, the nave, crypt and north aisle of Tarbat Old Church were excavated in advance of its refurbishment as the Tarbat Discovery Centre, allocated Sector 4. Small-scale excavation has also taken place, in response to development associated with the construction of nearby dwellings (Intervention 15, house plot excavation, allocated Sector 3) and with the Discovery Centre (Intervention 16 and Intervention 22 service trench excavation, Intervention 26 oil-tank excavation and Intervention 27 statue base excavation).

Excavation in Sectors 1 to 4 has revealed evidence for a Pictish monastic settlement enclosed by a large ditch. Within Sector 4, the monastic church and cemeteries have been identified and sampled. Within Sector 1 and 2, areas of industrial craft-working activity, areas for agricultural processing and large stone-built features thought to belong to water management, have been identified and sampled. The total area of excavation is 6515m² (0.65ha).

This Data Structure Report concerns excavations in the south field (Sector 1), carried out between 1994 and 2005. It draws on, and refers to, an earlier field report written by Madeleine Hummler (FR5) and an interim synthesis and interpretation prepared by Martin Carver and published in summary form in *Portmahomack*,

Monastery of the Picts (Carver 2008, ch 2,3,5 and 6).

Acknowledgements

The Tarbat Discovery Programme would like to thank the Tarbat Historic Trust and the village of Portmahomack for their hospitality, and current sponsors Historic Scotland, the National Museum of Scotland and the University of York. We are grateful to Rod McCullagh, Deputy Head of Archaeological Programmes and Grants Advice, Historic Scotland, for his support, advice and guidance and to Fraser Hunter and Martin Goldberg for advice and management of the Tarbat archive held at the NMS.

1.0 INTRODUCTION

This document reports on the archaeological excavation of Sector 1 of the Tarbat Discovery Programme, Portmahomack (Figure 1)(NGR NH 915 840). The fieldwork was undertaken between 1994 and 2003, by the University of York in association with Field Archaeology Specialists (FAS) Ltd. This report represents the Data Structure Report for the whole of Sector 1 (Figure 2), and has been prepared with reference to Historic Scotland guidelines on the preparation and content of Data Structure Reports (1996, 9). It uses post-excavation work undertaken as part of a Field Report prepared by Madeleine Hummler (FR5), and preliminary analysis and synthesis undertaken for the published interim report (Carver 2008).

2.0 FIELDWORK PROCEDURE

The area under evaluation was divided into lettered zones based on bounded areas, land use and ground conditions (Zones A to F). Every fieldwork activity carried out at the site was assigned an intervention number (Intervention 1 to 30; Appendix A).

2.1 EVALUATION

The cropmark enclosure discovered during the Moray Aerial Survey by Jones and Keillar had already been investigated by Jill Harden in 1991 as part of a preliminary archaeological assessment of the site. The investigation of the enclosure ditch (Intervention 1) comprised an evaluation trench measuring 4m x 10m, which was stepped in to 1.50m x 8.75m at a depth of 0.80m for safety reasons. The excavation of a section through the ditch produced a partial profile, characterised the ditch fills, and although no dateable artefacts were recovered a number of samples of organic material were retrieved for radiocarbon dating (see below, Section 3.3.1).

The University of York evaluation of the site was undertaken in three phases during 1994 and 1995. The first phase of the evaluation consisted of topographic and geophysical survey, and was carried out in March 1994. A detailed topographic survey of the kirkyard, and the three fields to the south of the church which were known to contain parts of the cropmark enclosure ditch (Zones B-F), was undertaken using a total station theodolite (Intervention 4). The survey data was processed using LisCAD software to produce a contour map at 0.5m intervals (Figure 3). The aerial photograph showing the cropmark enclosure ditch was plotted using Aerial software and combined with the contour map in an AutoCAD drawing. As part of the topographic survey a permanent site grid was established with heights based on the Ordnance Survey Datum derived from a local benchmark.

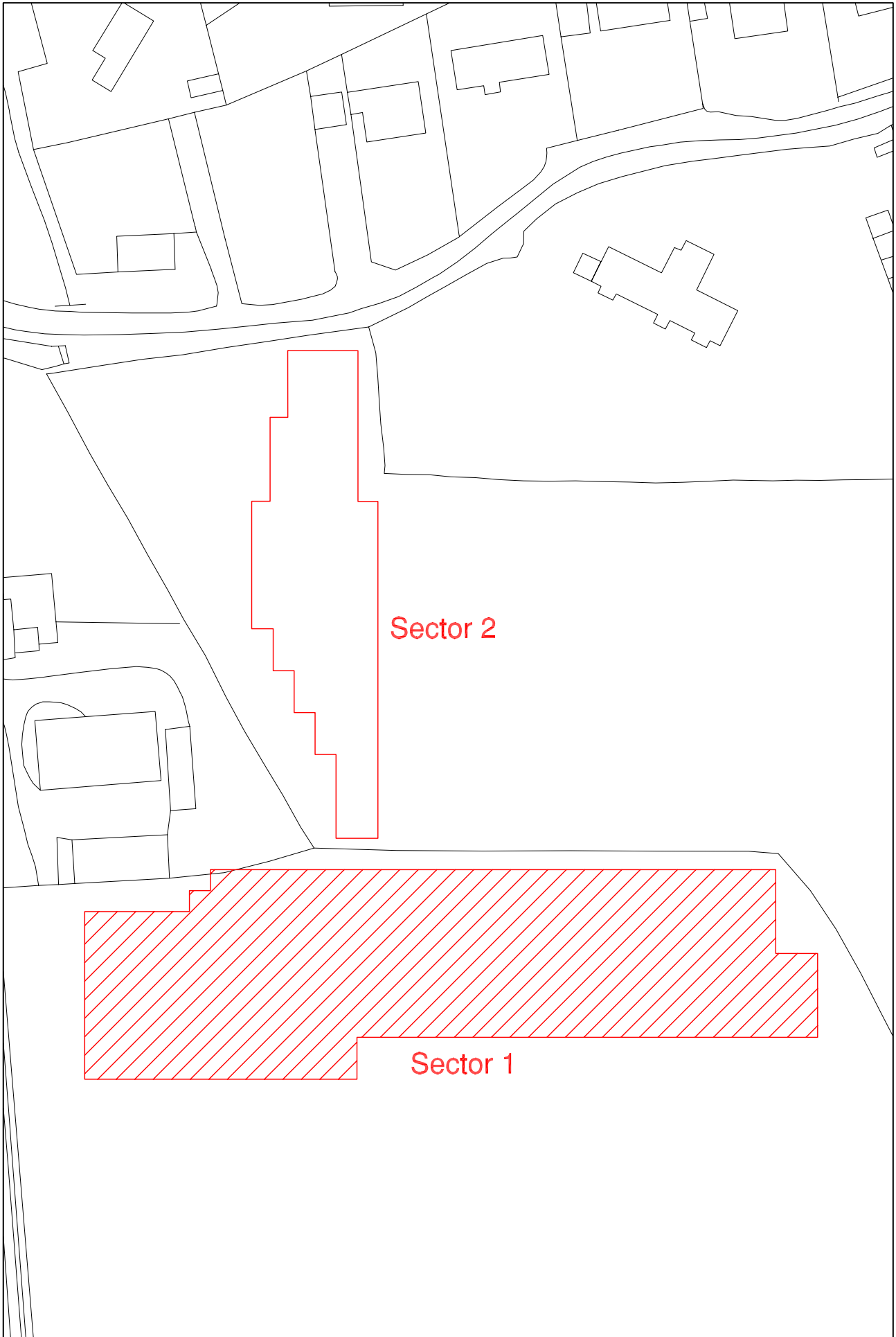
Geophysical survey was also undertaken in tandem with the topographic survey. The geophysical survey areas were set out in both available parts of the Glebe Field (Zone D) and across the east-west cropmark feature in the field to the south (Zone E). The geophysical survey consisted of a magnetometer survey (Intervention 2) undertaken at 0.5m x 1.0m reading intervals using a fluxgate gradiometer (Geoscan Research FM8), and a soil resistance survey (Intervention 3) undertaken at 1.0m x 1.0m intervals using a soil resistance meter (Geoscan



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Location map	Scale 1:50000		Figure 1
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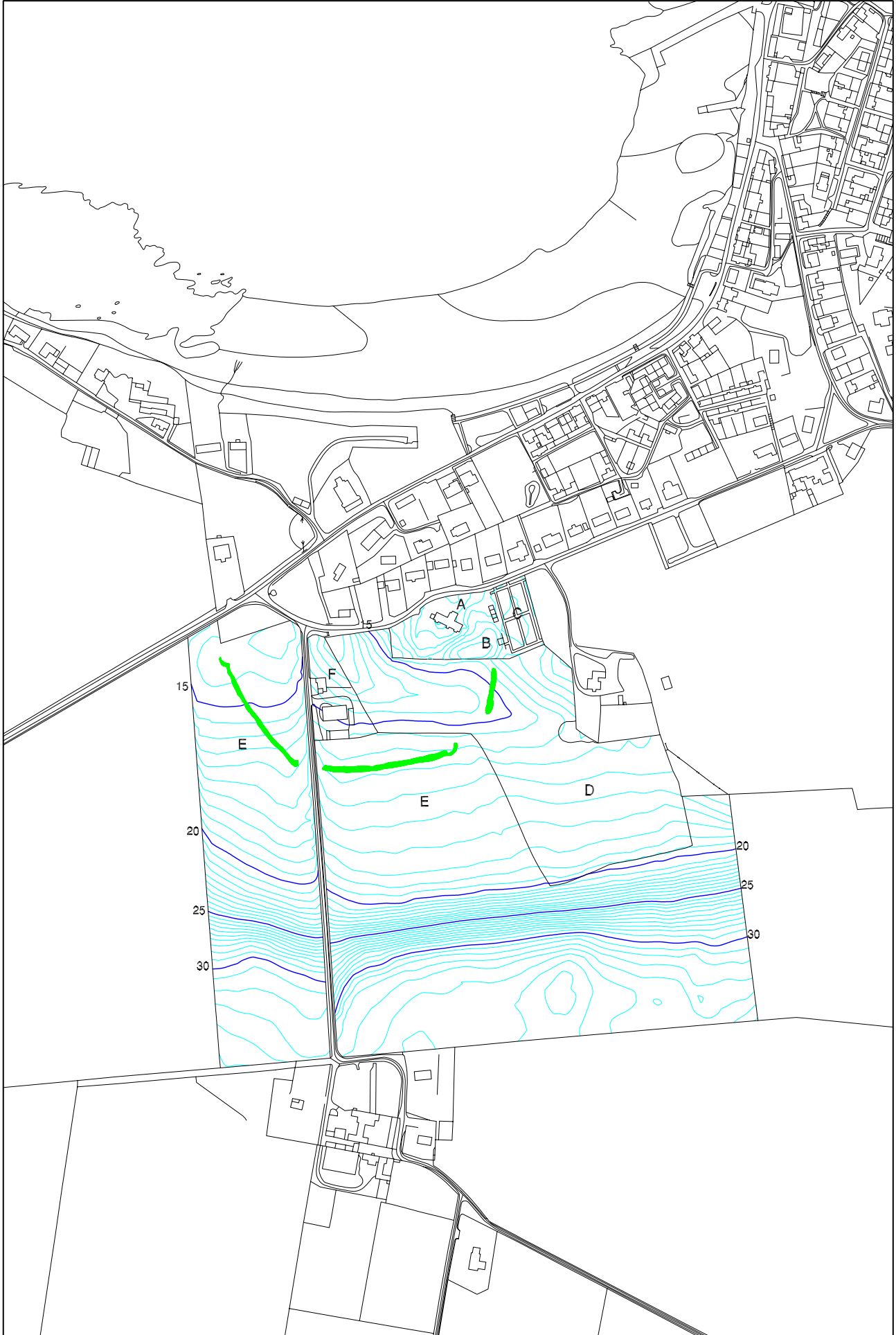
Location of Sector 1

Scale 1:1000



Figure 2





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Contour map and cropmark

Scale 1:5000



Figure 3



Research RM4 at 0.5m probe spacing with DL10 data logger). Both surveys clearly defined the enclosure ditch as well as numerous other anomalies. The magnetometer survey, however, provided more useful results in identifying other buried archaeological remains (Figure 4). A series of regularly-spaced linear positive magnetic anomalies on a NNW-SSE alignment was defined in the southern part of the survey area and interpreted as furrows. Three clearly-defined, uniform linear anomalies were considered to represent recent field drains. To the north of the enclosure ditch the magnetometer survey identified a group of discrete, and fairly strong, magnetic anomalies which, it was hoped, reflected the presence of settlement related features such as buildings and hearths in the interior of the enclosure.

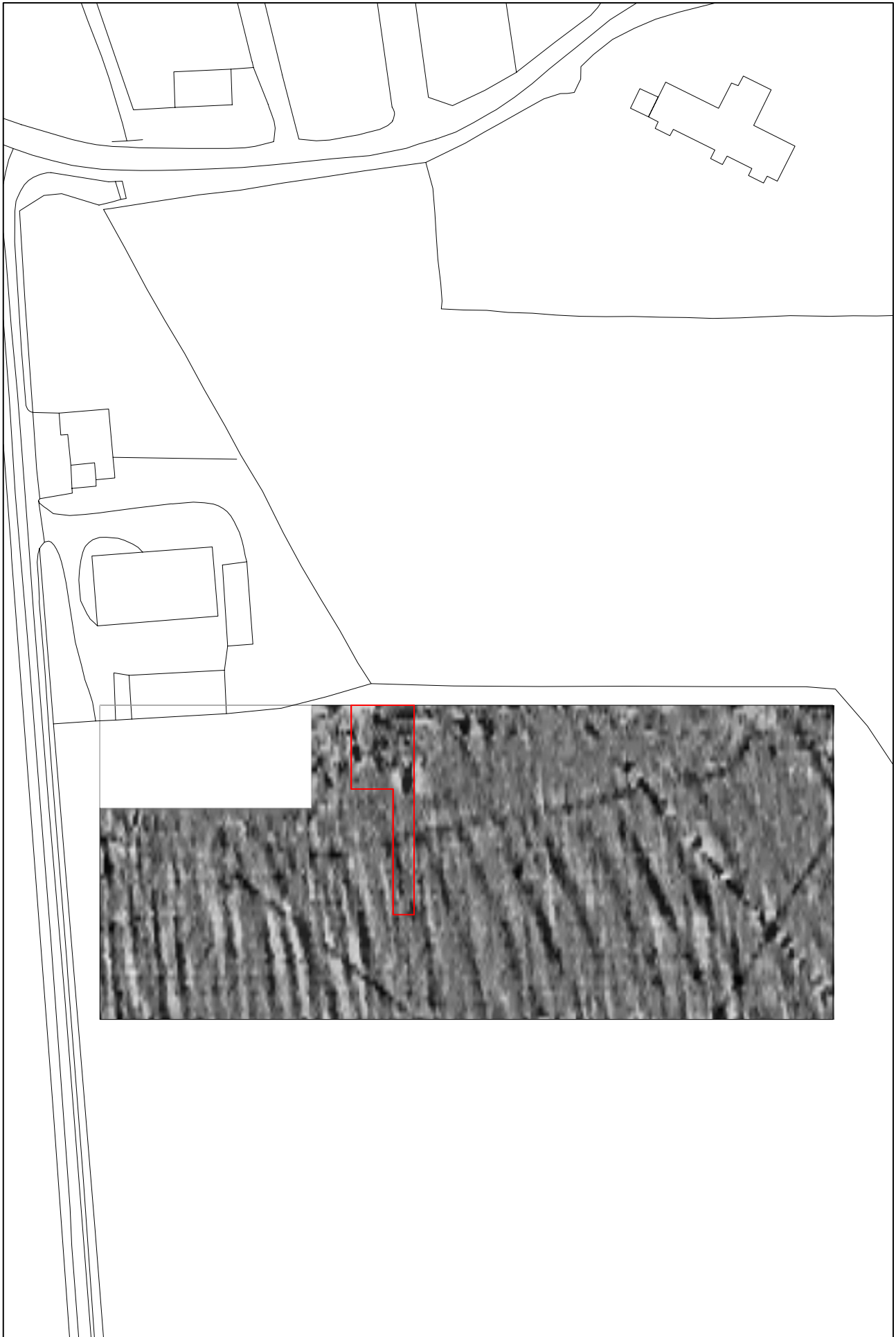
The second phase of the evaluation was undertaken during the summer of 1994. Three large evaluation trenches were excavated across the site, including one trench in Zone E to the south of the Glebe Field (Intervention 7, Figure 5). Intervention 7 measured 12m x 16m and was positioned to investigate the magnetic anomalies identified in the interior of the enclosure, an area which coincided with a concentration of stones noted during the survey. An area of 4m x 24m was also excavated which extended the trench southwards across the full width of the enclosure ditch.

Intervention 7 was stripped by machine, with the exception of one 4m x 8m area which was excavated by hand in order to test for the presence of meaningful finds distributions within the ploughsoil. The topsoil/subsoil interface was found to lie *c.*0.30m below ground level, at which point part of the remains of an apparently semi-circular building (Structure 1), a well (initially thought to be a souterrain)(11/F36), a possible oven (11/F18), and an area of possible metalworking were defined. The enclosure ditch was also defined in plan, but not sampled by excavation. Although a high concentration of features was defined within the enclosure ditch, no reliable dating evidence was recovered from this surface mapping operation.

Given the complexity of the archaeological remains encountered in Intervention 7, it was considered necessary to excavate a larger area in order to extend the plan of features before any excavation was undertaken. To this end, the third phase of the evaluation was undertaken during the summer of 1995, extending the area of Intervention 7 to 32m x 40m (Intervention 11). The same non-destructive 'strip and map' technique was used to define archaeological deposits and features beneath the ploughsoil.

Across the entire sector, evidence for truncation by modern ploughing was encountered, in the form of west-east ploughsoil-filled scores accompanied by at least two phases of land drainage. In addition, the archaeology of the monastic phases was found to have been truncated by medieval ridge and furrow cultivation dated to *c.*1200 onwards. So, it is assumed that the upper levels of all monastic features encountered had been truncated by the plough.

Approximately 250 features were mapped within Intervention 7/11. The semi-circular building defined in Intervention 7 proved to be the shape of an elongated horseshoe, and continued beyond the western edge of excavation. The building contained a possible central hearth, and a series of large double postholes. The remains of two further possible buildings were also located (Structure 2 and 3). The definition of a possible hearth with a windbreak, further features with charcoal-rich fills, and the presence of slag and crucible fragments gave greater credibility to the metal-working area defined in Intervention 7. The excavation of Intervention 11



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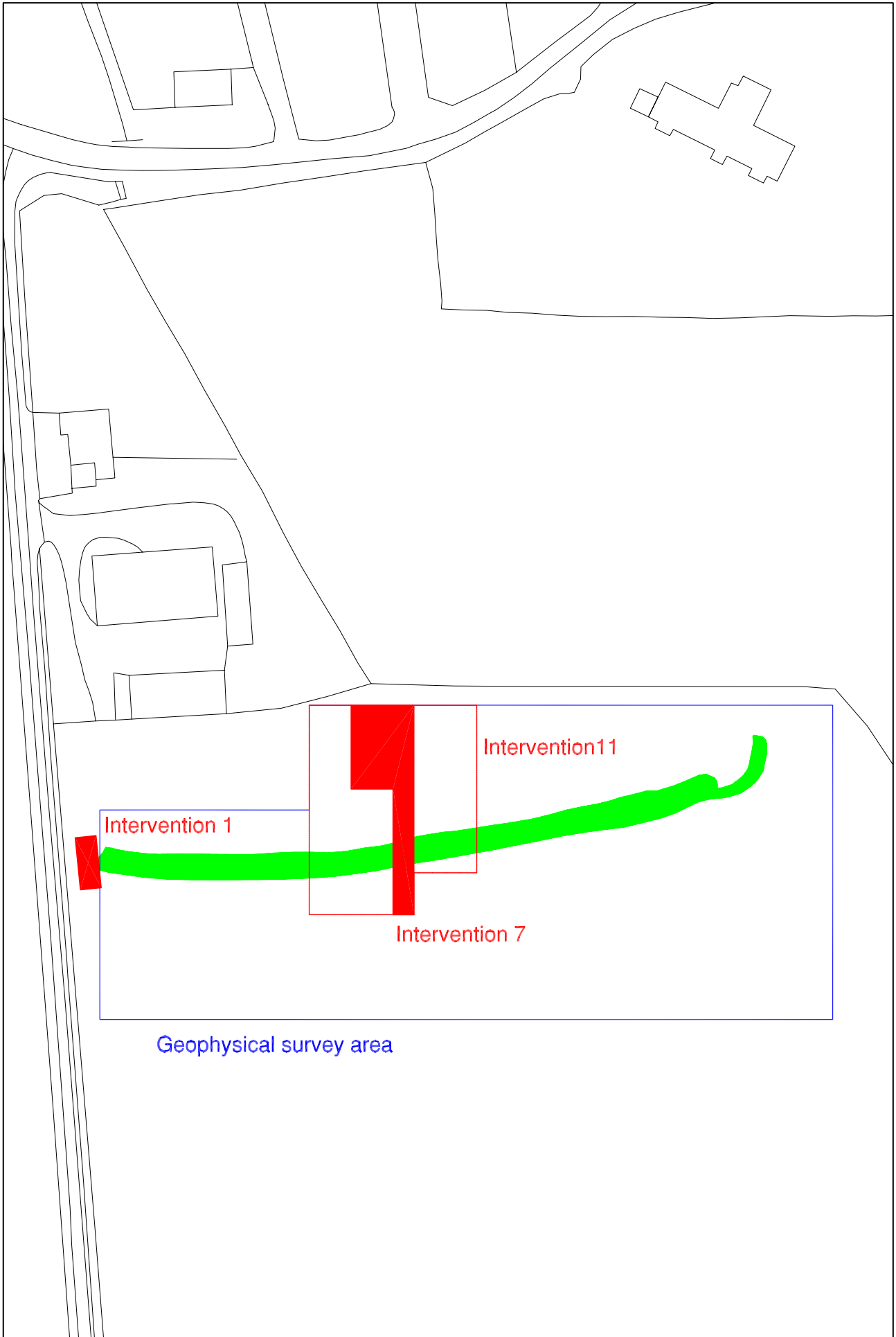
Results of magnetometer survey showing evaluation trench (Int.7)

Scale 1:1000



Figure 4





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Location of evaluation trenches

Scale 1:1000



Figure 5



provided a large window into the peripheral part of the enclosure, with evidence for buildings and industrial activity, and clearly demonstrated that this area of the site largely consisted of archaeological features cutting sand subsoil beneath a layer of ploughsoil.

1995 was also one of the hottest summers on record, and provided ideal conditions for the formation of parchmarks. This was particularly true for the area to the east of Intervention 11, where the enclosure ditch, medieval furrows, field drains, and several curvilinear features were clearly visible within the low grass (Plate 1). These features were mapped using a total station theodolite, adding significantly to the information derived from other non-invasive investigations of the area (Intervention 12).



Plate 1 Parchmarks visible in 1995

2.2 RESEARCH DESIGN

The principal aim of the research programme was to reveal the date, purpose, and social, economic and ideological character of the site, since nothing similar had then been contacted in the northern Scottish mainland. The evaluation of the southern periphery of the enclosure had clearly demonstrated that the area contained evidence for structures, industry and ditch systems, and since the area was ploughed and largely unstratified, it offered an economical opportunity to plan a large part of the site. The Sector 1 sample was largely designed to provide this plan, and to selectively dissect any buildings, industrial features, and animal bone assemblages thought to relate to the early historic period.

2.3 FIELDWORK METHODOLOGY

Written, drawn and photographic records were made of all archaeological deposits. A local site grid was used for recording purposes; site north lies 23° west of Ordnance Survey north. With the exception of Figure 1, all co-ordinates and alignments expressed in this report refer to the site grid; all heights are expressed in metres above Ordnance Datum (AOD).

The recording system followed *Field Research Procedure* (Carver 1999), the standard operating system employed by FAS. Evaluation trench Intervention 7 was superseded by Intervention 11 during the excavation phase. Feature, context and find numbers allocated within Intervention 7 starting at C1000 and for features starting at F1 were reused within Intervention 11 and allocation continued. Adjacent Intervention 25 was allocated to excavation which began in the far eastern zone of Sector 1 used separate site indices again starting at C1000 and for features starting at F1. In order to differentiate duplicate numbers within the following text they are pre-fixed with either 11/ or 25/ as appropriate. All deposits were defined as contexts (standard stratigraphic units). This system also defines and records features as higher order stratigraphic units consisting of sets of contexts. Thus feature records are additional to, not alternative to, context records (Carver 1999, 158).

Information recovery levels were also selected, applied, and recorded during the excavation of Sector 1. Each recovery level (A-F) represents a coherent set of definition/excavation and recording operations. Each level

implies recovery through a particular ‘mesh’; so that contexts, features and finds of particular minimum visibility or size are captured by the application of a particular recovery level.

2.4 EXCAVATION PROCEDURE

2.4.1 Horizon mapping

The principal aim of the excavation of Sector 1 was to produce a reliable, high quality plan of archaeological remains within the area while minimising damage to this archaeological resource through unnecessary excavation. The technique employed was therefore to remove the ploughsoil, define buried features, and record them without excavating them, and to sample excavate features when the geometry of the area was more fully understood. This tactic, known as ‘strip and map’ provides an extensive plan which could then be used to focus resources on the sample excavation of features. Once areas had been mapped they could be covered with plastic sheets and reburied for their protection (‘strip, map and wrap’) until such times as they were investigated further.

The level at which archaeological features were defined for detailed recording generally coincided with the level of the subsoil and was termed ‘Horizon 2’. The term ‘Horizon 1’ was reserved for any features that were definable within the base of the ploughsoil.

Stripping

Between 1996 and 2000 the remaining parts of Sector 1 that had not been recorded during the evaluation of the area (Intervention 7 and 11) were systematically ‘stripped, mapped and wrapped’. During each of these seasons a pre-defined area was set out using a total station theodolite from the project’s permanent survey stations. Most of the topsoil was then stripped from the area under strict archaeological supervision using a back-acting mechanical excavator fitted with wide toothless ditching bucket (Recovery Level A)(Plate 2). The remnants of the topsoil layer (c.0.10m) were then progressively excavated by shovel scraping (Recovery Level B), coarse trowelling (Recovery Level C), and fine trowelling (Recovery Level D) to achieve good feature definition at the subsoil interface (Horizon 2)(Plate 3). All finds recovered during this topsoil stripping and feature definition process were plotted three-dimensionally using a total station theodolite regardless of the recovery level in operation.

Mapping

Sector 1 was divided into quadrants (lettered A-Z), with



Plate 2 Machine opening of Sector 1



Plate 3 Fine trowelling during mapping of Horizon 2

further 8m x 4m module divisions (numbered 1-8 for each quadrant)(Figure 6). Each module was carefully cleaned by fine trowelling and photographed from a scaffolding tower using medium format and 35mm colour photography. The modules were then sketched in the site notebook from the scaffolding tower and annotated with the allocated feature and context numbers. This numbering was later transferred to the module horizon plans. Deposit edges were then tagged, and the tags surveyed using a total station theodolite. The tag coordinates were then plotted at 1:10 (A1) and used as the basis for preparing a plan of feature and context edges for each module. During the later seasons of Horizon 2 mapping in Sector 1, the tags were simultaneously surveyed and plotted in AutoCAD on a portable pen computer. The pen computer was then used to draw the context and features edges directly into AutoCAD. The stone component of any features and structures were drawn at 1:10 using a planning frame and baseline located by a total station theodolite, and were then added to the module horizon plan.

