Iron Age and Roman salt production and the medieval town of Droitwich

Excavations at the Old Bowling Green and Friar Street

Edited by Simon Woodiwiss

Hereford and Worcester County Council

Contributions by: James Bond BA FSA MIFA, Father Jerome Bertram MA FSA, Susan Colledge BSc, Anne Crone, Brenda Dickinson BA, Christopher Gregson NDD ATC Dip Cons, James Greig, Mark Hassall, Julian Henderson BA MA PhD, Jennifer Hillam BSc FSA MIFA, Hilary Howard, Justin Hughes BA AIFA, Alan Hunt, Derek Hurst, Steven Juggins, Alison Locker BSc, Louise Monk BA, Donald Mackreth, Gerry McDonnell BTech PhD MIFA, Ruth Morgan PhD, Elaine Morris, Michael Nellist Bsc LDS RCS(Eng), Robert Otlet, Allan Peacey, Helen Rees BA, Fiona Roe MA MLitt, Alan Saville BA FSA MIFA, Wilfred Seaby MA FSA, Michael Sekulla, Robin Symonds PhD, Jane Timby BA PhD, Roberta Tomber, David Williams PhD FSA, Roger Williams BSc, Simon Woodiwiss BA AIFA

Illustrations by:
Anne Crone and Carolyn Hunt MAAIS

1992

CBA Research Report 81

Council for British Archaeology

Published 1992 by the Council for British Archaeology
112 Kennington Road, London SE11 6RE

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN 1 872414 24 9

Typeset in house by Julie Gardiner and Lisa Pickering

Printed by Alden Press, Oxford

Contents

Sections in parentheses refer to fiche

Old Bowling Green

Friar Street

Illustrations

Figures

31 Roman pottery vessels in fabrics 12 (continued, 1-8), 13 (9-13) and 14 (14-31). Scale 1:4

32 Roman pottery vessels in fabrics 14 (continued, 1), 15 (2-7), 17 (8), 18 (9-11), 19 (12-20), 20 (21), 21.1 (22), 21.2 (23) and 22 (24-8). Scale 1:4

33 Roman pottery vessels in fabrics 22 (1-19) and 23 (20-5). Scale 1:4

34 Roman pottery vessels in fabrics 27 (1), 28 (2-8), 29 (9- 23), 31 (24-6), 32 (27-9) and 33 (30-1). Scale 1:4

35 Roman pottery vessels in fabrics 33 (continued, 1-5), 34 (6), 36 (7-8), 38 (9), 40 (10-1) and 41 (12). Scale 1:4

36 Non-vessel pottery forms, spindle whorls (1-2), candlesticks (3-4) and a whistle (5). Scale 1:2

37 Briquetage vessels. Scale 1:4

38 Objects in 'briquetage' fabrics, thatch or loomweights (1-2) and shallow vessel (3). Scale 1:2

39 Proportions (by number of sherds) of fabrics present in phases 1-3

40 Proportions (by number of sherds) of fabrics present in phases 4-5

41 Proportions (by number of sherds) of fabrics present in phases 7-9

42 Proportion (by number of sherds) of fabrics present in phases 10-13

43 Decorated Samian (fabric 43). Scale 1:2

44 Ceramic building material. Scale 1:2

45 Tile stamps. Scale 1:1

46 Ceramic objects. Scale 1:2

47 Clay pipe. Scale 1:2

48 Glass. Scale 1:2

49 Worked stone, flintwork (1-2), shale (4) and whetstones and rubbers (5-9). Scale 1:2

50 Worked stone, querns (11-5) and shaped building stone (17). Scale 1:4

51 Inscriptions, on pottery (1-2) and stone (3). Scale 1:2

52 Copper alloy, Roman brooches (1-3), other Roman objects (5-10) and a post-medieval object (12). Scale 1:1

53 Lead. Scale 1:2 (except no 3)

54 Worked bone and antler, Roman bone (1-6), Roman antler (7)

General discussion
120 Medieval Droitwich
121 Post-medieval Droitwich

Fiche

Old Bowling Green

M122	Key	4:A1
M123	Structure 1	4:A2
M124	Structure 2	4:A3
M125	Structure 3	4:A4
M126	Structure 3	4:A5
M127	Structure 3	4:A6
M128	Structure 4	4:A7
M129	Structure 5	4:A8
M130	Structure 6	4:A9
M131	Structure 7	4:A10
M132	Structure 8	4:A11
M133	Structure 9	4:A12
M134	Structure 10	4:A13
M135	Structure 11	4:A14
M136	Structure 12	4:B1
M137	Structure 13	4:B2
M138	Structure 15	4:B3
M139	Structure 16	4:B4
M140	Structure 17	4:B5
M141	Structure 18	4:B6
M142	Structure 19	4:B7
M143	Structure 20	4:B8
M144	Structure 21	4:B9
M145	Structure 22	4:B10
M146	Structure 22	4:B11
M147	Structure 23	4:B12
M148	Structure 24	4:B13
M149	Structure 25	4:B14
M150	Structure 26	4:C1
M151	Structure 27	4:C2
M152	Structure 27	4:C3
M153	Structure 28	4:C4-6

M154	Structure 29	4:C7
M155	Structure 30	4:C8-10
M156	Structure 31	4:C11-12
M157	Structure 32	4:C13
M158	Structure 33	4:C14
M159	Structure 34	4:D1
M160	Structure 35	4:D2
M161	Structure 36	4:D3
M162	Structure 37	4:D4
M163	Structure 38	4:D5
M164	Structure 39	4:D6
M165	Structure 41	4:D7
M166	Structure 42	4:D8
M167	Structure 43	4:D9
M168	Structure 44	4:D10
M169	Structure 45	4:D11
M170	Structure 46	4:D12
M171	Structure 47	4:D13
M172	Structure 48	4:D14
M173	Structure 49	4:E1
M174	Structure 50	4:E2
M175	Structure 51	4:E3
M176	Structure 52	4:E4
M177	Structure 53	4:E5
M178	Structure 54	4:E6
M179	Structure 55	4:E7
M180	Structure 56	4:E8
M181	Structure 57	4:E9
M182	Structure 58	4:E10
M183	Structure 59	4:E11
M184	Structure 60	4:E12
M185	Dendrochronology	4:E13

Friar Street

M186	Structure 1	5:A1
M187	Structure 2	5:A2
M188	Structure 3	5:A3
M189	Structure 4	5:A4
M190	Structure 5	5:A5

M191	Structure 6	5:A6
M192	Structure 8	5:A7
M193	Structure 12	5:A8
M194	Structure 13	5:A9
M195	Structure 14	5:A10
M196	Structure 15	5:A11
M197	Structure 16	5:A12
M198	Structure 17	5:A13-14
M199	Structure 18	5:B1-2
M200	Structure 19	5:B3
M201	Structure 20	5:B4
M202	Structure 21	5:B5
M203	Structure 22	5:B6
M204	Structure 24	5:B7
M205	Structure 25	5:B8
M206	Structure 27	5:B9
M207	Structure 29	5:B11-12
M208	Structure 30	5:B13
M209	Structure 31	5:B14
M210	Structure 32	5:C1
M211	Structure 33	5:C2
M212	Structure 34	5:C3
M213	Structure 34	5:C4
M214	Structure 35	5:C5
M215	Structure 36	5:C7-8
M216	Structure 37	5:C9
M217	Structure 39	5:C10
M218	Structure 42	5:C11-12
M219	Structures 41 and 43	5:C13-14
M220	Structure 44	5:D1-2
M221	Structure 46	5:D3
M222	Structure 47	5:D4
M223	Structure 48	5:D5
M224	Structure 49	5:D6
M225	Structure 50	5:D7
M226	Structure 51	5:D8
M227	Structure 52	5:D9-10
M228	Structure 53	5:D11
M229	Structure 58	5:D12

M230	**Structure 59**	**5:D13**
M231	**Structure 60**	**5:D14**
M232	**Structure 173**	**5:E1**
M233	**Dating of Roman timbers**	**5:E2**
M234	**Dating of timbers**	**5:E3**

Plates

Old Bowling Green

1 Wood debris in the fill of a brine tank (S6, P4)
2 Body deposited in partly filled brine tank (S7, P5)
3 Barrels (S16 and S19, P8)
4 Post on padstone showing decay of centre (S22, P9)
5 Early 16th century Venetian millefiori goblet or bowl
6 Radiograph of lower left third molar region
7 Radiograph of right tibia showing arrested growth lines (1 and 2)
8 Radiograph of upper right third molar region
9 Selected examples of the recovered plant remains
10 Selected examples of the recovered plant remains
11 Fragment of post-medieval 'barrow', or conical wicker basket for drying salt crystals

Friar Street

12 Brine tank (S2, P1)
13 Wood debris in the fill of a brine tank (S2, P2)
14 Cellar (part of S43, P7)

Tables

Fiche

	analysis	3:B4
M28	Radiocarbon dates	3:B5
M29	Thin sectioned sherds	3:B10
M30	Clay pipe	3:B13
M31	Ironwork	3:C1
M32	Lead	3:C2
M33	Animal bone	3:C3-D14
M34	Shell	3:E1

Stratigraphic analysis Simon Woodiwiss

Aims of analysis

The stratigraphic analysis provided a chronological outline of the site's development using stratigraphic and dating information to establish the chronological framework. In addition, the physical archaeological deposits and their spatial relationships with each other provided the structural interpretation. The stratigraphic analysis acknowledges a two-way flow of information. Information from external sources (other excavations, ethnography, typological association, etc) may be used to provide information on the excavation (eg to date deposits using externally dated pottery). Conversely, excavation derived information may add to an existing independent body of information (eg by qualifying the period of use of a particular pottery fabric). There is obviously a danger of circular argument, but by identifying the direction of information flow this may be avoided. The distinction drawn between excavation derived and externally derived information enables the latter to be easily extracted from specialist reports and synthesised to form an integrated discussion of the site's development, rather than existing solely as a series of independent specialist reports.

The stratigraphic analysis had to be flexible enough to allow for consistency of procedure to exist even when a less intensive analysis was deemed necessary in certain instances. This was necessary due to the constraints of limited resources which dictated the identification of priorities, and was exemplified in the placing of the later deposits within a restricted set of phases. Thus, for instance, contexts in phases 10 to 14 at the Old Bowling Green were allocated primarily on date rather than structural development.

Methods of analysis

Introduction

When the author took over the direction of the post-excavation analysis in 1985, a substantial amount of work on the stratigraphical analysis had been carried out. The previous director of the Old Bowling Green (John Sawle) had grave doubts over the results, however, and felt that due to widespread contamination and later truncation little could be achieved save for the identification of major structures. Reexamination of the field record indicated that more could be extracted than first thought. The field record had not been fully checked and

often relationships were not cross-referenced. The strategy for the identification of contexts was not consistently applied through the whole term of both excavations. This occurred especially early on, where 'cuts' and 'cut fills' were often recorded as a single context, as was then the practice. Later on, cuts and fills were recorded separately. The matrix for the Old Bowling Green was constructed for each of the excavation areas which, though they were physically connected and had contexts in common, were isolated on the stratigraphic matrix diagram. These points obviously made accurate construction of the stratigraphic matrix and comparisons between areas unnecessarily difficult.

The resulting stratigraphic analysis carried out by John Sawle and Heather James identified only the more important and obvious structures. Though these were considered to be largely correct identifications it was felt that the field record, when properly checked and represented stratigraphically, would justify a much more thorough analysis. With the author being unfamiliar with the excavation, the opportunity was taken to revise the stratigraphic analysis. The stratigraphic analysis of Friar Street was less well advanced.

The stratigraphic analysis consists of three main sections: preparation, recording of structures and recording of phases. A fourth section was anticipated (the recording of periods), but it was later decided that this further generalisation did not add substantially to the analysis. The stratigraphic analysis does not operate in a hierarchical way of associating contexts. Structures and or phases are not necessarily directly and exclusively related. For instance, structures may span more than one phase.

Preparation

Preparation included checking the field record for consistency, construction of the stratigraphic matrix and compilation of the Context Catalogue.

As mentioned above the field record was not consistently compiled: for instance, occasionally one context was recorded when two separate contexts existed. In order to make the two recording approaches compatible, new contexts were allocated to separate cuts from fills where necessary.

The following fields of the record cards were checked for cross-referencing and against other parts of the field record (drawn and photographic): plan, section, photographs, relationships. Special care was taken over the last field, and relationships were not changed or added without good cause. Relationships not recorded but indicated on plans were not generally added to the field record. The plans appear to be essentially 'feature' plans, and the representation of 'layers' was not felt to be consistent enough to allow the identification of relationships purely from the drawn record. Similarly, the main sections were treated with

caution as these appear to have been drawn at a later stage in the excavation and the identification of contexts did not always appear to be reliable. Photographic references were added at this stage, when the photographic catalogue was compiled. Alterations to the field record cards were made in red ink. Alterations to drawings were made in pencil, initialled and dated.

Terminii post quem were supplied by a number of classes of finds and evidence (pottery, tile, clay pipe, coins, radiocarbon and dendrochronology). Evidence of contamination, either provided by the field record or the finds, was noted. Contexts thus identified and those uncertainly phased were not used in the quantification of finds.

The stratigraphic matrix was constructed by considering each context in numerical order, using the 'fill of', 'earlier than', 'same as', and 'equivalent to' relationships only. Annotation indicating context type, *terminus post quem* and the identification of structures was added during later stages in the analysis.

As the field record had not been compiled with such a detailed analysis in mind, and lacked consistency, a context catalogue was compiled to impose consistency on the description and to monitor progress during analysis. The order of the fields for the catalogue followed the successive stages of the analysis.

Recording of structures

The identification of structures forms the major part of the stratigraphic analysis. A structure is defined as a group of contexts which are related in terms of their stratigraphic position, absolute date, spatial association, constructional detail, dimension, and form. Contexts must be related in more than one of these characteristics, of which stratigraphic position must be one. Exceptionally, a single characteristic has been used (stratigraphic position) where contexts have little to relate them further but were considered to be important to the analysis (eg HWCM 600, S195). Single contexts formed structures where there were no other such related contexts (eg HWCM 600, S82). All contexts were allocated to structures except where this would not materially add to the analysis and may have led to confusion. This only applied to insecurely stratified and arbitrary contexts.

The term structure was used as these groups of contexts were not wholly associated objectively. Neither was the field record consistent enough to enable analysis to be approached along the same lines as more recent excavations. The term 'group' for example is used by the Department of Urban Archaeology, Museum of London, to describe an equivalent but more objectively formed association of contexts (Museum of London 1986). The term structure does not necessarily imply building activity.

Many of the major structures at the Old Bowling Green were identified and discussed by John Sawle and Heather James. This work was used as the basis of the more comprehensive analysis, though some reconsideration and reinterpretation occurred.

The contexts compiling a structure were identified as belonging to 'construction', 'use' or 'disuse' elements. This identification was more certain in some cases than others. For instance, a linear cut may be firmly identified as part of a structure's construction. However, the latest fill of such a feature may be considered to be more closely related to the construction of a dump over the cut than its disuse. Conventionally in such uncertain cases, contexts were related to the earliest structure's disuse. Use is particularly difficult to identify, and contexts were not usually identified with the use of a structure unless they fell within the following categories. Deposits of fuel residues *in situ* were the most obvious indications of use. Conventionally, the earliest fills of linear cuts, with a fine particle size component, were identified as possibly indicating use (ie the primary silting of ditches). Structures composed of contexts indicating later alterations, but retaining the identifying characteristics of the structure, were termed 'reconstruction', 'reuse' and 'redisuse' as appropriate. A number suffix was used where multiple alterations were evident (eg S3). An additional category of 'unknown' was used where no identification could reasonably be made, this usually applied to layers.

Structures and their components were identified solely from the field record and absolute dating provided by specialist work. The structure record sheet details the components, reasons for their association, a brief description, discussion of dating and interpretation.

A drawn record of selected structures was also prepared. This consisted of a plan of construction and/or constructional detail (showing components such as clay lining, stakes and walls). Sections (or profiles) were also included, showing all construction, use, disuse, etc elements where present. Insets show the structure outline and the outline of contexts described as physically cutting the structure. Only those structures deemed to have some interesting or meaningful form were selected for illustration (largely those with complex construction detail, alignments and the major linear cuts).

Phase identification

In order to discuss the stratigraphic analysis and the resulting structures in a form suitable for publication, phases were identified. This also allowed the presentation of finds analysis to show development through time. A phase may be defined as a generally contemporaneous group of contexts, a series of phases

representing major stages in the site's development. The identification of phases is based on stratigraphy, spatial relationships and dating.

It was evident that contamination had occurred. This was identified either from the field record or from the assemblages themselves. The pottery was most affected in this way, and assemblages with very few later sherds were provisionally identified as possibly being contaminated. The assemblage was then either used in the dating of the phase or ignored, depending on the overall pattern of the phase. A phase is essentially an expedient way of representing the site's development, and in no way suggests that the site developed uniformly over its area, or in sudden stages. The more realistic continual development shown by the structures is much less easy to represent and discuss. Furthermore, as many structures span more than one phase, phases and structures cannot be directly related. For instance, the construction of a structure may occur in one phase, its use and disuse in another.

This method of identifying phases allowed for some variation in the degree of association, where necessary. For the Old Bowling Green the later phases (P11 to P14) were identified on the basis of broad date ranges. For the later phases the deposits were less substantial and were generally stratigraphically unrelated. The construction of the bowling green (P14) appeared to have truncated much of the earlier stratigraphy, and it was felt that the information gained from a detailed analysis, if indeed possible, would not justify the time spent on it. Other excavations in Droitwich (especially Friar Street) had much better developed stratigraphy covering this period, which would be of greater use to the analysis of finds.

This element of subjectivity made the stratigraphic analysis less perfect than might be desired, but was appropriate to the standard of the field record and allowed for expedient analysis and publication.

One major assumption was made in the phasing of contexts. The disuse fills of structures were assumed to be deposited soon after use ceased, in other words, cuts were not left open for long before infilling, unassociated with use, occurred.

Phases were recorded on sheets which solely detailed the constituent contexts. Phase descriptions were not made on a specific recording sheet, as this information was easily accessible elsewhere in the record using the contexts identified. Description and discussion of structures and parts of structures for each phase was prepared in freetext for direct inclusion in the published report. Insecurely phased contexts were described in a separate section which also included discussion on likely phases.

As area J had only just commenced before the excavation was completed and had only a few late structures, it has not been included in the published phase

discussion.

Drawings were prepared for each phase. These were based on representation of the construction elements present in each phase only, due to the difficulty in representing use and disuse. In this sense the drawings are partial representations of the phase, and they must be used in conjunction with the written descriptions in text and fiche for a full account.

Period identification

Broad period divisions were also identified and relate to common terminology in use by archaeologists. Though these are identified in the context catalogue it was felt that they would not substantially aid the presentation of the analysis. They were however retained as part of the record for future use by researchers who may require this facility.

Old Bowling Green phase description

Simon Woodiwiss

This section presents a summary of the results of the stratigraphic analysis. In the following discussion each certainly phased structure or part of a structure is described. Uncertainly phased structures are described and discussed at the end of this section. Some are important to the consideration of the site, whilst others are dealt with in a summary manner as these are of importance mainly to the stratigraphic analysis rather than to the general discussion of its results.

Within the structure descriptions, the presence of briquetage and charcoal as minor components was noted for layers only, as it was thought more likely that they represent residual components in the disuse elements of cuts. The terms clay, silt and sand indicate presence and not respective dominance of each particle size component. The term 'fills' is used to denote disuse elements in the structure description, unless otherwise stated. As only broad date ranges have been derived from the finds, and these are indicated in the dates given with the phase headings, dating is not generally discussed for the certainly phased structures. Only dates derived from dendrochronology, radiocarbon and coins are mentioned in the description. Dimensions are conventionally given in the order of length, width and depth, unless otherwise specified.

Phase 0

Structure 70

This single layer (3007) was composed of Mercian Mudstone and formed the natural, undisturbed base of the excavation. Not all of the archaeological deposits were excavated and this layer was observed in isolated areas and in the sides of deeper cuts.

Phase 1 Possible late Bronze Age to Iron Age

Structures: 61, 180, 212 and 215

The components of this phase were characterised by layers of dark soil (59, 67, 2461, 429 and 497) often with pebbles (296, 301 and 2192) overlying Mercian

Mudstone. A radiocarbon date of cal BC 1045-838 was obtained from context 2192 (Table M17, 1:E10). Briquetage (56 and 67) and charcoal (492) were recorded as minor components.

Phase 2 Earlier Iron Age

Structures: 2, 14, 44, 71, 72, 73, 79, 80, 81, 82, 83, 84, 87, 89, 131, 132, 181, 182, 183 and 213

Structure 2 (Fig M124, 4:A3)
Structure 2 was excavated and recorded during the final day of site work. It was very similar to structure 1 (uncertainly phased) in construction, being a rectangular pit with steeply sloping sides and a wattle lining (2459 and 2700, 3.70 x 1.20 x >0.40m). No clay lining was recorded. Its disuse elements (2460 and 2701) were primarily composed of clay.

Structure 14
The record of this structure was also very poor. It appears to have consisted of a circular pit (2195) lined with clay (2196), which was perhaps partially burnt.

Structure 44 (Fig M168, 4:D10)
Structure 44 consisted of a group of circular and subcircular possible postholes (487, 421, 422, 423, 404, 181, 424 and 425), varying in size from 0.15 x 0.14 x 0.08m (422) to 0.43 x 0.27 x 0.07m (423). All had flat bases. Only two fills were recorded (405 and 420) and both were of sandy loam.

Structures 71 and 72
These two structures consisted of layers (S71 413, 419, 191, 415, 182 and 189. S72 163 and 170) of sandy clays and sand. Most had briquetage and charcoal as minor components.

Structure 73
Structure 73 consisted of two pits, of which one (185) possibly cut the other (179). The disuse elements were composed of sandy clay (180 and 186).

Structures 79 and 80
These two structures were composed of pits (S79 438 and 436), possible postholes (S79 463. S80 451, 455 and 462) and linear cuts (S79 443. S80 431). Their fills

were composed of clay (S79 464. S80 452, 454, 456 and 428). Few of the features were stratigraphically related and it was uncertain how many were likely to be contemporary.

Structures 81 and 82
Layers (S81 414, 412 and 433. S82 440) of clay and sandy clay with briquetage and charcoal as minor components.

Structures 83 and 84
Possible postholes (S83 449. S84 406, 410 and 430), a pit (S84 198) and a linear cut (S83 447) made up these two structures. Their fills were of clay (S83 448. S84 199, 401 and 402) and sandy clay (S83 450. S84 403, 407 and 409).

Structures 87 and 89
These layers consisted of sandy clay (S87 177 and 178. S89 492) with briquetage and charcoal as minor components. One layer was almost entirely composed of briquetage (S89 491).

Structure 131
A group of three layers of silty clay (1603) and clay (1758 and 1756/1741). Briquetage and charcoal formed a minor component of context 1603.

Structure 132
A poorly recorded structure consisting of a possible pit (1782) and its fill of briquetage (1783).

Structure 181
Structure 181 was a group of ten layers, four of which (2455, 2456, 2184 and 2189) were mainly composed of briquetage. Other major components were of silt (2457), sand (2458 and 2158) and sandy clay (2191, 2193 and 2175), of which all except context 2458 had briquetage as a minor component.

Structure 182
This structure consisted of a possible stakehole (2187) and a pit (2181), of which the fill was of charcoal (2182), forming a possible use element for this structure. The disuse element (2188) was composed of clay.

Structure 183
This structure consisted of a single layer (1941), mainly composed of briquetage.

Structure 213

Structure 213 consisted of two pits (472 and 478) and one possible posthole (488) with fills of sandy clay (473 and 479). Context 485 was poorly recorded.

Phase 3 Later Iron Age

Structures: 3, 4, 5, 6, 7, 8, 9, 10, 23, 24 and 25

Structure 3 (Figs M125, 4:A4)

Structure 3 had two periods of reconstruction (the last one occurring in phase 4). Many of the original construction elements had been removed by later reconstruction with only the base of the elongated pit (95) remaining. A line of stakeholes ran along the southern side of the pit. Disuse elements were of sand (162) and clay (157). The first reconstruction element consisted of the northern and eastern sides of a pit of which the southern and western sides were subsequently removed (172). Neither the clay lining nor stake revetment, present in other similar structures, had survived. The single disuse element consisted of sandy clay (173). This structure was on a similar alignment to structures 4, 5 and 6.

Structure 4 (Fig M128, 4:A7)

Much of the western side of this structure was removed by later activity. A pit (132) was lined with clay (140, 156, 171, 174 and 160) and revetted with 41 stakes. Above the highest surviving level of the stakes, impressions existed in the clay lining. This structure was on a similar alignment to structures 3, 5 and 6. A radiocarbon date of cal BC 358-91 was recovered from the clay lining (156, Table M17, 1:E10).

Structure 5 (Fig M129, 4:A8)

Again much of this structure was destroyed by later activity. It consisted of an elongated pit (495) with traces of stakes. However, no clay lining was described in the field record. This structure was on a similar alignment to structures 3, 4 and 6. Its disuse elements were of sandy clay (494 and 496). A radiocarbon date of cal BC 101-72 from the disuse fills (494, Table M17, 1:E10) was probably close to the actual date of disuse.

Structure 6 (Fig M130, 4:A9)

A subrectangular construction pit (1684, 4.62 x 2.10 x 1.40m) contained a clay

lining (1772, *c* 0.20m thick) and a revetment of 58 stakes (1745). Most of these stakes were placed with their greatest width parallel to the sides of the pit. Some however, were placed at right angles to it. SRBX, SRZX, SREV and SRCC were evenly spaced along the south side and SRKS (directly opposite SRCC) along the north side. This structure was on a similar alignment to structures 3, 4 and 5. A silt (1775) from behind the stake revetment may have accumulated during use of the structure. A dendrochronological *terminus post quem* of AD 19 was obtained for the stake revetment (1745, Table M16, 1:E8).

Structure 7 (Fig M131, 4:A10)
The components of this structure consisted of an elongated pit (1685/2163, 5.50 x 2.74 x 1.00m) with a clay lining (1774/2199, *c* 0.10-0.30m thick) and ten stakes set at irregular intervals (1773). This structure was on a similar alignment to structure 8. A radiocarbon date of cal BC 151-66 cal AD (Table M17, E10) and a dendrochronological *terminus post quem* of AD 25 (Table M16, 1:E8) were established for the stake lining (1773).

Structure 8 (Fig M123, 4:A11)
The construction pit for this structure (1690/2414, 6.95 x 3.44 x 1.29m) was the largest of all of the clay- and stake-lined pits. It too had a clay lining (1770, *c* 0.25m thick) and a stake revetment (1693). Above the highest surviving level of the stakes, impressions existed in the clay lining. Four pieces of wood (SR573A, SR574, SR575A and SR575B) were also laid along the bottom edge of part of the stake revetment and were themselves held in place by stakes. This structure was on a similar alignment to structure 7. A dendrochronological *terminus post quem* of AD 25 was obtained for the stake revetment (1693, Table M16, 1:E8).

Structure 9 (Fig M133, 4:A12)
This structure was incompletely excavated due to its proximity to the limit of the excavated area. The construction pit (1991) had a clay lining (2703, 0.05-0.35m thick) and a stake revetment. Forty-nine stakes (2702) were recovered. Considerable slumping had occurred on the south side, leaving the stakes overhanging by as much as 0.20m. Above the highest surviving level of the stakes, impressions existed in the clay lining. This structure was on a similar alignment to structure 10. A dendrochronological *terminus post quem* of AD 17 was obtained for the stake lining (Table M16, 1:E8).

Structure 10 (Fig M134, 4:A13)
The location of the limit of excavation prevented the complete excavation of this

structure. The construction pit (1970-2049) appeared to be subrectangular in plan, though structure 29 had removed much of the upper edges. The clay lining (2704) varied from 0.10 to 0.55m in thickness, however the field record suggests that the greater thickness was caused by partial collapse of the lining along the north side. No stakes were noted. This structure was on a similar alignment to structure 9. The disuse elements were composed of clay (1971, 1973 and 2050).

Structure 23 (Fig M147, 4:B12)
The construction elements of this structure consisted of a subcircular pit and linear cut (2178/2707) to the west. At the western end a later pit had obscured its full extent. The cuts had steep, fairly uniform sides. A pebble surface (2705) existed on the eastern edge of the structure. This structure was on a similar alignment to structure 24, though it was deeper (maximum depth 0.54m).

Structure 24 (Fig M148, 4:B13)
The construction elements had a rather more irregular shape than structure 23 and were shallower (0.25m depth). However, it was again composed of a pit and linear cut (2099/2098). It also had a similar alignment to structure 23. The eastern side had been removed by structure 203. This structure was on a similar alignment to structure 23.

Structure 25 (Fig M149, 4:B14)
The construction elements of a pit and linear cut were also present here, but the latter had a southward alignment (2156/2157). A linear cut (1869) removed the southward extent of the structure. The disuse element (2155) consisted of sand and contained much charcoal.

Phase 4 Mid 1st to early 2nd century AD

Structures: 3, 4, 6, 7, 8, 10, 23, 24, 30, 62, 63, 93, 134, 135, 136, 137, 142, 143 and 144

Structure 3 (Figs M126, 4:A5)
The final period of reconstruction consisted of an elongated pit (106, 4.74 x 3.26 x 0.85m) with a clay (117 and 133) and stake (96) lining. The clay was 0.10 to 0.20m thick and, above the highest surviving level of the stakes, impressions existed in the clay. Disuse elements consisted of clays and sands (130, 129, 127, 128, 116 and 115).

Structure 4 (Fig M128, 4:A7)
Structure 4 remained in use during this phase as indicated by the late date of the earliest disuse element (149).

Structure 6 (Fig M130, 4:A9)
The primary disuse elements were composed of silts and clays (1707, 1706 and 1692). An assemblage (31 pieces) of wood (3116) was deposited in the pit. This consisted of worked branches, all aligned in the same direction.

Structure 7 (Fig M131, 4:A10)
The primary disuse elements consisted of clay (1768), probably representing collapse of the lining. Context 2164 was unrecorded. An assemblage (59 pieces) of wood, aligned in the same direction (3117), had a dendrochronological *terminus post quem* of 75 BC (Table M16, 1:E8).

Structure 8 (Fig M132, 4:A11)
The primary disuse elements consisted of silts and sands (1752, 1717/2438 and 1718/2436) and charcoal (1716/2437). An assemblage (96 pieces) of wood (3118) was aligned in a north to south and east to west direction. This wood had a dendrochronological *terminus post quem* of 15 BC (Table 16, 1:E8).

Structure 10 (Fig M134, 4:A13)
The disuse elements consisted of clay (1971, 1973 and 2050).

Structure 23 (Fig 147, 4:B12)
The disuse elements consisted of clay (2190) and sandy clay (2179).

Structure 24 (Fig M148, 4:B13)
The primary disuse elements consisted of briquetage (2088) and clay (2086), but the latter included much briquetage and charcoal.

Structure 30 (Fig M155, 4:C8-10)
This structure consisted of a linear cut (66/209/286-165/468-2081) running north-west to south-east with a gradient down to the north-west of 1 in 20. The dimensions ranged from 1.00 to 2.00m in width and from 1.00 to 1.50m in depth. A fill, possibly relating to use, was composed of sandy clay (255). Reconstruction occurred four times along the same alignment (212 then 214, then 211, and finally 48A, 48B, 279 and 210). Related to these cuts were constructional fills (254 of reconstruction 1, 249 of reconstruction 2 and possibly 291 of reconstruction 3)

composed of wattle and clay. There were many fills relating to the use and disuse of each reconstruction (222, 256, 260, 251/292, 252 and 253 of reuse 1. 220/250, 221/258, and 259 of redisuse 1. 248, 247, 245A, 244A, 243A and 242A of reuse 2. 245, 244, 243, 242/290, 241, 240, 239 and 246 of reuse 3. 238 and 280 of redisuse 4). A number of these contained redeposited wattle and clay from the linings of the successive cuts (243 and 246 of reuse 3). A number of fills could not be related to any of the other elements (168, 169, 471, 486, 167, 469, 477, 476, 470, 482 and 2183), one of which (476) had a radiocarbon date of cal BC 388-168 (Table M17, 1:E10).

Structure 62
A late disuse element (323) was composed of silt.

Structure 63
This structure consisted of 33 layers, a number of which had briquetage as the major component (223, 201 and 276). The others were mainly composed of silt (295, 215/216, 327 and 326), silty clay (294, 285, 218, 204 and 273), clay (293, 288, 287, 237, 236, 283/225/282/328, 269, 278, 203, 202, 71, 72, 73, 74, 205/302, 289 and 54), sand (284 and 55), sandy clay (206/207 and 277) and loam (75). Charcoal and briquetage were often recorded as minor components. One layer (45) was poorly recorded.

Structure 93
These nine layers were composed of sand (749, 750, 761, 726 and 765), silt (763), and clay (762, 764 and 766). Briquetage and charcoal were often mentioned as minor components.

Structure 134
These two layers were composed of silt (1755 and 1767).

Structure 135
A pit (1764), a posthole (1762), two possible stakeholes (1769 and 1759), a linear cut (1734) and their fills made up this structure. The linear cut was much affected by later activity. Of the fills recorded, 1763 and 1735 were of clay and 1761 was of silt. The fills of cuts 1769 and 1759 were voids. Posthole 1762 contained the remnants of a post.

Structure 136
These two layers were composed of briquetage (1608) and silt (1728).

Structure 137

The stakeholes of this structure (1721, 1754, 1757, 1765 and 3102) had similar dimensions (0.04 to 0.14m in diameter and 0.10 to 0.33m in depth). All were roughly circular. The remains of wood adhering to the sides of a number of stakeholes (1765 and 3102) were recorded. The only fill (1722, the rest being voids) was composed of sandy silt.

Structure 142

These two cuts (1736 and 1750) were incompletely excavated. Context 1736 post-dated 1750. Their fills were of silt (1744 and 1737), clay (1740) and sandy silt (1751).

Structure 143

The two layers that composed this structure (1726 and 1729) and a further four possible components (1676, 1613, 1743 and 1700) were mainly composed of silt except for context 1676, which was of sandy silt. Briquetage and charcoal both formed minor components.

Structure 144

The disuse elements of this structure were composed of loam (1589) and silty clay (1683).

Phase 5 Early 2nd to mid 3rd century AD

Structures: 1, 4, 6, 7, 8, 9, 30, 50, 51, 97, 106, 138, 146, 147, 175, 177 and 209

Structure 1 (Fig M123, 4:A2)

Although the construction elements of structure 1 were uncertainly phased, those of disuse were placed within this phase due to the consistency of the pottery assemblage. The earliest of these contexts (28C) was composed of clay and wattle, which probably represented the collapse of the clay- and wattle-lined sides of this structure. The later fills were of sand (28A and 28B), and brushwood was also recorded as a component of 28B (3012 was poorly recorded).

Structure 4 (Fig M128, 4:A7)

Structure 4 remained in use into this phase, as indicated by the later date of the earliest disuse element (149).

Structure 6 (Fig M130, 4:A9)
Structure 6 continued in disuse during this phase with the deposition of context 1705: silt, with briquetage as a minor component.

Structure 7 (Fig M131, 4:A10)
The final disuse element (1686) was composed of silty clay, and contained a complete articulated human skeleton which had not been carefully buried.

Structures 8, 9 and 30
Continued in disuse.

Structure 50 (Fig M174, 4:E2)
The construction elements consisted of two pits (1260 and 1262), probably subrectangular in plan. These were much disturbed by later activity, leaving only one complete side of context 1262 measurable (0.80m). The pits were 0.97 (1260) and 0.18m (1962) deep. Each contained a post (3059 and 3061 respectively). The construction pit fills were composed of silt (1261) and silty clay (1263).

Structure 51 (Fig M175, 4:E3)
The construction elements consisted of four subcircular pits, three of which were roughly the same size (1183, 0.80 x 0.74 x 0.11m, 1196, *c* 0.88 x >0.55 x 0.13m, 1199, *c* 0.80 x >0.36 x 0.10m and 1197, 0.32 x 0.24 x 0.11m). The three larger pits formed a roughly straight line running east to west. The disuse elements were composed of clay (1184 and 1198), loam (1204) and silty clay (1200).

Structure 97
This structure consisted of a single layer (711) of silty loam with charcoal as a minor component.

Structure 106
The phase 5 components of this structure appeared to include contexts 1257, 1266, 1250, 1244, 1240, 1221/1237/1238, 1217 and 1216. However, the contexts with pottery dated to the early 2nd to mid 3rd century (1257, 1266, 1250 and 1240) were identified on the basis of one or two diagnostic sherds in each case. The layers were composed of silty clay (1257 and 1217), sand (1266), clay (1216, 1221/1237/1238, 1240 and 1250) and silt (1244). Briquetage and charcoal were noted as minor components of contexts (1257, 1266, 1216, 1240 and 1250). Briquetage was noted as a minor component of contexts 1217 and 1221/1238/1237.

Structure 138
One layer was composed of sand, with briquetage and charcoal as a minor component (1508).

Structure 146
The construction elements consisted of a subrectangular posthole (1680), post (1776), postpipe (1537) and fill of silty sand (1677). The disuse element (1538) was composed of silt.

Structure 147
Three of these layers were composed of silt (1636, 1539 and 1561), and one (1539) contained charcoal as a minor component.

Structure 175
This structure consisted of a single layer of silt (1625) with charcoal as a minor component.

Structure 177
The earliest construction element was a subcircular pit (1623) with fills of silt (1624), sandy silt (1712) and silty clay (1715). Later construction elements were two subcircular stakeholes (1713 and 1714/1766). Voids filled these features.

Structure 209
Again this consisted of an earlier subcircular pit (1784) with two later subcircular stakeholes (1630 and 1632). Only the stakehole fills were recorded, and these were of silt (1631 and 1633).

Phase 7 Earlier mid 3rd to late 4th century AD

Structures: 4, 6, 9, 26, 30, 112 and 210

Structure 4, 6 and 9
Continued in disuse.

Structure 26 (Fig M150, 4:C1)
Consisting entirely of construction elements, this structure had a trench (1014) defining a roughly trapezoidal area with reconstructed sides of 6.96 x 8.04 x 9.40 x 8.88m and an average width of c 0.95m. The depth was variable (0.66 to 0.91m)

but the trench had a generally flat base, the difference in depth being caused by a step of *c* 0.20m on the southern side. The trench was filled with sandstone rubble in a loam matrix (1126, 1125, 1188, 1015 and 1016). The size of the stone generally diminished towards the top. Only one piece of ston[illegible]ith worked faces was recovered. Two coins (2:D1) dated AD 260-8 (1016) and 364-75 (1015) were also retrieved from the construction fills.

Structure 30
Continued in disuse.

Structure 112
These layers were composed of sandy silty loam (617), clay (619) and sand (723). Context 699 was poorly recorded. Charcoal was recorded as a minor component of contexts 723 and 617.

Structure 210
These layers were composed of loam (1179-1094, 1175 and 1129). Briquetage and charcoal were recorded as minor components. Sandstone fragments were recorded as a minor component of 1094, which lay to the south of structure 26.

Phase 8 Mid 3rd to late 4th century AD

Structures: 4, 6, 9, 15, 16, 17, 18, 19, 20, 21, 28, 30, 31 and 55

Structure 4, 6 and 9
Continued in disuse.

Structure 15 (Fig M138, 4:B3)
The construction elements consisted of a pit (1038, >2.24 x 1.33 x >0.70m), thirteen barrel hoops (1228) and possibly a fill of clay (1118). A radiocarbon date of cal BC 18-135 cal AD was obtained for the hoops (Table M17, 1:E10). The long axis of the pit ran at right-angles to structure 31. Disuse elements were composed of clay (1039, 1041 and 1120).

Structure 16 (Fig M139, 4:B4)
A pit (1063, 1.80 x 1.20 x 0.70m), a barrel cut longitudinally (1102) and a clay fill (1254) composed the construction elements. The barrel (length 1.80m) included hoops, staves and end boards. This and structures 17 and 19 were on the same

alignment. A radiocarbon date of 139-343 cal AD was obtained for the barrel (Table M17, 1:E10). The disuse elements were composed of clay (1070 and 1064) and silty clay (1060).

Structures 17 and 18 (Figs M140, 4:B5 and M141, 4:B6)
These subrectangular pits (1141 and 1219) were of similar dimensions (2.25 x 1.40 x 0.70m and 1.80 x 0.94 x 0.24 respectively) to the pits containing barrels in this phase (S16 and S19). Structure 17 was aligned with them and structure 18 lay parallel and just to the north-west. The disuse elements of structure 17 were composed of clay (1144), clay loam (1142) and loam (1138). Context 1143 was poorly recorded. The fill of structure 18 was composed of clay loam (1220).

Structure 19 (Fig M142, 4:B7)
A pit (1152, *c* 1.80 x 1.30 x *c* 0.60m), a barrel cut longitudinally (3060) and probably a clay fill (1164) comprised the construction elements. The barrel (length 1.75m) included hoops, staves and boards. This and structures 16 and 17 were on the same alignment. A radiocarbon date of cal BC 36-129 cal AD was obtained for the barrel (Table M17, 1:E10). The disuse elements were composed of loam (1153) and clay (1156).

Structure 20 (Fig M143, 4:B8)
A poorly defined pit (1180) contained eleven barrel hoops (1229), of which eight were *in situ*. A radiocarbon date of 139-343 cal AD was obtained for the hoops (Table M17, 1:E10). The disuse elements were composed of silty clay (1182) and loam (1181).

Structure 21 (Fig M144, 4:B9)
Again the pit (1582) was poorly defined: indeed the excavator suggested that this may have been part of structure 31. It contained three barrel staves *in situ* (1727, length 1.90m). The staves gave a radiocarbon date of cal BC 2-214 cal AD (Table M17, 1:E10). The fill that lay directly on top of the barrel (1688) was of sandy silt with yellow/green flecks and may have been deposited as part of the final use of the structure. The secondary fill was of silt (1583).

Structure 28 (Fig M153, 4:C4-6)
The disuse of structure 28 occurred during phase 8, with the filling of the linear cut running alongside the road. The fills were of sandy silt (709) and clay (1055).

Structure 30
Continued in disuse.

Structure 31 (Fig M156, 4:C11-12)
This linear cut (578/1097/1575) was straight, with nearly vertical sides and a flat base (25.80 x 1.00 x 0.80m). The base generally sloped from the ends down towards the middle. Structure 28 ran parallel to structure 31, and structures 20 and 21, barrels were probably *in situ* within the cut. The disuse elements were composed of sandy clay (575, 577, 583 and 585), clay (1057, 1190, 1130/1098, 1103 and 1112), silty clay (1575/1234) and silt (1742). A radiocarbon date of cal BC 187-51 cal AD was obtained from context 611 (Table M17, 4:E10), a disuse element, the composition of which was not recorded.

Structure 55 (Fig M179, 4:E7)
Six postholes and possible postholes (1738, 1695, 1703, 1701, possibly 1730 and 1697) formed a single line. The postholes varied in size between 0.48 x 0.44 x 0.40m and 0.70 x 0.56 x 0.32m. In addition a stakehole (1711) with a pointed base was included as part of this structure. The construction pit fills were of silt (1696, 1704 and 1702), and of these context 1702 contained packing stones and 1704 a padstone. The postpipes (1584 and 1611) were all subrectangular, varying in size from 0.24 x 0.18 x 0.20m to 0.16 x 0.14 x 0.40m. The disuse elements were composed of silt (1739, 1612, 1731, 3101 and 1698) and loam (1585). This structure ran parallel to structure 31 and just to the north of it for approximately 4.50m of its length.

Phase 9 Later mid 3rd to late 4th century AD

Structures: 4, 6, 9, 11, 22, 27, 30, 49, 58, 59, 102, 105, 117, 118, 119, 126, 128, 149, 151, 152, 154, 160, 161, 162 and 172

Structure 4, 6 and 9
Continued in disuse.

Structure 11 (Fig M135, 4:A14)
The full extent of this pit (637) with its clay lining (649, 650 and 648) was obscured by the limit of excavation. Its initial disuse element (639) was composed of clay and contained a lens of charcoal.

Structure 22 (Fig M145, 4:B10)

The stones of structure 22 were revealed during the excavation of structure 31, with which they were at first assumed to be contemporary. It later became evident that the stones lay *in situ* within their own postholes, cutting through the fill of structure 31, but not before much of the fills of both structures had been removed as one. The stones formed two parallel alignments (1275, 1268, 1579, 1681, 1580, 1581 and 1517 to the north, and 2462, 2464 and 2463 to the south). Not only were these alignments parallel but the three stones to the south were directly opposite those to the north (2462 to 1579, 2464 to 1681 and 2463 to 1581). The westward extent of the southern line was obscured by the limit of the excavation. A possible posthole, but with no stone, was located in the southern alignment opposite to a stone (1580) in the northern alignment. No stone or pit was located opposite to context 1517, on the southern side. The stones were all large and of similar dimensions (eg 0.50 x 0.25 x 0.30m, 2464). Most had holes cut into one or more faces. Only one of the postholes containing the stones was largely undisturbed (2392). It was subrectangular in plan and had dimensions of 1.20 x 0.90 x 0.94m. This posthole also contained the poorly preserved remains of a post (2465, *c* 0.30m diameter), *in situ* on top of the stone (2464). The post gave a radiocarbon date of cal BC 383-124 (Table M17, 1:E10). Two postpipes were also recorded (2403 and 2430) and of these 2430 had a diameter of *c* 0.35m. One posthole (1672) had two stones recorded (1681 on top of 1719), and in another (2428) a second stone is mentioned but not recorded. The constructional fills were composed of silty clay (2393), silt (2433 and 2401) and loam (1155). The composition of contexts 1781, 1778, 1780, 1779 and 1777 was not recorded. Only a number of disuse elements were tentatively assigned to this phase. These were composed of silt (1673, 2404 and 2431) and ash (2429). The placing of these contexts in phase 8 was purely on the grounds of their *terminii post quem* so disuse of the structure may have been at the later date indicated by other disuse elements (see phase 11).

Structure 27 (Figs M151, 4:C2 and M152, 4:C3)

Reconstructed twice, this structure was a linear cut enclosing an area largely off the south-western limit of the excavation. The earliest cut (607) had a gradient down to the north and an even base. The sides and the base were lined with intermittent rows of stakes (704, 703, 702, 701, 700, 676, 675, 646, 645, 644, 624 and 601) and a stake hole (600). A small pit (613) was also located in the base of the cut. The first reconstruction (606) was mostly removed by the second, and dimensions and gradients could not be estimated. It also had steep sides and an even base. The final reconstruction (630) had a maximum width of 2.00m and

depth of *c* 1.00m. With steep sides and a flat base there was a 1 in 33 gradient down to the north. Stakes (599, 598, 597, 596, 594, 593, 588, 647 and 572) and stakeholes (595, 602, 592, 603, 591 and 590) lined the base. The disuse elements of the earliest cut were composed of sandy clay (589/614 and 574/629; 612 was unrecorded). Being the earliest fill, 574/629 may have been a primary silt related to the use of the structure. The disuse element of the first reconstruction was of sand, silt, clay and loam (559/630/564/560).

Possible construction components consisted of two linear cuts (651 and 580) and two postholes (525 and 532). Context 651 ran north to south parallel to the larger linear cut and *c* 2.00m to the west. It had gently sloping sides and a flat base. Linear cut 580 continued the east to west alignment of the northern section of the larger linear cut and had gently sloping but irregular sides. Its fills were of silty clay (581) and sandy clay loam (579). The postholes (525 and 532) also had construction fills of silty clay (533 and 534) and postpipes (608 and 609). Only one of the disuse elements (519, sandy clay loam) was securely placed within this phase.

Structure 30
Continued in disuse.

Structure 49 (Fig M173, 4:E1)
These five possible postholes (678, 660, 642, 640 and 635) and eight possible stakeholes (663, 659, 658, 657, 656, 655, 654 and 653) formed a tight cluster, to which three possible postholes (625, 712 and 715) and thirteen post or stakeholes shown on a field plan but not otherwise recorded, may be added. Though alignments could not easily be identified, there existed two possible rows running east to west and roughly parallel to each other. Disuse elements were of sandy clay (679, 641, 643, 664, 665, 666, 667, 668, 669, 670 and 674) and loam (626, 671, 713 and 716).

Structure 58 (Fig M182, 4:E10)
These linear cuts (2345/2447 and 2354) were not directly related stratigraphically though they may represent construction and reconstruction elements. The remains of another linear cut (2412) may also form part of this structure. Aligned east to west, the cuts had steep sides and a flat base. Much affected by later disturbance, the full extent of this structure was obscured by the limit of excavation. Disuse elements were composed of silt (2346, 2448, 2349, 2355 and 2413).

Structure 59 (Fig M183, 4:E11)
This structure consisted of an alignment of four large postholes (2339, 2335, 2343 and 2415), the largest measuring 1.00 x >0.90 x 0.28m. The upper sides of contexts 2335 and 2339 were gently sloping with steep lower sides probably indicating erosion of the upper sides. A constructional fill (2384) of sandy silt and a postpipe (2352, 0.16 x 0.12 x 0.37m) were recorded for posthole 2415. A subcircular depression in the base of context 2343 was also recorded. Disuse elements were composed of silt (2336, 2340, 2353 and 2344).

Structure 102
These three layers were composed of clay (556), sandy silt (571) and sandy clay loam (563). Briquetage was noted as a minor component of context 571. Two coins dated AD 293-6 (563) and AD 320 (556) were also recorded (2:D1).

Structure 105
This probable pit (555) had fills of sandy clay (553 and 554).

Structure 117
A shallow, steep sided linear cut (623) with a fill of sandy clay (662).

Structure 118
A single layer (618) of sandy clay.

Structure 119
A single subrectangular pit (615) and fills composed of sandy silt (616 and 621).

Structure 126
Two pits (1052 and 1160) and a linear cut (1136) partially comprised this structure. The disuse elements were of loam (1053 and 1137).

Structure 128
Four layers of sandy silt loam (632), loam (1124) and silty clay (1195). The composition of context 680 was not recorded. Briquetage and charcoal were recorded as minor components (1124 and 1195).

Structure 149
The construction elements consisted of a pit (2317), a posthole (2286), its fill of sand (2288) and a possible posthole (2313). The fills were composed of silt (2314 and 2318).

Structure 151
These layers were composed of briquetage (2326) and silt (2379 and 2319).

Structure 152
Sandstone and limestone rubble formed the major component of three of the layers of this structure (2394, 2390 and 2391). Another two were composed of silt but had mortar as a minor component (2388 and 2387). The earliest layer was composed of sandy silt (2327).

Structure 154
These two layers were composed of silt (2420 and 2423) and had charcoal recorded as a minor component.

Structure 160
This structure consisted of a posthole (2252) with two postpipes (2256 and 2258), two possible postholes (2275 and 2277) and a possible postpipe (2279). The disuse elements were composed of silt (2257, 2259, 2253, 2276, 2278 and 2280).

Structure 161
Structure 161 consisted of six pits (2324, 2331, 2320, 2441, 2322 and 2421) and a posthole (2337) which contained a post (3115). Contexts 2320 and 2337 were reconstruction elements of contexts 2331 and 2441 respectively. The disuse elements were of silt (2325, 2338/2348, 2442, 2422 and 2323), sandy silt (2332) and clay (2446).

Structure 162
A posthole (2305) with two postpipes (2307 and 2309) and a constructional fill of sandy silt (2315). Disuse elements were composed of silt (2310 and 2308) and clay (2306).

Structure 172
A single linear cut (2418), its full extent obscured to the north and south by structures 177 and 161. The feature was shallow (*c* 0.10m depth) with a disuse element composed of charcoal (2419).

Phase 10 5th to 11th century

Structures: 4, 6, 9, 11, 22, 27, 30, 110 and 126

Structures 4, 6, 9 and 11
Continued in disuse.

Structure 22
Possibly continued in use or disuse.

Structure 27
Possibly continued in use or disuse.

Structure 30
Continued in disuse.

Structure 110
A single layer (1205-1264) composed of clay with charcoal as a minor component.

Structure 126
Continued in disuse.

Phase 11 12th to 14th century

Structures: 4, 6, 9, 11, 13, 22, 27, 29, 30, 38, 76, 101, 115, 126, 139, 140, 141, 149, 157, 158, 159, 174, 185, 186, 190 and 194

Structure 4 (Fig M128, 4:A7)
The final disuse element was composed of sandy clay (131).

Structure 6
Continued in disuse.

Structure 9 (Fig M133, 4:A12)
The final disuse element was composed of silty clay (1943).

Structure 11 (Fig M135, 4:A14)
The final disuse element was composed of silty clay (638).

Structure 13 (Fig M137, 4:B2)
This single pit (1592) had a possible clay lining (1594) and disuse element composed of loam (1593).

Structure 22 (Figs M145, 4:B10 and M146, 4:B11)
Three elements of disuse can be placed in phase 11 (1522, 1723 and 2249) and these were composed of silt. A postpipe (2248) was also placed in this phase.

Structure 27 (Figs M151, 4:C2 and M152, 4:C3)
The final disuse elements were composed of sandy clay (620/523/584/552/531/684), silty clay (652) and sandy clay loam (526). The latter contained a coin dated to AD 270-3 (2:D1).

Structure 29 (Fig M154, 4:C7)
The final disuse elements were composed of sandy clay (1948 and 1926), loam (1920), clay (1919, 1870/1918, 1972 and 1986), and ash (2048 and 1953). Context 1942 was poorly recorded.

Structure 30 (Fig M155, 4:C8-10)
Several of the final disuse elements of structure 30 were certainly phased, one was composed of sandy loam (2082), the other (66A/66B/3016) was poorly recorded.

Structure 38 (Fig M163, 4:D5)
This structure's constructional elements consisted of a nearly circular pit (2019) with vertical sides and a flat base (*c* 1.20m diameter) with two shallow pits or depressions (1915). The fills of the latter included a possible construction element of loam (1912) and possible use element of burnt clay and charcoal (1916). The fills of context 2019 were composed of clay (2021) and stones (2020).

Structure 76
Four pits (151, 146, 142 and 137) and a linear cut (136) were located in the north-east corner of the excavation. Context 136 was later than 142. The disuse elements were all of sandy clay (190, 143, 138, 144, 161, 164, 148 and 145).

Structure 101
The disuse elements were composed of sandy silt (537 and 565).

Structure 115
A single layer, the composition of which was not recorded (1003).

Structure 126
Disuse continued with the deposition of context 1161, composed of silty clay.

Structure 139
The disuse component of this structure was composed of silty clay (1678).

Structure 140
These four layers were composed of silt (1614 and 1619), sandy silt (1662) and clay (1610). Briquetage and charcoal were recorded as minor components of contexts 1614 and 1662, and charcoal only of 1610.

Structure 141
Of these four pits (1554, 1601, 1598 and 1596) and one possible posthole (1590), 1598 was later than 1596. Their disuse elements were composed of silt (1597, 1600, 1609/1627, 1607, 1602 and 1555), sandy silt (1674), clay loam (1622), briquetage (1606) and clay (1591).

Structure 149
The only disuse element that can be securely placed within this phase was composed of silt (1559/2285/2312).

Structure 157
These layers were composed of silt (2227 and 2316) or were poorly recorded (2212).

Structure 158
This single layer was composed of sandy silt (2281).

Structure 159
A posthole (2282) with packing stones and a possible posthole (2254) made up this structure, together with disuse elements of silt (2255 and 2283).

Structure 174
These two layers were composed of silt (1562 and 1574).

Structure 185
A number of disuse elements can be placed within this phase. These were composed of silty clay (2116, 2027-1995 and 2067), sandy clay (2186) and loam (2065).

Structure 186
The make up for the surfaces (2135 and 2133) was composed of stone and pebbles (2051 and 2018).

Structure 190
A group of three layers composed of burnt clay (1914 and 1954) and loam (2058). Like the former, the latter context showed signs of burning in the recording of charcoal and briquetage as a minor component.

Structure 194
A construction element (2052), a pit and two disuse elements can be placed within this phase. The disuse elements were composed of silty clay (2080): context 2053 was poorly recorded.

Phase 12 15th to 18th century

Structures: 6, 32, 34, 52, 56, 67, 77, 92, 123, 125, 127, 155, 156, 167, 168, 169, 176, 191, 192, 193, 195, 196, 197, 198, 199 and 200

Structure 6 (Fig M130, 4:A9)
The final disuse element (1687) was composed of silt and sandstone rubble.

Structure 32 (Fig M157, 4:C13)
The final disuse elements were composed of clay (521 and 3005) and sandy silt (522).

Structure 34 (Fig M159, 4:D1)
This very large (>11.20 x *c* 7.50 x *c* 2.00m) pit or linear cut (30/118) was not completely defined due to the northern limit of the excavation. It had sloping sides and a flat base in which the excavator noted a number of brine springs. The initial fills were of silt, with coarser components above (68, 69, 103 and 3008).

Structure 52 (Fig M176, 4:E4)
These two linear cuts ran north to south, though one (1017) was much longer than the other (1044, 2.20m length). The longer cut generally sloped downward to the north but did not have an even gradient. The disuse components were composed of loam (1018 and 1045) and pebbles (1026).

Structure 56 (Fig M180, 4:E8)
A single linear cut (1503) of indeterminate length extended beyond the southern limit of the excavation. This structure ran north to south and *c* 3.00m to the east of structure 52. The disuse elements were composed of sandy silt (1519) and silt (1502, 1505, 1504 and 1513). Two residual coins dating to AD 260-73 and AD 347-8 were recovered (1505 and 1513, 2:D1).

Structure 67
One of the disuse elements (3009) can be certainly placed within this phase.

Structure 77
These four layers were composed of clay (113), sand (101), pebbles (141) and sandy clay (134).

Structure 92
Part of this structure included a linear cut (103-105) of indeterminate length running east to west. The cut contained a drain of brick (3034 and 3032) and a constructional fill composed of sandy clay (126 and 153). The disuse element was also composed of sandy clay (107). The disuse element of a pit was composed of sandy clay (475/481).

Structure 123
This structure consisted of three pits (1099, 1104 and 1108). One possible component (1088) and a further pit (1106) were uncertainly phased but included as part of this structure. Variation in size indicated differing functions and though they cut each other they should not be considered as reconstruction elements. Their fills were composed of clay (1107) and loam (1105, 1100, 1101, 1104 and 1089).

Structure 125
The two layers that were securely phased were composed of silt (1013) and loam (1025).

Structure 127
These two layers were composed of silt (1056) and loam (1085), the latter with charcoal as a minor component.

Structure 155
Three of the disuse elements of this structure were securely phased and were composed of silty clay (1507) and sandy silt (1510 and 1509).

Structure 156
These layers were all composed of silt (1524). Additionally briquetage and charcoal were noted as minor components (1533, 1515, 1546 and 1501). A residual coin of AD 64-8 was recovered from context 1515 (2:D1).

Structure 167
This structure consisted of two pits (2223 and 2207), a possible posthole (2229) and a linear cut (2225). The latter ran north to south, parallel to structures 52 and 56. It also had a gradient down to the north. The disuse elements were composed of silty clay (2230), silt (2224 and 2226) and sandy silt (2209).

Structure 168
These layers were composed of pebbles (2205-2206) and silt (2301).

Structures 169 and 176
The disuse elements of the latest parts of these structures were composed of silt (2243, 1564 and 1550).

Structure 191
These three stratigraphically equivalent layers were poorly recorded (1917-1905-1904).

Structure 192
Three possible postholes (2094, 2141 and 2137) post-dated the disuse of a linear cut composed of charcoal (1938). The disuse elements of the later cut were composed of silt (2095) and sandy clay (2142). The composition of context 2138 was poorly recorded. The possible postholes were similar in both size and form.

Structure 193
This surface (2134) and its make-up (2022) were composed of pebbles. Much of the central part was removed by structure 203.

Structure 195
Several of the disuse elements of this pit and linear cut group were securely phased. These were composed of silty clay (1053), loam (1923) and silt (1928).

Structure 196
A linear cut (1895/2068) extending to the north of the excavated area had a butt end to the south and was fairly substantial (*c* 1.00m depth). Its disuse elements were composed of silty clay (1897), loam (1896) and clay (2069).

Structure 197
This single layer (1864) was composed of silty clay with charcoal.

Structure 198
Two possible postholes were of dissimilar size and shape (1846, 0.18 x 0.12 x 0.45m and 1860, 1.06 x 0.52 x 0.23m). Their disuse elements were composed of silty clay (1847) and silt (1861).

Structure 199
A single layer of silt (1843), with charcoal as a minor component.

Structure 200
These three possible postholes (1871, 1862 and 1858) and a linear cut (1844) are not all contemporary. The eastern edge of the latter lay outside the excavated area and was *c* 0.60m deep. Context 1858 was similar in size (0.18 x 0.18 x 0.30m) and shape to context 1846 of structure 198. The disuse elements were composed of silt (1872), clay (1865) and silty clay (1863 and 1859).

Phase 13 19th to early 20th century

Structures: 33, 35, 41, 42, 43, 48, 53, 68, 103, 116, 129, 166, 167, 170, 200, 201, 202, 203, 205, 206 and 211

Structure 33 (Fig M158, 4:C14)
The largest observable part of this linear cut (102 and 1007) ran north-east to south-west, with its southern part altering to a north-south alignment. It had a 1 in 50 gradient down to the north-east. Other construction elements were a lining of brick (1009 and 3031), fills of clay (1010) and sandy clay (123). Another linear cut (104) ran east to west with a 1 in 42 gradient down to the east joining context

102. It too had a brick lining (3033). A third linear cut (513/1020) joined context 1007 with a gradient down to the east. This too had a brick lining (512 and 1022) and constructional fills of silty clay (509) and sandy silt (1024). A fill of silty clay and sand (514) was recorded for the brick lining and may have related to the use of the structure. Disuse elements were of clay (1008), sand (502), silty clay (503) and silt (1021). A residual coin dated to AD 1799 was recovered from context 502 (2:D2).

Structure 35 (Fig M160, 4:D2)
Two of the disuse elements of this structure were composed of sandy clay loam (628) and clay (1058).

Structure 41 (Fig M165, 4:D7)
This structure consisted of a rectangular pit (9) with an adjacent area of brick and stone (12). The fill (3001) was composed of brick and mortar rubble.

Structure 42 (Fig M166, 4:D8)
This pit (20/312) contained a brick lining (6-7/311) with constructional fills of silt (314, 313 and 315), sandy loam (316) and silty clay (317 and 3119).

Structure 43 (Fig M167, 4:D9)
This pit (5) contained a rectangular brick lining (3113) with a linear cut and brick lining extending to the north-west.

Structure 48 (Fig M172, 4:D14)
The disuse elements of this structure were composed of charcoal and ash (507), sand with some charcoal (515) and sandy clay, with rubble as a minor component (517).

Structure 53 (Fig 177, 4:E5)
The initial fill (1084) was composed of clay and contained two large planks of wood. This may represent a deposit of cess and could be related to the structure's use. A secondary fill (1083) was composed of silt.

Structure 68
Three layers could be certainly phased and these were composed of loam (10 and 3). The composition of context 4 was poorly recorded.

Structure 103
The three disuse elements were composed of sandy silty loam (504, 505 and 506).

Structure 116
A posthole (1042) and pit (1011) partly comprised this structure. Their disuse elements were composed of silty clay (1043), loam (1012) and clay (1035).

Structure 129
One of the disuse elements was composed of clay (1037) and the other (1034) was poorly recorded.

Structure 166
These layers were composed of sandy silt (2210 and 2203-2204) and silt (2211).

Structure 167
A final disuse element (2208) composed of sandy silt was deposited during this phase.

Structure 170
A number of construction elements could be certainly phased, a possible fill of silty clay (2234) and a possible postpipe (2235). In addition, three disuse elements were composed of silt (2228 and 2236) and silty clay (2232).

Structure 200
The final disuse element was composed of silt (1845).

Structure 201
These three layers were composed of silt (1813), silty clay (1838) and clay (1831). Charcoal was recorded as a minor component of context 1813.

Structure 202
Five of the construction elements were certainly phased. These consisted of two pits (1836 and 1856/1885) with their fills of silt (1839 and 1857/1886) and ash (1837).

Structure 203
This structure consisted of two linear cuts (1816 and 1824), two pits (1818 and 1834), and two possible postholes (1820 and 1829). A third linear cut (1826) was possibly a reconstruction of context 1824. Of the linear cuts, 1824 was the most

substantial (10.80 x 1.18 x 0.33m) running north to south. The disuse elements were composed of silt (1827 and 1830), silty clay (1817, 1821, 1825 and 1828), clay (1819 and 1835), sand (1354) and sandy silt (1855).

Structure 205
These two layers were composed of clay (1801) and silt (1810).

Structure 206
One pit (1806) was placed in this phase, with a fill of sandy clay (1807).

Structure 211
This single layer (1019) was composed of loam with some charcoal.

Phase 14 Later 20th century

Structures: 69, 165 and 206

Structure 69
These ten layers were the first to be excavated and were composed of ash (1), sandy clay (457 and 527), silty clay loam (501), and silt (1000 and 2200). The other layers were poorly recorded (100, 1001 and 1800).

Structure 165
This linear cut (2201) ran east to west across the southern part of the excavation. It was very shallow (*c* 0.04m) and its fill was of pebbles and sand (2202).

Structure 206
Two of the three linear cuts contained drain pipes (1802 and 1814). The other linear cut (1804) was poorly recorded. A pit (1811) also formed part of this structure. The disuse elements were composed of ash (1805 and 1812). Contexts 1802 and 1815 were poorly recorded.

Uncertainly phased structures

Structures: 1, 4, 9, 12, 28, 29, 30, 32, 35, 36, 37, 39, 45, 46, 47, 48, 49, 53, 54, 55, 57, 60, 62, 64, 65, 66, 67, 68, 74, 75, 76, 85, 86, 88, 90, 91, 92, 94, 95, 96, 98, 99, 100, 101, 103, 104, 106, 107, 108, 109, 111, 113, 114, 116, 120, 121, 122, 123, 124, 125,

126, 129, 130, 133, 138, 139, 141, 144, 145, 147, 148, 149, 150, 151, 153, 155, 157, 158, 161, 163, 164, 169, 170, 171, 173, 176, 178, 179, 184, 185, 187. 188, 192, 194, 195, 202, 204, 210 and 214

Structure 1 Phases 2 to 4 (Fig M123, 4:A2)
The construction elements consisted of a rectangular pit with steep sides and a curved base (28/40/320, 2.00 x 1.55 x 0.75m). It contained a clay and wattle lining (2813) which did not survive to the top of the cut. The wattle produced a radiocarbon date of cal BC 101-72 (Table M17, 1:E10).

Stratigraphically the structure post-dated contexts with an Iron Age *terminus post quem* but can be placed in either of phases 2 or 3. Though, constructed in a very similar way to structure 2, it did not have the same relationship with the clay and stake lined pits characteristic of phase 3. The fills also indicated a longer period of use, in phase 5.

Structure 4 Phases 7 to 10 (Fig M128, 4:A7)
The earliest disuse elements (135 and 149) were composed of sandy clay. They may have been deposited between phases 7 and 10 though in view of the phasing of similar structures (eg S5, S6, S7, S8 and S10), a later date is unlikely.

Structure 9 Phases 4 to 10 (Fig M133, 4:A12)
Disuse elements, with the exception of the final one, were composed of sandy clay with much charcoal (2194), clay (2153 and 1998) and silty clay (1992).

Stratigraphy and the presence of later pottery in two of these fills (1992 and 2194) does not allow this structure's certain phasing. However, the 12th to 14th century *terminus post quem*, especially for the earliest fill (2194) indicates that use continued for over ten centuries, which was clearly unlikely. As the assemblage of later pottery was very small and the structure much disturbed by later activity, it would seem likely that this represents contamination and the phasing would have been more like that of the similar structures (eg S8 and S10).

Structure 12 Phases 4 to 8 (Fig M136, 4:B1)
The full extent of this pit (746) was not determined. It had a clay lining *c* 0.20m thick (3048) and a poorly recorded disuse fill (3049).

The phasing of the construction elements could not be more certainly ascribed than to phases 4 to 8. The disuse, however, had a pottery derived *terminus post quem* of mid 3rd to late 4th century and, with this predating structures of phase 9 (S27), the range can be narrowed to phases 7 to 8.

Structure 28 Phases 7 to 8 (Fig M153, 4:C4-6)

The construction elements consisted of a surface (724-1002) and its make-up composed of gravel (743-1176). The surface had two parallel depressions and a linear cut ran to the south (710/1054). This cut was *c* 0.40m wide and *c* 0.20m deep, with occasional stake holes in its base. The structure was orientated east to west, petering out to the east, its full extent obscured by the western limit of excavation. Within the make-up of the surface a pit (1157) and its fill of clay (1158) were recorded.

Despite its obvious importance to the site the construction and use of structure 28 was impossible to phase satisfactorily. Stratigraphy and dating indicate construction and use in either or both of phases 7 and 8. The form of the structure would indicate a function as a road or track running from the centre of the excavated area to the west. In both phases the arrangement of structures could be seen as being served by the road (S26 and S31). It would not be unlikely that the road was in use during both phases. It appears to have been little used, as its disuse certainly occurred in phase 8 and only one set of wheel ruts was recorded where, with long term use, many would be expected. Also, only one level of make-up was recorded and few repairs seem to have been carried out.

Structure 29 Phases 4 to 10 (Fig M154, 4:C7)

This substantial (*c* 2.20m wide and *c* 1.20m deep) linear cut (1869) ran north-east to south-west and at its southern end turned a right-angle to the south-east. The eastern side was less steep than that on the west. The highest part of the base was at the point at which its course altered, with a gradient of 1 in 100 to the north-east and 1 in 67 to the south-east. There also occurred at this point a vertical step down of *c* 0.60m to the southern section. Primary fills of clay (1961/2055) and sandy silt (2054) may possibly relate to the structure's use, and a radiocarbon date of cal BC 379-116 cal AD was obtained from one of these (1961/2055, Table M17, 1:E10). The only uncertainly phased disuse element was composed of clay (2025).

This linear cut's construction could be placed as early as phase 4, however it possibly post-dates a context with a mid 3rd to late 4th century *terminus post quem* which would refine the phasing to between 7 and 11. The radiocarbon date may have been derived from residual material.

Structure 32 Phases 11 to 12 (Fig M157, 4:C13)

This linear cut (558) ran north to south and had one reconstruction element (26/208 and 551). It had a gradient down to the north of *c* 1 in 67 and was not very substantial (*c* 0.50m wide and *c* 0.30m deep). The original construction

element was filled with sandy clay loam (557 and 573) and sandy silt (540).

Though the original construction may have occurred in phase 11 it could equally be allocated to phase 12, when its final disuse also occurred. Linear cuts of similar dimensions and alignment (S52 and S56) may be securely placed within phase 12.

Structure 35 Phases 11 to 13 (Fig M160, 4:D2)

An alignment of five possible postholes (539, 544, 627, 720 and 1059) running east to west to the south of structure 48. All were similar in size and shape (though 720 was subcircular rather than rectangular). The disuse elements were composed of sandy silt (438 and 545) and clay (719).

The structure may have been constructed and used in phases 11, 12 or 13, the latter when part of its disuse certainly occurred. A long period of disuse may not be expected for such small cuts and the finds from contexts 545, 538 and 719 may all be residual. Construction in phase 11 would, therefore, seem most unlikely. The spatial relationship with structure 48 may also be more than coincidental.

Structure 36 Phases 4 to 5 (Fig M161, 4:D3)

Possibly associated with these three postholes (318/3023, 3022 and 3021) were two possible postholes (41 and 267). These (with the exception of 41) formed a north to south alignment. Other constructional elements included posts (65/309, 63/303 and 61/307) and fills of silt (60/308 and 62/305) and loam (64). Disuse elements were composed of silt (263 and 204) and clay (3013).

Stratigraphy and a radiocarbon date of cal BC 2-129 cal AD (Table M17, 1:E10) from one of the posts (61/307) would suggest phase 4, at least for the construction elements of this structure. Two of the constructional fills have a possible pottery derived *terminus post quem* of early 2nd to mid 3rd century. However, this is suspect as it was based on very small assemblages or uncertainly identified fabrics. A phase 5 date cannot be entirely ruled out.

Structure 37 Phases 4 to 9 (Fig M162, 4:D4)

These four stakeholes (1604, 1664, 1668 and 1670) formed a rectangle with sides measuring 2.50 x 1.50m. Another stakehole (1666) lay just to the north-east of context 1668. The disuse elements were composed of silt (1605 and 1665), sandy silt (1671) and silty clay (1667 and 1669).

Stratigraphically, construction and use may have occurred at any time between phases 4 and 9. The small volume of the fills made the presence of a datable pottery assemblage almost impossible. A single sherd from context 1665 gave a possible *terminus post quem* of the mid 1st to early 2nd century.

Structure 39 Phases 4 to 12 (Fig M164, 4:D6)
The construction elements of this structure consisted of six stakes (231, 230, 233, 228, 229 and 227), a posthole (3026) with a post (232) and fill (272), and possibly a stakehole (3028) with a stake (234). Of the fills, 272 was of silt though the only disuse element (3027) was poorly recorded. The structure formed a rough alignment running obliquely into the northern limit of excavation. This structure may be placed anywhere between phases 4 and 12.

Structure 45 Phases 4 to 5 (Fig M169, 4:D11)
Twenty possible postholes (755, 754, 753, 752, 741, 742, 760, 759, 758, 757, 756, 727, 732, 733, 734, 737, 738, 739, 740 and 729) were clustered around a linear cut (744). Only two of the fills were recorded and these were composed of sand (730 and 734). Although possibly later, this structure is best placed in phases 4 to 5.

Structure 46 Phases 7 to 9 (Fig M170, 4:D12)
A rough alignment of six possible postholes (633, 707, 708, 1134, 1073 and 1077) running north-west to south-east. Though their size varies considerably (from 0.38 x 0.34 x 0.18m, 707 to 0.72 x 0.54 x 0.26m, 1077) they are all stratigraphically complementary. The disuse elements were composed of sandy clay loam (634, 705 and 706), silty loam (1074), sand (1078) and silt (1135).

Lack of stratigraphic relationships with the structures that characterise phases 7 to 9 makes this difficult to phase with certainty. However, it was roughly aligned at right-angles to structures 17, 16 and 19.

Structure 47 Phases 7 to 9 (Fig M171, 4:D13)
This single pit (542) was smaller (1.26 x *c* 0.85 x 0.57m) than those containing parts of barrels, though it too contained wood, much decayed, over the second fill (685). If this was *in situ* then the fills of silty clay (685) and sandy clay (693) may be regarded as constructional. The disuse elements were composed of silty clay (541) and sandy clay (543). The structure may be placed between phases 7 and 9.

Structure 48 Phases 12 to 13 (Fig M172, 4:D14)
The construction elements consisted of a rectangular pit (516) with a brick lining (524 and 511). A primary fill of iron or slag (520) may either be derived from its construction or from its use.

Although the stratigraphy for a similar structure (S42) would indicate a 19th to 20th century *terminus post quem* this does not hold true for structure 48. It may have been constructed as early as the 18th century (P12), however, it would appear to have been in use during phase 13, where its function is discussed.

Structure 53 Phases 12 to 13 (Fig M177, 4:E5)
This rectangular pit (1082, 1.46 x 1.40 x >0.60m) with vertical sides could have been constructed in phase 12, though its possible use and disuse occurred in phase 13.

Structure 54 Phases 2 to 4 (Fig M178, 4:E6)
This structure consisted of 31 stakeholes (1637 to 1661, 3090 to 3094 inclusive, and 1732) and two possible postholes (1586 and 1628). The layout of the structure defies a concise written description, though the six stakeholes to the west (1732 and 3090 to 3094 inclusive) were somewhat similar to those comprising structure 60, albeit on a different orientation. The disuse elements were of silt (3065 to 3099 inclusive) and loam (1587). The structure may be placed anywhere between phases 2 and 4.

Structure 57 Phases 4 to 8 (Fig M181, 4:E9)
This single pit (2333) was of unique form for the excavation, being a subcircular cut with a central 'pedestal' of undisturbed material. The overall dimensions were 1.90 x 1.50 x 0.27m. A fill of charcoal and ash (2334) may be related to the structure's use. Its disuse element was composed of silt (2330).

The structure may be placed anywhere between phases 4 to 8, and in both phases 4 and 8 were nearby structures that could have been associated.

Structure 60 Phases 2 to 12 (Fig M184, 4:E12)
These seven stakeholes formed two diverging alignments (2036, 2040, 2042 and 2034, 2038, 2044) with a single outlier (2113). The disuse elements were composed of silty clay (2035, 2037, 2039, 2041, 2043, 2045 and 2114).

Though this may be placed within a greater range of phases (P2 to P12) the similarity to part of structure 54 has already been noted.

The following uncertainly phased structures are not described in detail as it is felt they would not add materially to the phase description. They do, however, form an important part of the stratigraphic analysis. Structures described as 'part' denote those already described above but of which a small part may not be certainly phased.

Structure	Phase range	Description
30 part	4-5	Feature group
49 part	9-11	Feature group
55 part	8-11	Feature group

Structure	Phase range	Description
62 part	2-4	Feature group
64	4-9	Feature group
65	4-9	Layer group
66	7-12	Layer group
67 part	7-12	Feature group
68 part	12-13	Layer group
74	4-9	Feature group
75	11?	Layer group
76 part	11-12	Feature group
85	2-4	Layer group
86	2-4	Layer group
88	2-4	Feature group
90	3-4	Feature group
91	3-4	Layer group
92 part	11-12	Feature group
94	7-8	Layer group
95	7-9	Feature group
96	7-9	Layer group
98	9-11	Feature group
99	9-11	Layer group
100	11-12	Layer group
101 part	9-11	Feature group
103 part	11-13	Feature group
104	11-12	Feature group
106 part	1-5	Layer group
107	4-5	Feature group
108	4-5	Feature group
109	5-7	Layer group
111	10-11	Feature group
113	5-7	Feature group
114	5-11	Layer group
116 part	7-13	Feature group
120	8-9	Feature group
121	8-12	Feature group
122	11-12	Layer group
123 part	11-12	Feature group
124	8-9	Layer group
125 part	11-12	Layer group

Structure	Phase range	Description
126 part	7-9	Feature group
129	12-13	Feature group
130	11-12	Feature group
133	2-4	Feature group
138 part	4-5	Layer group
139	4-11	Feature group
141 part	11-12	Feature group
144 part	2-4	Feature Group
145	11-12	Layer group
147 part	5-11	Layer group
148	4-5	Layer group
149 part	5-12	Feature group
150	5-9	Feature group
151 part	5-9	Layer group
153	5-12	Layer group
155	5-12	Feature group
157 part	5-11	Layer group
161 part	4-12	Feature group
163	4-5	Feature group
164	9-11	Feature group
169 part	11-12	Feature group
170 part	11-13	Feature group
171	7-9	Layer group
173	4-9	Feature group
176 part	11-12	Feature group
178	7-9	Layer group
179	5?	Feature group
184	2-5	Feature group
185 part	2-11	Feature group
187	2-12	Feature group
188	11-13	Layer group
192 part	11-12	Feature group
194 part	2-11	Feature group
195 part	2-12	Feature group
202 part	12-13	Feature group
204	12-13	Feature group
210 part	7-12	Layer group
214	4-5	Layer group

Dendrochronology Anne Crone

Only four major structures contained oak timbers of sufficient quantity and size suitable for dendrochronological analysis. Structures 6, 8 and 9 were fully lined with thin boards, while in structure 7 only ten boards of the lining had survived *in situ*. Structures 6, 7 and 8 contained much wood in their fills and, although the majority of it was branchwood, a number of boards similar to those lining the pits were also found.

All had been split radially from the trunk and left untrimmed, thus preserving ring patterns of adequate length for cross matching (Baillie 1982, 56). As many pieces still retained a large proportion of their sapwood the possibility existed that an accurate felling date for the timbers, and indirectly a construction date for the pit lining, might be obtained.

The standard procedures for dendrochronological analysis are described in detail in Baillie (1982) and Hillam (1983) and were followed in this study.

Results

Each tree-ring curve was initially matched against other curves from within the same structure. A mean curve, or sub-master, was then constructed for each structure by averaging the widths of each ring with all the others that occurred at that position of overlap. When cross-matching proved difficult within a structure, the anomalous curves were compared against the sub-masters of other structures.

Structure 6

In the case of structure 6 internal cross-matching produced only one pair. Comparison of each ring curve against the other structure sub-masters provided sufficient cross-matches to build a mean curve for this structure. Seven samples from structure 6 could not be cross-matched at all, including SRH, the only sample from the disuse elements to be examined.

Structure 7

Apart from SRNU, a sample from the disuse elements which could not be matched against anything, all the measured samples from structure 7 cross-matched internally. SRVT, another piece of debris, also cross-matched and was included in the sub-master.

Structure 8

The twenty samples of lining from structure 8 cross-matched internally. Five samples from the disuse elements were also measured, three of which cross-matched against the structure sub-master but two of which, SRLY and SRTZ, could not be cross-matched at all. The sub-master for structure 8 was the longest, covering 240 years.

Structure 9

All but one of the samples from structure 9 either cross-matched internally or against the other structure sub-masters.

Out of 59 individual curves, only eleven could not be cross-matched at all. It was hoped that the boards from the disuse elements of the structures might provide a date for their final abandonment. Unfortunately, many of these samples could not be matched, and those that could did not retain any sapwood (Table M15, 1:E6-7).

It has been suggested that when a visual comparison has established an almost perfect match of ring-sequences, these samples came from the same tree (Hillam 1982). This occurred in only two pairs of ring-sequences, SRWE and SRUE in structure 9, and SRMV and SREX in structure 6. However, the absence of any other such matches does not necessarily mean that the remaining 55 samples came from as many trees.

Table M16 contains the data for only those samples used to construct the structure sub-masters. The average ring widths of each sample from structures 7, 8 and 9 varied from 0.8 to 2.3mm, indicating that the timber came from slow growing trees. In the case of structure 6, however, the range was much greater, from 1.6 to 4.0mm.

Dating

The sub-masters for each structure were compared visually and all terminated within eight years of each other, providing a sequence of 240 years for the site. The four sub-masters were then run by Jennifer Hillam against four dated master curves, using the standard computer programme for comparing tree-ring data (Baillie and Pilcher 1973). The programme calculates the correlation value, r, and a significance value, Student's t, for each position of overlap between two ring sequences. Values greater than $t = 3.5$ are taken to indicate good matches (whose probability of chance occurrence is less than 1 in 1000) and are then checked

visually. High Student's *t* values were consistently obtained for a position of overlap that dated the Old Bowling Green sequence to 215 BC to AD 25. The reference curves used and the *t* values obtained are listed in Table M16.

Discussion

A precise felling date can only be obtained if the bark or the bark-edge is still present on the timber measured, enabling the final growth ring to be confidently identified (Type A: Baillie 1982, 61). If the bark-edge has not survived an estimate of the amount of sapwood that would have been present must be made. Baillie (1973) calculated that 32 $\pm$ 9 years was a useful estimate for Irish oaks and recent work in North Wales (Hughes *et al*, 1981) supports this figure. This estimate is used here, and represents a 68% confidence range.

None of the samples from the excavation retained any bark, but many pieces retained a large proportion of their sapwood, and therefore should provide a close estimate of the felling date.

A sample (SR590) from structure 8 spanned the years 171 BC to AD 25 and retained 39 sapwood rings. This figure lies close to the outer limits of Baillie's range and it is therefore assumed that AD 25 was close to the felling date for the timber used in the lining of structure 8. If this assumption is correct then the heartwood/sapwood boundary of all those samples retaining some sapwood should fall within Baillie's range when calculated back from AD 25. Within structure 6 SRBV would have had 28 rings ; within structure 7 the estimated range was 27 to 34 rings; within structure 8 the estimated range was 28 to 39 rings; within structure 9 the estimated range was 30 to 31 rings with the exception of SROE which would have had only 22 sapwood rings.

On these grounds it is suggested that the construction of all four structures was contemporary and that the timber used to line the structures was felled in AD 25. This does not necessarily imply that the construction date of the structures was also AD 25. A gap between the felling and the construction date could result from the use of seasoned timbers or from the reuse of old wood. However, none of the boards lining the tanks showed any signs of reuse, usually indicated by redundant joints, notches or pegholes. The sapwood was very fragile, especially since the boarding was quite thin, and would have been vulnerable to insect attack and rot. It is unlikely that it would have survived removal from one structure to another; it has survived to a large extent on many pieces.

The arguments against the use of seasoned wood in the tanks have been discussed elsewhere (chapter 18). In addition, it should be pointed out that

although one of the aims of seasoning is to reduce the moisture content of the timber, this would not be necessary for timbers intended for use in structures where they would be submerged in water (chapter 18). It is therefore concluded that the timber lining the tanks was felled in AD 25 and used immediately afterwards.

Table M15 Samples taken for dendrochronology

Structure	SR no	Disuse/ or Construction	Total no of rings	No of sapwood rings	AV ring width in mm	Dimensions in mm
6	BV	Construction	112	24	1.4	160 x 20
	CV	Construction	75	0	1.9	150 x 20
	QX	Construction	185	0	2.4	300 x 30
	XX	Construction	95	0	4.0	260 x 35
	YX	Construction	105	0	2.1	230 x 50
7	MT	Construction	84	0	1.4	130 x 20
	NT	Construction	112	20 + 4	1.3	160 x 20
	PT	Construction	155	33	1.1	170 x 50
	UT	Construction	111	26	1.2	170 x 35
	VT	Disuse	94	0	1.3	180 x 30
	WT	Construction	155	32	1.3	200 x 30
	XT	Construction	170	0	2.3	270 x 30
8	546	Construction	136	0	1.2	180 x 15
	550A	Construction	139	13 + *c* 16	1.3	210 x 30
	554	Construction	109	2	1.5	160 x 30
	571	Construction	231	27 + 7	1.2	300 x 20
	590	Construction	196	39	0.8	150 x 40
	594	Construction	156	15 + 6	1.3	220 x 20
	595	Construction	183	34	0.9	170 x 50
	596	Construction	91	0	1.6	150 x 40
	599	Construction	111	2	1.7	230 x 40
	613	Construction	164	h/s	1.2	180 x 30
	618	Construction	176	26	1.1	190 x 20
	621	Construction	133	26 + 3	1.1	170 x 20
9	OE	Construction	59	14	1.4	140 x 40
	WE	Construction	60	0	1.7	110 x 30
	ZE	Construction	143	23	0.9	150 x 35
	HF	Construction	57	22	1.8	110 x 30
	LF	Construction	109	18	1.0	120 x 35
	QF	Construction	86	4	1.6	150 x 50

Structure	SR no	Disuse/ or Construction	Total no of rings	No of sapwood rings	AV ring width in mm	Dimensions in mm
	RF	Construction	49	0	2.3	110 x 50
	UF	Construction	71	0	0.9	130 x 40

Table M16 t values between structure chronologies and Roman master chronologies

Reference curve and author	Structure 6 ends AD 19 only 205 years used	Structure 7 ends AD 25	Structure 8 ends AD 25	Structure 9 ends AD 17
Droitwich, Friar St (141BC - AD44) Hillam 1982	t = 6.10	t = 6.83	t = 7.55	t = 9.25
New Fresh Wharf/ Seal House, London (73BC - AD209) Morgan - unpublished	t = 0.21	t = 3.82	t = 6.12	t = 3.47
Peninsular House, London (252BC - AD70) Hillam - unpublished*	t = 6.73	t = 6.45	t = 4.05	t = 7.10
Roman London (159BC - AD171) Hillam - unpublished*	t = 5.84	t = 6.78	t = 4.34	t = 7.52

* mentioned in Hillam and Morgan (1981)

Radiocarbon Robert Otlet and Simon Woodiwiss

Eight radiocarbon dates (28c, 156, 307, 494, 1102, 1229, 1773 and 2192) fell within the date range of their respective phases at one standard deviation. One had a dendrochronological date of AD 25 (1773, S7; Table M16, 1:E8). Nine dates (156, 307, 1102, 1228, 1229, 1727, 1773, 2465 and 3060) were from the construction elements of their respective structures, while the rest were from fills and layers and therefore more likely to be residual. Of the dates from construction elements, those from contexts 1228, 1727, 2465 and 3060 were earlier (at one standard deviation) than the date ranges assigned to the phase. This indicates that the components were in use well before being placed in their excavated context. This is to be expected and the contexts, in this case barrels (1228, 1727 and 3060), may conceivably have been in circulation for the 100 to 200 years indicated by the radiocarbon dates. However one constructional component, a post from structure 22 (2465), had a far earlier date than that of its eventual stratigraphic position and even then formed part of a building that possibly existed into phase 11 (chapter 2). A period of over a thousand years for the use of this piece of timber is indicated, but this must be qualified by the uncertainty of the building's period of use. The other dates which, at one standard deviation, lie outside their phase range (476, 611, 1023 and 1961), came from layers or the fills of ditches.

The radiocarbon dates were funded and arranged by the Historic Buildings and Monuments Commission for England and were carried out at the Low Level Measurements Laboratory, Harwell.

Table M17 Radiocarbon dates

Reference	Type	C	S	P	C14 date BP	Calibrated range 1 s d
HAR 4084	Wood	1102	16	8	1770±70	139-343 cal AD
HAR 5872	Wood	28c	1	2-4	2000±70	cal BC101-72
HAR 5873	Wood	156	4	3	2130±80	cal BC358-91
HAR 5874	Wood	307	36	4-5	1930±70	cal BC2-129 cal AD
HAR 5875	Wood	476	30	4	2200±80	cal BC388-168
HAR 5876	Wood	494	5	3	2000±70	cal BC101-72
HAR 5877	Char	611	31	8	2050±90	cal BC187-51 cal AD
HAR 5878	Wood	1023	114	7-9	1820±70	112-315 cal AD
HAR 5879	Wood	3060	19	8	1940±80	cal BC36-129 cal AD
HAR 5880	Wood	1228	15	8	1930±80	cal BC18-135 cal AD
HAR 5881	Wood	1229	20	8	1770±70	139-343 cal AD
HAR 5882	Wood	1773	7	3	2020±80	cal BC 151-66 cal AD
HAR 5883	Wood	1727	21	8	1910±90	cal BC 2-214 cal AD
HAR 5884	Wood	1961	29	5-9	2180±80	cal BC 379-116 cal AD
HAR 5885	Char	2192	180	1	2790±90	cal BC 1045-838
HAR 5886	Wood	2465	22	9	2190±80	cal BC 383-124

Definition of ceramic phases and use of ceramic evidence Helen Rees

The combination of pottery and stratigraphic data produced no refinements of ceramic sequence beyond that already established by other sites in the south-western Midlands and in southern Britain generally. Thus, the phasing was defined on external evidence, and each separate assemblage was assigned a *terminus post quem* on the basis of the presence of certain types and the absence of others. This classification was based on the author's general knowledge of ceramic sequence in the area, and on the dating of widely traded wares, which are in general well studied and published and some of which are the subject of specialist reports. Dating for *mortaria* was given by Kay Hartley (pers comm). If the reader wishes to check the validity of the ceramic phasing in detail, consultation of the archive and of the following publications is recommended:

Darling 1977, 64-67, 90 fig 6.10 92. (for ceramic phase B)
Ford and Rees, forthcoming (for ceramic phases A and B)
Gillam 1976, 57-79 (for ceramic phases C and D)
Greene 1978, 15-30 (for ceramic phases B and C)
Howe, Perrin and Mackreth 1980 (for ceramic phase D)
Morris 1980, 221, 254 (for ceramic phases U to Z)
Peacock 1965-7, 15-28 (for ceramic phases B to D)
Peacock 1968, 14-27 (for ceramic phase A)
Rigby 1973, 7-24 (for ceramic phase B)
Vince 1977, 257-305 (for ceramic phases W to X)
Webster 1976, 18-46 (for ceramic phases B to D)
Young 1977 (for ceramic phase D)
Young 1980b, 11-55 (for ceramic phase D)

As the detail of chronological development available varies from type to type, certain fabrics and forms were more easily assignable to phase than others. Where external information concerning the chronology of particular wares was poor or absent they were assigned to the earliest phase possible. For example, forms in fabric 12 (Severn Valley ware) for which there was no evidence to the contrary were assigned to phase B on the grounds that fabric 12 made its earliest appearance in that phase.

Thus Table M18 below contains two levels of information: the types positively diagnostic of each phase (core characteristics), and the types for which no later

distinctions could be defined (possible characteristics). Each phase includes all the types potentially of that phase, irrespective of whether they occurred in later assemblages. The form numbers refer to the forms recorded in the archive.

Index to ceramic phases

Phase A Iron Age
Phase B Mid first to early second century AD
Phase C Early/mid second to mid third century AD
Phase D Mid third to late fourth century AD
Phase U Ninth to eleventh century AD
Phase W Twelfth to fourteenth century AD
Phase X Fifteenth to seventeenth century AD
Phase Y Seventeenth to eighteenth century AD
Phase Z Nineteenth to twentieth century AD

Table M18 Typological characteristics of each ceramic phase (form numbers refer to the archive form illustrations)

Phase	Core characteristics	Possible characteristics
A	fabric 1; briquetage vessels fabric 2; briquetage vessels fabric 3; forms 29.0, 34.0, 77.2 fabric 5; all forms	fabric 3; forms 9.0, 28.0 30.0, 31.0 32.0, 33.0, 38.1 fabric 4; all forms present fabric 7; all forms present fabric 8; all forms present
B	fabric 3; forms 46.0, 47.0, 51.0 fabric 12; forms 9.0, 36.0, 37.0, 40.0, 46.0, 77.1, 78.0, 83.0, 87.0, 154.0 fabric 13, forms 37.0, 77.1 fabric 25 all forms present fabric 26; no forms present fabric 35; no forms present fabric 43; Claudio-Neronian to Trajanic forms - EMAD	fabric 12; all forms present, except those listed as diagnostic of phases C and D fabric 13; all forms present except those listed as diagnostic of phases C and D fabric 14; all forms present except those listed as diagnostic of phases C and D; fabric 15, all forms present fabric 16; no forms present fabric 18; all forms present except those listed as diagnostic of phases C and D fabric 20; all forms present fabric 35; no forms present fabric 36; form 150.2 fabric 41; all forms present fabric 42; all forms present
C	fabric 12; forms 63.0, 79.0, 128.0	fabric 3; forms 154.0, 156.0, 161.0, 164.0

	fabric 13; form 79 fabric 14; form 64.0 fabric 22; forms 8.1, 13.0, 42.0, 90.0, 104.0 fabric 32; forms 145.1, 145.2, 152.0 fabric 33; forms 135.0, 136.0, 137.0 fabric 34; form 152.0 fabric 37; form 149.0 fabric 43; Hadrianic to Antonine forms fabric 44; all forms present	166.0, 170.0 fabric 12; form 94.0 fabric 18; form 94.0 fabric 22; all forms except those listed as diagnostic of phase D fabric 27; form 127.0 fabric 38; no forms of this phase present fabric 39; no forms present fabric 36; form 151.0
D	fabric 12; forms 59.0, 60.0, 66.0, 68.0, 69.0, 70.0, 71.0, 72.0, 75.0, 76.0, 80.0, 96.0, 97.0, 98.0, 99.0 fabric 14; forms 59.0, 99.0, 103.0 fabric 17; all forms present fabric 18; form 96.0 fabric 19; all forms present fabric 21; all forms present fabric 22, forms 61.0, 62.0, 102.0, 103.0, 157.0; dec 44 fabric 23; all forms present fabric 28; all forms present fabric 29; all forms present fabric 30; all forms present fabric 31; all forms present fabric 32; forms 145.3, 146.0 fabric 33; forms 138.?, 139.0, 140.0, 141.0, 142.0 fabric 38; form 8.2 fabric 40; all forms present	fabric 24; no forms present
U	fabric 46, all forms present fabric 48; all forms present	

	fabric 49; all forms present	
W	fabric 53, all forms present	fabric 60; all forms present
		fabric 69; forms 212.0,
	fabric 55; all forms present	213.0, 214.0, 215.0, 216.0
	fabric 56; all forms present	
	fabric 57, all forms present	
	fabric 58; all forms present	fabric 99; all forms present
	fabric 64.1; all forms present	
	fabric 65; all forms present	
	fabric 64.2; all forms present	
	fabric 64.3; all forms present	
X	fabric 69; forms 221.0, 227.0	fabric 75; all forms present
	forms 219.0, 220.0,	fabric 77; all forms present
	221.0, 222.0, 223.0, 224.0,	
	225.0, 226.0, 227.0	
	fabric 70; all forms present	
	fabric 72; all forms present	
Y	fabric 91; all forms present	fabric 79; no forms present
	fabric 78; all forms present	fabric 81.4; all forms present
	fabric 81.1-81.3; all forms	
	present	
	fabric 82; all forms present	
Z	fabric 83; all forms present	
	fabric 84; all forms present	
	fabric 85; all forms present	
	fabric 100; all forms present	

The petrology of selected Roman pottery fabrics and one of late Saxon date Hilary Howard

Twenty-eight Roman sherds and one late Saxon sherd from the Old Bowling Green excavation, Droitwich were submitted for thin sectioning. The aims of this analysis were to verify fabric groups discerned through macroscopic examination, to identify inclusions present in each fabric type, and if possible to establish their geological source. Additionally it was hoped by means of comparison of the Old Bowling Green sections with those from Sidbury, Worcester (Vince pers comm) to suggest possible common manufacturing centres.

The sherds supplied included eight examples typologically and macroscopically identified as Severn Valley ware, and 21 grey wares, some Malvernian in form and others believed to be reduced versions of the more usual oxidised Severn Valley wares from Kenchester. These showed a strong correlation between fine fabrics and oxidising firing, whilst the coarser fabrics were almost invariably reduced. It was hoped that the Old Bowling Green assemblage would indicate a similar connection between paste selection and firing technology.

Initial microscopic examination of the entire collection revealed three major fabric groups, described here as 'Malvernian', 'Malvernian derived' and 'quartz' wares. Five sherds contained unique inclusion suites and were accorded individual consideration.

Malvernian wares (SR2, SR4, SR5, SR14, SR17, SR21 and SR25)

The Malvernian samples fall into three groups which, it is suggested, represent the exploitation of at least three different areas of the Malvern Hills outcrop. Without an extensive programme of raw material sampling and analysis, however, it is not possible to define these areas with any degree of precision. A further section (SR28) contains a single grain of Malvernian rock, but for reasons described below, is assigned to Group II of the Quartz wares.

Group I SR2 and SR17 contain abundant angular fragments of Malvernian rock up to 1.2mm across the longest axis, set in a baked clay matrix containing a high tenor of angular quartz silt and white mica. SR2 also contains frequent fragments of a highly altered brown feromagnesium mineral (probably associated with the Malvernian inclusions) and a little brown hornblende of a kind present too in SR17. These samples show a marked similarity with Vince's Sidbury Malvernian Group A.

Group II SR5, SR14, SR21 and SR25 also contain Malvernian rock, but here are somewhat rounded and extensively altered, making identification of the constituent minerals very difficult. Large, rounded, slightly micaceous sandstones (to 2.0mm) are present in all four sections. SR25 (fabric 48, late Saxon) contains a scatter of rounded quartzite fragments, and SR21 occasional organically stained pellets of the phosphate mineral collophane. Whilst the range of inclusions is closely matched by Vince's Sidbury Malvernian Group B, angular quartz silt and white mica in the matrices of SR5, SR14 and SR21 are considerably denser. This could be interpreted as different manufacturing centres, possibly exploiting the same source of temper, but using spatially distinct clay deposits.

Group III SR4, unparalleled at Sidbury, also contains fragments of altered Malvernian rock, but here the inclusion assemblage is dominated by very large subangular fragments of heavily sericitised and kaolinised felspar (2.5mm). Large arkose sandstones also occurred together with the more unusual micaceous quartz variety, and a little brown hornblende is visible.

Malvernian derived wares (SR1, SR6, SR9, SR11 and SR20)

Frequent grains of orthoclase and plagioclase felspar, hornblende, epidote and brown, altered ferromagnesium minerals, all usually associated with Malvernian rock, appear in all five samples. However, as no actual rock fragments were visible, it was decided to treat these samples as distinct from Malvernian tempered fabrics. No samples comparable with these 'Malvernian derived' wares were found in the Sidbury collection.

Group I SR1 and SR6 contains rounded grains of quartz and orthoclase felspar to 0.5mm in diameter, set in a densely packed silty matrix with rare laths of white mica. Occasional fragments of plagioclase, quartzite and micaceous sandstone are visible, and SR1 additionally contains a single ragged grain of quartz-mica schist, and a little arkose sandstone.

Group II SR9, SR11 and SR20 are somewhat finer textured than SR1 and SR6, all inclusions being 0.1mm or less across. A similar range of minerals is visible, although SR9, SR11 and SR20 are distinctly more micaceous.

Quartz wares (SR3, SR7, SR8, SR10, SR12, SR13, SR15, SR16, SR22, SR23, SR24 and SR28)

Group I medium quartz grains, 0.1-0.5mm (SR10 and SR16). SR10, a well made, hard, reduction fired ware, contains an exceptionally high density of well-sorted angular quartz grains, generally 0.2-0.3mm. This fabric is otherwise inclusionless, save for a sparse scatter of rounded iron ore fragments. Sidbury SR13 is similar to SR10, but the considerable fine mica present in the former precluded a

common origin.

The quartz grains contained in SR16 are less well sorted, ranging from 0.05 to 0.4mm, and are less abundant. This micaceous fabric is extensively pitted, indicating the burning out of a considerable amount of organic material. Micaceous sandstone and a single large-grained quartzite are visible in thin section. Gloucester fabric TF17, represented at Sidbury by SR47 and SR48, is very similar to SR16.

Group II fine quartz grains, 0.05-0.1mm (SR12, SR13, SR15, SR22, SR23, SR24 and SR28). This group is characterised by a high tenor of fine quartz grains, generally angular or subangular, and abundant white mica. Occasional larger quartz grains to 0.3mm are visible in some sections, and micaceous and mica-free sandstones to 0.4mm are common throughout this group. Both elongated and rounded iron ore particles are frequently encountered, together with considerable ferruginous staining. Rounded micaceous pellets of argillaceous material to 0.40mm are present in all samples, and SR13 and SR23 also contain rounded fine-grained marlstone fragments of similar size. SR22 contains a single subangular grain of fresh limestone. Both surfaces and cores of all samples in this group are somewhat pitted, suggesting the burning out of small amounts of organic and/or carbonaceous material.

The final section in this group (SR28) contains a small (0.3mm) angular fragment of fresh igneous rock composed of quartz, a little orthoclase felspar, and epidote. The matrix, however, closely resembles that of this quartz group and contains no further minerals indicative of Malvernian derivation. It may be that a little Malvernian rock temper accidentally found its way into the clay at a centre producing pottery of more than one fabric type.

These fine quartz wares bear a striking similarity to Sidbury Severn Valley wares groups A and B, particularly Sidbury SR1, SR5, SR7 and SR15. A detailed programme of size analysis of both sherds and kiln material may indicate a common local source for these fabrics.

Group III sand tempered wares (SR3, SR7 and SR8). SR3 contains inclusions identical to those found in Sidbury SR3, SR22, SR23 and SR35, described by Vince (pers comm) as rounded quartz sand tempered wares. Well-sorted rounded quartz grains to 3.0mm, and occasional fragments of micaceous sandstone and mudstone, are set in a micaceous clay matrix containing a scatter of fine angular quartz silt.

SR7 again contains rounded quartz grains and sandstones (some with mica, and some with a siliceous matrix), but here ill-sorted, varying from 0.05 to 0.8mm. Rare fine mica is visible in this very friable fabric.

SR8 may also be described as rounded quartz sand tempered, but both the size and density of the inclusions, and a complete lack of mica, suggest an origin

distinct from that of SR3 or SR7. Abundant rounded grains of quartz and large-grained siliceous sandstone are set in a sparse yellowish clay matrix. No other inclusions are visible. There are no parallels within the Sidbury assemblage, although samples from Roman Kenchester (62 and 63) are somewhat similar, but less dense.

Unclassified samples (SR18, SR19, SR27 and SR29)

SR18 contains rare large (up to 2.0mm) rounded fragments of a heavily iron-stained brown mudstone set in a mica free red clay matrix. A very sparse scatter of fine quartz silt (less than 0.05mm) is visible in thin section. This fabric is unlike any found at Sidbury or Kenchester.

SR19, a very hard sandy fabric, may be described as grog-quartz tempered. Angular fragments (to 0.5mm) of crushed fired ceramic, opaque in thin section and containing a scatter of fine angular quartz grains (generally 0.05mm) and subangular quartz grains (0.5mm), occur in similar frequencies within a pale grey mica-free matrix. Occasional rounded mudstones, again to 0.5mm, are also present. No grog-tempered wares occurred at Sidbury, and Gloucester fabric TF2 bears little resemblance to the Old Bowling Green example.

SR26 contains a large number of rounded, generally micaceous sandstone fragments (to 0.8mm) set in a red clay micaceous matrix, inclusionless save for a very sparse scatter of fine subangular quartz. Micaceous clay pellets and rounded iron ore fragments of similar size to the sandstones are occasionally visible. The high proportion of sandstone and virtual lack of quartz excluded this sample from a 'quartz' ware classification. SR26 closely resembled the 'Sandstone Tempered' wares (SR14 and SR20 at Kenchester).

SR27 contains rounded, altered limestone fragments to 2.0mm, and similar shaped voids, in addition to frequent fine-grained mudstones, many with carbonate surround. These are generally about 1.0mm in diameter with a single grain measuring about 4.0mm. Two fragments of fine-grained siliceous material, probably chert, are also present. No parallels could be found from other West Midlands Roman sites.

SR29 is representative of the so-called calcite gritted wares commonly found at Droitwich. This fairly low-fired, reduced, mica free fabric is dominated by abundant elongated fragments of marine fossil shell (phylum *Brachiopoda*) to 4.0mm.

No other inclusions are visible save for a scatter of sparse quartz in the matrix. The rim sherd supplied for analysis is considerably blackened, both internally and externally, suggesting a relationship with food preparation. The writer has analysed the frequency of heavy carbonate-tempered known

cookwares, and investigated the efficiency of such fabrics through experimental work. It is hoped that the results of this project will assist in positive identification of cookwares within a diverse functional assemblage.

Discussion

The analytical results described in this report emphasise the need for a thorough investigation of kiln debris from sites throughout the West Midlands region. The mineralogical similarities observed between pottery types from Old Bowling Green, Sidbury and Kenchester suggest that common production centres may have served a wide area during the Roman period.

It is only through careful comparison of pottery fabrics with recognised products and wasters from known kiln sites that this hypothesis may be tested, and our knowledge of Roman trading practices increased. Both 'Malvernian' pottery and the more usual Severn Valley wares are divisible into discrete groups on the basis of size range of quartz and mica inclusions. The 'Malvernian derived' wares, identified only at Old Bowling Green thus far, may be more difficult to characterise. Whilst the inclusions suggest a Malvernian origin, it is equally possible that the parent igneous rock should be sought further afield. More work on drift deposits in the Severn and Wye valleys may clarify the position.

A recent analysis of Severn Valley wares from Kenchester (Howard 1985) produced a correlation between inclusion size and density, and firing technology. Oxidised wares contained fine quartz and mica, whilst those with grey cores and those fired in a completely oxygen-free atmosphere tended to be considerably coarser. It was hoped that a similar phenomenon would be observable at the Old Bowling Green. Only nine of the sherds submitted contained a range of geologically indistinct inclusions similar to Kenchester group I, and no such correlation was evident within the fine-textured group. SR28 alone is totally oxidised, SR13, SR15, SR22, SR23 and SR24 all show evidence of some reduction, and SR12 is completely reduced. The Old Bowling Green clays, however, generally contained a much higher proportion of organic matter than those used for Kenchester wares, and carbonisation of this material during the firing process may account for discoloration of fabrics which would otherwise have been completely oxidised. Further work, both analytical and experimental, is required to investigate this problem more fully.

Petrological report on selected ceramic material Elaine Morris

This is a report on four samples of handmade and wheelthrown sandy fabric sherds selected for petrological analysis from the pottery recovered during excavations at the Old Bowling Green. Each sherd will be described macroscopically, and the fabric will be discussed as seen in thin section.

Descriptions

SR30 is from an irregularly fired, handmade jar which ranges in colour from black to light brown. The vessel is not burnished. In fresh fracture, the fabric is very sandy and quite porous as a result. The grains of quartz, which are easily visible, appear rounded in shape and common in frequency.

In thin section, this optically anisotropic clay matrix contains a 25-30% concentration of rounded to subrounded quartz grains: 10-15% larger grains (0.2-0.8mm), 10-15% medium-sized grains (0.1-0.2mm) and 1-5% finer grains (0.1mm or less). Some of these grains are rounded pieces of chert, microcrystalline silica, and quartzite. Naturally-occurring irregular clumps of argillaceous matter (clay pellets) are common, but iron oxides are rare. Two micaceous siltstones and one quartzite/mica fragment (?schist) were also identified. The clay matrix is only slightly micaceous. The incomplete oxidisation during firing of this vessel has left rare pieces of naturally-occurring long thin black carbonaceous matter in the matrix.

This fabric, used in the construction of a handmade vessel, is extremely similar both macroscopically in fresh fracture and microscopically in thin section to SR33 below, a wheelthrown example.

SR31 is a rim sherd from an irregularly oxidised (buff grey to pale orange) wheelthrown vessel with a cordon at the base of the neck zone. The surfaces of the vessel are smoothed but not burnished. The fabric is sandy with a moderate amount of quartz grains, up to 1.0mm across, in fresh fracture. Reddish-brown clay-like pellets are visible and measure up to 1.5mm across. One rounded siltstone (2.0mm) was also observed. The fabric was slightly porous but also denser than SR30 and SR33.

In thin section, this optically anisotropic micaceous clay matrix contains a moderately well-sorted amount of quartz grains: 1-5% large (0.2-1.0mm) rounded to subrounded grains, 10% medium-sized subangular to subrounded grains, and 10-15% finer subangular grains. There is a 1% concentration of rounded micaceous siltstones, up to 0.8mm across, and a single rounded piece of fine sandstone

(1.0mm). Iron oxides are present but sparse in number.

SR32 is a unique sherd from a segmental dish of *terra nigra* form, and is wheelthrown and burnished on both surfaces. The vessel is surprisingly irregularly fired with an oxidised interior and reduced exterior. This is again a moderately sandy fabric with grains of quartz up to 1.0mm visible and some porosity evident in fresh fracture.

In thin section, this optically anisotropic clay matrix is extremely micaceous with an abundance of fine muscovite mica which make this matrix very different from all other examples in this group. There is a moderate amount of subrounded to subangular quartz grains: 1% large grains (0.2-0.8mm), 5-10% medium-sized grains, and 10-15% finer grains. Rare pieces of quartzite, chert and iron oxides are present. One fragment each of potash felspar and micaceous siltstone were identified. The fabric in general has a fine smooth well-sorted texture.

SR33, a bodysherd, comes from a wheelthrown and well-smoothed globular jar with a horizontal cordon at the neck and body join. The interior surface of the sample has completely flaked away, revealing a moderately sandy fabric with grains measuring up to 1.0mm across. The fabric looks very similar to SR30, and is quite similar to SR31.

In thin section, this fabric is identical to that described for SR30 above, but it lacks the single pieces of siltstone and (?)schist/quartzite. Both SR30 and SR33 are distinctive in their low proportions of finer quartz grains and mica content.

Discussion

The type of inclusions found in these four samples does not indicate any specific source other than sedimentary deposits of clays and sands. SR30 and SR33 are likely to be from the same deposit, which is very interesting since the former is handmade and the latter wheelthrown. Both are extremely similar to pottery fabric 5.1 sherds in the Friar Street collection of later Iron Age pottery (3:B7). It was surprising to see the amount of mica in the section of SR32 since this was not apparent macroscopically. SR31 is probably from a deposit very similar to that utilised to form the SR30 and SR33 vessels based on the presence of clay pellets in all three examples, as well as the moderate to sparse amount of mica in each. There is nothing in SR 32 to indicate that it originates from a source at some distance from any of the other samples, but the clay matrix is different due to the great quantity of mica present.

Specific inclusions absent from these four samples are any indicators of a Malvernian source (ie hornblende, epidote, plagioclase felspars, Palaeozoic limestone, or felspathic sandstone fragments) or a Cotswold/Jurassic source (shelly limestone or oolitic fragments). In fact, there are no indications as to why

this pottery could not have been made in the local Droitwich area. The presence of argillaceous matter (clay pellets) as natural inclusions in three samples would favour a local source, but would not exclude other possibilities. The rarity of these types of vessels in the county of Hereford and Worcester, and their abundance in areas further south (Salmonsbury and Bagendon), cannot be overlooked. The only samples from Beckford which sound similar by description were the non-calcareous examples in 'Group 18 Miscellaneous Sandy wares' (Tomber, pers comm).

Petrological report on selected limestone-tempered fabrics Elaine Morris

The following brief petrology report represents the definition of two different limestone-tempered fabrics utilised in the prehistoric, or early Roman, period and in the early medieval period for coarse wares. Only one featured sherd was provided for each fabric type and, therefore, only one thin section was produced.

SR34

Rim, from a light brown-surfaced jar with grey reduced core. This fabric, which contains abundant angular fragments of white limestone from 1.0-3.0mm across and infrequent fine quartz grains and clay pellets, is extremely similar to the Malvernian B1 fabric first identified and defined by Peacock (1968, 421-2). He suggested that the inclusions in the fabric were probably Palaeozoic and most likely originated in the Malvern district.

SR35

Rim sherd of limestone tempered fabric consists of a 15-25% concentration of oolitic limestone fragments. The clay matrix itself is very micaceous, but also contains a 5-10% concentration of small sized quartz grains (0.1mm or less) of subangular shape. The clay may well be naturally tempered since the large pieces of oolite were rounded to subrounded in shape and there is also a moderate amount of finer fragments of degraded limestone which resulted from natural forces. It seems as though the larger pieces of oolite have separated naturally into their rounded, individual components and have not been crushed by human activity into angular fragments. However, it should be emphasised that these suggested interpretations have not been tested, as yet. A source in the Jurassic system is most likely.

Alan Vince examined this sherd, macroscopically, and agreed that it is an oolitic limestone tempered fabric. This fabric, when utilised in the earlier medieval period, was designated TF41B in the Gloucester Type Fabric Series. He suggested that an 11-12th century parallel for this rim form was found at St Oswald's Priory, Gloucester (Heighway *et al* 1978, 126-7, fig 9.2).

Petrological report on an unusual medieval fabric Elaine Morris

A sherd of unglazed pottery from a large vessel was submitted for petrological analysis. This sherd came from context 108 (SR36). The general characteristics of this vessel suggested that it was a large storage jar or unsooted cooking pot of typical medieval proportions and attributes. However, the fabric was quite different from the more common sand, limestone and Malvernian tempered medieval pottery from the area. Therefore, a thin section was required to help indicate possible sources for this fabric type.

Macroscopic definition

This is a hard-fired, handmade vessel of large proportions. It is mainly unoxidised throughout, having various shades of grey clay matrix. However, the external surface has been oxidised to a pale orange colour in some areas. Shallow scratched parallel lines may represent decoration on the side of the vessel.

The clay matrix contains a moderate to common amount of hard, dull, angular rock inclusions which are white, grey and red. They measures up to 5.0mm across. None of these inclusions have the typical glittering, reflective qualities of Malvernian rock inclusions. One of the inclusions on the interior surface looks like a piece of shell and there are rare vesicles which may once have held limestone inclusions. There is aiso a sparse amount of finer quartz present.

Microscopic definition

In only one thin section, this anisotropic clay matrix contains an unusual, poorly-sorted mixture of inclusions. The larger angular inclusions, which constitute about 15-25% of the total matrix, include numerous pieces of quartz measuring from 0.2-2.5mm across, fragments of limestone and sandy limestone (0.5-1.8mm), rare quartz porphyrite (0.5-1.0mm), and several angular pieces of chert, measuring from 0.3-1.5mm across. There is also a single piece of metamorphosed quartzite (0.6mm), possible fragments of tuff and a few black opaque fragments of organic matter. Clay pellets, measuring up to 2.0mm across, appear in a 5-10% concentration.

There is also a 5% concentration of finer, subrounded to subangular quartz grains (0.2mm or less in size) and a 1% concentration of finer limestone.

Sources

It is most likely that this is a slightly sandy clay, tempered with larger angular

rock inclusions. These inclusions are of such an unusual composition that a boulder clay, glacial sand and gravel, or other glacial deposit is a likely source for them.

Droitwich lies in an area of Mercian Mudstone (Keuper Marl) consisting of a slightly calcareous clay that can have a high proportion of quartz dust of bimodal size distribution, or a very fine grained composition that is well sorted and devoid of large grains of detrital sediments (Hains and Horton 1969, 69-71). Thin beds of siltstones and sandstones can also occur. Therefore, this fabric type is not likely to come from the solid geological deposits in the Droitwich area.

The drift deposits in the Droitwich area offer greater possibilities for the identification of a source for this clay and its inclusions:

> South of Droitwich considerable spreads of sand and gravel belonging to the Fourth and Fifth Terraces overlie the Keuper Marl ...
>
> A brick pit 550yd NW of Huntingtrap Farm affords a section of red marls and sandy marls with layers of grey clay and hard grey skerry bands, about 40ft of beds being exposed (Mitchel *et al* 1962, 100).

Similarly, there has been some recording of quartzite, sandstones, chert, grit, porphyrite and tuff in the Third Terrace which has been mapped at Droitwich and the Salwarpe (Mitchel *et al* 1962, 113-14). The Fourth Terrace has a similar range of gravels that were 'contorted and contain local pockets of sand and sandy clay' (Mitchel *et al* 1962, 112). These Fourth Terrace gravels 'form large spreads between Martin Hussingtree and Droitwich on the south-east side of the Salwarpe Valley' (Mitchel *et al* 1962, 113).

Therefore, there is a strong possibility that this fabric type is a local product but other similar terrace deposits near limestone sources may have provided the clay and inclusions. The identification of this fabric type and vessel form in quantity from other medieval sites, in Warwickshire for instance, may alter these preliminary assumptions.

The petrology of selected samples Roberta Tomber

Material from the Old Bowling Green was examined as part of a general survey of what is frequently termed 'Severn Valley' ware. This research was to characterise, petrologically, the different known sources of Severn Valley ware and, using these results, to allocate material from occupation sites to known kiln centres.

Microscopic examination of this ware shows it to contain common sedimentary rocks which cannot be closely sourced and primarily quartz grains, an undiagnostic mineral which occurs in all types of deposits throughout the United Kingdom. Even in cases where diagnostic inclusions can be identified, such as those kilns from the Malvern area, only *c* 40% of sherds exhibit these characteristic traits. Therefore, the pottery may be sourced by the presence of certain temper but cannot be excluded from a particular source by its absence.

Given this, and the abundance of quartz inclusions in Severn Valley ware, an alternative technique of characterisation was necessary and size analysis was employed. This method has been successfully used to discriminate between different sandy wares (eg Peacock 1971) and it allows an objective manner by which to measure quartz grains. The method employed is similar to that described by Streeten (1979) whereby the results of measuring grains of quartz were graphically displayed as a size and frequency ratio. In this way the individual kilns were compared and could be characterised and the results verified by using simple statistical tests.

Since it was possible to distinguish the kiln groups using this technique, selected sherds from occupational sites were then subjected to textural analysis with the aim of determining from which kiln they had originated. However, the results from this stage of analysis, using both typological considerations and statistical testing, showed that this could not be achieved. Failure is due to the paucity of kiln information at this time and further excavation may remedy the situation. As it was not possible to allocate occupation samples to specific kiln sites not all sherds were subjected to size analysis.

Possible kiln activity at Droitwich

One waster sherd SR37 was examined in order to determine whether Severn Valley ware was being produced at Droitwich. Overfiring had caused the sherd to vitrify, making both macroscopic and microscopic analysis somewhat unsatisfactory. However, in thin section a sparsely micaceous, optically anisotropic clay matrix can be seen. Abundant subangular quartz grains, with occasional

rounded fragments, is the major constituent. Quartz is most frequently 0.04mm, but grains to 0.47mm are visible and quartz can be divided into the following size categories:

Small	0.05mm or less	61%
Medium	0.06mm-0.10mm	30%
Large	0.11mm or greater	9%

Muscovite mica is sparse and does not appear to exceed 0.07mm. Iron ore is also present.

Very small quantities of subangular felspar are noted. Plagioclase measures up to 0.08mm, while orthoclase reaches 0.21mm. Quartzite and sandstones are present in equal quantities; the former is subangular in shape and is evenly distributed between 0.06 to 0.62mm in size. Fine-grained sandstones, subangular and rounded, are normally naturally occurring inclusions (the use of the phrase 'naturally occurring sandstones' does not necessarily suggest that other sandstones are intentional temper but is used to distinguish between sandstones which do not have a clearly defined boundary and those which do). They are usually from 0.15 to 0.20mm in size. One fragment of a fine grained volcanic rock is also present.

The size and sorting of this sherd may suggest local manufacture, as it does not correspond to any known kiln groups, however these results may be misleading due to its vitrified state, which made size analysis difficult. The volcanic rock may be drift from the Malvern area. Examination of further samples is necessary before any definitive conclusions can be reached.

Other material

Four other samples were examined, in addition to the 'waster' sherd, (SR37) and fabric descriptions follow. Textural analysis was not carried out on any of these samples.

SR38

This tankard has an optically anisotropic clay matrix which contains moderate quantities of subangular and angular quartz grains. Like most Severn Valley fabrics, the majority of quartz grains are 0.05mm or less but examples up to 0.25mm are not infrequent and are characteristic of the sherd. Moderate amounts of muscovite and biotite mica are also contained in the clay matrix. The former predominated with examples up to 0.20mm being seen in thin section. Iron ore is also found and measures up to 0.90mm.

Other temper includes both plagioclase and orthoclase felspar in sparse quantities. Plagioclase measures up to 0.11mm while orthclase is seen to 0.19mm.

Rock fragments consist of limestone, quartzite, siltstone and sandstone. Limestone is sparse and does not appear to exceed 0.08mm in size. Quartzite and fine-grained sandstone occur in moderate and abundant amounts. The quartzite range from 0.13 to 0.55mm in size and are subangular in shape. Subangular and angular fragments of fine-grained sandstone can be seen between 0.30 to 0.45mm. Some of the fragments contain mica while others are metamorphosed. Finally, siltstone, sometimes micaceous, measure to 0.25mm.

SR39

This sherd has a very clean clay matrix which is optically anisotropic and contains angular quartz with occasional subangular or angular examples. The majority of quartz grains are *c* 0.05mm or less. Moderate quantities of muscovite mica (to 0.10mm) and lesser amounts of biotite are seen in the matrix. In addition, occasional rounded and subangular clay pellets, to 0.45mm, are present. Iron ore occurred in sparse quantities to 0.30mm.

Single fragments of plagioclase felspar (0.90mm) and quartzite (0.07mm) are also identified. Siltstone and fine grained sandstone are also seen in limited quantities. Siltstone is sometimes micaceous and occurs up to 0.12mm, while sandstone is seen as large as 0.30mm.

SR40

SR40 contains rock and mineral fragments which characterise it to the Malvern region. These fragments include hornblende, volcanic rock and feldspathic sandstone. While the latter is not restricted to the Malvern area it can be found in many kiln samples and is therefore a diagnostic feature of the Malvern area.

SR41

Abundant subangular quartz set in a clean, optically anisotropic clay matrix is seen in thin section. Most of the quartz is 0.05 to 0.06mm or less, but examples up to 0.50mm are isolated. Occasionally, rounded or subanguiar clay pellets, to *c* 0.25mm, are present in the matrix. The fabric is moderately micaceous and both muscovite and biotite (to *c* 0.10mm) are contained in the clay. Sparse iron ore is also found. A single fragment of plagioclase felspar (0.10mm) conclude the list of mineral inclusions.

Rock fragments consist of siltstone, fine-grained sandstone, quartzite and limestone. Of these, a single grain of micaceous siltstone (0.35mm) was identified. Quartzite and sandstone occur in slightly greater quantity than siltstone, but

neither is common. Quartzite is seen from 0.10 to 0.76mm. Sandstone, sometimes micaceous, measures from 0.30 to 0.50mm. Abundant inclusions of limestone are present and they are between 0.15 to 0.25mm in size.

Discussion

On the basis of rock and mineral inclusions it can be suggested that these four sherds represent a minimum of two production centres: one containing Malvernian rock fragments and another with limestone inclusions. SR39 and SR41 may represent a discrete source, as they both contain clay pellets and have a clean clay matrix. It is also possible that SR38, with reference to quartz size, is different from the other samples. If all these suppositions are correct, three sources might be indicated.

First century AD pottery from Droitwich

Jane Timby

Thin sections were prepared from vessels derived from the 1st century AD civilian levels during the excavation. The vessels examined consisted of one imported *terra nigra* platter and two coarseware platters of probably native origin. The purpose of the examination was:

a) to provide a more detailed fabric analysis of the vessels in an attempt of identify potential areas of production.
b) to compare the vessels with those already examined from other sites
c) to compare the *terra nigra* platters with other similar examples in an attempt to determine whether examples from military contexts can be distinguished from those occurring in apparently civilian contexts.

The thin sections were prepared using conventional techniques (cf Tite 1972, 215-6). The samples were allocated numbers (ie R 794-799) which refer to the thin section library at the Department of Archaeology, Southampton University, where the sections are currently housed. This referencing was in addition to that used within this report.

Macroscopic description

SR42 Context 564 (Section no R 795)

Form: platter/shallow bowl, diameter 220mm. Colour: Interior surface (I) smooth, black. Exterior surface (E) matt grey, not as highly polished, dark grey-black, Core (C) mid grey. Fabric: very hard, fine sandy ware. Occasional grains of quartz and voids are visible.

SR43 Context 1146 (Section no R 796)

Form: platter/shallow bowl, diameter 200mm. Colour: I-smooth, polished pewter grey, E-not as highly polished, dark grey-black, C-mid grey. Fabric: very hard, fine sandy ware. Occasional grains of quartz and voids are visible.

SR44 Context 100 (Section no R 797)

Form: platter, Cam type 16. Colour: I-smooth polished black, E-matt black, C-light blue-grey. Fabric: very hard, fine sandy ware - *terra nigra*.

Examined but not sectioned:
Context 2048
Form: basesherd from a platter Cam type 16 with a low footring. Interior surface marked with at least two lightly incised concentric lines. Colour: I-polished dark grey, E-matt dark grey, C-light blue-grey. Fabric: hard, fine sandy ware, - *terra nigra*.

Microscopic description
Terra nigra platter (SR44)
Petrologically this sherd consists of a fine optically anisotropic clay matrix, with a dense scatter of fine, mostly subangular to rounded quartz grains (x-0-0.4mm). Occasional inclusions of dark brown iron ore, microcrystalline silica (chert/flint) and very fine white mica also occur. SR44 also contains occasional grains of tourmaline and augite. In the absence of a distinct mineral assemblage the sample was used in a programme of textural analysis along with a number of other sherds from contemporary sites in Britain. The occurrence of *terra nigra* platters of Cam type 16 at the Old Bowling Green is typical of late 1st century AD military contexts outside the main distribution of this ware in south-east Britain (see Rigby 1977 for the current known distribution of Cam 16 platters). This form, together with flanged cups Cam 58, was amongst the latest of the Gallo-Belgic wares to be produced and the main production region appears to be based in the Marne and Moselle. The analysis was undertaken to test for any correlation between fabric and the nature of the context in which the particular platter was found, for example between military and civilian occupation. Grain size analysis was carried out using the methods outlined by Peacock (1971).

The data derived from the textural analysis of the Droitwich examples was analysed along with the data from a number of other identical platters from sites in Britain (Darvill and Timby 1982, 81-2, fig 8.5). The results would suggest that at least three sources were involved for the sample studied. There did not however appear to be any distinction between platters from civilian contexts compared with those from military sites. At present one must assume that the potters were probably supplying both markets. It is possible that the vessels arrived as bulk consignments from one region (or group of workshops) rather than from an individual workshop. It is also possible that the 'civilian' examples were derived from a military source.

Coarseware (SR42)
Common frequency of mostly angular quartz (x 0.1mm) in an optically anisotropic matrix. In addition there are occasional inclusions of quartzite, plagioclase

felspars, microcline, augite and silty sandstone.

Coarseware (SR43)
Fine optically anisotropic matrix with a dense frequency of fine quartz (x 0 0.3mm) with an infrequent scatter of larger grains. Fine lathes of muscovite mica also occur in some frequency. In addition there are occasional grains of quartzite, iron ore and sandstone.

The fabrics from the two coarseware vessels samples were microscopically very different from one another. On analogy with other sites, vessels of this nature are usually produced locally with a fairly restricted distribution. The petrology would be consistent in this case with a local source, or sources, but unfortunately without a more detailed look at the clays in the area or other local products, little more can be said about these vessels. They did not compare with any of the coarsewares studied from Chester also dating to the later 1st century (Ward 1981).

Table M19 Sherds used for petrological analysis

Accession numbers refer to the collection of ceramic thin sections at the Department of Archaeology, University of Southampton.

Specialist Reference	Accession no	Context	Fabric	Thin section no
1	R372	1161	18	
2	R373	1142	19	
3	R374	1138	15	
4	R375	1070	3	
5	R376	1001	19	
6	R377	1023	18	
7	R378	1041	15	
8	R379	1194	15	
9	R380	1023	18	
10	R381	1023	14	
11	R382	1156	18	
12	R383	1176	12	
13	R384	1253	12	
14	R385	1001	19	
15	R386	1175	12	
16	R387	1214	14	
17	R388	1081	3	
18	R389	1001	17	
19	R390	1178	16	
20	R391	1105	18	
21	R392	1161	19	
22	R393	1689	12	
23	R394	1023	12	
24	R395	1098	12	
25	R396	1205	48	
26	R397	1137	12	
27	R398	1023	17	
28	R399	1689	12	
29	R400	546	23	
30	I 1627	2192	5	D4
31	I 1628	2184	8	D3

Specialist reference	Accession no	Context	Fabric	Thin section no
32	I 1629	1942	8	D2
33	I 1630	471	7	D1
34	I 1194	1258	4	D6
35	I 1193	2027	57	D5
36	I 1197	108	99	WC
37	R935	28 A-D	12	
38	R936	28 A-D	12	
39	R937	28 A-D	12	
40	R938	1173	2	
41	R939	1205	12	
42	R795	564	7	
43	R796	1146	8	
44	R797	100	25	

Amphorae David Williams

The *amphorae* were classified by fabric and form and then weighed and counted. The types represented were Dressel 20, Dressel 2-4, Pélichet 47, Rhodian style, Camulodunum 186A and a small number of unassigned types. The origin and dates of these *amphorae* are summarised below.

Total weight of *amphorae* sherds	22,295g
Total number of *amphorae* sherds	243

Total of each fabric

	by weight		by count	
Dressel 20	17,330g	77.7%	140	57.6%
Possible Dressel 20	943g	4.2%	8	3.3%
Dressel 2-4	1,248g	5.6%	21	8.6%
Pélichet 47	1,180g	5.4%	27	11.1%
Rhodian style	1,028g	4.6%	39	16.1%
Camulodunum 186A	423g	1.9%	3	1.2%
Unassigned	143g	0.6%	5	2.1%

Dressel 20

Dressel 20 *amphorae* came from the Guadalquivir region of Spain, between Seville and Cordoba, where they were used principally for the transportation of olive-oil. This type of *amphorae* has a wide date-range from the pre-Roman Period 1 levels at Camulodunum to the 3rd/4th centuries AD.

Dressel 2-4

This form of *amphorae* was made in a variety of places during the late 1st century BC to the 2nd century AD, eg Italy, southern France and Spain, and was probably used for carrying wine.

Pélichet 47

Wine-*amphorae*, probably from southern France, in particular the area around the mouth of the Rhône. In Britain, these vessels date from the latter half of the 1st century AD to the beginning of the 3rd century, with the main concentration occurring during the second half of the 2nd century.

Rhodian style

This type of *amphorae* occurs in the pre-Roman Period 1 levels at Camulodunum and lasts well into the Flavian period. The Droitwich sherds are in Peacock's Fabric 1 (1977a), with a probable origin in Rhodes, and it is likely that they carried wine.

Camulodunum 186A

This *amphorae* type probably originated from the coastal region of southern Spain between Cadiz and Malaga and contained marine products. The form can be dated from the end of the 1st century BC to the late 1st century AD.

Table M20 Amphorae catalogue

Context	Specialist reference	Type
3	1-7	Dressel 20+Pélichet 47
25	8	Dressel 20
28 A-D	9-12	Dressel 20
3009	13-14	Dressel 20
3012	15	Dressel 20
49	16-18	Dressel 20
100	19-21	Pélichet 47+Camulodunum 186A
113	22-3	Dressel 20
120	24	Dressel 20
124	25-6	Unknown+Dressel 20
131	27	Dressel 20
457	28	Rhodian
469	29-33	Rhodian
471	33-49	Rhodian (15)
477	50-65	Rhodian
500	66-8	Dressel 20
501	69-71	Dressel 20
531	72-9	Dressel 20
547	80-2	Dressel 20
564	83-6	Dressel 20
579	87	Dressel 20
629	88	Dressel 20
639	89	Dressel 20
677	90	Dressel 20
682	91-2	Dressel 20
699	93+129	Dressel 20+Unknown
718	94	Dressel 20
728	95	Pélichet 47
731	96-7	Dressel 20
743	98-9	Dressel 20+Unknown
747	100-2	Dressel 20
751	103	Dressel 20
1002	104	Dressel 20
1006	105	Dressel 20

Context	Specialist reference	Type
1015	106	Dressel 20
1023	107-8	Dressel 20
1039	109	Dressel 20
1098	110-12	Dressel 20+Unknown
1111	113	Pélichet 47
1149	114	Dressel 20
1151	115	Pélichet 47
1192	116	Rhodian
1193	117-18	Dressel 20+Rhodian
1205	119-20	Pélichet 47+Dressel 20
1215	121-2	Dressel 20+Camulodunum 186A
1216	123	Dressel 20
1230	124-8	Dressel 20
1515	130	Pélichet 47
1522	131-49	Dressel 20
1536	150	?Dressel 20
1541	151	Dressel 20
1561	152	Dressel 20
1567	153-4	Dressel 20
1689	155	Pélichet 47
1723	156	Dressel 20
1752	157-9	Dressel 20
1768	160-1	Pélichet 47+Dressel 20
1866	162-3	Dressel 20
1896	164	Dressel 20
1918	165-7	Pélichet 47
1919	168-9	Pélichet 47+Dressel 2-4
1920	170-1	Pélichet 47+Dressel 20
1942	172-5	Pélichet 47+Dressel 20
1948	176-7	Dressel 20
1963	178	Dressel 20
1985	179-184	Dressel 20
2025	185	Dressel 20
2048	186-212	Dressel 20+Pélichet 47+ Dressel 2-4
2054	213-5	Dressel 20

Context	Specialist reference	Type
2089	216	Dressel 20
2202	217-23	?Dressel 20
2227	224	Dressel 20
2232	225	Dressel 20
2267	226-7	Dressel 20
2271	228	Dressel 20
2274	229-31	Dressel 20
2301	232	Dressel 20
2303	233-4	Dressel 20
2330	235	Dressel 20
2382	236	Dressel 20
2413	237	Dressel 20
2436	238-9	Pélichet 47
2610	240-1	Dressel 20+Dressel 2-4
Unstratified	242	Dressel 20
Unstratified	243	Dressel 20

Samian catalogue Brenda Dickinson

The catalogue entries are arranged in the following order: specialist reference, context, structure, phase, description

1	3	68	13	Jar (form 72 etc), Central Gaulish. Second half of the 2nd century
2	3	68	13	Form 18/31, from Les Martres-de-Veyre. First half of the 2nd century
3	3	68	13	Form 31R, Central Gaulish. Mid to late Antonine
4	3	68	13	Form 37, from Les Martres-de-Veyre. First half of the 2nd century
5	3	68	13	Form 18/31, Central Gaulish. Hadrianic
6	3	68	13	Form 18/31, from Les Martres-de-Veyre. Trajanic
7	3	68	13	Form 31, Central Gaulish. Antonine
8	3	68	13	Form 31, Central Gaulish. Antonine. Joins SR9 and goes with SR14, SR16 and SR19
9	3	68	13	Form 31, Central Gaulish. Antonine. Joins SR8 and goes with SR14, SR16, SR19
10	3	68	13	Footring from a rouletted dish, Central Gaulish. Hadrianic or Antonine
11	3	68	13	Form 18/31, from Les Martres-de-Veyre. Trajanic or early Hadrianic
12	3	68	13	Form 18/31 or 31, Central Gaulish, with parts of two lead rivets. Hadrianic or early Antonine
13	3	68	13	Form 38 flange, Central Gaulish. Antonine
14	3	68	13	Form 31, Central Gaulish. Antonine. Goes with SR8, SR9, SR14, SR16 and SR19
15	3	68	13	Form Curle 11 (?) footring, Central Gaulish. Hadrianic or early Antonine
16	3	68	13	Form 31, Central Gaulish. Antonine. Goes with SR8, SR9, SR14, SR16 and SR19
17	3	68	13	Form 29 base, South Gaulish. Neronian or early Flavian
18	3	68	13	Form 18/31, Central Gaulish. Hadrianic or early Antonine
19	3	68	13	Form 31, Central Gaulish. Antonine. Joins

SR9 and goes with SR14, SR16, SR19

20 3 68 13 Form 30 base, very small (probably the rouletted variety), from Les Martres-de-Veyre. First half of the 2nd century. Joins SR80

21 3 68 13 Form 37, South Gaulish, with a boar (Hermet 1934, pl 27, 40), a cluster of buds and a conventional grass-tuft. The decoration is probably similar to that on a bowl in the Bregenz Cellar hoard (Jacobs 1913, no 12). All the details were used at La Graufesenque by potters whose work was influenced by Germanus i. *c* AD 80-110

22 4 68? 13 Form 33, from Les Martres-de-Veyre. First half of the 2nd century

23 4 68? 13 Form 18/31, from Les Martres-de-Veyre. Trajanic or early Hadrianic

24 10 68 13 Form 27g, South Gaulish. 1st century

25 10 68 13 (With 257, 280, 569, and 625). The greater part of a bowl of form 29, in 1st century Lezoux ware, with orange fabric and a dull, orange glaze. The moulding is exceptionally good, though the finishing of the rim is not to the same standard. The upper zone occurs on bowls stamped by, or in the style of Atepomarus ii (Bull Hist et Scient de l'Auvergne LXII (1942), 200, 15). The motifs in the lower zone appear to be made up of repeated impressions of similar large and small leaves. Neronian

26 10 68 13 Form 29 rim, South Gaulish. Neronian or early Flavian

27 10 68 13 Form 15/17 or 18, South Gaulish. Flavian

28 10 68 13 Bowl, Central Gaulish. Antonine

29 10 68 13 Form 15/17 or 18, burnt, South Gaulish. 1st century

30 10 68 13 Form 30 or 37 rim, burnt, Central Gaulish. Antonine

31 10 68 13 Form 18/31 or 31, Central Gaulish. Hadrianic or early Antonine

32 10 68 13 Form 30 or 37 rim, South Gaulish. Flavian or Flavian-Trajanic

33 10 68 13 -, Central Gaulish. Antonine

34 10 68 13 Form 31, Central Gaulish. Antonine

35 10 68 13 Form 18/31R Central Gaulish. Antonine

36 10 68 13 Form 18/31 or 31, Central Gaulish. Late Hadrianic or early Antonine

37 10 68 13 Form 31, Central Gaulish. Antonine

38 10 68 13 Form 15/17R or 18R, South Gaulish. A shallow groove for a rivet was probably not completed because of the hardness of the overfired fabric. Flavian or Flavian-Trajanic

39 10 68 13 Form 37 base, from Les Martres-de-Veyre. Hadrianic or early Antonine

40 10 68 13 Form 27 or 35, South Gaulish, with the glaze ground away inside. Flavian

41 10 68 13 Form 27 (?) rim, burnt, South Gaulish. Flavian or Flavian-Trajanic

42 10 68 13 Form 18/31, from Les Martres-de-Veyre. First half of the 2nd century

43 10 68 13 Form 33, Central Gaulish. Hadrianic or Antonine

44 10 68 13 Form 30 or 37 rim, South Gaulish. Flavian or Flavian-Trajanic

45 10 68 13 -, Central Gaulish. Antonine

46 10 68 13 Form 38 flange, Central Gaulish. Antonine

47 10 68 13 Form 29, South Gaulish. The upper zone has a fan-shaped plant, in the lower part of a scroll. Late Neronian or early Flavian

48 10 68 13 Form 30 or 37, Central Gaulish. Antonine

49 10 68 13 Form 18/31, Central Gaulish. Hadrianic or early Antonine

50 10 68 13 Form 18, South Gaulish. Flavian. Joins SR78

51 13 68 12-13 Form 18/31, from Les Martres-de-Veyre. Trajanic. With SR63

52 13 68 12-13 Form 33, Central Gaulish. Hadrianic or Antonine

53 14 68 12-13 Form 18/31R, Central Gaulish. Hadrianic or early Antonine

54 14 68 12-13 Form 31, Central Gaulish. Antonine

55 14 68 12-13 Dish or bowl, Central Gaulish. Antonine

56 14 68 12-13 Central Gaulish flake. Antonine

57 14 68 12-13 -, burnt, South Gaulish. 1st century

58 14 68 12-13 (With 120 and 121) Three fragments of form 37, two joining, Central Gaulish. Panelled decoration, with: 1) A small double medallion. 2) A dolphin (D.1051) in a chevron festoon (Rogers 1974, F15). This bowl could be by either Laxtucissa or Paternus v, both of whom used these details, the T-tongued ovolo (Rogers 1974, B206) and the same combination of horizontal border of small beads and vertical borders of rhomboidal beads. Cf

Stanfield and Simpson 1958, pl 97, 4, 7; 104, 4 for some of the details on stamped bowls. *c* AD 160-200

59	14	68	12-13	Form 33, Central Gaulish. Antonine
60	14	68	12-13	Form 18/31, from Les Martres-de-Veyre. Trajanic
61	15	68	12-13	Form 18/31, Central Gaulish. Hadrianic
62	16	1?	5	Form 29 rim, South Gaulish. Neronian or early Flavian
63	22	66?	7-12	Form 18/31, from Les Martres-de-Veyre. Trajanic. With SR51
64	22	66?	7-12	Counter, burnt, Central Gaulish. 2nd century
65	24	66	7-9	Form 31, Central Gaulish, stamped]I or I[. Antonine
66	26	32	11-12	Dish. South Gaulish. Flavian or Flavian-Trajanic
67	28A	1	5	Form 30, Central Gaulish, with rouletting replacing the more usual moulded decoration. Both forms 30 and 37 were treated this way in Central and East Gaul. The fabric of this bowl suggests origin at either Les Martres-de-Veyre or at one of the Hadrianic-Antonine sites at Lezoux. In either case, it will belong to the first half of the 2nd century
68	28A	1	5	(With SR79, SR84-5 and SR507). Six fragments, some joining, of form 30, in the fabric of Les Martres-de-Veyre. A freestyle scene, with ovolo (Rogers 1974, B14) and figures used by mould makers for Donnaucus. The warriors to left (0.210) and right (not in D or O) are on a bowl from London (Walters 1908, M1441). The kilted figure (D.125, with a detached sword, instead of a spear) and amazon (0.251) are on a bowl from Les Martres (Terrisse 1968, pl XXXI, 606). *c* AD 110-120
69	28A	1	5	Form 27, South Gaulish. Flavian or Flavian-Trajanic
70	28A	1	5	Form 18/31R, stamped TA[SGILLVSF] by Tasgillus ii (die 2a). This potter worked at both Les Martres-de-Veyre and Lezoux, but all the examples noted of this stamp are in Les Martres fabric, and there are several examples from the kilns there. One is under the base of a form 29. The stamp has also been noted at Malton. *c* AD 110-125
71	28A	1	5	Form 37, Central Gaulish. Probably by Arcanus, who used the beaded circle and zig-zag border. Hadrianic or early Antonine
72	28A	1	5	35, South Gaulish, worn inside. Flavian
73	28A	1	5	Form 18/31R, Central Gaulish. Hadrianic or

early Antonine

74 28A 1 5 Form 15/17 or 18, burnt, South Gaulish. 1st century

75 28A 1 5 Form 29, South Gaulish. Upper zone, with a scroll with spirals and leaves. The spiral is unusual in having no rosette at its inner end. The leaf (Knorr 1919, Taf 65, 17, under Primus) occurs on bowls stamped by Gallicanus, Matugenus ii and Primus iii. *c* AD 50-65

76 28A 1 5 Form Ritt. 12 or Curle 11 flange, South Gaulish. 1st century

77 28A 1 5 Form 18/31, from Les Martres-de-Veyre. Trajanic

78 28A 1 5 Form 18, South Gaulish. Flavian. Joins SR50

79 28A 1 5 (With SR68, SR84-5 and SR507). Six fragments, some joining, of form 30, in the fabric of Les Martres-de-Veyre. A freestyle scene, with ovolo (Rogers 1974, B14) and figures used by mould makers for Donnaucus. The warriors to left (0.210) and right (not in D or O) are on a bowl from London (Walters 1908, M1441). The kilted figure (D.125, with a detached sword, instead of a spear) and amazon (0.251) are on a bowl from Les Martres (Terrisse 1968, pl XXXI, 606). *c* AD 110-120. (The sherd is marked 28C)

80 28A 1 5 Form 30 base, very small (probably the rouletted variety), from Les Martres-de-Veyre. First half of the 2nd century. Joins SR20

81 28B 1 5 Form 18/31R, Central Gaulish. Hadrianic or early Antonine

82 28B 1 5 Form 37, in the fabric of Les Martres-de-Veyre. The single-bordered ovolo (Rogers 1974, B28) was used there by X-2 and X-3 (Drusus i). The rim has been drilled for a rivet. *c* AD 100-120

83 28C 1 5 (With SR68, SR79, SR84-5 and SR507). Six fragments, some joining, of form 30, in the fabric of Les Martres-de-Veyre. A freestyle scene, with ovolo (Rogers 1974, B14) and figures used by mould makers for Donnaucus. The warriors to left (0.210) and right (not in D or O) are on a bowl from London (Walters 1908, M1441). The kilted figure (D.125, with a detached sword, instead of a spear) and amazon (0.251) are on a bowl from Les Martres (Terrisse 1968, pl XXXI, 606). *c* AD 110-120 (illustrated)

84-5 28C 1 5 (With SR68, SR83, SR79 and SR507). Six fragments, some joining, of form 30, in the fabric of Les Martres-de-Veyre. A freestyle scene, with ovolo (Rogers 1974, B14) and figures used by mould makers for Donnaucus. The warriors to left (0.210) and right (not in D or O) are on a bowl from London (Walters 1908, M1441). The kilted figure (D.125, with a detacherd,

instead of a spear) and amazon (0.251) are on a bowl from Les Martres (Terrisse 1968, pl XXXI, 606). *c* AD 110-120

86 28C 1 5 Form 18/31, burnt, from Les Martres-de-Veyre. Trajanic or early Hadrianic

87 28C 1 5 Form 15/17 or 18. South Gaulish. Flavian

88 28C 1 5 Form 18/31, burnt, from Les Martres-de-Veyre. Trajanic or early Hadrianic

98-9 35 66 7-9 Form 18/31R (2 joining sherds) Hadrianic or early Antonine

100 35 66 7-9 Form 37, South Gaulish. The scroll, with leaves in the upper parts, the lower parts divided horizontally, with leaf-tips above and animals below, and a basal wreath of chevrons, is a common type of decoration in the period. *c* AD 75-95

101 35 66 7-9 Form 37, Central Gaulish. Probably Antonine. Joins SR112 and SR113

102 35 66 7-9 Form 31, Central Gaulish. Antonine

103 35 66 7-9 Cup, Central Gaulish. Hadrianic-Antonine

106 39 - - Form 45 collar, East Gaulish. Late 2nd or early 3rd century

109 44 66 7-9 Form 18/31, Central Gaulish or East Gaulish. Hadrianic-Antonine

110 44 66 7-9 Form 27 or 35, Central Gaulish. Hadrianic or early Antonine

112-3 49 66 7-9 Form 37, Central Gaulish. Probably Antonine. Joins SR101

114 49 66 7-9 Form 37, Central Gaulish. Probably Cinnamus ii, with his striated spindle and hollow bead. *c* AD 150-180

115 49 66 7-9 Form 29 base, South Gaulish. Neronian or early Flavian

116 49 66 7-9 Form 18, South Gaulish. Flavian

117 49 66 7-9 Form 18R, burnt, South Gaulish. Drilled for a rivet. Neronian or early Flavian

118 49 66 7-9 Form 29 rim, South Gaulish. Neronian or early Flavian

119 52 66 7-9 Form 18/31-31, Central Gaulish, with a whitish slip under the glaze. Hadrianic-Antonine

120-1 52 66 7-9 (With SR58) Three fragments of form 37, two joining, Central Gaulish. Panelled decoration, with: 1) A small double medallion. 2) A dolphin (D.1051) in a chevron festoon Rogers 1974, F15). This bowl could be

either Laxtucissa or Paternus v, both of whom used these details, the T-tongued ovolo (Rogers 1974, B206) and the same combination of horizontal border of small beads and vertical borders of rhomboidal beads. Cf Stanfield and Simpson 1958, pl 97, 4, 7; 104, 4 for some of the details on stamped bowls. *c* AD 160-200

122 64 36 4-5 Form 37, Central Gaulish. Panelled decoration, with a Bacchus (0.566) and erotic group (Oswald 1936-7, pl XC, B). The beads and rosette suggest the work of Criciro v, and the Bacchus appears on a bowl in his style from Leicester. *c* AD 140-170

123 64 36 4-5 Form 29, South Gaulish. Early Flavian

124 69 34 12 Form 30 or 37 rim, Central Gaulish. Hadrianic or Antonine

125 69 34 12 Form 33, Central Gaulish. Hadrianic-Antonine

126 100 69 14 Form 18/31-31, Central Gaulish. Hadrianic or Antonine

127 108 34 12 -, Central Gaulish. Hadrianic or Antonine

128 115 3 4(11?) Form 29 base, South Gaulish. Neronian or early Flavian

129 192 214 4(5) Form 37, Central Gaulish. Hadrianic or Antonine

130 283 63 4? Form 31, Central Gaulish. Antonine

131 294 63 4 Form 27, from Les Martres-de-Veyre. Trajanic or early Hadrianic

132 313 42 13 Form 37 base, Central Gaulish. Antonine

133 329 - - Form 18/31 or 31, Central Gaulish. Hadrianic-Antonine

134 329 - - Form 31, Central Gaulish. Antonine

135 329 - - Form 46 (with Curle 23 rim), Central Gaulish. Hadrianic-Antonine

136 329 - - Form 31, Central Gaulish. Antonine

137 500 - - Dish, Central Gaulish. Hadrianic or early Antonine

138 500 - - Form 18/31 or 31, Central Gaulish. Hadrianic or Antonine

139 500 - - Form 31R, Central Gaulish. Mid to late Antonine

140 500 - - Form 29, South Gaulish. Neronian or early Flavian

141 500 - - Footring, Central Gaulish. Hadrianic or

Antonine

142 500 - - Form 27, burnt, South Gaulish (?). 1st century(?)