Wrapping

On completion of each season of horizon mapping, those areas which would clearly be revisited in later seasons for sample excavation were protected with thick polythene sheeting and sand bags prior to backfilling. The wrapping of these areas allowed for their rapid machine re-excavation without a risk of damaging the archaeological features and deposits.

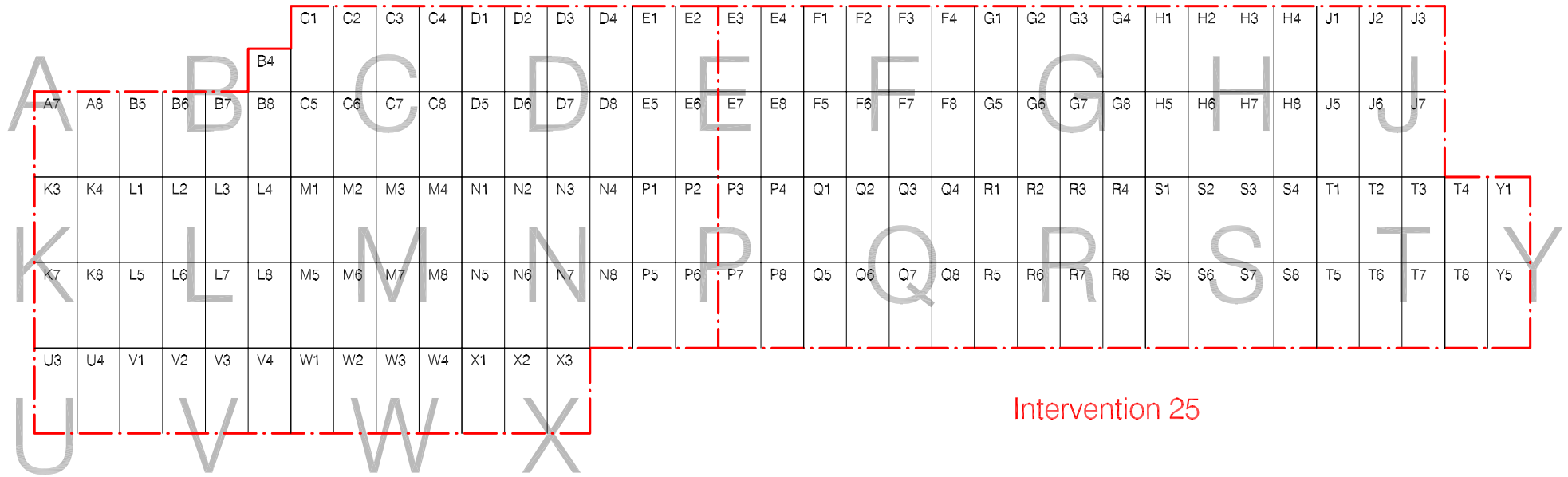
2.4.2 Feature sampling

Once Sector 1 had been largely mapped, features and structures were selected for more detailed investigation. In line with the Research Design, sample excavation focussed on structural features, industrial activity, and animal bone assemblages which were likely to belong to the early historic period. The ditch systems were also sampled in order to provide further information on the date and form of the enclosure and associated features.

All sampled features were subject to pre-excavation planning, section excavation and post-excavation planning, with a photographic record made at each stage. All contexts not in features were subject to pre-excavation planning and horizon photography. All site drawings were drawn at 1:10 and survey was undertaken using a total station theodolite accurate to +/- 5mm.

Archaeological features and deposits considered to date to the early historic period were excavated and recorded at Recovery Level D, while later features such as furrows, drains, and animal burials were investigated at Recovery Level C.

Since Sector 1 provided large areas of subsoil-cut archaeological features, the area was also used as for training. Field Schools were undertaken on the site from 1996 to 2001 in order to provide formal training for archaeology students. Part of this training involved the detailed excavation and recording of archaeological features. Although the need to provide formal training did increase the amount of sample excavation undertaken on the site, much of the feature excavation undertaken by the Field Schools focussed on features considered to be of lesser significance.



Intervention 11

Intervention 25



2.4.3 Sampling regime

Contexts were subject to coarse dry-sieving (10mm mesh), 100% where practicable with a sub-sampling regime for extensive deposits. At least 10 litres of each deposit were retained for flotation for general biological analysis (GBA) using a Siraf-type water-recycling tank (1000 micron mesh for dense fraction and 300 micron mesh for light fraction). Additionally, ‘grab’ samples (30g) were taken for pollen and microfossil analysis, and geochemical analysis including pH, phosphate, magnetic susceptibility and ICPS analysis. All ‘grab’ samples and artefacts were located in 3-D, bulk finds were recovered by hand and by context.

3.0 FIELDWORK RESULTS

The archaeology encountered in Sector 1 was characterised by negative features cut into subsoil with occasional stratigraphic sequences indicated by intercutting (Figure 7). The archaeological remains encountered in Sector 1 have been assigned to five principal periods using stratigraphic information, radiocarbon dating and for Period 4 onwards ceramic and coin dating information (Table 1).

Table 1 Summary of periods

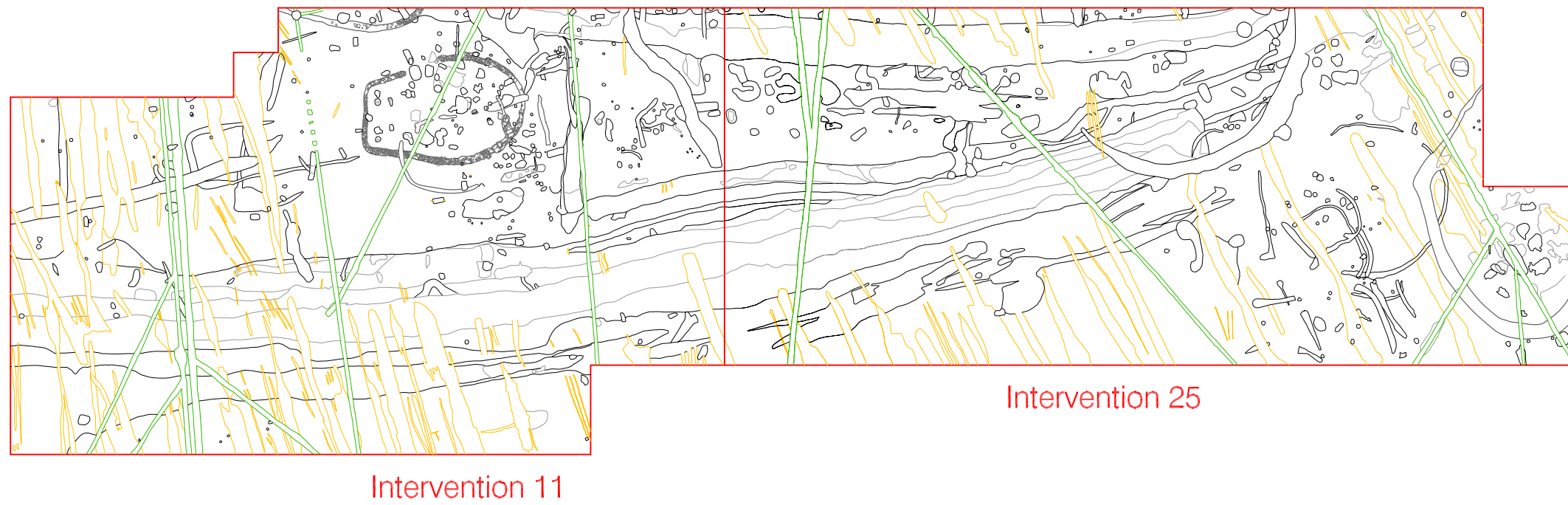
Period	Activity	Date range
0	Ploughing and structural activity	Prehistory to 6th century
1	Enclosure ditch	6th/7th century
2	Construction of ditch and vallum, structural activity, craft-working	7th to 8th century
3	Structural activity, modification of vallum	9th to 11th century
4	Clearance, levelling and ploughing	13th to 15th century
5	Land drain systems	Modern

3.1 PERIOD 0

Very few features have been assigned to Period 0 but are identified broadly as those that cut directly into natural subsoil *and* are cut in turn by principal features belonging to Period 1 and/or Period 2. Since the two large west-east enclosure ditches (Period 1 11/F176/25/F179 and Period 2 11/F158/25/F132) cut swathes through Sector 1 they provide two easily identifiable ‘events’ in the palimpsest of features within the sector. No dateable material or material suitable for radiocarbon dating was recovered from features assigned to Period 0.

3.1.1 Early cultivation

The most notable Period 0 activity within Sector 1 represented cultivation, in the form of scratch ploughmarks associated with spreads of podsollic soil (11/C1043, 11/C1152, 11/C1257, 11/C1371, 11/C1373, 11/C1381, 11/C1385, 11/C1404) which were cut consistently by the two major Period 1 and 2 enclosure ditches (11/F176/25/F179 and 11/F158/25/F132) and by Structure 1.



The scratch ploughmarks were visible as thin, grey-sand-filled interruptions in the yellow sand subsoil, orientated broadly north-south and wavering slightly on their trajectory, sometimes cross-ploughed east-west (Plate 4). Individual mapping of these numerous, ephemeral cultivation marks was not practicable, although Horizon 2 module photographs provide a full record of their location. Areas of more substantial podsol were also encountered at the western end of the sector (Plate 5) and where tested were found to measure up to 0.10m in places masking scratch ploughmarks. The Horizon 2 module photographs have been examined and most Sector 1 modules contained evidence for this early cultivation. The presence of the scratch ploughmarks and/or areas of podsol is widespread, extending beyond the northern and southern limits of the mapped area (Figure 8). The area of cultivation seems somewhat undifferentiated, lacking significant evidence for field boundaries. However, some division seems likely to have been present and features which may represent boundaries or drainage ditches were glimpsed in areas of thinner podsol. Three extremely truncated gullies, one possibly set with posts, filled with grey sterile sand 11/F465, 11/F468 and 11/F469, 11/F61 and 25/F236 (see Figure 8). Notably however, evidence for this early cultivation did not appear to extend into the easternmost area of the sector. This absence is not readily explained by later truncation or differential survival and is coincident with an area of possible early structural activity.

3.1.2 Structural activity

The remains of a likely ring-ditch (25/F31, 25/F115, 25/F120 (and 25/F181), 25/F124 - henceforth all grouped as 25/F31) and possible associated posthole groups (25/F111, 25/F112 and 25/F113, 25/F121, 25/F122 and 25/F123) have been assigned to Period 0 (Figure 9). The nature of the fill of ring-ditch 25/F31 and its position at the eastern extreme of the ancient plough evidence supports allocation to Period 0. The most direct stratigraphic relationships were with later curvilinear gullies which are also assigned to Period 0 (25/F23-6 and 25/F42/F110). While they clearly supercede the ring-ditch their form and location suggest continuous structural activity rather than belonging to an altogether later phase of activity.

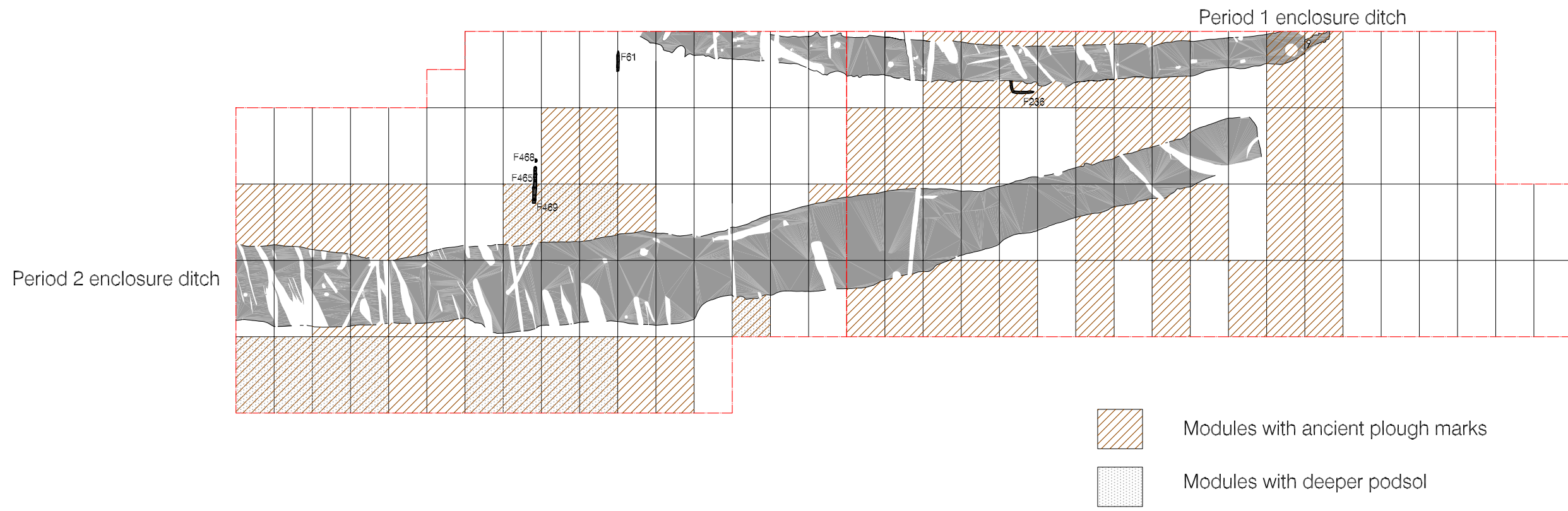
Ring-ditch 25/F31 was represented by five discrete lengths of curvilinear gully which created an interrupted circular form enclosing an area *c.*14.0m in diameter. The lengths of gully incorporated five breaks: two apparently deliberate, one at the northeastern arc and a more substantial gap at the northwestern side corresponding with the position of six postholes; three further breaches were due to truncation by later features,



Plate 4 Scratch ploughmarks in Module G2 visible in the sand subsoil and cut by Period 1 enclosure ditch



Plate 5 Deep podsol deposit in Module M3 cut by Period 2 enclosure ditch

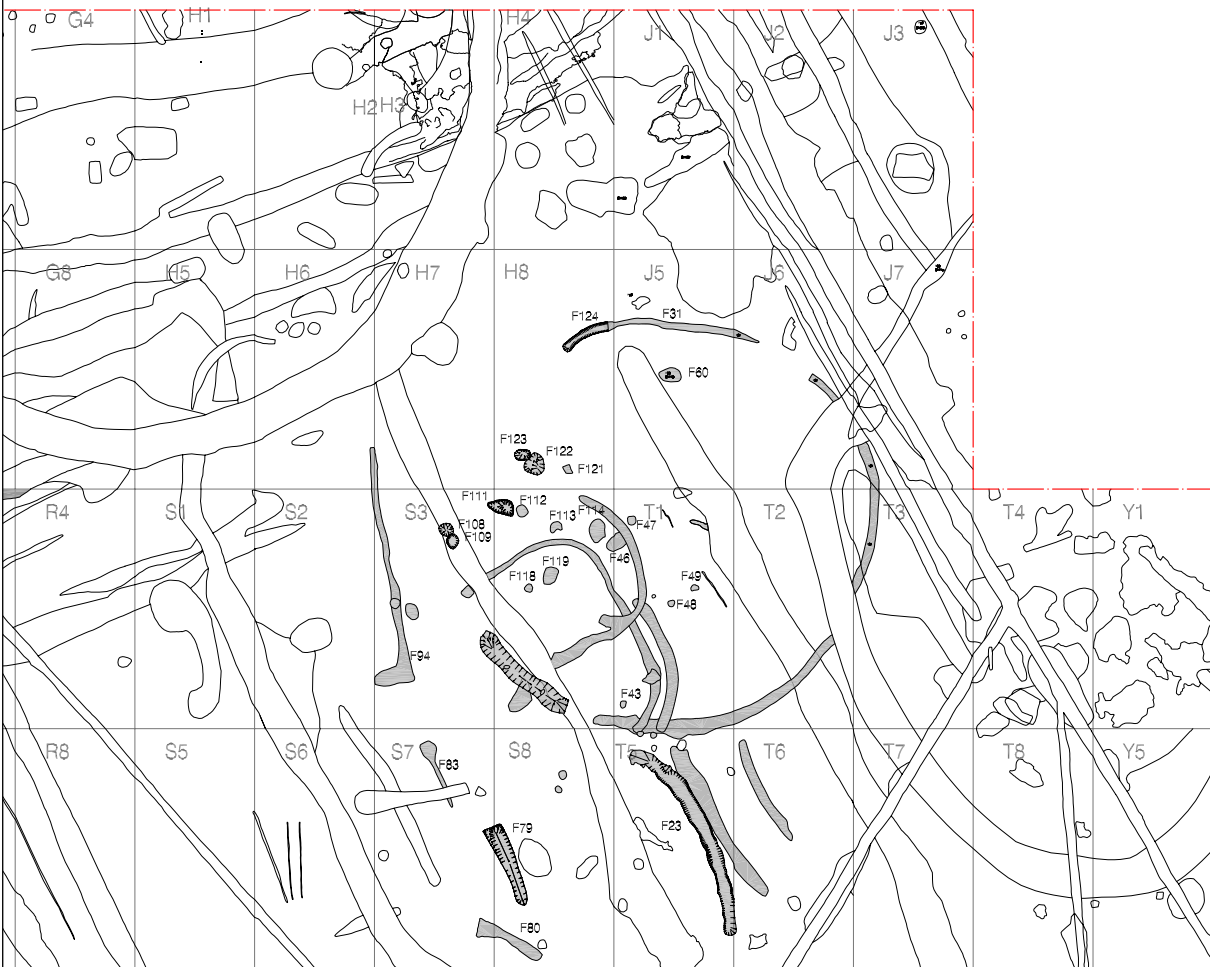
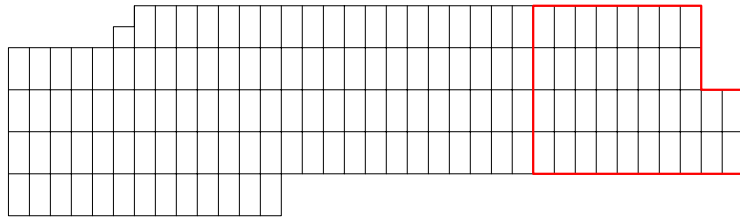


Location of Period 0 ploughmarks and associated features

Scale 1:500



Figure 8



Period 0 ring-ditch F31 and associated postholes

Scale 1:200



Figure 9



one at the southern side coincides with the position of a medieval plough furrow 25/F76 and two on the east side clearly result from the excavation of 25/F3. Investigation of two termini of 25/F31 (assigned 25/F120 and 25/F124) revealed straight steep profiles suggesting genuine butt-ends rather than gradual truncation. The fills of the termini (25/C1211 and 25/C1215) consisted of grey or brown sterile sandy silts reminiscent of the nature of the plough marks and podsol, often containing stones but without clear evidence for posts. Excavation of three of the six postholes (25/F111, 25/F122 and 25/F123) revealed severe truncation but all contained packing stones. Other posthole features lay within the bounds of ring-ditch F31 but did not form any coherent arrangement, being 25/F43, 25/F46-9, 25/F108-9, 25/F114.

Associated features

To the immediate west of 25/F31, three linear features orientated broadly north-south were defined (25/F79, 25/F83 and 25/F94) and may represent a discontinuous linear boundary feature, although this identification remains tenuous; only 25/F79 was sampled and considered to be a gully or ploughed-dragged stone hole. Nonetheless the lack of ancient plough marks within this zone and certainly to the east of these ephemeral linear features is noteworthy.

As well as ring-ditch 25/F31, various structural features were identified to the east of this possible boundary many of which were investigated (see Figure 9)(gullies 25/F23-6 and 25/F42/F110 and postholes 25/F33, 25/F36-7, 25/F39-40, 25/F77-8, 25/F80-2, 25/F106-7). A small cluster of postholes in the zone of 25/F31 were interpreted as modern in date and are not considered further (25/F28-30 and 25/F32).

To the immediate south of 25/F31 an unexcavated rectilinear feature assigned 25/F34 (25/C1077 and 25/C1078) appeared burrow-like in the Horizon 2 module photograph, although 25/F23 which cuts it can be considered as part of the early Period 0 group. 25/F23 was curvilinear in plan with an apparent deliberate butt-end at the southern end (Plate 6). The gully was fully excavated in quadrants and was found to contain a single backfill of sterile sand (25/C1066) and a discrete patch of possible ash (25/C1138). While not extensive enough within the excavated sample the feature gives the impression that it could belong to an interrupted ring-ditch, although perhaps a return might be expected within the sample to the southwest.

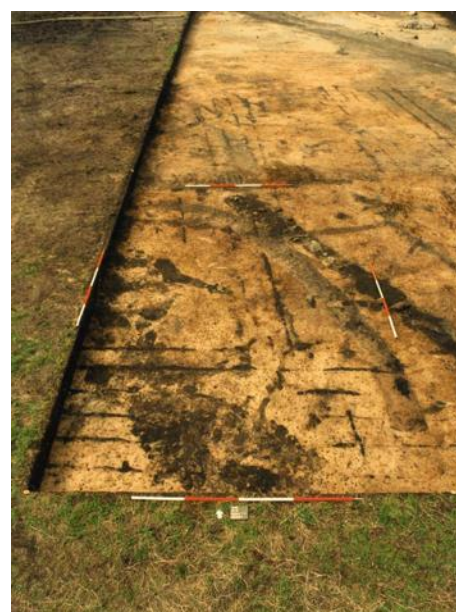


Plate 6 Gully 25/F23 pre-excavation

Further curvilinear features were investigated which cut into the earliest Period 0 features (25/F24-6, 25/F42/110 and 25/F45/F117). Excavation of 25/F24 revealed a stone-filled slot, although no clear evidence for post settings, while 25/F26 to the north proved to be similar in form but filled with grey sand. Adjacent gully 25/F42/F110 was extremely truncated and disturbed (25/F44) and also lacked any evidence for posts. Although similar in form, the fill of nearby gully 25/F42/F117 was reminiscent of ploughsoil and considered to be later in date than the adjacent curvilinear gullies.

It seems probable that 25/F31 represents an open, interrupted ring-ditch that drained surface water from, and

enclosed, a structure of some kind, although the associated postholes were severely truncated and not sufficient to suggest form or function. The activity of cutting small curvilinear drains appeared to persist in the same place for a period of time since all the gullies appeared to have lain open without the presence of posts.

3.2 PERIOD 1

3.2.1 Enclosure ditch

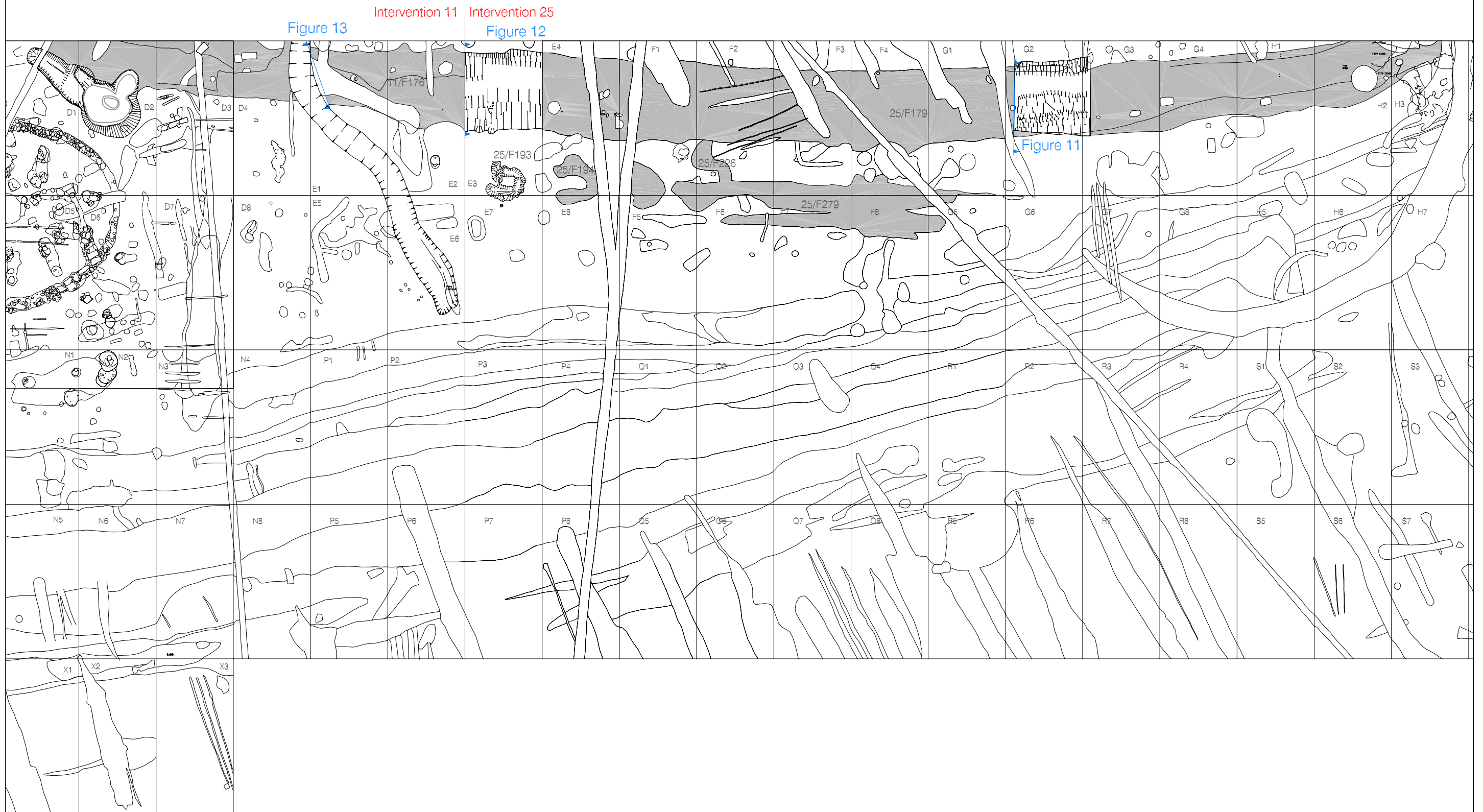
The principal event assigned to Period 1 within Sector 1 was the excavation of a large ditch, measuring between *c.*3.0m to *c.*4.0m wide. The ditch was located at the northern limit of the excavation area, and was visible for a total length of *c.*25.0m from the northwest corner of Intervention 11 to the northeast corner of Intervention 25 (Figure 10). The feature was assigned 11/F176 and 25/F179 and clearly cut Period 0 podsol and ard marks. In turn the feature was cut by features and structures assigned to Period 2, most notably S8 and S3. Evidence for disuse appears to represent gradual silting and is described here, although final backfilling and levelling is likely to have been undertaken during Period 2. Subsequent settling of the backfill system appears to have taken place during Period 2, since an important assemblage of Period 2 craft-working waste was captured in the resulting hollow surviving fortuitously beneath the level of the modern plough.