143 500 - - Form 18, South Gaulish. Flavian

144 501 69 14 Form 29 rim, burnt, South Gaulish. Neronian or early Flavian

145 501 69 14 Form 27, Central Gaulish. Hadrianic

146 501 69 14 Form 31R, Central Gaulish. Mid to late Antonine. Joins SR160

147 501 69 14 Form 31, Central Gaulish. Antonine

148 501 69 14 Form 30 or 37 rim, East Gaulish. Late 2nd or early 3rd century

149 501 69 14 Form 18, South Gaulish. Flavian

150 501 69 14 Form 32 etc, East Gaulish. Late 2nd or early 3rd century

151 501 69 14 Form 30 or 37 rim, Central Gaulish. Antonine

152 501 69 14 Form 29, South Gaulish. Neronian

153 501 69 14 Form 31, Central Gaulish. Mid to late Antonine

154 501 69 14 Form 31, Central Gaulish. Early to mid Antonine. Joins SR159

155 501 69 14 Dish or bowl, East Gaulish. Late 2nd or early 3rd century

156 501 69 14 Form 18, burnt, South Gaulish. 1st century

157 501 69 14 Form 37, Central Gaulish. Hadrianic

158 501 69 14 Form 30, Central Gaulish. Antonine. With SR203-4

159 501 69 14 Form 31, Central Gaulish. Early to mid Antonine. Joins SR154

160 501 69 14 Form 31R, Central Gaulish. Mid to late Antonine. Joins SR146

161 501 69 14 Form 79, Central Gaulish. Mid to late Antonine. Joins SR178 and goes with SR174, SR179 and SR186

162 501 69 14 Form 38 or 44(?). Central Gaulish. Hadrianic-Antonine

163 501 69 14 Form 30 or 37 rim, Central Gaulish. Hadrianic or early Antonine

164 501 69 14 -, Central Gaulish. Hadrianic or Antonine

165	501	69	14	Dish, Central Gaulish. Hadrianic or Antonine
166	501	69	14	Form 81, collar, Central Gaulish. Hadrianic-Antonine
167	501	69	14	Dish, East Gaulish. Late 2nd or early 3rd century
168	501	69	14	Form 30 or 37 rim, Central Gaulish. Antonine
169	501	69	14	Form 33, Central Gaulish. Hadrianic. Joins SR176 and SR198
170	501	69	14	-, heavily burnt. Undatable
171	501	69	14	Form 31, Central Gaulish. Mid to late Antonine
172	501	69	14	Dish, South Gaulish. 1st century
173	501	69	14	Form 29, South Gaulish. Neronian or early Flavian
174	501	69	14	Form 79, Central Gaulish. Mid to late Antonine. Goes with SR161, SR179 and SR186
175	501	69	14	Form 30 or 37 rim(?), South Gaulish. Flavian
176	501	69	14	Form 33, Central Gaulish. Hadrianic. Joins SR169 and SR198
177	501	69	14	Form 33, from Les Martres-de-Veyre. First half of the 2nd century
178-9	501	69	14	Form 79, Central Gaulish. Mid to late Antonine. SR178 joins SR161 and goes with SR161, SR174 and SR186
180	501	69	14	Form 18/31R, Central Gaulish. Hadrianic or early Antonine
181	501	69	14	Form 30, Central Gaulish, in the style of Cinnamus ii. *c* AD 150-180
182	501	69	14	Form 31R, Central Gaulish. Mid to late Antonine
183	501	69	14	Form 37, Central Gaulish, in the style of Cinnamus ii. *c* AD 150-180
184	501	69	14	Form 36 flange (?), East Gaulish. Late 2nd or early 3rd century
185	501	69	14	Form 18, South Gaulish. Neronian or early Flavian
186	501	69	14	Form 79, Central Gaulish. Mid to late Antonine. Joins SR178 and goes with SR161, SR174 and SR179
187	501	69	14	Form 18/31, Central Gaulish. Hadrianic or

early Antonine

188	501	69	14	Form 31, burnt, Central Gaulish. Antonine
189	501	69	14	Form 18/31, Central Gaulish. Hadrianic
190	501	69	14	Form 18, South Gaulish. Neronian or early Flavian
191	501	69	14	Form 18/31R, Central Gaulish
192	501	69	14	Form 29 or 30, South Gaulish, Hadrianic or early Antonine, burnt. Before AD 85
193	501	69	14	-, Central Gaulish. Antonine
194	501	69	14	Form 18/31 etc, Central Gaulish. Hadrianic or Antonine
195	501	69	14	-, East Gaulish. Late 2nd or early 3rd century
196	501	69	14	Form 31, East Gaulish. Late 2nd or early 3rd century
197	501	69	14	Form 30 or 37 rim (?), burnt. Undatable
198	501	69	14	Form 33, Central Gaulish. Hadrianic. Joins SR169 and SR176
199	501	69	14	Form 18R, South Gaulish. Neronian or early Flavian
200	501	69	14	Form 27, South Gaulish. Flavian-Trajanic
201	501	69	14	Form 31R, burnt, Central Gaulish. Mid to late Antonine
202	501	69	14	Form 18, South Gaulish. Flavian
203-4	501	69	14	Form 30, Central Gaulish. Antonine. With SR158
205	511	48	12-13	Form 18/31, Central Gaulish. Hadrianic
206	511	48	12-13	Form 36 flange, Central Gaulish. Mid to late Antonine
207	519	27?	9	Form 30 rim, South Gaulish. Flavian or Flavian-Trajanic
208	522	32	12	-, from Les Martres-de-Veyre. Trajanic or early Hadrianic
209	522	32	12	Form 33, East Gaulish. Late 2nd or early 3rd century
210	523	27	11	Rouletted dish, South Gaulish. Neronian or early Flavian
211	523	27	11	Rouletted dish, Central Gaulish. Hadrianic-Antonine
212	523	27	11	-, Central Gaulish. Hadrianic or Antonine

213	523	27	11	-, Central Gaulish. Antonine
214	523	27	11	Form 79 or Ludowici Tg(?), Central Gaulish. Mid to late Antonine
215	523	27	11	-, Central Gaulish. Antonine
216	526	27?	11	Form Ritt 8, South Gaulish. Neronian. Joins SR434 and goes with SR438
217	529	100	11-12	-, Central Gaulish. Hadrianic, or Antonine. (With rivet hole)
218	529	100	11-12	Form 31, burnt, East Gaulish. (Trier ware). Late 2nd or early 3rd century
219	529	100	11-12	Form 31R, Central Gaulish. Mid to late Antonine
220	531	27	11	A red colour-coated ware base
221	531	27	11	Form 31R, Central Gaulish. Mid to late Antonine
222	531	27	11	Form 18/31, from Les Martres-de-Veyre. Trajanic or early Hadrianic
223	531	27	11	Form 31R, Central Gaulish. Mid to late Antonine
224	531	27	11	Dish, Central Gaulish. Antonine
225	531	27	11	Form 33, South Gaulish. Flavian-Trajanic
226	531	27	11	Form 30 or 37 rim, Central Gaulish. Hadrianic
227	531	27	11	Form 37, Central Gaulish. Hadrianic or early Antonine
228	531	27	11	Form Curle 11, perhaps from La Madeleine. Hadrianic-Antonine
229	531	27	11	Form 37, Central Gaulish. in the style of the Cerialis ii-Cinnamus ii group. *c* AD 140-170
230	531	27	11	Form 31, Central Gaulish. Antonine
231	531	27	11	Form 18/31 or 31, Central Gaulish. Hadrianic or Antonine
232	531	27	11	Form 37, Central Gaulish. Hadrianic or Antonine
233	541	47	7-9(11)	Form 37, Central Gaulish, stamped A[DVOCISI] by Advocisus of Lezoux, where the die (8a) is known. There are many bowls with this stamp on Hadrian's Wall and at its hinterland forts, but only one has been noted in Scotland (at Kelso). The trifid motif occurs on a stamped bowl from the Wroxeter forum destruction (Atkinson 1942, H3). *c* AD

160-190

234 543 47 7-9 -, East Gaulish. Antonine

235 552 27 11 Form 31, Central Gaulish, stamped]ILVI·M or]IIVI·M. Antonine

236 552 27 11 Form 79, Central Gaulish. Mid to late Antonine

237 552 27 11 Form 38 (small), East Gaulish. Late 2nd or early 3rd century

238 552 27 11 Form 30 or 37 rim, Central Gaulish. Hadrianic or Antonine

239 552 27 11 Form 18R, South Gaulish, slightly burnt. Neronian or early Flavian

240 559 27 9(11) Form 31, Central Gaulish. Mid to late Antonine

241 559 27 9(11) Form 29, slightly burnt, South Gaulish. Upper zone, with a scroll with leaves and large and small spirals. The leaf (Knorr 1919, Taf 65, 17, under Primus) is on bowls stamped by Primus iii and Matugenus ii, from Mainz and Aislingen, respectively (Knorr 1919. Taf 66B; Knorr 1912, Taf IV, 3). The rosette in the larger spiral is on a bowl from the Cirencester fort ditch, stamped by Primus. The whole zone is closely paralleled on another bowl from Aislingen (Knorr 1912 Taf V, 8), with decoration similar to that on many bowls by Gallicanus. *c* AD 50-65

242 559 27 9(11) Form 18/31 or 31, Central Gaulish. Hadrianic or Antonine

243 559 27 9(11) Form 67, South Gaulish. Flavian

244 559 27 9(11) Rouletted dish, South Gaulish. Flavian

245 559 27 9(11) Form 79 or Ludowici Tg, East Gaulish. Late 2nd or early 3rd century

246 559 27 9(11) Form 45 collar, East Gaulish. Late 2nd or early 3rd century

247 559 27 9(11) (323) Form 33, stamped [AC]VRIO·F by Acurio of Lezoux, where the die (5a) is known. There is no site dating for Acurio, but his repertoire includes forms 18/31R, 27 and 38. This is probably one of his later stamps, since he used it on forms 31 and 80. *c* AD 150-170

248 560 27 9(11) -, Central Gaulish. Hadrianic or Antonine

249 560 27 9(11) Form 18, South Gaulish. Flavian

250 560 27 9(11) Form 31, Central Gaulish. The wall has shallow, irregularly-spaced grooves both inside and out. Mid to late Antonine

251 560 27 9(11) Form 31, Central Gaulish. Antonine

252 563 102 9 Form 31, Central Gaulish, stamped]I· or ·I[. Hadrianic-Antonine

253 564 27 9(11) Rouletted dish, Central Gaulish. Hadrianic or Antonine

254 564 27 9(11) Form 29, South Gaulish. The upper and lower zones are completely filled with decoration, in the manner of the Bassus I-Coelus firm, though with a different range of motifs. Double wreaths in the upper zone are not common and, when they occur, are usually identical. Gallicanus used them on some of his bowls. The motif in the basal wreath occurs mainly in the Claudio-Neronian period, and the use of wavy lines through it, and dividing the two lower wreaths also suggests this date. No parallels have been found for the exclusive use of wreaths on form 29 except on bowls stamped by Gallicanus, but an unprovenanced bowl at Mainz, of which only the lower zone survives, has two wreaths separated by beads. Its basal wreath, very similar to the one on the Droitwich bowl, is divided in the same way, but by beads. *c* AD 50-65. Joins SR261 and goes with SR260 (illustrated)

255 564 27 9(11) (Joins SR324 and SR327). Form 29, South Gaulish. Upper zone, with a winding scroll with small, shell-shaped leaves. Pre-Flavian

256 564 27 9(11) Form 18/31, from Les Martres-de-Veyre. Trajanic. Joins SR281 and goes with SR278

257 564 27 9(11) (With SR25, SR280, SR569 and SR625). The greater part of a bowl of form 29, in 1st century Lezoux ware, with orange fabric and a dull, orange glaze. The moulding is exceptionally good, though the finishing of the rim is not to the same standard. The upper zone occurs on bowls stamped by, or in the style of Atepomarus ii (Bull Hist et Scient de l'Auvergne LXII (1942), 200, 15). The motifs in the lower zone appear to be made up of repeated impressions of similar large and small leaves. Neronian (illustrated)

258 564 27 9(11) Form 18, South Gaulish. Neronian or early Flavian. Perhaps goes with SR276

847 564 27 9(11) Form 18R, South Gaulish, with very faint rouletting. The profile of the wall is nearer to form 18. There is still kiln-grit on the inside of the base and under the footring, so the dish may have been broken before it was ever used. The sherds have been fitted together with a large number of lead rivets, presumably because it was worthwhile to mend a new vessel. Unfortunately, although most of the dish has survived, the complete stamp has not, and only C[or] remains. Neronian or early Flavian

260-1 564 27 9(11) Form 29, South Gaulish. The upper and lower zones are completely filled with decoration, in the manner of the Bassus

I-Coelus firm, though with a different range of motifs. Double wreaths in the upper zone are not common and, when they occur, are usually identical. Gallicanus used them on some of his bowls. The motif in the basal wreath occurs mainly in the Claudio-Neronian period, and the use of wavy lines through it, and dividing the two lower wreaths also suggests this date. No parallels have been found for the exclusive use of wreaths on form 29 except on bowls stamped by Gallicanus, but an unprovenanced bowl at Mainz, of which only the lower zone survives, has two wreaths separated by beads. Its basal wreath, very similar to the one on the Droitwich bowl is divided in the same way, but by beads. *c* AD 50-65. SR261 joins SR254 and SR260 and goes with SR254 (illustrated)

262	564	27	9(11)	Form 79 or Ludowici Tg, Central Gaulish. Mid to late Antonine
263	564	27	9(11)	Form Curle 11 flange, Central Gaulish. Hadrianic or early Antonine
264	564	27	9(11)	Form 18/31, Central Gaulish. Hadrianic
265	564	27	9(11)	Form 33, from Les Martres-de-Veyre. Trajanic or early Hadrianic
266	564	27	9(11)	Footring, South Gaulish. Flavian
267	564	27	9(11)	Form 18, South Gaulish. Neronian or early Flavian
268	564	27	9(11)	Form 27, South Gaulish. Flavian. With SR271 and SR277
269	564	27	9(11)	Form 37, South Gaulish. *c* AD 75-90
270	564	27	9(11)	Form 27, Central Gaulish. Hadrianic
271	564	27	9(11)	Form 27, South Gaulish. Flavian. With SR268
272	564	27	9(11)	-, Central Gaulish, shaped as a counter. Hadrianic or Antonine
273	564	27	9(11)	Form 32, etc, East Gaulish. Late 2nd or early 3rd century
274	564	27	9(11)	Form 30 or 37 rim, Central Gaulish. Hadrianic or Antonine
275	564	27	9(11)	Dish or bowl, Central Gaulish. Hadrianic or Antonine
276	564	27	9(11)	Form 18, South Gaulish. Neronian or early Flavian. Perhaps goes with SR258
277	564	27	9(11)	Form 27, South Gaulish. Flavian. With SR268
278	564	27	9(11)	Form 18/31, from Les Martres-de-Veyre. Trajanic. Goes with SR254
279	564	27	9(11)	Form 27, South Gaulish. Neronian or early

Flavian

280 564 27 9(11) (With SR25, SR257, SR569 and SR625). The greater part of a bowl of form 29, in 1st century Lezoux ware, with orange fabric and a dull, orange glaze. The moulding is exceptionally good, though the finishing of the rim is not to the same standard. The upper zone occurs on bowls stamped by, or in the style of Atepomarus ii (Bull Hist et Scient de l'Auvergne LXII (1942), 200, 15). The motifs in the lower zone appear to be made up of repeated impressions of similar large and small leaves. Neronian (illustrated)

281 564 27 9(11) Form 18/31, from Les Martres-de-Veyre. Trajanic. Joins SR256

282 570 95 7-9 Gritted *mortarium*, burnt, Central Gaulish. *c* AD 170-200

283 570 95 7-9 Form 36, burnt, Central Gaulish. Antonine

284 570 95 7-9 Form 31, Central Gaulish. Mid to late Antonine

285 571 102 9 Form 37 rim, riveted, Central Gaulish. Hadrianic or Antonine

286 571 102 9 Form 30, from Les Martres-de-Veyre, in the style of Igocatus (X-4). *c* AD 100-120. Probably with SR362

287 571 102 9 Form 18/31R, Central Gaulish. Hadrianic or early Antonine

288 571 102 9 Form 37, Central Gaulish. Hadrianic or early Antonine

289 571 102 9 Form 18/31 or 31, burnt, Central Gaulish. Hadrianic or Antonine

290 574 27 9(11) Form 31, burnt, Central Gaulish. Mid to late Antonine

291 574 27 9(11) Form 15/17, South Gaulish. Flavian. With SR292

292 574 27 9(11) Form 15/17, South Gaulish. Flavian. With SR291

293 574 27 9(11) Form 30 or 37 rim, Central Gaulish, drilled for a rivet. Antonine

294 574 27 9(11) Form 31, Central Gaulish. Antonine

295 574 27 9(11) Form 18, South Gaulish. Flavian

296 574 27 9(11) Form 15/17 or 18, burnt, South Gaulish. 1st century

297 574 27 9(11) Form 36 flange, Central Gaulish. Mid to late Antonine

298	577	31	8	Form 33, Central Gaulish. Hadrianic or early Antonine
299	577	31	8	Jar, Central Gaulish. Probably Hadrianic
300	579	27?	9?	Form 18/31-31, East Gaulish. Antonine
301	579	27?	9?	Form 18R, burnt, South Gaulish. 1st century
302	582	99	9-11	-, Central Gaulish. Antonine
303	582	99	9-11	Form 18/31 or 31, Central Gaulish. Hadrianic or Antonine
304	582	99	9-11	Form 31, Central Gaulish. Antonine
305	582	99	9-11	-, burnt. Undatable
306	582	99	9-11	Form 18/31 or 31, Central Gaulish. Hadrianic or Antonine
307	582	99	9-11	Form 29 base, South Gaulish, Neronian
308	582	99	9-11	Form 27, South Gaulish. Neronian
309	582	99	9-11	Form 18/31, Central Gaulish, drilled for rivets. Hadrianic
310	582	99	9-11	Form 15/17, South Gaulish, Pre-Flavian
311	582	99	9-11	-, Central Gaulish. Hadrianic or early Antonine
312	582	99	9-11	Form 18/31 or 31, Central Gaulish, heavily burnt. 2nd century
313	582	99	9-11	-, Central Gaulish. Hadrianic or early Antonine
314	582	99	9-11	Form 37, Central Gaulish. The ovolo (Rogers 1974, B231) and horseman (D.156) were used by Cinnamus ii. *c* AD 150-180. With SR328
315	582	99	9-11	Form 18/31 or 31, Central Gaulish. Hadrianic or Antonine
316	582	99	9-11	Form 18, South Gaulish. Flavian
317	583	31	8	Form 30 or 37 rim, Central Gaulish. Antonine
318	586	28	7-8	Form 18/31 or 31, Central Gaulish. Hadrianic or Antonine
319	589	27	9(11)	Form 30 or 37 rim, Central Gaulish. Antonine
320	589	27	9(11)	Form 31(?), Central Gaulish. Antonine
321	589	27	9(11)	-, Central Gaulish. Hadrianic or Antonine
322	589	27	9(11)	Dish, Montans ware (?). 1st century(?)
323	589	27	9(11)	Form 38 flange, Central Gaulish. Antonine

324	589	27	9(11)	(Joins SR255 and SR327). Form 29, South Gaulish. Upper zone, with a winding scroll with small, shell-shaped leaves. Pre-Flavian
325	589	27	9(11)	-, burnt. Undatable
326	589	27	9(11)	Form 27, South Gaulish. Neronian or early Flavian
327	589	27	9(11)	(Joins SR255 and SR324). Form 29, South Gaulish. Upper zone, with a winding scroll with small, shell-shaped leaves. Pre-Flavian
328	589	27	9(11)	Form 37, Central Gaulish. The ovolo (Rogers B231) and horseman (D.156) were used by Cinnamus ii. *c* AD 150-180. With SR314
329	589	27	9(11)	Form 38 or 44 rim, Central Gaulish. Antonine
330	589	27	9(11)	Form 18 or 18/31, South Gaulish. Flavian or early Trajanic
331	589	27	9(11)	Cup, from Les Martres-de-Veyre. Trajanic or early Hadrianic
332	589	27	9(11)	-, Central Gaulish. Hadrianic or Antonine
333	589	27	9(11)	Form 18, South Gaulish. Early-Flavian
334	616	119	9	Form 45 collar, East Gaulish. Late 2nd or early 3rd century
335	618	118	9	Dish, East Gaulish. Late 2nd or early 3rd century
336	618	118	9	Form 18/31 or 31, Central Gaulish. Hadrianic or early Antonine
337	620	27	11	Form Curle 15 or 23, Central Gaulish. Antonine
338	620	27	11	Form 37, Central Gaulish, with ovolo Rogers (1974) B156, with a wavy line below. The ovolo was regularly used by Iullinus ii, and the border appears occasionally on bowls in his style. *c* AD 160-190
339	628	35	13	Dish, from Les Martres-de-Veyre. First half of the 2nd century
340	629	27	9(11)	Form 33, Central Gaulish. Hadrianic or early Antonine
341	629	27	9(11)	Form 79 or Ludowici Tg, Central Gaulish. Mid-Antonine
342	629	27	9(11)	Form 31, Central Gaulish. Mid to late Antonine

343 629 27 9(11) Form 15/17 or 18, South Gaulish. 1st century

344 629 27 9(11) -, Central Gaulish. Hadrianic or Antonine

345 629 27 9(11) Form 37, Central Gaulish. Hadrianic or Antonine

346 630 27 9(11) Form 37, in the fabric of Les Martres-de-Veyre, with a hare (0.2084) over partly-impressed acanthus leaves (Stanfield and Simpson 1958, fig 37, 33) and a basal wreath of tri-lobed motifs (*ibid* 28). All the details are on a bowl from Colchester stamped under the base, after moulding, by Ioenalis i. *c* AD 100-120

347 630 27 9(11) Form 18/31-31, from Les Martres-de-Veyre. Hadrianic or early Antonine

348 630 27 9(11) Dish (Form 31?), Central Gaulish. Antonine

349 631 96 7-9 Form 31, stamped MATERNI by Maternus iv of Lezoux (die ll). This particular stamp has not been recorded before, but his work is known at the hinterland forts of Hadrian's Wall and at Pudding Pan Rock. His repertoire includes forms 31R, 79, 80 and occasionally 27. *c* AD 160-190. Joins SR354

350 631 96 7-9 Form 37, base, Central Gaulish. Antonine

351 631 96 7-9 -, Central Gaulish. Hadrianic or Antonine

352 631 96 7-9 Form 18/31R, Central Gaulish. Hadrianic or early Antonine

353 631 96 7-9 Form 18/31-31, Central Gaulish. Hadrianic-Antonine

354 631 96 7-9 Form 31, stamped MATERNI by Maternus iv of Lezoux (die ll). This particular stamp has not been recorded before, but his work is known at the hinterland forts of Hadrian's Wall and at Pudding Pan Rock. His repertoire includes forms 31R, 79, 80 and, occasionally, 27. *c* AD 160-190. Joins SR349

355 631 96 7-9 Form 33, Central Gaulish. Hadrianic or early Antonine

356 631 96 7-9 Cup, Central Gaulish. Hadrianic or early Antonine

357 639 11 9 Form 36 flange, Central Gaulish. Antonine

358 677 96 7-9 Form 31, burnt, Central Gaulish. Antonine

359 677 96 7-9 Form 33, Central Gaulish. Hadrianic or early Antonine

360 677 96 7-9 Form 33a, from Les Martres-de-Veyre. Trajanic or early Hadrianic

361 677 96 7-9 Form 18/31, South Gaulish. Flavian-Trajanic

362 677 96 7-9 Form 30, from Les Martres-de-Veyre. The ovolo (Rogers B92) was used by Igocatus (X-4). *c* AD 100-120. Probably from the same bowl as 286, which has a narrow panel of rings

363 677 96 7-9 35 or 42, etc, from Les Martres-de-Veyre. First half of the 2nd century

364 677 96 7-9 Form 37, burnt. Undatable

365 677 96 7-9 Form 31, East Gaulish. Late 2nd or early 3rd century

366 677 96 7-9 -, South Gaulish. 1st century

367 681 98 9 or 11 Form 18/31, from Les Martres-de-Veyre. Trajanic

368 682 99 9 Form 31, Central Gaulish. Antonine

369 682 99 9 Footring, East Gaulish. Late 2nd or early 3rd century

370 682 99 9 Cup, South Gaulish. Flavian

371 682 99 9 Form 33, Central Gaulish. Hadrianic or early Antonine

372 682 99 9 Footring, Central Gaulish. Hadrianic or Antonine

373 682 99 9 35/36 flange, Central Gaulish. Antonine

374 682 99 9 Form 79, Central Gaulish. Mid to late Antonine

375 683 95 7-9 Form 27, Central Gaulish. Hadrianic

376 686 98 9 or 11 -, South Gaulish. Flavian or early Trajanic

377 686 98 9 or 11 Form 18, South Gaulish. Flavian

378 689 - - Form 37, South Gaulish. Flavian

379 692 95 7-9 -, Central Gaulish. Hadrianic or Antonine

380 692 95 7-9 -, burnt, Central Gaulish (?). 2nd century

381 699 112 7 Form 31R, Central Gaulish. Mid to late Antonine

382 699 112 7 Form 37 base, Central Gaulish. Antonine

383 699 112 7 Form 30 or 37 rim (?), Central Gaulish. Hadrianic-Antonine

384 699 112 7 Form 38, East Gaulish, very worn inside base. Late 2nd or early 3rd century. Joins SR390-1

385 699 112 7 Form 37, Central Gaulish, grooved for a rivet. Scroll

386 699 112 7 -, East Gaulish. Late 2nd or early 3rd century

387 699 112 7 Form 33, Central Gaulish. Antonine

388 699 112 7 -, Central Gaulish. Antonine

389 699 112 7 Form 31R, Central Gaulish. Mid to late Antonine

390-1 699 112 7 Form 38. East Gaulish, very worn inside the base. Late 2nd or early 3rd century. Joins SR384

392 699 112 7 Form 33, burnt, Central Gaulish. Antonine

393 699 112 7 Form 31R, Central Gaulish. Mid to late Antonine

394 700 27 9 Form 15/17 or 18 burnt, South Gaulish. 1st century

395 700 27 9 Form 37 base, burnt, Central Gaulish. 2nd century

396 700 27 9 Form 27, burnt. 1st century

397 711 97 5 Form 18/31 or 31, burnt, Central Gaulish. Antonine

398 711 97 5 Form 31, Central Gaulish. Antonine

399 711 97 5 Form 31, Central Gaulish. Early to mid Antonine

855 711 97 5 Form 18/31R, Central Gaulish. Hadrianic-Antonine. With SR856 and SR859-60

856 711 97 5 Form 18/31R, Central Gaulish. Hadrianic-Antonine. With SR855 and SR859-60

857 711 97 5 Missing

858 711 97 5 Dish, Central Gaulish. Hadrianic or Antonine

859-60 711 97 5 Form 18/31R, Central Gaulish. Hadrianic-Antonine. With SR855 and SR856

400 714 96 7-9 Cup footring, from Les Martres-de-Veyre. Trajanic or early Hadrianic

401 714 96 7-9 Form 31, Central Gaulish. Antonine

402 714 96 7-9 Form 33, Central Gaulish. Antonine

403 714 96 7-9 Dish, South Gaulish. Flavian or early Trajanic

404 714 96 7-9 (411) Form 33 or 80, etc, stamped [F:]BI:NIM:^retrograde, by Fabianus ii of Lezoux, where the die (2a) is known. Fabianus probably only used this one die, though others have been attributed to him. It occurs mainly on form 33, but single examples of forms 31 and 31R have been noted. He worked in the Antonine period, but no closer dating is possible

405 717 96 7-9 -, Central Gaulish. Antonine

406 717 96 7-9 Form 18/31-31, Central Gaulish. Hadrianic-

Antonine

407	717	96	7-9	Form 31, Central Gaulish. Antonine
408	717	96	7-9	Form 18/31, from Les Martres-de-Veyre. Trajanic
409	718	99	9	Coarseware
410	718	99	9	Form 27, from Les Martres-de-Veyre. Trajanic or early Hadrianic
411	718	99	9	Form 18/31(R?), Central Gaulish. Hadrianic or early Antonine
412	718	99	9	-, Central Gaulish. Hadrianic or Antonine
413	718	99	9	-, South Gaulish. 1st century
414	722	-	-	Form [illegible]1R, Central Gaulish. Hadrianic-Antonine
415	723	112	7	-, Central Gaulish. Hadrianic or Antonine
416	731	94	7-9	Form 27g, South Gaulish. Flavian or early Trajanic
417	731	94	7-9	Form 29, South Gaulish. Pre-Flavian
418	731	94	7-9	-, South Gaulish. 1st century
419	731	94	7-9	Form 36, South Gaulish. Flavian. With SR427
420	731	94	7-9	Form 18, South Gaulish. Pre-Flavian
421	731	94	7-9	Form 15/17 or 18, South Gaulish. Flavian
422	731	94	7-9	Form 18, South Gaulish. Flavian
423	731	94	7-9	Form 15/17 or 18, South Gaulish. Flavian
424-6	731	94	7-9	Form 18(3), South Gaulish. Flavian
427	731	94	7-9	Form 36, South Gaulish. Flavian. With 419
428	731	94	7-9	Form 37, Central Gaulish, mended in several places with lead rivets. The two repeated panels are: 1) A horseman (0.251). 2) A boar (0.1668) over a lion (0.1497I). On the decoration, this bowl would almost certainly have been attributed to Drusus ii of Lezoux. However, since it is in Les Martres-de-Veyre fabric, it was either made there in a Lezoux mould or, more probably, Drusus began his career at Les Martres, as his connections with Sacer i and his associates would have suggested. It is in his familiar Lezoux early style, with alternating wide and narrow panels without subdivisions (cf Stanfield and Simpson 1958, pl 89, 12, from Heronbridge). His small bowls all seem to be in this style. The type of footring is more common at Les Matres than Lezoux, and also suggests that this is one of his earlier products. A range *c* AD 120-125 is likely for his activity at Les Martres-de-Veyre
429	743	28	7-8	Form 18R, South Gaulish. Neronian or early Flavian

430	743	28	7-8	-, South Gaulish. Flavian or early Trajanic
431	743	28	7-8	Form 37, South Gaulish. Flavian-Trajanic
432	743	28	7-8	Form 15/17R or 18R, South Gaulish. 1st century
433	745	94	7-8	Form 37 rim, Central Gaulish. Hadrianic or Antonine
434	745	94	7-8	Form Ritt 8, South Gaulish. Neronian. Joins SR216
435	745	94	7-8	Form 27, Central Gaulish. Hadrianic
436	745	94	7-8	Form 15/17 or 18 South Gaulish. Neronian or early Flavian
437	745	94	7-8	Form 18/31, from Les Martres-de-Veyre. First half of the 2nd century
438	745	94	7-8	Form Ritt 8, South Gaulish. Neronian. Goes with SR216
439	745	94	7-8	Form 15/17, burnt, South Gaulish. 1st century. With SR440 and SR448
440	745	94	7-8	Form 15/17, burnt, South Gaulish. 1st century. With SR439 and SR448
441	745	94	7-8	Form 27(?), South Gaulish. Neronian or early Flavian
442	746	12	4-8	Form 27, South Gaulish, worn inside. Flavian
443	746	12	4-8	Form 29, heavily burnt, South Gaulish. Late Neronian or early Flavian
444	747	-	-	Form 27, South Gaulish. Neronian or Flavian
445	747	-	-	Form 27, South Gaulish. Flavian
446	747	-	-	Form 18, South Gaulish. Flavian
447	747	-	-	Form 27, South Gaulish. Flavian
448	750	93	4	Form 15/17, burnt, South Gaulish. 1st century. With SR439 and SR440
449	751	94	7-8	Form 27, South Gaulish. Flavian
450	763	93	4	Form 18, South Gaulish. Flavian
451	763	93	4	Form 37, base, South Gaulish. Early Flavian
452	763	93	4	Form 36, South Gaulish. The flange is unusually narrow and the decoration, of barbotine leaves, is widely spaced. One motif has three small leaves, placed fan-wise. Probably Flavian
453	763	93	4	Form 27 (2 joining fragments), South Gaulish. Neronian-Flavian
454	1000	69	14	Form 79, Central Gaulish. Mid to late

Antonine

455	1000	69	14	Form 37 rim, Central Gaulish. Antonine
456	1000	69	14	Form 33, South Gaulish. Neronian or early Flavian
457	1000	69	14	Form 33, Central Gaulish. Antonine
458	1000	69	14	Form 18, South Gaulish. Neronian or early Flavian
459	1000	69	14	Form 38 or 44(?), Central Gaulish. Antonine. With SR460
460	1000	69	14	Form 38 or 44(?), Central Gaulish. Antonine. With SR459
461	1000	69	14	Form 38 flange, Central Gaulish. Mid to late Antonine
462	1000	69	14	Form 37, Central Gaulish, perhaps in the style of Cinnamus ii. Mid to late Antonine
463	1000	69	14	Form 37, Central Gaulish. in style of the Paternus v group. *c* AD 150-200
464	1000	69	14	Dish, heavily burnt, Central Gaulish. Mid to late Antonine. Joins SR466
465	1000	69	14	Form 37 rim, Central Gaulish. Antonine
466	1000	69	14	Dish, heavily burnt, Central Gaulish. Mid to late Antonine
467	1000	69	14	Form 31, Central Gaulish. Mid to late Antonine. Joins SR464
468	1000	69	14	Form 37, Central Gaulish, in the style of the Cerialis ii-Cinnamus ii group. *c* AD 140-170
469	1000	69	14	Form 36, Central Gaulish. Mid to late Antonine
470	1001	69	14	Dish, East Gaulish. Late 2nd or early 3rd century
471	1001	69	14	Form 31R(?), Central Gaulish. Mid to late Antonine
472	1001	69	14	Form 31, Central Gaulish. Antonine
473	1002	28	7-8	Form 30 or 37 rim, South Gaulish. Flavian
474	1002	28	7-8	Form 30 or 37 rim, Central Gaulish. Antonine
475	1002	28	7-8	Form 79R or Ludowici TgR, Central Gaulish. Mid to late Antonine
476	1002	28	7-8	-, Central Gaulish. Antonine

477	1003	125	12	Form 31R, Central Gaulish. Mid to late Antonine
478	1003	125	12	Form 79 or Ludowici Tg, Central Gaulish. Mid to late Antonine
479	1003	125	12	Form 30 or 37 rim, burnt, Central Gaulish. Antonine
480	1013	125	12	Form 33a, from Les Martres-de-Veyre. Trajanic
481	1015	26	7	Dish or bowl, Central Gaulish. Antonine
482	1015	26	7	-, Central Gaulish. Antonine
483	1018	52	12	Form 37, Central Gaulish. Hadrianic or Antonine
484	1018	52	12	Form 31R, Central Gaulish. Mid to late Antonine
485	1018	52	12	Form 36 flange, Central Gaulish. Mid to late Antonine
486	1018	52	12	-, Central Gaulish. Antonine
487	1018	52	12	Form 30 or 37 rim, South Gaulish. Flavian
488	1023	114	7-9	Form 33, burnt, Central Gaulish. Mid to late Antonine
489	1023	114	7-9	Form 30 or 37 rim, Central Gaulish. Hadrianic or Antonine
490	1023	114	7-9	Dish, Central Gaulish. Hadrianic or Antonine
491	1023	114	7-9	-, burnt, Central Gaulish. Antonine
492	1023	114	7-9	Form 45, burnt, Central Gaulish. *c* AD 170-200
493	1023	114	7-9	Form 18/31, Central Gaulish. Hadrianic or early Antonine
494	1023	114	7-9	Form 30 base, Central Gaulish, drilled for a rivet. Antonine
495	1023	114	7-9	Form 30 base, Central Gaulish. Antonine
496	1023	114	7-9	Form 31, Central Gaulish. Antonine
497	1023	114	7-9	Form 18, South Gaulish. Flavian
498	1023	114	7-9	Dish, Central Gaulish. Hadrianic or early Antonine
499	1023	114	7-9	-, South Gaulish. Flavian or early Trajanic
500	1023	114	7-9	Form 37, from Les Martres-de-Veyre. The ovolo (Rogers 1974, B44) was used by the Rosette Potter. *c* AD 100-120
501	1023	114	7-9	Form 30 or 37 rim, Central Gaulish(?).

Antonine

502 1023 114 7-9 Form 37, Central Gaulish, with freestyle decoration. The single-bordered ovolo (Rogers 1974, B12), snake on rock (D.960 bis) and stag (0.1822Q) were between then all used by Attianus ii, Criciro v and Sacer i. It is not possible to tell which potter made this bowl. Hadrianic or early Antonine

503 1023 114 7-9 Form 31, Central Gaulish. Early to mid Antonine

504 1023 114 7-9 Form 31, Central Gaulish. Early to mid Antonine

505 1023 114 7-9 (463) Form 29 rim, heavily burnt, South Gaulish. 1st century

506 1023 114 7-9 Form 37, Central Gaulish, with a freestyle scene. The Mercury (D 288 variant), siren (D499), leaf (Rogers 1974, J146) and nine-petalled rosette all occur on a stamped bowl of Maccius ii from High Cross. The ovolo (Rogers 1974, B109) is probably the one on a stamped mould of his from Lezoux (Coll. Oswald-Plicque), which was also used by Butrio. The other figure-types are a Diana in a chariot and a small, naked figure (neither in D or O), another Diana (D.69, also recorded for Maccius) and a bird (D.1041). Very few of Maccius's decorated bowls are known, and it is useful to have one which adds some new figure-types. He clearly has connections with Butrio, but one of his decorated bowls and a plainware cup occur in a pit-group of *c* AD 150-160 at Alcester. His plain forms include 18/31, 18/31R and 27. *c* AD 125-150 (illustrated)

507 1025 125 12 (With SR68, SR79 and SR84-5) Six fragments, some joining, of form 30, in the fabric of Les Martres-de-Veyre. A freestyle scene, with ovolo (Rogers 1974, B14) and figures used by mould-makers for Donnaucus. The warriors to left (0.210) and right (not in D or O) are on a bowl from London (Walters 1908, M1441). The kilted figure (D.125, with a detached sword, instead of a spear) and amazon (0.251) are on a bowl from Les Martres (Terrisse 1968, pl XXXI, 606). *c* AD 110-120

508 1025 125 12 Form 33, Central Gaulish. Antonine

509 1028 129 12-13 Form 38, Central Gaulish. Antonine

510 1030 122 11(12) Form 36, Central Gaulish. Mid to late Antonine

511 1045 52 12 -, Central Gaulish. Hadrianic or early Antonine

512 1047 121 11(12) Form 18R, burnt, South Gaulish. Flavian or early Trajanic

513 1049 121 11(12) Form 31, burnt, Central Gaulish. Early to mid Antonine

514 1049 121 11(12) Form 18, South Gaulish. Neronian or early Flavian

515 1058 35 13 Form 31R, slightly burnt, Central Gaulish. Mid to late Antonine. With SR516

516 1058 35 13 Form 31R, slightly burnt, Central Gaulish. Mid to late Antonine. With SR515

517 1058 35 13 Form 79 or Ludowici Tg, heavily burnt, Central Gaulish. Mid to late Antonine

518 1070 16 8 Form 18/31, from Les Martres-de-Veyre. Trajanic-Hadrianic

519 1070 16 8 Form 31R, Central Gaulish. Mid to late Antonine

520 1070 16 8 -, Central Gaulish. Hadrianic or Antonine

521 1070 16 8 Form 4 .ollar, East Gaulish. Late 2nd or early 3rd century

522 1070 16 8 Form 30 base, Central Gaulish. Antonine

523 1081 210? 7-12 Form 30 or 37 rim, heavily burnt, Central or East Gaulish. Antonine or later

524 1083 53 13 Form 31R, East Gaulish. Late 2nd or early 3rd century

525 1083 53 13 Form 31, Central Gaulish. Antonine

526 1083 53 13 Form 33, from Les Martres-de-Veyre. Hadrianic or early Antonine

527 1083 53 13 Form 18, South Gaulish. Neronian or early Flavian

528 1085 127 12 Form 18, South Gaulish. Flavian

529 1094 210 7 Form 38, Central Gaulish. Antonine

530 1094 210 7 Form 31R, Central Gaulish. Mid to late Antonine

531 1098 31 8 Form 29, South Gaulish. Neronian

532 1098 31 8 Form 37, in the fabric of Les Martres-de-Veyre. Freestyle decoration, with a lion (D.769), bear (D.815), horse (D.901) and cornucopias. The ovolo, lion and bear were used by mould-makers for Medetus and Ranto (Stanfield and Simpson 1958, pl 30, 360; 31, 370). *c* AD 110-125. Joins SR702 and goes with SR539 and SR664

533 1098 31 8 Form 31, Central Gaulish. Antonine. Joins SR535

534 1098 31 8 Form 32 etc, East Gaulish, perhaps stamped LI[. Late 2nd or early 3rd century

535 1098 31 8 Form 31, Central Gaulish. Antonine. Joins SR533

536 1098 31 8 Form 36 flange, Central Gaulish. Mid to late Antonine

537 1098 31 8 Form 31, Central Gaulish. Mid to late Antonine

538 1098 31 8 Form 31, East Gaulish. Late 2nd or early 3rd century. Was once riveted to SR542

539 1098 31 8 Form 37, in the fabric of Les Martres-de-Veyre. Freestyle decoration, with a lion (D.769), bear (D.815), horse (D.901) and cornucopias. The ovolo, lion and bear were used by mould-makers for Medetus and Ranto (Stanfield and Simpson 1958, pl 30, 360; 31, 370). *c* AD 110-125. Goes with SR532

540 1098 31 8 Form 33, Central Gaulish. Mid to late Antonine

541 1098 31 8 Form 30 or 37 base, Central Gaulish. Antonine

542 1098 31 8 Form 31, East Gaulish. Late 2nd or early 3rd century. Was once riveted to SR538

543 1098 31 8 Form 31R, Central Gaulish. Mid to late Antonine

544 1098 31 8 Form 18R, South Gaulish. Neronian or early Flavian

545 1098 31 8 Form 31, burnt, Central Gaulish. Antonine

546 1111 120 8-9 Form 27(?), from Les Martres-de-Veyre. First half of the 2nd century

547 1111 120 8-9 Form 31, burnt, Central Gaulish. Antonine

548 1111 120 8-9 Form 38, slightly burnt, perhaps East Gaulish. No bead lip, but with an internal groove behind the rim, and a straight flange. Antonine or later

549 1111 120 8-9 Form 37, Central Gaulish. The finely-beaded panel borders and leaf (Rogers 1974, J49) were both used by Advocisus (Stanfield and Simpson 1958, pl 112, 8). *c* AD 160-190

550 1118 15 8 Form 31, burnt. Antonine

551 1119 124 8-9 Form 37, Central Gaulish, with panels: 1) A tripod (?). 2) Man with chlamys (D.344). 3) Leaf (Rogers 1974, J56). The details in panels 2 and 3 and the heavily-beaded borders are typical of the work of

Casurius ii (Stanfield and Simpson 1958, pl 133, 17, 20). *c* AD 160-190

552 1120 15 8 Base, burnt, Central Gaulish(?). 2nd century(?)

553 1125 26 7 Form 18/31, from Les Martres-de-Veyre. Trajanic

554 1127 109 5? Form 31, Central Gaulish. Antonine

555 1126 26 7 Form 18, South Gaulish. Neronian

556 1130 31 8 Form 33, Central Gaulish. Antonine

557 1137 126 9 Form 79 or Ludowici Tg, Central Gaulish. Mid to late Antonine

558 1138 17 8 Form 37, with a captive (D.643) used at Les Martres-de-Veyre by Igocatus (X-4). *c* AD 100-120

560 1139 109 5? Form 30 base, Central Gaulish. Hadrianic, perhaps from Les Martres-de-Veyre

561 1139 109 5? Form 30 or 27 footring, burnt, South Gaulish. Flavian or early Trajanic

562 1142 17 8 Form 18/31, Central Gaulish. Hadrianic or early Antonine

563 1142 17 8 Form 31, Central Gaulish. Antonine

564 1143 17 8 Dish, Central Gaulish. Hadrianic or Antonine

565 1149 - - -, Central Gaulish. Antonine

566 1151 114 5-9(11) Form 37, Central Gaulish, with a tripod Rogers 1974, Q21) in a narrow panel. The ovolo (Rogers 1974, B24) and the beads are characteristic of the work of the Large-S Potter. He used the tripod on bowls from Wilderspool (Grosvenor Mus, Chester) and Thisleton. *c* AD 125-145

567 1151 114 5-9(11) Form Curle 11(?), Central Gaulish. Hadrianic or early Antonine

568 1153 19 8 Form 18/31R or 31R, Central Gaulish, with a groove inside the lip. Antonine

569 1161 126 11 (With SR25, SR280 and SR625) Rim sherd from 257, qv

570 1164 19 8 Dish or bowl, Central Gaulish. Antonine

571 1167 109 5(7) Form 37, South Gaulish, with a tree over a zone of double-cogged festoons, one containing a bird. The festoons are probably separated by a trifid motif (Knorr 1919, Taf 22, 7). All the details occur on a bowl from Rottweil (Fundberichte aus Schwaben XVIII (1910), Taf V, 4). The connections suggest a date *c* AD 75-100

572 1171 113 5? Form 27, from Les Martres-de-Veyre. First half of the 2nd century

573 1174 120? 8-9 Form 31R, Central Gaulish. Mid to late Antonine

574 1173 109 5(7) Form 37, Central Gaulish, with scroll decoration. The leaf and astragalus scroll-binding occur at Chester and London, respectively, on signed and stamped bowls of Attianus ii. (Stanfield and Simpson 1958, pl 87, 21; 85, 6). *c* AD 125-145

575 1173 109 5(7) Form 31, Central Gaulish. Early to mid Antonine

576 1173 109 5(7) Form 36, Central Gaulish. Antonine

577 1175 114? 5? Form 18, South Gaulish. Pre-Flavian

578 1178 109? 5(7) Form 18, South Gaulish. Neronian or early Flavian

579 1178 109? 5(7) Form 29, South Gaulish. Neronian or early Flavian

580 1178 109? 5(7) Form 31, Central Gaulish. Antonine

581 1178 109? 5(7) Form 29, South Gaulish. Neronian

582 1178 109? 5(7) Form 18/31, from Les Martres-de-Veyre. Trajanic

583 1179 210 7 Form 37 rim, Central Gaulish. Hadrianic or Antonine

584 1181 20 8 Form 79/80, Central Gaulish. Mid to late Antonine

585 1185 106 5(7) Form 36 (the angular variant), South Gaulish. Flavian

586 1185 106 5(7) Form 18, South Gaulish. Flavian-Trajanic

587 1187 116? 7-13 Form 80 or Ludowici Tx, Central Gaulish. Mid to late Antonine

588 1190 31 8 Form Ritt 12 or Curle 11, South Gaulish. Neronian or early Flavian

589 1190 31 8 Form 18/31-31R, Central Gaulish. Antonine

590 1190 31 8 Form 38 flange, Central Gaulish. Antonine

591 1192 113 5(7) Form 33, Central Gaulish. Antonine

592 1192 113 5(7) Form Curle 11 flange, from Les Martres-de-Veyre. Hadrianic or early Antonine

593 1193 109 5(7) Form 27, South Gaulish. Neronian or early Flavian

594 1193 109 5(7) Form 33 or, more probably, 15/31, Central Gaulish. Antonine

595 1193 109 5(7) Form 31R, Central Gaulish. Mid to late

Antonine

596 1194 106 4-5 Form 29 base, South Gaulish, stamped 0[or]0. Pre-Flavian

597 1205 110 10 Form 32 etc, East Gaulish. Late 2nd or early 3rd century

598 1205 110 10 Form 79 or Ludowici Tg, Central Gaulish. Mid to late Antonine

599 1205 110 10 Form 31, Central Gaulish. Antonine

600 1205 110 10 -, Central Gaulish. Hadrianic or Antonine

601 1205 110 10 -, Central Gaulish. Antonine

602 1205 110 10 Form 31, Central Gaulish. Mid to late Antonine

603 1205 110 10 Form 36, burnt, Central Gaulish. Mid to late Antonine

604 1205 110 10 Form Curle 23, Central Gaulish. Antonine

605 1205 110 10 Form 30 or 37 rim, Central Gaulish. Hadrianic or Antonine

606 1208 114 7-9 -, Central Gaulish. Antonine

607 1208 114 7-9 Dish, South Gaulish. Neronian-Flavian

861 1214 109 5(7) Form 30, from Les Martres-de-Veyre Trajanic. Cf SR362-286

608 1215 107 5 Form 31R, Central Gaulish. Mid to late Antonine

609 1222 107 4-5 Form 15/17 or 18, South Gaulish. Neronian or early Flavian

610 1230 111 10-11 -, burnt, Central Gaulish. Mid to late Antonine

611 1230 111 10-11 -, Central Gaulish. Mid to late Antonine

612 1230 111 10-11 -, heavily burnt, shaped as a 'spindle whorl'. Probably Central Gaulish and Antonine

613 1240 106 5 Dish, stamped [DOVIICC]VS by Do(v)eccus i of Lezoux (die IIe). This stamp has been recorded at sites in northern Britain re-occupied *c* AD 160. The forms include 31R. *c* AD 165-200

614 1244 106 5 Decorated bowl, South Gaulish, Neronian or early Flavian

615 1250 106 5 Form 45, Central Gaulish. *c* AD 170-200

616 1502 56 12 -, Central Gaulish. Antonine

617 1504 56 12 Form 31R, Central Gaulish. Mid to late Antonine

618 1504 56 12 Form 32(?), East Gaulish. Late 2nd or early 3rd century

619 1504 56 12 Form 38 or 44 rim, Central Gaulish. Antonine

620 1505 56 12 Form 31R, Central Gaulish. Mid to late Antonine

621 1505 56 12 -, Central Gaulish. Antonine

622 1506 147? 9 Form 31, Central Gaulish. Mid to late Antonine

623 1508 138 5 Form 37, Central Gaulish. Two joining rim sherds. The T-tongued ovolo was used by the Quintilianus i and Paternus v groups of potters and also, almost certainly, by Paullus iv. The wavy-line border below the ovolo was also used by several of the potters involved, and the fabric and glaze are not very informative for determining the date. Hadrianic or Antonine. Joins SR665

624 1508 138 5 Form 31, Central Gaulish. Antonine

625 1508 138 5 (with SR25, SR280 and SR569). A burnt fragment from the bowl in SR257

626 1508 138 5 Form 37, burnt, Central Gaulish. Panelled decoration, with a Hercules (D.464) and caryatid (0.1207A), both used by Criciro v. The ovolo (Rogers 1974, B52) is more normally associated with Divixtus i, but occurs on several bowls likely to be by Criciro. Both potters used the beaded ring at the panel junctions. This bowl is almost certainly by Criciro, in view of the wavy line below the ovolo. *c* AD 140-170

627 1508 138 5 Form 36, Central Gaulish. Hadrianic or Antonine

628 1514 145 12 -, South Gaulish. Neronian or early Flavian

629 1514 145 12 Form 27, South Gaulish. Flavian

630 1514 145 12 Form 27, South Gaulish. Neronian or early Flavian

631 1515 156 12 Form 18R, burnt, South Gaulish. Flavian

632 1515 156 12 Form 37, Central Gaulish. Hadrianic or early Antonine

633 1515 156 12 Dish or bowl, Central Gaulish. Hadrianic or Antonine

634 1522 22 9(11) Form 36 flange(?), Central Gaulish. Mid to late Antonine

635 1533 156 12 Form 27(?), South Gaulish. 1st century

636 1533 22 12 Form 24, burnt, South Gaulish. Pre-Flavian

637 1536 155 11-12 (With 711). Two fragments of form 30, Central Gaulish, with scroll decoration. The ovolo (Rogers 1974, B145), leaves (Rogers 1974, J1 and H72) were all used by Cinnamus ii. The leaves are on a stamped bowl from Segontium (Wheeler 1923, fig 73, 48). *c* AD 150-180

638 1536 155 11-12 Form 79 or Ludowici Tg, Central Gaulish. Mid to late Antonine

640 1536 155 11-12 Form 38 or 44 rim, Central Gaulish. Antonine

641 1543 155 11 Form 37, Central Gaulish, with a freestyle scene. The T-tongued ovolo (Rogers 1974, B206), leopard (D.790), goat (0.1842 variant), horse (D.906A) and acanthus (Rogers 1974, K37) were all used by Paternus v. *c* AD 165-200

642 1546 156 12 Form 38 flange, Central Gaulish, with the down-turning part of the flange going back at a slight angle. Antonine

643 1546 156 12 Form 18/31R, Central Gaulish. Hadrianic or early Antonine

644 1550 176 12 Form 33, Central Gaulish. Antonine

645 1552 155? 12 Form 30 or 37 rim, East Gaulish. Late 2nd or early 3rd century

646 1553 155? 12 Form 37, Central Gaulish. The unusual ovolo, with thick tongue, occurs at Castleford in a layer dated after AD 150. The trilobed motif (of the type Rogers 1974, G152-185) is not closely identifiable. Antonine (illustrated)

647 1553 155? 12 Form 37R, from Les Martres-de-Veyre. Trajanic or early Hadrianic

648 1553 155? 12 Form 33, Central Gaulish. Hadrianic-Antonine

649 1553 155? 12 Form 18/31, Central Gaulish. Hadrianic-Antonine

862 1553 155? 12 Dish, from Les Martres-de-Veyre. First half of the 2nd century

650 1553 155? 12 Form 79 or Ludowici Tg, Central Gaulish. Mid to late Antonine

651 1557 55 8-11 -, Central Gaulish. Antonine

652 1561 147 5 Form 18, South Gaulish. Flavian

653 1565 170 12 Form 36 flange, Central Gaulish. Antonine

654 1565 170 12 Dish, Central Gaulish. Antonine

655 1566 155? 7-11 Dish, Central Gaulish. Antonine

656 1567 155 7-11 Form 37, Central Gaulish. Hadrianic or

Antonine

657 1576 31 8 Form 31, Central Gaulish. Mid to late Antonine

658 1576 31 8 Form 36, East Gaulish. Late 2nd to early 3rd century

659 1576 31 8 Form 33, Central Gaulish. Antonine

660 1576 31 8 Form 37, Central Gaulish. Zonal decoration, with a dolphin (D.1052(?)) and border of rhomboidal beads, both used by members of the Paternus v group. *c* AD 160-200

661 1576 31 8 Form 45 collar, East Gaulish. Late 2nd or early 3rd century

662 1576 31 8 Form 15/17 or 18, South Gaulish. Flavian

663 1576 31 8 Form 79, Central Gaulish. Mid to late Antonine

664 1576 31 8 Form 37, in the fabric of Les Martres-de-Veyre. Freestyle decoration, with a lion (D.769), bear (D.815), horse (D.901) and cornucopias. The ovolo, lion and bear were used by mould-makers for Medetus and Ranto (Stanfield and Simpson 1958, pl 30, 360; 31, 370). *c* AD 110-125. Goes with SR532

665 1576 31 8 Form 37, Central Gaulish. Two joining rim sherds. The T-tongued ovolo was used by the Quintilianus i and Paternus v groups of potters and also, almost certainly, by Paullus iv. The wavy-line border below the ovolo was also used by several of the potters involved, and the fabric and glaze are not very informative for determining the date. Hadrianic or Antonine. Joins with SR623

666 1583 21 8 -, Central Gaulish. Antonine

667 1583 21 8 (470) Form 30 or 37 footring, Central Gaulish. As this has become detached from the bowl, it was almost certainly applied to the base after moulding, instead of being turned out after moulding, as on some examples. Antonine

668 1593 13 11 Form 18, South Gaulish, slightly burnt. Flavian. Joins SR671 and goes with SR675

669 1594 13 11 Form 15/17, burnt, South Gaulish. 1st century. Probably goes with SR674

670 1594 13 11 Form 15/17, South Gaulish. Probably pre-Flavian

671 1594 13 11 Form 18, slightly burnt. Flavian. Joins SR668 and goes with SR675

672 1594 13 11 Form 30, South Gaulish. The large leaf in the

saltire occurs on signed bowls of Calus from Mainz (Knorr 1919, Taf 17) and Valkenburg ZH. It seems to be typical of his work. Neronian or early Flavian

673 1594 13 11 Form 22, South Gaulish. Flavian

674 1594 13 11 Form 15/17, burnt, South Gaulish. 1st century. Probably goes with SR669

675 1594 13 11 Form 18, South Gaulish, slightly burnt. Flavian. Joins SR671 and goes with SR668

676 1616 178 7-9 Form 37, Central Gaulish. Hadrianic or Antonine

677 1618 - - Form 29 rim, South Gaulish. Neronian

678 1622 141 11 -, Central Gaulish. Hadrianic or Antonine

679 1626 178 7-9 Footring, burnt, from a rouletted dish. Probably Central Gaulish and 2nd century

680 1673 22 9 Form 36 etc, Central Gaulish. Hadrianic or early Antonine

681 1673 22 9 Form 18/31, Central Gaulish. Hadrianic or early Antonine

682 1675 138 4-5 Form 18, South Gaulish. Flavian or Flavian-Trajanic

683 1677 146 5 Form 30 base, Central Gaulish. Hadrianic or early Antonine

684 1677 146 5 Form 38, Central Gaulish, with the glaze ground away inside the base. Antonine

685 1678 139 11 Form 15/17 or 18, burnt, South Gaulish. 1st century

686 1683 144 4 Form 18(?), slightly burnt, South Gaulish. Neronian or early Flavian

687 1687 6 12 Form 29, burnt, South Gaulish. Neronian

688 1689 8 4-5(7?) Form 29 rim, South Gaulish. Neronian

689 1689 8 4-5(7?) Form 18/31R or 31R, Central Gaulish. Antonine

690 1689 8 4-5(7?) Form 79 or Ludowici Tg (the early variety), Central Gaulish. Mid Antonine

691 1689 8 4-5(7?) Form 18/31 or 31, Central Gaulish. Hadrianic or Antonine

692 1689 8 4-5(7?) Form 31, Central Gaulish. Antonine

693 1691 - - Form 33, Central Gaulish. Antonine

694 1696 55? 8 Form 31R, Central Gaulish. Mid to late Antonine

695 1699 178 7-9 Form 79, Central Gaulish. Mid to late Antonine

696 1705 6 4(5) Form 30 or 37 rim, Central Gaulish. Antonine

697 1712 177 5 Form 15/31, Central Gaulish. Mid Antonine

698 1728 136 4(5) Form 35, South Gaulish. Flavian or Flavian-Trajanic

699 1729 143 4 Form 18/31R, from Les Martres-de-Veyre. Trajanic or early Hadrianic

700 1743 143 4 Form 18, South Gaulish. Flavian

701 1866 188 1-12(13) Form 79 or Ludwici Tg, Central Gaulish. Mid to late Antonine

702 1866 188 1-12(13) Form 37, in the fabric of Les Martres-de-Veyre. Freestyle decoration, with a lion (D.769), bear (D.815), horse (D.901) and cornucopias. The ovolo, lion and bear were used by mould-makers for Medetus and Ranto (Stanfield and Simpson 1958, pl 30, 360; 31, 370). *c* AD 110-125. Joins SR532

703 1866 188 1-12(13) Form 18/31R, Central Gaulish. Hadrianic or early Antonine

704 1896 196 12 Form 29, South Gaulish. Pre-Flavian

705 1917 191 12 -, Central Gaulish. Antonine

706 1917 191 12 Cup or bowl, Central Gaulish. Antonine

707 1919 29 11 Form 27, stamped S DATI·M by Sedatus IV of Lezoux, where the die (2c) is known. This stamp was used on forms 18/31, 27 and 33. His work appears occasionally in the Rhineland, suggesting activity before *c* AD 150, and one of his signed jar moulds also has a signature of Paullus iv. *c* AD 125-150

708 1920 29 11 Form 18/31, Central Gaulish. Hadrianic or early Antonine

709 1928 195? 12 Dish or bowl, slightly burnt, Central Gaulish. Antonine

710 1938 192 12 Form 15/17, South Gaulish. Neronian or early Flavian

711 1942 29 11 (With SR637) Two fragments of form 30, Central Gaulish, with scroll decoration. The ovolo (Rogers 1974, B145), leaves (Rogers 1974, J1 and H72) were all used by Cinnamus ii. The leaves are on a stamped bowl from Segontium (Wheeler 1923, fig 73, 48). *c* AD 150-180

712 1942 29 11 Form 18, South Gaulish. Neronian or early Flavian

713	1953	29	11	Form 29, South Gaulish. Neronian or early Flavian
714-5	1961	29	5-9	Form 27(?), South Gaulish. Neronian or early Flavian
716	1972	29	11	Dish, South Gaulish. 1st century
717	2048	29	11	Form 18, South Gaulish. Flavian. With SR724
718	2048	29	11	Form 37, South Gaulish. Flavian
719	2048	29	11	Dish, Central Gaulish. Hadrianic or Antonine
720	2048	29	11	-, South Gaulish. Flavian(?)
721	2048	29	11	Form 18, South Gaulish. Flavian
722	2048	29	11	Form 24, South Gaulish. Neronian
723	2048	29	11	Footring, Central Gaulish. Hadrianic or Antonine
724	2048	29	11	Form 18, South Gaulish. Flavian. With SR717
725	2054	29	5-9	Dish, burnt, South Gaulish. Neronian or early Flavian
726	2059	195	11-12	Form 27, South Gaulish. Flavian
727	2059	195	11-12	Form 18, burnt, South Gaulish. Neronian or early Flavian
728	2059	195	11-12	Dish, Central Gaulish. Hadrianic or Antonine
729	2086	24	4(11)	-, South Gaulish. Flavian
730	2095	192	12	Form 31, Central Gaulish. Antonine
731	2168	195?	5-12	Form 18, South Gaulish. Neronian or early Flavian
732	2174	195	5-12	Form 18/31 or 31, Central Gaulish. Hadrianic or Antonine
733	2183	30	4	Form 24, South Gaulish. Neronian
734	2200	69	14	Form 33, Central Gaulish. Antonine
735	2200	69	14	Dish, Central Gaulish. Antonine
736	2200	69	14	Form 31, Central Gaulish. Antonine
737	2200	69	14	Form 38 or 44, Central Gaulish. Antonine
738	2200	69	14	-, Central Gaulish. Hadrianic or Antonine. Joins SR740 and goes with SR741
739	2200	69	14	Form 31, burnt, Central Gaulish. Antonine
740	2200	69	14	-, Central Gaulish. Hadrianic or Antonine. Joins SR738 and goes with SR741
741	2200	69	14	-, Central Gaulish. Hadrianic or Antonine. Goes with SR738 and SR741

742-3 2204 166 13 Two joining fragments of form 37, Central Gaulish, with scroll decoration. Antonine

744 2205 168 12 Dish, Central Gaulish. Hadrianic or Antonine

745 2205 168 12 Form 31, Central Gaulish. Antonine

746 2205 168 12 Form 33, East Gaulish. Antonine or later

747 2206 168 12 Dish (rouletted?), Central Gaulish. Hadrianic or Antonine

748 2206 168 12 Form 30, Central Gaulish. Antonine

749 2209 167 12 Form 37, Central Gaulish, in the style of Acaunissa, with his ovolo (Rogers 1974, B22) and a helmeted figure. *c* AD 125-145

750 2212 157 11 Form 18/31, stamped [GONO]I·M with die 2a of Gongius of Central Gaul, presumably Lezoux. Forms 18/31, 18/31R and 27 are among his commonest forms, but the presence of this stamp at Camelon and Old Kilpatrick shows that he worked in the Antonine period. One of his stamps occurs in a pit-group of the 150s at Alcester. *c* AD 140-170

751 2212 157 11 Form 38 or 44 rim, Central Gaulish. Antonine

752 2214 170 12 Form 37, slightly burnt, Central Gaulish. In the style of Cinnamus ii, with one of his ovolos (Rogers 1974, B143). *c* AD 150-180

753 2214 170 12 Form 31R, Central Gaulish. Mid to late Antonine

754 2214 170 12 Form 36 flange, Central Gaulish. Antonine

755 2214 170 12 Form 15/17, South Gaulish. 1st century

756 2226 167 12 Form 79, Central Gaulish. Mid to late Antonine

757 2226 167 12 Form 38 without bead-lip, East Gaulish. Late 2nd or early 3rd century

758 2226 167 12 Form 37, Central Gaulish, with panels: 1) Tripod (Rogers 1974, Q16). 2) Seated figure (D.566). The tripod, borders of rhomboidal beads and nine-petalled rosette were used by Ianuaris ii, the first two at Lezoux, the rosette at Northchurch, Herts. The bowl may be by Ianuaris, but could equally well be by Paternus iii, who used many of the same details as Ianuaris. *c* AD 140-170

759 2232 170 13 Form Curle 11, South Gaulish. Flavian

760 2234 170 13 Footring, Central Gaulish. Antonine

761 2255 159 11 Form 30, South Gaulish. Flavian

762 2260 153 11(12)? -, slightly burnt, South Gaulish. Neronian or early Flavian

763 2260 153 11(12)? Form 37, Central Gaulish, with Minerva

(D.77). Probably by Cinnamus ii, who used the figure-type and partly-impressed acanthus leaves below it. *c* AD 150-180

764 2262 164 9-11 Form 37, Central Gaulish, with scroll decoration. The leaf (Rogers 1974, J1) was used at Lezoux in the Hadrianic and Antonine periods

765 2267 153 11(12?) Form 30R, Central Gaulish. Hadrianic or early Antonine

766 2267 153 11(12?) Form 37, Central Gaulish, in the style of Cinnamus ii, with one of his ovolos (Rogers 1974, B231). *c* AD 150-180

767 2267 153 11(12?) Form 37, burnt. The fabric is very micaceous, with a dull orange glaze, both typical of 1st century Lezoux ware. The motif is very like Rogers (1974) G9. The piece is not closely datable, but is likely to belong to the Flavian or Flavian-Trajanic period, since Lezoux samian was not exported regularly to Britain before then (illustrated)

768 2267 153 11(12?) Form 18/31R-31R, Central Gaulish. Mid Antonine. Joins SR770

769 2267 153 11(12?) Form 18/31 or 31, Central Gaulish. Hadrianic or Antonine

770 2267 153 11(12?) Form 18/31R-31R, Central Gaulish. Mid Antonine. Joins SR768

771 2267 153 11(12?) Form 33, Central Gaulish. Antonine

772 2267 153 11(12?) Form 18/31 or 31, Central Gaulish. Antonine

773 2267 153 11(12?) Form 31, Central Gaulish. Antonine

774 2267 153 11(12?) Form 31R, Central Gaulish. Mid to late Antonine

775 2267 153 11(12?) Form 31, Central Gaulish. Mid to late Antonine

776 2267 153 11(12?) Form 33, Central Gaulish. Antonine

777 2267 153 11(12?) Form 18/31, Central Gaulish. Hadrianic or early Antonine

778 2267 153 11(12?) Form 29(?) base, South Gaulish. Neronian

779 2267 153 11(12?) Form 37, burnt, Central Gaulish. In the style of Paternus v or one of his associates. *c* AD 160-200

780 2267 153 11(12?) Form 18/31 or 31, from Les Martres-de-Veyre(?). Hadrianic or early Antonine

781 2267 153 11(12?) Form 27, Central Gaulish. Hadrianic

782 2267 153 11(12?) -, South Gaulish. 1st century

783 2267 153 11(12?) -, South Gaulish. Neronian or early Flavian

784 2267 153 11(12?) Form 18/31, from Les Martres-de-Veyre.