Ditch 11/F176/25/F179 was excavated in three discrete areas: in 1999 a section measuring 4.0m wide was excavated in Module G2 (25/F179); in 2000 a section also measuring 4.0m wide was excavated in Module E3 (25/F179); in 2001 a free section in Module E1 was formalised due east of where Period 4 ditch 11/F165/24/F417 cut through 11/F176. Excavation of the feature in 1999 and 2000 was hampered by the presence of groundwater mobilising the basal sand fills resulting in collapse of the section in Module E3 before full photographic recording had been achieved. The section excavated within Module G2 allowed the upper fill system of the feature to be recorded while the deepest part of the feature was probed and a profile reconstructed. In spite of the logistical problems of excavation the sequence encountered in Modules E3 and G2 appeared to indicate an initial ditch measuring over 1.80m wide x 1.30m deep with a steep northern edge, the southern edge been lost to a recut creating a broader, shallower feature measuring up to 4.10m wide x 0.95m deep, although there are some oddities in the fill systems which may prompt alternative interpretation.

Investigation of the eastern portion of the feature was undertaken where it intersected with two ditches, Period 2 inner ditch 25/F131 and Period 5 ditch 25/F125. As well as incorporating this point of juncture the area coincided with an area of variable natural subsoil and the results were not conclusive. A number of context numbers were allocated to possible ditch fills (25/C1298, 25/C1291, 25/C1295, 25/C1299).

Module G2 section (Figure 11)

The excavated segment within Module G2 appeared to represent an initial ditch with a stepped profile. A steep northern edge was recorded to a depth of 0.60m where the profile changed to a gentle slope and then became steep again to a final depth of 1.15m onto a flat base; the southern edge sloped more gradually to the base (Plate 7). The ditch was backfilled initially with a soft pink sand fill (25/C1330) presumably laid down rapidly in watery conditions given its contorted profile and clean nature. This may have been contemporary with slumping of the north edge (25/C1345). Both were followed, possibly quickly, by a substantial fill of yellow sand

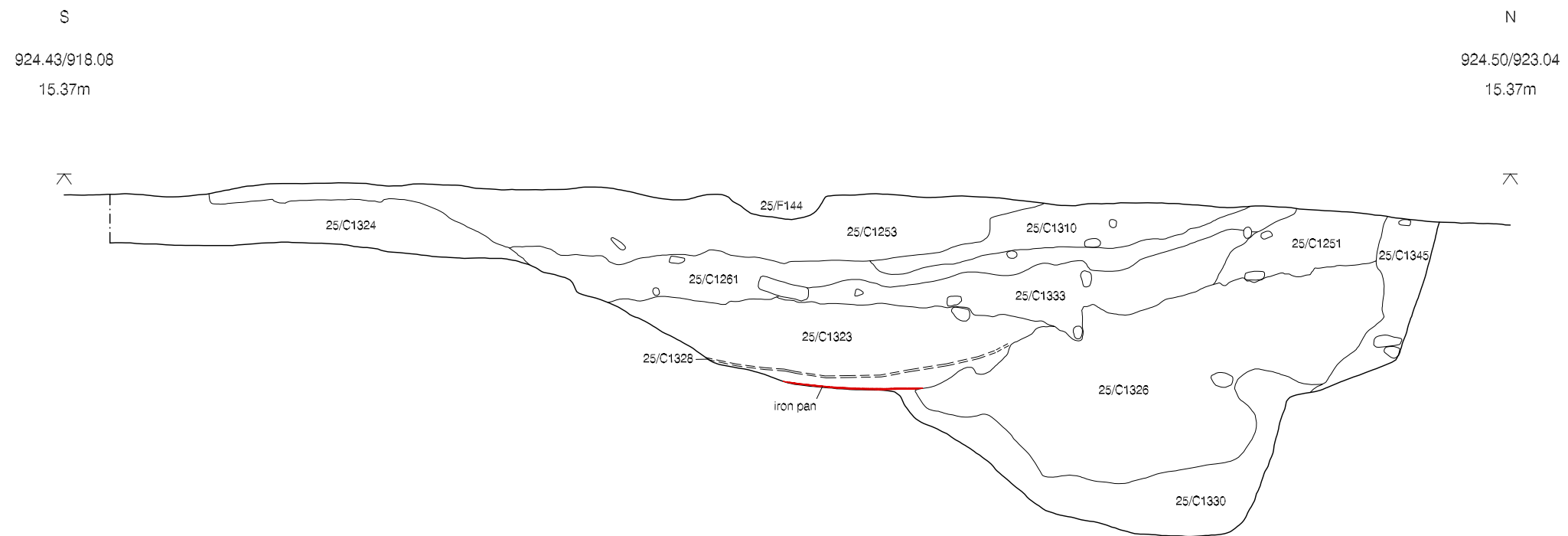


Period 1 enclosure ditch showing excavated sections

Scale 1:200



Figure 10



Period 1 enclosure ditch - Module G2 east-facing section

Scale 1:20

Figure 11

containing clods of dark grey silty sand, possibly turves, tipping in from the north (25/C1326). The deposition appeared to level the feature completely prior to the excavation of a second ditch offset slightly to the south.

This later cut appeared as a broad, gently sloping profile with flat base measuring *c.*4.0m wide x 0.70m deep. The feature filled slowly and intermittently seemingly with no coherent effort to backfill. The basal fill consisted of a pink soft sand fill also noted as 25/C1330, followed by a dark silt allocated 25/C1328. A more substantial deposit of pinkish-grey sand (25/C1323) was devoid of inclusions and noted as possibly windblown. Subsequent deposition is localised at the northern edge consisting of two tipping deposits of reddish-brown silty sand (25/C1333 and 25/C1251). The remaining shallow form of the ditch was then filled with a thin deposit of dark grey silty sand (25/C1261) followed by another slump from the north (25/C1310). The ditch was finally levelled with a buff sand (25/C1253) again noted as possibly windblown.

Module E3 section (Figure 12)

The excavated segment within Module E3 reflected that of the Module G2 sample closely and appeared to consist of an initial ditch with a steep northern edge to a depth of 0.60m where the feature shelved, at which point excavation ceased due to ground water (Plate 8). The profile of the feature was probed with a hand auger and the north edge appeared to become steeper again towards the base; the profile of the southern edge suggested some symmetry to the ditch base. The ditch base appeared from auger samples to be filled with soft clean sand and was seen from excavation to be overlain by 25/C1400, a deposit of yellow sand containing clods of pink boulder clay and iron pan, and 25/C1379, a cleaner sand deposit. The disuse of the feature appeared to be rapid and deliberate and once levelled, a new ditch was excavated representing a feature approximately 4.0m wide x 1.0m deep with gently sloping sides onto a concave base on an alignment offset slightly to the south. The new ditch displayed a fill system of slowly-accumulating, probably water-lain running sands interspersed with silts (25/C1399, 25/C1392 and 25/C1392). This initial period of gradual silting was followed by the deposition of two more substantial deposits of grey and brown silty sands (25/C1389 and 25/C1390). Final levelling of the feature was represented by a redeposited yellow sand subsoil (25/C1378). Dished into a remaining linear hollow on the southern edge of the feature was a deposit of dark greyish-brown silt, which contained a rich assemblage of Period 2 metal- and glass-working waste (25/C1377).

Module E1 section (Figure 13)

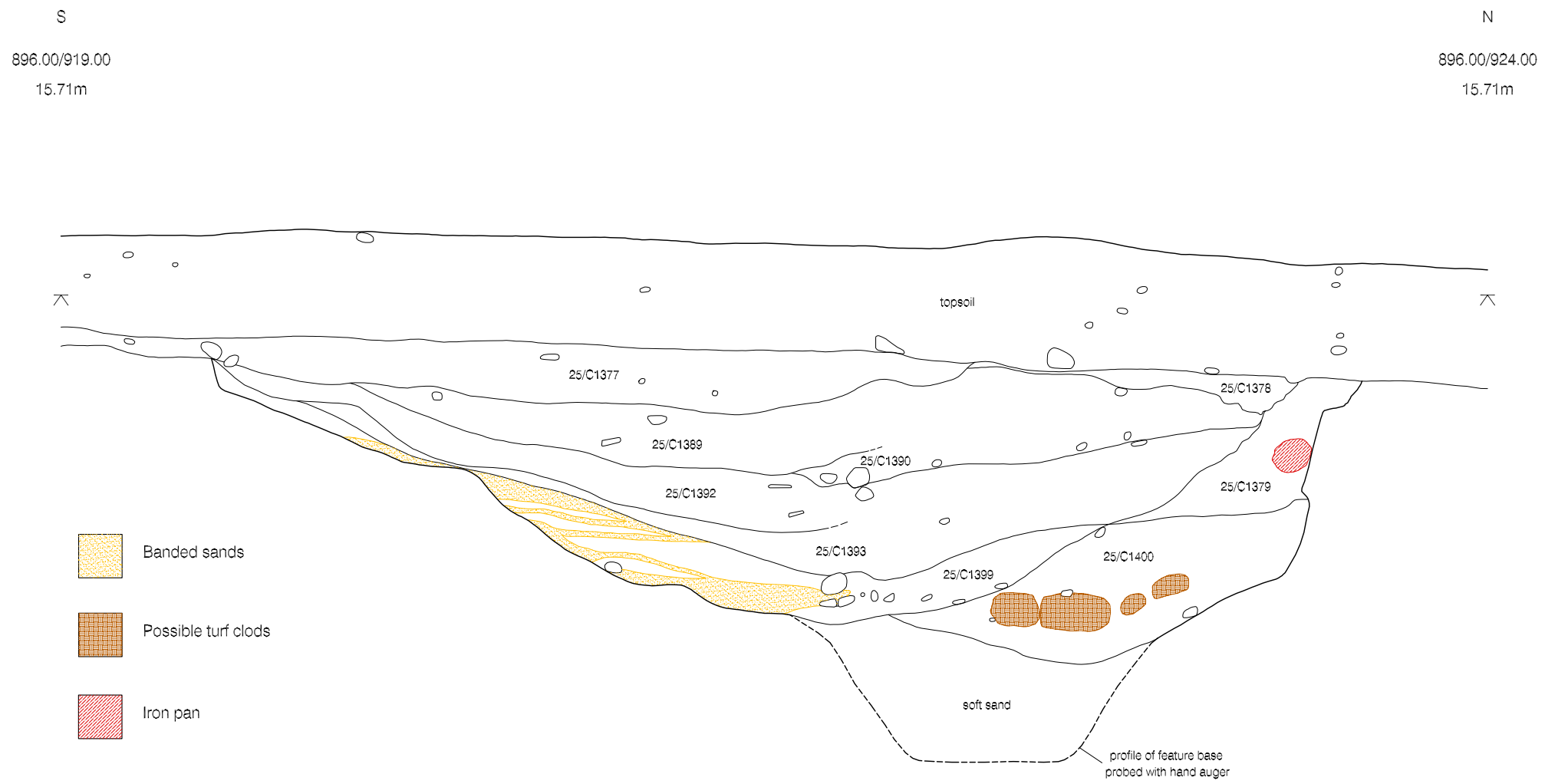
The recorded section within Module E1 consisted of the formalisation of a free-section through 11/F176 where



Plate 7 Period 1 enclosure ditch, Module G2 west-facing section



Plate 8 Period 1 enclosure ditch, Module E3 west-facing section



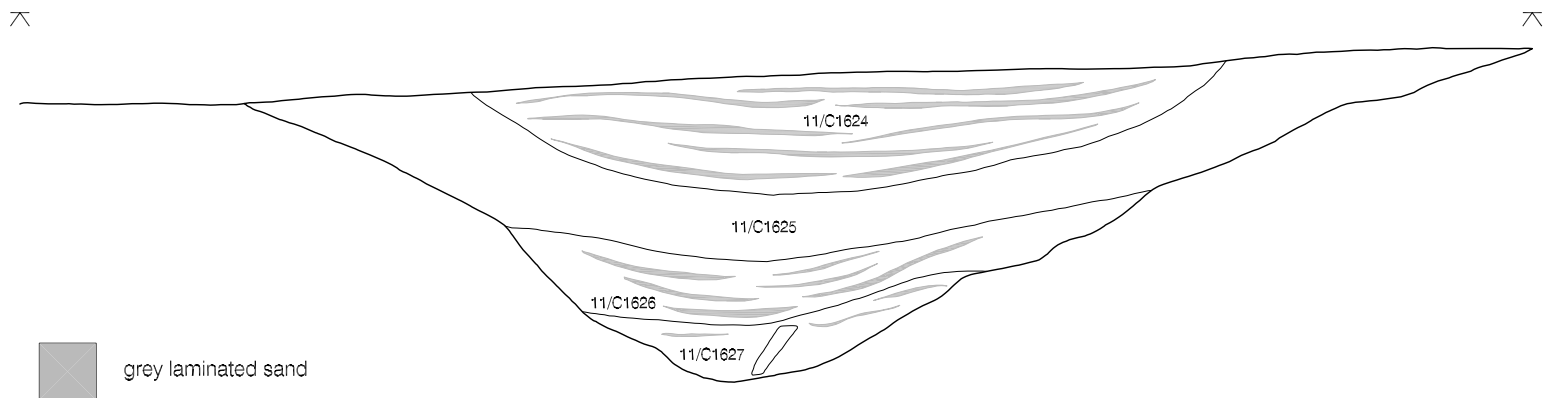
Period 1 enclosure ditch - Module E3 east-facing section

Scale 1:20

Figure 12

N
887.72/924.15
15.47m

S
889.04/920.41
15.47m



Period 1 enclosure ditch - Module E1 west-facing section

Scale 1:20

Figure 13

it was cut by Period 4 ditch 11/F165/24/F417 (see Figure 10). This did not allow much more of the form of the ditch to be excavated, but provided another section through its profile (Plate 9). The sequence and profile of the feature was here notably different, lacking any evidence for a possible recut, and appearing as a broad U-shaped ditch. Notably, the filling was slow and intermittent, similar to that recorded in the previous two samples. The basal fill consisted of a dark grey silty sand (11/C1627) representing initial silting of the feature followed by periodic accumulation of a pale brown sand laminated notably on the north side possibly representing erosion of the ditch sides (11/C1626). A thin deposit of dark grey silty sand was then laid down (11/C1625=25/C1389/C1390/C1261) and was interpreted as slowly accumulating during a period of consolidation. The feature was then levelled with a buff sand (11/C1624=25/C11253/C1378) before sinkage of a dark grey silty sand containing craft-working debris (11/C1250=25/C1377).

Associated features

A number of amorphous features were defined along the southern edge of 11/F176/25/F179 cut into the natural sand subsoil and cut by modern ploughing, (25/F193, 25/F194, 25/F225, 25/F226, 25/279, 25/C1363, 25/C1364)(see Figure 10). Two of the features were distinctive for their clear 'horseshoe'-shape; 25/F193 was excavated and interpreted as a tree-pit (Plate 10).

3.3 PERIOD 2

3.3.1 Enclosure ditch system

The Period 2 enclosure ditch dominated Sector 1 and was that identified as a cropmark in 1984 (Plate 11). Mapping of the cropmark suggested a discontinuous C-shaped or annular feature with a system of internal smaller ditches which intermittently flanked the main ditch less than 1.0m to its north. The main ditch was first located and excavated by Jill Harden within a sample to the immediate east of Rockfield road in 1991 (Intervention 1)(see Figure 5). Its next exposure within Sector 1 was in Intervention 7 where it was allocated

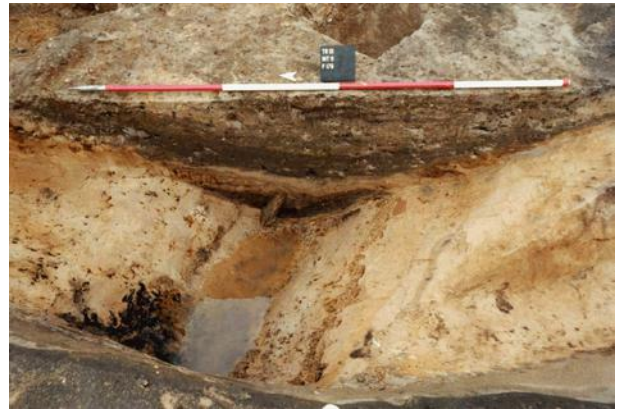


Plate 9 Period 1 enclosure ditch, Module E1 west-facing section



Plate 10 Period 1 tree pit 25/F193, Module E3



Plate 11 Aerial photograph of 1984 showing Period 2 enclosure ditch

7/F30, a number superseded during investigation within Intervention 11 and 25, where it was assigned 11/F158 and 25/F132 respectively. By 2000 the feature had been mapped across Sector 1 for a distance of *c.*109m, along which its width varied from between 9.0 and 9.5m at the west reducing suddenly to between 6.7 and 6.9m, corresponding with the position of an internal flanking ditch.

Evidence for the original construction of the ditch, its revetment and primary silting, and accompanying banks is described here while the subsequent decline of ditch maintenance, land clearance and deliberate backfilling by ploughing are described in discussions of Period 3 and 4 activity respectively (see Section 3.4.2 and 3.5.1).

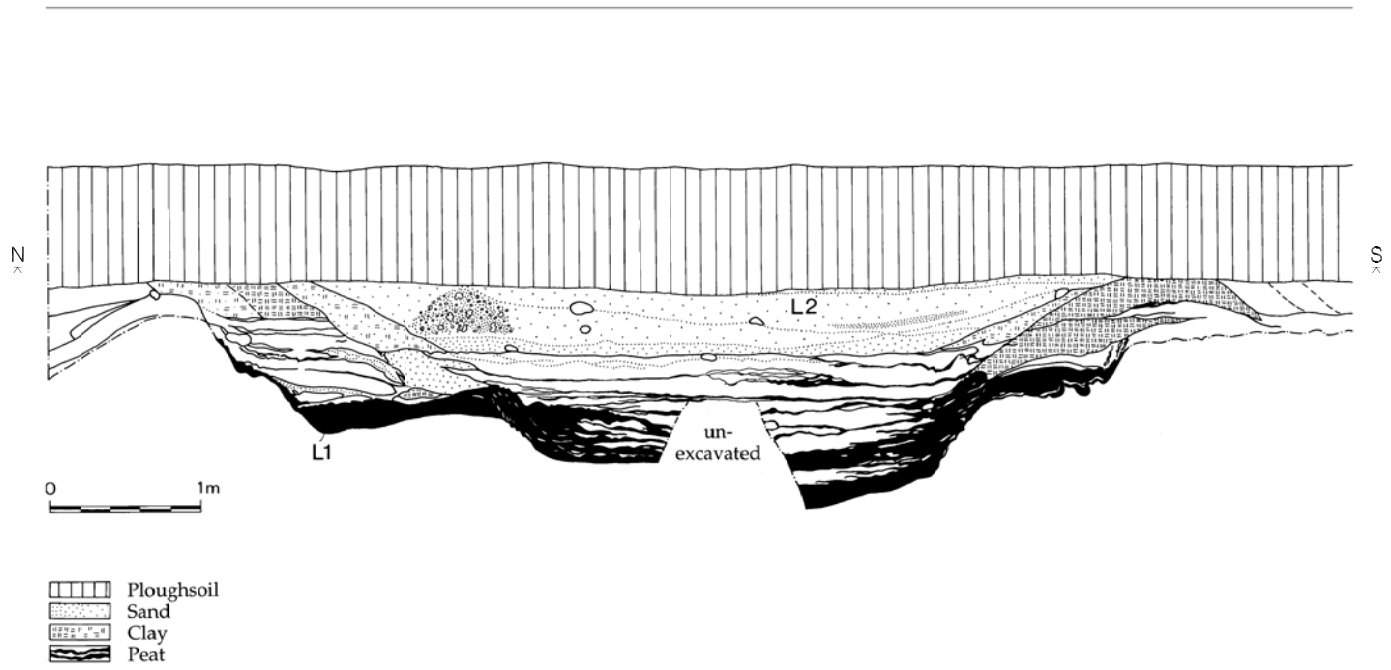
Intervention 1

The trench cut across the enclosure ditch by Jill Harden (Intervention 1) measured 1.5m wide, but did not achieve a complete profile due to the presence of ground water that undermined the sections (Figure 14). Initial interpretation identified a total of five recuts (Bulletin 1, 6-9), although with the benefit of further samples of the nature of the feature, the sequence has been reappraised and simplified here.

Removal of the lowest ditch fills revealed a natural deposit of pink cobble-rich boulder clay, the original base of the feature having been seen only within a small sump; the depth of the ditch at this point was recorded as *c.*1.40m below ploughsoil. Where the profile of the ditch was defined it appeared to have a relatively wide flat-bottomed base 2.6m across with possibly stepped sloping sides widening to a maximum *c.*7.2m. The earliest deposit encountered within the ditch consisted of a laminated peat deposit (L2) which had the appearance of having accumulated slowly and intermittently and in the presence of water possibly during Period 3. Significant to the early form of the ditch, during the accumulation of this laminated deposit interleaving slumping shoulders of material are noted on both the north and south sides of the ditch, interpreted by Harden as indicating the presence of internal and external banks. The attitude of these slumping deposits also appears to have been interpreted as marking a recut, which now seems less likely. Significantly, the recorded section appears to show the ditch and bank system is less plough-truncated at this point than in the rest of Sector 1 and that remnants of the lower soils of both banks were captured in section (see Figure 14). Components of both shoulders include clay, perhaps the original upcast of pink boulder clay.

Intervention 11 and 25

Excavation carried out after 1991 revealed over 100m of the enclosure ditch in plan, recorded in some detail at Horizon 2 (see Figure 7). In plan, the feature appeared striated along its length and in the early years of mapping a number of feature numbers were allocated: 7/F30 (7/C1042) during evaluation, the northern fills mis-identified as a rampart 11/F157, 11/F262 (11/C1375), 11/F282 (11/C1407) and assigned as a separate ditch 11/F260. Eventually consensus was reached that the feature represented a single ditch (11/F158) with a number of deposits visible in plan some of which may have originated as 'rampart' or bank make-up (11/C1227, 11/C1261, 11/C1300, 11/C1381, 11/C1424). Mapping within Intervention 25 benefitted from this process and a single feature number was allocated 25/F132 with a series of deposits visible in plan at Horizon 2 (25/C1226 to 25/C1231 inclusive and 25/C1240). Once defined, 11/F158/25/F132 was sampled at two points, a 4.0m section was excavated within Modules N3 and N7 (11/F158) in 1996 and a further 4.0m section was excavated within Module P3 and P7 in 2000 (25/F132)(Figure 15).



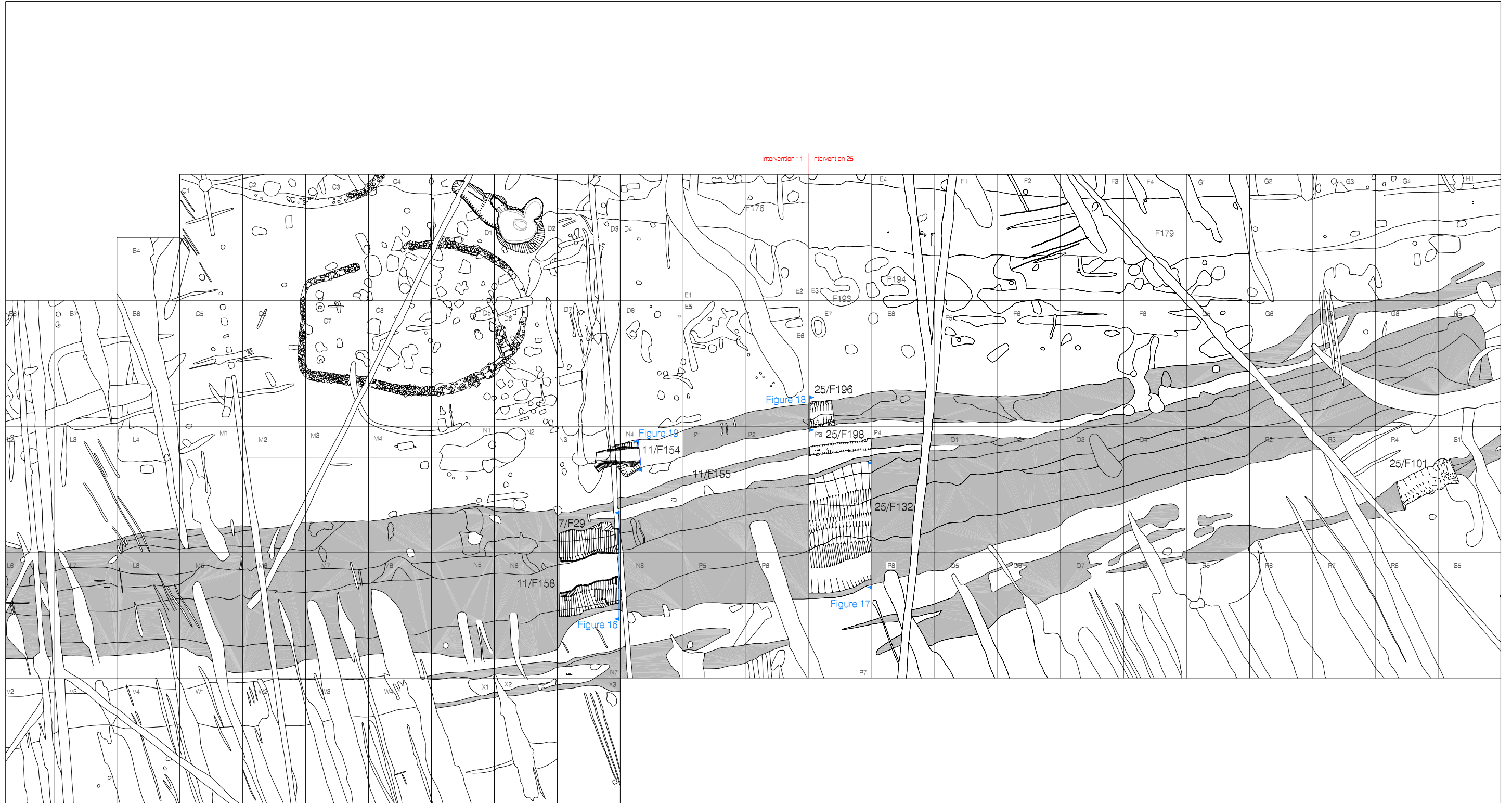
Period 2 enclosure ditch - Intervention 1 west-facing section

Scale 1:50



Figure 14





Period 2 enclosure ditch system showing excavated sections

Scale 1:250



Figure 15

Module N3 and N7 ditch segment 11/F158

This segment was located within Quad N, unwittingly coinciding with the position of a field drain (11/F2) which unfortunately obscured the upper levels of some ditch fills in the recorded section. Nonetheless the complete profile of the ditch was achieved, having been excavated during the dry hot summer of 1996 when ground water levels meant excavation conditions were at an optimum, the water only hampering detailed recording of the very basal fills.