Trajanic

785	2272	153	11(12?)	-, Central Gaulish, slightly burnt. Probably Antonine
786	2274	164	9-11	Dish Central Gaulish. Antonine
787	2280	160	9	-, Central Gaulish. Hadrianic or Antonine
788	2281	158	11(12)	Form 18/31 or 31, slightly burnt, Central Gaulish. Hadrianic or Antonine
789	2296	164	9-11	Form Ritt, 12 or Curle 11, South Gaulish. Neronian or early Flavian. With SR791
790	2296	164	9-11	Form 33, Central Gaulish. Hadrianic or Antonine
791	2296	164	9-11	Form Ritt, 12 or Curle 11, South Gaulish. Neronian or early Flavian. With SR789
792	2300	153	11(12?)	Form Curle 11(?), from Les Martres-de-Veyre(?). First half of the 2nd century?
793	2304	153	11(12?)	Form 15/31 or 33, Central Gaulish. Antonine
794	2304	153	11(12?)	-, Central Gaulish. Hadrianic or Antonine
795	2304	153	11(12?)	Form 18/31 or 31, from Les Martres-de-Veyre. First half of the 2nd century
796	2304	153	11(12?)	Form 36 flange, Central Gaulish. Mid to late Antonine
797	2304	153	11(12?)	-, Central Gaulish. Hadrianic or Antonine
798	2304	153	11(12?)	Form 33, Central Gaulish. Antonine
799	2306	162	9	Form 31, Central Gaulish. Antonine
800	2314	149	9	Form 38 or 44 rim, Central Gaulish. Antonine
801	2314	149	9	Form 32 etc, East Gaulish. Late 2nd or early 3rd century
802-3	2316	157	11	Form 36 flange (2 joining fragments), Central Gaulish. Antonine
804	2319	151	9	Form 33, Central Gaulish. Antonine
805	2328	148	4(5)	Dish South Gaulish. Neronian or early Flavian
806	2329	151	4-9	Form 24, burnt, South Gaulish. Pre-Flavian
807	2361	163	5	Dish, Central Gaulish. Hadrianic or Antonine
808	2396	163	5	Form 31R, Central Gaulish, drilled for a rivet. Mid to late Antonine
809	2401	22	9	Form 31R, Central Gaulish. Mid to late Antonine

810	2405	153	5	Form 31, Central Gaulish. Antonine
811	2419	172	9	Form 38 or 44 footring, Central Gaulish. Antonine
812	2419	172	9	Form 37, South Gaulish. Flavian
813	2419	172	9	Form 27, South Gaulish. Neronian or early Flavian
814	2429	22	9	Rouletted dish (footring), Central Gaulish. Antonine
815	2433	22	9	Form 18/31, from Les Martres-de-Veyre. Trajanic
816	2448	58	9	Form 33, Central Gaulish. Hadrianic or Antonine
817	2448	58	9	Form 18R, slightly burnt, South Gaulish. Flavian-Trajanic
819	2600	69	14	Form 31, Central Gaulish, stamped C[. Mid to late Antonine. With SR838
820	2600	69	14	Form 31R, burnt, Central Gaulish. Mid to late Antonine
821	2600	69	14	Form 15/17 or 18, South Gaulish. Flavian or early Trajanic
822	2600	69	14	Jar (without decoration), Central Gaulish. Antonine
823	2600	69	14	Form 33, Central Gaulish. Antonine
824	2600	69	14	Form 32, East Gaulish. Late 2nd or early 3rd century. With SR833
825	2600	69	14	Form 33, burnt, Central Gaulish. Antonine
826	2600	69	14	Form 32, East Gaulish. Late 2nd or early 3rd century
827	2600	69	14	Form 32, burnt, East Gaulish. Late 2nd or early 3rd century
828	2600	69	14	-, Central Gaulish. Antonine
829	2600	69	14	Form 31R, Central Gaulish. Mid to late Antonine
830	2600	69	14	Form Curle 23, Central Gaulish. Antonine. With SR835 and SR843
831	2600	69	14	Form 38, Central Gaulish. Mid to late Antonine
832	2600	69	14	Form 38 or 44 rim, Central Gaulish. Antonine

833	2600	69	14	Form 32, East Gaulish. Late 2nd or early 3rd century. With SR824
834	2600	69	14	Form 24, South Gaulish. Neronian
835	2600	69	14	Form Curle 23, Central Gaulish. Antonine. With SR830 and SR843
836	2600	69	14	Form 31, Central Gaulish. Antonine
837	2600	69	14	Form 36, East Gaulish. Late 2nd or early 3rd century
838	2600	69	14	Form 31, Central Gaulish, stamped C[. Mid to late Antonine. With SR819
839	2601	-	-	Form 45 collar, Central Gaulish(?). Late Antonine or early 3rd century
840	2601	-	-	Form 35/36, Central Gaulish. Antonine
841	2601	-	-	Form 29 rim, South Gaulish. Early Flavian
842	2601	-	-	Form 31R(?), Central Gaulish. Mid to late Antonine
843	2601	-	-	Form Curle 23, Central Gaulish. Antonine. With SR830 and SR835
844	2601	-	-	Form 31R, Central Gaulish. Mid to late Antonine
845	2601	-	-	Form 79, Central Gaulish. Mid to late Antonine
846	2606	208	13	Form 33, burnt, Central Gaulish. Mid to late Antonine
847	2606	208	13	See Context 564
848	2609	208	13	Form 29 base, stamped OFMODES[TI] by Modestus i of La Graufesenque (die 2g). One of his commonest stamps, though not recorded in dated contexts, apart from the Cirencester Fort Ditch (*c* AD 55-65). It occurs almost exclusively on form 29. *c* AD 45-65
849	2609	208	13	Rouletted dish, Central Gaulish. Antonine
850	2610	208	12	Form 27g, South Gaulish. Flavian
851	2610	208	12	Form 15/17, South Gaulish. Neronian or early Flavian
852	2610	208	12	Form 33, Central Gaulish. Antonine
853	2610	208	12	Bowl, Central Gaulish. Antonine
854	2610	208	12	See HWCM 3682
855-6				See Cont 711
858-60				See Cont 711
62	3002	1?	5	Form 29 rim, South Gaulish. Neronian or

early Flavian

66	3006	32	12	Dish, South Gaulish. Flavian or Flavian-Trajanic
89	3009	67	12	Form 27, burnt, South Gaulish. Neronian or early Flavian. Joins SR94 and SR97
90	3009	67	12	Form Curle 23, Central Gaulish. Hadrianic or early Antonine
91	3009	67	12	Dish, East Gaulish. Late 2nd or early 3rd century
92	3009	67	12	-, burnt, Central Gaulish. First half of the 2nd century
93	3009	67	12	Form 33(?), from Les Martres-de-Veyre. Trajanic or early Hadrianic
94	3009	67	12	Form 27, burnt, South Gaulish. Neronian or early Flavian. Joins SR89 and SR97
95	3009	67	12	Form 18/31 or 31, Central Gaulish. Hadrianic-Antonine
96	3009	67	12	Form 18, burnt, South Gaulish. Neronian or early Flavian
97	3009	67	12	Form 27, burnt, South Gaulish. Neronian or early Flavian. Joins SR89 and SR94
104	3010	67	7-12	Form 18, burnt, South Gaulish. Neronian or early Flavian
105	3010	67	7-12	Form 15/17 or 18, South Gaulish. Flavian
107	3012	1	5	Form 18/31, from Les Martres-de-Veyre. Trajanic
108	3012	1	5	Form 37 base, Central Gaulish. Hadrianic or early Antonine
111	3016	30	11	Form 29 base, South Gaulish. Pre-Flavian

Rhenish ware Robin Symonds

The catalogue entries are arranged in the following order: specialist reference, context, quantity, description

1 501 1 side (lower body) Trier Rhenish ware, beaker, probably form 1 (Symonds forthcoming)

2 531 1 base Central Gaulish fine (Rhenish type) colour-coated ware or other continental import, base of globular beaker. Flavian-Trajanic?

3 682 1 side (mid-body) Central Gaulish fine (Rhenish type) colour-coated ware, ovoid beaker, Group 11 (Symonds forthcoming, fig 10), with underslip barbotine scroll decoration bordered by single bands of rouletting

4 529 1 rim (2 pieces) Central Gaulish fine (Rhenish type) colour-coated ware, globular beaker, Group 9 (Symonds forthcoming, fig 9)

5 1220 1 side (lower body) Trier Rhenish ware, (2 pieces) form 1, Group 34 (Symonds forthcoming, fig 26), with oval indentation bordered by a double band of rouletting

6 1515 1 side (neck) Trier Rhenish ware, beaker, probably form 1 (Symonds forthcoming)

7 1522 1 side (mid-body) Trier Rhenish ware, beaker, probably form 1 (badly burnt?; Symonds forthcoming)

8 1576 1 side (lower body) Trier Rhenish ware, beaker, probably form 1 (Symonds forthcoming)

9 1689 1 side (mid-body) Trier Rhenish ware, beaker, probably form 1 (Symonds forthcoming), with rouletting

10 2314 1 rim Nene Valley colour-coated beaker, mid 3rd to 4th century

11 677 1 side (mid-body) Romano-British (could be Colchester, but equally could be from any of various sites in Gaul), roughcast ovoid beaker, 1st to mid 2nd century

12 1081 1 side (mid-body) Central Gaulish fine (Rhenish type) colour-coated ware, globular beaker, Group 9 (Symonds forthcoming, fig 9), with a double band of rouletting

13 2200 1 side (lower body) Trier Rhenish ware, beaker, probably form 1 (Symonds forthcoming)

Discussion

The proportions of Central Gaulish Rhenish-type ware to Trier Rhenish ware are roughly what would be expected at any Romano-British site with 3rd century contexts. The Central Gaulish ware sherds could be as early as the mid 2nd century, but are often found residually well into the mid 3rd century (or later); the Trier Rhenish ware vessels ought not to have been made earlier than the fourth quarter of the 2nd century or later than *c* 275. Tentative dates are given for the other sherds; the sources of which are very uncertain, although this need not affect the accuracy, such as it is, of the dating.

Coins Michael Sekulla

The small number of coins and their largely residual provenance restricted worthwhile specialist comment to identification. Information, where available. is given for each coin in the following order: specialist reference, material, denomination, bibliographic reference, ruler, issue date, mint. All references are to The Roman Imperial Coinage (RIC), H Mattingly and E A Sydenham, 1923-67, or Late Roman Bronze Coinage (LRBC), R A G Carson, P V Hill and J P C Kent 1960.

1, AE, *as* (RIC 315), Nero, AD 64-68, Lugdunum (Lyons). Context 1515, structure 156, phase 12.
2, AE, *dupondius* (RIC as 473), Vespasian, AD 71, Rome. Context 692, structure 95, phase 7-9.
3, AE, *sestertius*, Trajan, AD 98-117, Rome. Context 576, structure 96, phase 7-9.
4, AE, *as*, Trajan?, AD 98-117?. Context 574, structure 27, phase 9(11).
5, AE, *as*, Faustina I, AD 140+. Context 44, structure 66, phase 7-9.
6, AE, *antoninianus* (RIC as 176-181), Gallienus SR, AD 260-68, Rome. Context 1015-1018, structure 26 or 52, phase 7 or 12.
7, AE, *antoninianus* (RIC as 180/181), Gallienus SR, AD 260-68. Context 1016, structure 26, phase 7.
8, AE, *antoninianus* (RIC as 121ff), Tetricus I, AD 270-3. Context 526, structure 27?, phase 11.
9, AE, *antoninianus*, Gallic Empire, AD 260-73. Context 1505, structure 56, phase 12.
10, AE, *antoninianus*, Gallic Empire, AD 260-73. Context 529, structure 100, phase 11-12.
11, AE (RIC as 300ff), Carausius, AD 286-293. Context 501, structure 69, phase 14.
12, AE, *antoninianus*, Carausius, AD 286-93. Context 696, structure 95, phase 7-9.
13, AE (RIC as 85ff), Allectus, AD 293-96. Context 563, structure 102, phase 9.
14, AE, Family of Constantine I, AD 330+, unstratified.
15, AE, Family of Constantine I, AD 347-8. Context 1513, structure 56, phase 12.
16, AE, *follis* (RIC copy as London 182/3), Constantinus II, AD 320, Copy? Context 556, structure 102, phase 9.
17, AE (LRBC-2 as lg 276ff), Valens, AD 364-75. Context 100 structure 69, phase 14.
18, AE (LRBC-2 1012), Valens, AD 365-75, Aquileia (northern Italy). Context 501, structure 69, phase 14.
19, AE (LRBC-2 as 86ff), Valens/Valentinian I, AD 364-75. Context 1015,

structure 26, phase 7.
20, AE (LRBC-2 as 276ff), AD 364-75. Context 1013, structure 125, phase 12.
21, AE (LRBC-2 as 276ff), AD 364-75. Context 681, structure 98, phase 9 or 11.
22, AE, illegible, 1st to 2nd century? Context 714, structure 96, phase 7-9.
23, AE, illegible, 3rd century? Context 1023, structure 114, phase 7-9.
24, AE, illegible. Context 1502, structure 56, phase 12.
25, AE, illegible. Context 501, structure 69, phase 14.
26, AE, illegible. Context 1018, structure 52, phase 12.
27, AE, illegible. Context 541, structure 47, phase 7-9(11).
28, AE, illegible. Context 1024, structure 33, phase 13.
29, AE, illegible. Context 1845, structure 200, phase 13.
30, AE, illegible. Context 1060, structure 16, phase 8.
31, AE, illegible. Context 501, structure 69, phase 14.
32, AE, illegible. Context 1920, structure 29, phase 11.
33, AE, illegible. Context 523, structure 27, phase 11.
34, AE, illegible. Context 523, structure 27, phase 11.
35, AE, illegible. Context 547, structure 27, phase 9.
36, AE, Half Penny, George III, AD 1799. Context 502, structure 33, phase 13.
37, AE, 18th century? Unstratified.
38, AE, illegible. Context 1060, structure 16, phase 8.

Animal bone tables Alison Locker
Table M21

Key

Con = Context

Ox = Ox	She = Sheep	Goa = Goat
Ovi = Ovicaprid	Pig = Pig	Hor = Horse
Red = Red deer	Dog = Dog	Cat = Cat
D/F = Dog/Fox	Har = Hare	Lar = Large Ungulate
Sar = Small Ungulate	LMam = Large mammal	Uni = Unidentifiable mammal
Fow = Fowl	Goo = Goose	Buz = Buzzard
Bir = Bird		

Phase 1; Table 1.

Con	Ox	Ovi	Hor	Red	Lar	Sar	Total
67	-	1	-	-	2	-	3
2192	2	4	-	-	2	1	9
2461	13	9	12	1	15	-	50
Total	15	14	12	1	19	1	62

Phase 2; Table 2i, Structure 2.

Con	Ox	Ovi	Lar	Total
246	1	-	1	2
2701	-	2	3	5
Total	1	2	4	7

Table 2ii; Structure 44.

Con	Ox	Ovi	Lar	Total
416	1	4	2	7

Table 2iii; Structures 71 and 72.

Con	Ox	Ovi	Lar	Sar	Total
170	3	3	12	2	20
189	-	-	2	-	2
191	1	-	3	2	6
413	-	1	1	-	2
Total	4	4	18	4	30

Table 2iv; Structure 73.

Con	Ovi	Total
186	2	2

Table 2v; Structures 79 and 80.

Con	Ox	Ovi	Pig	Lar	Total
428	-	1	-	-	1
456	1	-	1	6	8
Total	1	1	1	6	9

Table 2vi; Structure 82.

Con	Ox	Ovi	Lar	Sar	Total
440	2	6	8	6	22

Table 2vii; Structures 83 and 84.

Con	Ox	Ovi	Pig	Lar	Sar	Total
409	-	2	-	-	-	2
448	1	3	1	3	1	9
450	2	4	-	5	-	11
Total	3	9	1	8	1	22

Table 2viii; Structures 87 and 89.

Con	Ox	Pig	Lar	Sar	Total
178	-	1	2	2	5
491	2	-	2	-	4
Total	2	1	4	2	9

Table 2ix; Structure 131.

Con	Ox	Ovi	Pig	Hor	Lar	Sar	Total
1758	30	18	3	6	32	4	93

Table 2x; Structure 181.

Con	Ox	Ovi	Pig	Hor	Lar	Sar	LMam	Total
2158	3	2	-	-	-	3	-	8
2184	6	11	-	-	2	1	-	20
2189	1	7	-	1	5	1	1	16
2191	1	-	-	2	-	-	1	4
2193	26	14	2	24	57	11	-	134
2455	-	4	-	-	2	2	-	8
2456	9	24	-	1	9	5	-	48
Total	46	62	2	28	75	23	2	138

Table 2xi; Structure 183.

Con	Ox	Ovi	Lar	Sar	Total
1941	2	3	2	2	9

Table 2xii; Structure 213.

Con	Ovi	Total
479	1	1

Phase 3; Table 3i, Structure 3.

Con	Ovi	Lar	Sar	Total
157	5	1	4	10
173	2	2	1	5
Total	7	3	5	15

Table 3ii; Structure 4.

Con	Ox	Ovi	Pig	Hor	Lar	Sar	Total
156	-	2	-	1	2	-	5
160	1	9	1	-	2	4	17
174	-	4	-	-	-	-	4
Total	1	15	1	1	4	4	26

Table 3iii; Structure 5.

Con	Ox	Ovi	Pig	Dog	Lar	Sar	Total
494	1	13	1	1	9	9	34

Phase 4; Table 4i, Structure 3.

Con	Ox	Ovi	Pig	Lar	Sar	Total
116	2	7	-	4	3	16
128	1	-	-	-	-	1
129	-	1	-	1	2	4
130	-	1	-	-	-	1
133	-	-	1	-	2	3
Total	3	9	1	5	7	25

Table 4ii; Structure 6.

Con	Ox	Ovi	Lar	Total
1707	2	24	7	33

Table 4iii; Structure 7.

Con	Ox	Ovi	Lar	Sar	Total
1768	4	14	4	2	24

Table 4iv; Structure 8.

Con	Ox	She	Ovi	Pig	Lar	Total
1716	-	-	5	-	-	5
1717	-	-	6	-	-	6
1718	-	1	1	-	1	3
1752	1	-	4	-	-	5
2437	1	-	-	-	-	1
2438	-	-	4	1	2	7
Total	2	1	20	1	3	27

Table 4v; Structure 10.

Con	Ox	Hor	Total
1971	1	1	2

Table 4vi; Structure 23.

Con	Ox	Lar	Sar	Total
2179	1	1	2	4

Table 4vii; Structure 24.

Con	Ox	Ovi	Total
2088	1	1	2

Table 4viii; Structure 30.

Con	Ox	Ovi	Hor	Lar	Sar	Total
168	-	8	-	-	6	14
238	-	1	-	-	-	1
243	1	1	-	-	1	3
246	-	-	1	-	-	1
247	1	-	-	-	-	1
250	-	3	1	1	1	6
255	2	-	-	-	-	2
256	-	5	-	-	-	5
259	-	1	-	-	-	1
469	-	3	-	1	-	4
470	-	2	-	-	1	3
471	2	1	-	-	3	6
477	3	-	-	-	-	3
2183	7	1	-	6	2	16
Total	16	26	2	8	14	66

Table 4ix; Structure 63.

Con	Ox	Goa	Ovi	Pig	Hor	Dog	Lar	Sar	Total
55	2	-	4	-	1	-	1	2	10
202	1	-	4	-	-	-	-	-	5
204	6	-	18	1	-	-	13	2	40
205	1	-	1	-	-	-	3	-	5
207	2	-	4	-	-	-	1	-	7
218	-	-	2	-	-	-	-	1	3
223	-	-	1	-	-	-	-	-	1
225	3	-	2	-	-	-	6	1	12
269	-	-	1	-	-	-	1	-	2
276	1	-	-	-	-	-	-	-	1
278	-	-	3	-	-	-	2	3	8
282	-	-	4	-	-	-	-	-	4
283	28	1	19	3	11	2	37	6	107
285	-	-	1	-	-	-	-	-	1
288	-	-	1	-	-	-	1	1	3
294	-	-	-	-	-	-	1	-	1
302	3	-	-	-	-	-	1	-	4
Total	47	1	65	4	12	2	67	16	214

Table 4x; Structure 93.

Con	Ox	Ovi	Dog	Lar	Total
749	-	2	-	1	3
750	-	2	-	-	2
763	3	4	1	4	12
Total	3	8	1	5	17

Table 4xi; Structure 134.

Con	Ox	Ovi	Pig	Lar	Sar	Total
1755	-	3	1	1	2	7
1767	1	-	1	1	-	3
Total	1	3	2	2	2	10

Table 4xii; Structure 135.

Con	Ovi	Bir	Total
1735	2	-	2
1761	-	1	1
Total	2	1	3

Table 4xiii; Structure 136.

Con	Ox	Ovi	Pig	Dog	Lar	Sar	Total
1608	-	1	-	-	1	-	2
1728	5	12	4	1	-	12	34
Total	5	13	4	1	1	12	36

Table 4xiv; Structure 142.

Con	Hor	Lar	Total
1737	-	1	1
1740	1	3	4
Total	1	4	5

Table 4xv; Structure 143.

Con	Ox	Ovi	Pig	Lar	Sar	Total
1613	-	-	-	1	-	1
1700	1	-	-	1	-	2
1726	-	3	1	1	2	7
Total	1	3	1	3	2	10

Table 4xvi; Structure 144.

Con	Ox	Ovi	Pig	Lar	Sar	Total
1683	1	7	1	1	1	11

Phase 5; Table 5i, Structure 1.

Con	Ox	Ovi	Pig	Hor	Dog	Lar	Sar	Total
3012	25	7	4	1	1	10	1	49

Table 5ii; Structure 6.

Con	Ovi	Total
1705	1	1

Table 5iii; Structure 7.

Con	Ox	Ovi	Pig	Hor	Lar	Sar	LMam	Total
1686	5	9	3	1	12	5	2	37

Table 5iv; Structure 97.

Con	Ox	Ovi	Lar	Sar	Total
711	5	5	8	2	20

Table 5v; Structure 106.

Con.	Ox	Ovi	Hor	Lar	Sar	Total
1238	-	-	-	-	1	1
1240	8	8	-	9	1	26
1244	1	5	1	-	3	10
1250	-	-	-	2	-	2
1257	12	4	-	11	-	27
1266	1	-	-	1	3	5
Total	22	17	1	23	8	71

Table 5vi; Structure 138.

Con	Ovi	Pig	Hor	Lar	Sar	Total
1508	14	1	1	7	1	24

Table 5vii; Structure 146.

Con	Ox	Ovi	Pig	Lar	Sar	Total
1538	1	-	-	1	-	2
1677	1	5	1	9	2	18
Total	2	5	1	10	2	20

Table 5viii; Structure 147.

Con	Ox	Ovi	Hor	Dog	Lar	Sar	Buz	Total
1539	-	-	-	-	1	-	-	1
1561	2	6	1	1	-	2	1	13
1636	1	-	-	-	2	1	-	4
Total	3	6	1	1	3	3	1	18

Table 5ix; Structure 175.

Con	Lar	Sar	Total
1625	1	2	3

Table 5x; Structure 177.

Con	Ox	Ovi	Lar	Sar	Total
1624	-	2	-	-	2
1712	1	-	-	-	1
1715	5	6	4	1	16
Total	6	8	4	1	19

Phase 7; Table 6i, Structure 26.

Con	Ox	Ovi	Pig	Hor	Dog	Lar	Sar	Total
1015	5	3	1	1	1	6	3	22
1125	4	5	-	-	-	3	-	10
1126	3	7	-	1	-	12	1	24
Total	12	15	1	2	1	21	4	56

Table 6ii; Structure 112.

Con	Ox	Ovi	Pig	Hor	Lar	Sar	Fow	Total
617	3	-	-	-	1	1	-	5
699	27	22	6	3	41	9	3	111
723	3	-	-	-	1	-	-	4
Total	33	22	6	3	43	10	3	120

Table 6iii; Structure 210.

Con	Ox	Lar	Sar	Total
1094	1	2	1	4
1179	1	1	1	3
Total	2	3	2	7

Phase 8; Table 7i, Structure 15.

Con	Ox	Ovi	Pig	Lar	Sar	Total
1039	12	-	-	8	-	20
1041	7	3	1	5	1	17
1120	13	3	-	-	1	17
Total	32	6	1	13	2	54

Table 7ii; Structure 16.

Con	Ox	Ovi	Pig	Hor	Red	Dog	Lar	Sar	Fow	Uni	Total
1060	13	4	3	-	1	-	13	5	-	-	39
1064	39	8	2	-	-	-	19	14	-	2	84
1070	90	22	5	-	1	227*	66	12	1	-	424
1254	7	9	-	2	-	-	9	-	-	-	27
Total	149	43	10	2	2	227	107	31	1	2	574

*225 bones are from whole skeletons

Table 7iii; Structures 17 and 18.

Con	Ox	Ovi	Pig	Lar	Sar	Fow	Goo	Total
1138	2	5	-	9	7	-	-	23
1142	3	4	-	3	1	-	-	11
1143	9	9	2	16	4	1	-	41
1144	2	-	-	2	-	-	-	4
1220	-	-	-	-	-	-	1	1
Total	16	18	2	30	12	1	1	80

Table 7iv; Structure 19.

Con	Ox	Ovi	Pig	Lar	Total
1153	27	9	5	44	85
1156	27	-	-	14	41
1164	7	-	-	-	7
Total	61	9	5	58	133

Table 7v; Structure 20.

Con	Ox	Ovi	Pig	Hor	Dog	Lar	Sar	Fow	Total
1181	29	12	1	1	1	11	7	1	63
1182	4	-	-	-	-	-	1	-	5
Total	33	12	1	1	1	11	8	1	68

Table 7vi; Structure 21.

Con	Ox	Ovi	Hor	Lar	Total
1583	1	1	1	1	4

Table 7vii; Structure 28.

Con	Ox	Ovi	Pig	Lar	Sar	Uni	Total
709	3	2	1	8	-	-	14
1055	1	1	-	3	1	1	7
Total	4	3	1	11	1	1	21

Table 7viii; Structure 31.

Con	Ox	Ovi	Pig	Hor	Dog	Lar	Sar	Fow	Total
575	29	10	-	1	-	35	6	-	81
577	51	4	3	-	2	42	4	1	107
583	20	2	2	1	-	5	5	-	35
585	12	-	-	-	1	3	-	-	16
1098	15	19	16	1	-	26	6	-	83
1112	1	1	-	1	-	2	-	-	5
1130	12	7	-	-	-	12	2	-	33
1190	14	10	2	-	-	5	9	-	40
1742	2	6	2	-	-	3	2	-	15
Total	156	59	25	4	3	133	34	1	415

Table 7ix; Structure 55.

Con	Ox	Ovi	Lar	Total
1696	-	4	4	8
1702	-	1	1	2
1704	-	1	-	1
1739	1	1	-	2
Total	1	7	5	13

Phase 9; Table 8i, Structure 11.

Con	Ox	Ovi	Pig	Red	Dog	Lar	Sar	Total
639	4	4	1	2	1	7	3	22

Table 8ii; Structure 22.

Con	Ox	Ovi	Lar	Total
2393	-	1	-	1
2401	2	2	2	6
2404	-	-	2	2
2429	2	3	1	6
2433	-	-	1	1
Total	4	6	6	16

Table 8iii; Structure 27.

Con	Ox	She	Ovi	Pig	Hor	Red	Dog	D/F	Har	Lar
559	175	-	39	12	3	-	2	-	-	119
560	10	-	8	-	-	-	-	-	-	30
564	439	1	55	33	4	1	6	1	-	73
574	55	-	7	5	1	-	1	-	-	24
579	56	-	23	5	1	-	-	-	-	12
581	1	-	1	-	-	-	-	-	-	-
589	47	-	55	10	2	1	-	-	1	70
612	2	-	-	-	-	-	-	-	-	-
629	26	-	34	2	1	-	-	-	-	37
630	29	-	38	3	2	-	-	-	-	36
Total	840	1	260	70	14	2	9	1	1	401

Table 8iii; Structure 27 continued.

Sc	LMam	Uni	Fow	Total
17	-	-	1	368
3	-	-	1	52
14	5	-	2	634
7	-	10	-	110
14	-	7	2	120
1	-	-	-	3
24	-	-	-	210
-	-	-	-	2
16	-	-	2	118
1	-	-	1	110
97	5	17	9	1727

(+ 5 frags indet bird = 1732)

Table 8iv; Structure 49.

Con	Ox	Lar	Fow	Bir	Total
626	-	1	1	1	3
643	1	-	-	-	1
Total	1	1	1	1	4

Table 8v; Structure 58.

Con	Ox	Ovi	Lar	Sar	Total
2346	1	-	-	-	1
2349	-	-	1	-	1
2355	1	7	4	3	15
2413	1	1	1	-	3
2447	2	4	2	2	10
2448	1	-	-	2	3
Total	6	12	8	7	33

Table 8vi; Structure 59.

Con	Ox	Ovi	Lar	Sar	Total
2336	1	4	1	1	7
2340	3	7	1	2	13
2384	-	3	-	-	3
Total	4	14	2	3	23

Table 8vii; Structure 102.

Con	Ox	Ovi	Pig	Lar	Sar	Total
556	21	2	1	28	7	59
563	59	16	8	51	23	157
571	3	2	-	4	3	12
Total	83	20	9	83	33	228

Table 8viii; Structure 105.

Con	Ox	Ovi	Lar	Total
553	2	1	1	4

Table 8ix; Structure 117.

Con	Ox	Lar	Sar	Total
622	3	4	1	8

Table 8x; Structure 118.

Con	Ox	Ovi	Lar	Sar	Total
618	15	3	9	2	29

Table 8xi; Structure 119.

Con	Ox	Ovi	Pig	Hor	Lar	Total
616	7	3	1	-	18	29
621	-	-	-	1	-	1
Total	7	3	1	1	18	30

Table 8xii; Structure 126.

Con	Ox	Ovi	Lar	Sar	Total
1137	1	4	4	2	11

Table 8xiii; Structure 128.

Con	Ox	Ovi	Lar	Sar	Total
632	21	9	25	1	56
1124	3	3	6	-	12
1195	-	1	-	-	1
Total	24	13	31	1	69

Table 8xiv; Structure 149.

Con	Ox	Ovi	Pig	Lar	Sar	Total
2288	-	7	-	3	1	11
2314	1	1	-	3	-	5
2318	-	5	2	3	2	12
Total	1	13	2	9	3	28

Table 8xv; Structure 151.

Con	Ovi	Lar	Total
2326	2	1	3
2379	1	1	2
Total	3	2	5

Table 8xvi; Structure 152.

Con	Ovi	Lar	Total
2327	4	2	6

Table 8xvii; Structure 160.

Con	Ox	Lar	LMam	Total
2257	1	1	-	2
2280	1	-	1	2
Total	2	1	1	4

Table 8xviii; Structure 161.

Con	Ox	Ovi	Pig	Lar	Sar	Total
2328	-	1	-	-	-	1
2325	10	3	-	1	1	15
2332	-	2	-	-	-	2
2338	-	2	-	-	-	2
2422	2	-	1	1	-	4
2442	1	4	-	1	2	8
Total	13	12	1	3	3	32

Table 8xix; Structure 162.

Con	Ovi	Lar	Total
2306	1	1	2

Phase 10; Table 9i; Structure 110.

Con	Ovi	Lar	Total
1264	2	1	3

Phase 11; Table 10i; Structure 13.

Con	Ox	Ovi	Hor	Lar	Sar	Total
1593	5	2	-	-	-	7
1594	3	4	2	2	1	12
Total	8	6	2	2	1	19

Table 10ii; Structure 27.

Con	Ox	Ovi	Pig	Hor	Red	Dog	Lar	Sar	Fow	Goo	Total
523	135	50	23	1	3	-	143	37	1	-	393
552	51	12	-	-	-	-	56	1	-	-	120
584	2	1	-	-	-	-	-	2	-	-	5
620	41	21	4	2	-	4	69	7	1	1	150
Total	229	84	27	3	3	4	268	47	2	1	668

Table 10iii; Structure 29.

Con	Ox	Ovi	Pig	Hor	Lar	Sar	Total
1918	2	-	-	-	-	-	2
1920	1	1	-	-	-	1	3
1942	11	15	4	-	17	1	48
1948	1	2	-	1	-	-	4
1953	3	-	-	-	-	-	3
1972	8	5	1	-	8	1	23
1986	1	1	-	-	2	-	4
Total	27	24	5	1	27	3	87

Table 10iv; Structure 30.

Con	Ox	Ovi	Lar	Sar	Total
66	1	-	1	-	2
2082	2	3	3	1	9
3016	1	-	1	-	2
Total	4	3	5	1	13

Table 10v; Structure 38.

Con	Ox	Ovi	Pig	Lar	Sar	Fow	Total
1916	-	1	1	3	6	-	11
2021	1	2	1	3	2	1	10
Total	1	3	2	6	8	1	21

Table 10vi; Structure 76.

Con	Ox	Ovi	Hor	Lar	Fow	Total
138	1	-	-	1	-	2
143	2	1	-	2	-	5
161	1	5	1	2	1	10
Total	4	6	1	5	1	17

Table 10vii; Structure 115.

Con	Ovi	Pig	Lar	Sar	Total
1003	6	4	9	6	25

Table 10viii; Structure 139.

Con	Ovi	Lar	Total
1678	1	2	3

Table 10ix; Structure 140.

Con	Ox	Total
1614	1	1

Table 10x; Structure 141.

Con	Ox	Ovi	Pig	Dog	Lar	Sar	Goo	Total
1555	1	2	1	6	7	1	1	19
1606	-	-	1	-	3	-	-	4
1607	1	-	-	-	1	-	-	2
Total	2	2	2	6	11	1	1	25

Table 10xi; Structure 158.

Con	Ox	Ovi	Pig	Lar	Total
2281	1	3	2	2	8

Table 10xii; Structure 174.

Con	Ovi	Total
1562	1	1

Table 10xiii; Structure 185.

Con	Ox	Ovi	Hor	Lar	Total
1995	-	3	-	2	5
2027	1	1	-	-	2
2065	1	3	-	1	5
2067	-	-	1	-	1
2116	2	1	-	2	5
Total	4	8	1	5	18

Table 10xiv; Structure 186.

Con	Ox	Ovi	Pig	Lar	Sar	Total
2018	10	3	1	4	2	20
2051	9	8	-	3	4	24
Total	19	11	1	7	6	44

Table 10xv; Structure 194.

Con	Ox	Ovi	Lar	Sar	Total
2053	3	2	2	1	8

Phase 12; Table 11i, Structure 32.

Con	Ovi	Pig	Sar	Total
3005	2	80*	2	84

*a foetal pig skeleton

Table 11ii; Structure 52.

Con	Ox	Ovi	Pig	Hor	Lar	Sar	Total
1018	6	5	1	1	10	-	23
1045	2	-	1	-	6	8	17
Total	8	5	2	1	16	8	40

Table 11iii; Structure 56.

Con	Ox	Ovi	Hor	Lar	Sar	Total
1502	1	-	1	4	-	6
1504	4	3	1	7	1	16
1513	2	-	-	3	-	5
Total	7	3	2	14	1	27

Table 11iv; Structure 125.

Con	Ovi	Pig	Lar	Total
1025	1	1	1	3

Table 11v; Structure 155.

Con	Ovi	Pig	Lar	Sar	Total
1509	2	-	-	-	2
1510	-	1	3	6	10
Total	2	1	3	6	12

Table 11vi; Structure 156.

Con	Ox	Goa	Ovi	Pig	Dog	Lar	Sar	Total
1533	4	-	6	2	1	4	14	31
1546	3	1	2	-	1	4	6	17
Total	7	1	8	2	2	8	20	48

Table 11vii; Structure 168.

Con	Ox	Ovi	Pig	Lar	Sar	Total
2205	15	6	1	23	-	45
2206	6	2	-	3	1	12
2301	1	6	-	5	-	12
Total	22	14	1	31	1	69

Table 11viii; Structure 192.

Con	Ox	Ovi	Pig	Lar	Sar	Total
1938	5	14	1	10	1	31
2095	2	2	-	-	-	4
Total	7	16	1	10	1	35

Table 11ix; Structure 195.

Con	Ox	Total
1923	3	3

Table 11x; Structure 196.

Con	Ox	Ovi	Sar	Total
2069	1	1	3	5

Table 11 xi; Structure 197.

Con	Lar	Cat	Total
1864	2	95*	97

*most of a skeleton

Complete human skeleton Michael Nellist

Recording aims

The record aimed to identify parts of the skeleton present and identify features to determine its pathology, sex and age.

The record

Context 1686 Structure 7 Phase 5

Colour: a uniform grey-brown

Character: hard and brittle

Skull: most of the cranial bones were found to be present, except for a small, vertical portion of the frontal bone where a midline post-mortem fracture had occurred involving the right superciliary arch. Other bones missing were the nasal and ethmoid bones and the greater wing of the left spheroid bone.

The majority of the facial bones were absent, although a portion of the right maxilla and most of the right zygomatic bone were present. The right mandible, distal to 6\ was missing.

The basi-sphenoid synchondrosis was open.

Dentition: teeth present were as follows:

UE #

8 7 6----------

|

----6 5 4 3/2/1 /1/2/3/4/5 6 7

c

UE Unerupted
/2 Tooth missing but socket present
c Small occlusal cavity
-- Area missing
 # Small enamel fracture

Attrition was evident on the buccal cusps of 6-6. Disto-lingual rotation of 3-3

had occurred and there was moderate supragingival calculus on both the mesio-labial and lingual aspects of 3\. A radiograph (Plate 8) confirmed the presence of a partially formed, unerupted 8/ crown.

Vertebral column: all the vertebrae existed except for the left half of S5 and the coccyx. Fusion of the sacral vertebrae had not occurred.

Thoracic cage: although the distal portion of the rib L3 was missing, the remaining ribs were present, but some were fragmented.

Except for the manubrium, no other bones of the sternum were identified.

Upper limbs: an unfused coracoid process from the left scapula and various bones from the hands were missing; all the other upper limb bones were present.

In the right hand, only the following were found: the pisiform, capitate and hamate bones, all the matacarpals and the proximal phalanges R2 and R5.

In the left hand, only the trapezoid, hamate and triquetral bones represented the carpels, whilst the matacarpals L1, 2, 4, and 5 and the proximal phalanges L1 to L4 also existed.

None of the epiphyses present was united.

Lower limbs: in the right foot, only the middle and distal phalanges were missing.

Bones missing from the left foot were the calcaneum (but not its epiphysis), the cuboid, medial cuneiform, proximal phalanges L4 to L5 and all the middle and distal phalanges with the exception of the distal L2 phalanx and the epiphysis for the distal L1 phalanx.

All other bones of the lower limbs were present, but none of their epiphysis had united.

Environmental method Susan Colledge and James Greig

Sampling method

During the progress of the excavation the director (John Sawle) took charge of most of the sampling and collected from features which appeared to contain organic material suitable for analysis. Site visits were made from time to time by James Greig and Susan Colledge to take some column samples, for example of the very large pit, structure 34 (118), and to keep in touch with the sampling programme. The number of samples taken were too many for them all to be studied, so there was further selection in the laboratory (see below).

Method of analysis

The samples were mostly 1-5 kg of clay material which was mostly very black and sometimes contained pebbles. This can be difficult material from which to extract plant remains. For macrofossil extraction sub-samples of 1-2 litres were measured out by the displacement of water in a large measuring beaker. The sediments were broken down with water in a washing-up bowl with no chemicals used other than a little detergent. Experiments using hydrogen peroxide, sodium phosphate ('Calgon') or other chemicals proved ineffective when measured against breaking down the material with gentle hand pressure.

The organic material was separated by washover, and the lighter organic material was poured off with the water and collected in a fine sieve of 0.3mm mesh. Clay, fine silt and other very small particles were also washed over in suspension, but these went through the sieve mesh. The organic material which washed over was further cleaned with water on the fine sieve until no more muddy suspension came out, and was then separated into size fractions with a bank of sieves with meshes of 4mm, 2mm, 1mm, and 0.3mm. The residue of heavier and coarser inorganic material with sand and small stones which was left behind in the washing bowl was re-sieved on a 0.5mm mesh and dried, then poured into a bowl of water, and any further organic remains that floated scooped up and added to the ones already washed over. This was mainly done to test the efficiency of the washover, and the numbers of seeds recovered in this way were very small. Sorting was done with a microscope at about 10x magnification, and identification was done with reference to an extensive collection of modern seeds, and to published data. The plant remains were stored in alcohol. Some plates of

seeds have been included, which were done with a Zeiss 'Tessovar' photomicroscope.

The pollen analysis was done on sub-samples of about 10cc, by the usual methods of breaking down in alkali and treatment with acids including hydrofluoric acid; this often needed to be repeated to ensure removal of all the clay mineral. Acetolysis removed some organic matter and also made the pollen grains swell so that they were easier to see. Finally, the samples were stained with safranin and mounted in glycerin jelly. Counting was done with a compound microscope with phase contrast objectives. Identification was done with use of the reference collection, slides of which could be examined with a second microscope beside the one used for the fossil material.

Results

Many samples were collected from the excavation, and of these only a certain proportion could be analysed, because of pressure of work. The selection was based partly on the likely archaeological interest, with special attention to material from the Iron Age/Roman and Roman periods, and partly on the suitability of the samples; inevitably those which appeared to have the best preserved material were selected.

1707, S6, P4
Fill of brine tank (1684), relates to disuse, mid 1st to early 2nd century *terminus post quem*. Black clag with gravel. Pollen preservation sparse.

1961, S29, P5-9
Primary fill of ditch, possibly relates to use. A mid 1st to early 2nd century pottery *terminus post quem* is indicated. The radiocarbon date is cal BC 379-116 cal AD. 1 litre main sample, 1 litre extra sample for extra taxa.

1775, S6, P3
Dark grey sediment from between the wooden revetment stakes and the clay lining. It could relate to the use of the brine tank. 1 litre clay/silt/sand sieved out, giving 100 ml. organic material <4mm and 80 ml wood charcoal >4 mm. Some seeds and beetles remains present.

132, S4, P3
Clay lining of brine tank, though its precise location is uncertain. Radiocarbon

date of cal BC 358-91. Clay and silt, broke down fairly well. 1.5 litres processed, some organic material washed over, about 90ml in all. There was no pollen at all in the one sample that was prepared.

559, S27, P9(11)
Ditch fill. Masses of wood charcoal noted. Pollen shrunken with much charcoal, but otherwise well preserved. There was possible evidence of tanning from Alison Locker's study of the bones.

(578), S31, P8
Possible construction trench for setting a series of barrels. Very black clag. Preservation was poor. When the macrofossils were analysed a few bone fragments were noted in the coarse sievings, a few seeds in the 4-1mm fraction and very few seeds in the 1-0.3mm fine fraction. Insect remains were not seen.

1070, S16, P8
Very black clag.

1098, S31, P8
Organic material 'peaty'. Fill of longitudinal cut relating to disuse. Contaminated. Possibly mid 3rd to late 4th century. Some thin grains noted in the pollen preparations, otherwise preservation good. Macrofossils from 1 litre.

(118), S34, P12
Disuse, possibly post-medieval (was called F118a). Macrofossil and pollen samples processed November 1977. *Pisidium* sp. noted as abundant, dextral *Lymnaea* present.

The plant remains are listed in Table 2.

Diatoms Steven Juggins

Of the two samples submitted only one (3008) contained diatoms and these were well preserved (Table M22).

The four dominant taxa (*Nitzschia apiculata, N. frustulum, N. hungarica* and *Synedra tabulata*) are brackish water forms. While these may occasionally be found in fresh waters their presence in such high numbers indicates deposition in a brackish environment. Other brackish forms present are *Bacillaria paradoxa, Navicula pygmaea,* and *Achnanthes brevipes v intermedia.* The remainder of the assemblage is composed of freshwater forms although most of these can tolerate slightly brackish water. Using the distribution of these taxa in the Thames estuary and published accounts of their ecology I would suggest a salinity of 2-5 gl-1.

Table M22 Relative frequency of diatoms in a count of 200 valves

Achnanthes brevipes v intermedia	1.6
Achnanthes clevei	0.4
Achnanthes lanceolata	3.2
Achnenathes hungarica	1.6
Amphora coffeaeformis	0.8
Amphora venta	2.4
Bacillaria paradoxa	0.8
Caloneis amphisbaena	0.8
Cocconeis placentula v euglypta	2.0
Cyclotella meneghiniana	0.4
Diatoma elongatum	0.8
Diatoma vulgare	0.4
Gomphonema angustatum v productum	1.6
Melosira varians	1.2
Navicula avenacea	0.8
Navicula cincta	2.4
Navicula exilis	0.4
Navicula gastrum	0.4
Navicula gregaria	0.4
Navicula pygmaea	3.4
Nitzschia amphibia	0.4
Nitzschia apiculata	10.7

Nitzschia frustulum	17.8
Nitzschia hungarica	14.6
Nitzschia peregrina	0.8
Nitzschia tryblionella	2.0
Rhoicosphenia curvata	3.2
Surirrela ovata	5.5
Synedra tabulata	18.2

Lifting and conservation of a waterlogged barrel from Droitwich Christopher Gregson

The half barrel (1102, S16, P8) cut longitudinally, was set trough-like in a soil block. To lift the barrel as a complete assembly, moulds of expanded polyurethane foam were cast over the outer and inner faces of the staves. Aluminium foil acted as the release agent. The outer mould, cast first, was made in six sections, three either side of the long axis. These were cast alternately to provide support during removal of the remaining soil piers. The remains of oak hoops were exposed during preparation of the outer mould; these were held in position by strips of aluminium foil pinned to the staves, before covering with the release agent. After moulding the barrel was turned over for examination of the outer face. On removal of the mould the lower stave on both sides slid down and fragmented. These were packed separately. The barrel in its polyurethane moulds was transported to the Archaeological Research Centre at the National Maritime Museum for conservation.

Following cleaning of adhering soil and recording, the staves, end boards and hoops were separated for treatment. All were conserved by impregnation with cold (ie room temperature) polyethylene glycol (Breox 1500 grade, BP Chemicals Ltd). The biocide 'Panacide' (BDH Chemical Ltd) was utilised during the early stages of treatment. Shrinkage values for the staves between measured points were, in the tangential plane 5.2% (18 measurements), in the radial plane 1.1% (18 measurements), and in the longitudinal plane 0.5% (3 measurements).

Friar Street phase description Justin Hughes

Phase 1 Iron Age

Structures 1, 2, 3, 4, 5 and 56

Structure 1 (Fig M186, 5:A1)
This structure consisted of an elliptical pit (885), measuring 3.40 x 2.06 x 0.66m. Its sides had partially collapsed. Thirty poorly preserved stakes and stakeholes probably represented the remains of a timber lining. The fills were composed of a mixture of clays and sands (886 to 890) which contained briquetage.

Structure 2 (Fig M187, 5:A2)
Structure 2 consisted of a pit (730/760), which measured 4.66 x 2.12 x 1.01m. It was subrectangular in shape with almost vertical sides, and it had a flat base. The feature also had a clay lining (743) revetted by stakes, for which a dendrochronological date of AD 19 was obtained.

Structure 3 (Fig M188, 5:A3)
Similar in form and construction to structure 1. It consisted of an oval, flat-bottomed pit (488) with eroded sides and a series of stakeholes cut through its base around the edge. These were again interpreted as the remains of a stake lining. Dimensions: 3.60 x 1.64 x 0.85m.

Structure 4 (Fig 189, 5:A4)
Structure 4 consisted of a pit (469) which was filled with large quantities of briquetage, charcoal and ash in a complex series of deposits (1156 to 1175 inclusive). These deposits were composed of green and grey clays, and of dark brown and grey loams with some silty deposits within contexts 1171 and 1174. The lower fills (1162, 1163, 1164, 1169, 1170, 1171, 1172 and 1173) may have been associated with the use of the structure, as the concentration of fuel waste within their soil matrices was higher than noted in the remaining upper fills. The pit had an elliptical plan with almost vertical sides. Structure 3 lay approximately 1.00m to the west.

Structure 5 (Fig M190, 5:A5)
This structure lay at the south-eastern corner of the excavation and was truncated along its northern end by structure 36. This pit (1154, 4.40 x 1.08 x 0.66m) was similar to structure 2, with an identical profile, and traces of a clay

lining. It contained wood stains in its base and sides, indicating that a stake revetment formed part of the original construction.

Structure 56
Stratigraphically this was the earliest structure on the excavation, consisting of a pit (467) with a loam fill (468). However, the structure was largely cut away by structure 4, and no field drawing was made.

Phase 2 Early to mid Roman

Structures 2, 3, 5, 6, 7, 8, 9, 10, 11, 23, 27, 40, 45, 55, 63, 66, 77, 78, 82, 84 and 100

Structure 2 (Fig M187, 5:A2)
This pit was constructed in phase 1, but its disuse components accumulated in phase 2. These were composed of primary deposits of clay silts (738, 741 and 742), and of secondary fills (731, 732, 733, 734, 735, 736, 737, 739 and 740) which were composed of clay and loam with patches of redeposited natural clay and sand.

Structure 3 (Fig M188, 5:A3)
The fills (489, 490, 491, 492, 493, 494, 495 and 496) were composed of clay and loam containing a large quantity of briquetage and charcoal. Radiocarbon dates were obtained from three charcoal samples taken from the fills of structure 3. These were cal BC 366-40, cal BC 400-100 and cal BC 331-60 cal AD. However, the pottery indicated that the dates were from residual material.

Structure 5 (Fig M190, 5:A5)
This structure was also constructed in phase 1, but pottery contained in the disuse was of phase 2 date. Its fills (413, 414, 415, 416 and 417) were similar to those described in structure 3 but with a higher percentage of clay.

Structure 6 (Fig M191, 5:A6)
This structure consisted of three construction elements. One pit (1137) had a diameter of 3.20m and formed a construction cone for a well shaft (1139), which was 3.25m deep. The shaft varied in diameter from 0.73m at its top to 0.59m at its base. The lining was composed of dressed sandstone blocks (1140). Some unevenly dressed blocks of green sandstone were retrieved from some of the later fills (1134, 1135 and 1136), which were deposited at the end of phase 2. The primary fill of the shaft (1143) was a clay silt, while the two later fills (1141 and

1142) had a similar composition of clay and sandstone. Contexts 1134, 1135 and 1136 lay over the well shaft, and were composed of fragments of green sandstone.

Structure 7

This structure was contemporary with the well (S6), and lay to the west. It consisted of a group of four postholes and three stakeholes in a discrete cluster. Two postholes (868 and 871) were of similar form, their dimensions being 0.70 x 0.50 x 0.27m, and 0.52 x 0.47 x 0.25m respectively. Three stakeholes (873, 875, and 879) formed an east to west alignment between the two postholes. The fills were uniformly composed of clay loam (869, 872, 874, 876, 878, 880, 882 and 884).

Structure 8 (Fig M192, 5:A7)

These ditches lay to the north of structure 7, and continued northwards outside the excavated area. The four cuts making up this structure (891, 893, 895 and 897) were of similar length and width, however their depths were not recorded. Gravels and clays (892, 894, 896 and 898) formed the fills.

Structure 9

These pits had no clear association with the features previously described in phase 2, except that their construction components (716, 717, 719 and 721) were cut from a similar level. Their average depths were *c* 0.10m, and they were uniformly filled with clay loam (715, 718, 720 and 722) but contained no finds.

Structure 10

Sixteen stakeholes formed a cluster, 10.00m to the south of structure 6. Six stakeholes (1046, 1057, 1059, 1065, 1077 and 1079) formed a north-west to south-east alignment, while ten others (1040, 1042, 1044, 1048, 1055, 1073, 1075, 1081, 1083 and 1085) formed an irregular pattern with no clear function. Packing, mainly pebbles, was noted in the sand and clay loam which filled the stakeholes.

Structure 11

A pair of ditches (1053 and 1061) and their fills (1054 and 1062) made up this structure. The cuts ran parallel, on an east to west alignment. Both cuts also had similar dimensions, being 2.84 x 0.56 x 0.20m (1053) and 2.44 x 0.34 x 0.15m (1061). Its construction post-dated the disuse of the well (S6). The fills were of gravelly loam. Ditches 1067 and 1069 may also have been part of structure 11, as features connecting 1053 and 1061. They measured 1.68 x 0.40 x 0.12m, and 0.68 x 0.30 x 0.10m respectively, and their fills (1068 and 1070) were again of gravelly loam.

Structure 23
This pit group was constructed in two stages (1089 followed by 1093). The former measured 0.76 x 0.80 x 0.53m, and was reconstructed to form a larger feature which measured 0.90 x 0.86 x 0.45m. The fills (1090, 1091, 1092, 1094 and 1095) were composed of gravel and loam.

Structure 27 (Fig M206, 5:B9)
This structure consisted of two ditches (646 and 665). Like structure 66 its full extent was not visible because it partially lay under the southern and western excavation edges. Context 646 was punctuated along its southern side by six stakeholes, from which some timber survived.

Structure 40
This pit group (1108, 1110 and 1112) was partially cut away by structure 17. Its fills (1109, 1111 and 1113) were composed of loam.

Structure 45
These two layers of gravel and loam (867 and 870) also contained patches of clay.

Structure 55
Structure 55 consisted of an alignment of postholes (1129, 1131, 1144 and 1146). Although out of alignment with the rest of the structure, posthole 1124 has been included here on the basis of its stratigraphic position. All of the fills (1125, 1126, 1127, 1128, 1130 and 1132) were composed of clay and loam.

Structure 57
Consisted of a gravelly clay layer (707) which covered a large part of the central area of the excavation.

Structure 63
This structure's major constituent was context 775, a ditch measuring 1.44m x 0.37m (its depth was not recorded). Pits 765, 767 and 777 were not planned, and were given no descriptive detail in the original record. The fills of structure 63 were composed of sandy loam and clay soils (766, 768, 776 and 778).

Structure 66
A single pit (1105) formed the construction element of this structure. Its character was not fully determined because its edges were largely lost under the northern excavation edge. Its fills were composed of clay loam (1106 and 1107),

which contained a large quantity of briquetage.

Structure 77
Structure 77 was composed of a clay layer (664) in the southern half of the excavation, which post-dated the main period of activity in this phase.

Structure 78
Again the southern excavation edge largely obscured the extent of this structure. It consisted of pits 637 and 639, and their fills of clay loam (638 and 640). It appears from the stratigraphic information that structure 78 was constructed at a slightly later date than structure 27.

Structure 82
This rectangular pit (1050) was severely truncated by structure 83, so that its original form could not be ascertained.

Structure 84
Layer 1036 was composed of gravel. It appeared to have been laid down at a similar date to structures 45 and 174, and certainly post-dated the structures associated with the well.

Structure 100
Structure 100 lay adjacent to structure 23. It consisted of a pit (1096) which had gravel and loam fills (1097, 1098, 1099, 1100, 1101 and 1102).

Phase 3i 3rd to 4th century

Structures 12, 13, 14, 15, 16, 17, 18, 27, 54, 64, 68, 86, 91 and 174

Structure 12 (Fig M193, 5:A8)
This was a north-west to south-east alignment of post and stakeholes (792, 808, 844, 846, 852 and 854). Their diameters were *c* 0.25m, with little variation in size or form. Several other pits of similar form (842, 848, 850 and 856) were probably linked to this alignment. The ten post and stakeholes were of similar depth, *c* 0.10m. The fills (793, 809, 843, 845, 847, 849, 851, 853, 855 and 857) were composed of clay loam.

Structure 13 (Fig M194, 5:A9)
Lying 0.30m to the west of structure 12, and on the same alignment, this structure consisted of an alignment of postholes (723, 725, 727, 818 and 820). Unlike the even spacing of the features within structure 12 however, this alignment was irregular. Context 723 may have formed the original construction which was successively recut by pits 725, 727, 818 and 820. The fills (724, 726, 728, 819 and 821) were of a similar clay loam matrix to the fills of structure 12.

Structure 14 (Fig M195, 5:A10)
Structure 14 consisted of a cluster of pits and ditches, lying in close proximity and similar to structures 12 and 13 (756, 758, 822, 824, 826, 828, 830, 832, 834, 836 and 838). The fills were mainly composed of sand and loam (757, 759, 823, 825, 827, 829, 831, 833, 835, 837 and 839).

Structure 15 (Fig M196, 5:A11)
Structure 15 formed a pit group in a roughly circular arrangement. its construction elements (784, 786, 788, 790, 794 and 796) were filled with sand and clay loam which also contained gravel as a minor component (785, 787, 789, 791, 795 and 797).

Structure 16 (Fig M197, 5:A12)
This structure consisted of a ditch (1116), running east to west and terminating in the west. Its full length was not recorded as the eastern end lay beyond the section face. The cut had a 'V' shaped profile and a narrow flat base. Its main fill (1117) was of clay, with charcoal and sandstone as a minor component. Fill 1104 comprised a secondary disuse component, and was composed of clay loam.

Structures 17 and 18 (Figs M198, 5:A13-4 and M199, 5:B1-2)
Each of these structures were narrow, shallow linear cuts which lay parallel to but *c* 10.00m south of structure 16. Structure 17 (712/769/813) was >16.00m long. Its western end was clearly defined but the eastern edge merged into a layer (1029). Its width varied from 0.50 to 0.66m, and its depth from 0.10m in the west to 0.22m in the east. Structure 18 ran on a parallel course *c* 1.00m to the south. It was formed by contexts 330/701, and was 0.75m wide and 0.24m deep. A slight downward gradient was noted as both structures ran westward. The edges of both structures in their central areas were not clearly defined and, although no physical evidence of disturbance was recorded, it is likely from the position and depth of structure 34 (see phase 4ii) that they were partially removed. The fills of the two cuts were composed of sandy, clayey loams (713 770,

814, 815, 331 and 702).

Structure 27 (Fig M206, 5:B9)
The disuse of structure 27 occurred in this phase. Fills (647, 648, 649, 650, 651, 666, 667 and 668) consisted of a mixture of sands, clays and loams, occasionally with gravel as a minor component.

Structure 54
This single layer was composed of a gravelly loam (866) which accumulated in the 3rd century.

Structure 64
This layer group (1103, 1118 and 1123) was composed primarily of sandy loams with clay as a minor component.

Structure 68
Another layer group of two contexts (810 and 1037), both of which were composed primarily of clay loam, although context 1037 contained some gravel.

Structure 86
This structure consisted of a series of interconnecting pits and a ditch. The construction elements consisted of pits (1003, 1009, 1011 and 1013), postholes (1007 and 1017), and a ditch (1021). Their fills (1004, 1006, 1008, 1010, 1012, 1014, 1016, 1018 and 1022) contained a matrix of sand and clay loams.

Structure 91
This structure was assigned a phase 3 date on the basis of the Oxfordshire wares from fill 1122. However, the pits (1119 and 1121) were not planned, so that further associations could not be drawn. The fills of the pits (1120 and 1122) were composed of clay.

Structure 174
Two layers were composed of clay loam, 729 being the earlier, and 682 similar but with a substantial gravel component. Both layers covered a large area of the excavation, from the central area to the western edge.

Phase 3ii Sub-Roman

Structures 20, 21, 24, 25, 26, 28, 62, 65, 67, 71, 107, 121, 171 and 174

Structure 20 (Fig M201, 5:B4)
The earliest ditch (782) was aligned on a north-west to south-east axis, petering out at its south-eastern end. The base and lower edges of a second ditch (780) formed an initial reconstruction element which in turn was cut by a ditch (710). Contexts 780 and 782 were filled with silty clay (781 and 783), and context 710 was filled with clay loam (711).

Structures 21 and 24 (Figs M202, 5:B5 and M204, 5:B7)
These structures consisted of a parallel series of north to south ditches on the western side of the excavation. The southern terminals of both structures were removed by structure 36 (P5ii). The construction components of structure 24 (746, 748, 750 and 752) were similar in form, particularly in their width and depth, and they were spaced at roughly 1.00m intervals. The fills of both groups (680, 681, 709, 747, 749, 751 and 753) were composed mainly of sandy loam.

Structure 25 (Fig M205, 5:B8)
Lying to the east of structure 21, this structure consisted of two ditches (683 and 685). The fills (684 and 686) were composed of loam and clay loam respectively.

Structures 26 and 28
These structures consisted of a possible posthole (699) and a pit (697), which were located in the central area of the excavation. The fills (698, 700 and 702) were primarily composed of clay loam.

Structure 62
This ditch (695) had a fill of loam (696) but was poorly preserved as it was partially removed by later activity.

Structure 65
Covering much of the excavated area, this layer (674) was made up of loam and pebbles with a maximum depth of 0.30m.

Structure 67
Structure 67 consisted of an incomplete line of stakeholes (689, 691 and 693) and a poorly preserved ditch (761), all of which were largely cut away by structure 36.

Structure 71
This layer (463) was composed of loam with pebbles as a minor component.

Structure 107
This ditch (816) was not recorded in any detail. Its depth was 0.29m. The fill (817) was also not recorded.

Structure 121
Cut by structure 21, this structure consisted of a narrow east to west aligned cut (598), which was disturbed at both ends by contexts 679 and 708 (P13).

Structure 171
Structure 171 consisted of layers of clay loam (634, 635, 636, 641, 642, 643, 644 and 645) which also contained some redeposited clay. The spatial limit of this layer group was not recorded and its depth fluctuated from 0.06 to 0.15m.

Phase 4i Earlier Saxo-Norman

Structures 19, 22, 31, 69, 93, 107, 158 and 170

Structure 19 (Fig M200, 5:B3)
A single ditch (534/675/1015) was constructed on a curving north-west to south-east line. Its north-western end was not located, having been disturbed by structure 34, however the cut widened and deepened towards its south-eastern butt end. A possible primary silt (1016) was recorded. The fills (535 and 676) were composed of loose clay and loam.

Structure 22 (Fig M203, 5:B6)
Structure 22 was constructed in two stages: a ditch (864) and its fill (865) formed the first stage, and a ditch (677) and fill (678) the second. Feature 864 measured 4.40 x 0.40 x 0.18m, 677 measured 8.40 x 0.40 x 0.18m, and it recut 864. The two cuts were aligned north-west to south-east.

Structures 31 and 158 (Fig M209, 5:B14)
Contexts 480, 482, 509, 511, 515, 517 and 519 formed a line of stakeholes running parallel to structure 19 and *c* 2.60m from its southern side. Contexts 484, 486, 503, 505, 507, 513, 526 and 528 were tightly but randomly clustered on either side of this main alignment. All of the stakeholes had similar dimensions (between

0.25 x 0.13 x 0.26m and 0.20 x 0.09 x 0.20m) with the exception of 505 and 507 (which measured 0.65 x 0.25 x 0.10m and 0.32 x 0.18 x 0.11m respectively). The fills of all fifteen cuts were uniformly composed of sandy loam (481, 483, 485, 487, 504, 506, 508, 510, 512, 514, 516, 518, 520, 527 and 529).

Structure 69
A single pit (744) was filled with a clay loam (745).

Structures 93 and 170
These groups were probably deposited at the same time, but were assigned separate structure numbers because of their composition. One (1026) comprised a layer of sandy clay, the other (1029) a layer of sandy loam.

Structure 107
Pit 816 and its fill (817) appear in the stratigraphic matrix but the construction was not planned, and the soil fill was not described.

Phase 4ii Later Saxo-Norman

Structures 30, 32, 34, 37, 70, 80 and 81

Structure 30 (Fig M208, 5:B13)
Four pits (594, 625, 629 and 632), two postholes with posts (538 and 620), and a ditch (627) formed the constructional elements. The fills were composed of clay and loam (539, 540, 541, 542, 543, 544, 621, 622, 623, 624, 626, 628, 630, 631 and 633).

Structure 32 (Fig M210, 5:C1)
Structure 32 consisted of a pit (545) which measured 1.40 x 1.24 x 0.80m, with clay loam fills (546 to 551 inclusive). Of these, 548, 549 and 551 also had a high organic content, containing decayed wood and humic deposits.

Structure 34 (Fig M212, 5:C3-4)
This structure consisted of a group of inter-related pits. Their bases were punctuated by a series of stakeholes forming a line of four along its western side, and twelve along the eastern, which curved inwards at its northern end. The general form was complex because a wide deep ditch (571), running north to south through the structure, was interrupted by several pits (521, 583 and 652).

Organic residues were evident in the fills of the main construction. The fills were of clay, sand and loam (473-478, 971, 974, 976, 979, 436, 471, 531, 522-525, 573-576, 578, 585, 586, 653, 654 and 655).

Structure 37 (Fig M216, 5:C9)
Structure 37 consisted of a pit (669) which measured 1.80 x 0.90 x 0.54m, and contained two clay loam fills (670 and 671), which produced an assemblage of horncores. Its construction was similar to that of structure 32, and from its location it seems to have been associated with it. Pottery *terminii post quem* from the disuse of structures 32 and 37 suggested, however, that they may have been filled at a slightly later date.

Structure 70
The two layers forming structure 70 (552 and 553) were composed of black clay and loam, occupying much of the area of the excavation, but of notably variable depths. In spite of its unevenness, an increase in depth was noted from west to east. In the western area its average thickness was 0.10 to 0.15m, in the central area 0.30 to 0.35m, and in the east 0.55 to 0.60m. The deposit accumulated during phases 4ii to 9, and was cultivated from the 13th to 17th centuries. During post-excavation analysis S70 was therefore given the following equivalent numbers: S74, S76, S89, S94, S95, S96, S97, S108, S109 and S127.

Structure 80
This structure consisted of a possible posthole (1030) and its loam fill (1031).

Structure 81
Structure 81 consisted of a pit (980) containing a clay loam fill (981). Its original dimensions were obscured by its truncation by structure 35.

Phase 5i 12th century

Structures 29, 33, 35, 39, 74, 76, 79, 83, 85, 88, 89, 90, 97, 101, 105, 121, 159, 160, 161 and 165

Structure 29 (Fig M207, 5:B11-12)
Structure 29 consisted of a ditch (435/470/530) of indeterminate length, running east to west. The sides of the cut were gently sloping with a curving base. The fills were composed of clay and loam (436, 471 and 531).

Structure 33 (Fig M211, 5:C2)
Lying to the west of structure 29 the limit of excavation prevented the total recording of this structure. It was composed of a pit (444), which measured 2.14 x 1.64 x 0.68m, and contained two posts *in situ*. The fills (447, 448, 449, 450, 451 and 452) were composed of a mix of gravel, clay, loam and organic soils. They were contained in the bottom half of the pit, which was reconstructed later at a shallower depth, but with a wooden lining (446) which was subsequently filled with loam (445). Unfortunately, the lining was only drawn in section.

Structure 35 (Fig M214, 5:C5)
This structure consisted of three pits (472, 970 and 972). The pit group cut away the eastern end of structure 29, but was filled with similar soils. The fills (473, 474, 475, 476, 477, 971, 974 and 976) were composed mainly of clay.

Structure 39 (Fig M217, 5:C10)
This pit (911) measured 1.16 x 1.02 x 0.14m and had a bowl-shaped profile. The use and disuse fills (912, 913, 914 and 915) were composed of clay and contained large quantities of charcoal and ash. A pebble and clay layer (983/1155) with a surface (988) survived to a length of 1.64m and width of 1.50m. This was cut by context 911. A ditch (993), containing traces of a horizontal wooden setting, was constructed along the southern edge of 988. Two possible postholes (986 and 989) were recorded in the base of 993. They were filled with clay and loam (987 and 990). At the western edge of the cut, two more postholes were recorded (999 and 1001). The former was filled with an ashy loam (1000), the latter with a clay loam (1002).

Structures 74 and 76
These layers were composed of clay (308, 309, 136 and 300). Their average depth across the excavated area was 0.25 to 0.30m.

Structure 79
This structure consisted of a single layer (419).

Structure 83
Cutting structure 74, this pit (1024) had a fill of clay loam (1025).

Structure 85
Considerably cut away by structure 36, this structure consisted of a pit (418) and its fill (1181), which was composed of clay and pebbles.

Structures 88 and 90

Eight shallow postholes, five pits and two narrow ditches made up these two structures. Structure 36 had presumably removed their northward continuation. Structure 88 comprised contexts 431, 432, 587, 588, 589, 590, 591, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 763 and 764. Structure 90 consisted of five pits (610, 612, 614, 616 and 618).

Structure 89

These two layers (464 and 465) were composed of clay and loam.

Structure 97

This consisted of a single layer (985) of clay loam, cut away by structures 35 and 39.

Structure 101

This single posthole (1027) was filled with gravel and clay (1028).

Structure 105

Another single layer (969) was composed of clay loam. The deposit post-dated structure 74 and pre-dated structure 35.

Structure 121

This structure was constructed in phase 3ii, but appears to have gone out of use in the 12th century. Its fill was composed of loam silt.

Structure 159

A compacted layer of clay loam with some redeposited clay (460).

Structure 160

These three layers were composed of sandy loam (500, 501 and 502). Layer 501 formed the main deposit, within which 500 and 502 were slightly darker lenses. This structure was identified stratigraphically as the earliest deposit in phase 5i, however its extent was not recorded.

Structure 161

This amorphous pit (943), which was much disturbed by structure 173, had a loam fill (942).

Structure 165

Post-dating structure 76, these two stakeholes (453 and 455) had fills composed of clay.

Phase 5ii Early 13th century

Structures 36, 38 and 74

Structure 36 (Fig M215, 5:C7-8)

This structure had two elements of construction: the initial one, a ditch (404/554) running east to west, and subsequently, a smaller linear cut (962) running north to south. Their full lengths could not be recorded due to the limit of excavation. However, the eastern end of cut 404/554 terminated within the area of the excavation, giving a minimum length of 17.00m. Cut 404/554 had steep sides, a maximum width of 3.72m and depth of 1.65m, and became shallower (1.20m) and narrower (2.52m) towards the east. The sides of cut 962 were steeper and had a depth of 0.67m. Primary fills of silt (408, 565 and 961) possibly related to the final use of 404/554, after which the cut was filled with a sequence of layers largely composed of clay and loam (405, 406, 407, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 956, 959, 963, 964, 965 and 966).

Structure 38

This structure was poorly recorded but post-dated structure 36. It consisted of a pit (1023/1032), 0.65m deep, which contained fills 1033, 1034, 1035 and 960. With the exception of a loam and rubble fill (960), these disuse deposits were composed of sand and silty loam. There was, however, a notably high content of charcoal and ash within the disuse components.

Structure 74

Layer 308 continued to accumulate.

Phase 6 13th to 14th century

Structures 42, 44, 58, 87, 94, 95 ,96, 98, 99, 102, 108, 110, 111, 113, 114, 115, 116, 124, 125, 127, 140 and 173

Structure 42 (Fig M218, 5:C11-12)
Structure 42 consisted of a surface (49/328) composed of cobbles (297 and 338) in the south and south-western areas, over which make-up (334 and 335) was laid. In the east this make-up continued as context 333, at the same stratigraphic level as contexts 297 and 338. It was compacted by further make-up within 66 and 153. The complete surface traversed the site from west to east: a length of 15.40m, with an average depth of *c* 0.30m.

Structure 44 (Fig M220, 5:D1-2)
The main ditch (219/904) ran from east to west and turned approximately 1.00m from the eastern edge of the site to run north to south. The southern extent of the cut was obscured by structure 41. A second ditch (214) running north to south could not be physically linked with 219, as the projected junction lay outside the excavated area, however their contemporaneity is likely. The depths of cuts 219 (0.65m) and 214 (0.60m) were similar, but context 904 was much shallower (0.22m). Both cuts had steep-sided profiles with flat, even bases, while the sides of cut 904 were less steeply cut, and its base was irregular.

Structure 58 (Fig M229, 5:D12)
Of these four postholes, two (369 and 371) were similar in size, as were the two larger postholes (382 and 384). The fills were composed of clay and loam (370, 372, 383 and 385).

Structure 87
Poorly recorded, this ditch (1177) had a slight gradient down to the south. The form of the structure was not defined in any detail, but its surface dimensions were 5.30 x 0.50m. This structure may have been constructed as a modification to context 426, which was stratigraphically earlier but was not fully recorded. The structure's disuse components were of gravel and sand (424 and 425).

Structure 94
These four layers were composed of clay, loam and gravel (316, 317, 420 and 421).

Structure 95
A single layer (386) of clay loam was partially sealed by structure 94, and also lay below structure 99.

Structure 96
Post-dating structure 58, these four layers (366, 367, 368 and 373) were uniformly composed of clay and loam.

Structure 98
Structure 98 was formed by layers 334 and 335 within structure 42. Contexts 422 and 423 were originally recorded as a negative feature and fill, but on closer inspection it was realised that they were associated with the construction of surface 49/328. Structure 98 was therefore contemporary with contexts 333 and 338.

Structure 99
Structure 99 was disturbed during the construction of surface 49/328 (P9). It consisted of contexts 267, 268, 271, 272 and 336, and their disuse (269, 270 and 337). The main component (268) comprised a spread of burnt clay and charcoal, incorporating burnt clay patches (269 and 270). The area measured 1.25 x 0.40m. Two postholes (271 and 272) and a pit (336) were detected on its periphery, and may have been associated with the group.

Structure 102
Consisting of three postholes (376, 378 and 380) and a rectangular pit (402), the postholes were filled with loam (377, 379 and 381) and the pitfill (403) was composed of clay loam.

Structure 108
This major layer group was composed primarily of clay and loam (226), with clay and pebbles as a minor component (217, 222, 223, 225 and 264). Layer 226 varied in depth from 0.70 to 0.75m in the northern and central area, where it was disturbed by the ditch 219. Intrusive features caused some contamination.

Structure 110
A single thin layer of clay loam (459).

Structure 111
These two pits (400 and 1176) contained fills of clay and loam (401 and 409).

Structure 113
A single layer of ashy loam (994).

Structure 114
Lying to the north-west of structure 113, this was a more substantial layer group. It consisted of three layers of loam (951, 952 and 978) which pre-dated structure 44.

Structure 116
These three layers (953, 954 and 955) were composed of ashy loam, similar to structure 113.

Structure 124
A single posthole (358) with a fill of clay loam (359).

Structure 125
Three layers of sand, clay and loam (294, 298 and 307).

Structure 127
Two layers of clay loam (274 and 277) post-dating structures 42 and 94.

Structure 140
This consisted of a small posthole (278) and its fill (279) of sandy clay loam, which was cut by structure 44.

Structure 173 (Fig M232, 5:E1)
This ditch (257) ran east to west and contained two wall foundation fills (258 and 259).

Phase 7 15th to 16th century

Structures 41, 42, 43, 49, 59, 60, 109, 122, 128, 130, 132, 135, 138, 141, 144, 163, 164 and 167

Structure 41 (Fig M219, 5:C13-14)
Structure 41 occupied the eastern half of the excavation. Its main component was a sandstone wall (12/374 and 375). The surviving dimensions were 5.00m from north tc south and 2.00m from east to west. The full extent was,

however, obscured by later activity. The wall was constructed with unevenly bonded sandstone blocks. A cobbled surface (341) lay adjacent to the west side of the wall. The make-up (343) of pebbles and sand was patchy.

Structure 42
Continued in use.

Structure 43 (Fig M219, 5:C13-14)
The western half of the excavated area was occupied by this structure, consisting of contexts 95, 99, 108, 133, 134, 157, 159, 160, 184, 185, 187, 189, 198, 199, 200, 201, 205, 206, 208, 213 and 280. Contexts 95 and 99 formed the easternmost wall, which was constructed in sandstone on a north to south alignment and survived to a length of 7.50m. The number of courses was not recorded but the grey sandstone blocks were with slight variations 0.25m wide, and were roughly hewn. It was conjectured that the northern half of the wall alignment had been robbed. Wall 184 ran westwards and at right angles to the south end of 95, and was stratigraphically contemporary. It was constructed from similarly hewn sandstone blocks and its length was 2.78m. Only one course survived, and the individual dimensions of the blocks measured 0.25 x 0.20m. At its western butt end, 184 turned at right angles where a partially robbed sandstone wall (187) ran northwards, parallel to wall 95. Again, this wall seems to have been crudely constructed in the sense that its courses were arranged in roughly dressed blocks. Its northern end was robbed but was originally butted to wall 205, which joined 187 with 95, to complete one room of structure 43. Part of the primary internal floor of this room survived. It consisted of context 189, a flagged sandstone surface which remained intact in its western area, but was robbed in the east by the later insertion of a pipe trench. In the central area of floor 189 a hearth structure made of tile was recovered, measuring 2.50m from north to south and 2.00m from west to east. It occupied an area 4.50m in length and 2.70m in width.

Context 157 consisted of a foundation trench for walls 95/99 and measured 2.15 x 0.30m. Foundation trench 280 measured 2.78m in length and was constructed for wall 184. Context 185 formed a foundation trench for wall 187. Finally, 213 formed a foundation for wall 205, and measured 2.74 x 0.25m.

The rear and external components of structure 43 lay beyond the excavated area to the north, while padstones 199, 200, 201, 206 and 208 lay to the south, forming a gap or entrance into the area enclosed by the sandstone walls described above.

The contextual components of structure 43 were completed by a timber structure, formed by a north to south alignment lying parallel to, and east of, wall

95/99. It consisted of five posthole cuts (133, 134, 108, 159 and 160) of uniform dimensions, enclosing an area 4.50m from north to south, and 3.00m from west to east.

Structure 49 (Fig M224, 5:D6)
An alignment of four postholes (909, 973, 907 and 934) running parallel to structure 41.

Structure 59 (Fig M230, 5:D13)
This structure consisted of five postholes (346, 348, 350, 354 and 355) which were aligned east to west, and lay adjacent to the northern end of the structure 41. The form of all but one (355) was subcircular, though this contained a sandstone padstone. The fills of the postholes were composed of loam and clay with masonry chips and mortar flecks as minor components.

Structure 60 (Fig M231, 5:D14)
A group of three postholes (318, 320 and 324) and two pits (312 and 322) post-dated structure 42. The fills were all composed of sand, clay and loam (313, 319, 321, 323 and 325).

Structure 109
Each context (30, 31, 104 and 112) was initially detected in different areas on the site but their position and uniformity of composition made it clear that they were the same deposit, composed of a thick black clay soil, predating structures 41 and 43.

Structure 122
A single posthole (392), the full extent of which was obscured by the western excavation edge, had a fill of loam (393).

Structure 128
Structure 128 consisted of three layers (301, 302 and 303) composed of sand, clay and loam respectively.

Structure 130
Post-dating structure 42, this elongated pit (326) measured 0.88 x 0.52m. It was filled with clay loam (327).

Structure 132
This ditch (273) ran east to west, though its full extent was not established. Its fill was composed of clay loam (276).

Structure 135
This layer (230), composed of clay loam, contained lenses of sandy loam (250) and loam (251), and contained large quantities of flat roofing tile.

Structure 138
This single posthole (304) contained a sandstone pad (306). It also contained a fill of loam (305).

Structure 141
This structure consisted of two thin layers of clay and loam (196 and 197).

Structure 144
Post-dating structure 109, these layers were composed of clay (158), mortar (162) and clay and rubble (163).

Structure 163
This structure consisted of a single posthole (245) with a rubble fill (246) which may have been associated with structure 43, though no stratigraphic link was detected.

Structure 164
These three postholes (360, 364 and 457) were located in the central area of the excavation. Disuse elements were composed of clay and loam (365 and 458). Possibly associated with structure 163, these two structures pre-dated structures 41 and 43.

Structure 167
A single layer of clay (339) which was cut by structure 59.

Phase 8 16th to mid 17th century

Structures 41, 43, 46, 49, 118, 129, 133, 136 and 166

Structures 41 and 43 (Fig M219, 5:C13-14)
These two structures did not appear to have been radically altered since phase 7, except that both posthole alignments (133, 134, 108, 159 and 160 S41, and 907, 909, 934 and 973 S43) went out of use.

Structure 46 (Fig M221, 5:D3)
Reconstruction occurred during this phase and the southern edge was moved southwards (286, 287, 288, 289, 290, 291 and 293). Later activity disturbed much of the eastern part of this structure. The make up was composed of cobbles and gravel.

Structure 49 (Fig M224, 5:D6)
This structure went out of use during phase 8 with the deposition of ash and charcoal (908) and loam (910 and 935). Context 1150 was not fully recorded.

Structure 118
This single layer (932) was composed of loam with some rubble.

Structure 129
These three layers (236, 237 and 238) were composed of clays and sandy loams, and post-dated structure 46.

Structure 133
A single layer of clay loam (218) which contained sandstone and mortar as a minor component.

Structure 136
This pit (234) had a fill composed of clay loam (235).

Structure 166
An isolated posthole (433) with a fill of clay loam (434).

Phase 9 Mid 17th to 18th century

Structures 41, 43, 47, 48, 61, 119, 120, 123, 131, 139, 143, 145 and 169

Structure 41 (Fig M219, 5:C13-14)

The exterior of structure 41 was divided from structure 43 by a brick-built boundary wall (101) which measured 3.40 x 0.30m. A brick floor (98) lay between context 101 and the main fabric, forming a side yard to the west. It measured 1.80m from west to east, and 1.60m from north to south.

The base of a box-shaped feature (33/389) was built into the chimney structure (12/374 and 375). Its cavity contained an ashy fill (61).

To the north of the chimney stack, context 25 formed the first of a series of internal features connected with a cellar. It comprised a floor measuring 1.10 x 0.80m which was constructed with one layer of red brick. It provided an entrance to the cellar, and included three steps descending into it.

A tiled floor (26) lay adjacent to 25 and was again associated with the cellar, but was not planned. A brick wall (27) lay to the west of these floors. It measured 2.70 x 0.38m and formed the western side of the cellar, beyond the steps.

Wall 924 provided a partition within the cellar, and measured 2.20 x 0.36m. The bricks were bonded with white/yellow mortar, and survived as three courses next to another wall (925) at right angles, to the south. 925 was partially robbed and truncated during 19th century building work, so that its recorded measurements (2.80 x 0.36m) were conjectured on the basis of an unnumbered trench which formed its foundation.

Floor 926, within the cellar, lay to the north of wall 924 and was made from grey/yellow sandstone flags, and edged with machine made red brick. Its dimensions were 2.00 x 1.60 x 0.16m, while the brick size averaged 0.21 x 0.11 x 0.05m.

The floor consisted of a mortar spread (933) which provided evidence of the overall dimensions. Thus the cellar's west to east length was 3.20m, and from north to south 2.20m.

938 formed the rear wall of 926 and was constructed from brick and tile in three courses. Its length of 2.60m indicated that it had been partially robbed. It was bonded with yellow mortar, chalk and crushed red sandstone.

A largely robbed brick wall (927) formed the easternmost feature of the structure running in a southerly line from the cellar. Its original length was likely to have been comparable with its foundation (902), which measured 8.50m. The wall itself was bonded with white mortar containing shattered fragments of grey

brick and slag lumps. Brick size averaged 0.23 x 0.12 x 0.05m.

The final feature associated with structure 41 was a north/south drain construction (930) which lay to the rear of the property. Like 938 to the west, the drain was partially robbed, its surviving 'L' shape being 1.60 x 0.50m, with a depth of 0.2?m.

The wall and drain went out of use along with the property in the late 18th century. This was represented by the rubble fills of 926 and 930 (948 and 931 respectively). Pottery *terminii post quem* were more precise for the former, with sherds dated to *c* 1790, while the fill of 930 contained pottery manufactured in the 1600s and 1700s.

Structure 43 (Fig M219, 5:C13-14)

In the early 1700s walls 95 and 99, which formed the original east side of structure 43, were rebuilt. The sandstone base was retained but its courses were laid in brick. The phase 7 building to the west had been largely removed, the foundations being covered by contexts 76, 166 and 180 (a dark brown, grey clay and loam layer group).

The south wall (188) had also been partially robbed at its western end, and only one course of bricks survived. It was constructed on a clay platform (186).

Two largely robbed floor surfaces (75 and 82) lay immediately to the east of the right-angled junction between walls 95 and 188. One floor (75) was composed of brick over an orange/brown mortar foundation, while the other (82) was made from reused malthouse tiles and lay adjacent to, and south of, floor 75. The dimensions of the two floors combined were 1.70m from north to south and 0.84m from east to west. They appear to have been enclosed by a brick wall (83) which, although again poorly preserved, flanked the northern edge of 82 and ran into 75. The southernmost wall of the central structure was separated from the street frontage by a parallel wall (72/170/207).

Structure 43 was separated from structure 41 by a brick and cobbled area (98 and 341) and by brick lined ditches (15, 16, 97, 101 and 105), which occupied the central area of the excavation. The cut (16/105) measured 7.00 x 0.40 x 0.20m from west to east, and 8.00 x 0.40 x 0.22m from north to south. It was built with brick sides of a single course, and was formed by ditch 121 which was 0.70m wide. Wall 15/97 retained the drainage course.

Structure 47 (Fig M222, 5:D4)

Structure 47 was sealed by the cobbled surface (S48) in the mid 18th century. It consisted of a line of three postholes (239, 241 and 243) running east to west. These postholes were of similar form with a mean diameter of 0.65m, and depth

of 0.25m. The fills consisted of clay loam (240, 242 and 244).

Structure 48 (Fig M223, 5:D5)
The line of the road represented by structure 46 in phase 8 was recognisable in the 1700s but was disturbed by structure 48. A cobbled surface (51 and 67), whose northern edge extended beyond the limit of structure 46, confirmed the evidence that structure 41 was built further back from the road. However, the surface was disturbed. Its surviving dimensions were 4.46 x 3.14 x 0.15m.

Structure 61
Structure 61 consisted of nine pits sealed by structure 48 (43, 46, 47, 48, 56, 139, 140, 141 and 142). It was disturbed by the deposition of structure 48 and by later activity.

Structure 119
Structure 119 comprised a substantial layer of loam (906) which covered the eastern area of the excavation, south of structure 41.

Structure 120
This structure consisted of three pits (918, 920 and 922) which post-dated structure 119. The pits were filled with loam (919, 921 and 923).

Structure 123
Structure 123 was an isolated pit (314), measuring 2.00 x 0.80 x 0.28m, and was filled with clay loam (315).

Structure 131
This structure partially sealed structure 61 and was contemporary with structure 48. It comprised a clay layer (329).

Structure 139
Structure 139 was formed by pit 344, which was rectangular in plan and measured 0.42 x 0.38 x 0.29m. Its fill (345) was similar to and probably contemporary with context 315, identified as the disuse component of structure 123. Its matrix was primarily clay, with loam as a minor component.

Structure 143
These layers (90, 148 and 176) were predominantly composed of clay with some ash.

Structure 145
These seven layers (138, 146, 147, 151, 152, 153 and 154) were composed of clay and pebbles.

Structure 169
Structure 169 was contemporary with structure 48. It formed a cobble surface (52, 53, 54 and 55) which was not recorded in detail.

Phase 10 18th century

Structures 48, 50, 51, 61, 134, 142, 146, 147, 149, 150, 152, 153, 154, 155 and 172

Structure 48 (Fig M223, 5:D5)
This surface went out of use in the late 18th century and was sealed by structure 146.

Structure 50 (Fig M225, 5:D7)
Seven postholes (247, 249, 252, 254, 265, 284 and 295) formed an east to west alignment across the southern end of the excavated area (see tithe map, 1825). Their fills were composed of sandy loam with clay (248, 253, 255, 266, 285 and 296).

Structure 51 (Fig M226, 5:D8)
This context group lay close to the western end of structure 50 and formed the construction pit for a clay-lined well (179) which had a diameter of 1.40m. Its depth was not recorded.

Structure 61
The fills were composed of clay (50, 164 and 231), rubble (63, 64 and 65) and loam (57).

Structure 134
Structure 134 consisted of three pits (1152, 260 and 262). Pits 1152 and 262 were largely removed by pit 260, which measured 0.53 x 0.32 x 0.26m. The fills were composed of clay loam (261 and 263). 1153 was not recorded. The structure was sealed by structure 152.

Structure 142
This group was formed by three layers of clay, sand and loam (190, 191 and 193).

Structure 146
Structure 146 consisted of a surface (4/71/149) which was composed of cobbles, and ran from the south-west corner of the excavated area through to the south-eastern edge. It was respected by the post alignment (S50).

Structure 147
Structure 147 consisted of two layers (102 and 103) of rubble post-dating structure 109.

Structure 149
This group lay over the south-eastern area of structure 146. It consisted of a single layer (7/73/74/88) which was composed of clay and ash.

Structure 150
Twelve layers (13, 79, 91, 96, 178, 77, 80, 81, 92, 93, 94 and 174) were composed of clay with ash, but layer 92 was distinguished by its gravelly loam content.

Structure 152
This layer group was probably contemporary with structure 150 and was located in the south-eastern area of the excavation. It was composed of clay and rubble (8, 9, 10, 20, 34, 38, 39, 40, 42, 44, 45, 57, 58 and 59) and post-dated structures 48 and 61.

Structure 153
Structure 153 was sealed by structure 149. It consisted of two pits (119 and 120). Their depths were not recorded but in plan they measured 0.90 x 0.86m and 0.80 x 0.58m, respectively. Their disuse was represented by loam fills (128 and 129).

Structure 154
This structure partially sealed structure 150 and consisted of a group of layers (167, 171, 172, 173, 175, 178 and 208) which were composed of clay and loam.

Structure 155
Structure 155 was composed of five distinctive layers (14, 18, 19, 24 and 35) of clay with brick fragments. The structure was laid over the central area of the excavation.

Structure 172

Structure 172 consisted of a robber trench (29/41). It was filled with rubble (28 and 32).

Phase 11 19th to 20th century

Structures 52, 53, 151, 156 and 157

Structure 52 (Fig M227, 5:D9-10)

This building post-dated the demolition of the tenements in the first half of the 20th century. It consisted of a brick-built foundation (68). Its east to west wall length measured 14m, while the end walls, constructed from north to south, measured 6.00m. The walls were laid onto a construction trench approximately 0.10m in depth. The foundation trench was consolidated with compressed brick rubble and mortar.

An intervening north to south wall, measuring 6.00m long, formed part of the same structure. The two walls enclosed areas measuring 4.00 x 1.60m in the west, and 8.40 x 4.00m in the east.

During clearance of modern vegetation over the excavation, an unrecorded feature constructed from concrete laid on compressed brick rubble, measuring approximately 2.00 x 1.60m, was also noted. Two iron railing posts survived, one at either end of the concrete floor.

Building debris which lay to the north-west of the floor, but to the south of the main enclosure, was assumed to have been associated with a cellar structure.

Structure 53 (Fig M228, 5:D11)

Structure 53 consisted of a brick-built wall (69) which skirted the west and south of the excavated area, its complete length being 25.00m. The brick courses were handmade, by wire cutting, and had individual measurements of approximately 0.23 x 0.11 x 0.05m. The wall pre-dated structure 52 (see the Ordnance Survey first edition plan of 1884).

Structure 151

A single layer (89) of rubble.

Structure 156

This structure was formed by layers of rubble (3, 70, 165 and 901).

Structure 157

Structure 157 lay over structure 156 and formed the latest archaeological deposits on the excavation. It was composed of building rubble (1 and 2).

An intervening north to south wall, measuring 6.00m long, formed part of the same structure. The two walls enclosed areas measuring 4.00 x 1.60m in the west, and 8.40 x 4.00m in the east.

During clearance of modern vegetation over the excavation, an unrecorded feature constructed from concrete laid on compressed brick rubble, measuring approximately 2.00 x 1.60m, was also noted. Two iron railing posts survived, one at either end of the concrete floor.

Building debris which lay to the north-west of the floor, but to the south of the main enclosure, was assumed to have been associated with a cellar structure.

Structure 53 (Fig M228, 5:D11)

Structure 53 consisted of a brick-built wall (69) which skirted the west and south of the excavated area, its complete length being 25.00m. The brick courses were handmade, by wire cutting, and had individual measurements of approximately 0.23 x 0.11 x 0.05m. The wall pre-dated structure 52 (see the Ordnance Survey first edition plan of 1884).

Structure 151

A single layer (89) of rubble.

Structure 156

This structure was formed by layers of rubble (3, 70, 165 and 901).

Structure 157

Structure 157 lay over structure 156 and formed the latest archaeological deposits on the excavation. It was composed of building rubble (1 and 2).

Uncertainly phased structures

Structures 72, 75, 82, 92, 103, 104, 106, 112, 117, 126, 137, 148 and 162

Structure 72 Phases 4 to 5

Two ditches (461 and 532) cut into a gravel surface (463, see structure 71 in phase 3ii). They were filled with sand (462) and clay (533).

Structure 75 Phases 3 to 5
This structure consisted of two pits (566 and 569), and pre-dated structures 33 and 159 in phase 5i. The pits were filled with clay (567, 568 and 570) but no finds were recovered.

Structure 82 Phases 2 to 5
This pit (1050) was constructed in phase 2 but its disuse component (1051) was uncertainly placed between phases 2 and 5. It was composed of clay and loam.

Structure 92 Phases 3 to 9
This structure was composed of a layer (982), overlying structure 86 (a phase 3 pit group). It was sealed by structure 119 (see phase 9). However, the gravel, clay and loam matrix was also cut by structure 35 in phase 5, indicating that this layer group was deposited on the site between phases 3 and 4. From the content of abraded Severn Valley wares and Oxfordshire wares it seems likely that structure 92 was laid down in the early post-Roman period, but the uncertain stratigraphic sequence dividing phases 3 and 4 made it difficult to assign a precise date.

Structure 103 Phases 6 to 9
This structure consisted of an isolated pit (975), measuring 0.60 x 0.58 x 0.17m, which contained a fill (976) of sandy clay loam with a small quantity of 12th century pottery. It partially cut into structure 35 in phase 5i, but stratigraphically it only pre-dated structure 119 in phase 9. A probable construction date in phase 5 is based on pottery dating for the disuse component.

Structure 104 Phases 3 to 9
Formed by an arbitrary cleaning layer (977), this structure assisted in the definition of structure 92 (P1).

Structure 106 Phases 5 to 7
This structure consisted of a pit (860), and a clay lining (863), which cut into structure 74 of phase 5i. The pit was filled with clay loam (861), and with mortar and rubble (862). The former contained 14th to 17th century pottery. The structure pre-dated context 33/389 within the brick building phase of structure 41. Dating information indicated a phase 6/7 period of construction for structure 106 but the stratigraphic sequence did not fully verify this.

Structure 112 Phases 5 to 11
This structure consisted of a pit (1005) which post-dated contexts of phase 5i and

a fill (1006). This structure was sealed by contexts place in phase 11. It is possible that context 1005 was constructed in the 13th century as finds of that date were recovered, but its function and association were unclear.

Structure 117 Phases 5 to 11

This structure was uncertainly placed between phases 5 and 11, and contained pottery in its disuse which indicated a 16th century date. It seems likely that this pit (949) and its clay loam fill (950) were deposited between the end of the 13th century and the early 16th century, but associated activity was not established.

Structure 126 Phases 7 to 10

This structure consisted of a deposit of clay which sealed context 437 of structure 29 (P5i). The layer (299) also contained pottery datable to the 13th and 14th centuries, indicating that it was laid down either late in phase 5 or early in phase 6. It was sealed by structure 151, with a late 18th century *terminus post quem* but structure 126 itself seems to have been associated with medieval activity on the site.

Structure 137 Phases 7 to 9

These four layers, composed of redeposited clays (132, 137, 155 and 182) were uncertainly placed between phases 7 and 9. The deposits post-dated the initial construction of structure 43, but were sealed by 19th century levels, and contained a large quantity of residual pottery. Post-medieval pottery and clay pipe suggest that the structure was deposited in the late 17th to early 18th century.

Structure 148 Phases 10 to 11

A single layer (23/100) of sand was possibly deposited during brick-built renovations to structure 41 (the eastern building), but because it formed a thin spread of material with no direct stratigraphic link, its association with 18th century activity could not be established.

Structure 162 Phases 5 to 11

This structure consisted of a pit (944), partially obscured by the eastern excavation edge, and contained fills of loam (945, 946 and 947). No finds were recovered from the feature, which was sealed by structure 119 in phase 9.

The dating of Roman timbers Jennifer Hillam

The excavation uncovered numerous waterlogged oak timbers from context 730. These either formed part of the lining for a tank (S2) or were from a possible superstructure thrown into it. It is suggested that the fill of the tank, dated archaeologically to the 1st or 2nd centuries AD, had some connection with the salt industry. Tree-ring analysis was undertaken to provide relative, and if possible absolute, dating for the excavation. Samples SR106, SR112, SR137, SR138 and SR139 were examined in 1977 by Ruth Morgan, and the remainder in 1978 by the author. The original work produced only relative dating but advances in British dendrochronology (Hillam and Morgan 1981) made it possible to date the timbers absolutely in 1981.

Method

Any large samples were split and sawn into smaller sections of *c* 50-100mm thickness. Most of them, however, were thin planks and great care had to be taken to avoid any breakage which would have destroyed the tree-ring record. The samples were deep-frozen for 48 hours to harden the wood. The cross-sections were cleaned, whilst still frozen, with a 'Surform' plane. This gave a smooth surface on which the individual rings were clearly visible.

The ring widths were measured to an accuracy of 0.1mm on the Sheffield tree-ring equipment. In 1978, this consisted of a travelling stage connected by a linear transducer to a display panel. The sample on the stage is observed through a 10x binocular microscope. As each ring is traversed, the width is shown on the display panel and is recorded manually. The ring widths were plotted on transparent semi-logarithmic recorder paper, which allows the tree-ring curves to be compared visually by sliding one over and past another. A computer program (Baillie and Pilcher 1973) is also available for the comparison of tree-ring data. This calculates the correlation value, Student's *t*, for each position of overlap between two ring sequences. Values greater than $t=3.5$ indicate a match, provided they are accompanied by an acceptable visual match.

Results

The details of all the Roman samples, except for two small stakes examined by

Ruth Morgan (3:A13), are given in Table M23. SR106 and SR112 were found in the ashy fill of the tank (S2) and were considered to be superstructure, whilst the remaining timbers formed part of the tank lining. SR106/112 and SR137/138 are both means of two timbers which had been split from the same tree. Table M23 (3:A13) also gives the average ring widths. The average widths vary from 1.03 to 2.48mm, indicating that the timber came from slow-grown oak trees. The trunks were radially split into thin planks, a method which produces many boards from one section of tree trunk. It is unlikely that the wood would have been seasoned. Timber was usually felled when required and used almost immediately in Roman times (Hollstein, 1965).

Visual comparison of the graphs showed that much of the timber did come from the same tree. There are no standard criteria for establishing which samples are from one tree but an almost perfect match between ring sequences, plus similarities between the timbers, usually signifies such an occurrence. It was relatively simple with the Droitwich samples as the pieces of wood were often identical: many of them could be crossmatched before the ring widths were measured. This is generally only possible with oak when dealing with samples from one tree. It was estimated that the sixteen samples came from four or five trees (Fig M233, 5:E2).

The constituents of each tree were meaned. The ring sequences from the five trees crossmatched with each other, and their relative positions are shown in Fig M233 (5:E2). 'Tree 1' is made up of SR159, SR160, SR164, SR165, SR166 and SR168. SR168 has only 34 rings; this ring sequence would have been impossible to match if the other samples had been from different trees. This study shows that such samples should not be ignored by dendrochronologists since, in certain situations, they can be dated. SR137, SR138, SR170, SR171, SR174 and SR175 were called 'tree 2', whilst trees 3, 4, and 5 are represented by SR106/112, SR139 and SR154 respectively. The felling date of trees 1 and 2 is identical. Some of the tree 2 components did not contain their outer rings. SR170, for example, had *c* 45 rings removed when it was converted into a plank. It demonstrates the difficulty of estimating the felling date if there is no sapwood present. SR139 shows this in practice since there is no way of knowing when it was felled. The plank may have been split from the inside of one of the other trees. SR154 shows a possible heartwood-sapwood transition, making it likely that it was felled at the same time as trees 1 and 2. Tree 3 appears to have its full complement of sapwood, so that it must have been felled 26 years later than the remaining samples. The tank lining therefore predates the 'superstructure' by 26 years.

Trees 1 and 2 were cut down in summer, since only the spring wood of the outer ring is present (the width of this incomplete ring was never measured,

giving a discrepancy of one year between the number of rings measured and the felling date). Nowadays timber is frequently felled in winter but summer felling was quite common in the past (Hollstein, 1965). The size of the trees used for the Droitwich timbers cannot be determined accurately, since none of the samples consisted of a complete radius from the pith to the bark edge. At a rough estimate they must have been at least 400mm in diameter.

The crossmatching between the five trees was confirmed using the computer program. Some of the resulting *t* values are set out in Table M25 (3:B1). The high value of 10.55 is from a comparison between some of the components of tree 2 and SR137/138, which is itself part of that tree. When the first Droitwich samples were examined in 1977, no crossmatching could be found between SR139, SR106/112 and SR137/138. Since the computer comparison between SR106/112 and SR137/138 gave a *t* value of only 3.06 this is not surprising. Only when further samples were examined did matching become possible. This demonstrates the necessity of sampling the maximum number of timbers from any one site, and may explain why some sites, with only three or four timbers, have produced few results.

Dating the timbers

A site master curve was constructed by averaging the ring width data of the five trees. The data from all the samples were used and the master curve had 185 rings (Table M26, 3:B2). In 1978 there were very few reference chronologies by which to date this master curve. The only dated sequences were from Germany (Hollstein 1972, 1974), one of which gave a possible match with Droitwich. It was felt that further proof was needed before the match could be accepted with confidence. Such proof was never found. Several floating chronologies were also available in 1978. Droitwich matched well (t=5.14) with a sequence from London (Morgan and Schofield 1978). However, this match did not help to date the Droitwich timbers, so instead a radiocarbon sample was taken from the outer 20 rings of SR106 and SR112. The radiocarbon date was 1950 $\pm$70 bp (Table M28, 3:B5).

Since 1978 many timbers have been examined at the DoE Dendrochronology Laboratory in Sheffield and much progress has been made. Several Roman chronologies have been constructed from timbers excavated in the City of London in addition to the one which matched with Droitwich. Sequences from Thames Street Tunnel and Peninsular House gave *t* values of 4.74 and 5.12 respectively with Droitwich. In 1981 the London chronologies were absolutely dated by

comparison with two sequences from Germany (Hillam and Morgan 1981). This in its turn dated the Droitwich master curve to 141BC to AD44, and the felling dates could at last be converted into calendar years (Table M24, 3:A14). The timber for the lining of the tank was felled in AD19 and that for the superstructure in AD45. Although it has taken four years to produce these results, the analysis of the Droitwich timbers well illustrates the potential of dendrochronology as a dating method.

Table M23 Details of timber samples

SR	Species	no of rings	Sapwood rings	Average ring widths (mm)	Dimensions (mm)
*106/112	OAK	159	27	2.34	25-35 x 350 30-50 x 340
*137/138	OAK	93	-	1.52	20-30 x 130
*139	OAK	71	-	1.03	45 x 80
154	OAK	52	1?	1.65	20-30 x 850
159	OAK	53	15	1.97	05-25 x 100
160	OAK	52	13	2.13	20 x 100
164	OAK	73	14	1.59	05-20 x 110
165	OAK	55	14	2.08	025-20 x 110
166	OAK	63	13	1.85	15 x 110
168	OAK	34	12	2.48	05-20 x 80
170	OAK	86	-	1.47	15 x 120
171	OAK	79	17	1.26	25 x 89
174	OAK	67	16	1.46	15 x 100
175	OAK	71	1	1.15	2.0 x 8

* Measured by Ruth Morgan

Table M24 Dating of the Droitwich timbers

The tree number indicates which samples are from the same tree. Where total sapwood is present, the incomplete outer ring was not measured, giving a discrepancy of one year between the years spanned by the ring sequence and the felling date.

SR	tree no	years spanned absolute	felling date	years spanned*	felling date*
159	1	35BC - 18AD	19AD	107 - 159	160
160	1	34BC - 18AD	19AD	108 - 159	160
164	1	55BC - 18AD	19AD	87 - 159	160
165	1	37BC - 18AD	19AD	105 - 159	160
166	1	45BC - 18AD	19AD	97 - 159	160
168	1	16BC - 18AD	19AD	126 - 159	160
137/138	2	125BC - 32BC	19AD	17 - 110	160
170	2	116BC - 31BC	19AD	26 - 111	160
171	2	61BC - 18AD	19AD	81 - 159	160
174	2	49BC - 18AD	19AD	93 - 159	160
175	2	70BC - 1AD	19AD	72 - 142	160
106/112	3	15BC - 44AD	45AD	27 - 185	186
139	4	141BC - 71BC	?	1 - 71	?
154	5	59BC - 8BC	19AD	83 - 134	160?

Table M25 Summary of t values

	tree 2	tree 1	137/138	154	139
106/112	5.23	3.05	3.06	4.26	-
tree 2	-	4.59	10.55	4.65	4.81

Table M26 Droitwich Roman master curve, 141BC to AD44

'n' represents the number of trees per decade. The data from a maximum of five trees (sixteen samples) is included.

	Ring width (0.1mm)										
year	0	1	2	3	4	5	6	7	8	9	n
0		8	12	9	11	12	14	12	9	9	1
10	11	10	9	12	10	12	14	15	17	16	2
20	15	17	16	15	22	13	16	14	11	11	2
30	14	17	13	12	11	14	19	17	17	19	3
40	21	15	23	21	20	21	23	24	14	14	3
50	15	14	17	20	19	18	21	19	18	27	3
60	20	22	18	20	18	16	19	18	17	16	3
70	19	16	20	19	18	15	17	20	19	16	2
80	19	19	18	15	17	15	16	18	10	14	3
90	17	15	14	15	15	16	13	14	13	15	4
100	16	13	11	11	18	15	17	16	15	14	4
110	12	20	17	14	15	21	19	17	15	18	4
120	20	17	13	16	24	18	14	17	16	19	4
130	17	12	11	18	16	19	21	18	18	21	3
140	20	19	18	22	21	17	17	23	18	12	3
150	21	17	18	15	16	19	14	16	19	18	3
160	17	17	15	13	12	13	20	12	15	18	1
170	15	11	16	12	13	20	15	14	19	18	1
180	13	11	12	12	12	18					

Tree-ring study of medieval stakes Ruth Morgan

Five stakes of 11th to 12th century date came from three contexts; 444, a cess-pit (S33), and 521 and 652 (S34), adjacent pits containing stake structures some 12.00m to the east. Sections of the stakes, all of oak (*Quercus* sp), were examined in 1976 and again just prior to publication, using the methods as described in Hillam (3:A9).

Three oak roundwood stakes from cess-pit 444 were about 100-130mm in diameter and 16 to 32 years old; details are given in Table M27 (3:B4). One stake (SR73) had bark remaining around the outside, and the complete formation of the outermost ring indicated winter felling. Though short, the signatures in the ring patterns of all three stakes showed that they were contemporary and possibly even from the same tree, the younger SR70 and SR71 being from higher up the trunk or branches. All three were probably cut in the same year, arbitrary year 36 as shown in Fig M234 (5:E3). A radiocarbon sample was cut from the outermost fifteen sapwood rings of SR73, giving a date of ad 1150 $\pm$70 (Table M28, 3:B4).

The two oak stakes from pits 652 (SR100) and 521 (SR99) were split from more substantial trees, probably 200 to 250mm in diameter, and up to 50 years old. Their ring-width patterns were also very similar (t=7.7), and proved to match those from the cess-pit stakes (Fig M234, 5:E3). The transition to sapwood is rather later in SR100 and SR99, giving estimated felling dates of after arbitrary years 51 and 45 respectively. A sapwood range of ten to 55 years (at 95% confidence limits) is now in use (Hillam, Morgan and Tyers 1987). It is thus uncertain whether SR99 and SR100 were cut at the same time or within a few years of each other; it is, however, clear that they were cut probably ten to 20 years later than the stakes for cess-pit 444. The quality of crossmatching suggests an origin in the same woodland.

A small master curve of 43 years was created from the ring-patterns of the five stakes; no correlation were found with existing chronologies from other sites in Droitwich, or with regional reference chronologies. Such a short ring series is unlikely to be dated.

Table M27 Details of the medieval stakes submitted for tree-ring examination

SR	Context	No of rings	No of sapwood rings	Diameter/ dimensions mm
70	444	16	11	120
71	444	16	11	100
73	444	32	12	130
99	521	27	3	150 x 80
100	652	39	6	160 x 75 dia 220

Radiocarbon Robert Otlet and Roger Williams

Table M28 Radiocarbon dates

Reference Context	Structure	Phase	C14 date BP	Calibrated range 1 S D
BIRM 733 488	3	1	2130±100	cal BC366-40
BIRM 734 488	3	1	2210±130	cal BC400-100
BIRM 735 488	3	1	2060±110	cal BC331-60 cal AD
HAR 2263 730	2	1	1950±70	cal BC36-119 cal AD
HAR 2264 444	33	5i	800±	1169-1272 cal AD

Petrology of the prehistoric pottery Elaine Morris

The purpose of the petrological analysis was to confirm the macroscopic identification of fabric types and to provenance the fabrics. The thin sections are held by Southampton University, Department of Archaeology (accession numbers I 1244 to I 1260).

Method

A representative sample of prehistoric pottery was examined in hand specimen, and divided into fabric types. Each fabric type was sampled for thin sectioning and petrological analysis.

The prehistoric pottery fabrics

Fabric 3 Group A (Malvernian rock inclusions)

One sherd from context 469 was thin sectioned and identified as containing Malvernian rock inclusions. The source of these inclusions is located in the pre-Cambrian deposits in the Malvern Hills (Peacock 1968, 419, fig 2), approximately 24km to the south-west of Droitwich. This fabric has been described in detail elsewhere (Peacock 1968, 414-21) and its distribution covers a wide area (Morris 1981b, fig 5.3; 1983) It accounted for 92% of Iron Age, non-briquetage fabrics found in phase 1.

Fabric 4.1 Group B1 (Palaeozoic limestone)

Two sherds of this fabric were thin sectioned, one each from contexts 415 and 488.

This fabric has also been described in detail elsewhere (Peacock 1968, 421-2). The most likely sources for inclusions of this type are located at Woolhope in Herefordshire, based on both the resource location and the pottery distribution system (Morris 1983, 116-22, figs 4.17 and 4.19).

Fabric 4.2 (Oolitic limestone)

A base sherd from context 469 was the only sherd of this fabric type. In thin section the optically anisotropic, micaceous clay matrix contained a 50-60% concentration of ooliths and oolitic limestone rock with rare pieces of shell, measuring from 0.01 to 2.0mm across. There was a sparse to moderate amount of subangular quartz (10%), measuring less than 0.4mm. Iron ore fragments

were also identified.

The presence of ooliths as inclusions in this fabric type indicated a Jurassic source for this material, such as the Cotswold area.

Fabric 5.1 (Quartz sand fabric)

Two sherds of this fabric were examined, from contexts 459 and 1166. They were very sandy and glittering, and came from handmade vessels. In thin section this optically anisotropic, micaceous clay matrix contained an abundance of quartz grains: 15-20% large grains (0.2-0.8mm), which were rounded to subangular in shape; 10-15% medium sized grains (0.1-0.2mm), subrounded to subangular; and 10% finer grains. There was also a 3-5% concentration of rounded to subangular ferruginous, micaceous siltstones (0.1-1.2mm), 3-5% of micro- and cryptocrystalline silicas (0.1-0.2mm), and 1-3% quartzite fragments (up to 0.8mm). Clay pellets and pieces of iron ore were also present.

This fabric was very similar petrologically to the fabric range identified in the sandy variety of Droitwich salt containers. The inclusions and clay matrix were not inconsistent with the range of Triassic and later deposits located in the Droitwich vicinity (Mitchell *et al* 1961, 99-100).

The fabric of a very fragmented vessel from context 1182 seemed to be very similar. In thin section this had an optically anisotropic, micaceous clay matrix containing a 15-20% concentration of subrounded to subangular quartz grains, 5-10% large grains (0.2-0.6mm); 5% medium sized grains (0.1-0.2mm); and 5% finer grains. There was also a 10-15% concentration of clay pellets. Two micaceous siltstones were also identified in this iron-rich matrix, of which one was subrounded to rounded (1.0mm) and the other subangular (2.2mm). This fabric could have been produced from local clays and inclusions.

Fabric 5.2 Group E (Quartz and quartzose sandstone)

A single sherd from context 469 exhibited in thin section an optically anisotropic, micaceous clay matrix containing a moderate amount of subrounded to subangular quartz grains: 10% large grains (0.2-0.6mm); 5-10% medium-sized grains (0.1-0.2mm); and 5% finer grains. One subangular piece of quartzose sandstone with siliceous cement (4.2mm), one piece of biotite mica (0.3mm), and one piece of potash felspar with epidote and muscovite (0.5mm) were also identified. There was also 5-10% concentration of rounded clay pellets.

The presence of quartzose sandstone, epidote, biotite mica and felspar in this fabric suggested that the source for these inclusions may lie in the Silurian deposits of Llandovery sandstone in either the Woolhope, Malvern or May Hill

areas (Earp and Hains 1971, 58-62, fig 33). This fabric type proved similar to other sandy and quartzose sandstone fabrics found in the collections from excavations at Beckford, Danes Camp (Conderton) and Guiting Power (Saville 1979).

Fabric 5.3 (Sparse large quartz inclusions)
There was a single sherd of this fabric type from context 885. In thin section this had an optically anisotropic, micaceous clay matrix containing a 20-25% concentration of subrounded to subangular quartz grains less than 0.5mm across; a 20-30% concentration of rounded clay pellets; two pieces of mudstone (2.0-2.5mm); and a 5% concentration of large angular pieces of quartz and quartzite (1.0-3.6mm). The matrix was iron-rich, and poorly wedged. This fabric may be pre-Iron Age.

Fabric 6 (Clee Hills dolerite rock inclusions)
There was only one body sherd of this fabric type and it was from the upper fills of structure 4 (1156-9). In thin section this sample contained quartz, dolerite, augite and olivine as described by Gelling and Peacock (1969, 96-7), but it also had two pieces of sandy limestone (0.6mm and 2.0mm), and two pieces (1.4-1.6mm) of a fine sandstone consisting of angular grains of sericitized quartz and potash felspar.

The source for the inclusions in this fabric type could be located *c* 32km to the north-west of Droitwich, in the Clee Hills area (Gelling and Peacock 1969, 97). The distribution of this type of pottery was more limited than that of the Group A pottery (see Morris 1981b, fig 5.1).

Fabric 9 Group D (Mudstone inclusions)
There was only one sherd of this fabric (1160). In thin section it was identical to sherds from Midsummer Hill (Morris 1981a, 151-3). The closest likely source for the inclusions could be found in the Keuper Marl and Old Red Sandstone deposits in the Martley area, about 15km west of Droitwich (Morris 1982).

Fabric 10 Untempered, fine fabric
A single sherd in a very smooth fabric was shown in thin section to have an optically anisotropic, fine-textured, clay matrix containing a sparse to moderate amount (10%) of muscovite mica threads (0.2mm or less), and a 5-10% concentration of subangular quartz grains (0.1mm or less). There was a rare amount (1-3%) of rounded clay pellets (0.4-1.0mm), and the fabric was poorly wedged with some natural bedding planes visible both in thin section and hand specimen. The source for this untempered clay could be local, since the presence

of a micaceous, silty clay with clay pellets (marl) is common in the Keuper Marl around Droitwich (Mitchell *et al* 1961, 87). The dating of this fabric type was, however, uncertain, and the possibility remained that it was pre-Iron Age (?Beaker period).

Discussion

Although Group A (Malvernian rock) fabric pottery was the most commonly occurring type in this assemblage, excluding briquetage, eight other different Iron Age fabric types or sub-types, from both local and non-local sources, were also represented. This range of ceramic fabric types provided an indication of the area which maintained contact with the salt producing location at Droitwich, probably through trading networks, during the Iron Age period. Although only middle to later decorated Iron Age pottery has been found at the Friar Street site, Droitwich salt containers have been identified at settlement sites throughout the Iron Age from the 5th century BC onwards (Stanford 1981b, fig 69). The location of the non-local sources for these pottery fabric types reflected directly the distribution of the salt containers themselves (Morris, 1981b, fig 5.5), as the salt containers have been found in the same areas that produced the pottery reaching Droitwich during the Iron Age, ie the Malvern Hills, the Cotswolds, the Clee Hills, Woolhope and south Gloucestershire.

Table M29 Thin sectioned sherds

Context	Phase	Fabric
415	1-2	4.1
469	1	5.1
469	1	3
469	1	4.2
469	1	5.2
885	1	5.3
1156-9	1	6
1160	1	9
1161	1	10
1166	1	5.1
1182	1	5.1
1182	1	4.1

Samian catalogue Brenda Dickinson

The catalogue entries are arranged in the following order: context, structure, phase, description

88	149	11	Form 18/31R, from Les Martres-de-Veyre. A ring of kiln-grit survived inside the base, so the dish had scarcely been used. Trajanic
179	51	10	Form 29, burnt, South Gaulish. Neronian or early Flavian
232	42	7	i) Form 27, burnt, Central Gaulish. Hadrianic or early Antonine
			ii) Form 32, East Gaulish. Late 2nd or early 3rd century
256	108	7	Form 36, Central Gaulish. Antonine
292	46	8	Form 36 etc, from Les Martres-de-Veyre. The footring was worn. Trajanic
316	94	6	Form 35 or 36, South Gaulish. Early Flavian
328	42	6	Form 29, burnt, Central Gaulish. The upper zone was apparently the same as on a bowl from the Old Bowling Green excavations, and consisted of a straight wreath of leaves occurring on bowls stamped by, or in the style of, the 1st century Lezoux potter, Atepomarus ii (Bull Hist et Scient de l'Auvergne LXII (1942), 200, no 15). Neronian (illustrated)
333	42	6	Scrap, Central Gaulish. Antonine
337	99	6	Form 15/17 or 18, South Gaulish. Flavian
416	5	2	Form 29, South Gaulish. The basal wreath consisted of striated chevrons, with a wavy line impressed over them. *c* AD 50-65
552	70	4ii	i) Form 18/31R or 31R. Central Gaulish. Hadrianic or Antonine
			ii) Form 38 flange, Central Gaulish. Antonine
553	70	4ii	i) Form 29, South Gaulish, with a lower zone of straight gadroons. Neronian
			ii) Form 18/31 or 31, Central Gaulish. Hadrianic or early Antonine
			iii) Form 31, Central Gaulish. Mid to late Antonine
555	36	5ii	i) Form 15/17, South Gaulish. Neronian

			ii) Form 38, Central Gaulish. Early to mid Antonine
640	78	2	Form 79 etc, Central Gaulish. Mid to late Antonine
666	27	2	i) Form 15/17 or 18, South Gaulish. Pre Flavian
			ii) Form 18, slightly burnt, South Gaulish. 1st century
709	27	2	Form 37, with scroll decoration, South Gaulish. Flavian-Trajanic
731	2	2	Form 15/17 or 18, burnt, South Gaulish. Neronian
757	14	3i	Scrap, Central Gaulish. Hadrianic or Antonine
966	36	5ii	Form 31, Central Gaulish. Antonine
984	-	-	Form 31, Central Gaulish. Antonine
1037	68	3i	Form 30 or 37 rim, Central Gaulish. Mid to late Antonine
1043	10	2	Flake, South Gaulish. 1st century
1097	100	2	Dish, burnt, South Gaulish. 1st century
1103	64	3i	Flake, Central Gaulish. Hadrianic or Antonine
1115	55	2	Form 31, Central Gaulish. Early to mid Antonine
1134	6	2	i) Form 33, from Les Martres-de-Veyre. Trajanic
			ii) Flake from a dish or bowl, Central Gaulish. Hadrianic or Antonine
1136	6	2	Dish or cup, Central Gaulish. Hadrianic or early Antonine
1142	6	2	i) Form 27, South Gaulish. Neronian
			ii) Form 31, Central Gaulish. Antonine
1181	85	5	Form 27, Central Gaulish. Hadrianic or early Antonine

Clay pipe table Derek Hurst and Allan Peacey
Table M30

Clay pipe was retrieved from the following contexts:

Phase 7	**220, 225 (?P6), 227, 246, 932**
Phase 8	**218, ?234**
Phase 9	**182 (?P8), 906**
Phase 10	**7, 10, 42, 55, ?76, 77, 92, 98, 103, ?119, 171, ?183**
Phase 11	**13, 14, 19, 32, 79, 81, 85, 88, 89, 102, 174, 178, 179, 180, 311 (?P10), 901**

Coins

Roman Wilfred Seaby

1 *Antoninianus* of Carausius (RIC 476 no 140) dated to AD 291-3 from London mint; context 331, structure 18, phase 3

2 AE, probably 4th century (illegible); context 1012, structure 86, phase 3

3 AE, probably 4th century (illegible); context 1037, structure 68, phase 3

4 AE, mid to late 4th century (illegible); context 1103, structure 64, phase 3

5 AE, 3rd to 4th century (illegible); context 1103, structure 64, phase 3

6 Silver *denarius*, probably early 3rd century (illegible); context 1023, structure 38, phase 5

7 *Follis* of Constantine the Great dated to AD 316-7 from London mint; context 301 structure 128, phase 6

8 AE, 4th century (illegible); context 286, structure 46, phase 8

Post-medieval Derek Hurst

9 Farthing of 1754; context 183, structure 43, phase 10

10 Halfpenny of 1799; context 183, structure 43, phase 10

11 Halfpenny of 1806; context 18, structure 155, phase 11

Ironwork tables Derek Hurst
Table M31

Contexts producing nails:

Phase 2	**640, 731, 1052, 1105, 1134**
Phase 3	**(?)1037, 1103, 1123**
Phase 4	**553**
Phase 5	**308, 962, 968, (?)995, (?)998**
Phase 6	**217, 219, 246, 257, 334, 337, 366, 368, (?)386, 388, 398, 401, 537, 951, 954, 996**
Phase 7-8	**182, 218, 220, 222, 223, 227, 235, 290, 339, 347, 932**
Phase 9	**906**
Phase 10	**(?)128, 183**
Phase 11	**13, 32, 35, (?)81, 85, 88, 89, 102, 174, 179, (?)929**

Miscellaneous unidentifiable scraps:

Phase 3	**870**
Phase 4	**552, 1016**
Phase 5	**308, 406, 476, 971, 995, 998, 1002**
Phase 6	**301, 333, 459, 954**
Phase 7	**182, 222, 932**
Phase 9	**906**
Phase 10	**183**
Phase 11	**14, 89, 102, 929**

Lead table Derek Hurst
Table M32

Small fragments of lead were associated with the following contexts:

Phase 3	**1103**
Phases 2-3	**1115**
Phase 4	**553, 671**
Phase 5	**300, 308, 471, 984**
Phase 6	**333**
Phase 7	**182, 328, 932**
Phases 6-7	**226**
Phase 11	**13, 81, 89**

Animal bone tables Alison Locker
Table M33

Key

Con = Context

Ox = Ox	She = Sheep	Goa = Goat
Ovi = Ovicaprid	Pig = Pig	Hor = Horse
Red = Red deer	Roe = Roe deer	R/F = Red/Fallow deer
Dog = Dog	Cat = Cat	Rab = Rabbit
Har = Hare	Fis = Fish	F/T = Frog/Toad
Fow = Fowl	Goo = Goose	Bir = Bird
DDk = Domestic duck	WPi = Wood pigeon	Lar = Large Ungulate (probably ox)

Sar = Small Ungulate (probably ovicaprid)
Uni = Unidentifiable mammal

Table 1; Phase 1, Iron Age.

Con	Ox	Ovi	Pig	Hor	Lar	Sar	Uni	Total
469	2	-	1	3	2	1	1	10
488	3	7	-	2	4	6	8	30
885	3	2	1	-	4	4	2	16
Total	8	9	2	5	10	11	11	56

Table 2i; Phase 2, 1st-2nd century. Structure 2.

Con	Ox	Ovi	Pig	Lar	Sar	Total
731	-	-	-	2	-	2
732	-	-	-	1	1	2
733	4	-	-	-	3	7
734	3	-	-	2	6	11
741	-	-	-	1	-	1
742	-	2	1	-	1	4
Total	7	2	1	6	11	27

Table 2ii; Structure 5.

Con	Ovi	Lar	Sar	Total
413	1	-	-	1
415	-	6	4	10
416	1	-	2	3
Total	2	6	6	14

Table 2iii; Structure 6.

Con	Ox	Ovi	Pig	Hor	Dog	Lar	Sar	Fis	F/T	Uni	Total
1134	5	-	-	1	1	15	-	-	-	4	26
1136	-	-	-	-	-	3	1	-	-	-	4
1139	3	1	-	-	80*	3	2	-	-	-	89
1141	-	-	-	-	-	4	-	-	-	-	4
1142	4	2	2	-	76*	2	2	6	6	-	100
1143	-	-	-	-	-	1	-	-	-	-	1
Total	12	3	2	1	157	28	5	6	6	4	224

* Fox

Table 2iv; Structure 7.

Con	Lar	Total
868	1	1

Table 2v; Structure 8.

Con	Lar	Total
897	1	1

Table 2vi; Structure 10.

Con	Lar	Total
1040	1	1

Table 2vii; Structure 11.

Con	Ovi	Hor	Total
1067	1	1	2

Table 2viii; Structure 23.

Con	Lar	Sar	Total
1089	2	1	3
1093	2	-	2
Total	4	1	5

Table 2ix; Structure 45.

Con	Ox	Lar	Sar	Uni	Total
867	-	1	2	1	4
870	2	10	-	-	12
Total	2	11	2	1	16

Table 2x; Structure 55.

Con	Ox	Ovi	Pig	Lar	Sar	Uni	Total
1114	1	2	1	9	11	9	33
1124	-	-	-	-	1	1	2
Total	1	2	1	9	12	10	35

Table 2xi; Structure 63.

Con	Lar	Total
765	1	1
775	1	1
Total	1	2

Table 2xii; Structure 66.

Con	Pig	Lar	Sar	Total
1105	1	1	3	5

Table 2xiii; Structure 78.

Con	Ovi	Sar	Total
637	1	-	1
639	-	1	1
Total	1	1	2

Table 2xiv; Structure 84.

Con	Ox	Lar	Total
1036	4	7	11

Table 2xv; Structure 100.

Con	Lar	Total
1096	3	3

Table 3i; Phase 3i, Mid/Late Roman. Structure 16.

Con	Ox	Ovi	Pig	Dog	Lar	Sar	Uni	Total
1116	8	2	4	3	30	15	17	79

Table 3ii; Structure 17.

Con	Pig	Lar	Total
769	-	2	2
813	1	1	2
Total	1	3	4

Table 3iii; Structure 18.

Con	Lar	Total
330	1	1

Table 3iv; Structure 27.

Con	Ox	Hor	Lar	Sar	Uni	Total
647	11	-	6	-	-	17
648	4	-	3	1	7	15
666	-	2	1	-	-	3
667	-	-	1	-	-	1
Total	15	2	11	1	7	36

Table 3v; Structure 64.

Con	Ox	Ovi	Pig	Dog	Lar	Sar	Uni	Total
1103	6	3	2	-	53	10	50	124
1118	1	1	2	1	2	4	8	19
1123	4	2	-	-	16	3	6	31
1133	-	-	-	-	2	-	1	3
Total	11	6	4	1	73	17	65	177

Table 3vi; Structure 68.

Con	Ox	Ovi	Pig	Hor	Lar	Sar	Bir	Uni	Total
1037	7	1	2	3	17	14	1	34	79

Table 3vii; Structure 86.

Con	Ox	Lar	Total
1011	1	1	2
1017	1	7	8
Total	2	8	10

Table 3viii; Structure 91.

Con	Lar	Sar	Total
1119	-	1	1
1121	1	-	1
Total	1	1	2

Table 3ix; Structure 174.

Con	Hor	Lar	Total
729	1	1	2

Table 4i; Phase 3ii, Sub Roman, Structure 20.

Con	Ox	Ovi	Lar	Total
710	2	1	1	4

Table 4ii; Structure 21.

Con	Lar	Total
679	1	1

Table 4iii; Structure 26.

Con	Ovi	Uni	Total
699	1	2	3

Table 4iv; Structure 28.

Con	Ovi	Pig	Lar	Sar	Fow	Bir	Uni	Total
697	5	6	21	16	1	2	10	61

Table 4v; Structure 67.

Con	Lar	Total
691	1	1

Table 4vi; Structure 71.

Con	Pig	Hor	Lar	Total
463	1	2	5	8

Table 4vii; Structure 121.

Con	Pig	Lar	Uni	Total
598	1	6	1	8

Table 4viii; Structure 171.

Con	Dog	Lar	Total
636	1	1	2

Table 5i; Phase 4i, 11th century, Structure 19.

Con	Ox	Ovi	Pig	Hor	Lar	Sar	Fow	Bir	Uni	Total
534	-	1	1	-	5	2	-	-	-	9
1015	3	7	4	1	18	20	2	1	20	76
Total	3	8	5	1	23	22	2	1	20	85

Table 5ii; Structure 22.

Con	Ox	Ovi	Lar	Total
677	1	1	1	3

Table 5iii; Structure 31/158.

Con	Pig	Dog	Lar	Sar	Total
497	1	1	2	2	6
517	-	-	5	2	7
Total	1	1	7	4	13

Table 5iv; Structure 170.

Con	Ovi	Sar	Total
1029	1	1	2

Table 6i; Phase 4ii, 11th century tanning, Structure 30.

Con	Ox	Ovi	She	Pig	Hor	Dog	Lar	Sar	Fow	Goo
538	2	-	-	-	-	-	4	-	-	-
539	4	7	2	5	1	2	15	14	1	1
542	6	5	1	7	-	-	7	6	2	-
594	1	-	-	-	-	-	7	5	-	-
620	2	1	-	1	-	-	5	-	-	-
621	2	-	-	3	-	-	2	3	-	-
625	3	-	-	1	-	-	2	-	-	-
627	1	-	-	-	-	2	-	3	1	-
632	-	-	-	-	-	-	-	1	-	-
Total	21	13	3	17	1	2	42	32	4	1

Table 6i; Phase 4ii, 11th century tanning, Structure 30 continued.

Bir	Uni	Total
-	-	6
1	7	60
-	-	34
-	-	13
-	-	9
-	1	11
2	-	8
-	-	7
-	-	1
3	8	149

Table 6ii, Structure 32.

Con	Ox	Ovi	Pig	Lar	Sar	Fow	Fis	Uni	Total
545	7	-	2	11	20	2	9	9	60
546	-	-	-	-	1	-	-	-	1
547	2	3	1	6	4	1	-	-	17
548	-	-	-	1	-	-	-	-	1
549	1	-	-	1	10	-	-	-	12
Total	10	3	3	19	35	3	9	9	91

Table 6iii; Structure 34.

Con	Ox	She	Goa	Ovi	Pig	Hor	Dog	Cat	Lar	Sar
521	-	-	-	1	-	-	-	-	8	-
522	5	1	-	1	-	-	-	-	16	11
523	-	-	-	-	1	-	-	-	8	4
524	2	-	-	2	-	-	-	-	11	3
525	2	-	-	1	1	-	-	-	4	2
536	4	-	-	1	2	-	-	-	12	-
571	1	-	-	3	2	-	-	-	13	4
572	3	-	2	1	-	-	-	1	5	5
573	9	-	10	5	3	-	-	1	33	27
574	-	-	-	-	-	-	-	-	6	3
575	4	-	-	2	2	-	-	-	5	5
576	6	-	-	-	2	1	-	-	16	5
577	1	-	-	-	-	-	-	1	-	-
583	-	-	-	1	1	-	-	-	9	5
584	8	2	3	2	5	2	-	1	53	21
585	1	-	2	1	3	-	-	-	18	5
586	-	-	-	-	-	-	1	-	3	2
652	7	-	-	-	3	-	-	-	3	2
653	1	-	-	1	1	-	-	-	8	3
654	-	-	1	-	-	-	-	-	4	-
655	1	1	-	-	3	-	-	-	6	3
Total	55	4	18	22	29	3	1	4	241	110

Table 6iii; Structure 34 continued.

Fow	Goo	Cro	Bir	Uni	Total
-	-	-	-	-	9
-	-	-	-	9	43
-	-	-	-	-	13
-	-	-	-	-	18
-	-	-	-	-	10
1	-	-	1	2	23
-	-	-	-	2	25
-	-	-	-	-	17
-	1	-	-	-	89
-	-	-	-	-	9
1	-	-	1	5	25
1	-	-	-	-	31
-	-	-	-	-	2
-	1	1	1	-	19
5	-	-	2	8	112
9	-	-	-	-	39
1	-	-	-	-	7
-	-	-	-	-	15
-	-	-	-	-	14
-	-	-	-	-	5
1	-	-	1	-	16
19	2	1	6	26	541

Table 6iv; Structure 37.

Con	Ox	Ovi	Pig	Dog	Cat	Lar	Sar	Fow	Uni	Total
671	10	3	3	4	1	13	8	1	1	44

Table 6v; Structure 70.

Con	Ox	She	Goa	Ovi	Pig	Hor	Red	Roe	Dog	Lar
552	35	-	1	45	32	1	-	1	2	182
553	9	2	-	8	9	-	1	-	-	50
Total	44	2	1	53	41	1	1	1	2	232

Table 6v; Structure 70 continued.

Sar	Fow	Goo	Bir	Uni	Total
105	1	1	3	102	511
33	-	-	-	10	122
138	1	1	3	112	633

Table 7i; Phase 5i, 12th century, Structure 29.

Con	Ox	She	Goa	Ovi	Pig	Hor	Dog	Lar	Sar	Uni	Total
435	10	-	-	6	4	1	-	12	2	30	65
437	15	1	1	1	3	-	1	26	2	20	70
470	10	-	-	1	3	-	-	17	8	7	46
530	3	-	-	-	-	-	-	2	1	-	6
532	-	-	-	-	-	-	-	-	-	1	1
Total	38	1	1	8	10	1	1	57	13	58	188

Table 7ii, Structure 33.

Con	Ox	Ovi	Pig	Dog	Lar	Sar	Uni	Total
444	13	8	3	1	21	7	3	56
445	2	-	1	-	3	5	-	11
446	3	2	-	-	2	3	1	11
447	-	-	-	-	1	-	-	1
Total	18	10	4	1	27	15	4	79

Table 7iii; Structure 35.

Con	Ox	She	Ovi	Pig	Hor	Dog	Lar	Sar	Fow	Goo
472	19	-	22	10	1	3	56	67	1	-
473	8	3	9	4	-	-	24	32	-	-
474	5	4	3	5	-	-	16	3	2	-
475	4	1	3	2	3	1	10	3	-	-
476	5	1	5	5	1	-	9	12	1	-
478	-	-	-	1	-	-	1	-	-	-
970	-	-	-	-	-	-	-	-	-	-
971	2	-	5	3	-	-	15	21	1	1
Total	43	9	47	30	5	4	131	148	5	1

Table 7iii; Structure 35 continued.

Bir	Uni	Total
-	36	215
-	6	86
-	-	48
-	-	27
-	7	46
-	-	2
-	6	6
1	3	52
1	53	482

Table 7iv; Structure 39.

Con	Ox	She	Ovi	Pig	Hor	Cat	Lar	Sar	Fow	WPi
988	10	-	6	4	1	-	17	20	-	-
989	1	-	-	2	-	-	-	7	-	-
993	1	-	3	-	-	-	1	-	-	-
996	11	2	6	15	1	4	48	66	3	-
997	-	-	9	7	-	-	16	62	-	1
998	4	-	2	4	-	-	14	24	-	-
1001	-	-	-	2	-	-	1	7	-	-
Total	27	2	26	34	2	4	97	186	3	1

Table 7iv; Structure 39 continued.

Bir	Uni	Total
13	-	71
-	-	10
-	4	9
1	46	203
-	8	123
-	6	54
-	8	18
14	92	488

Table 7v; Structure 76.

Con	Ox	Ovi	Pig	Hor	Dog	Lar	Sar	Uni	Total
300	37	11	7	4	1	69	17	7	153

Table 7vi; Structure 79.

Con	Lar	Total
419	4	4

Table 7vii; Structure 83.

Con	Ox	Ovi	Lar	Sar	Total
1024	2	1	3	1	7

Table 7viii; Structure 85.

Con	Lar	Sar	Total
418	1	1	2

Table 7ix; Structure 88.

Con	Ox	Lar	Sar	Uni	Total
600	4	4	1	5	14

Table 7x; Structure 97.

Con	Ovi	Lar	Sar	Fow	Uni	Total
985	2	3	10	1	5	21

Table 7xi; Structure 105.

Con	Ox	Sar	Total
969	1	1	2

Table 7xii; Structure 159.

Con	Ox	She	Goa	Ovi	Pig	Hor	Dog	Cat	Lar	Sar
460	78	1	3	43	24	8	10	3	200	67

Table 7xii; Structure 159 continued.

Fow	Bir	Uni	Total
2	2	19	460

Table 7xiii; Structure 160.

Con	Hor	Lar	Total
501	1	1	2

Table 7xiv; Structure 161.

Con	Ox	Pig	Lar	Sar	Total
943	1	1	4	4	10

Table 7xv; Structure 165.

Con	Ox	Hor	Dog	Lar	Sar	Total
453	6	1	2	13	3	25

Table 8i; Phase 5ii, Structure 36.

Con	Ox	She	Goa	Ovi	Pig	Red	Roe	Hor	Dog	Cat
404	10	-	-	4	2	-	1	-	1	-
405	8	1	-	5	3	-	-	5	1	-
406	6	-	-	4	2	-	-	3	-	-
407	9	-	-	3	6	-	-	-	-	-
408	4	-	-	-	1	-	-	-	-	-
555	15	-	1	8	3	-	-	14	1	-
556	4	-	1	-	-	-	-	-	-	1
956	2	-	-	1	1	-	-	-	-	-
959	5	-	-	6	2	-	-	-	-	-
961	3	-	-	1	3	-	-	1	-	-
962	9	1	-	14	18	12	-	2	-	1
966	3	1	-	3	5	-	-	1	-	-
967	5	-	-	2	1	-	-	-	-	-
Total	83	3	2	51	47	12	1	26	3	2

Table 8i; Phase 5ii, Structure 36 continued.

Lar	Sar	Bir	Uni	Total
20	2	-	9	49
11	16	-	-	50
12	4	1	3	35
10	6	-	-	34
8	2	-	-	15
33	5	1	10	91
3	-	-	-	9
6	4	-	-	14
17	19	4*	-	53
7	11	-	4	30
60	38	3*	41	199
35	19	2*	8	77
16	12	-	-	36
238	138	11	75	692

4* = 3 fowl, 1 goose
3* = 3 fowl
2* = 1 fowl, 1 goose

Table 8ii; Structure 38

Con	Ox	Ovi	Pig	Hor	Dog	Lar	Sar	Goo	Uni	Total
960	-	4	-	-	-	-	-	-	1	5
1023	5	1	1	1	-	13	7	1	1	30
1032	2	2	-	-	1	8	10	-	2	25
1038	-	1	-	-	-	2	-	-	-	3
Total	7	8	1	1	1	23	17	1	4	63

Table 9i; Phase 6,14th - 15th century, Structure 42.

Con	Ox	She	Goa	Ovi	Pig	Hor	R+F	Roe	Dog	Cat
233	58	2	-	19	10	22	1	-	1	1
297	5	-	-	2	2	2	-	-	1	-
333	112	-	1	39	29	9	-	2	-	2
334	31	-	-	5	2	9	-	-	-	-
Total	206	2	1	65	43	42	1	2	2	3

Table 9i; Phase 6,14th - 15th century, Structure 42 continued.

Lar	Sar	Uni	Total
164	41	81	400
24	4	28	68
302	63	148	707
63	1	40	151
553	109	297	1326

Table 9ii; Structure 44.

Con	Ox	Ovi	Pig	Hor	Lar	Sar	Uni	Total
214	3	2	-	-	3	-	-	8
216	-	-	1	-	4	3	4	12
219	-	-	-	-	4	2	-	6
220	2	9	6	1	30	20	23	91
Total	5	11	7	1	41	25	27	117

Table 9iii; Structure 58.

Con	Lar	Total
382	2	2

Table 9iv; Structure 94.

Con	Ox	Ovi	Pig	Hor	R+F	Dog	Cat	Rab	Lar	Sar
316	9	12	9	-	-	2	3	-	39	36
317	2	1	-	-	-	-	-	-	13	2
421	24	10	8	4	1	2	-	1	77	9
Total	35	23	17	4	1	4	3	1	129	47

Table 9iv; Structure 94 continued.

Uni	Total
21	131
-	18
3	139
24	288

Table 9v; Structure 95.

Con	Ox	Ovi	Pig	Hor	Roe	Lar	Sar	Uni	Total
386	9	6	5	4	1	29	19	5	78

Table 9vi; Structure 96.

Con	Ox	She	Ovi	Pig	Hor	Red	Roe	Dog	Cat	Har
366	49	2	24	10	22	-	-	-	-	-
368	3	-	-	1	-	-	1	-	-	-
373	2	-	-	3	-	-	1	-	-	-
398	12	1	4	7	1	-	-	2	1	-
412	44	-	20	11	22	1	-	1	2	1
Total	110	3	48	32	45	1	2	3	3	1

Table 9vi; Structure 96 continued.

Lar	Sar	Fow	Bir	Uni	Total
177	31	-	2	61	378
7	10	-	-	4	26
9	4	-	-	1	20
38	6	1	-	-	73
93	20	-	-	77	292
324	71	1	2	143	789

Table 9vii; Structure 98.

Con	Ox	Ovi	Hor	Lar	Uni	Total
422	4	1	3	9	2	19

Table 9viii; Structure 99.

Con	Ox	Ovi	Pig	Lar	Sar	Goo	Uni	Total
267	3	2	1	13	3	1	2	25
268	-	1	-	1	1	-	-	4
269	-	-	-	-	1	-	-	1
336	2	1	-	11	6	-	4	24
Total	5	4	1	25	11	1	7	54

Table 9ix; Structure 102.

Con	Ox	Pig	Lar	Total
402	1	2	1	4

Table 9x; Structure 108.

Con	Ox	She	Goa	Ovi	Pig	Hor	Dog	Cat	Rab	Lar
217	10	-	-	13	16	-	5	-	-	32
222	42	1	-	44	41	3	1	1	1	132
223	10	1	-	15	15	5	2	-	-	57
225	4	-	-	14	3	-	-	-	-	18
226	57	1	1	77	77	2	1	1	-	296
256	2	-	-	1	4	2	1	-	-	19
264	4	-	-	4	8	1	-	-	-	9
580	1	-	-	-	-	-	-	-	-	-
Total	130	3	1	168	164	13	10	2	1	563

Table 9x; Structure 108 continued.

Sar	Fow	Goo	Bir	Uni	Total
38	2	-	2*	25	143
68	5	-	5	161	505
48	-	-	-	16	169
18	-	-	1	40	98
130	7	3	1	152	806
14	-	-	-	20	63
13	-	-	-	9	48
-	-	-	-	-	1
329	14	3	9	423	1833

2* includes 1 crow

Table 9xi; Structure 110.

Con	Ox	She	Ovi	Pig	Hor	Dog	Lar	Sar	Total
459	18	1	6	7	4	2	39	10	87

Table 9xii; Structure 111.