The form of the ditch at this point consisted of a flat-bottomed feature 2.40m wide at the base with sloping sides around 45° widening to over 6.0m north-south (Figure 16; Plate 12). The earliest deposits within the feature consisted eroded natural pink boulder clay (11/C1490) on the south side, and dark and pale sand forming the north shoulder. The profile of this initial erosion led to interpretation as sand eroded by water movement accumulating behind a wattle structure. Stakes of wet-preserved wood were recorded *in situ* along the shoulders (see Plate 12) or recovered from the deposits in side the ditch (Plate 13). A sample of wooden stake returned a radiocarbon date of AD660-860 (95.4%). The wattle structure appears to have consolidated the edges sufficiently for a shallow organic-rich deposit and possible waterborne sand to accumulate (11/C1493 and 11/C1488). 11/C1493 was recorded as a layer of very dark brown sticky organically-rich silt. Subsequent deposition was allocated 11/C1487, a thick, dark brown organic layer assigned to Period 3, although again evidence for the presence and location of banks is relevant to the early form of the feature. This layer appeared to have accumulated over a period of time, judging by the interleaving shoulders of material which slump into the feature which had the attitude of eroding bank material discussed in Section 3.4.2. Notably, small wood fragments were identified as reminiscent of wattlework and may reflect the decay of the original revetment. Finally the feature was levelled by a series of cleaner sands and silty sands, perhaps representing redeposited original upcast and eroding bank material discussed in Section 3.5.1.



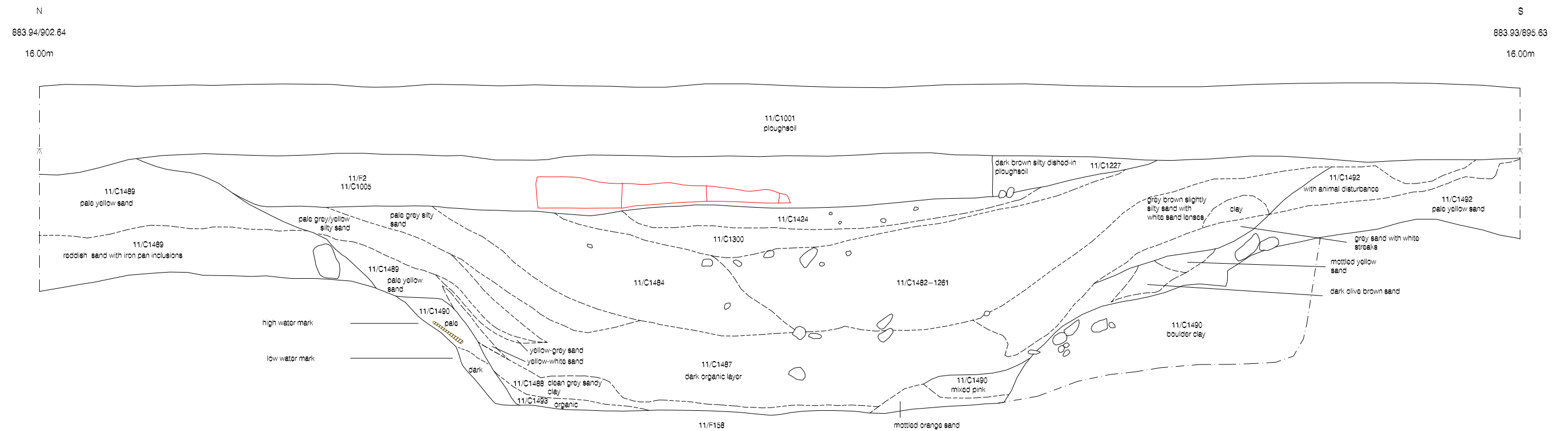
Plate 12 Period 2 enclosure ditch 11/F158 west-facing section



Plate 13 Period 2 enclosure ditch 11/F158 C1490 stake *in situ*

Module P3 and P7 segment F132

Another 4.0m segment was excavated within Quad P, although excavation was much hampered by ground water causing instability of the sections. For safety reasons, a section could not be drawn by hand but was photographed and a rectified digital drawing of the sequence was made (Figure 17; Plate 14). Once prepared the drawing was reconciled with the contexts assigned during hand-excavation. The complete form of the

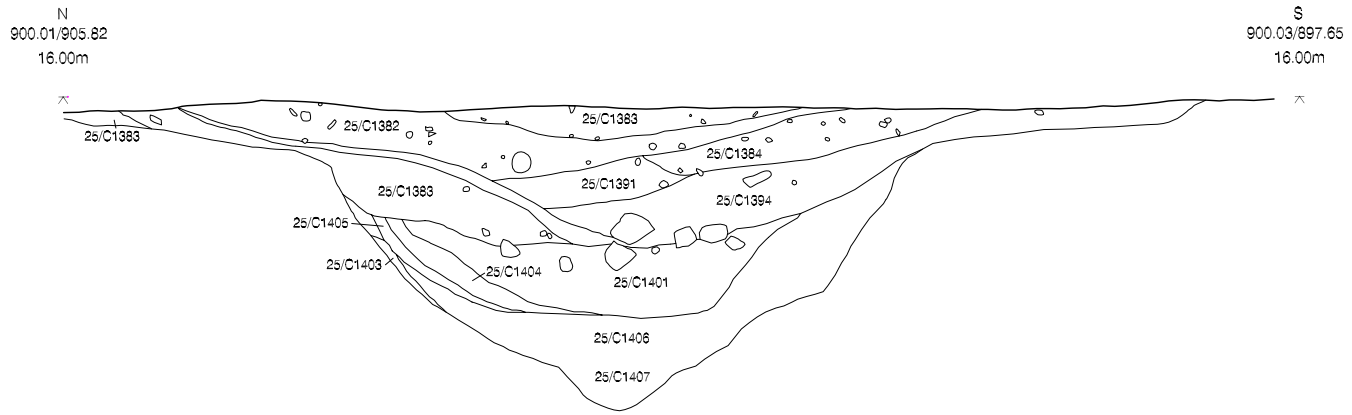


Period 2 enclosure ditch - Module N3 and N7 11/F158 - west-facing section

Scale 1:20



Figure 16



Period 2 enclosure ditch - Module P3 and P7 25/F132 west-facing section

Scale 1:50

Figure 17

feature was almost achieved with only the basal fills not recorded in detail. A number of deposits assigned to Period 3 and Period 4 activity were bulk sampled and submitted to Headland Archaeology for identification of plant and insect remains (Hastie 2000; Appendix B)(see Section 3.4.2 and 3.5.1).

The form of the feature as excavated at this point consisted of an almost V-shaped profile, 8.15m at its widest, with sides sloping initially at 30° and steepening to 60°, to a narrow concave base. The earliest deposit encountered within the ditch was allocated 25/C1408 and recorded as a greenish-grey silt. The deposit was

interpreted as primary silting of the feature and environmental assessment identified no organic material. During the accumulation of 25/C1408 the edges of the feature showed signs of erosion, identified as laminated black and yellow sand on the northern edge and a further greenish-grey silt on the southern edge again with the attitude of having accumulated behind a hurdle-like structure (25/C1403). Overlying these deposits was a group of several organic-rich layers appearing in section as a homogenous, plastic, peat-like layer assigned to later periods of activity. The water hazard meant that the sequence and date of the excavated sequence in this part of the ditch in relation to others is uncertain.

Internal associated ditches

Immediately to the north of 11/F158/25/F132, three subsidiary ditches were identified (11/F154/25/F196, 25/F124/25/F131 and 7/F29/11/F155/25/F198) and their initial excavation may be contemporary with that of 11/F158/25/F132 (see Figure 15).

7/F29/11/F155/25/F198 was excavated within Module N7 and Module P3 Intervention 25 where it proved to be c.0.60m wide and up to 0.10m deep (Plate 15; see Figure 15). Interpreted as earlier than 11/F158/25/F132 and reminiscent of Period 0 feature fills the separation of the feature from the enclosure ditch proper seems more likely to be a result of having been ploughed out, particularly given the feature's orientation and location. The feature has also been proposed as a marker ditch laying out the line of excavation during initial construction of the ditch system. To this can be added a thin linear feature mapped at Horizon 2 protruding from beneath the butt-end of 25/F132 (25/F134).

11/F154/25/F196 was more substantial, being visible on the 1984 aerial photographs and lying c.1.0m to the north of 11/F155/25/F198. The feature was sampled within Module E7 where it proved to be 1.70m x 0.60m



Plate 14 Period 2 enclosure ditch 25/F132 west-facing section

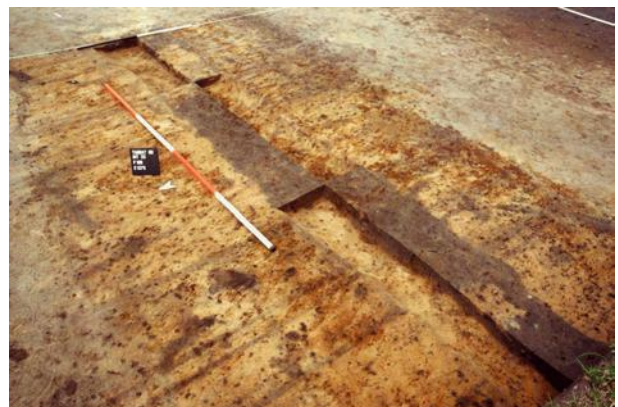


Plate 15 Period 2 25/F198 during excavation

deep, within Module N4 where it was found to be 1.50m wide and 0.50m deep. In plan, the feature was mapped for a distance of 32.70m and its western butt-end coincided with the position of Period 3 ditch 11/F18 while to the east the butt-end corresponded with the western terminus of a further ditch feature allocated 25/F124/25/F131 which continued eastwards for a distance of 31.20m where it merged with pool-like deposits located in the northeastern corner of the intervention. 25/F124/25/F131 was excavated more extensively within Modules G3 to H4 inclusive where it proved to be between 0.70-0.80m wide with gently sloping sides onto a concave base. A pair of possible structural features within the gap between 11/F154/25/F196 and 25/F124/25/F131 suggests there may have been some sort of access to the main ditch, perhaps between banks, which required gating or otherwise closing off. These possible postholes were assigned 25/F262 C1512 and 25/F263 C1513 (see Figure 15). While they appear to be cut into the backfill of 25/F132 and 25/F124 this may represent the disuse or removal of posts.

Module E7 segment

Excavation of a 1.50m segment of 11/F154/25/F196 within Module E7 revealed a sequence of initial silting (25/C1372) and erosion of the surrounding sand subsoil into the feature (25/C1371) followed by an accumulating turf-rich deposit (see Figure 15; Figure 18). Although not recorded by the excavator, following deposition of 25/C1396 the feature appears to have been recut, producing a marked flat-bottomed, steep-sided channel (Plate 16). This recut is considered to belong to Period 3 activity being finally backfilled with a distinctive deposit of redeposited boulder clay (25/C1370).



Plate 16 Period 2 25/F196 east-facing section

Module N4 segment

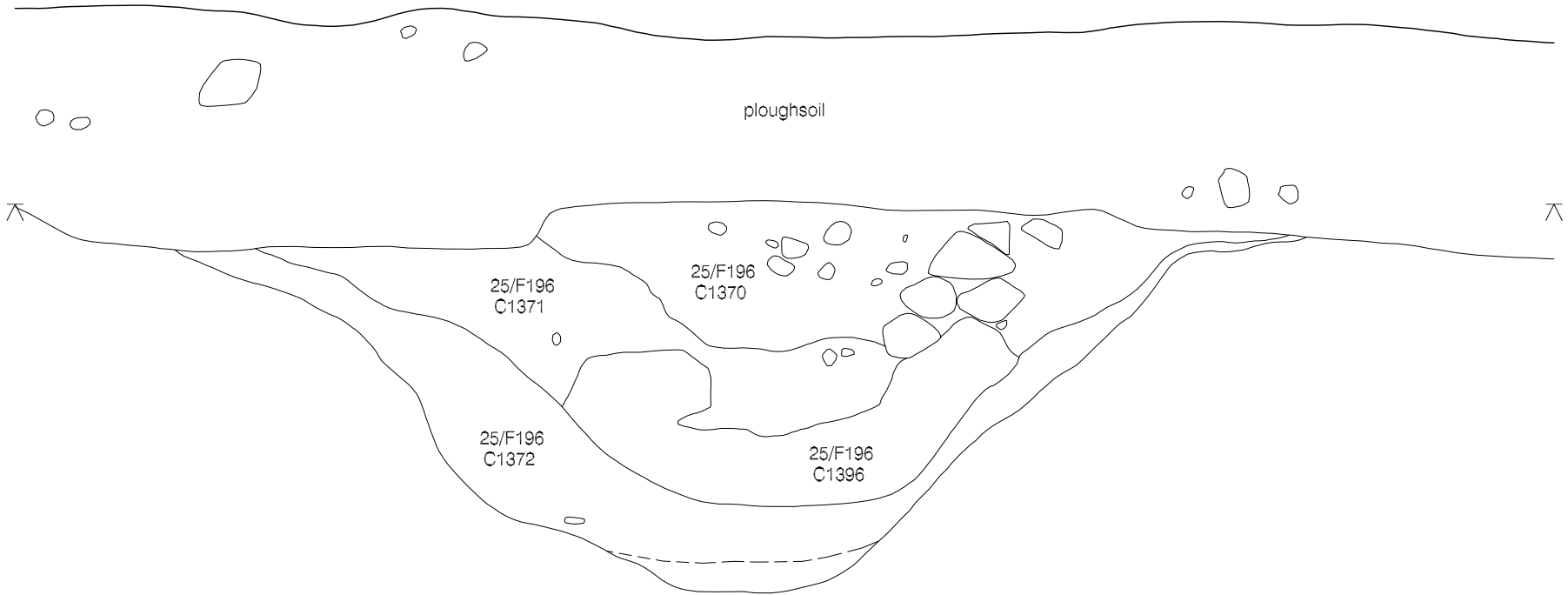
The segment of 11/F154/25/F196 excavated within Module N4 displayed a markedly different profile and sequence consisting of a wide flat-bottomed ditch containing evidence for an episode of subsoil erosion probably in the presence of water (11/C1650)(see Figure 14; Figure 19; Plate 17). Slow and intermittent silting of the feature followed possibly in the presence of water with periods of drier consolidation represented by turf lines (11/C1649, 11/C1648/11/1647, 11/1216). Subsequent deposition consisted of a thick layers of dark brown silty sands (11/C1216 and 11/C1651) followed by possibly windblown, bright yellow, redeposited sand subsoils (11/C1217 and 11/C1219) overlain finally by prominent deposit of redeposited pink boulder clay giving the feature a distinctive appearance in plan at this point (11/C1218).



Plate 17 Period 2 11/F154 west-facing section

S
896.04/907.64
15.90m

N
896.04/909.96
15.90m



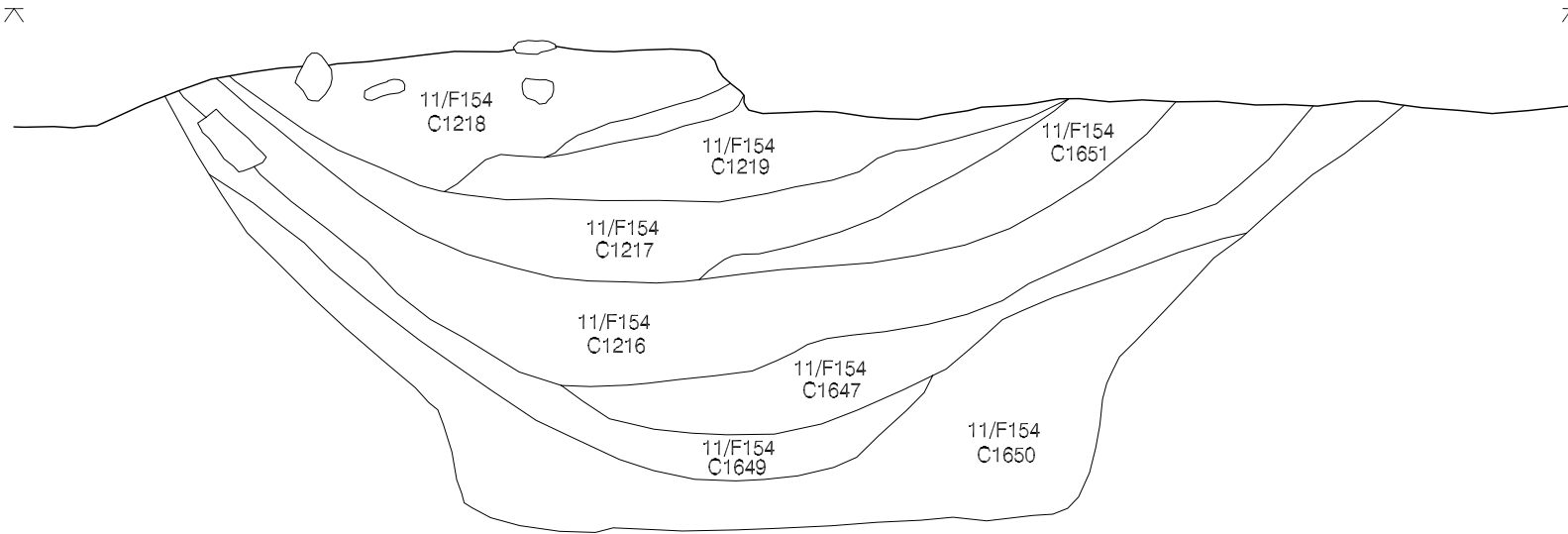
Period 2 internal ditch - 25/F196 east-facing section

Scale 1:10

Figure 18

N
885.14/907.16
15.87m

S
885.36/905.12
15.87m



Period 2 internal ditch - 11/F154 west-facing section

Scale 1:10

Figure 19



External associated ditches

Deposits of denatured grey soil were noted along the external side of the enclosure ditch, interpreted initially, and subsequently tested, as a possible track. The deposits were allocated various feature numbers along its discontinuous course (11/F31-2, 11/F184, 11/F190, 11/F201, 11/F211, 11/F215, 11/F246, 11/F268 and 25/F101) (see Figure 15). A 3.80m sample of 25/F101 was excavated where the feature proved to be irregular in plan and filled with a single deposit of denatured grey sand. Interpretation of the feature as the result of wheeled traffic is not clearly substantiated by the form of the feature and it seems possible that the deposits represented the remnants of an external bank whose weight pressed into the natural sand subsoil system. These deposits were noted as terminating in line with the eastern butt-end of the enclosure ditch, interpreted by the excavators as a result of differential truncation. Alternatively the juxtaposition of the ditch butt-end and the terminus to the irregular grey deposits could be interpreted as more meaningful, marking a break in a putative external bank coincident with the ditch-terminus.

3.3.2 Period 2 craft-working

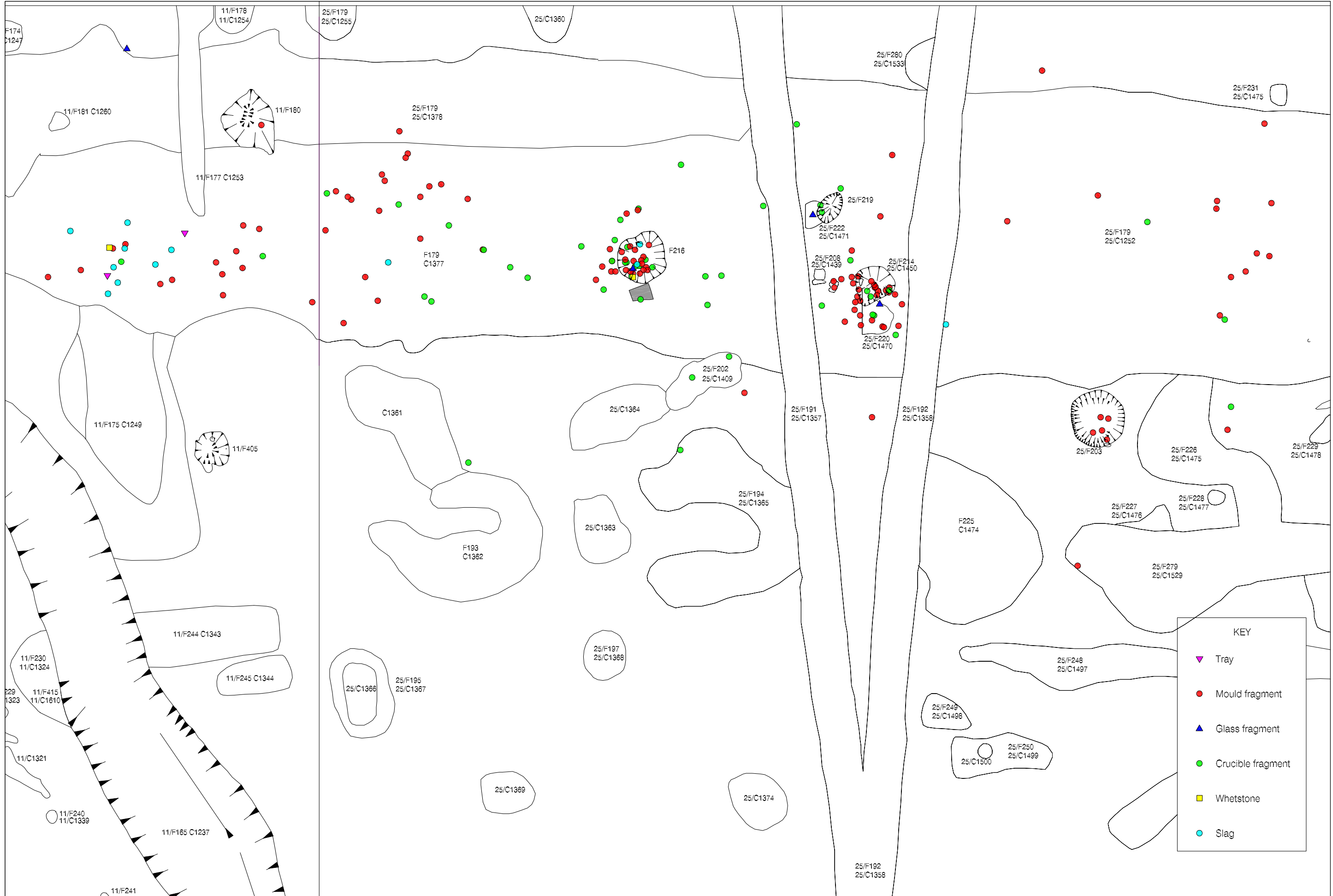
While not part of the ditch feature *per se*, the uppermost deposit within 11/F176/25/F179 yielded a rich assemblage of Period 2 craft-working debris (11/C1250=25/C1377). This deposit was excavated in its entirety over the course of several seasons and produced the first tantalising clay mould fragment and piece of raw blue glass (Find no 11/1000) in 1995 (Figure 20). Nearby a number of structural features were identified and some investigated (11/F405, 25/F178, 25/F180, 25/F195, 25/C1369, 25/C1374, 25/F249, 25/F202, 25/F203, 25/F219, 25/F220, 25/F222, 25/F280)(see Figure 20). The distribution of these structural features appears too large to suggest a building but may relate to an enclosed working area. In addition, a number of features which cut into the backfill system of 11/F176/25/F179 were found to contain craft-working debris (11/F34, 25/F208, 25/F216).

Deposit 25/C1377 was excavated in quadrants within Modules E4 and F1 and along with 25/C1461-4 proved to be a relatively substantial deposit which appeared to fill the remnant ghost of Period 1 enclosure ditch 11/F176/25/F179. Due to the possibility that the deposit represented the remains of an *in situ* craft-working area the surface was grid sampled (Plate 18). The deposit yielded the finest evidence for non-ferrous metal-, glass- and enamel-working from the site. Most notable were clay moulds bearing intricate cross or peltaic designs probably used for making composite glass and metal objects (Find no. 687, 855). In addition, two glass studs were also recovered from the deposit, one of dark blue glass containing silver wire cells filled alternately with yellow enamel, the other a simple opaque white stud with negative geometric design (Find no.686, 1452). Two fragments of heating tray covered with opaque yellow enamel were also retrieved (Find no. 3469).



Plate 18 25/C1370 during excavation

A group of features close to or within the backfilled 11/F176/25/F179 were identified and excavated during 2002 (25/F202, 25/F203, 25/F216, 25/F218). Posthole 25/F203 was situated to the immediate south of 11/F176/



KEY

- ▼ Tray
- Mould fragment
- ▲ Glass fragment
- Crucible fragment
- Whetstone
- Slag

Period 2 plan of 11/C1250/25/C1370 showing associated craft-working finds, distribution and possible associated features

Scale 1:50



Figure 20



25/F179 and was excavated during 2002. The feature proved to be a circular, steep-sided posthole containing a number of fills suggestive of construction backfills (25/C1484 and 25/C1444) and post-removal backfills (25/C1410 and 25/C1411). Seven fragments of ceramic mould were recovered from the latter. To the west of 25/F203, a possible double posthole was mapped during 2002 (25/F202) but not excavated, although pre-excitation cleaning yielded two fragments of crucible and a fragment of clay mould from the upper fill. To the north a further posthole (25/F219) was identified and excavated revealing an oval posthole containing a construction backfill (25/C1469), large red sandstone slabs - possible packing stones (Plate 19), and a disuse backfill (25/C1468) which yielded a fragment of crucible and two fragments of unidentified fired clay.



Plate 19 25/F219 during excavation

Adjacent to these structural features were further features, a small scoop 25/F216, a small stone setting 25/F218 and a possible butt-end of a gully (11/F34). Feature 25/F216 was excavated and proved to be a shallow scoop filled with a variety of craft-working detritus including five fragments of crucible, three fragments of clay mould and multiple unidentified fragments of fired clay, likely small fragments of clay mould or daub (Plate 20). Stone setting 25/F218 consisted of two small red sandstone slabs, one set vertically, the other tipping inwards (25/C1439). Covering the flat slab was a concentration of charcoal lumps and small fragments of clay mould. The remains are too fragmentary to identify them with any confidence as a working stance, although the components are suggestive of hearth material, albeit possibly redeposited or plough-disturbed. Some distance to the west a further feature was identified at Horizon 2 and excavated in 2002 (11/F34). The feature appeared as a butt-ending linear deposit of ash-rich silt and upon excavation proved to be filled with three separate deposits (11/C1753, 11/C1754, 11/C1762). The feature may represent the butt-end of a more extensive linear feature or discrete scoop; in either case the feature received craft-working waste, some of which was very small and unlikely to have travelled far. Included in the range of material recovered were several fragments of crucible, daub, slag, a fragment of clay mould, small iron objects and a droplet each of copper-alloy and dark blue glass.



Plate 20 25/F216 pre-excitation

3.3.3 Structures

Structure 1

The set of features assigned to Structure 1 in Sector 1 represents a large ‘bag-shaped’ building, first encountered in 1994, fully defined by 1996 and excavated in full in the 2001 to 2003 seasons inclusive. The structure consisted primarily of a cobble-filled foundation trench (11/F40) giving the bag-shaped form, and a series of

internal postholes. Within and around 11/F40 a number of features have been assigned to S1 or are considered to represent contemporary activity. Most notably, a hearth central to the east end of the structure, 11/F65, and associated flue 11/F79 have been assigned to the building. A large lined rubbish pit 11/F147 is also thought to relate to S1 activity. Significantly, S1 appears to have been remodelled during its lifetime: its initial construction is assigned to Period 2 and remodelling to Period 3. The post pits and wall trench of S1 contained very little cultural material, but the finds recovery policy for the horizon mapping technique has allowed assemblages to be reassigned to features belonging to the building.

A detailed analysis of the structure was undertaken between 2000 and 2001 by Madeleine Hummler and a record of her inventory and initial findings can be found as Field Report 5.3. These results were studied and reconsidered by Martin Carver during his preparation of the interim report (Carver 2008, 126-134, 140-2, 222). This report reflects the analytical stages already reached, while at the same time indicating where additional analysis is needed.

Phasing

In the analysis thus far, the postholes are assigned to two phases, attributed to Period 2 and 3 developments. Although the spatial layout is generally clear, the majority of postholes were replaced on one or more occasions, making them hard to read. Those of Period 2 were distinguished by being supported on a stone pad, and having clean sand backfills; while those of Period 3 were mostly double posts, cutting through the earlier post-pits and replacing their posts. On this basis the Period 2 layout was an internal array of single posts, with no porch. The central hearth is also assigned to this phase. In the Period 3 layout, the principal structural posts were replaced by double posts, *i.e.* an upright and an exterior buttress post, a porch was added on the north side of the door, and a flue replaced the hearth. The components of the Period 2 and 3 forms of the building are summarised in Table 2. Some of these assignments are equivocal, notably the row of four posts at the west end, assigned in the interim report to the refurbishment. Two or all four of these may move to the initial construction following further analysis.

Table 2 Phasing of features belonging to Structure 1

Component	Original construction	Refurbishment	Dismantling
East end postholes	11/F150	11/F148	11/F149 removed
	11/F464	11/F426/11/F427	
	11/F429	11/F442/11/F448	Removed
	11/F472	11/F472/11/F471	
	11/F47	11/F47 and 11/F402	
	11/F409	11/F49 and 11/F52	
	11/F455/473	11/F466/F462 11/F463	
	11/F402	11/F129/11/F128	
West end postholes	11/F118/9	11/F117	
	11/F443	11/F453	Removed
	11/F132		

Component	Original construction	Refurbishment	Dismantling
	11/F134	11/F435/11/F115 11/F131 11/F135/11/F438 11/F136 11/F133 11/F114 11/F138	Removed
Porch	11/F432 11/F451 11/1767 11/F461	11/F110/11/F445 11/F454 11/F450/11/F459 11/F113/1783	11/F126 removed
Perimeter wall	11/F40		
Heating	11/F65	11/F79	
Marker pit	11/F430		

Foundation trench

11/F40 (also assigned 11/F112 and 11/F125) defines a foundation trench cut into the subsoil, filled with a single deposit of pebbles and cobbles with some sandstone slab fragments, set tightly into a deposit of silty sand (11/C1056). Its form in plan consisted of a bowed east end and a straight-ended west end with splayed walls interrupted by a porch to the north. 11/F40 measured 14.44m longest x 9.85m widest enclosing an area of c.110m².



Plate 21 Structure 1 11/F40 post-excavation

The entire circuit was excavated (Figure 21; Plate 21)

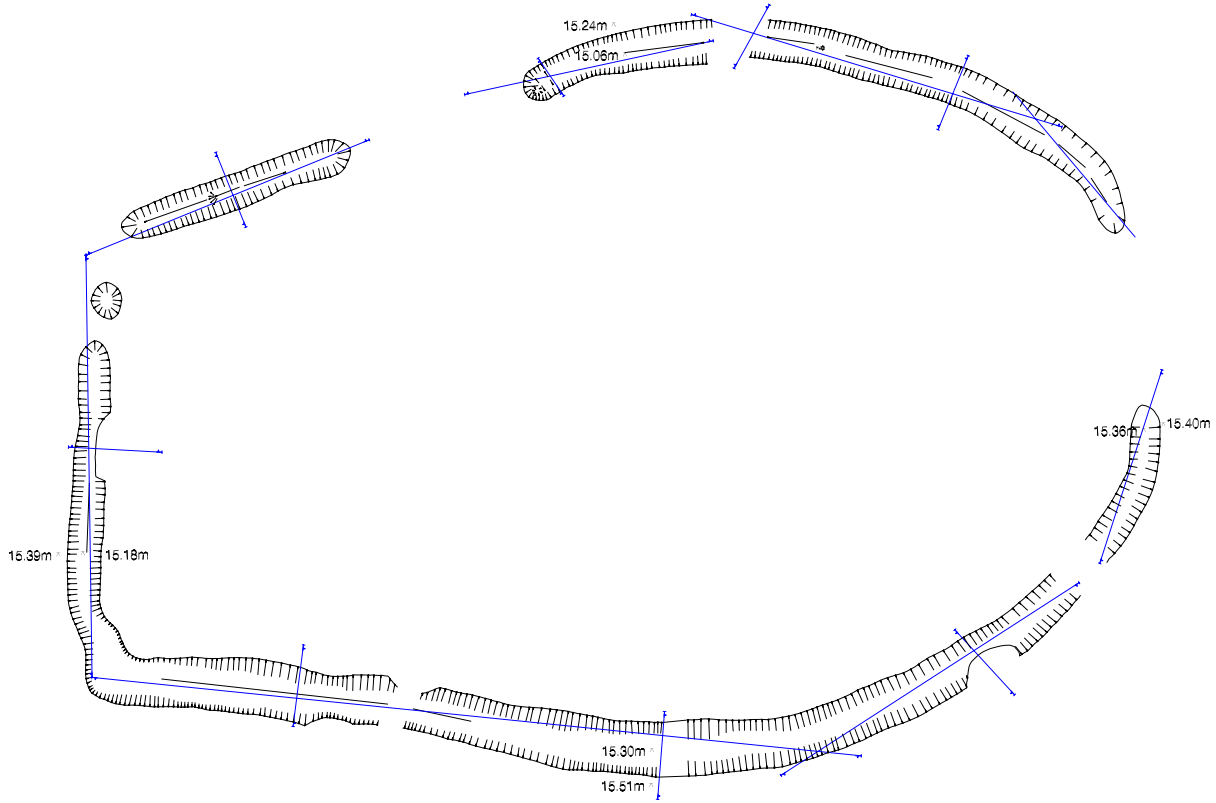
and proved to be U-shaped in profile, and varied in width between 0.15m and 0.45m and in depth between 0.25 and 0.30m. The fill 11/C1056 consisted of tightly-packed stones set in a soft silty sand matrix; the cobbles interlocked, resisting excavation. The most likely source for the pebbles and cobbles is the beach and a large piece of eroded whalebone found its way amongst the cobbles in the foundation trench.

F40 clearly cut door post F130, implying the timber posts were erected before the walls were prepared for construction (Plate 22). The sandstone slab fragments, some quite substantial, were similar to those used in the posthole construction and may represent waste from splitting and dressing packing and pad stones.



Plate 22 11/F130 pre-excavation showing relationship with 11/F40





Structure 1- F40 post-excavation hachure plan

Scale 1:100



Figure 21

Postholes

The layout of Period 2 showed a remarkable symmetry (Figure 22; Plate 23). A semi-circle of single posts on the east side (11/F150, 11/F464, 11/F429, 11/F472, 11/F47, 11/F409, 11/F455, 11/F402) was matched by a rectilinear grid of posts on the west side laid out in a trapezium (11/F118/9, 11/F443, 11/F132 and 11/F134). There was a pair of postholes either side of the doorway (11/C1767 and 11/F461).

It was not just the spatial arrangement that was symmetrical, but also the shapes (circular posts on the north side are matched by circular posts on the south side, 11/F135 and 11/F138; angled posts are matched by angled posts, 11/F115/11/F435 in the north and 11/F136 in the south), the depths (note that deep postholes are matched by deep postholes on either side, while shallow postholes, 11/F132 and 11/F134 face each other) and even the presence or absence of pad stones is mirrored on each side (see Figure 22). The presence of red sandstone slab post pads supporting the initial posts of Structure 1 formed a distinctive signature of the first phase, for example within 11/F464 and 11/F429 (Plate 24 and 25). The colouration of the sandstone used for postpads within some postholes appeared to have been split along bedding planes from an original larger block.

This symmetry, the pairing of posts, the presence of bracing posts at the western extremity (11/F115/11/F435 bracing 11/F131 and 11/F136 bracing 11/F135/11/F438), the position of two shallow posts on pad stones in the central part of the west end (11/F132 and 11/F134) could be used to suggest that the postholes of the west end not only supported a roof, but also an upper floor. It is also possible that the double posthole arrangement of the east end fulfilled a similar purpose. The postholes of the west end do not all show evidence of systematic replacement or refurbishment, as the postholes of the porch and east end do, but in five instances there is sufficient evidence to substantiate claims for a refurbishment.

The porch exhibits two phases of building. In its first state it consisted of four uprights, some 30-40 cm in diameter, the inner two postholes set deeper than the postholes projecting outwards. In a second phase, the two outer uprights are replaced by an arrangement of vertical posts and angled bracing posts, the two inner uprights by new uprights set immediately to the south of the former posts, perhaps as the porch was refurbished while



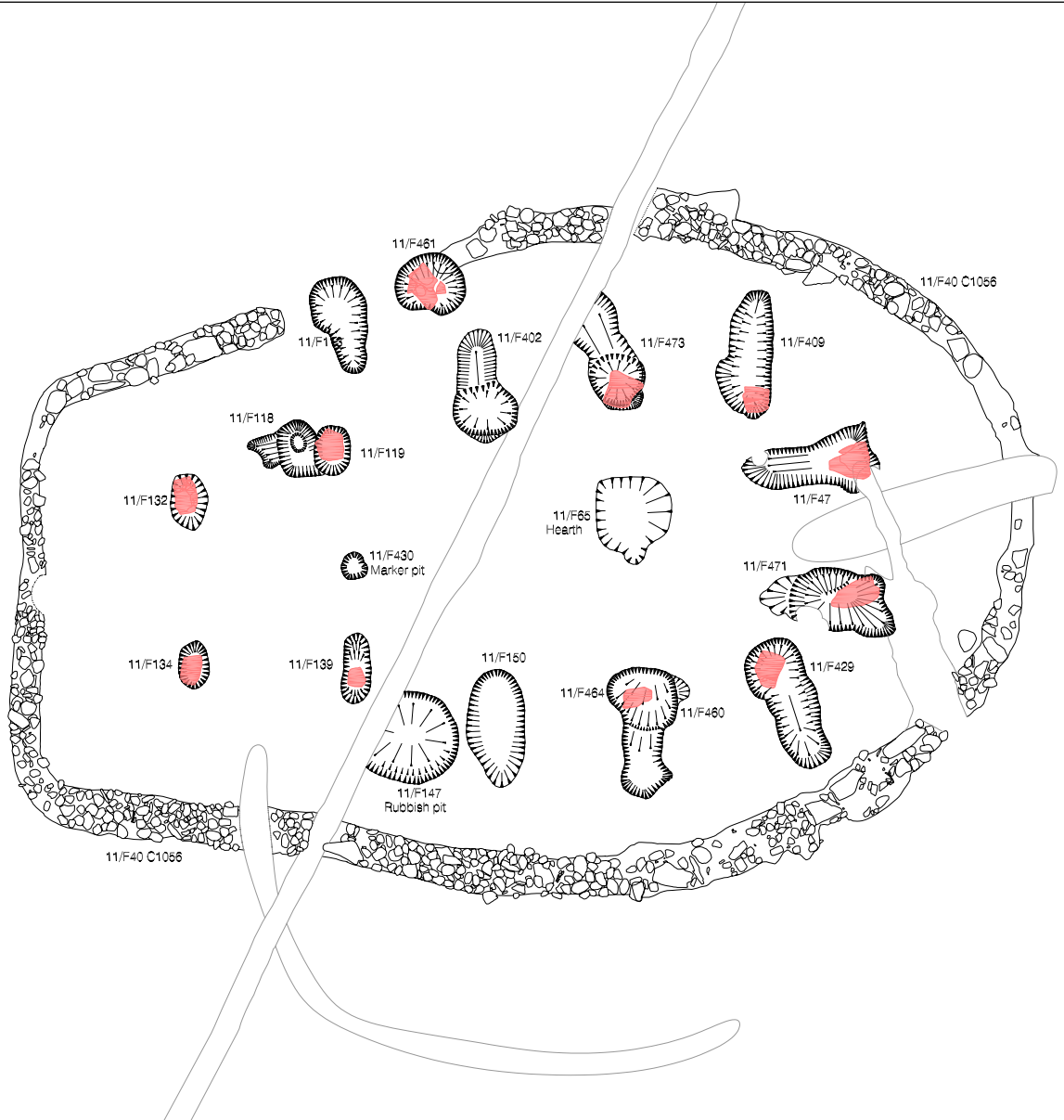
Plate 23 Structure 1 pre-excitation



Plate 24 Post pit 11/F429 showing pad stone



Plate 25 Post pit 11/F464 showing pad stone



Period 2 Structure 1 feature map

Scale 1:100



Figure 22



Structure 1 was in use.

Internal non-structural features

Central to the eastern end of S1 a hearth was defined and allocated 11/F65 (see Figure 22; Figure 23). 11/F65 measured *c.*1.5m in diameter and survived as a steep-sided concave scoop *c.*0.3m deep. 11/F65 was positioned approximately centrally to the formation of postholes of the east end. It is proposed that the deposits contained within hearth F65, including a large amount of animal bone, belong to its use and represent accumulating deposits of fuel, ash and debris from activity.

Hearth 11/F65 was partially excavated during the 1994 evaluation season in order to obtain material for a radiocarbon assay (11/C1082, 11/C1086, 11/C1141 and 11/C1142), although these deposits appear to relate to disuse and disturbance. Complete excavation followed in 2001 and was undertaken in quadrants revealing a sequence of deposits being the remainder of 11/C1141 and 11/C1615 and 11/C1621. 11/C1141 consisted of a very mottled dark grey sandy silt with lenses of yellowish-brown clayey silt, large amounts of charcoal throughout but concentrating towards the centre and many animal bones, most of which appeared burnt, and a few shell fragments. 11/C1621 lay beneath 11/C1141 and consisted of a dark grey deposit of sandy silt with occasional lenses of clayey silt. 11/C1621 overlay 11/C1615, the principal surviving fill of F65 which consisted of a black, charcoal-rich deposit, *c.*0.03-0.04m thick and covering the bottom of the feature, containing large quantities of charcoal, occasional fragments of burnt animal bone and a little gravel (Plate 26). Radiocarbon dating of a fragment of calcined animal bone from hearth fill C1141 produced a calibrated date of AD690-940 (95%)(GU-11756).

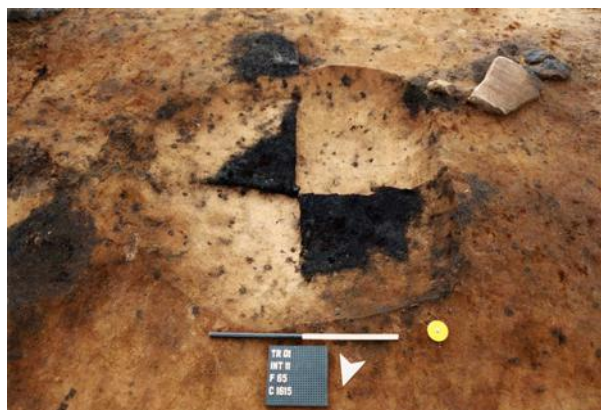
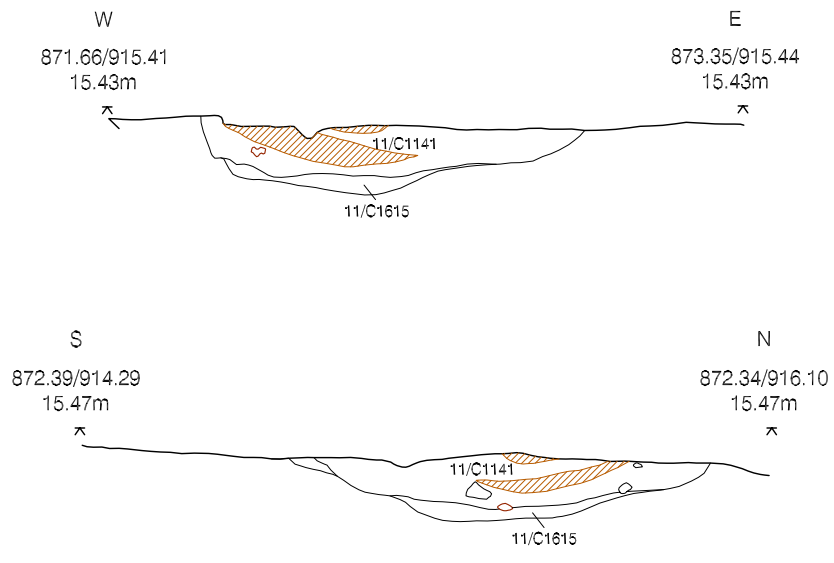


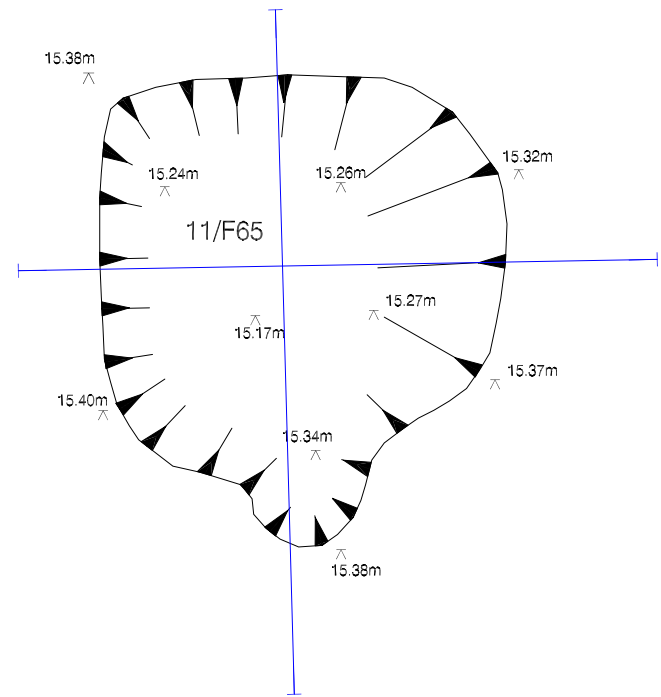
Plate 26 Structure 1 11/F65 C1615 during excavation

Material recovered from 11/F65 included over 1.5kg of mixed unburnt animal bone, which can be grouped with material from 3-D plotting and probably relates to the disuse of the building. A notable quantity of calcined animal bone was recovered from the fills of the hearth and probably relates to the use of animal bone as fuel. A flint was also noted from 11/C1141 (Find no 592) and has been provisionally identified as an end-and-side scraper which has been burnt, but probably represents residual prehistoric material rather than contemporary S1 activity.

11/F147 was defined at Horizon 2 as a circular feature measuring 1.2m in diameter, and truncated to the west by a field drain (11/F62)(see Figure 22; Figure 24). Quadrant excavation undertaken in 2001 revealed a straight-sided concave feature containing a number of deposits (Plate 27). The earliest was assigned 11/C1542=11/C1545 and appeared to form the remains of a lining within the feature. 11/C1541 then accumulated within the feature and was assigned a single context, although had the appearance of slow, mixed accumulation and contained frequent charcoal, lenses of clay, slag, daub and 400g of mixed animal bone. A distinct dump of pale yellow clayey silt 11/C1540 was deposited within the pit and contained fragments of daub,



- Stone
- Animal bone
- ▨ Clay lenses



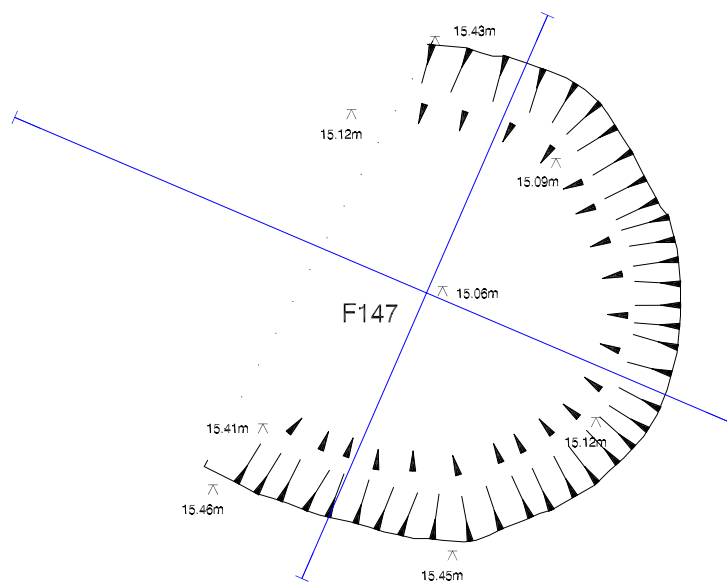
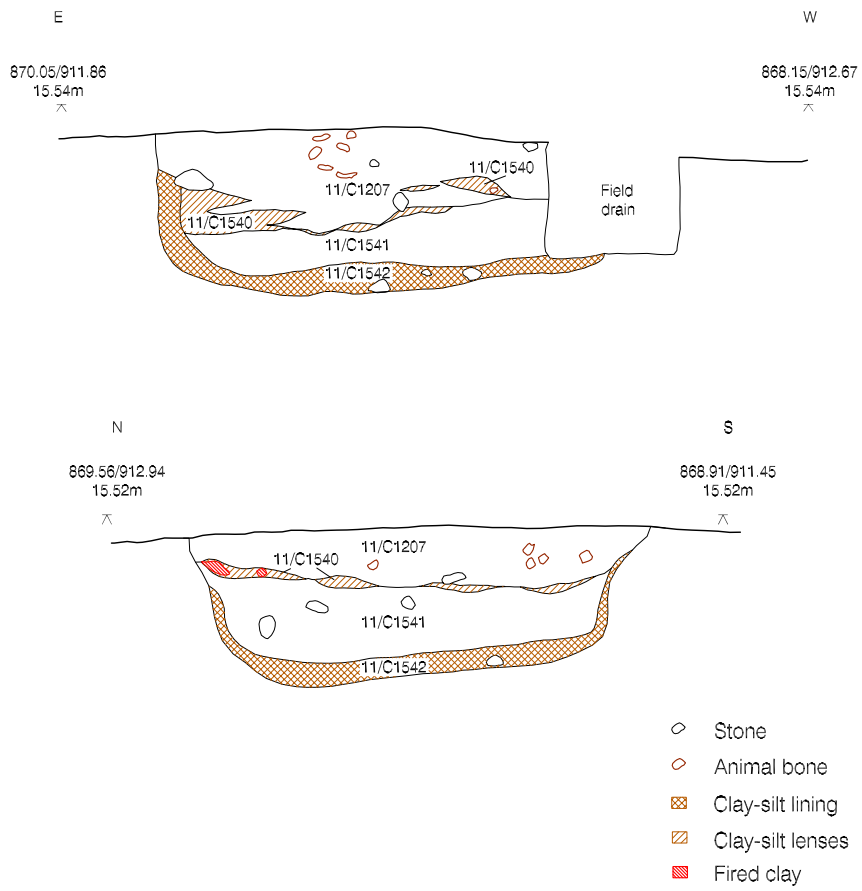
11/F65 west-east and north-south sections, post-excavation hachure

Scale 1:20



Figure 23





11/F147 rubbish pit - sections and hachure plan

Scale 1:20



Figure 24

a fragment of ceramic mould, calcined animal bone and occasional charcoal. A final deposit of bone-rich dark brown silty sand was assigned C1207 and contained over 1kg of mixed animal bone and some daub. Generally the admixture of cultural material reflects the nature of craft-working deposits within Sector 2.

Assemblage

The material plotted in contexts that covered S1 have shown some useful preliminary patterns. Only seven fragments of ironwork appear within the area of S1: iron nails, an iron pin and an unidentified piece of iron (Find no. 4, Find no. 803, Find no. 911, Find no. 917 and Find no. 2518, four of which were found near porch postholes), a piece of iron sheet (Find no 434), an iron disc (Find no 471).

Animal bone was strongly patterned (Figure 25). A general spread over the east end of S1 is increased in the centre with a very strong showing of bones over the central hearth 11/F65 and postholes to the south and north. Adding the distributions of bones from 11/C1147, 11/C1148 and 11/C1370, extends this strong correlation with features is extended to the northwest with a concentration of animal bones over the porch postholes and just outside as well as over the postholes of the northwest end. In summary, animal bone locations correlate very well with the position of underlying features of S1.

The finds from central hearth 11/F65 were both hand-collected during excavation and captured during flotation. The assemblage included animal bone burnt and unburnt, small quantities of slag, occasional small fragments of copper-alloy and iron objects, shell fragments notably winkles, burnt nut shell and a burnt flint scraper. Testing of the flotation residues with a magnet attracted material, some of which was hammerscale.

Structure 2

‘Structure 2’ was defined at Horizon 2 as a series of discontinuous linear features assigned 11/F39, 11/F43, 11/F95, 11/F137, 11/F140 and 11/F144 (see Figure 22; Plate 28). Together the features appeared to form a sub-rectangular enclosure which cut 11/F40 in two discrete places, the south wall by 11/F137 and the east wall of the bag-shaped circuit by 11/F43 and were thus interpreted as belonging to a structure positioned partly over the remains of S1 following its abandonment. S2 was excavated in 2001 and 2002 and post-excavation work has prompted a reappraisal of the grouping of these features as a structure.

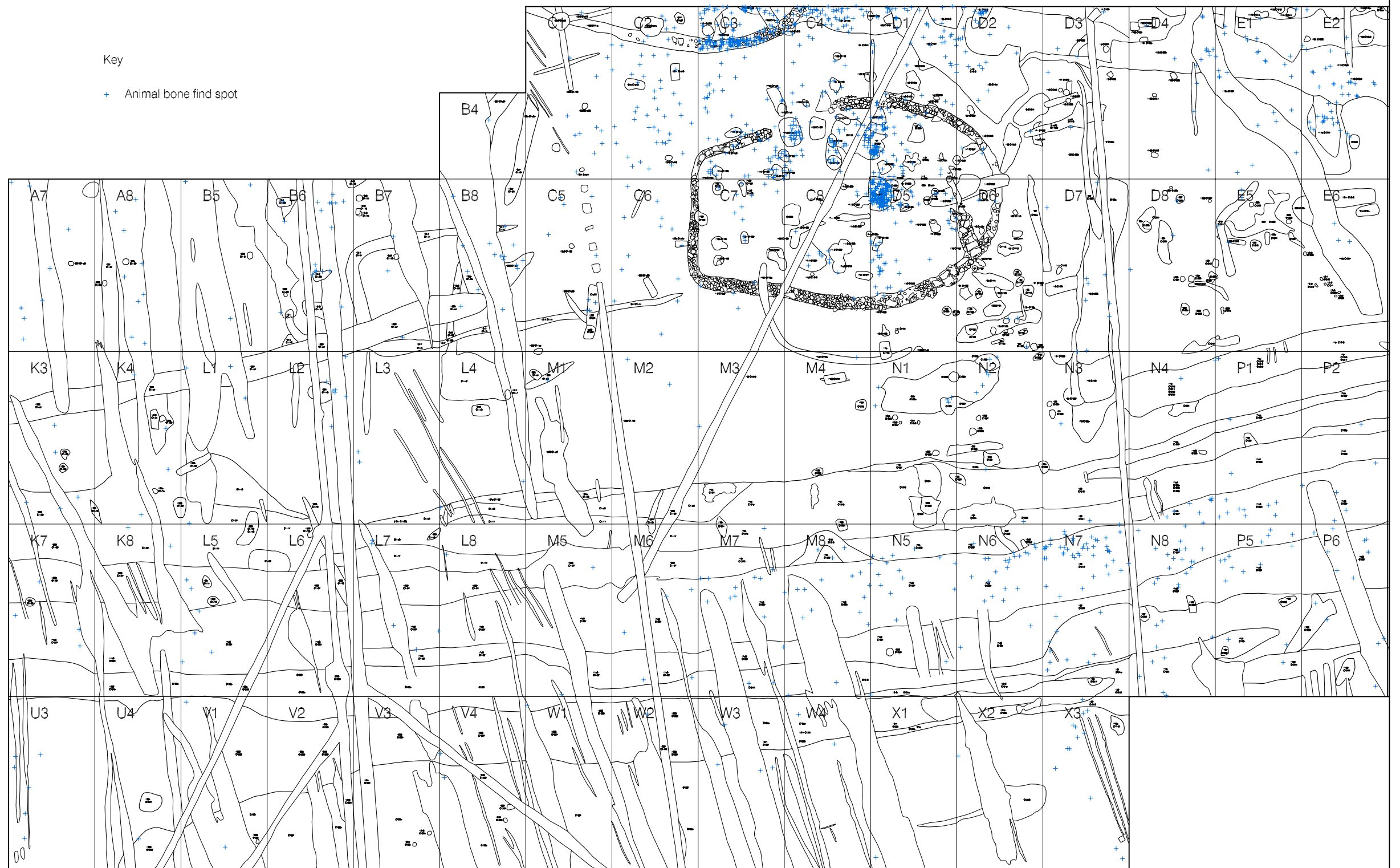


Plate 28 Structure 2 pre-excavation



Plate 27 Structure 1 11/F147 C1540 during excavation

Flue 11/F79 sets an important precedent; foundation trench 11/F40 can be breached without signalling the end



Distribution of animal bone in layers over Structure 1

Scale 1:200



Figure 25

of the building's occupation. Additionally, there are a number of stratigraphic inconsistencies in the assignment of these features to a contemporary structure. 11/F43 is cut by flue 11/F79 which belongs to the refurbished Period 3 S1, while 11/F137 clearly cuts into its foundation trench F40. In addition, southern gully 11/F95 resolved itself upon excavation into several discrete structural features (11/F378 and 11/F383) and 11/F43 was filled with a stone-rich backfill distinct from the sandy silt fills of the other grouped features. The abandonment of Period 3 S1 is believed to be coincident with the cessation of activity at the site until the enclosure ditch was levelled prior to the onset of ridge and furrow cultivation. Therefore S2 cannot clearly be assigned to a broader phase of activity. On balance its identification as a structure should be revised and its features reconsidered in the light of both phases of S1.