Con	Ox	Ovi	Lar	Sar	Total
400	1	1	1	1	4

Table 9xiii; Structure 114.

Con	Ox	Ovi	Pig	Lar	Sar	Bir	Uni	Total
951	4	3	3	5	14	1	15	45
952	2	-	-	6	4	-	-	12
978	2	2	-	4	-	-	3	11
Total	8	4	3	15	18	1	18	68

Table 9xiv; Structure 116.

Con	Ox	Ovi	Pig	Hor	Lar	Sar	Total
953	3	-	1	1	11	4	20
954	2	1	-	-	-	-	3
Total	5	1	1	1	11	4	23

Table 9xv; Structure 124.

Con	Pig	Lar	Sar	Total
358	1	2	1	4

Table 9xvi; Structure 125.

Con	Ox	She	Ovi	Pig	Hor	Dog	Lar	Sar	Uni	Total
294	8	1	7	2	3	1	36	11	11	80
298	-	-	1	-	-	-	2	-	-	3
Total	8	1	8	2	3	1	38	11	11	83

Table 9xvii; Structure 127.

Con	Ox	Ovi	Pig	Dog	Lar	Sar	Fow	Bir	Uni	Total
274	3	5	4	1	18	25	1	1	9	67
277	1	-	2	1	6	9	-	-	3	22
Total	4	5	6	2	24	34	1	1	12	89

Table 9xviii; Structure 173.

Con	Ox	Ovi	Pig	Lar	Sar	Fow	Uni	Total
257	2	1	-	1	-	-	-	4
258	2	-	-	-	1	-	4	7
259	1	2	1	6	2	1	2	15
Total	5	3	1	7	3	1	6	26

Table 10i; Phase 7, 15th - 16th century, Structure 41.

Con	Ox	Ovi	Lar	Total
341	1	1	1	3
375	-	-	1	1
227	-	1	5	6
Total	1	2	7	10

Table 10ii; Structure 43.

Con	Ox	Ovi	Lar	Sar	Total
280	1	1	1	1	4

Table 10iii; Structure 49.

Con	Lar	Total
973	1	1

Table 10iv; Structure 60.

Con	Ox	Ovi	Lar	Sar	Uni	Total
318	-	3	-	-	2	5
322	1	-	5	4	1	11
324	-	-	-	1	-	1
Total	1	3	5	5	3	17

Table 10v; Structure 128.

Con	Ox	Ovi	Pig	Dog	Lar	Sar	Uni	Total
301	9	9	1	1	23	9	18	70
302	-	1	-	-	5	-	-	6
Total	9	10	1	1	28	9	18	76

Table 10vi; Structure 130.

Con	Ox	Lar	Total
326	1	1	2

Table 10vii; Structure 132.

Con	Ox	Pig	Lar	Sar	Total
273	1	1	1	1	4

Table 10viii; Structure 135.

Con	Ox	Ovi	Pig	Hor	Red	Dog	Lar	Sar	Fow	Bir
230	19	22	12	1	1	1	129	54	1	2
250	3	3	4	-	-	-	9	6	-	-
252	2	3	1	-	-	-	11	5	-	-
Total	24	28	17	1	1	1	149	65	1	2

Table 10viii; Structure 135 continued.

Uni	Total
18	260
18	43
16	38
52	341

Table 10ix; Structure 137.

Con	Ox	She	Ovi	Pig	Hor	Dog	Rab	Lar	Sar	Uni	Total
182	13	1	13	14	2	2	1	30	23	12	111

Table 10x; Structure 163.

Con	Ovi	Pig	Lar	Sar	Uni	Total
245	1	5	2	1	4	13

Table 10xi; Structure 164.

Con	Ox	Hor	Lar	Sar	Total
457	4	1	9	2	16

Table 10xii; Structure 167.

Con	Ox	Ovi	Lar	Sar	Uni	Total
339	3	1	4	3	2	13

Table 11i; Phase 8, 17th century, Structure 46.

Con	Ox	Ovi	Pig	Rab	Lar	Sar	Fow	Bir	Uni	Total
282	1	1	-	-	2	-	-	-	-	4
290	8	1	3	-	14	6	-	-	2	34
292	4	6	5	1	45	28	1	1	21	112
Total	13	8	8	1	61	34	1	1	23	150

Table 11ii; Structure 118.

Con	Lar	Sar	DDk	Bir	Uni	Total
932	4	9	1	4	2	20

Table 11iii; Structure 129.

Con	Lar	Sar	Uni	Total
237	3	-	-	3
238	-	3	2	5
Total	3	3	2	8

Table 11iv; Structure 166.

Con	Lar	Total
433	7	7

Shell table Derek Hurst
Table M34

Phase	Context	*Ostrea edulis*	Freshwater mussel
1	890	1	-
2	1134	1	-
	1143	1	-
4	671	-	1
6	257	1	-
	294	1	-
	537	4	1
10	7	1	-
11	88	1	-
	102	1	-
Totals		12	2

Index to the archive

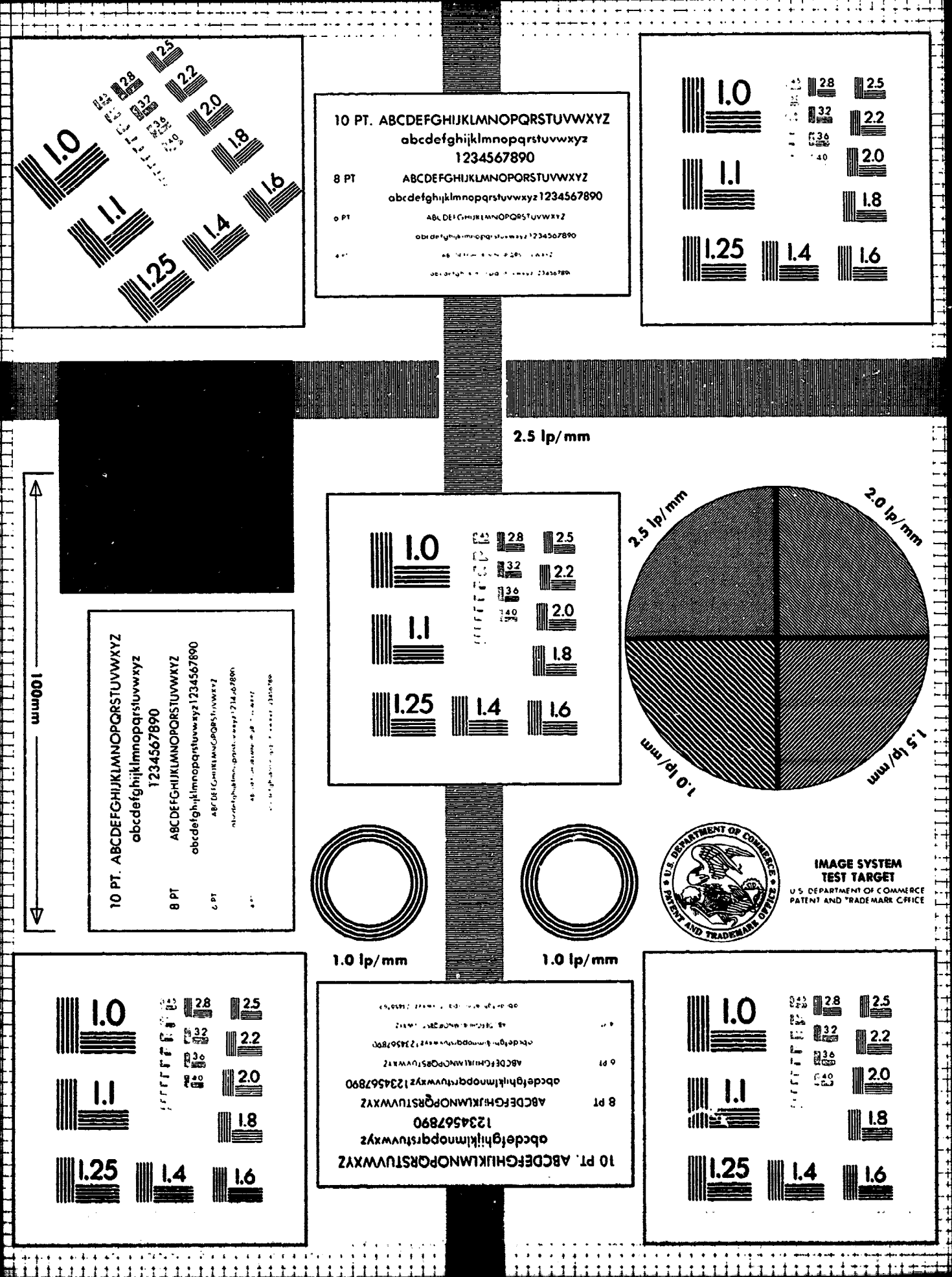
Old Bowling Green (HWCM 600)

Archive section

Index to the archive

Friar Street (HWCM 605)

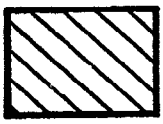
Archive section


10 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890
8 PT ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890
2.5 lp/mm
2.0 lp/mm
1.5 lp/mm
1.0 lp/mm
100mm
1.0 lp/mm
1.0 lp/mm
IMAGE SYSTEM
TEST TARGET
U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

SECTION


Silt

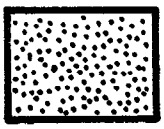

Loam

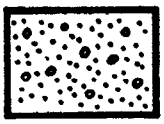

Organic

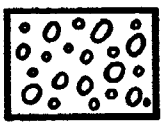

Clay with Silt


Clay with Loam


Clay with Organic

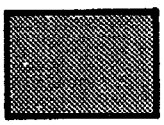

Sand


Gravel


Pebbles

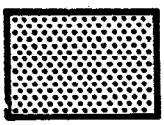

Pure Clay

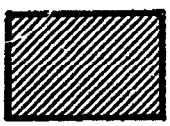

Wood


Unexcavated

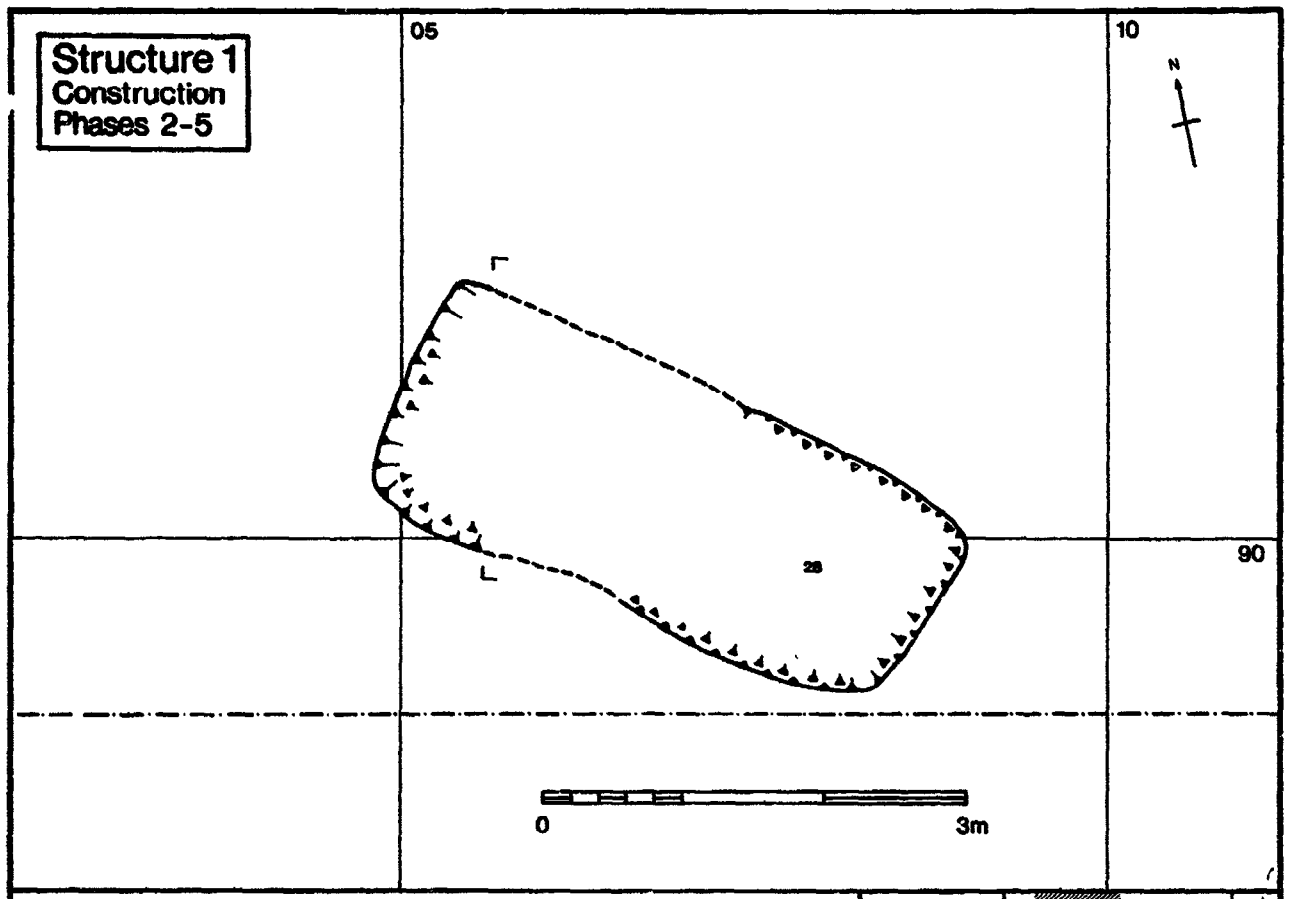
INSET


Structure

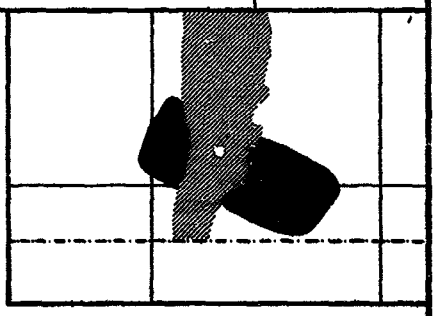

Cobbles

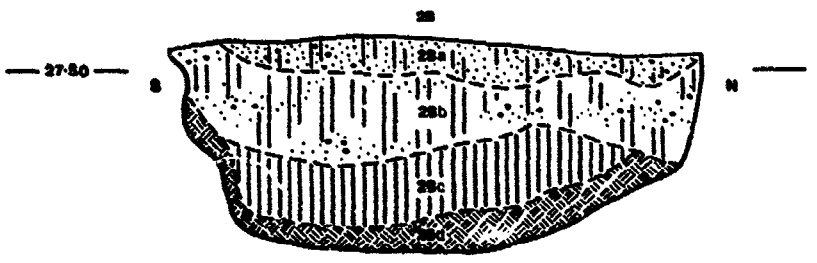

Later feature disturbing structure

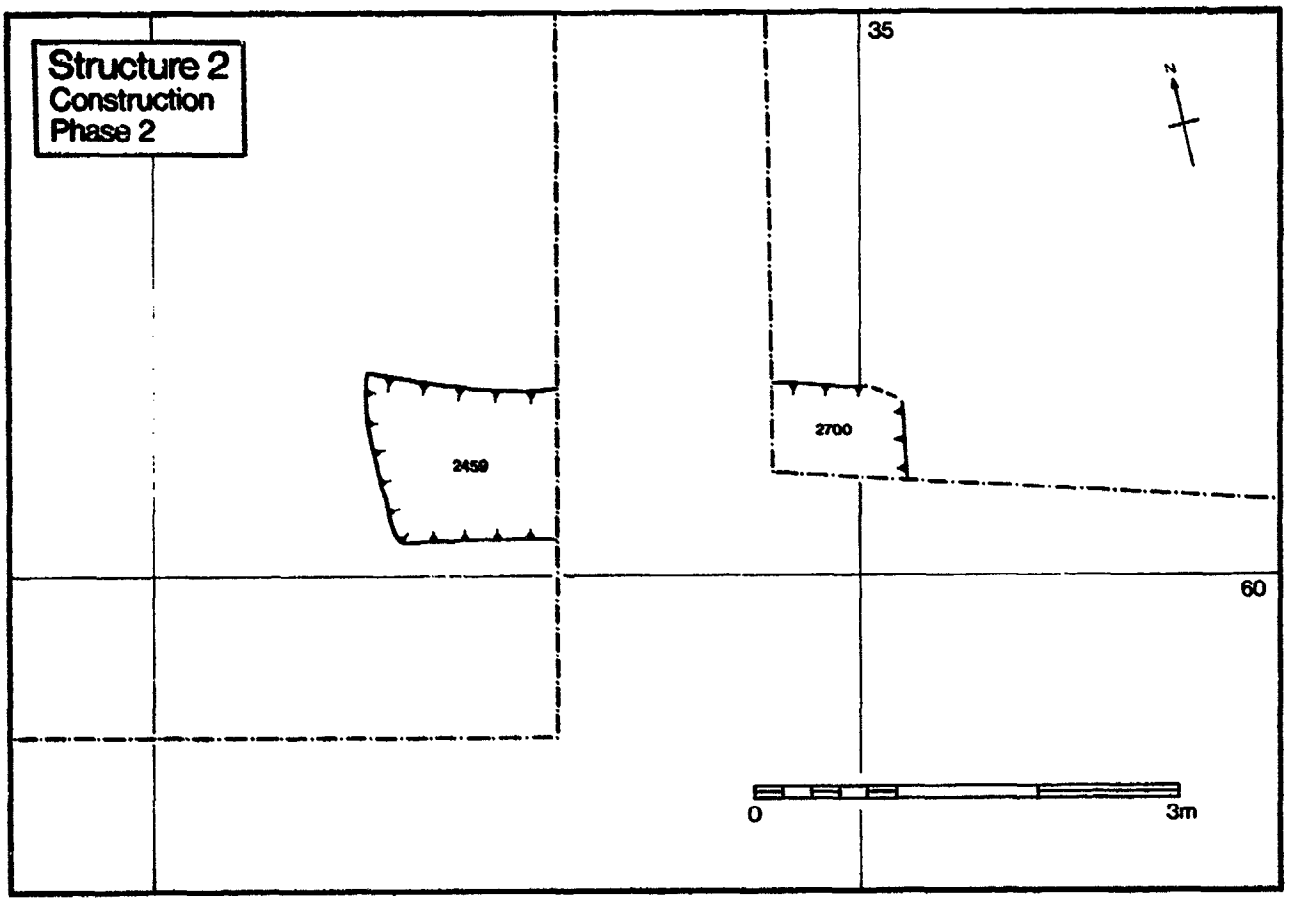
Structure 1
Construction Phases 2-5

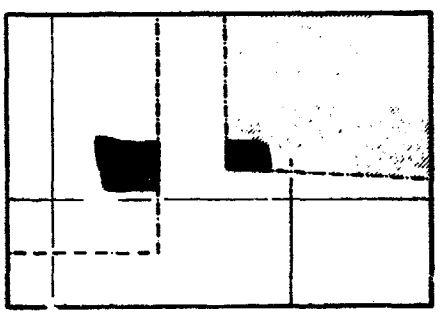


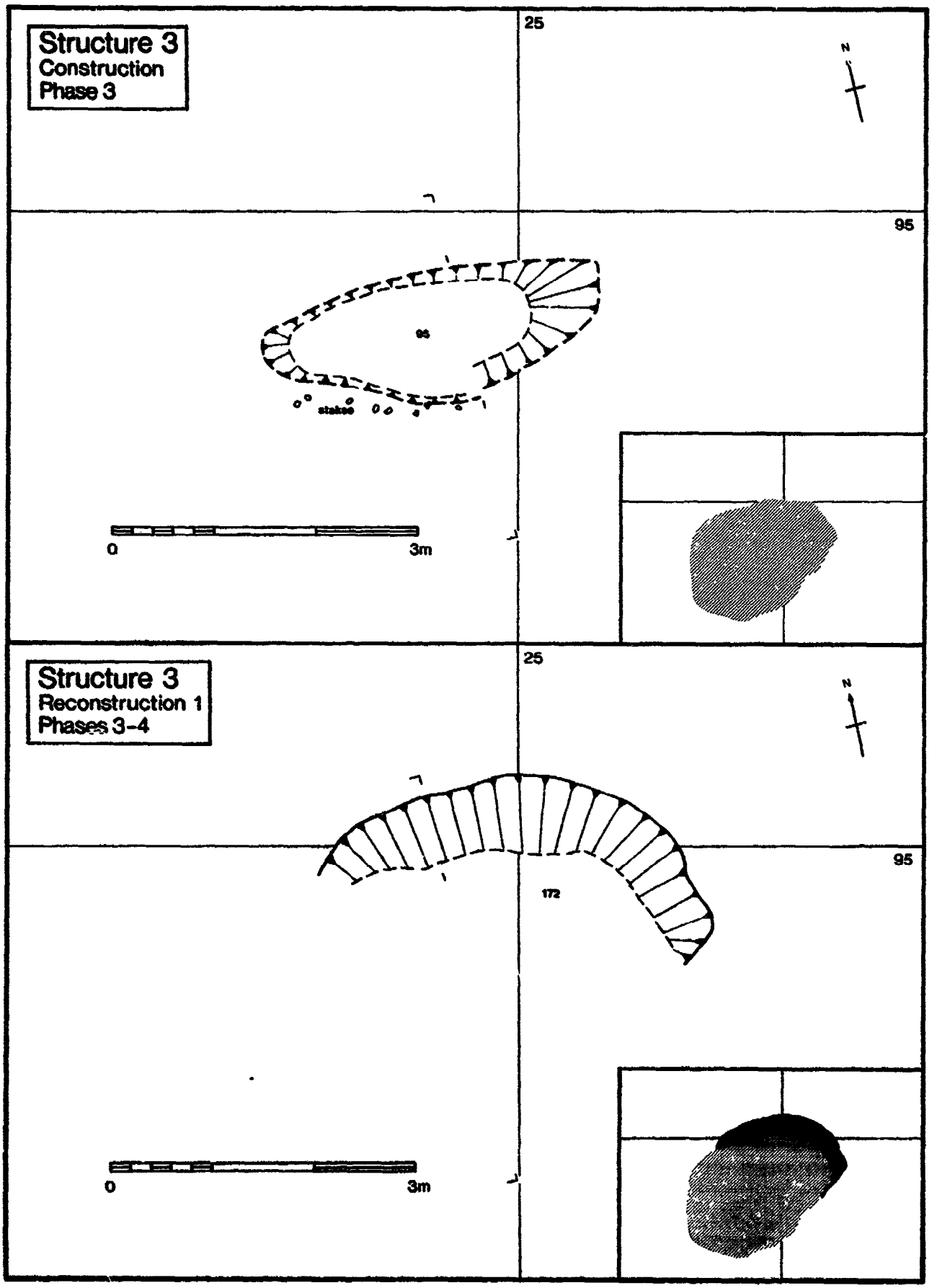
Section

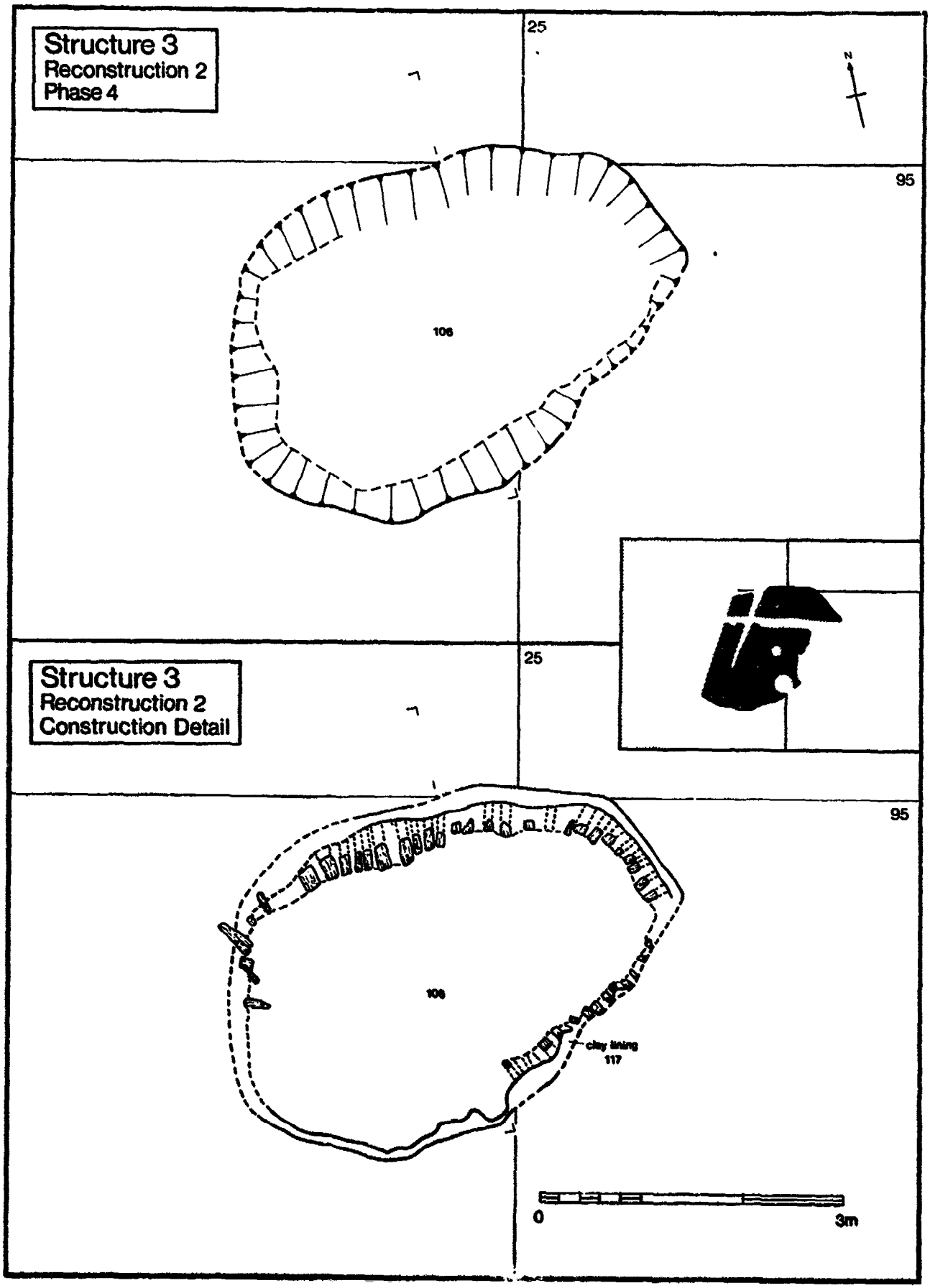




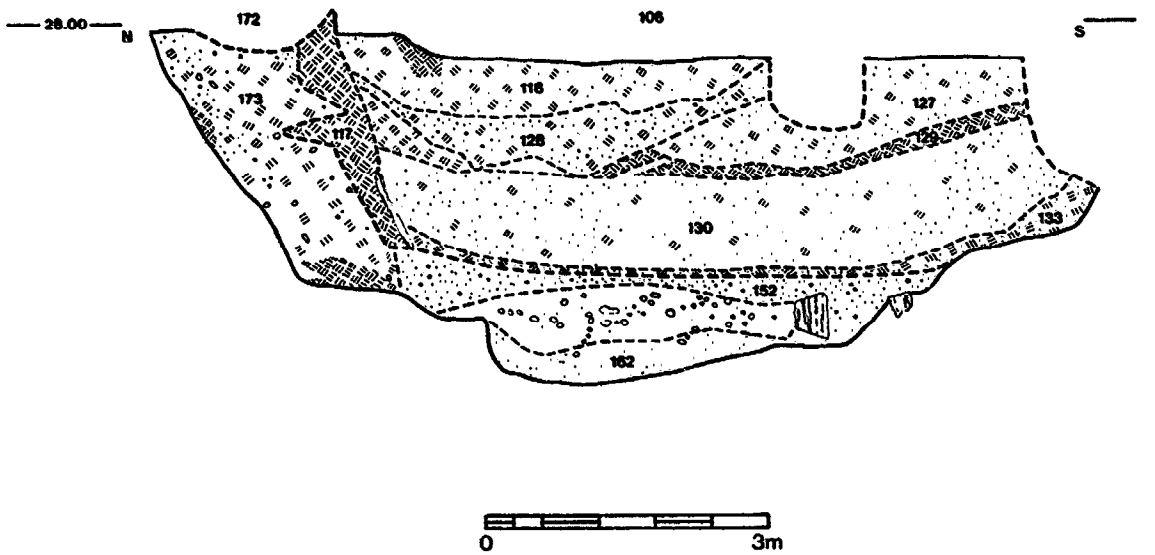

Structure 2
Construction
Phase 2
35
N
2459
2700
60
0
3m



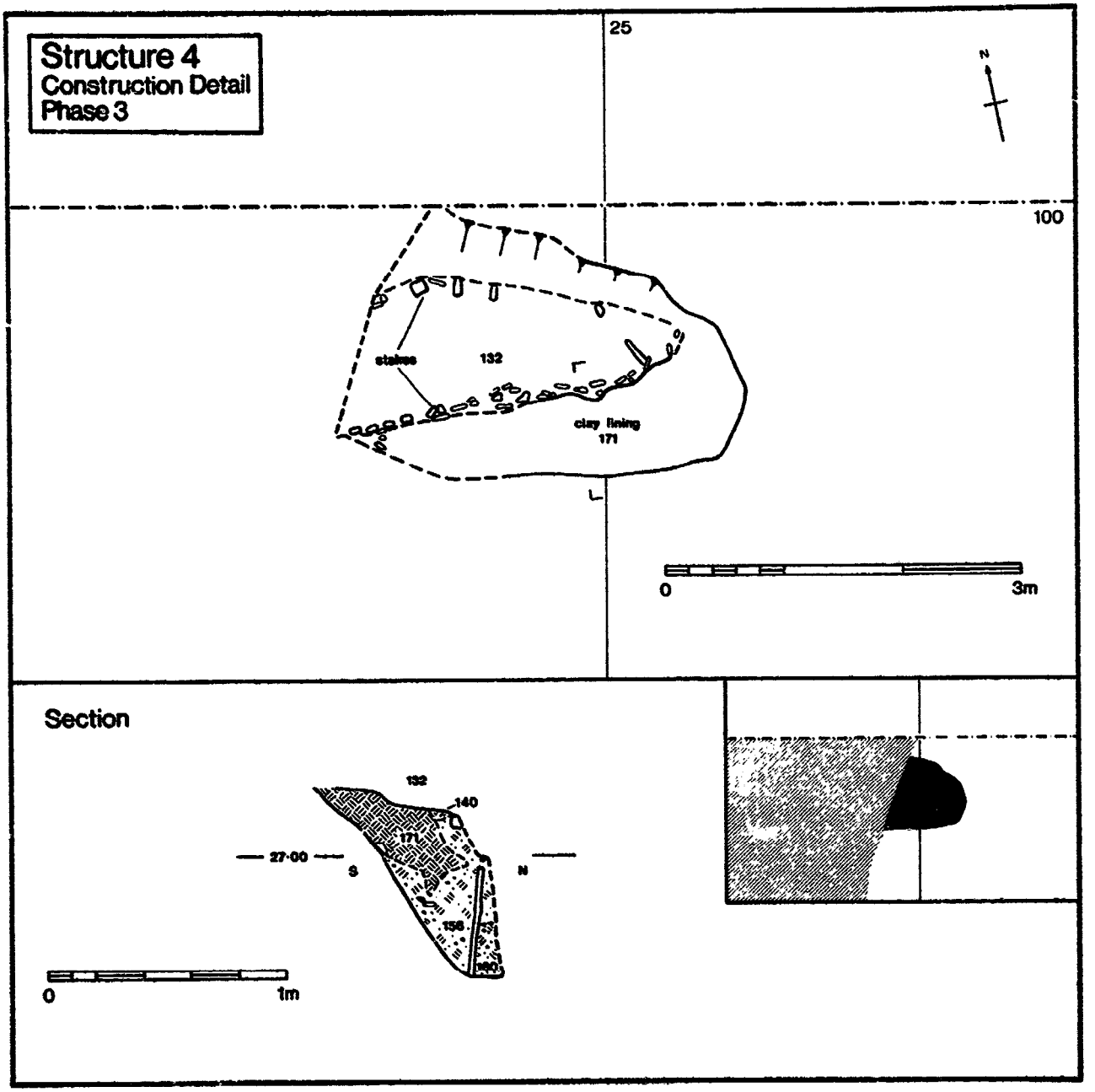

Structure 3
Construction
Phase 3
25
N
95
stakes
0
3m
Structure 3
Reconstruction 1
Phases 3-4
25
N
95
172
0
3m


Structure 3
Reconstruction 2
Phase 4
25
95
106
Structure 3
Reconstruction 2
Construction Detail
25
95
106
clay lining
117
0
3m

Structure 3
Section

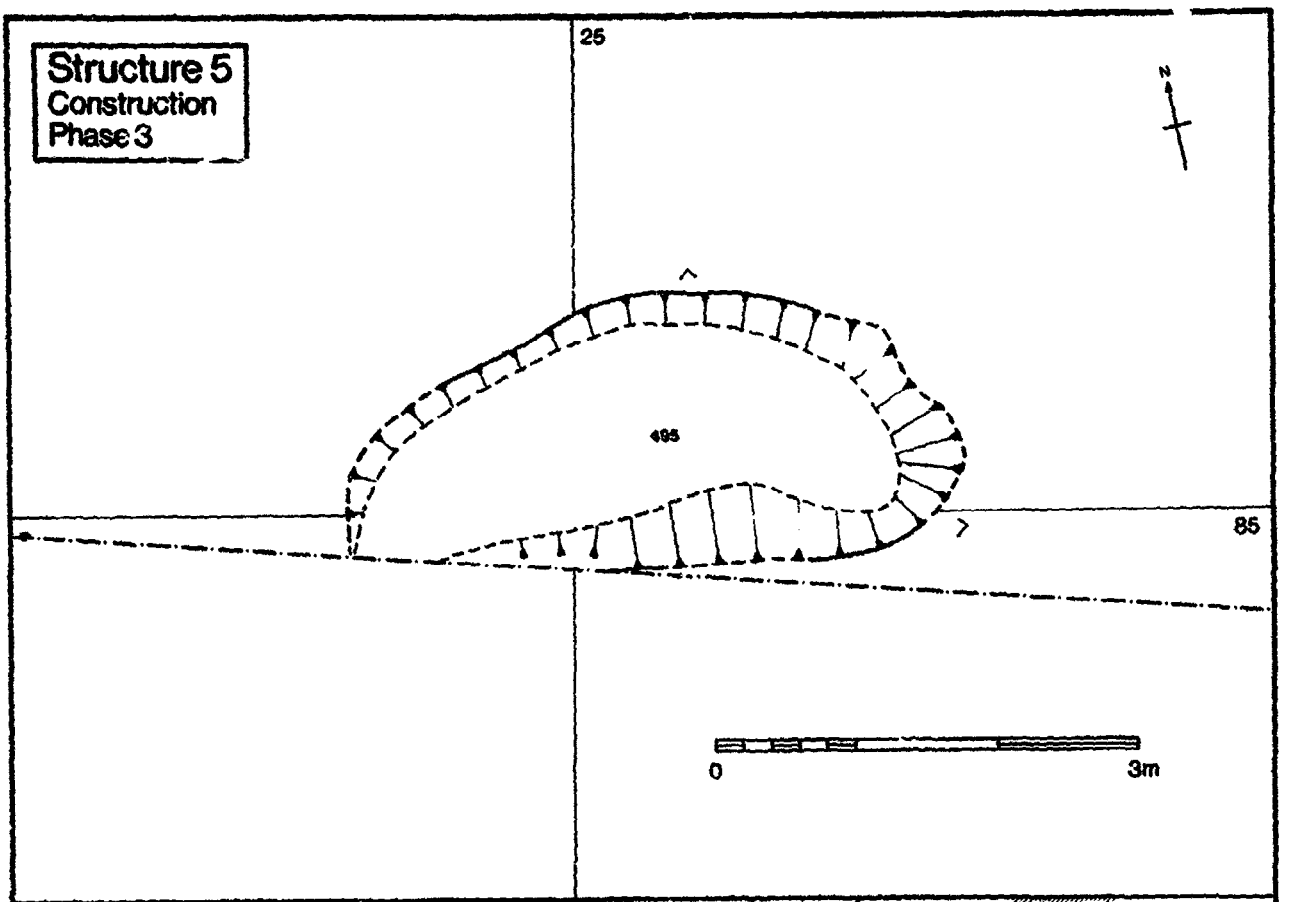


Structure 4
Construction Detail
Phase 3

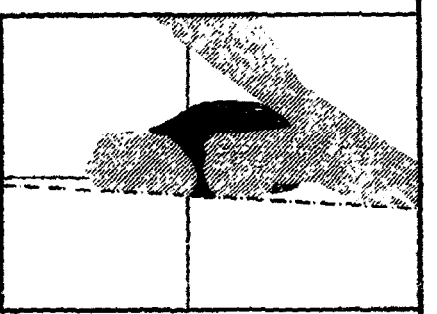


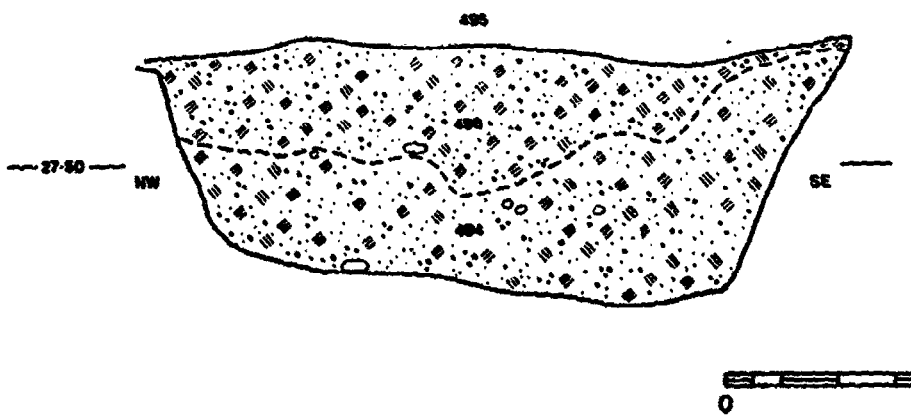
Section

Structure 5
Construction
Phase 3

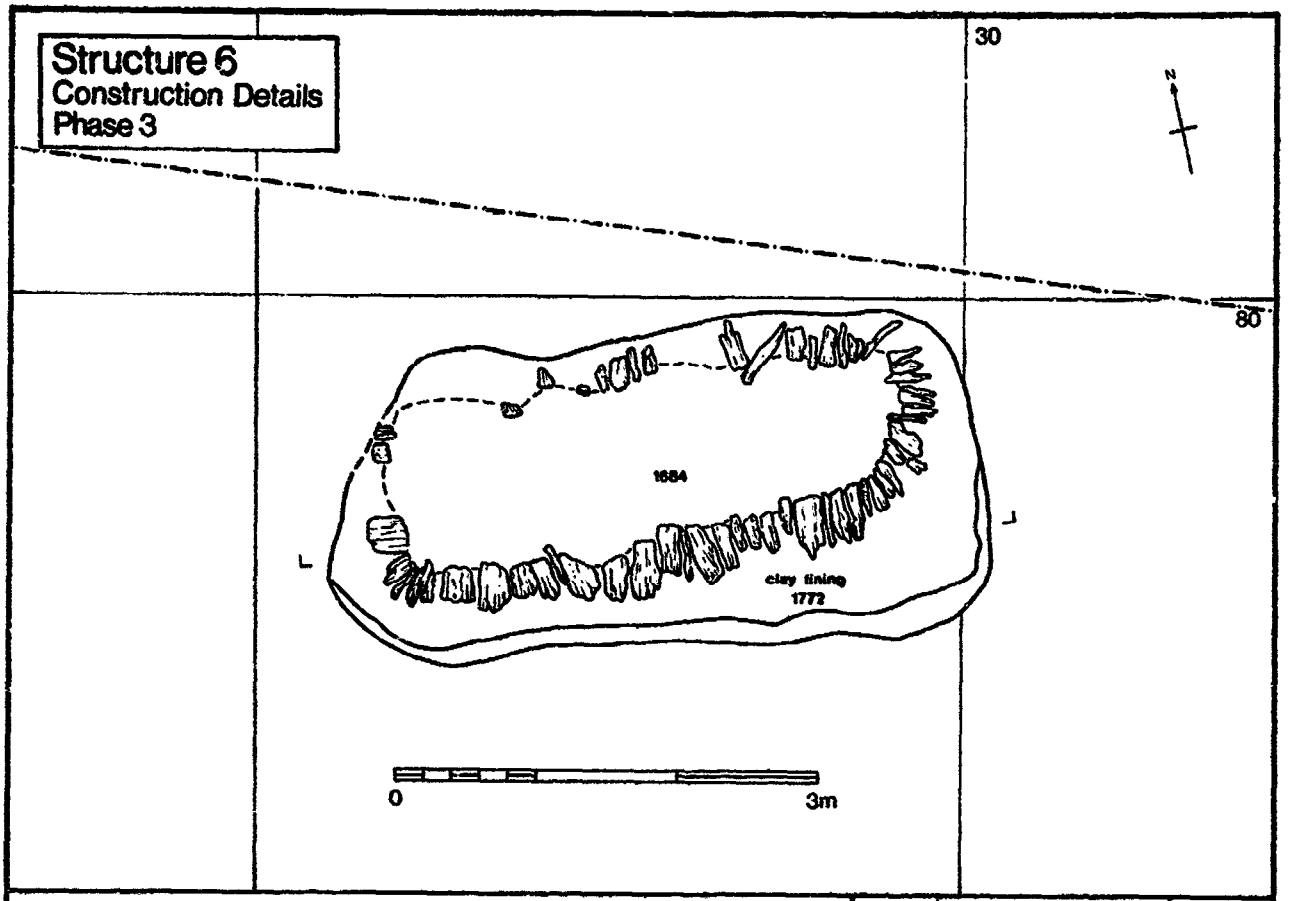


Section

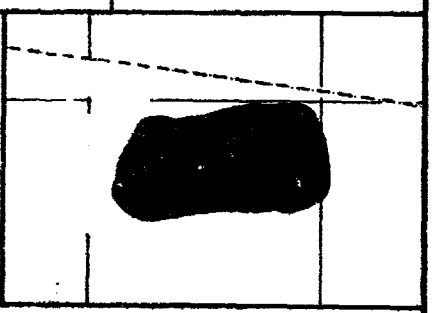


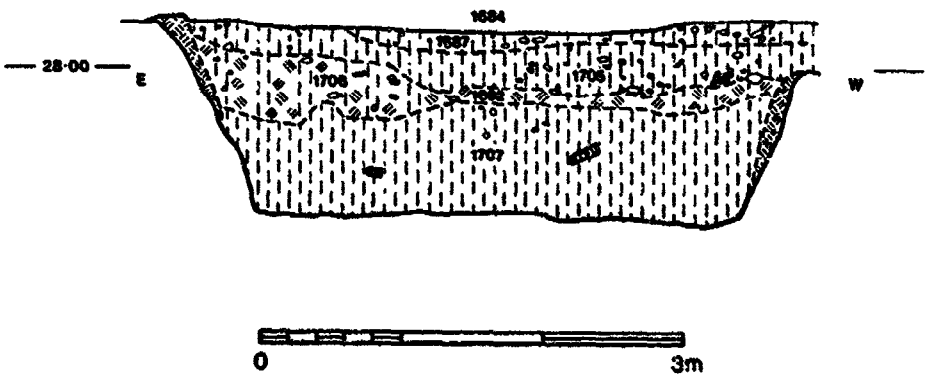


Structure 6
Construction Details
Phase 3

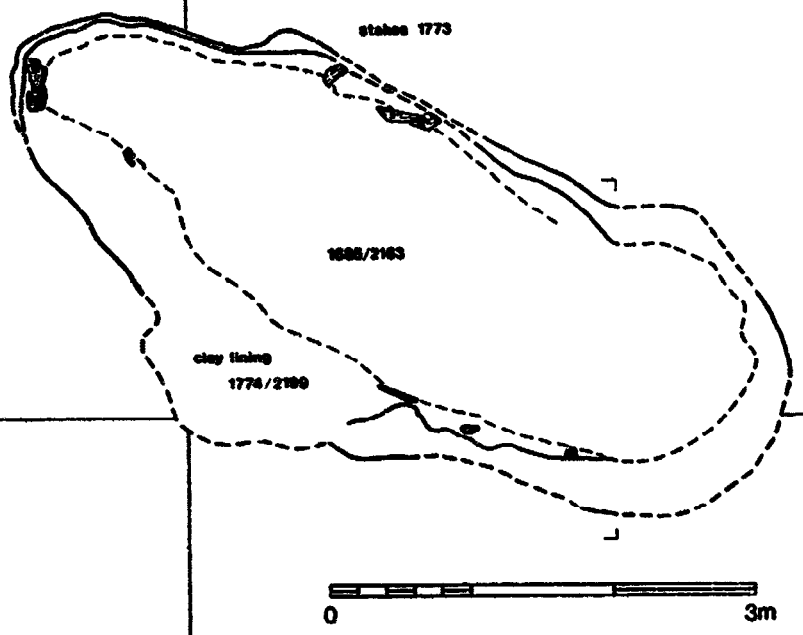


Section

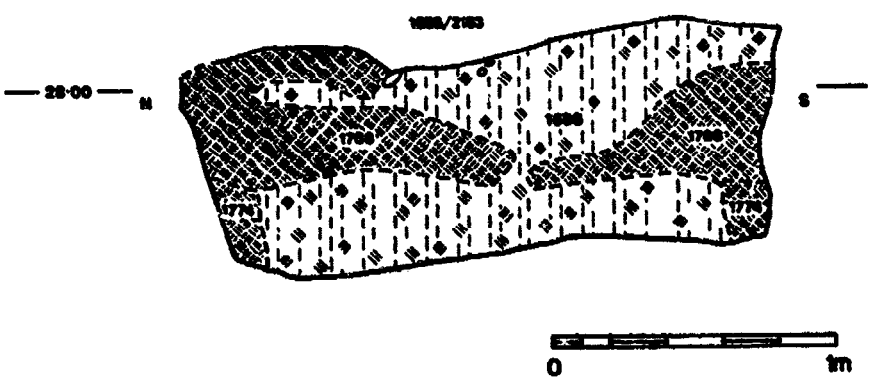


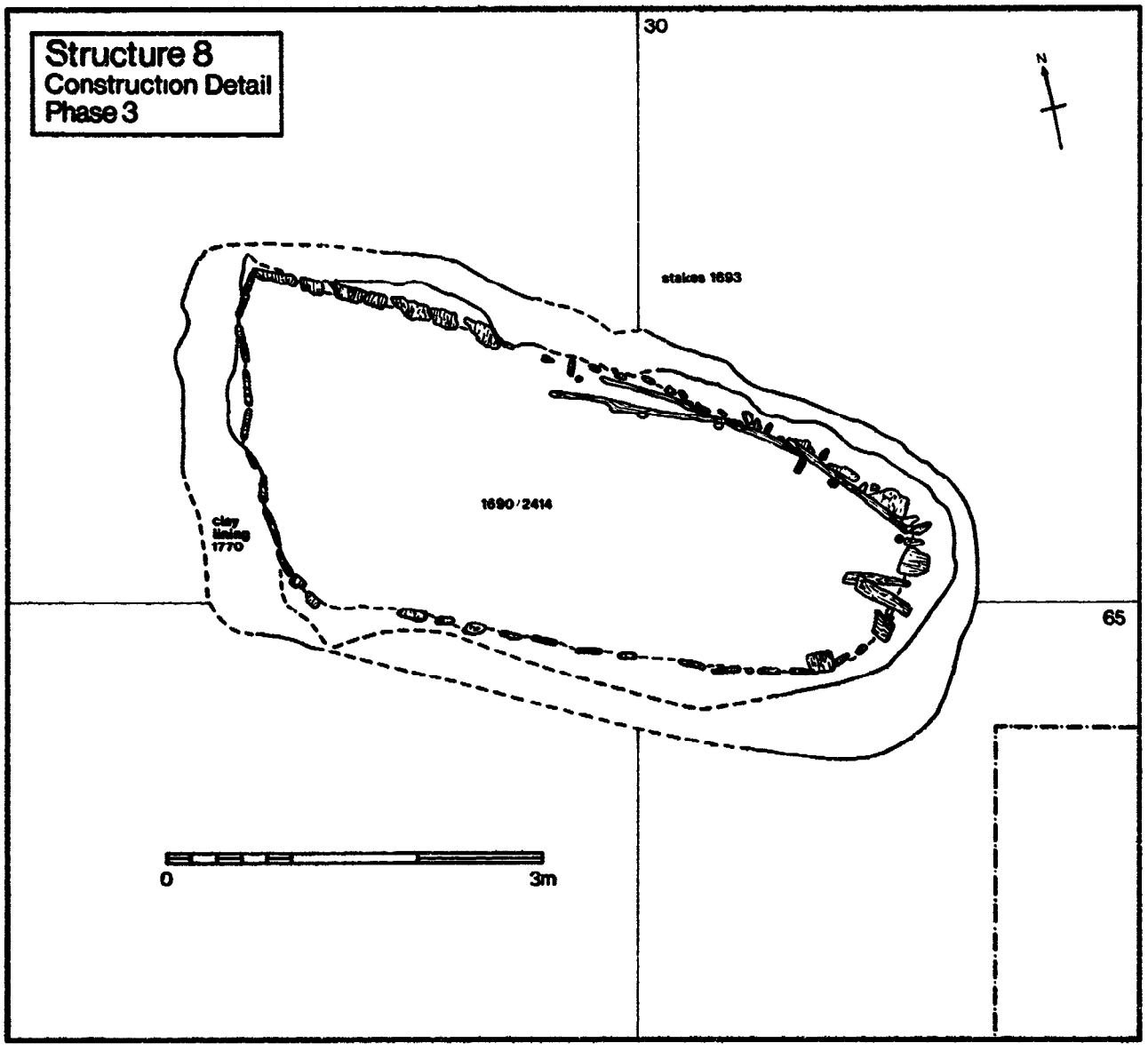


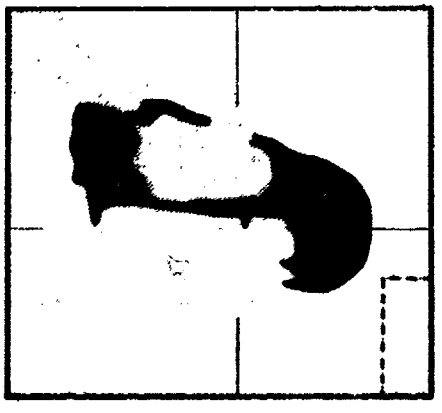
Structure 7
Construction Details
Phase 3

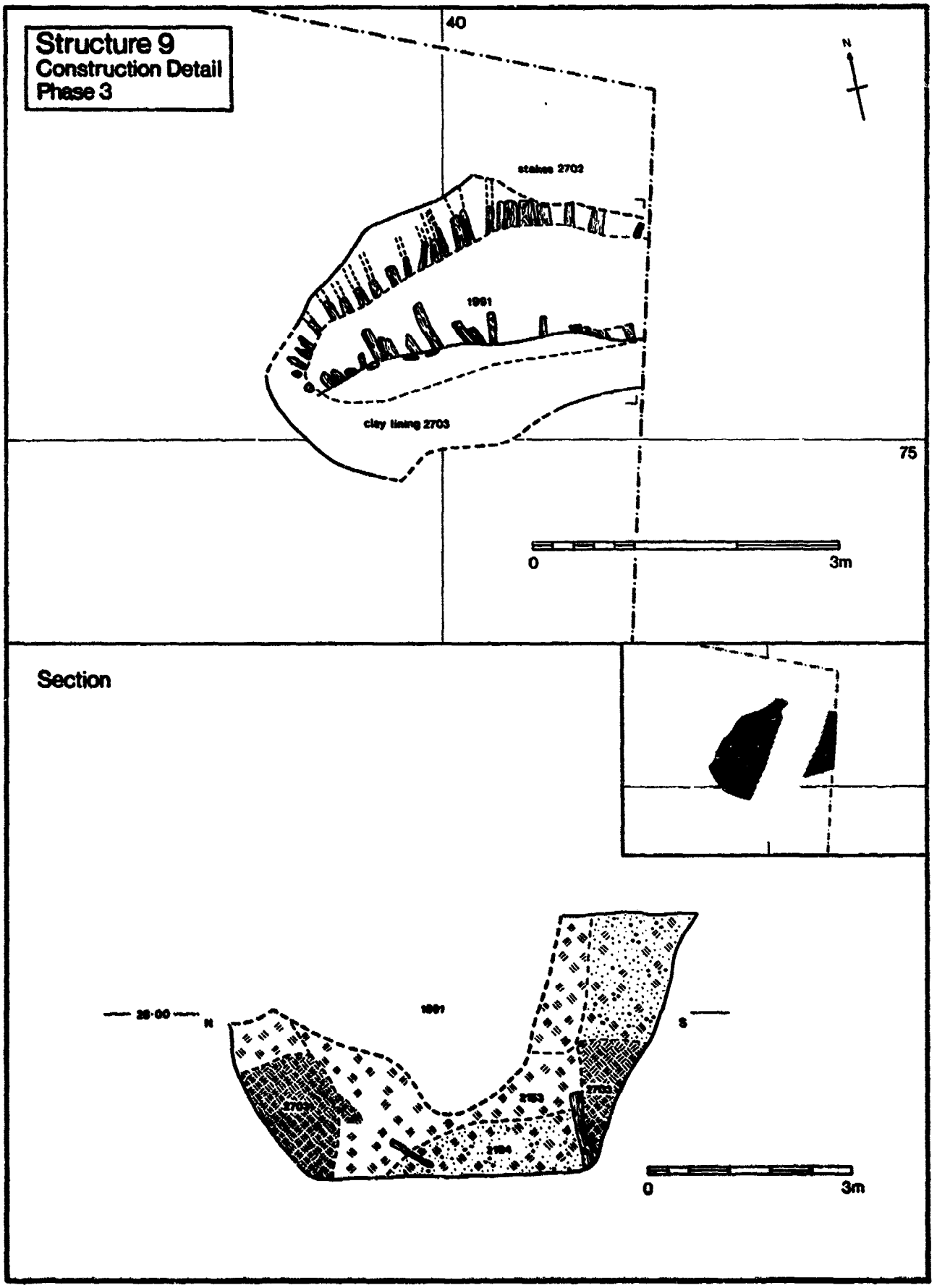


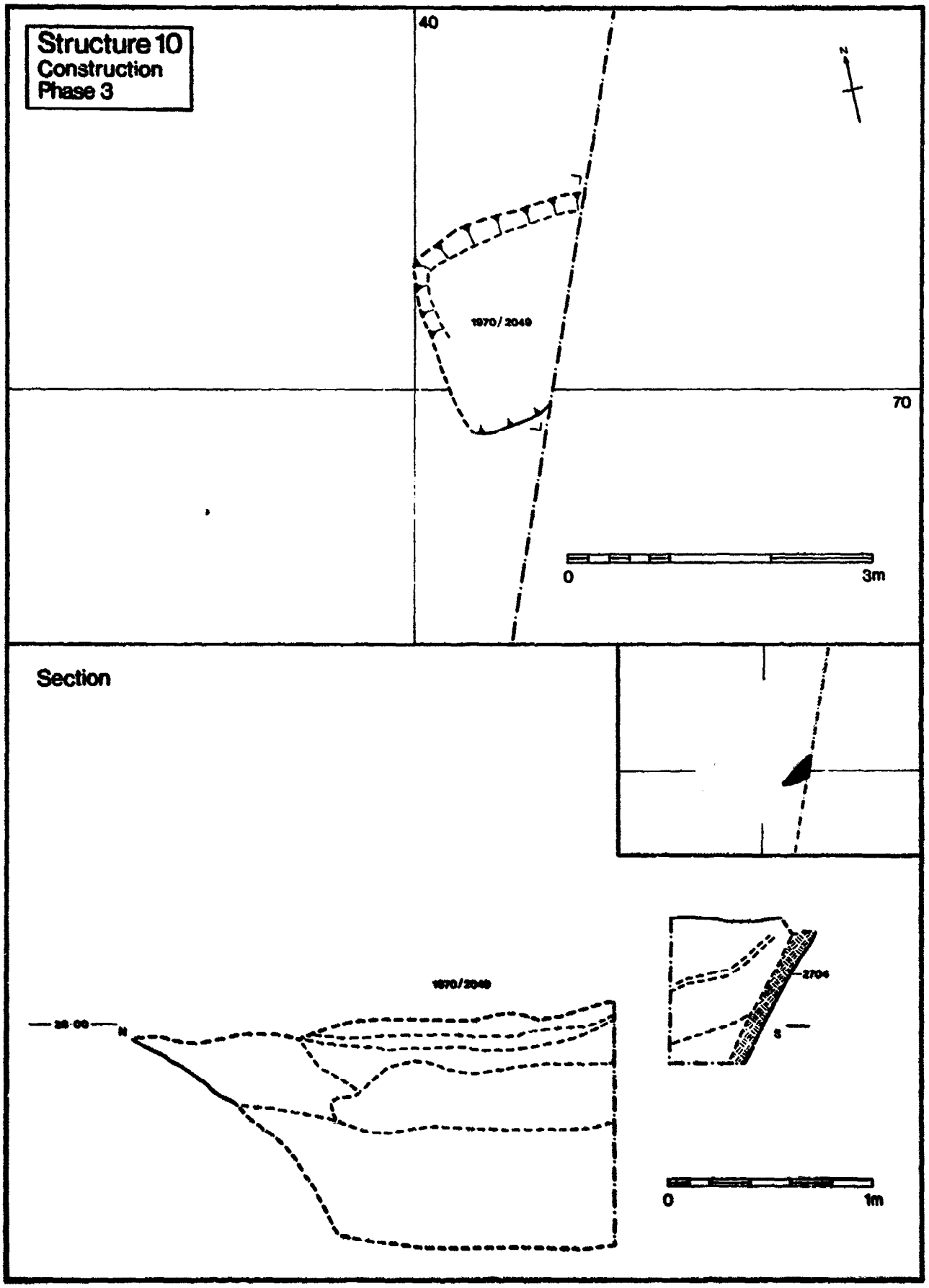
Section

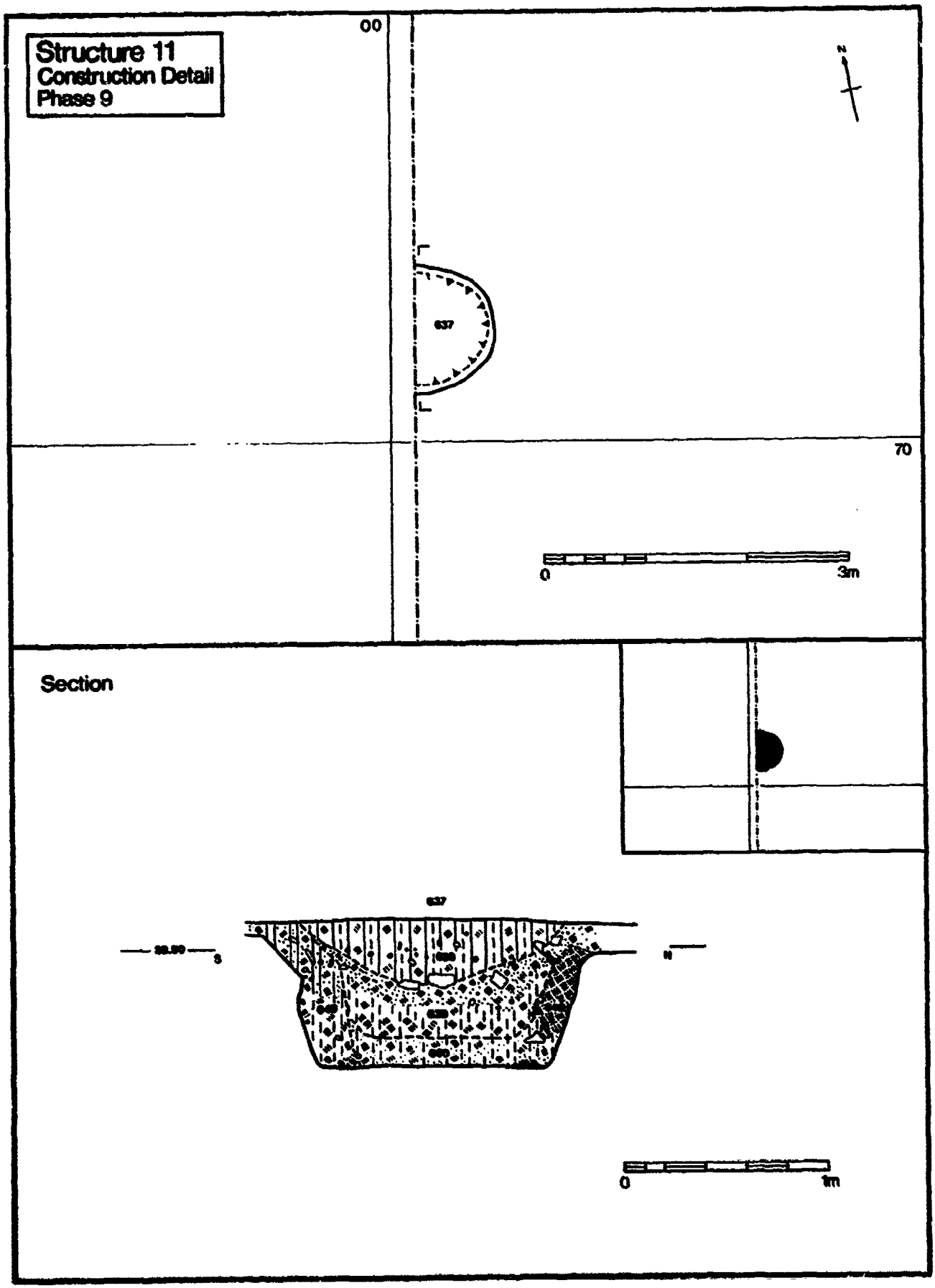



Structure 8
Construction Detail
Phase 3
30
N
stakes 1693
1690/2414
clay lining 1770
65
0
3m

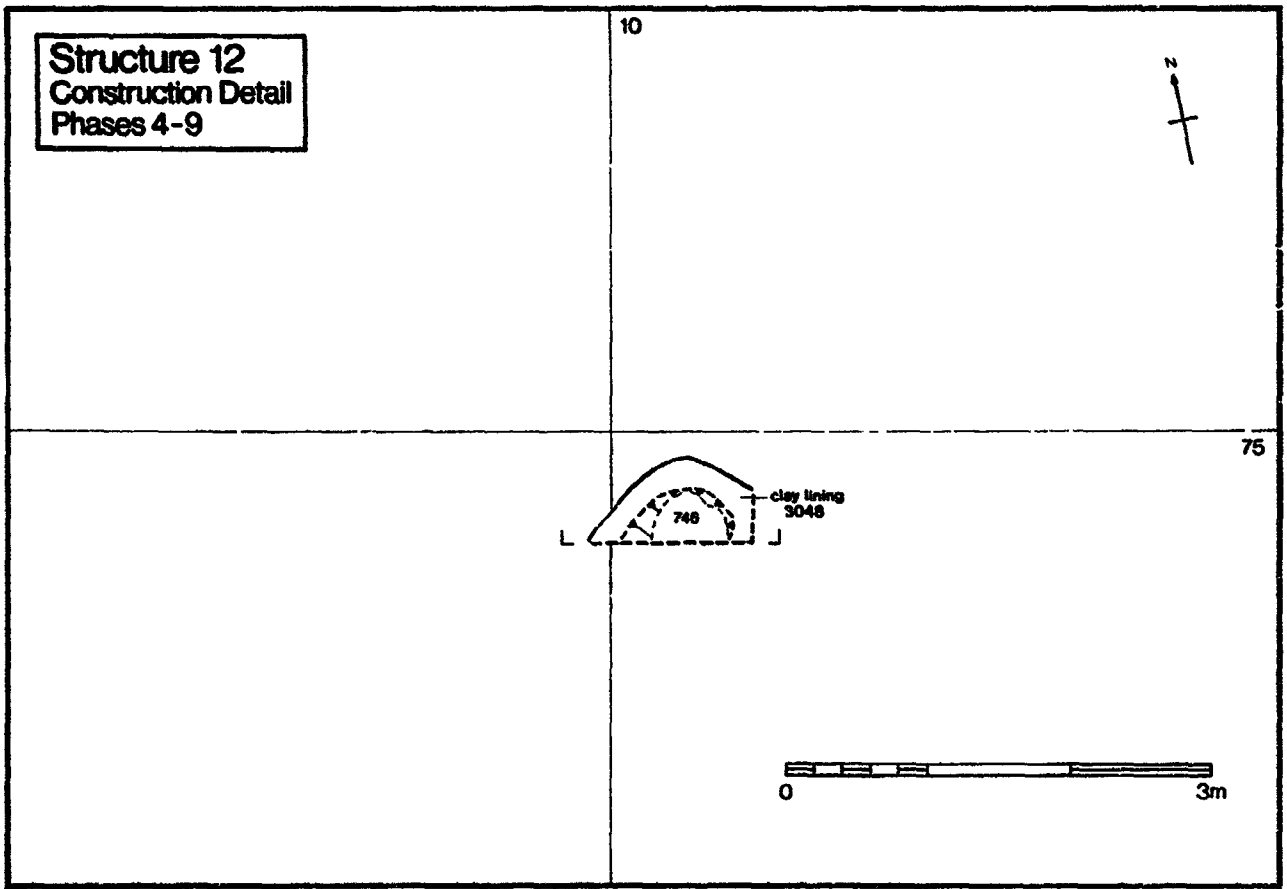



Structure 9
Construction Detail
Phase 3
40
N
stakes 2702
1001
clay lining 2703
75
0
3m
Section
25·00
N
1001
S
2703
2703
2704
0
3m

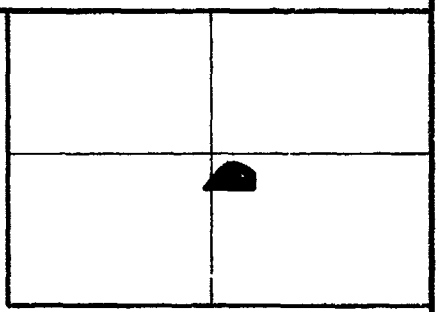

Structure 10
Construction
Phase 3
40
70
1970/2049
N
0
3m
Section
1970/2049
2704
S
0
1m

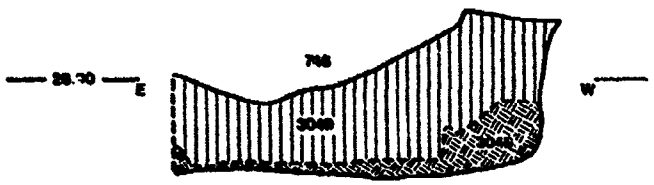

Structure 11
Construction Detail
Phase 9
00
N
637
70
0
3m
Section
637
S
N
0
1m

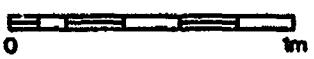
Structure 12
Construction Detail
Phases 4-9