There may be several breaches to foundation trench 11/F40 which do not signal the end of S1, such as the insertion of flue 11/F79 and associated posthole 11/F477. Likewise gully 11/F137 need not relate to post-S1 activity. Its backfill was not particularly diagnostic of purpose and no evidence for post settings was encountered, but a possible drainage function might be considered for the feature; its juxtaposition with pit 11/F147 is also noteworthy.

Structure 3

Structure 3 (11/F109, 11/C1155) was first defined at Horizon 2 as a curvilinear feature located in Modules C1 to C4. The structure disappeared beyond the northern limit of the intervention to the east, was truncated by a modern field drain junction (11/F372) to the west and cut into Period 1 ditch 11/F176/25/F179 (Figure 26; Plate 29). The fill of the feature 11/C1155 consisted of a grey silty sand with a notable concentration of rounded cobbles at its western end. Thus the feature was assigned a structure number due to its similarity to nearby 11/F40 the foundation trench of Structure 1. The distribution of animal bone recorded during horizon mapping show a concentration within the feature (see Figure 25).



Plate 29 Structure 3 11/F109 pre-excavation

The feature was sampled in two positions; the western cobble-rich end and a roughly central sample of 2.0m in length. The feature proved to be shallow and ill-defined against the fill system of underlying Period 1 ditch 11/F176/25/F179. The assignment and interpretation of the feature as Structure 3 was not pursued further.

Structure 6

Structure 6 was identified and mapped at Horizon 2 as a rectilinear gully forming an elongated U-shaped of three lengths, measuring 14.5m (south), 8.4m (west) and 8.0m (north). At Horizon 2, the structure was mapped as cutting an ill-defined amorphous feature with linear northern protrusion 11/F356). In turn the feature was cut by a Period 3 ditch 11/F330, traversed by two Period 4 furrows (11/351 and 11/F354) and a Period 5 field drain (11/F286)(Figure 27; Plate 30).



Period 2 Structure 3 11/F109 plan showing excavated sections

Scale 1:100



Figure 26





Structure 6 plan showing excavated sections

Scale 1:100



Figure 27



A length of the southern arm was sample excavated where the feature proved to be a shallow gully, 0.15m deep with a U-shaped profile and a single backfill of dark reddish-brown silty sand (11/C1474). No evidence for posts or stakes was recorded nor any silting and no finds were recovered.

Structure 8

The principal feature of Structure 8 was identified in 1994 to the northeast of Structure 1 and assigned 11/F36. The feature complex was subsequently excavated over three seasons and grouped with 11/F424, 11/F475, 11/F476, 11/F479-81 into Structure 8. 11/F36 appeared as a *c.*2.0m wide linear feature oriented broadly WNW-ESE over a length of *c.*5.0m (Plate 31). Visible in its pre-excitation plan was an eastern bowl-shaped form with a sand-filled lobe projecting from its northern edge and a channel protruding from its western edge, cut by field drain 11/F62 close to its western terminus. The feature was sectioned longitudinally NW-SE and the eastern bowl was cross-sectioned creating equal quadrants. The initial construction of the feature was assigned to Period 2 since it cut Period 1 enclosure ditch 11/F176, although it appears to be long-lived and, with a series of amendments, possibly persisted in use into Period 3. Accordingly the construction and initial form are assigned to Period 2 and discussed here, while the adapted feature and disuse are assigned to Period 3 and 4 respectively.

The original construction of S8 consisted of a large circular ‘bowl’ measuring 3.0m in diameter narrowing to 2.30m at its base, *c.*0.30m into pink boulder clay being a total of 1.20m deep (Figure 28). A northern lobe was also excavated at the same time and intruded into the deposits of Period 1 ditch 11/F176. The form was then backfilled with rapidly deposited mixed sands, presumably the original upcast (11/C1837, 11/C1820-11/C1830, 11/C1831, 11/C1645, 11/C1827, 11/C1828, 11/C1832, 11/C1833, 11/C1802, 11/C1803)(Figure 29). These deposits appear to have accumulated against a hard structure represented by 11/C1821 and 11/C1824, and interpreted as the remains of a timber plank lining. 11/C1821 was encountered towards the top of 11/F36 where it appeared as a very black discontinuous layer of desiccated planks visible in stripes orientated approximately north-south across the feature horizontally, with vertical planks tentatively identified. A corresponding layer identified within the portion of the feature which is likely to have experienced the fluctuations of the water table (11/C1824) appeared during excavation of the basal fills. 11/C1824 appeared primarily as a sticky, soft silty clay slick against underlying 11/C1829, although a small component was still recognisable as wood and was interpreted as the remains of timber plank lining (Plate 32). The evidence for timber lining within 11/F36 was greatest on the western side while little evidence was noted to the east and no evidence for the base of the feature having been lined was present.

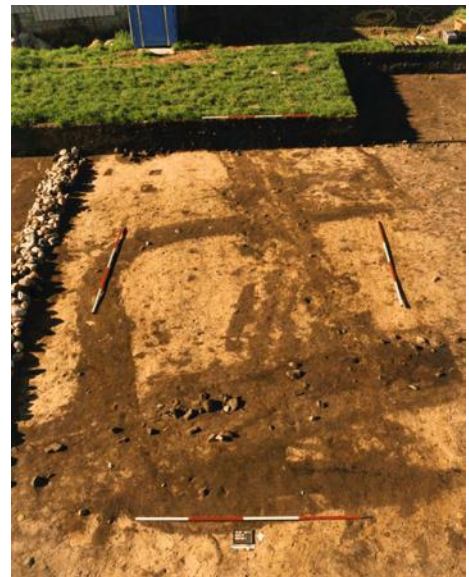
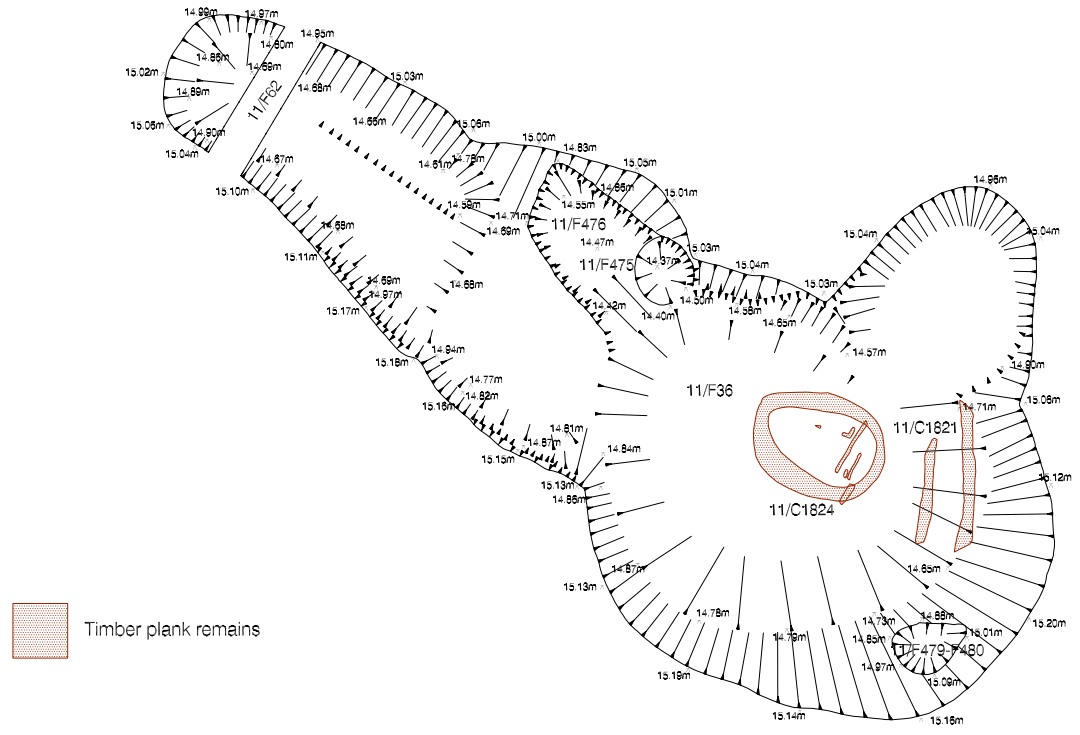



Plate 30 Structure 6 pre-excitation



Plate 31 Structure 8 pre-excitation



 Timber plank remains

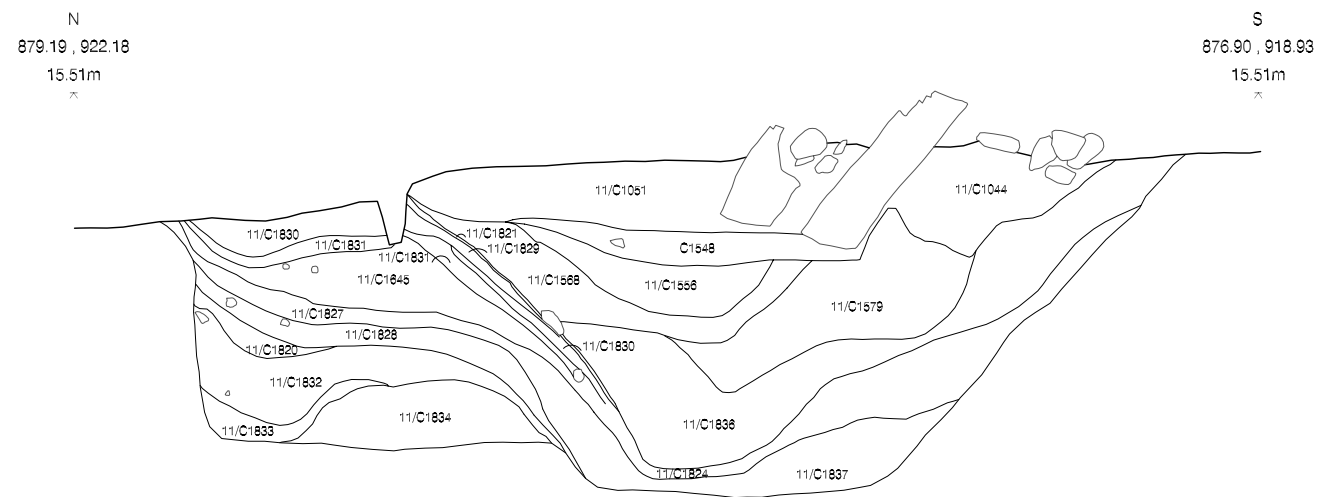
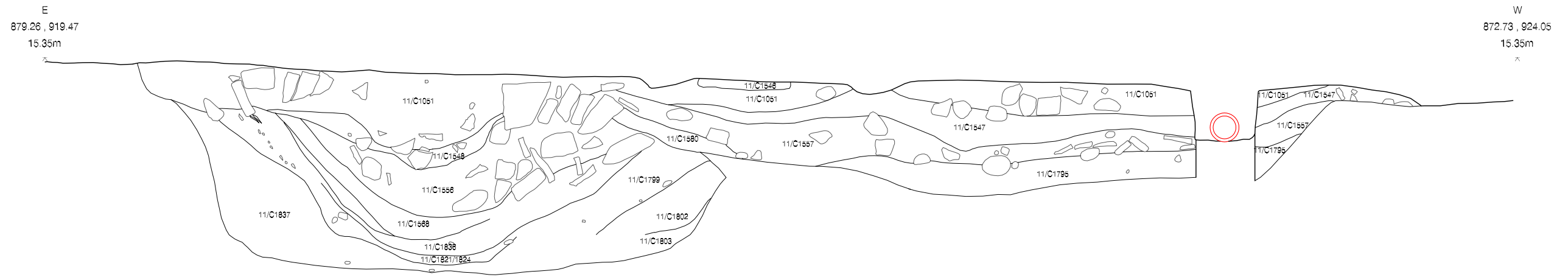
Period 2 Structure 8 post-excavation hachure plan

Scale 1:50



Figure 28





Structure 8 west-east and north-south sections

Scale 1:25

Figure 29

The corresponding channel to the west, assigned 11/F476, was integral to the early form of the feature and as originally dug appeared to consist of a shallow western portion becoming markedly steeper to the east coincident with the position of a posthole (11/F475). Posthole 11/F475 appeared as a circular deposit of rounded cobbles measuring 0.30m in diameter. During excavation the cobbles were found to have been set around a post represented by a post-pipe (11/C1809). The presence of the channel is considered to have allowed access to 11/F36 and the presence of a post might suggest the presence of a superstructure to enable water-filled vessels to be lifted out of the feature. A corresponding double-posthole was explored on the northern side of 11/F36 although excavation did not reveal convincing evidence for posts (11/F479-81).

During the initial use of the feature a number of deposits accumulated in the bowl and channel, probably waterborne sands (11/C1836, 11/C1568, 11/C1795) prior to an episode of remodelling attributed to Period 3 activity.



Plate 32 Structure 8 11/F36 C1824 pre-excitation

3.4 PERIOD 3

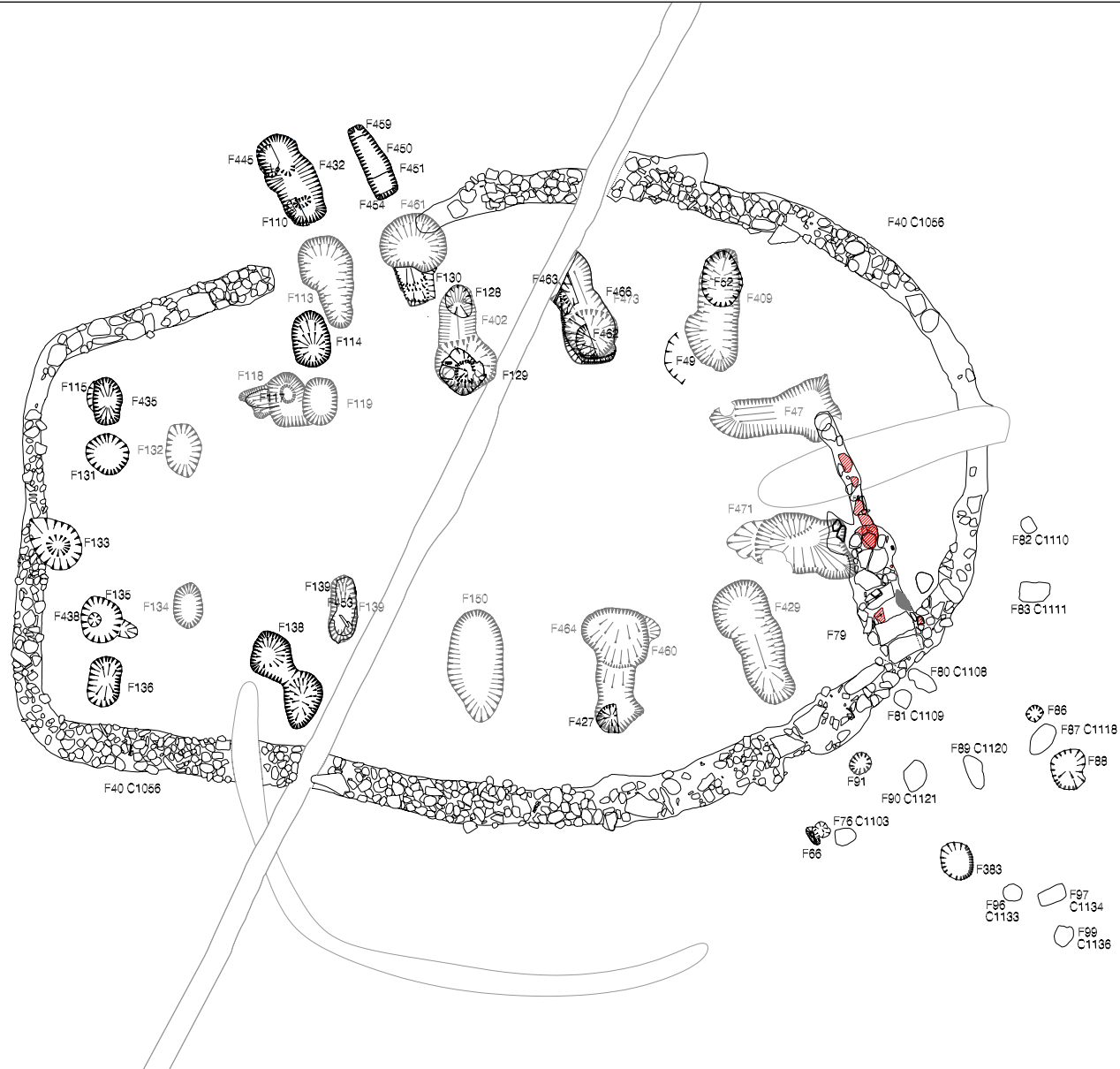
3.4.1 Structures

Structure 1

The form of Structure 1 in its second phase, assigned to Period 3, is presented in Figure 30 (see Table 2). The main developments of this form are: the replacement of the eastern semi-circle of posts with double posts, representing external buttressing (11/F148, 11/F426/11/F427, 11/F472/11/F471, 11/F47/11/F402, 11/F49/11/F52, 11/F466/ 11/F462/11/F463, 11/F129/11/F128); the enlargement of the entrance to create a porch (11/F110/ 11/F445/11/F454, 11/F113); the replacement of single posts by doubles at the west end 11/F117, 11/F453, 11/F435/11/F115); the addition of double postholes 11/F114 and 11/F138 and the addition of new posts further west 11/F131, 11/F135 and 11/F133. A stone-lined flue was cut through the perimeter wall 11/F40 on the southeast side. Collectively these alterations have been interpreted as the provision of an upper floor; the building is interpreted as having been used as a kiln barn (Carver 2008, 140-142).

Flue 11/F79

Two features defined within S1 have been identified as representing a flue: a well-preserved, stone-lined component 11/F79 (11/C1106, 11/C1526, 11/C1527, 11/C1528, 11/C1529, 11/C1544 and 11/C1552) and a further possibly plough-disturbed less well-preserved element to the north, assigned 11/F67 (11/C1093, 11/C1530, 11/C1562, 11/C1563) henceforth both discussed as 11/F79 (Figure 31; Plate 33). The feature was orientated at an angle of $c.30^\circ$ in a NNW direction towards hearth 11/F65 measuring 4.0m in length. 11/F79 was first identified as a linear channel lined with and covered by large sandstone slabs, while 11/F67 represented the northern continuation of 11/F79, running NNW for a further 1.80m, making the full extent of this channel

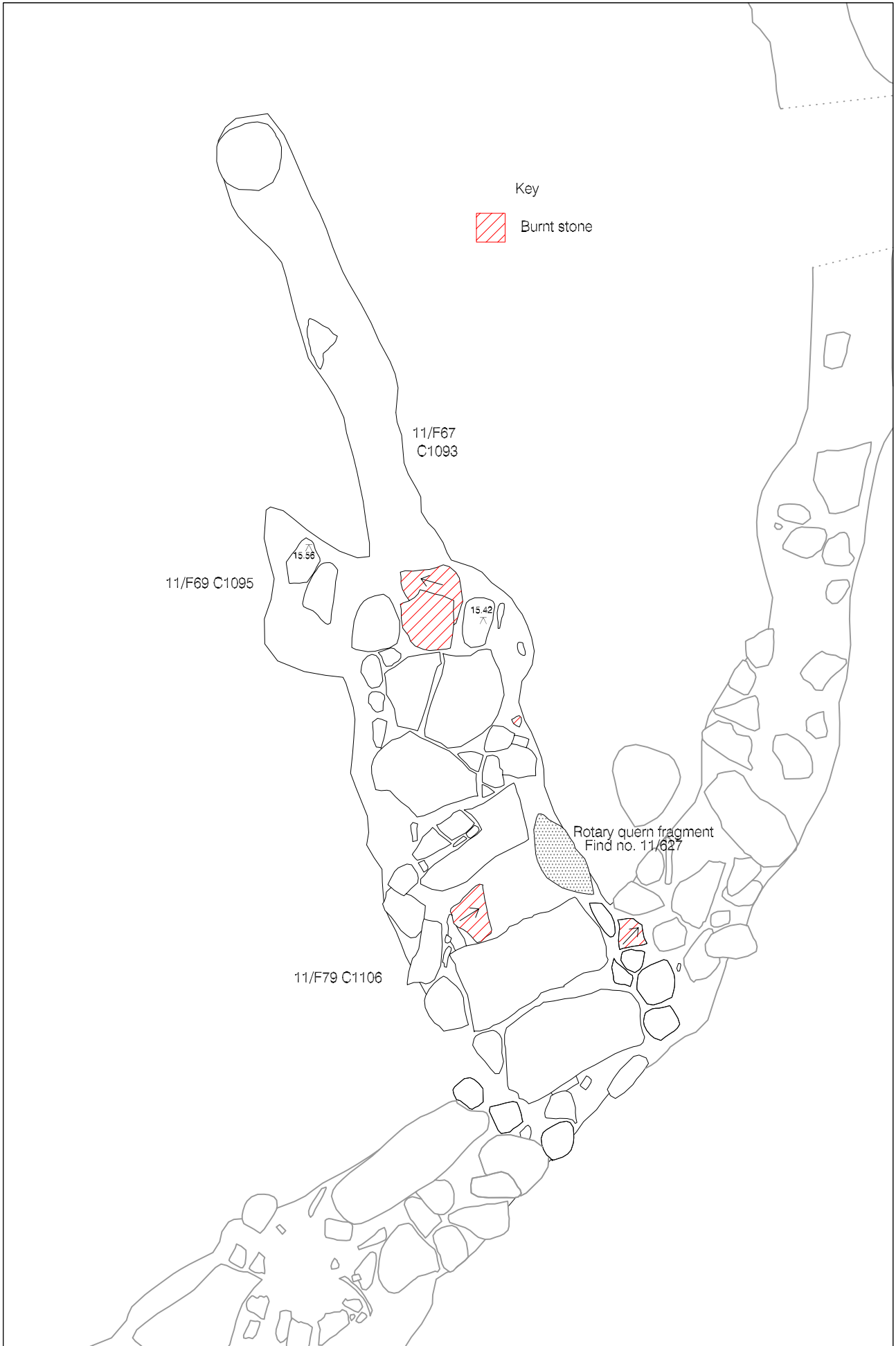


Period 3 Structure 1 feature map

Scale 1:100



Figure 30



Flue 11/F79/11/F69

Scale 1:20



Figure 31



just under 4m. Excavation during 2001 proved 11/F79 to be c.0.30m in depth and made of capstones 11/C1106 supported by lining stones 11/C1529 being roughly-shaped sandstone slabs becoming more fragmented to the north and displayed some evidence for burning. 11/C1528 assigned as cobble make-up of 11/F79 appears to represent reuse of the cobble component of foundation trench 11/F40, which subsequently became heat-affected during the life of 11/F79. The flue became filled with 11/C1544, an ashy heat-affected deposit, and backfilled with 11/C1542, 11/C1526 and 11/C1527, predominantly sandy silt deposits containing fragments of eroded sandstone from 11/C1106 and 11/C1529 while the channel existed as an open subterranean feature. 11/C1544, the earliest fill within the feature incorporated components of pale-coloured ash and charcoal and is likely to represent a deposit accumulating during the life of 11/F79.



Plate 33 Structure 1 11/F79 pre-excavation

11/F67 represented a portion of the flue which appeared to have suffered greater levels of disturbance than 11/F79, although the remnants of the surviving feature suggest shared construction and use. 11/C1562 and 11/C1563 represented the remains of a sandstone slab cover and lining respectively, showing signs of burning. The feature became filled with 11/C1530, possibly collapsing stone elements and lastly with 11/C1093 a final fill of dark brown silty sand with charcoal and clay of variable colour and concentration.

An iron nail and fragmentary animal bone was recovered from secondary contexts within flue 11/F79, and a fragmentary rotary quern (Find no 627) was reused within the makeup of the flue cover (Plate 34). Radiocarbon-dating of carbonised grain from flue 11/F79 C1527 produced a calibrated date of AD1020-1180 (95%)(GU-15019) signalling the end of the life of the feature and possibly the structure itself.

A number of features external to S1 appear to represent a grouping outside the building and suggests that F79 required a number of supporting features externally (see Figure 30).

Structure 8

An episode of remodelling of Structure 8 is assigned to Period 3 activity due to the refurbishment and continued use of Structure 1 during the period. The modification of the structure may have been prompted by the silting up of the main bowl, possibly hand-in-hand with the decay of the original plank lining. The principal activity assigned to Period 3 activity was the insertion of a stone slab blocking situated between the main bowl and channel, assigned 11/F424, which was set over the original construction cut backfills (11/C1799) and silting (11/C1568). While not assigned as a feature a conspicuous concentration of red sandstone slabs was present on the southern side of 11/F36 and formed an approximate



Plate 34 Find no. 627 in situ

right-angle with 11/F424. The two stone components are considered to represent Period 3 modification to the structure (Figure 32).

11/F424 was made of tightly packed and interlocking fragments of red sandstone slab (11/C1643) positioned transversely at the ‘mouth’ of the channel orientated north-south over deposits assigned to Period 2 activity. A red sandstone slab component within principal backfill 11/C1051 to the southern side of bowl 11/F36 is likely to have been related to the construction of 11/F424 and on its removal a distinct sub-square deposit of sand (11/C1556) was revealed against 11/F424, perhaps betraying the form of 11/F36 in its modified state (Plate 35). The position of wall 11/F424 suggests that the post set into channel construction cut 11/F476 (11/F475) had been removed as part of the remodelling operation.



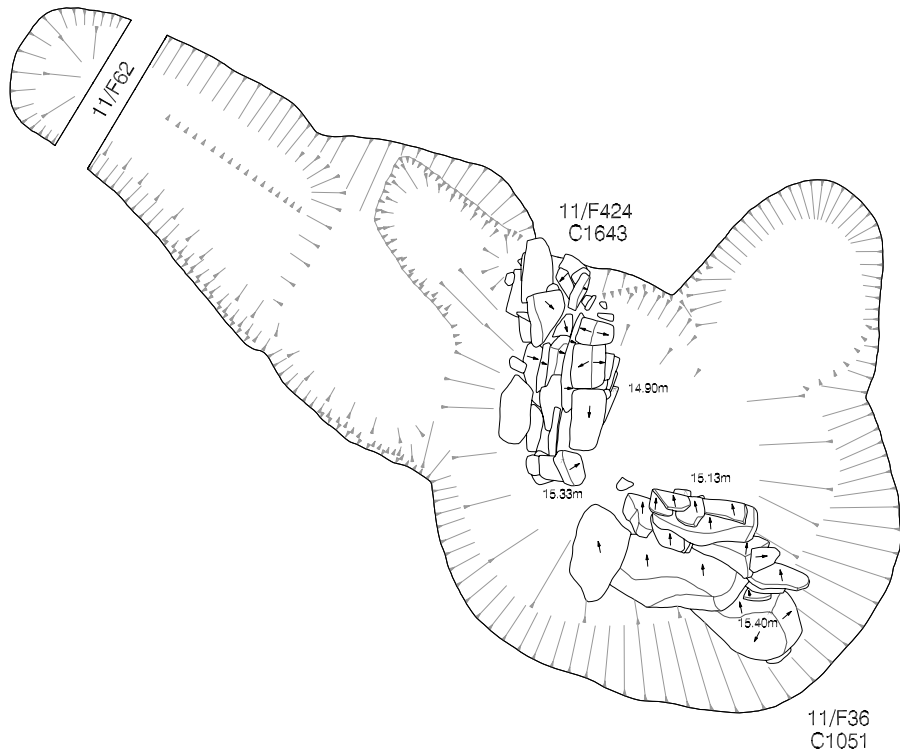
Plate 35 Period 3 Structure 8 11/F36 C1556 during excavation showing F424

A number of fills appear to have been deposited against 11/F424 on its western side and could be seen to abut the stone feature in section (see Figure 29)(11/C1580, 11/C1557, 11/C1547). Together these deposits suggest that the channel had all but been totally levelled and Structure 8 reduced to a shallow stone-lined sub-square feature, perhaps for water collection rather than tapping into ground water. Final backfilling followed and is assigned to Period 4.

Structure 5

Structure 5 was situated at the eastern end of Intervention 25. The structure was identified during 1997 and excavated during 1997 and 1998. The outline of the principal feature 25/F3 corresponded with anomalies mapped during a parchmark survey undertaken during the dry hot summer season of 1995 (12/F12) and can be seen clearly on the 1984 aerial photographs. The structure was defined as a group of features being a curvilinear ditch 25/F3 (and 25/F18) enclosing a series of pits 25/F10-11, and 25/F13 to 25/F19 inclusive (Figure 33). The structure cut Period 0 ring-ditch 25/F31, and was cut in turn by three convergent modern field drains (25/F2, 25/F6 and 25/F12) and was truncated by two furrows (25/F50, 25/F58). Its allocation to Period 3 relies on two radiocarbon determinations.

Ditch 25/F3 was extensively sampled at its southern side and all interior features investigated during 1997-8. The ditch 25/F3 consisted of a broad, shallow concave form up to 1.8m wide and 0.50m deep which emerged from the southern limit of Intervention 25 where it curved broadly from east to west turning slowly north to an ‘elbow’ at which point the orientation changed to NE-SW before disappearing beyond the eastern limit of Intervention 25. The portion of the ditch within Module J7 was assigned 25/F66 and a probable return for the feature was encountered close to the northeastern corner of Intervention 25, interpreted initially as a furrow, but almost certainly a return of 25/F3 (25/F18)(see Figure 33).

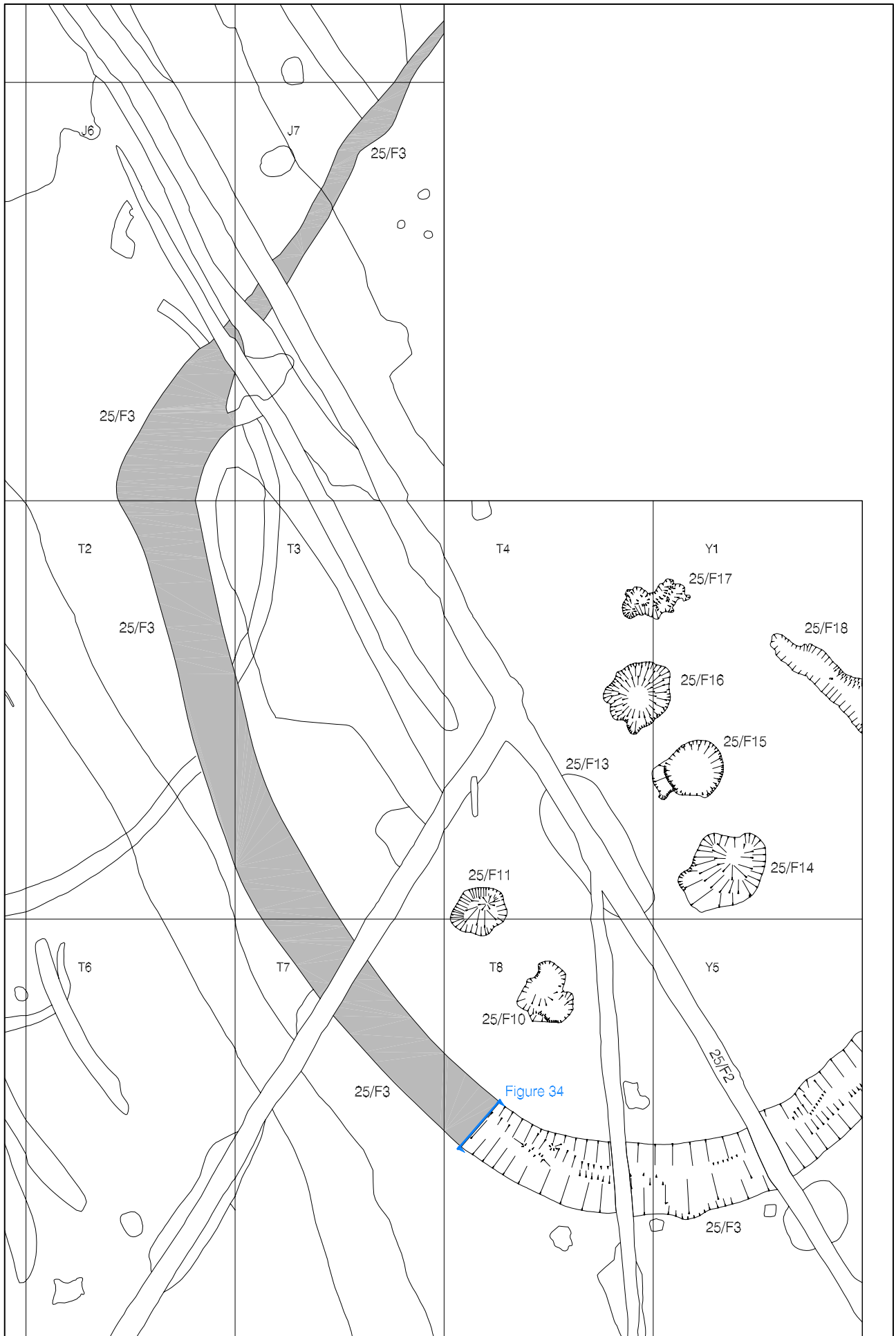



Period 3 Structure 8

Scale 1:50



Figure 32



Period 3 Structure 5 plan showing excavated sections Scale 1:100  Figure 33



The sequence encountered within the ditch was consistent through most sections; the feature was filled initially with windblown sand overlying subsoil in the base of the feature (25/C1157-8), overlain by silting (25/C1156)(Figure 34). Subsequent deposition consisted of several episodes of slumping from the north side of the ditch, thought to indicate the presence of an internal bank (25/C1151-4). Carbonised grain recovered by flotation from 25/C1153 returned an AMS date of AD890-1030 (95%)(GU-15018). This episode of slumping was followed by evidence for burning in the form of bright yellow and pink clay and charcoal-rich deposits (25/C1141 and 25/C1148). The *in situ* burning was succeeded by further evidence for gradual erosion of adjacent bank material and waterborne or windblown sands (25/C1140, 25/C1149, 25/C1136 25/C1147, 25/C1132, 25/C1134) prior to the deposition of a consistent deposit of olive-brown or ‘ginger’ sand (25/C1137=C1127=C1128). This deposit was noted as possibly organic, although intensive flotation did not reveal evidence for survival of organic matter. Finally the ditch was levelled, again quite gradually, with denatured grey silty sands (25/C1126, 25/C1017-8, 25/C1008-10).

The area enclosed by 25/F3 contained a number of features (25/F13 to 25/F19) and localised spreads of soil (25/C1031, 25/C1033-6, 25/C1040-1, 25/C1046-9). The interior features consisted of a central sub-oval feature (25/F13) cut by convergent field drains 25/F2 and 25/F6 surrounded by a number of irregular pits (25/F10/F11/F14-16, F19). Investigation of the central feature 25/F13 consisted of the removal of field drain 25/F2 followed by recording of its sections. This revealed a gently sloping concave form filled with 25/C1027 a highly variable charcoal-rich sandy silt which upon full excavation is likely to have resolved

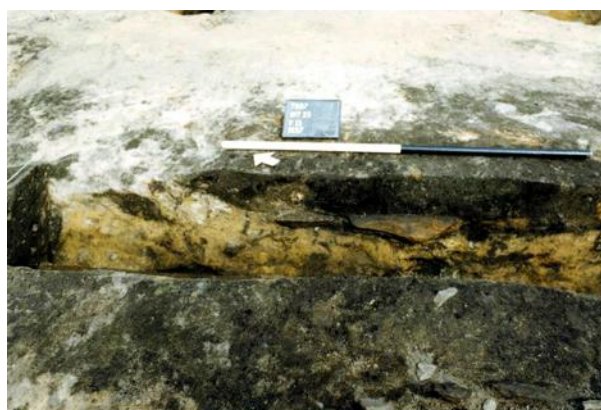
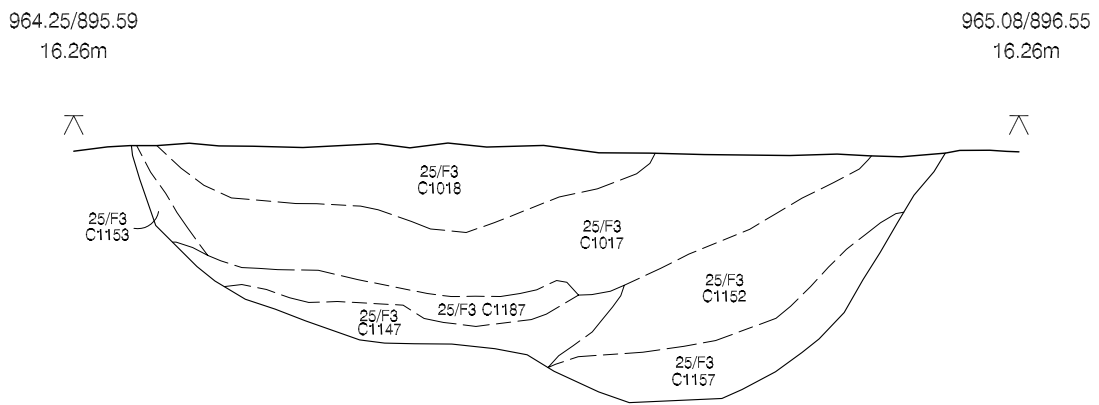


Plate 36 Period 3 Structure 5 11/F13 visible in free section of 25/F2

into several discrete deposits. Towards the base of 25/C1027 a number of horizontal burnt sandstone slabs sufficient to suggest a stone-lined component were visible in section (Figure 35; Plate 36). The deposit was sampled from section and a charred grain gained from flotation was dated and returned an AMS date of AD680-900 (95%)(GU-15017).

Surrounding 25/F13 were a number of irregularly-shaped pits which were all fully excavated (25/F10/F11/F14-16). 25/F10 proved to be an irregularly-shaped pit containing large stones set in a matrix of silty sand. 25/F11 revealed a more complex fill system consisting of an initial deposit of fine silty sand containing large cobbles (25/C1065) followed by a more consistent deposit of large stones (25/C1061) before two backfills were laid down (25/C1020 and 25/C1055) which contained charcoal lenses and burnt stone. This sequence was reflected in both 25/F14 and 25/F16 which were found to contain basal fills (25/C1064 and 25/C1062) overlain by deposits of large stones (25/C1058 and 25/C1057) and two backfills (25/C1023/25/C1053 and 25/C1025/25/C1054). 25/F15 was similar in form and depth to nearby features, although it contained a stone-free backfill. Some of these internal features were interpreted tentatively as possible postholes due to the presence of stones, although none of the stones were convincing as packing for a post and several displayed evidence for burning (Plate 37).



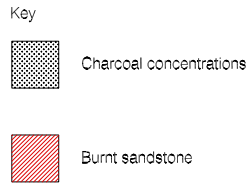
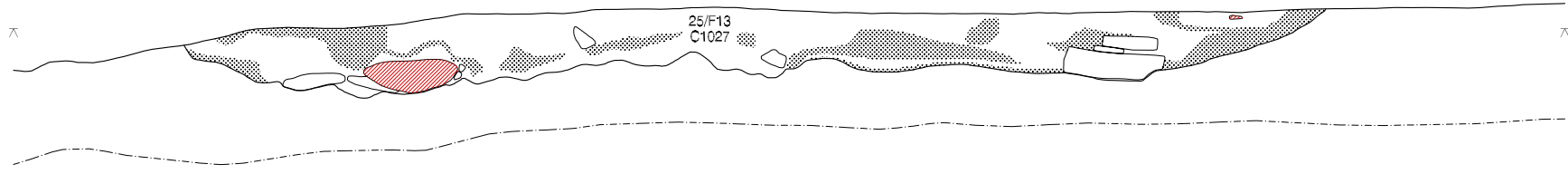
Structure 5 25/F3 southeast-facing section

Scale 1:10

Figure 34

NW
966.06/903.36
15.98m

SE
968.33/899.44
15.98m



Structure 5 25/F13 free-section from field drain 25/F2

Scale 1:20

Figure 35



Subsoil within the area enclosed by 25/F3 was allocated several numbers as distinct areas of iron-pan-rich sand were noted. All subsoil within the area enclosed by 25/F3 was allocated 25/C1021 unless heavily stained by iron pan in which case 25/C1006 (north) and 25/C1032 (south) apply. These areas of iron panning were only noted within the enclosed area and may have formed beneath bank material. Where glimpsed in the base of 25/F3, 25/C1021 was present to a depth of c.0.3-4m where it gave out onto natural pink clay being markedly higher than other areas of Sector 1. In addition a large glacial erratic was present within the area enclosed by 25/F3 associated with a scoop (25/F19) possibly caused by plough movement of the boulder, although it may not have been visible at ground-level during the use of the structure. Structure 5 was provisionally interpreted as a structure concerned with drying or processing grain (Carver 2008, 142, 223).



Plate 37 Period 3 Structure 5 25/F16 showing burnt stones within 25/C1057

3.4.2 Ditches

Enclosure ditch 11/F158/25/F132

During the excavation of the main enclosure ditch within Intervention 1 organic-rich material L2 was sampled and submitted for three radiocarbon determinations returned as AD 140-410, AD 250-531 and AD 350-590 (95%)(GU3265-3267). While no formal environmental assessment exists for this material it has been interpreted by Dr Stephen Carter as intrusive material on the basis of the radiocarbon determinations, a hypothesis strengthened subsequently by radiocarbon dating of wattle stakes from the ditch edges Intervention 11. Subsequently, analysis of pool deposits in nearby Sector 2 identified naturally occurring, in-washed specimens of a peat-forming moss and it seems plausible that the enclosure ditch tapped into a natural deposit of similar old material with which it eventually became clogged during disuse.

Module N3 and N7 segment F158

The layer of organic matter in the Module N ditch sample appears to have accumulated over a period of time judging by the interleaving shoulders of material which slump into the feature which had the attitude of eroding bank material (11/C1489 and 11/C1492). Finally the feature was levelled by a series of cleaner sands and silty sands perhaps redeposited original upcast and eroding bank material (11/C1482=C1261, 11/C1484, 11/C1300, 11/C1424 and 11/C1227). Notably a sherd of ceramic was recovered from C1300 and is tentatively identified as Scottish Red Ware pending specialist identification.

Module P3 and P7 segment F132

Excavation in plan allowed greater definition of the apparently homogenous layer and was excavated as 25/C1407 a black organic layer which during assessment yielded wood and leaf fragments of rough chervil (*Chaerophyllum temulentum*) and elder (*Sambucus nigra*). 25/C1407 lay beneath a black clay assigned 25/C1406 which in turn overlay a wefted mass of leaf fragments allocated 25/C1405. Assessment of this material identified wood, bark and leaf fragments, occasional tree buds and rush stems. Species identified included elder (*Sambucus nigra*), dock (*Rumex* sp.), stinging nettle (*Urtica dioica*), chickweed (*Stellaria media*)

and prickly sow-thistle (*Sonchus aper*). Overlying 25/C1405 was a further wood-rich black organic deposit containing wood, bark and leaf fragments as well as root debris (25/C1404). Among this material fragments of elder (*Sambucus nigra*), cinquefoil (*Potentilla* sp.), chickweed (*Stellaria media*) and buttercup or spearwort (*Ranunculus* sp.) were identified. Deposition of organic-rich material was interrupted by the deposition of a grey silty sand deposit (25/C1403) followed by a further organic-rich deposit 25/C1401 identified during excavation as peat-like and large branches were recovered during excavation. Assessment identified wood fragments and mosses with elder seeds, blackberry or bramble (*Rubus* sp.) and hedge woadwort (*Stachys sylvatica*) and radiocarbon dating of twigs from the deposit returned a date of AD 680-900 (95.4%). Organic-rich deposition finished with 25/C1397, the upper surface of which was littered with stones.

Subsidiary ditches

Adjacent to the remodelled S1, two ditches were identified belonging to Period 3 (11/F18 and 11/F165/24/F416). 11/F18 was first identified as a clear anomaly in the magnetometer survey due to its charcoal-rich fills. The feature was subsequently mapped at Horizon 2 as a possible oven due to the charcoal-rich, black final backfill (11/C1026) adjacent to a hard pink boulder clay dump (11/C1034)(Plate 38). Upon excavation it was established that the original feature consisted of a length of ditch oriented broadly north-south measuring *c.*12.5m north-south x *c.*2.0m east-west. 11/F18 was assigned to Period 3 activity since it cut partially backfilled Period 2 ditch 11/F154/25/F196 and radiocarbon dating of charcoal from a late backfill (11/C1143) returned a date of AD 780-1020 (95%). The feature was quadranted and alternate quadrants excavated to record the fill sequence in section (Figure 36 and 37; Plate 39). The southern end of the feature had been cut by modern field drain 11/F2.

The sequence encountered is best reflected in the longitudinal section. The sequence of deposition within 11/F18 began with the formation of a thin grey sand deposit within the feature as a whole and in places could be observed at the fringes of the feature in plan (11/C1025). The layer clung to the contours of the excavated form and was interpreted as a turfline suggesting a period of consolidation; the turf appears to have successfully consolidated the feature's edges which did not appear to have eroded during this time. Subsequent deposition was characterised by an episode of rapid backfilling from a southerly direction while at the northern end of the feature a single tip of dirty redeposited sand subsoil was laid down. In the longitudinal section these deposits have distinctive profiles (11/C1618, 11/C1025, 11/C1612 and 11/C1034). By far the most conspicuous deposit within this group was 11/C1034 a redeposited pink boulder clay which formed a distinct tip at the southern end and appeared to have eroded into the base of the feature to the north petering out as a thin clean washed pink sand (see Plate 39). Similar deposits



Plate 38 Period 3 11/F18 pre-excavation

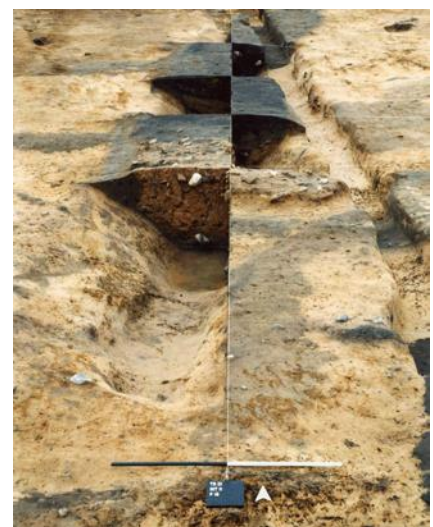


Plate 39 Period 3 11/F18 during quadrant excavation



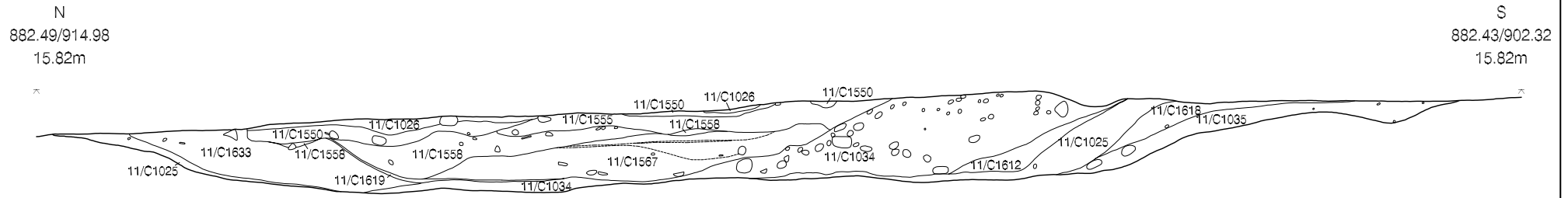
Period 3 ditches 11/F18 and 11/F165/24/F417 showing excavated sections

Scale 1:250



Figure 36





Period 3 11/F18 longitudinal section

Scale 1:50



Figure 37

were trapped in the top of Period 2 ditch features nearby (11/F154/25/F196) and are considered to have been laid down contemporaneously providing important phasing information. This episode of remodelling appears to have been followed by a further period of consolidation represented by turf line 11/C1619 followed by more rapid backfilling with a variety of ash-rich deposits some of which contained evidence for craft-working albeit probably redeposited (11/C1567, 11/C1558, 11/C1555, 11/C1550, 11/C1026).

11/F165 was identified at Horizon 2 as a sinuous ditch oriented broadly NE-SW running from close to 11/F158/25/F132 through Intervention 11 and reappearing within the southernmost limit of Intervention 24 (24/F417) in turn disappearing beyond the eastern limit of the intervention representing a ditch in excess of 40.0m long (see Figure 36; Plate 40). Often considered to belong to Period 4 the feature has been reassigned to Period 3 since no Period 4 material made its way into the feature backfill. Period 4 is the first ceramic phase of the site and the 3-D distribution of medieval pottery overlying Period 4 furrows was notable. The absence of pottery from 11/F165 is therefore noteworthy particularly considering that 100% of the available feature sample was excavated within Intervention 11 in addition to being sampled within Intervention 24. Like Period 3 11/F18 Period 2 craft-working waste was redeposited into the feature, not only where the feature interrupts the principal deposit 11/C1250/25/C1377 but also within Intervention 24. Its juxtaposition with the southern edge of enclosure ditch 11/F158/25/F132 and its direction towards the wet valley suggests more strongly that the feature belongs to Period 3 activity.



Plate 40 Period 3 11/F165 pre-excavation

The sequence encountered within 11/F165 varied along its course; at the northern end the feature was backfilled entirely with an homogenous deposit of dark grey sandy silt containing frequent stones (11/C1237) while closer to the southern terminus the feature displayed signs of more gradual, possibly waterborne silting and edge erosion prior to deliberate backfilling (Figure 38; Plate 41). Along the western edge of the ditch there was a suggestion of a small fence or hurdle position betrayed by an alignment of small postholes and stakeholes (11/F229, 11/F240-2 11/F258-9)(see Figure 36). While not tested the alignment of the features is suggestive.



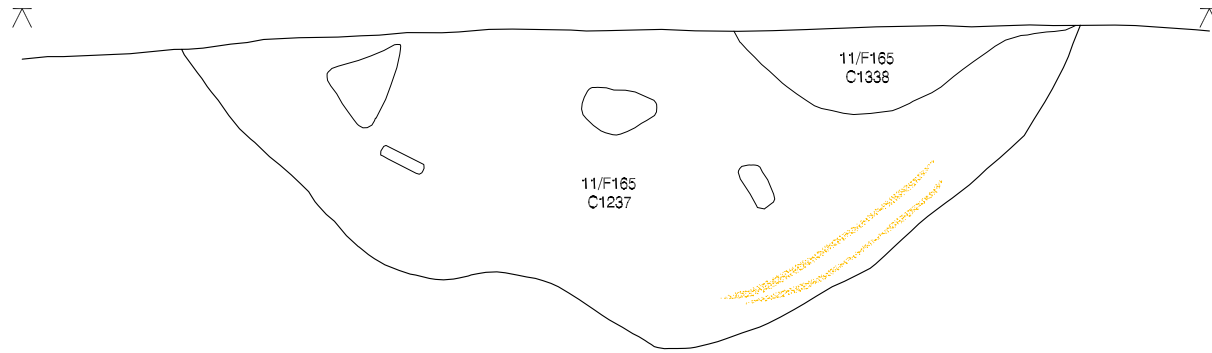
Plate 41 Period 3 11/F165 C1237 during excavation

3.5 PERIOD 4

3.5.1 Clearance and levelling of Period 3

The onset of Period 4 activity is thought to follow a hiatus in activity at the site and represents the first wholesale

W 893.42/915.87 15.56m E 891.97/915.25 15.56m



Key
Sand lenses



Period 3 11/F165/24/F417 east-west section

Scale 1:10

Figure 38

reorganisation of land use in Sector 1 since the first monastic enclosure. The establishment of a system of ridge and furrow cultivation was encountered throughout the sector preceded by evidence for the levelling and final backfilling of features in use during Period 3, notably represented in two major structures, Structure 1 and 8 as well as being apparent in negative features belonging to the monastic vallum. Manual clearance of stone appears to have taken place with several backfilling episodes containing high stone frequencies, while some evidence for the manual clearance of vegetation was also encountered.