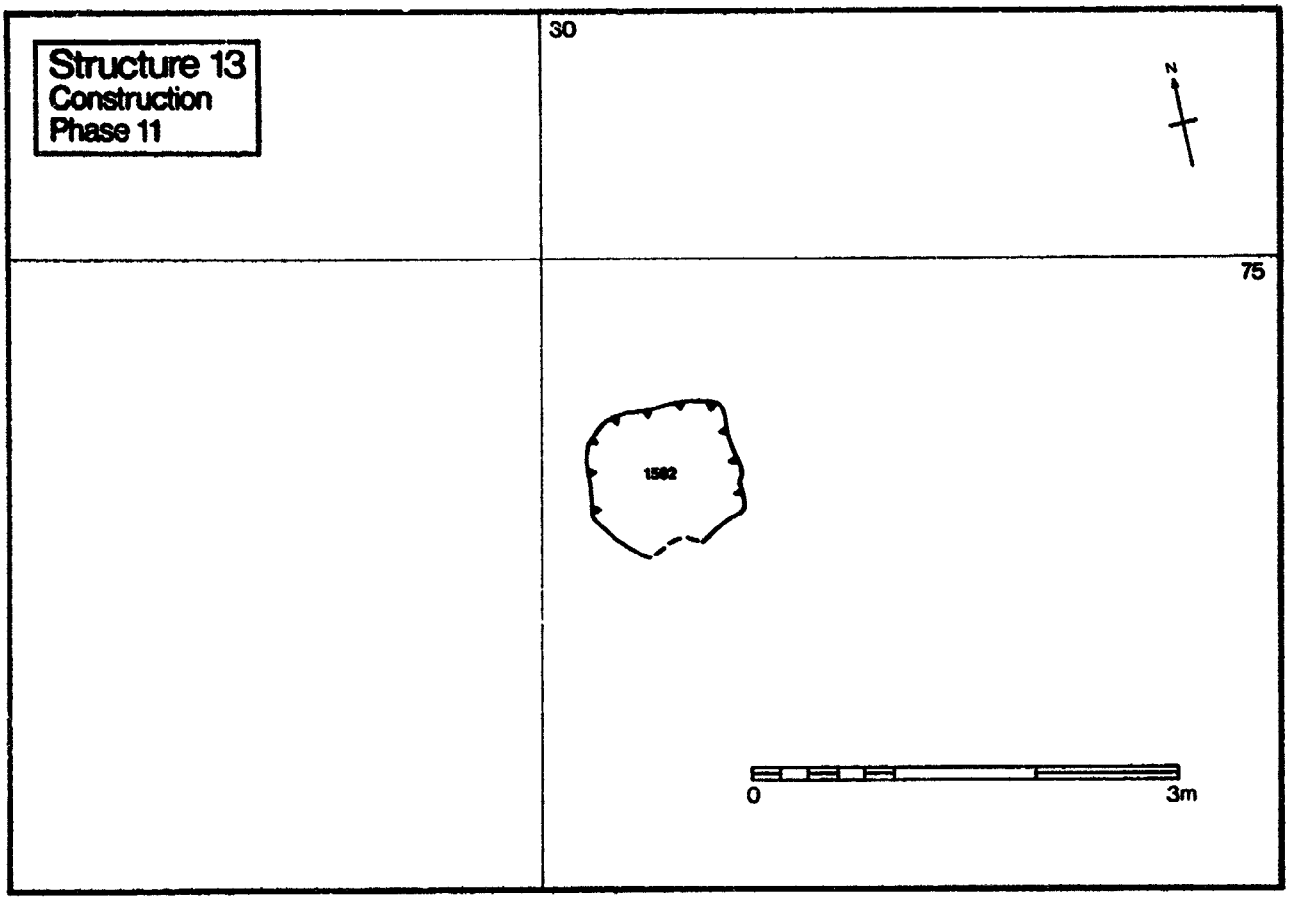


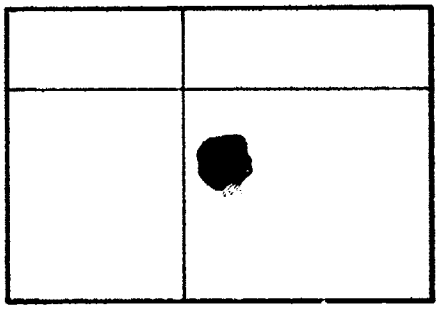
Section

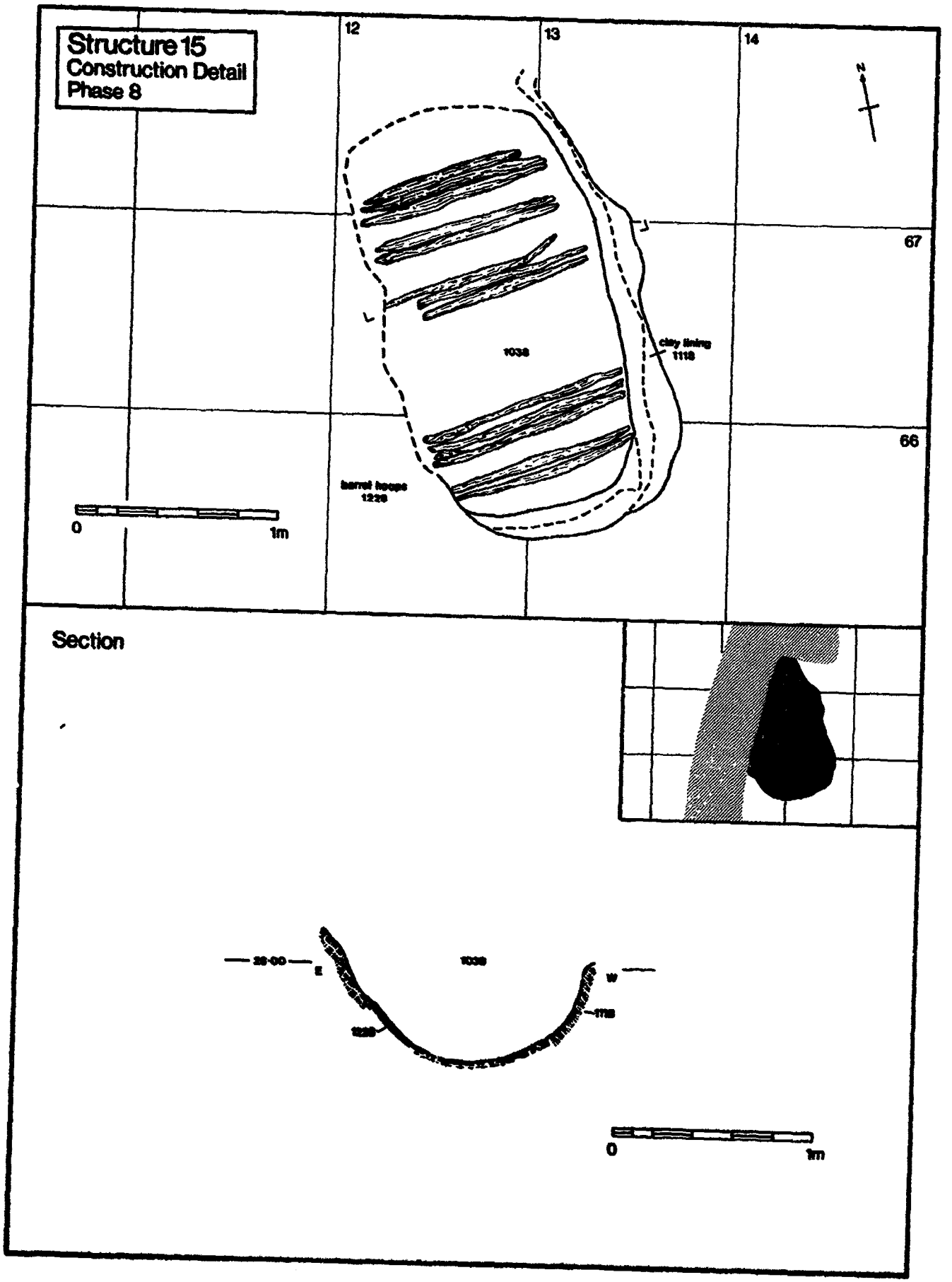




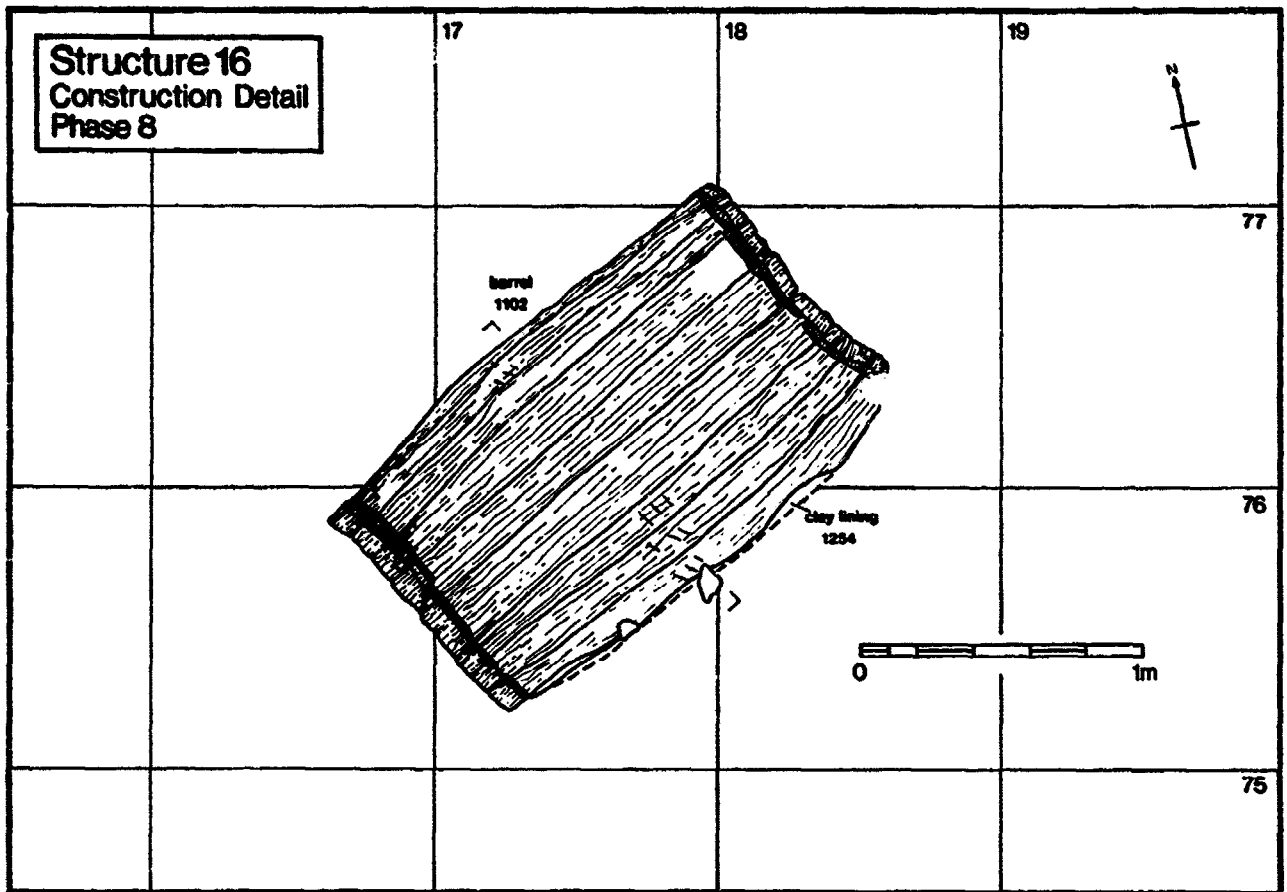



Structure 13
Construction
Phase 11
30
N
75
1592
0
3m

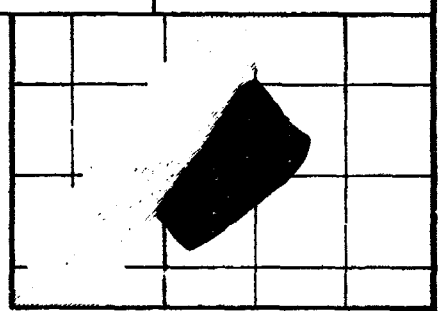


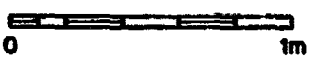

Structure 15
Construction Detail
Phase 8
12
13
14
67
66
1038
clay lining
1118
barrel hoops
1228
0
1m
Section
25·00
E
W
1038
1118
1228
0
1m

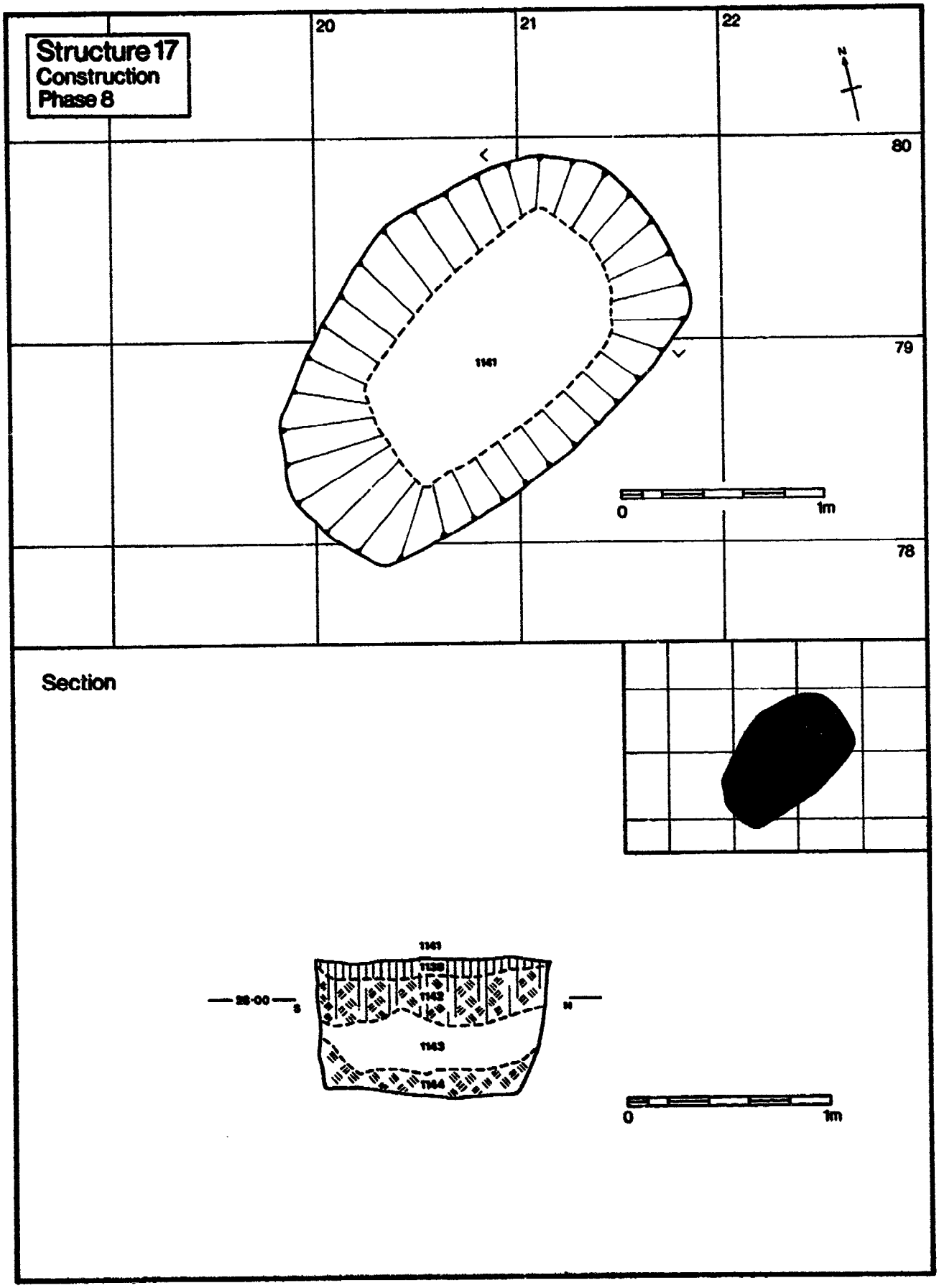
Structure 16
Construction Detail
Phase 8



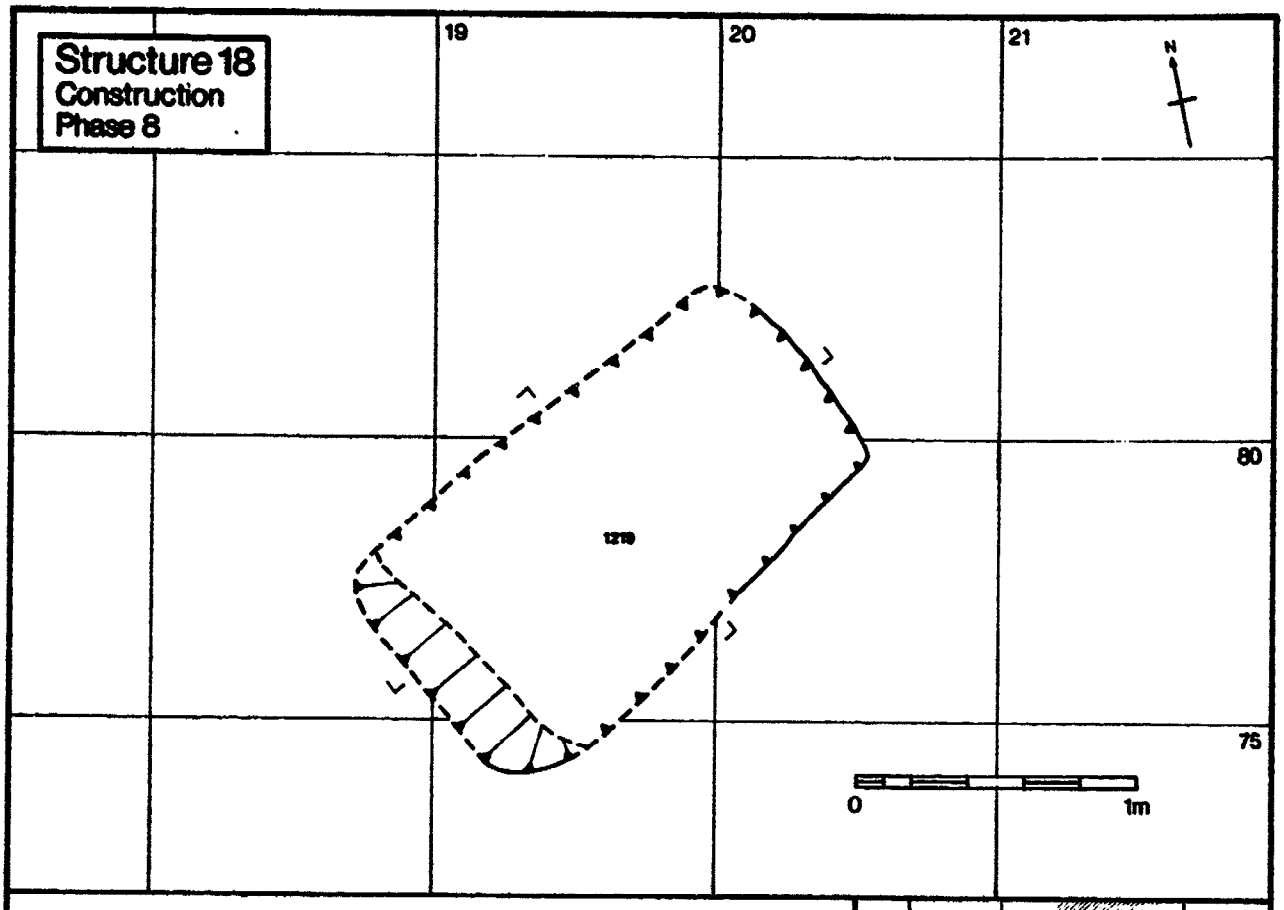
Section



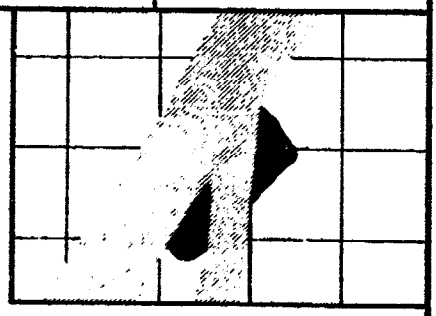


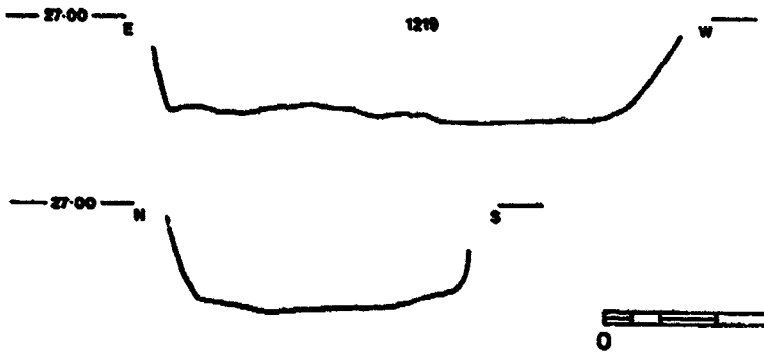

Structure 17
Construction
Phase 8
20
21
22
80
79
78
1141
0
1m
Section
1141
1139
1142
1143
1144
28·00
S
N
0
1m

Structure 18
Construction
Phase 8

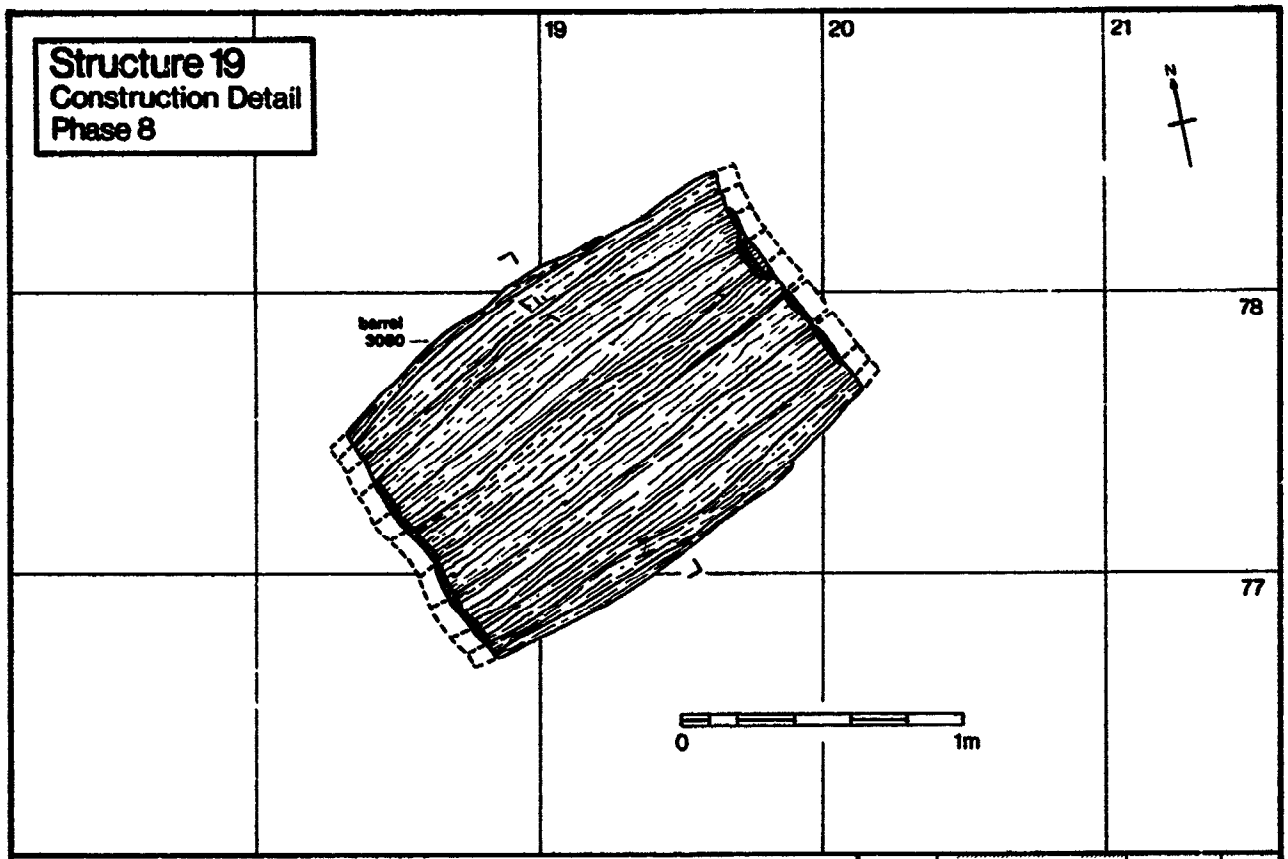


Profiles

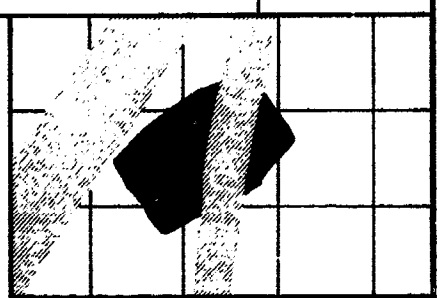


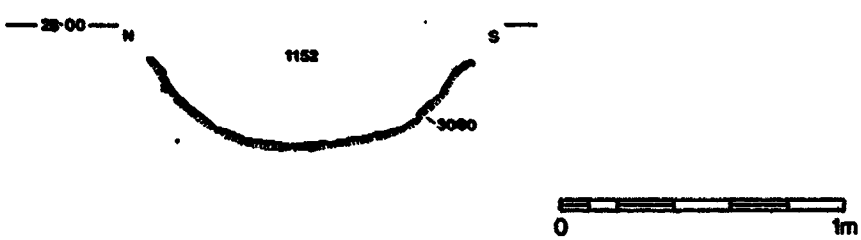


Structure 19
Construction Detail
Phase 8

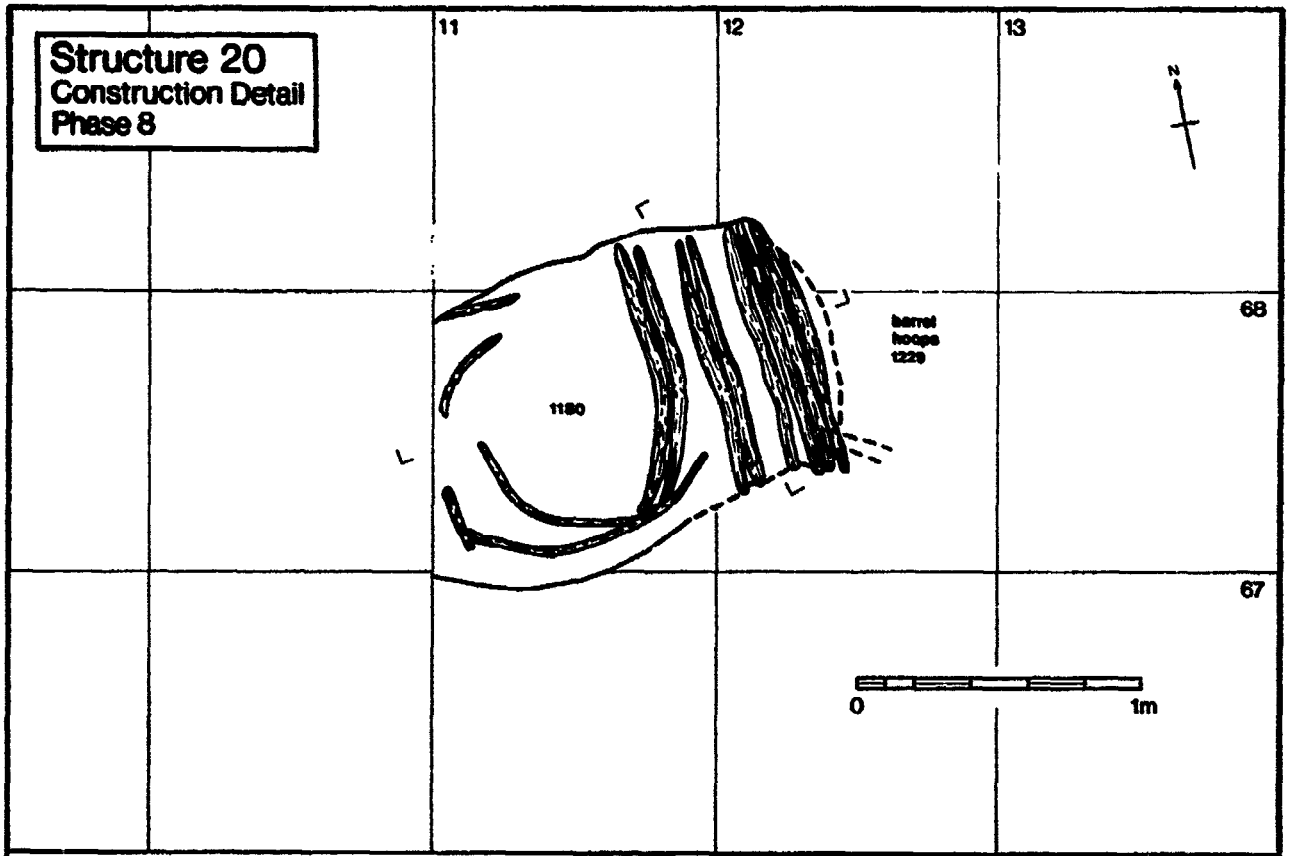


Section

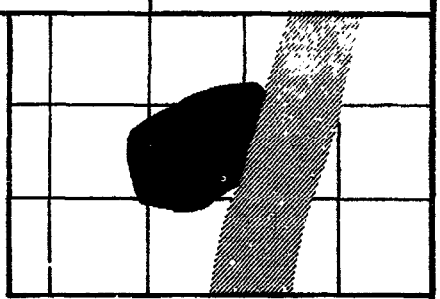


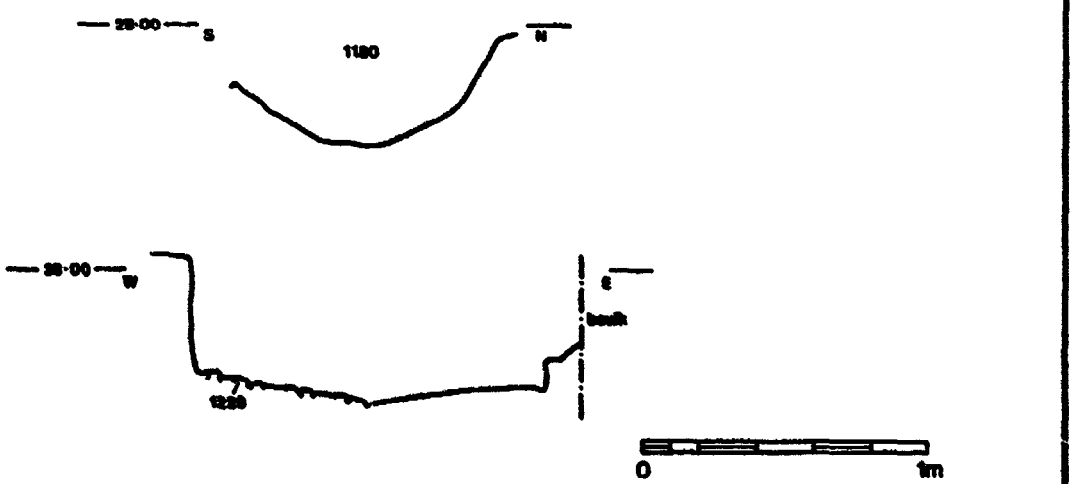


Structure 20
Construction Detail
Phase 8

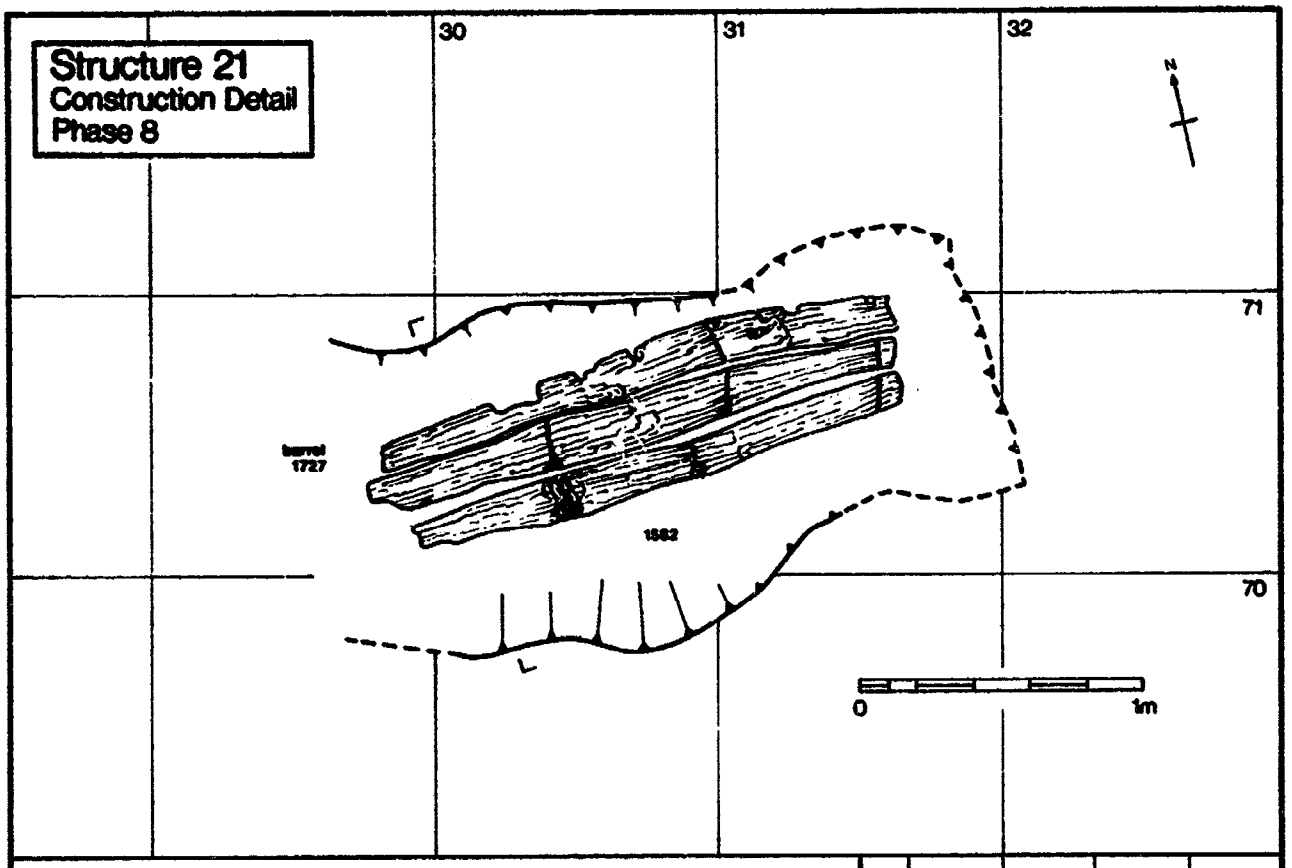


Profiles

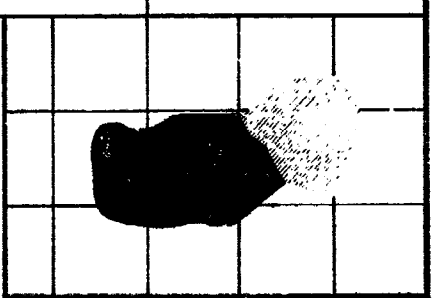


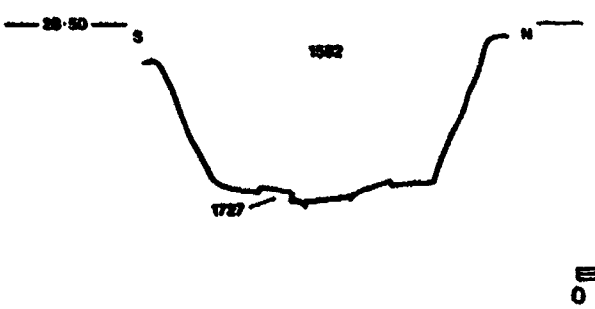


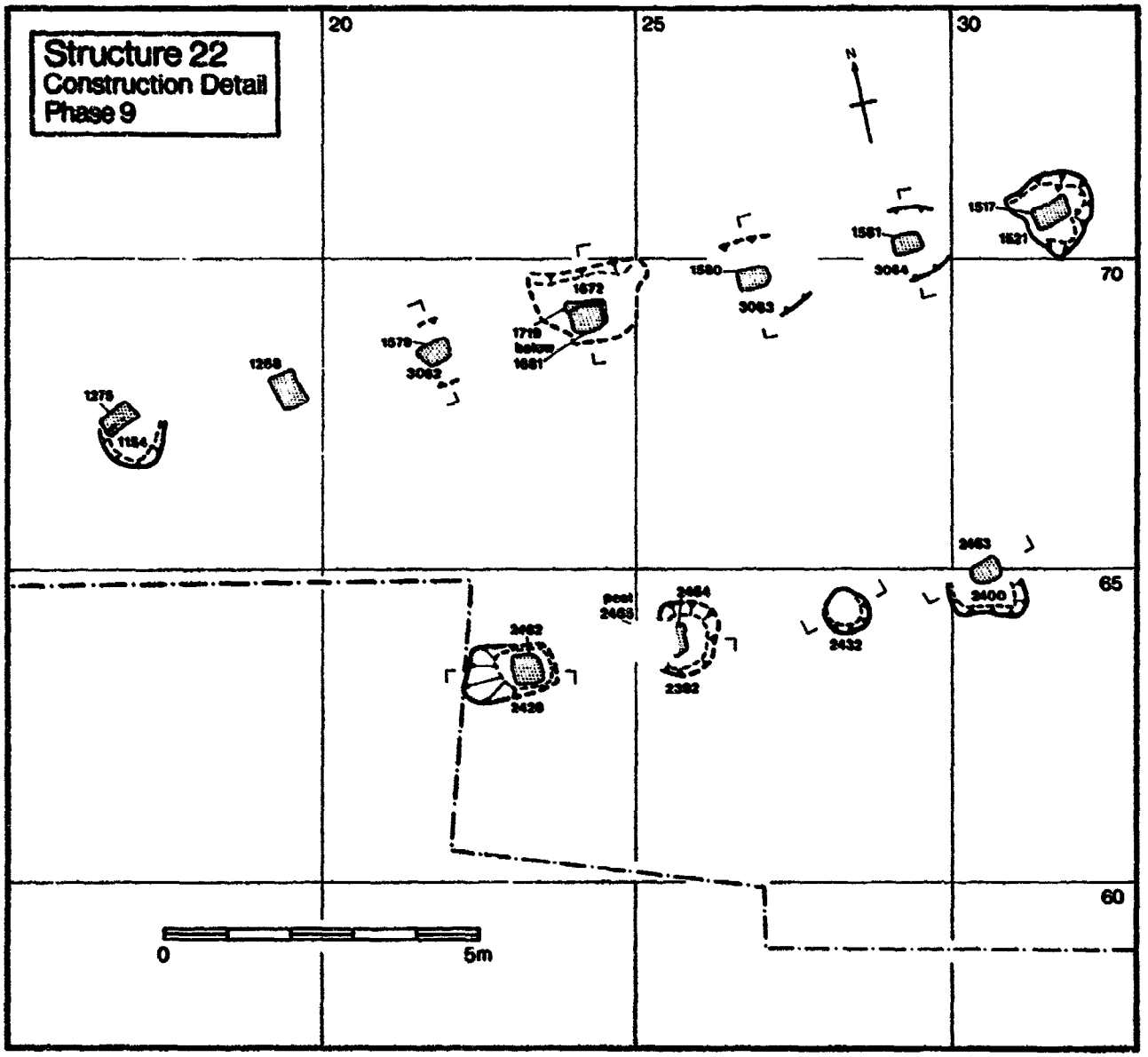
Structure 21
Construction Detail
Phase 8

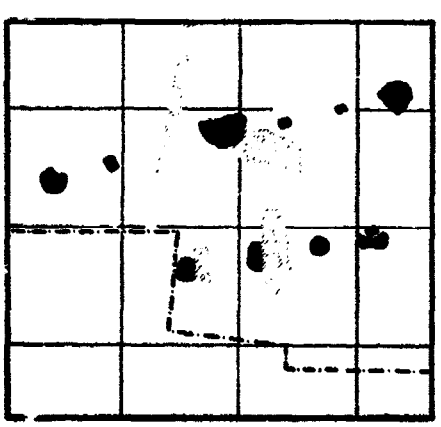


Profile

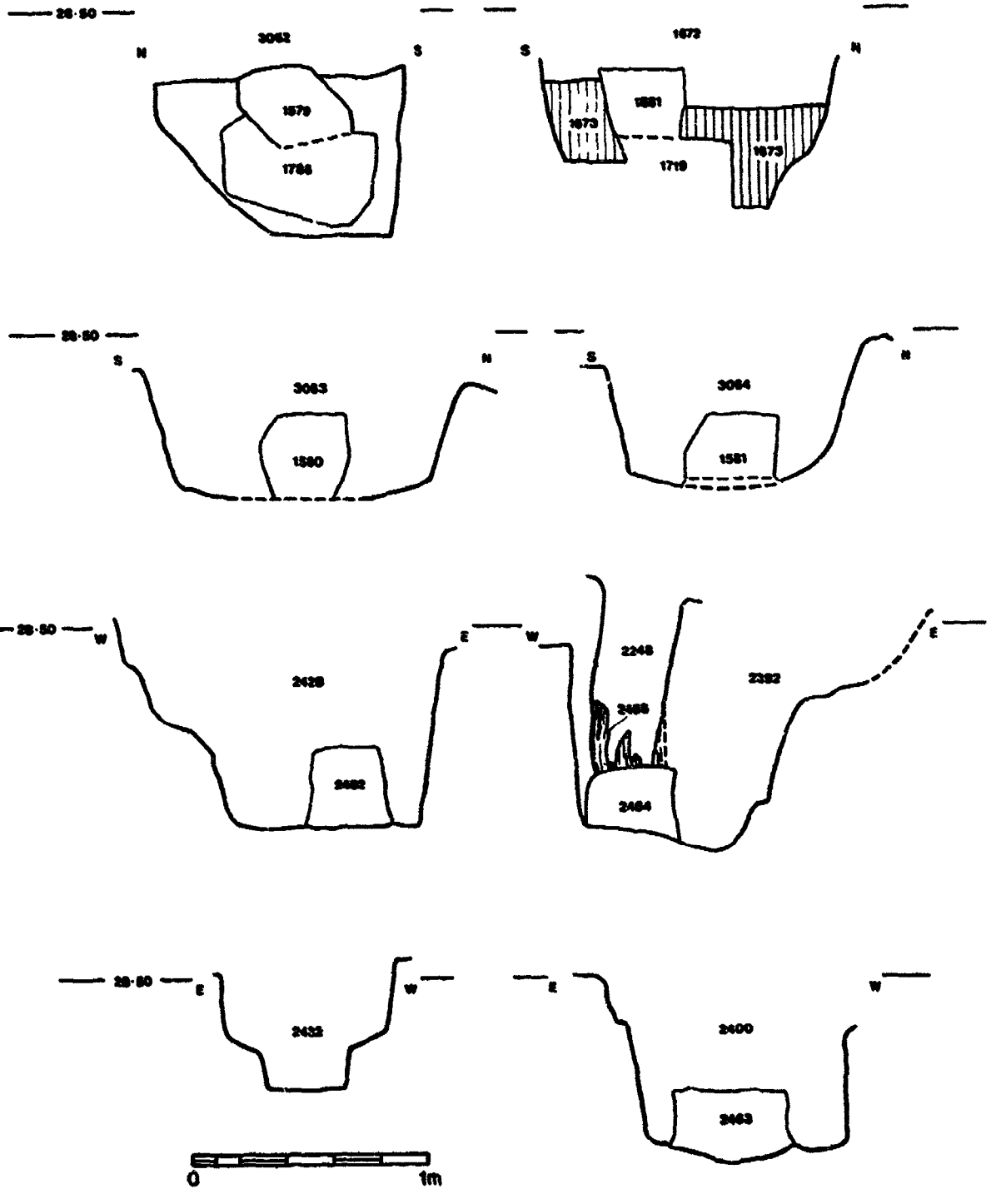


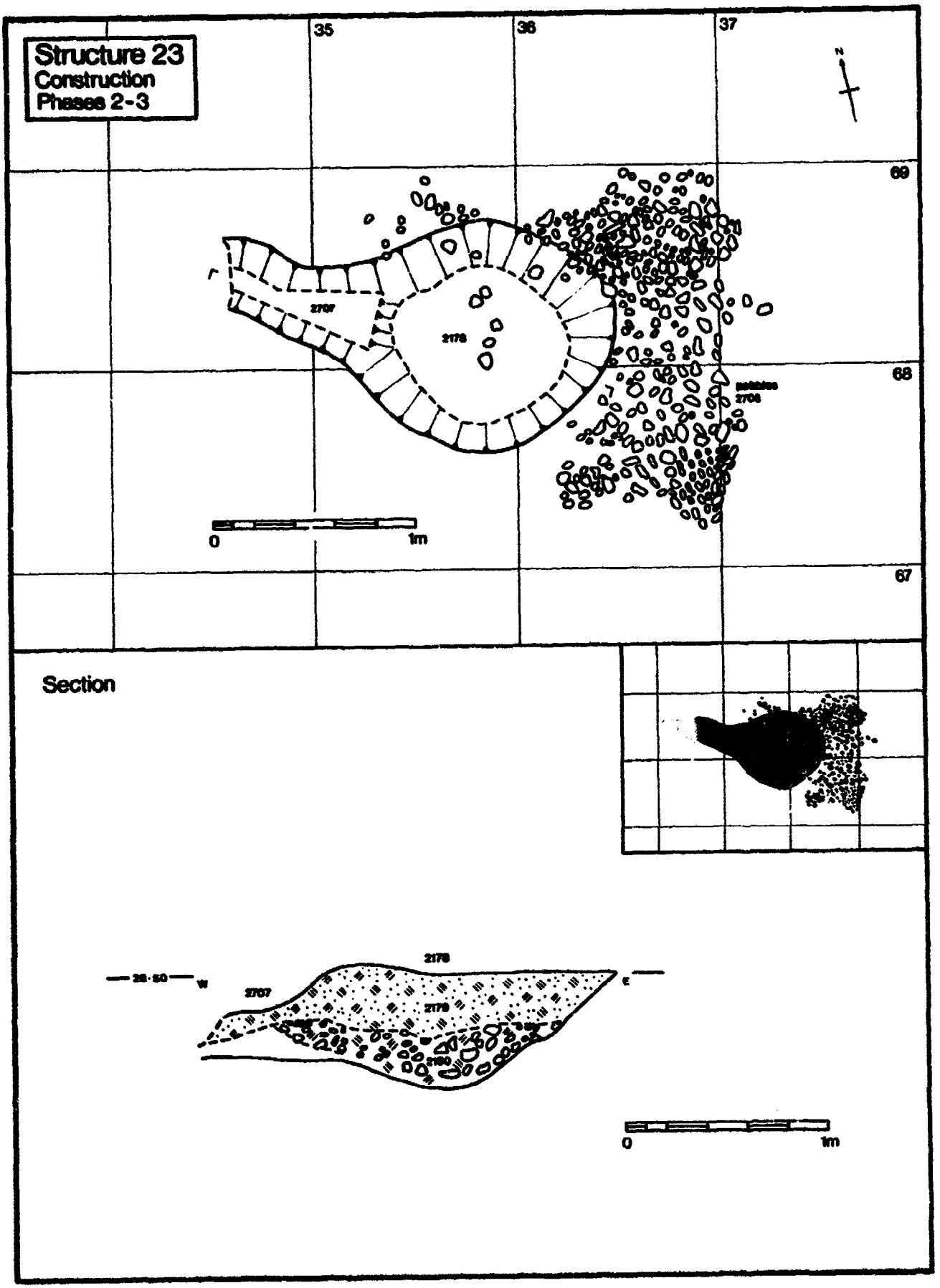



Structure 22
Construction Detail
Phase 9
20
25
30
70
65
60
N
1517
1621
1581
3064
1580
3063
1672
1579
3062
1718
below
1681
1268
1275
1154
3483
3400
2464
post
2463
2432
2382
2462
2439
0
5m

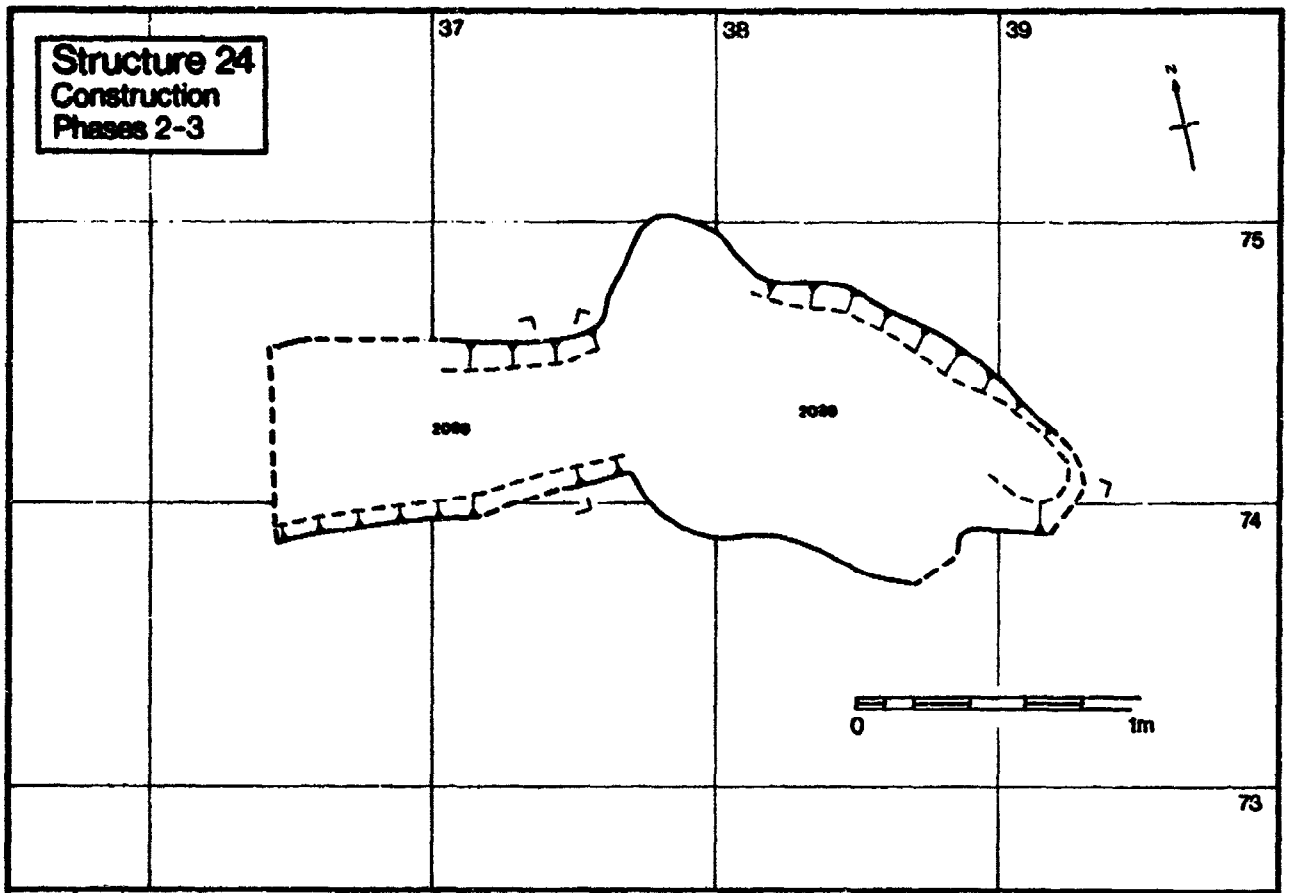


Structure 22
Sections

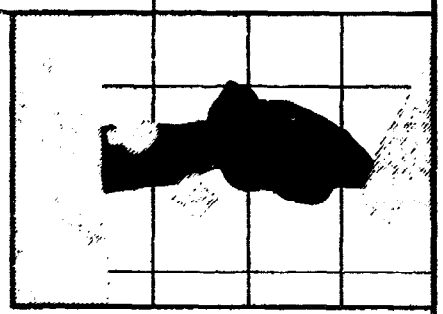


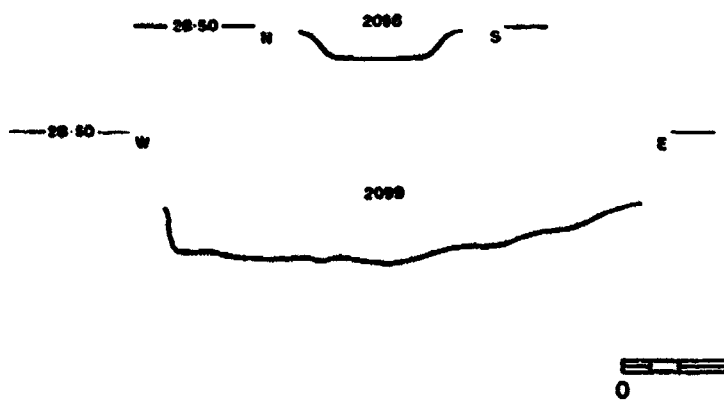

Structure 23
Construction
Phases 2-3
35
36
37
69
68
67
N
2707
2178
2704
0
1m
Section
2178
2707
2179
2180
0
1m

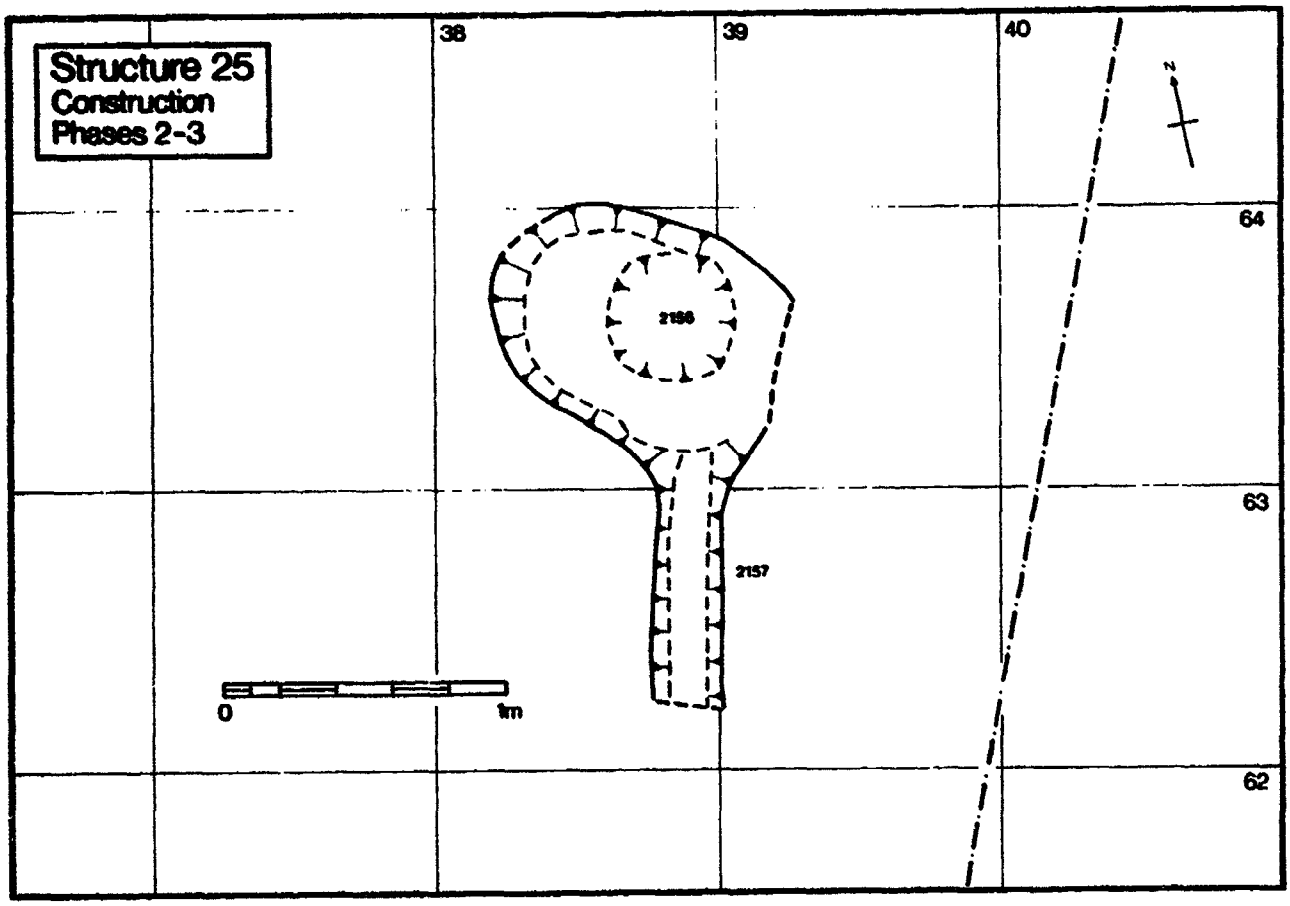
Structure 24
Construction
Phases 2-3

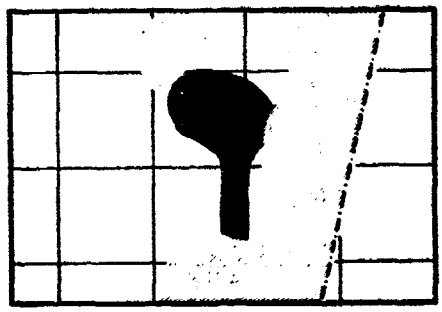


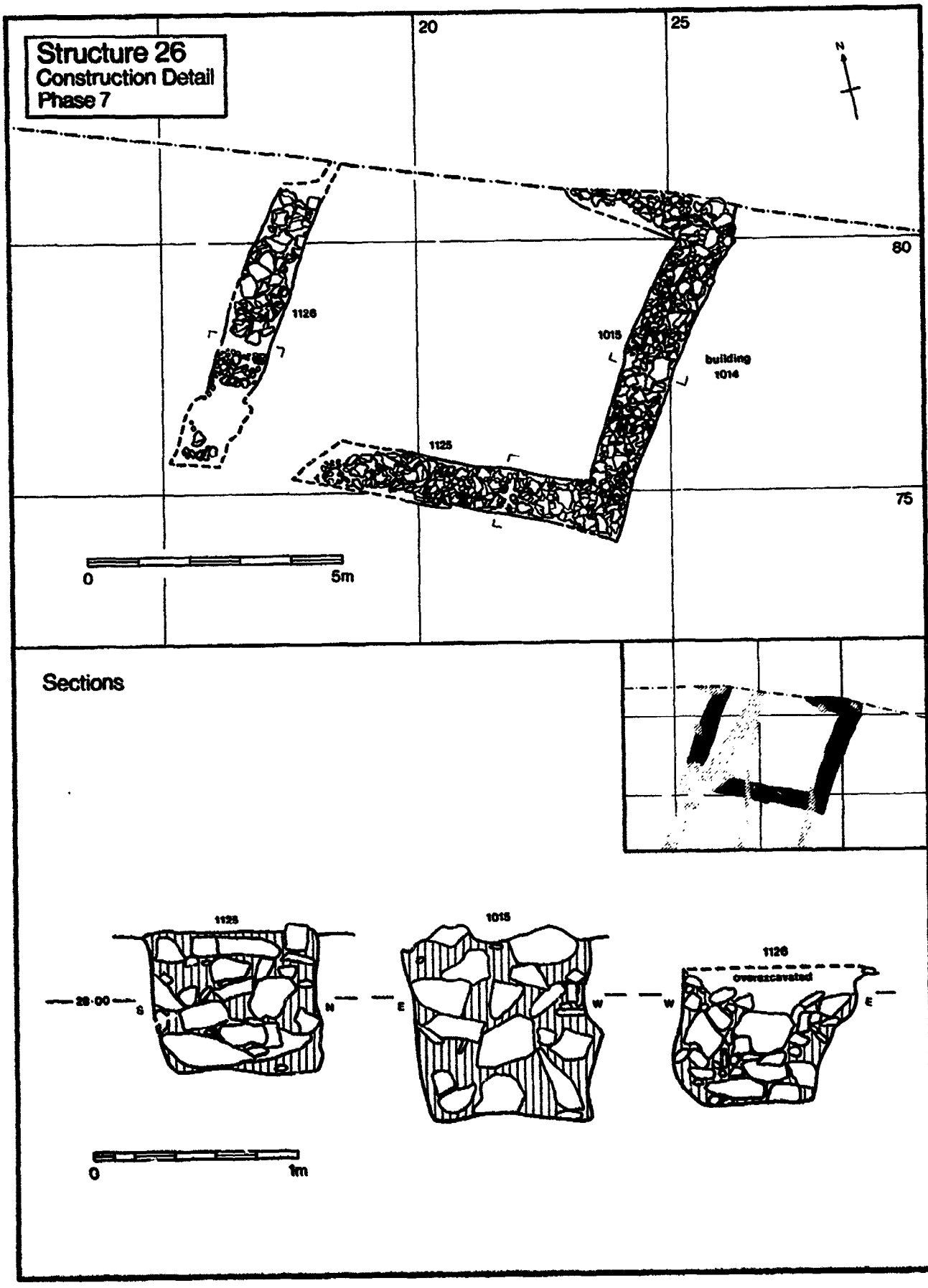
Profiles

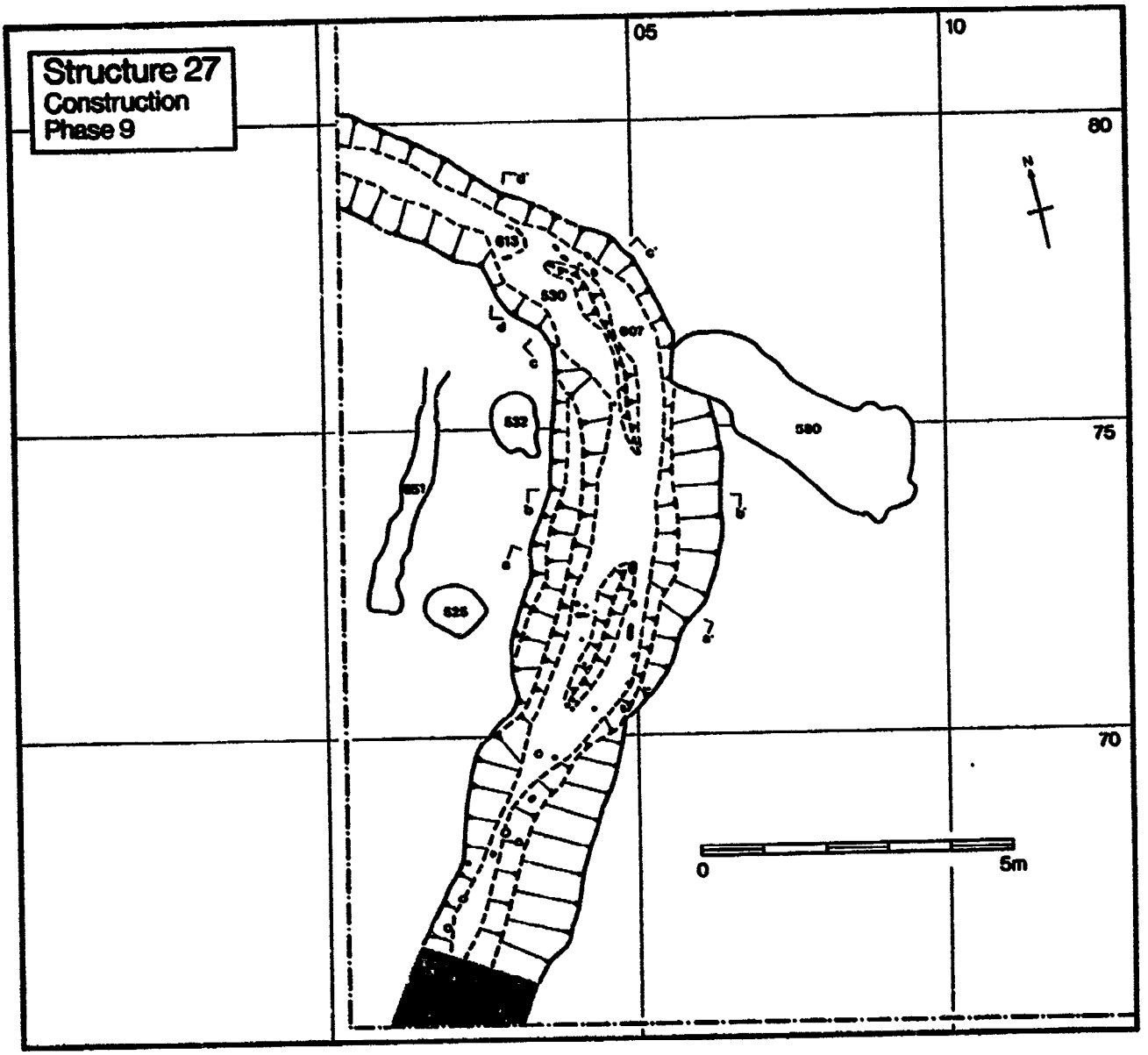


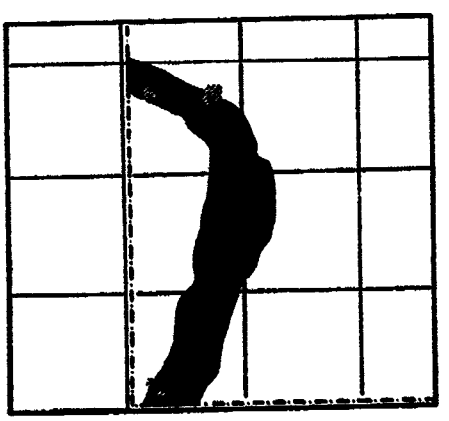



Structure 25
Construction
Phases 2-3
38
39
40
64
63
62
2156
2157
0
1m
N

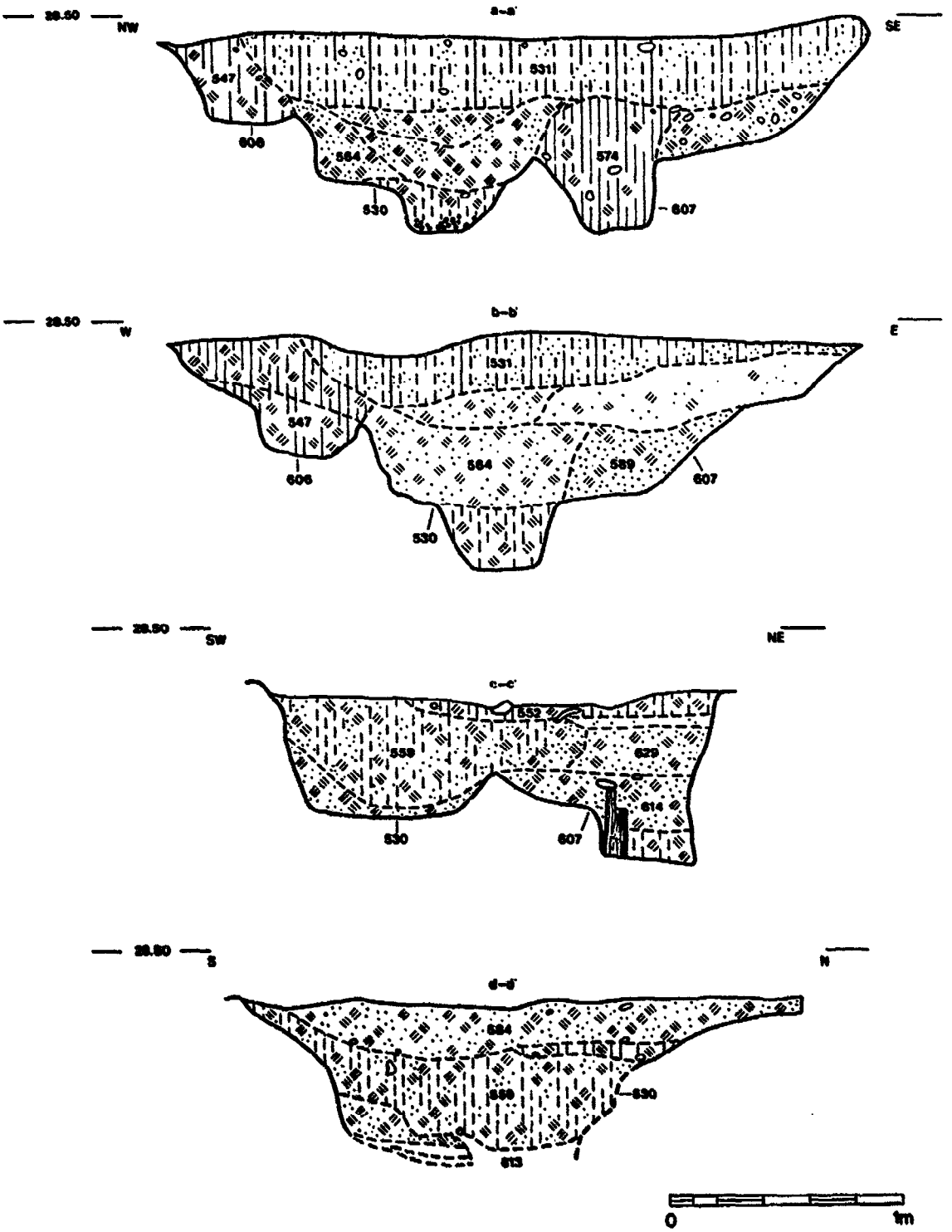



Structure 26
Construction Detail
Phase 7
20
25
80
75
N
1126
1015
building
1014
1125
0
5m
Sections
1125
1015
1126
overexcavated
28·00
S
N
E
W
W
E
0
1m


Structure 27
Construction
Phase 9
05
10
80
75
70
N
613
630
607
632
580
631
625
0
5m



Structure 27
Sections



Structure 28
Construction
Phases 6-7

05

10

15

20

N

surface .002

1157

710

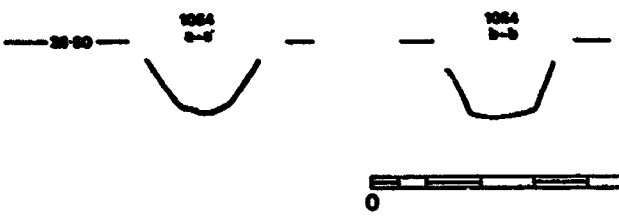
1084

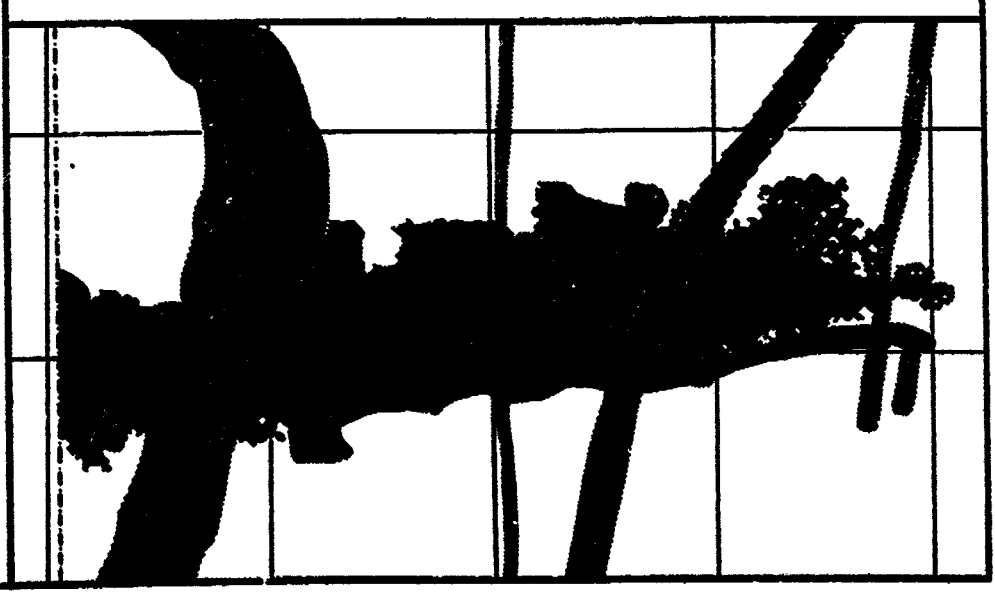
0 3m

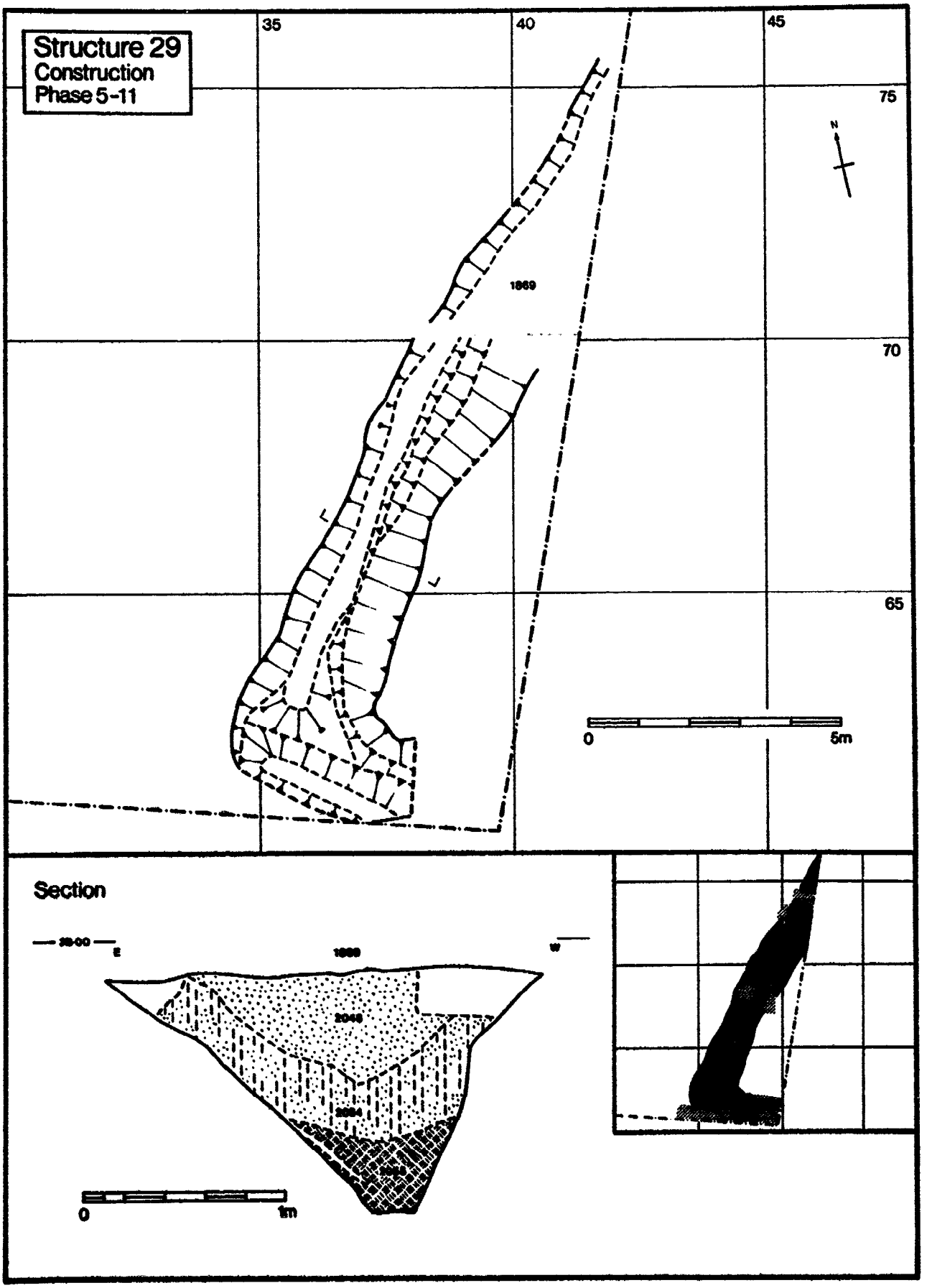
75

70

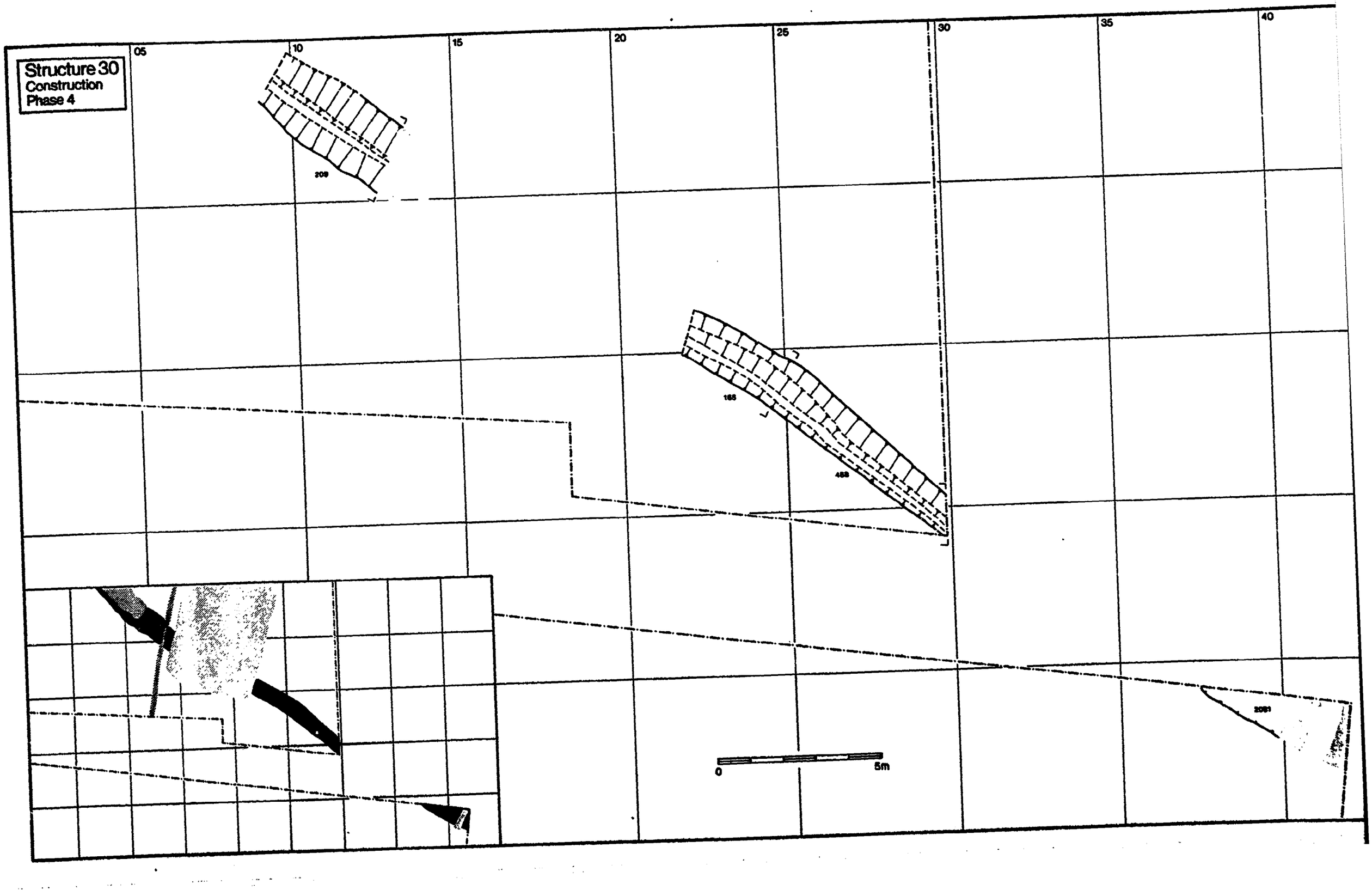
Profiles






Structure 29
Construction
Phase 5-11
35
40
45
75
70
65
N
1869
0
5m
Section
E
W
0
1m