Levelling of the Period 2/3 enclosure ditch

Evidence for deliberate manual levelling and backfilling of the Period 2 enclosure ditch, which had become silted and clogged during Period 3, is considered to be a clear marker of the onset of Period 4 activity. Within the Module P sample deposition into the feature, following evidence for the ditch having become overgrown during Period 3, was markedly different and consisted of a grey silt shoulder on the north side (25/C1402) followed by a deposit of laminated sand (25/C1394) again on the north side matched on the south by a pink sand shoulder reminiscent of a dissolved boulder clay covered in turn by a possible turfline. Deposits which finally levelled the feature probably derived from ploughsoil movement and in summary consisted of sterile grey and brown silty sands (25/C1391, 25/C1384, 25/C1382 and 25/C1381, 25/C1380) and finally sinkage of ploughsoil (25/C1383); many of these deposits were those mapped at Horizon 2.

Structure 1

There was evidence for the removal of several posts of the Period 3 form of Structure 1 and consisted of possible cuts into posthole backfills to remove the post. It should also be noted that there were no clear incidences of posts having rotted *in situ* with the concomitant voided and gradually filled post voids (see Table 2).

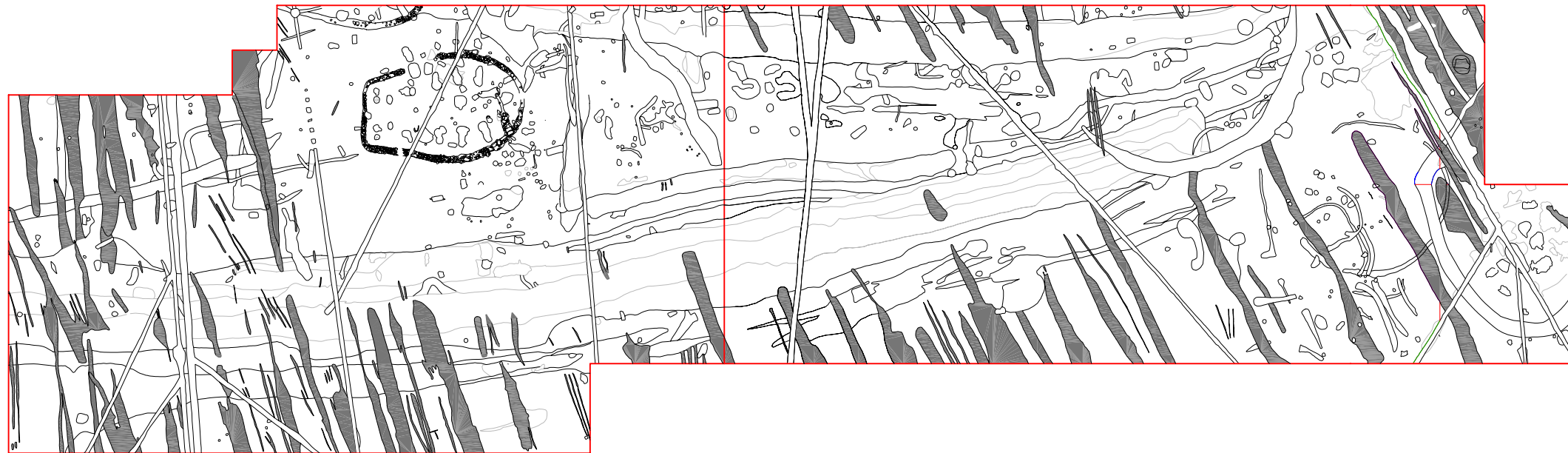
Structure 8

Structure 8 appears to have been finally disused and levelled in Period 4. The feature uppermost fills consisted of sandy silts reminiscent of furrow fills (11/C1040 and 11/C1051) and also contained a notable component of rounded cobbles which may have been manually deposited during site clearance into the remaining hollow of the form of Structure 8. A quantity of redeposited finds were contained in these deposits and included crucible fragments and some iron-working slag.

3.5.2 Ridge and furrow cultivation

Period 4 activity is dominated by a group of linear features oriented broadly NNW-SSE first identified in the 1984 aerial photograph (see Plate 11), also appearing as linear anomalies in the geophysical survey results and in the parchmarks of 1995. In all pre-excavation observations the features appeared to cease at the Period 2 enclosure ditch system, although this now seems to be related to the differential retention of water in buried features since when mapped the features, though discontinuous, do appear to the north of the ditch.

The features are interpreted as the remains of furrows which appeared variously as thin single linear features and more irregular, broader features which appears to be the result of differential preservation (Figure 39; Plate 42). The form and distribution of the features at the western end of Sector 1 is notable and corresponds with an area of deep ploughsoil which resulted in better preservation of features from all periods. Within Intervention



Period 4 map of furrows

Scale 1:500



Figure 39

11, a total of 37 features were assigned as furrows (7/F15, 11/F159, 11/F160, 11/F167, 11/F186, 11/F191, 11/F212, 11/F213, 11/F217, 11/F218, 11/F249, 11/F251, 11/F254, 11/F260, 11/F261, 11/F263, 11/F267, 11/F271, 11/F272, 11/F275, 11/F281, 11/F284, 11/F285, 11/F287, 11/F292, 11/F298, 11/F311 to 11/F313, 11/F323, 11/F325, 11/F338, 11/F340, 11/F351, 11/F354, 11/F364, 11/F370). Within Intervention 25 a total of 31 separate features were assigned as furrows (25/F41, 25/F50, 25/F51, 25/F53, 25/F54, 25/F55, 25/F57, 25/F58, 25/F59, 25/F62, 25/F67, 25/F76, 25/F85, 25/F87, 25/F92, 25/F93, 25/F95, 25/F97, 25/F145, 25/F200, 25/F223, 25/F224, 25/F234, 25/F237, 25/F238, 25/F243, 25/F272 to 25/F275, 25/F277). This total does not reflect the total number of furrows represented and several features probably represent the base of a single furrow. An overall impression of spacing can be read in some areas (see Figure 39), while elsewhere the distinction is less clear.



Plate 42 Intervention 11 in 1995 showing Period 4 furrows (foreground)

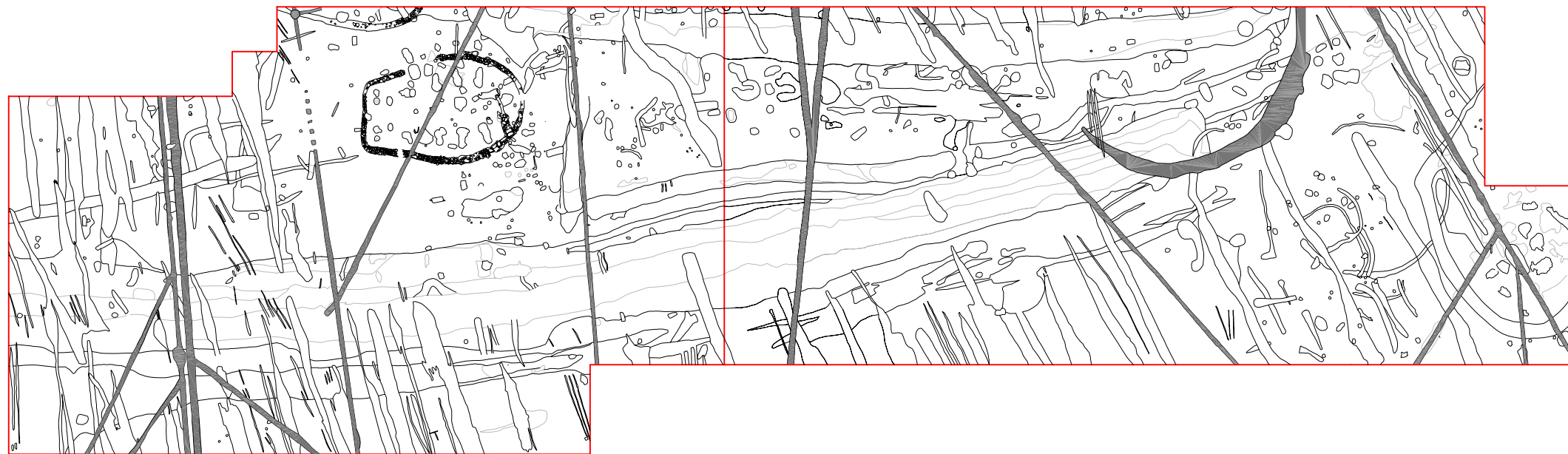
Dateable material from the system of furrows consisted primarily of medieval pottery dominated by Scottish Red Ware dating to the 13th to 15th century. The pottery was recovered from 11/25/C1002, the ploughsoil-archaeology interface, and was likely distributed among manuring material. In addition to the ceramic, three medieval coins were recovered from Sector 1. The coins have been identified by Nick Holmes as a silver penny of King John (1205-7), a silver penny of Edward I (1280-1) and a Scottish round silver halfpenny of John Baliol (1292-6). The 3-D location of this coin allows it be assigned to furrow 25/F41 in the southeastern corner of Sector 1. Overall the material contained within and associated with the furrows suggests a 13th-century date for the onset of the ridge and furrow cultivation. Coins minted before the 13th century are generally scarce, although ceramic traditions of the 11th to 12th century, such as Gritty Wares are not apparently represented in the assemblage, pending formal specialist identification.

3.6 PERIOD 5

Period 5 includes all post-medieval activity and many of the features assigned to the period probably date to the 20th century. The principal activity of this period relates to land management during arable farming of the area, namely drainage and latterly the disposal of sheep carcasses.

The land drainage appears to belong to two discrete systems (Figure 40). The earliest system is characterised mainly by cobble-filled rumble drains oriented north-south and traversing the sector (11/F270, 11/F273 to 11/F276, 25/F192, 25/F191). These are thought to have supplied water to a village well now known as the ‘baptismal’ well situated in the northwest corner of the Glebefield. The second system consists of the northern length of envelope drains visible more extensively on the aerial photographs and encountered within Sector 1 assigned 11/F2, 11/F62, 11/F286, 11/F306, 11/F371, 11/F372, 25/F2, 25/F6, 25/F20 25/F90.

An isolated prominent feature also appears to belong to efforts at drainage during Period 5 and was assigned



Period 5 map of drainage systems

Scale 1:500



Figure 40

25/F125 (see Figure 40; Plate 43). The feature appeared in plan in almost crescentic form and was extensively sampled. At Horizon 2 the feature appeared to cut two furrows 25/F76 and 25/F87 and was filled with a variety of deposits predominantly those reminiscent of old ploughsoil. The position of 25/F125 may reflect the junction of butt-ending buried linear features resulting in an area of greater water retention hampering drainage.



Plate 43 Period 5 25/F125 during excavation

A total of 14 modern sheep burials were encountered scattered across the sector (11/F75, 11/F107, 11/F162, 11/F196, 11/F360 to 11/F362, 11/F365, 11/F366, 11/F374, 25/F155, 11/F156, 11/F159, 11/F109).

4.0 DISCUSSION (Figure 41)

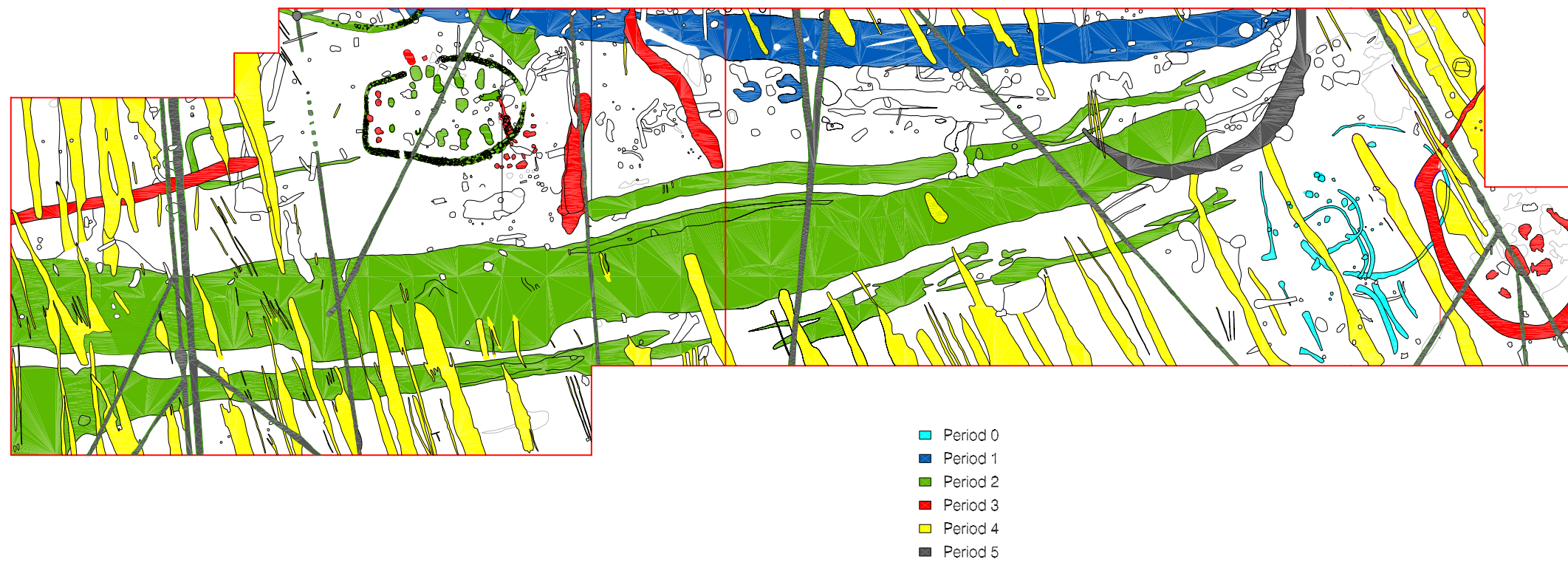
4.1 PERIOD 0 (Prehistoric to 6th century AD)

Activities belonging to Period 0 are the possible roundhouse 25/F31 at the southeast corner of Sector 1 and the ard marks cutting sand subsoil, seen mainly along the northern edge of the sector. Without exception they did not contain any dateable material, nor any material suitable for radiocarbon dating, although the feature fills were generally sterile sand and the remains were ephemeral and shallow. Accordingly, the period is assigned to a broad unspecified prehistoric activity but could conceivably represent the beginnings of monastic settlement.

Research is needed on the Bronze and Iron Age cultures of the area and whether matches can be found to the structures and cultivation in Sector 1. The assessment of lithic material, which includes tools and some debitage, from the sector is considered a priority and may provide evidence for dating of the features.

4.2 PERIOD 1 (6th/7th century)

The enclosure ditch attributed to this period represents the most significant activity within Sector 1 and with the exception of the possible presence of trees and bushes to its immediate south and probably a bank to its north, no other activity of this period was detected. Nor does the complete lack of cultural material recovered from the primary ditch fills suggest occupation nearby. The feature was not apparently defensive but appeared to relate to water management, possibly to interrupt the water running from the steep hill to the south and/or the collection of fresh water, a major preoccupation of the period within Sector 2.



Plan of features and structures by period

Scale 1:500



Figure 41

4.3 PERIOD 2

4.3.1 Ditch systems

The sequence throughout the excavated samples of the Period 2 enclosure ditch was strikingly uniform. The evidence for initial use, where excavation conditions allowed, showed a wide-bottomed feature penetrating just beneath the present day ground water level with some evidence for wattlework consolidation of the ditch edges and superficial silting (11/C1490, C11/C1498, 11/C1488, 25/C1403, 25/C1408). The presence of water during initial construction would have been inevitable and possibly deliberate judging by efforts to consolidate the ditch edges. It seems probable that the target of the ditch was the water draining off the slope to the south. The initial excavation of the feature can be securely assigned to Period 2, although the preoccupation of freshwater collection pervades all phases of activity at the site. An area of convoluted sand was noted in the southwestern corner of Sector 1 and may represent churning by cattle coming to drink, although the presence of an external bank may preclude this interpretation (Plate 44). Similar convoluted sands encountered within the monastic pool area were interpreted by Stephen Carter as caused by saturated sand layers becoming deformed under pressure.



Plate 44 Convoluted sand adjacent to Period 2 enclosure ditch (Module U3)

While almost certainly a water-collecting feature the ditch also performed the role of water interceptor providing a drier enclosed area for settlement. The aerial photograph of 1984 showed the buried ridge and furrow apparently ceasing at the ditch. In retrospect this appears to be the result of the buried enclosure ditch still intercepting water run off from the ridge channelled in buried furrows to the immediate south (see Plate 11). As well as performing drainage and water collection functions the ditch would have been an important and marker of the settlement's limits and territory.

The preservation of the upper levels of the ditch within Intervention 1 is notable and the lower levels of an external and internal bank appear in the recorded section. Notably, the deposits mapped externally to the ditch also appear to become more substantial at the western side of Sector 1 (see Figure 7). This appearance, along with deposits eroding from both north and south encountered in all sections and the make-up and colour of deposits ploughed into the feature in Period 4 contribute to evidence for the presence of banks. The extant earthworks at Iona Abbey show a ditch flanked in places by internal and external banks although notably not uniformly along the length of the vallum.

The form and sequence of the principal enclosure ditch has come into sharper focus with evidence for a more complicated ditch and bank system than previously supposed. The presence of a smaller internal ditch system immediately adjacent to enclosure ditch 11/F158/25/F132 suggests that at this point the form of the vallum was that of a large outer ditch flanked internally by a subsidiary interrupted ditch. Notably the space between these

two features would not be sufficient to contain a sizeable bank, although there is some evidence that there was one, possibly of redeposited boulder clay. Ditch 11/F154/25/F196 was initially interpreted as earlier than the excavation of enclosure ditch 11/F158/25/F132 since it was open to receive boulder clay presumed to have been encountered during the initial excavation of the deepest level of the ditch. Deposition of the boulder clay occurs late in the use of the feature possibly following recutting in Period 3. The pairing of 11/F154/25/F196 with 25/F124/F131 alongside possible structural features positioned at the break of the two ditches suggests that the ditches were excavated to simultaneously drain and enclose a parcel of land within the enclosure ditch. The juxtaposition of this area with S1 is noteworthy although the features which lie within it appear scattered and unremarkable.

4.3.2 Monastic craft

The taphonomy of the deposits and features associated with Period 2 craft-working in Sector 1 meant that only craft-working detritus which made its way into a negative feature or deposit trap survived. The near absence of rubbish pits associated with craft-working within Sector 2 suggests that pit digging was not a part of refuse disposal strategies. If the same is true of activity within Sector 1, the opportunities for deposit traps may have been limited. In addition, the survival of negative features within Sector 1 demonstrated that the upper levels of all features has been truncated by ploughing and that no occupation surfaces or floors survived. As a result it is not possible to say with certainty that craft-working was undertaken within Structure 1 or its environs. Nonetheless, the admixture of finds reflect that recovered from working areas within Sector 2 and the minuscule nature of some the evidence, such as droplets of metal and glass, suggests that the material had not travelled far.

The preponderance of features surrounding 11/F176/25/F179 cannot be interpreted clearly as coherent structures or indeed a 'workshop', but the arc of postholes and possible postholes surrounding the principal finds distribution might be significant (see Figure 20). Craft-working finds recovered from some of the structural features were restricted to disuse deposits which suggests the postholes were constructed before, and posts were removed after, craft-working had taken place. On a broader scale, the focus of these features and the distribution of craft-working debris surrounding 11/F176/25/F179 is within the zone of occupation associated with S1.

The principal evidence for monastic development inside the enclosure is the grandeur and symmetry of the building S1. The artefactual evidence from within S1 is slight (see Section 3.3.3), although where present suggests artisanal rather than purely residential activities. It seems that S1 could be considered a good candidate for a craft-working space given the concentration of craft-working finds surrounding the building.

Research is needed on the fabric and form of all material associated with craft from Sector 1; on the assemblage within the ploughsoil above Structure 1; on comparative architecture to Structure 1, from both archaeological and ethnoarchaeological sources, and on the comparative form of the later prehistoric and early historic periods.

4.4 PERIOD 3

4.4.1 Ditch systems

The layers assigned as L2 within the main enclosure ditch by Harden in 1991 are analogous to the deposition of organic-rich material within the Intervention 11 (11/C1487) and Intervention 25 (25/C1407-1) excavated samples. In all cases the accumulation of this material appears to have been coincident with the erosion of material from both north and south (11/C1487, 11/C1492, *cf.* clay and sand deposits in Figure 14). The accumulation of these deposits portrays an episode of clogging and silting along with accumulating with moss, rushes and fallen leaves and buds with possible sluggish water movement and no obvious attempts at maintenance. This slow process could conceivably be assigned to Period 3 when the settlement was reorganised and the resources for maintaining such a large feature were no longer at hand. Further, more detailed analysis, of the retents including insect remains from 25/F132 is recommended and may provide further insight into the environment surrounding the ditch and the nature of ground cover.

4.4.2 Structures

Structure 1 was refurbished as a two-storey kiln or malting barn. Structure 8 beside it continued as a likely source of fresh water albeit in an altered state. None of the features internal to Structure 5 can clearly be considered structural insofar as no clear post settings were identified among the stone-filled features and as a group they appear to relate more to unspecified high temperature activity.

Research is needed on the animal bone assemblages and carbonised material captured by flotation which may shed light on the nature of activities taking place within all of these structures; further radiocarbon dating is also required.

4.5 PERIOD 4

4.5.1 Clearance and cultivation

Deposit 25/C1401 appears to represent a much more concerted clearance effort with notably large portions of elder shrub or tree cut from nearby ground or conceivably of specimens which had managed to grow in the clogged ditch itself; the presence of root detritus suggests at least some of the specimens had managed to do so. In Intervention 25 stone clearance followed, presumably manually rather than plough-dragged, and in all excavated sections final levelling seems gradual as the remaining form of the ditch and its banks became slowly but eventually erased completely during Period 4 with the levelling of bank material.

Research is needed on the nature and date of this clearing operation. A sample of substantial waterlogged wood from a shrub or tree is recommended for specialist identification and specimen ageing.

5.0 ARCHIVE

The project archive is currently in the care of FAS, and the Department of Archaeology, University of York. All finds are reported to the Treasure Trove Advisory Panel, and all excavated material has been awarded, by the Queen's and Lord Treasurer's Remembrancer, to the National Museums of Scotland.

APPENDIX A INDEX TO INTERVENTIONS

YO10	INDEX OF INTERVENTIONS		
Site: TARBAT DISCOVERY PROGRAMME			
Int. No	Activity	Originator	Date
1	Trial excavation across enclosure ditch	Harden	1991
2	Magnetometer survey	Lahire	1994
3	Resistivity survey	Lahire	1994
4	Contour survey (churchyard)	Copp	1994
5	Church map	Copp	1994
6	Churchyard map	Copp	1994
7	Evaluation trench (Sector 1)	Roe	1994
8	Evaluation trench	Lahire	1994
9	Radar survey	Sympkins	1994
10	Evaluation trench	Lahire	1994
11	Excavation (Sector 2)	Lahire	1995
12	Cropmark mapping	Lahire	1995
13	Crypt clearance	Harden	1992-1995
14	Evaluation (Sector 2)	Lahire/Roe	1996-2003
15	Excavation (Sector 3)	Lahire	1996
16	Service trench (Sector 4)	Lahire	1996
17	Evaluation trench (Sector 4, church)	Roe	1996-1997
18	Test pits of church foundations (Sector 4)	Geddes/Roe	1997
19	Crypt excavation (Sector 4)	Roe	1997
20	Excavation (Sector 4, church nave)	Roe	1997
21	Watching brief churchyard wall (Sector 4)	Robins	1997
22	Service trench (Sector 4)	Roe	1997
23	Building recording (Sector 4, church)	Jones	1997
24	Excavation (Sector 2)	Lahire	1997-2003
25	Excavation (Sector 1)	Hummler	1997-1998
26	Excavation (Sector 2, oil tank)	Lahire	1998
27	Watching brief (Sector 2, statue base)	Lahire	1999
28	Gravestone recording (Sector 4)	Carver	1999-2002
29	Metal detector survey (Sector 1 and 2)	Lahire	1999-2002
30	Watching brief Highfield plot	Lahire	2005

APPENDIX B Assessment of waterlogged samples from the outer enclosure ditch

Mhairi Hastie, Headland Archaeology

1.0 METHOD

Five unprocessed samples were received from recent excavations at Tarbat, Easter Ross undertaken by Field Archaeology Specialists Ltd. The samples were taken from the outer enclosure ditch (F132) and were identified as being organic in character. A 0.5ml sub-sample from each was gently sieved through a 500µm and 200µm sieve then scanned using a binocular microscope to assess organic preservation.

2.0 RESULTS

Context No	Sample No	Composition
1401	726	Wood fragments and mosses with seeds of <i>Sambucus nigra</i> , <i>Rubus</i> sp., and <i>Stachys sylvatica</i> . Insect remains also present.
1404	745	large quantity of wood fragments and root debris with seeds of <i>Sambucus nigra</i> , <i>Potentilla</i> sp., <i>Stellaria media</i> and <i>Ranunculus</i> sp. High concentration of insect remains also present.
1405	132	Wood, bark and leaf fragments, occasional tree buds and rush stems with seeds of <i>Sambucus nigra</i> , <i>Rumex</i> sp., <i>Urtica dioica</i> , <i>Stellaria media</i> and <i>Sonchus asper</i> . High concentration of insect remains also present.
1407	743	Wood and leaf fragments with <i>Sambucus nigra</i> and <i>Chaerophyllum temulentum</i> . High concentration of insect remains also present.
1408	744	Gravel and sand with no organic material surviving

3.0 DISCUSSION

Four out of the five sub-samples (C1401, C1404, C1405, C1406 and C1407) showed good organic preservation with seeds fruits and insects surviving. The plant assemblages were dominated by wood fragments and elder seeds (*Sambucus nigra*). Smaller seeds were also present including cinquefoil (*Potentilla* sp.), buttercup/spearwort (*Ranunculus* sp.), blackberry/bramble (*Rubus* sp.), dock (*Rumex* sp.), hedge woadwort (*Stachys sylvatica*), chickweed (*Stellaria media*) and stinging nettle (*Urtica dioica*). In addition, a large quantity of well-preserved leaf fragments were recovered from C1705.

There is general continuity throughout both the early and later ditch fills with the seeds and fruits being primarily from plants that are specific to shrub and hedgerow habitats. The plant assemblages suggest that the ditch bank was relatively stable and covered by elder shrub or hedge. This may have been a deliberately managed hedgerow specifically cultivated as a screen for the ditch or for field enclosures, however, this cannot be identified purely from the plant assemblages.

One tentatively identified *Chaerophyllum temulentum* (rough chervil) fragment was found in C1407. This plant is also specific to hedgerows and wooded areas but is more commonly found in the south. It is therefore an indicator of the milder micro-climate found in the coastal regions around the site.

Significantly, there is no evidence, from the assessed fraction, for the presence of aquatic plants indicating that the ditch did not contain standing or flowing water. It was however damp enough to result in the anaerobic conditions needed for preservation of the plant remains.

4.0 RECOMMENDATIONS

- 1 Removal of a 100cc sample of weeds seeds from each context for an AMS date
- 2 Further analysis of each sample would provide a more accurate picture of the ditch environment and once dating of the samples has been undertaken it may be possible to identify real trends within the data
- 3 Further assessment of the insect remains from an upper and lower ditch fill with a view to identifying the surrounding landscape and any changes that may have occurred through time. Analysis of the plant remains indicate the immediate ditch environment and further assessment of the insect remains would add information on a wider scale possibly indicating surrounding habitats such as arable, heath or pasture land.
- 4 Identification of the leaf material present in C1405 to complement detailed identifications and production of a catalogue of different plant taxa.



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