Structure 30
Construction
Phase 4



N

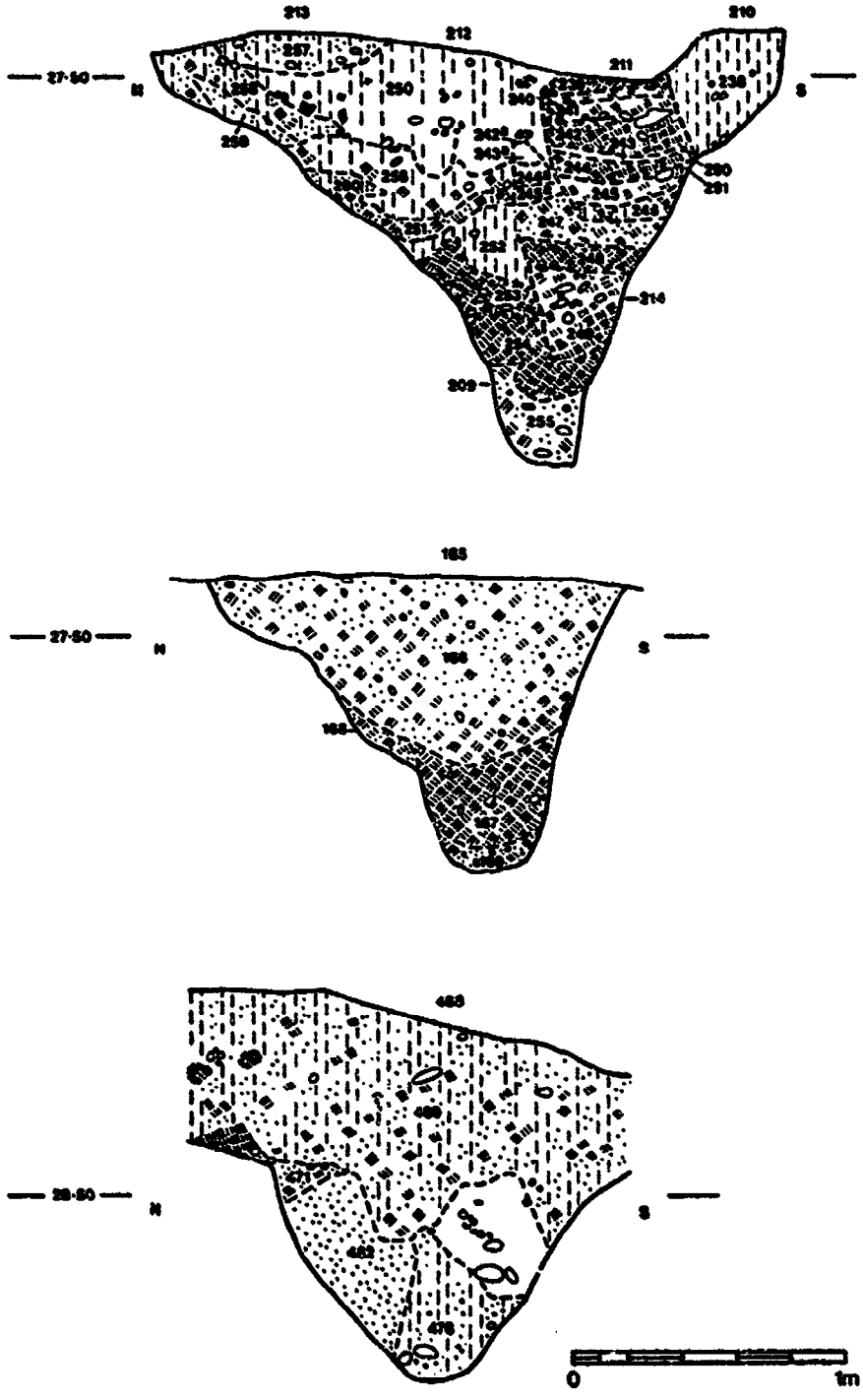
85

90

85

80

Sections



Structure 31
Construction
Phase 8

05 10 15 20 25 30 35

70

65

N

1578

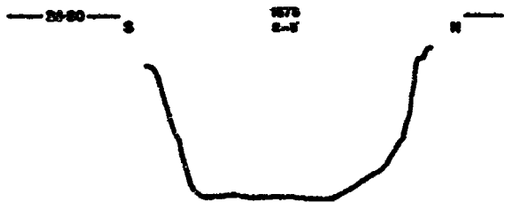
1087

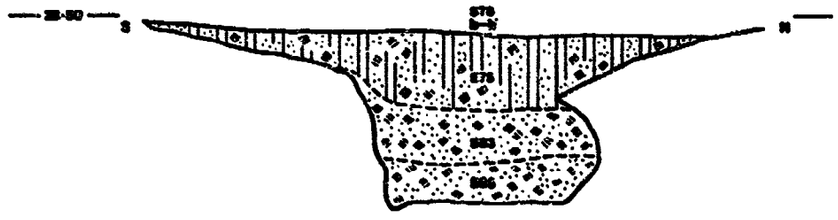
578

1578

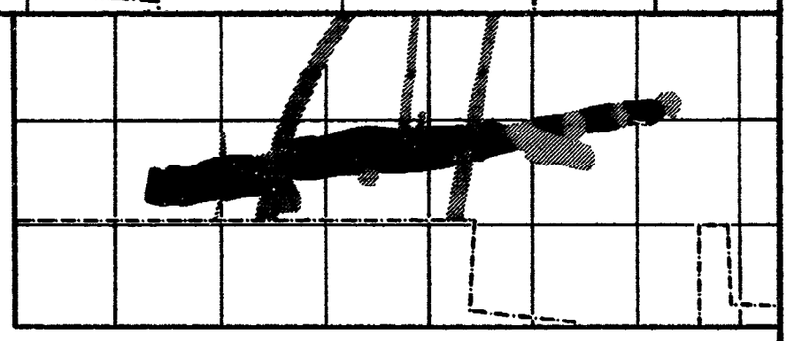
0 5m

Sections

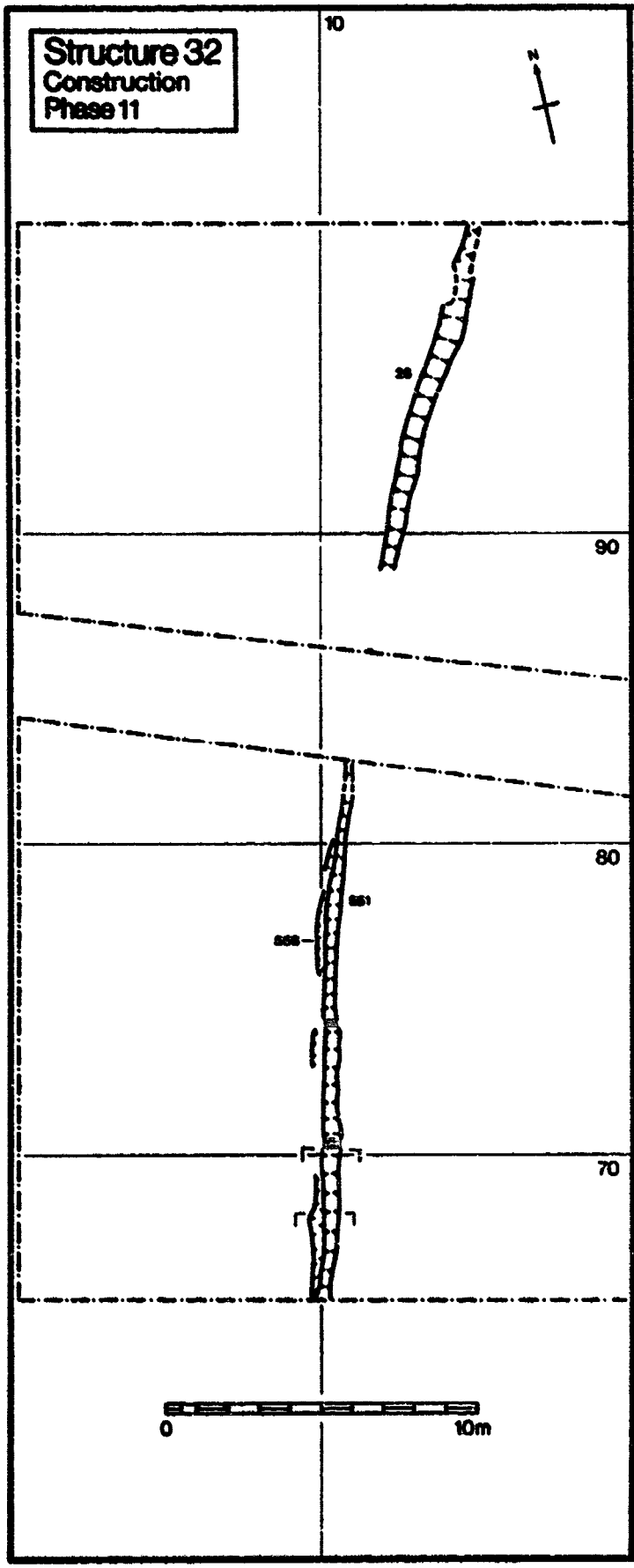




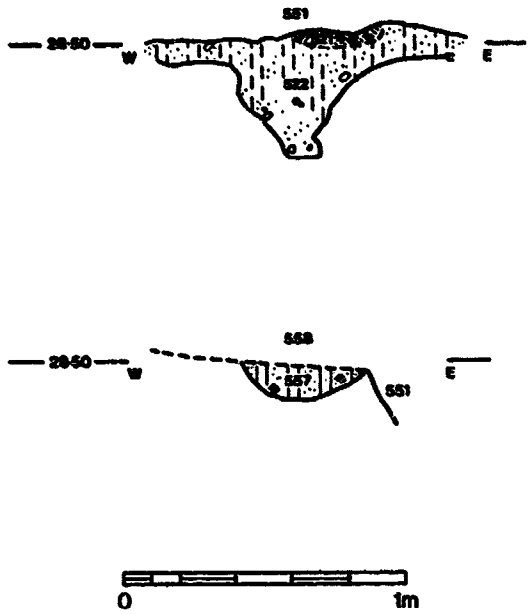
0 1m

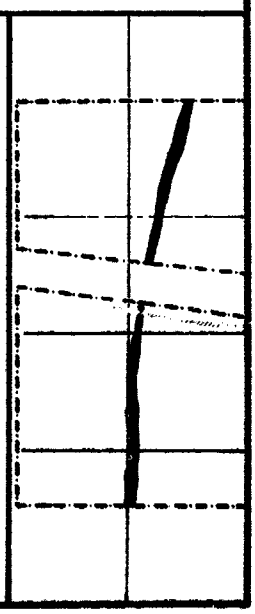


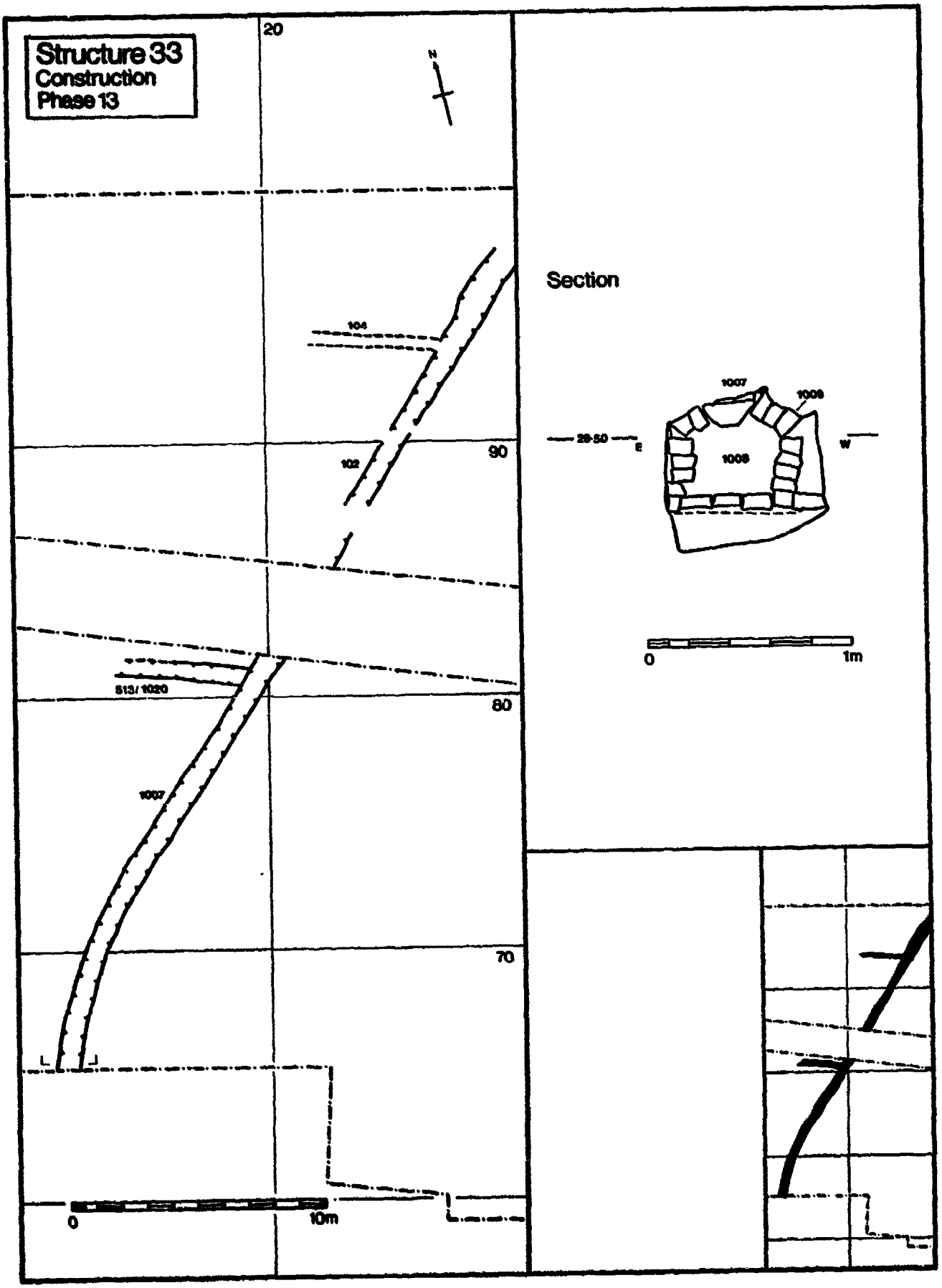
Structure 32
Construction
Phase 11



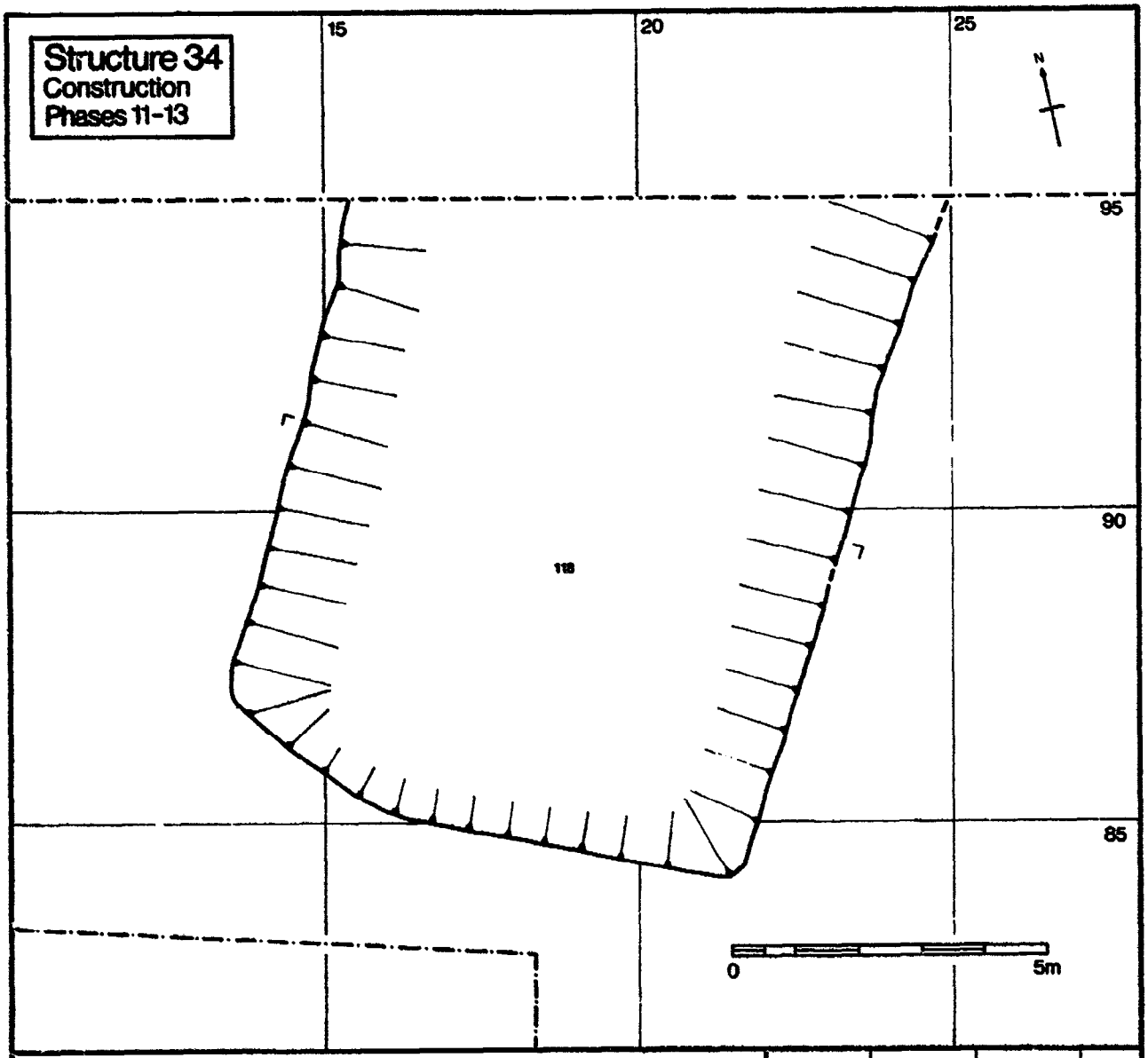
Sections



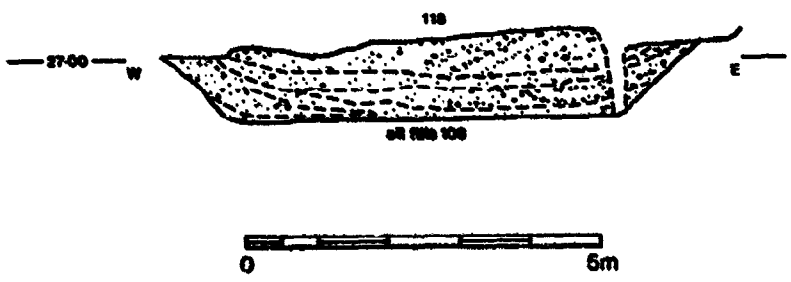


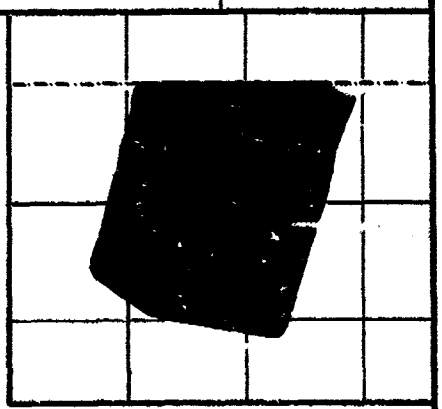

Structure 33
Construction
Phase 13
20
N
104
102
90
513/1020
80
1007
70
0
10m
Section
1007
1008
29·50
E
1008
W
0
1m

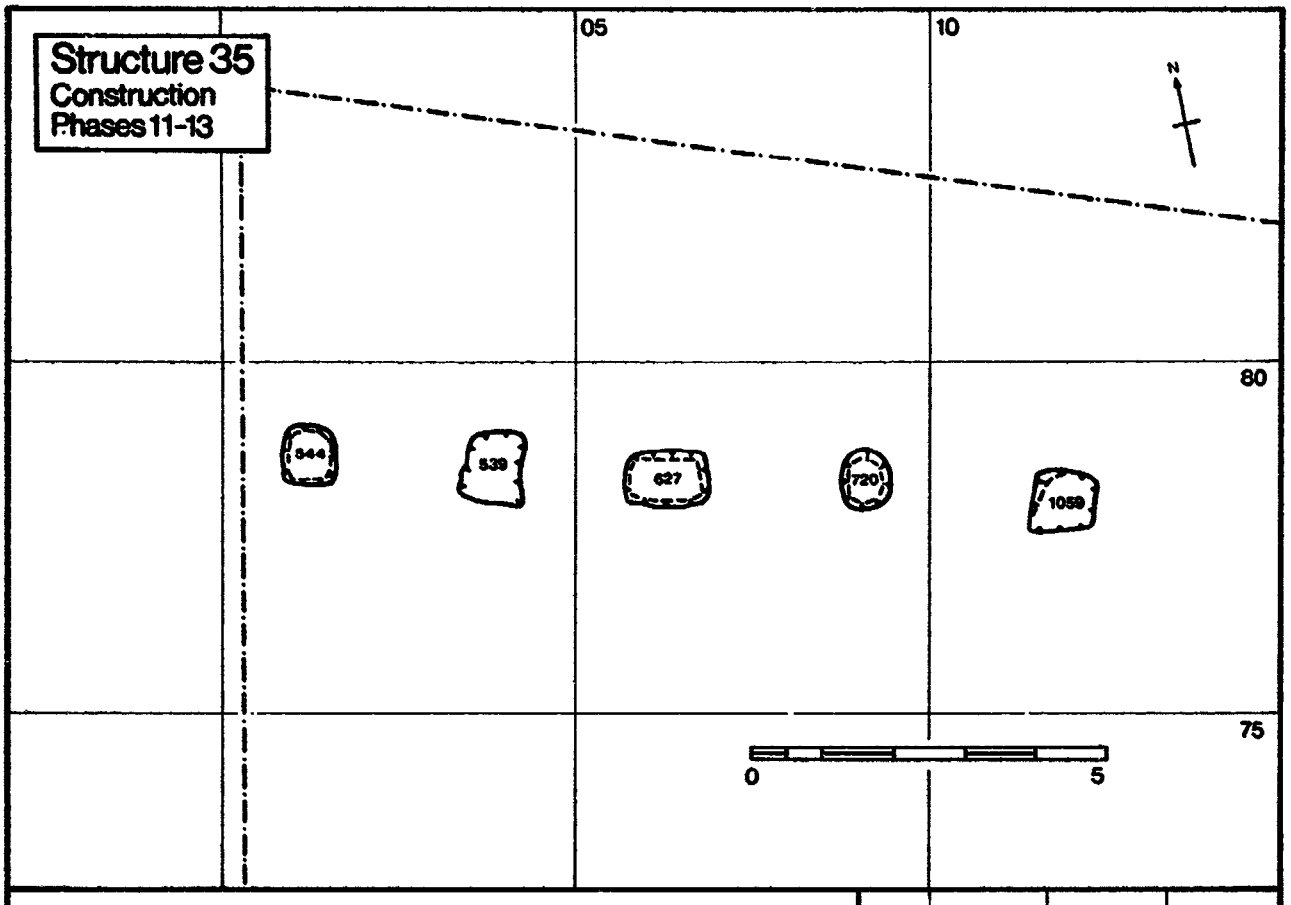
Structure 34
Construction
Phases 11-13



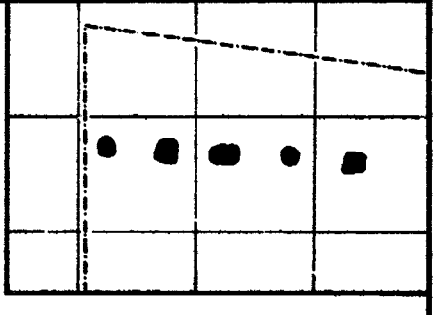
Section

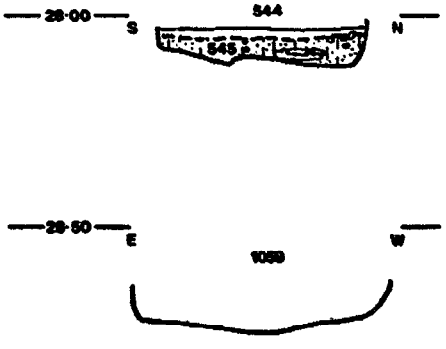





Structure 35
Construction
Phases 11-13
05
10
N
80
544
539
627
720
1059
75
0
5

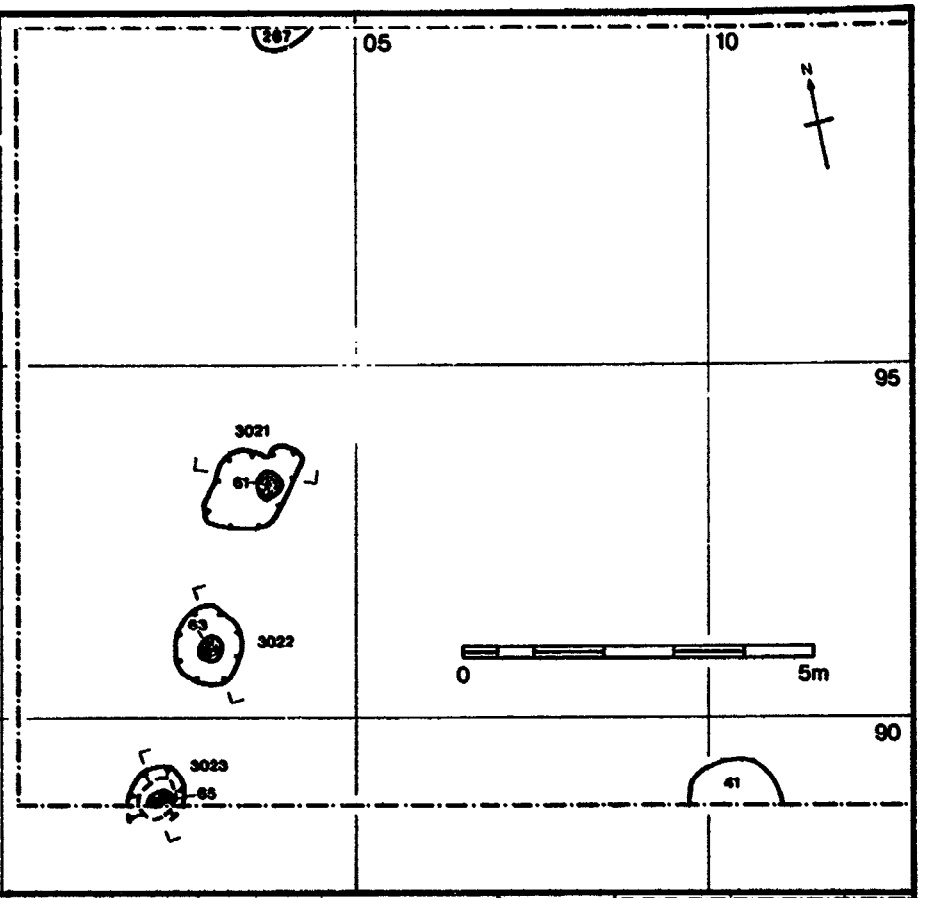
Sections



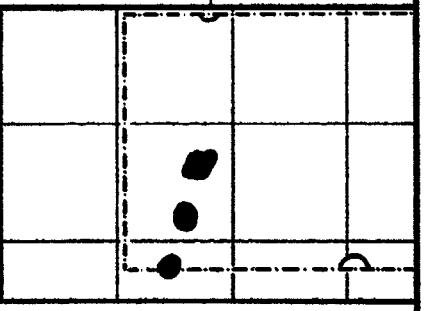

28·00
S
544
N
545
28·50
E
W
1059

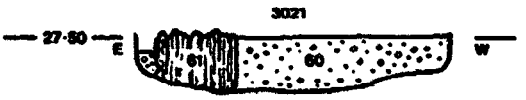

0
1m

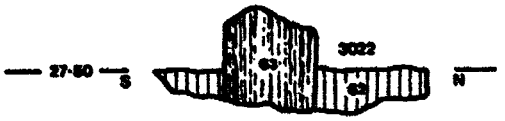
Structure 36
Construction
Phase 4

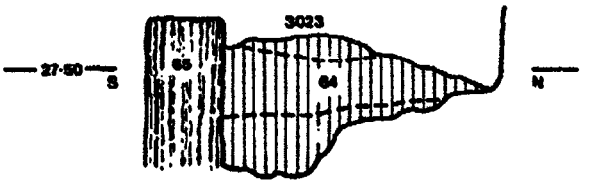


Sections



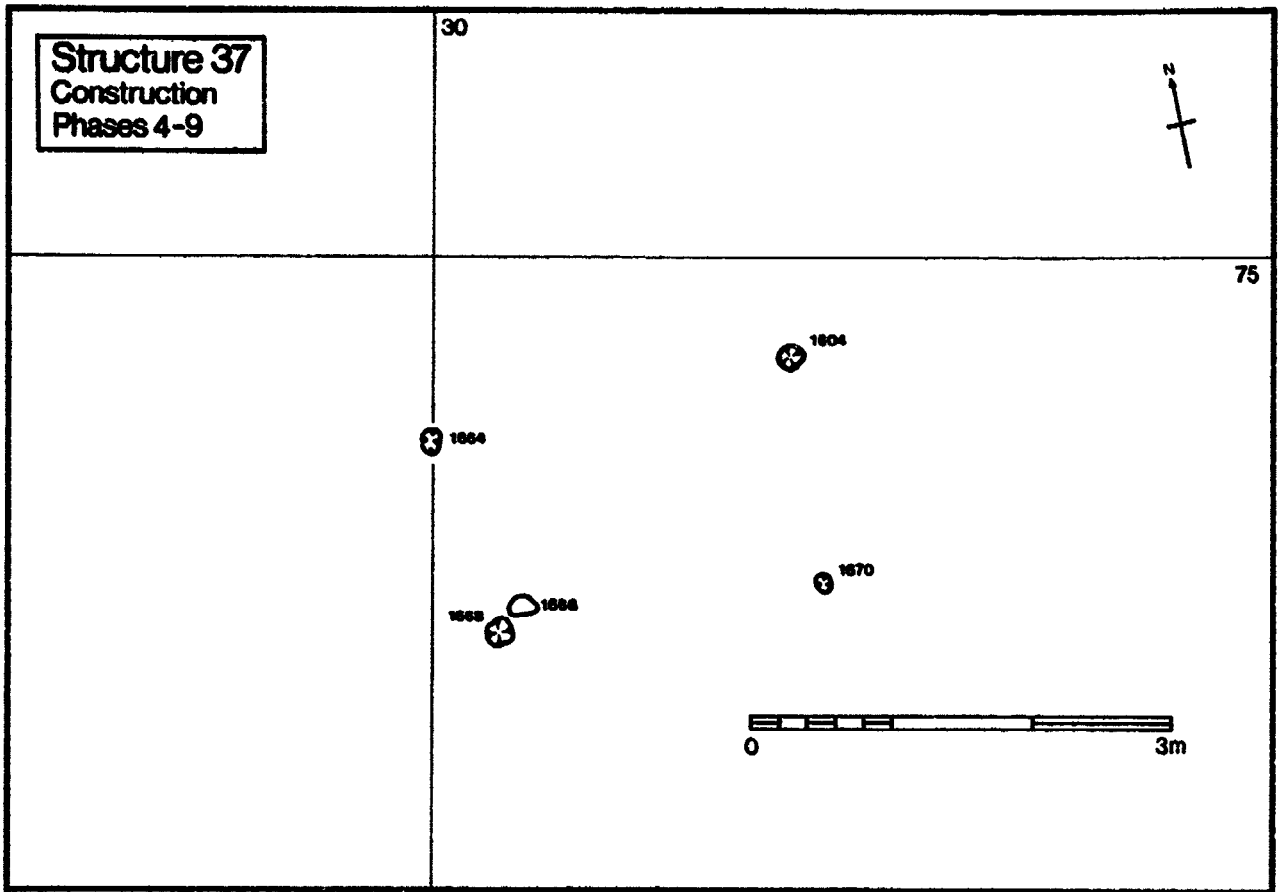




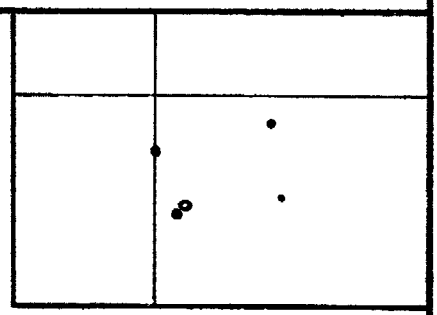


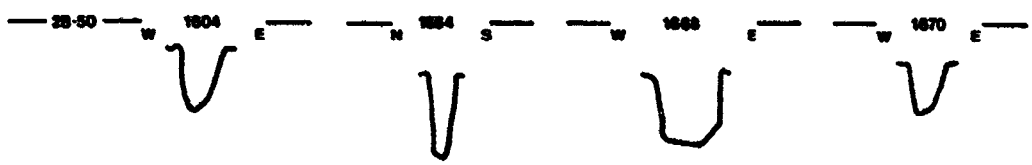
0 1m

Structure 37
Construction
Phases 4-9

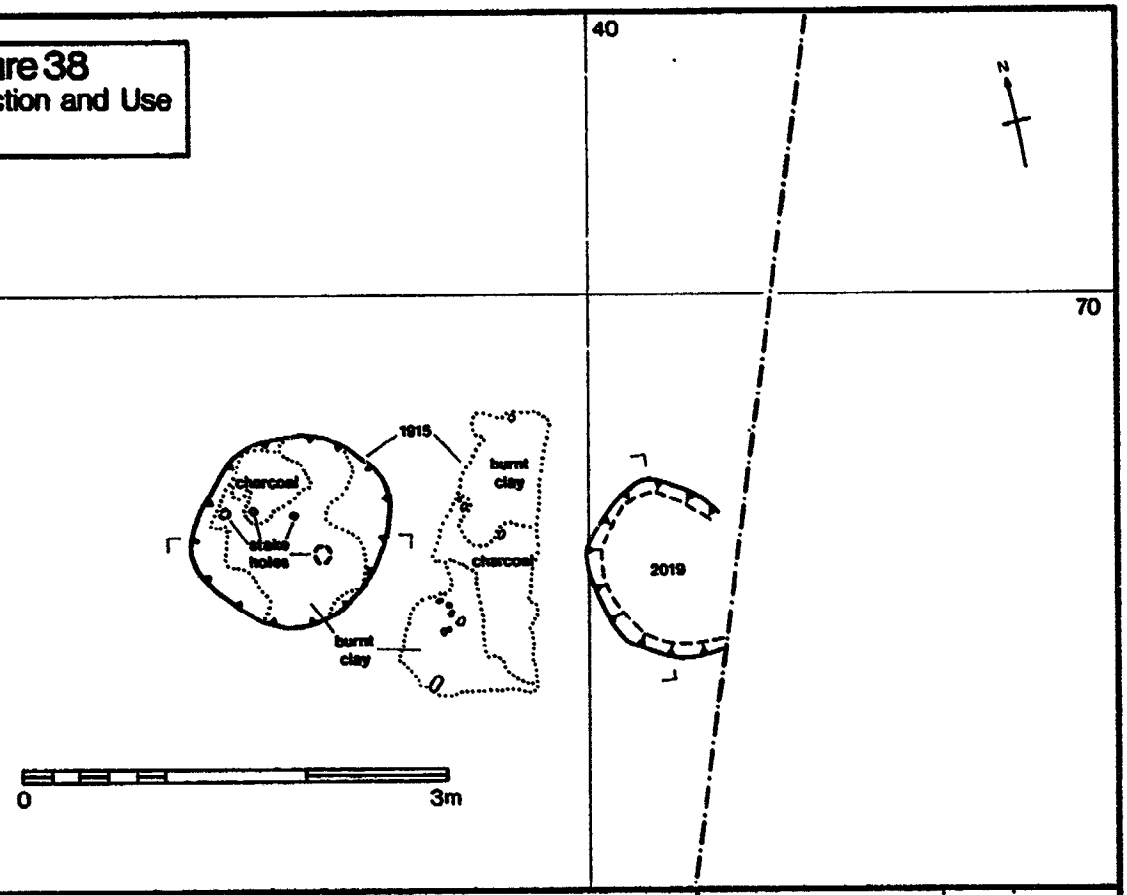


Profiles

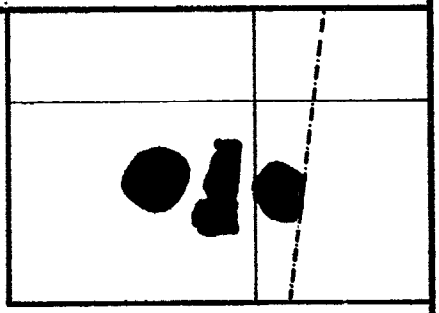


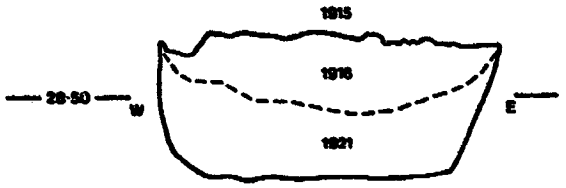


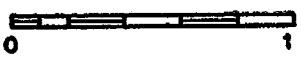
Structure 38
Construction and Use
Phase 11

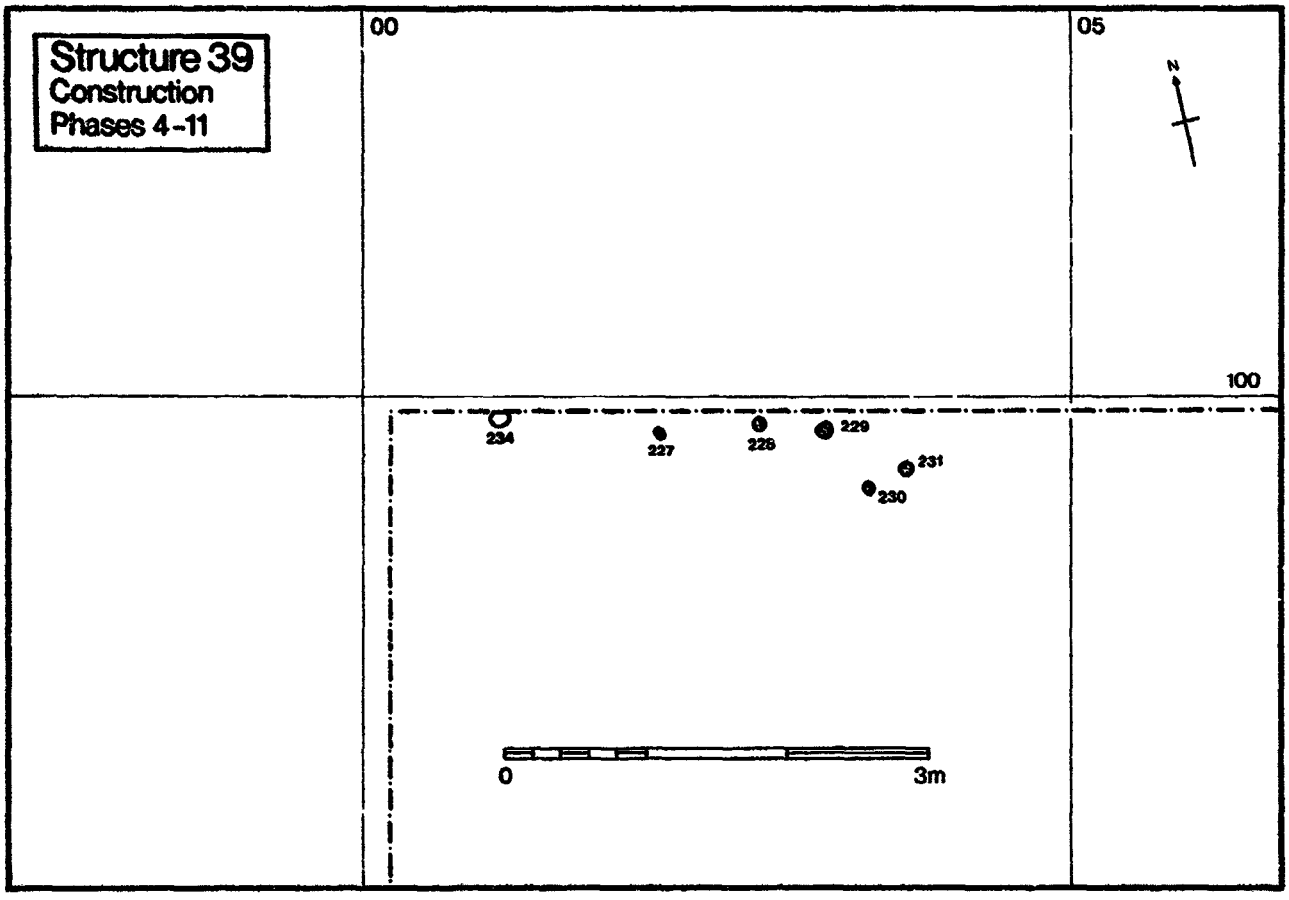


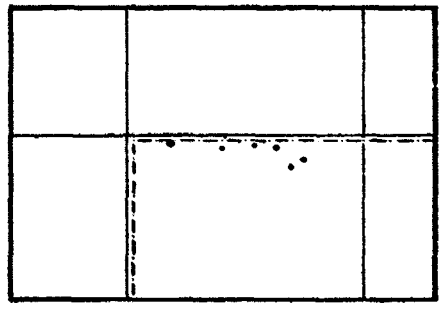
Sections







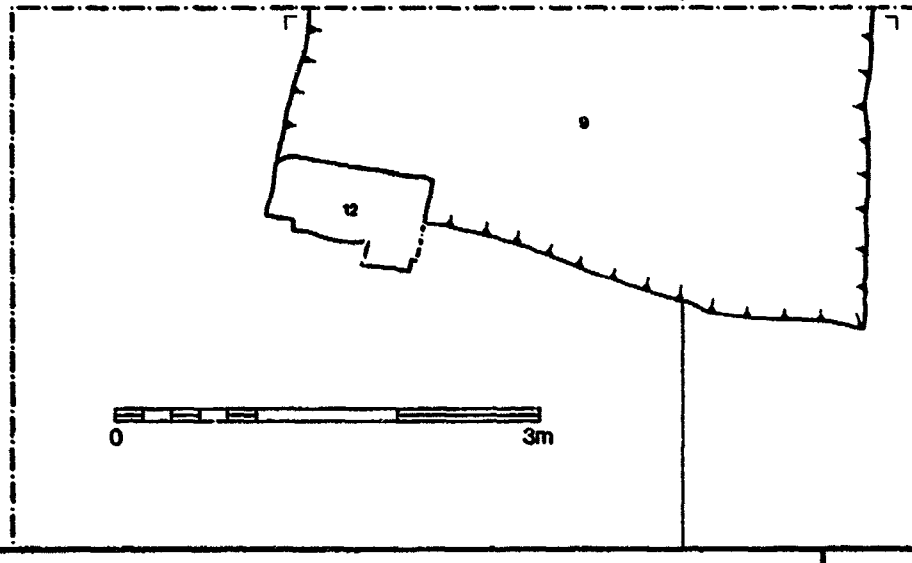

Structure 39
Construction
Phases 4-11
00
05
N
100
234
227
226
229
231
230
0
3m



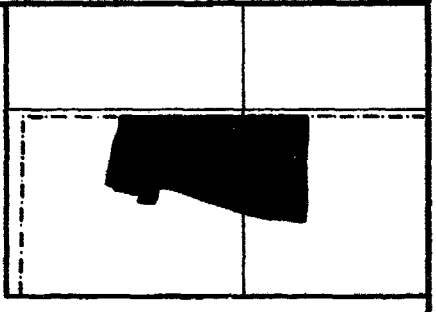
Structure 41
Construction Detail
Phase 13

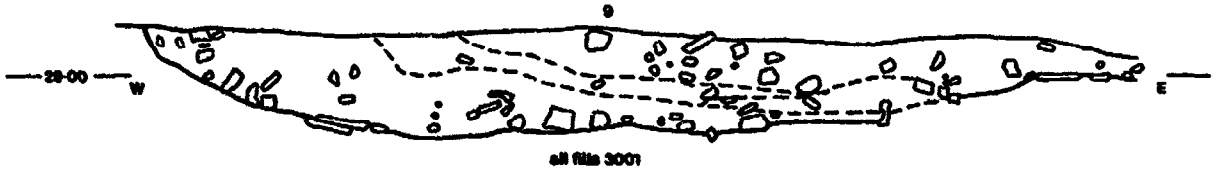
05

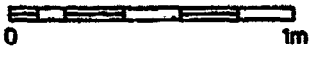
100

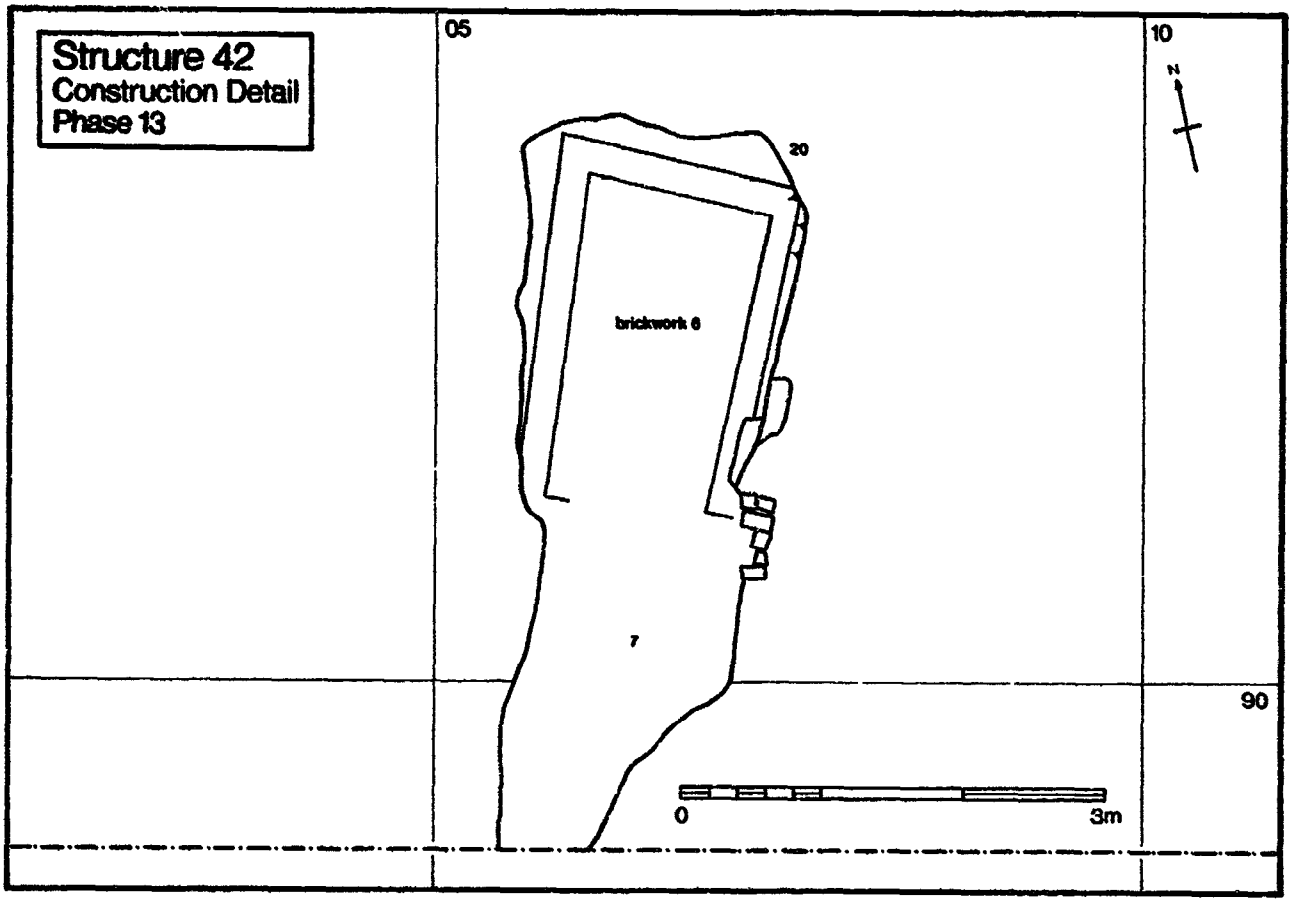


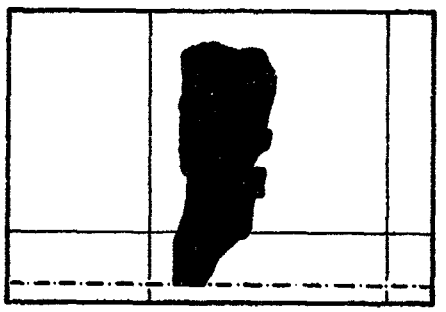
Section



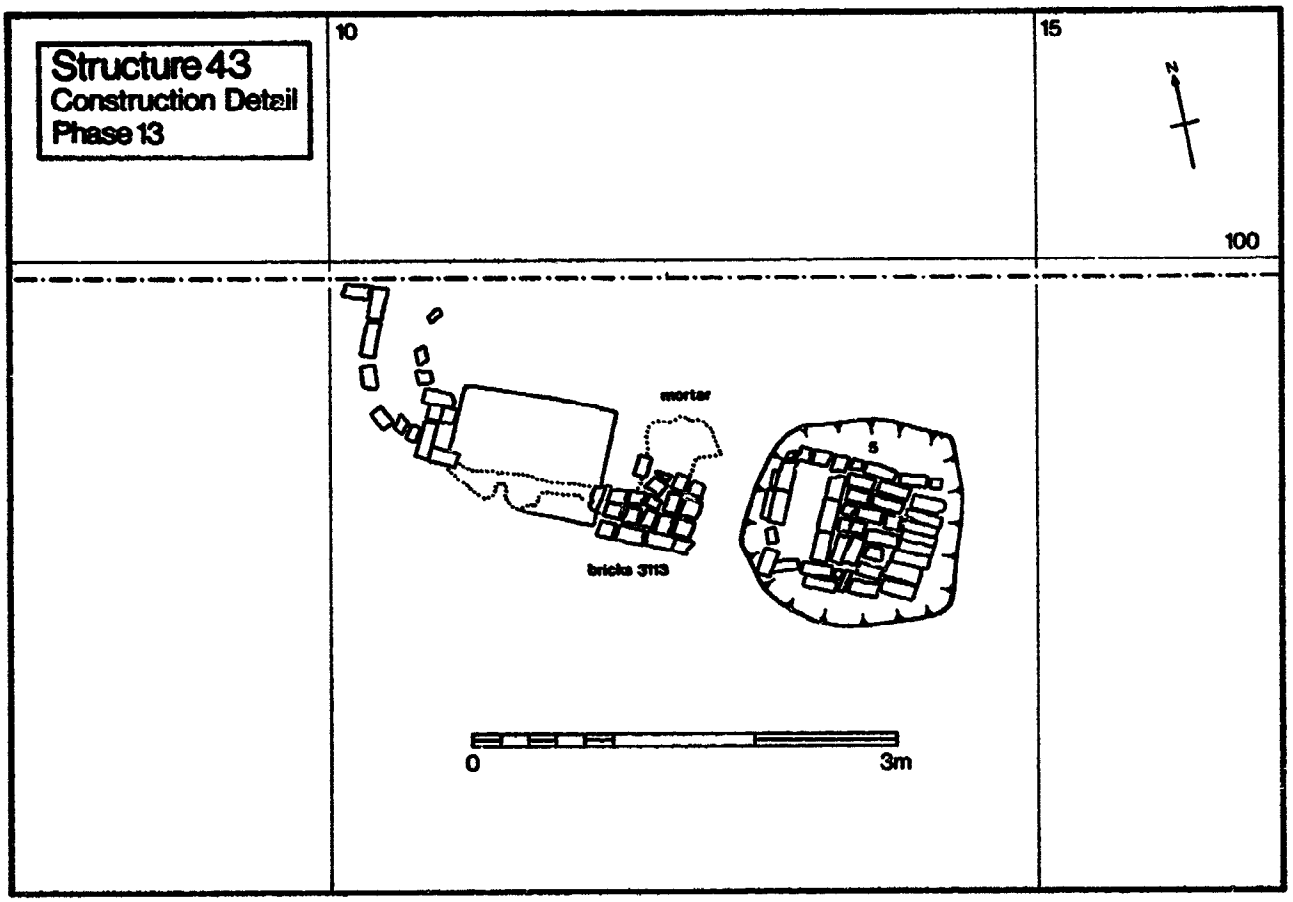


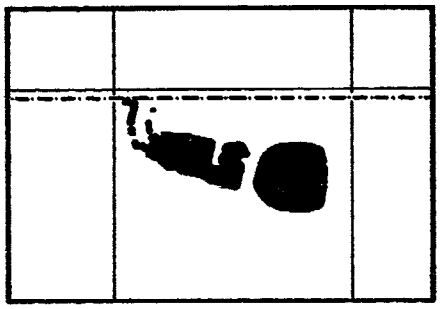



Structure 42
Construction Detail
Phase 13
05
10
N
20
brickwork 6
7
90
0
3m

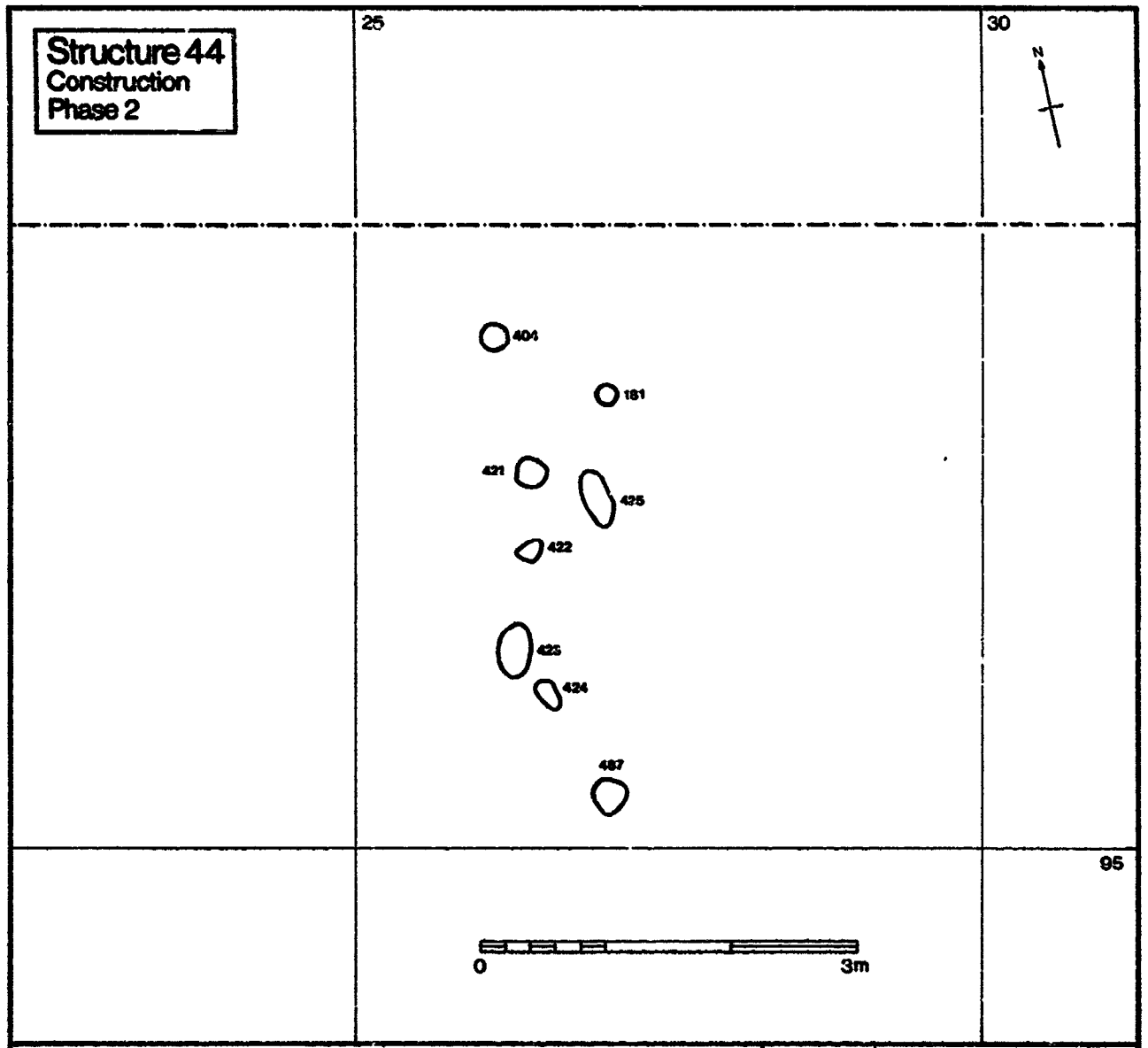


Structure 43
Construction Detail
Phase 13

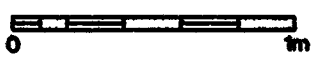


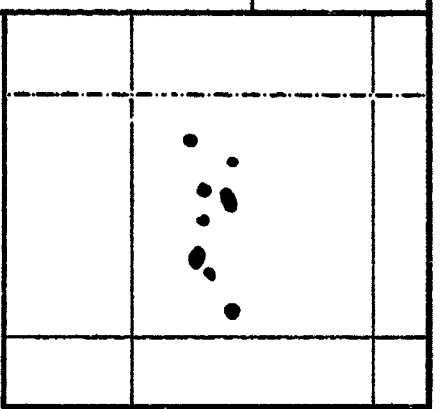


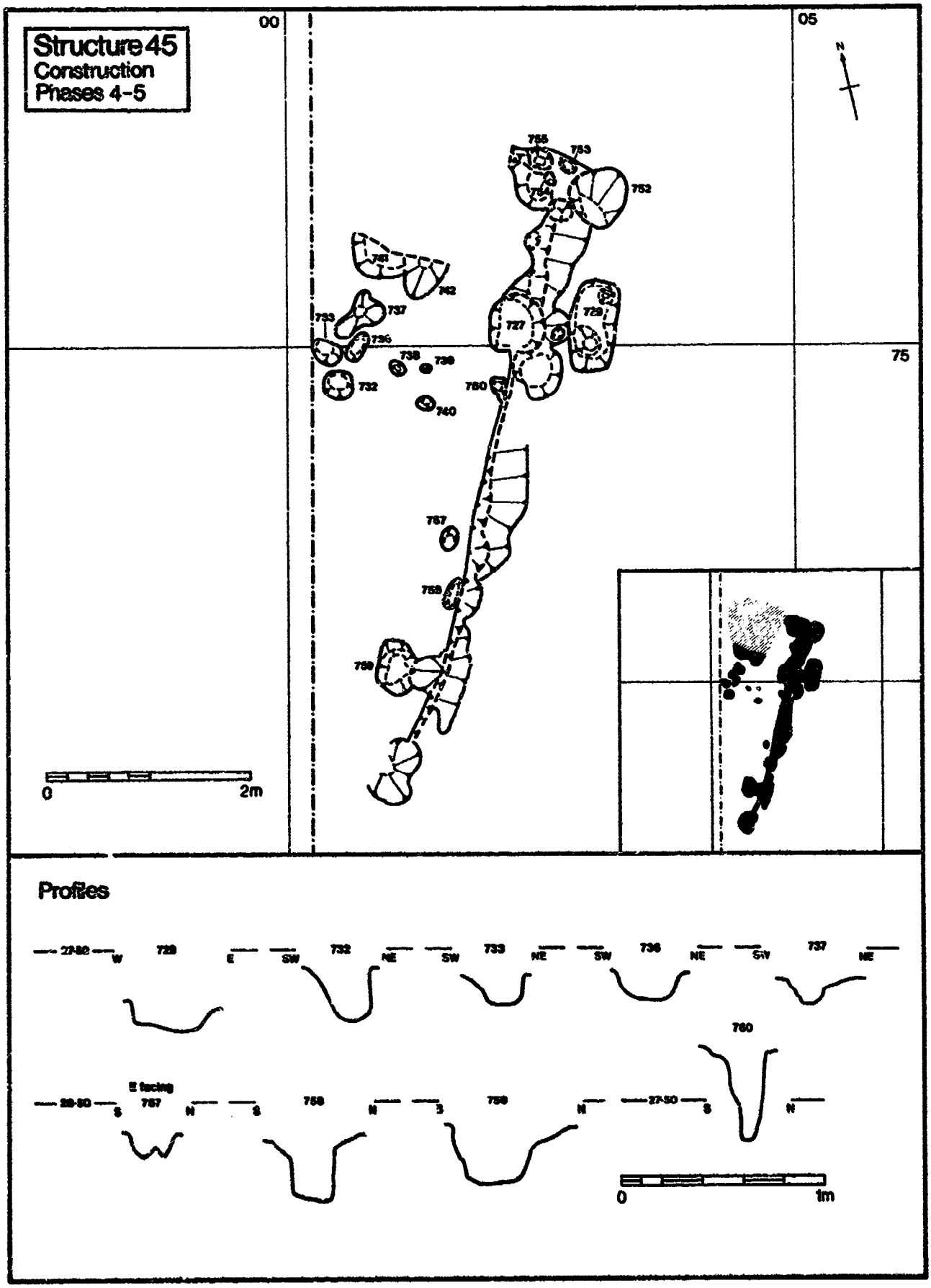
Structure 44
Construction
Phase 2

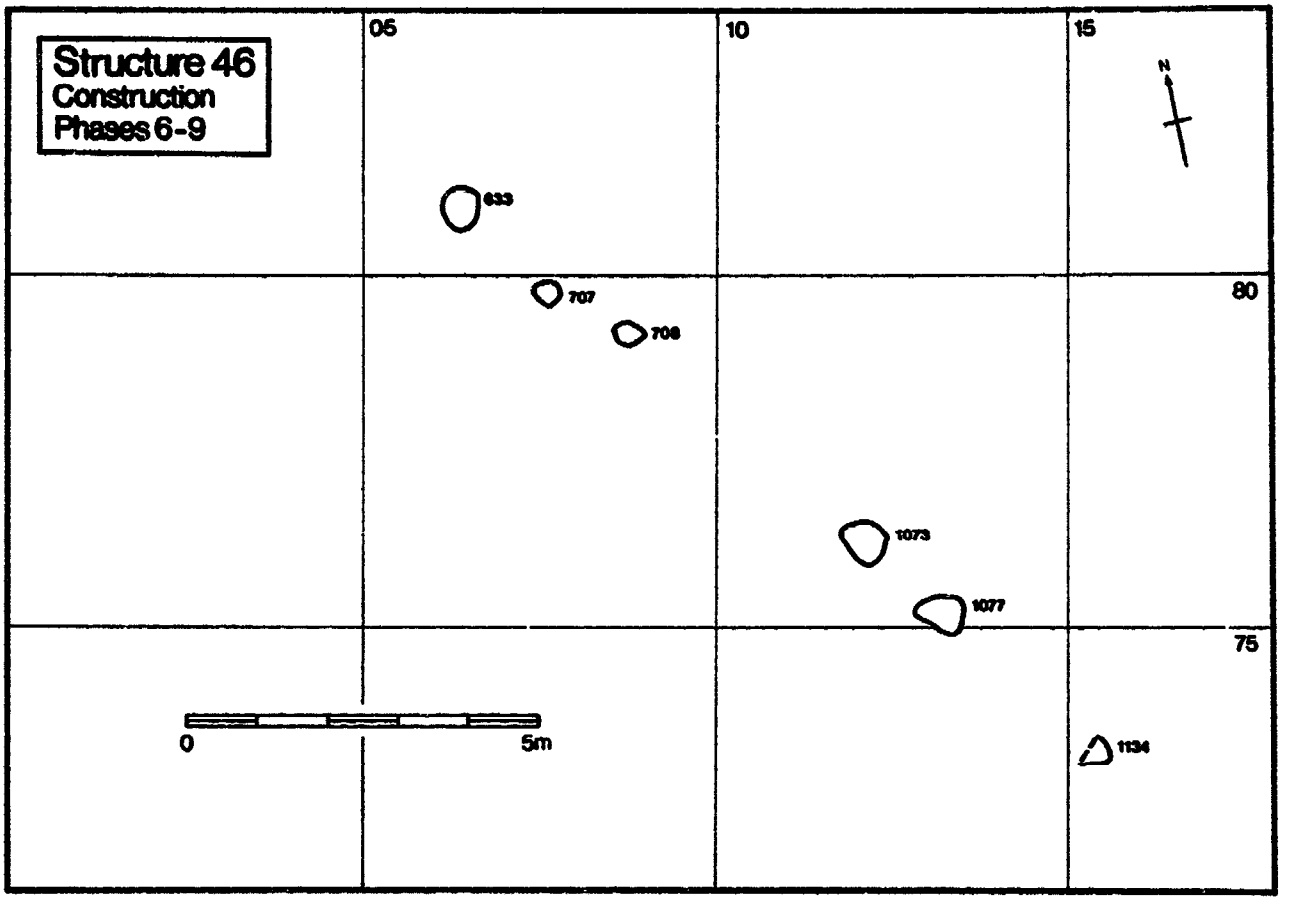


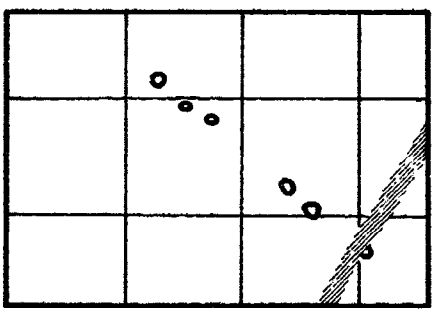
Section

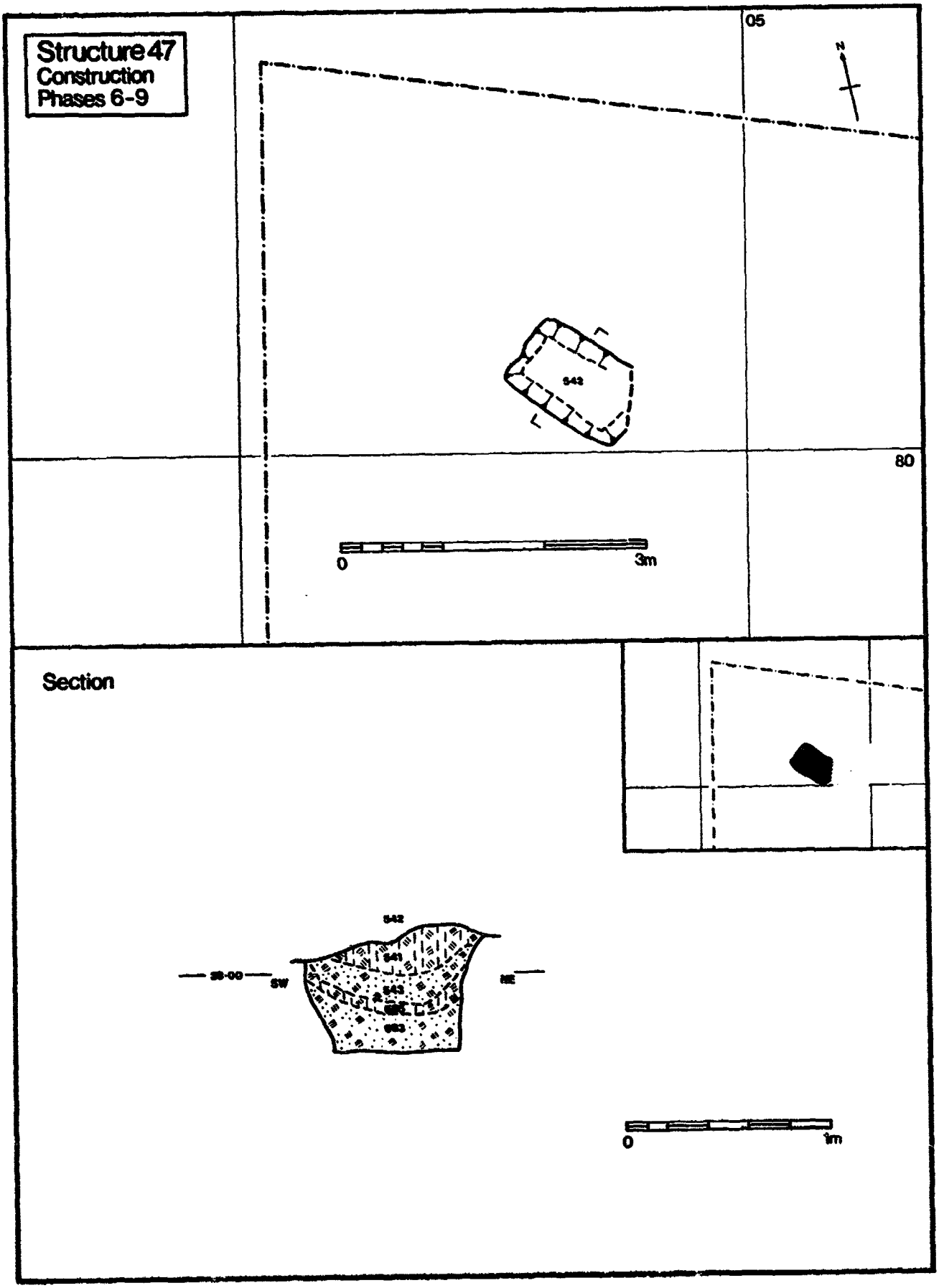




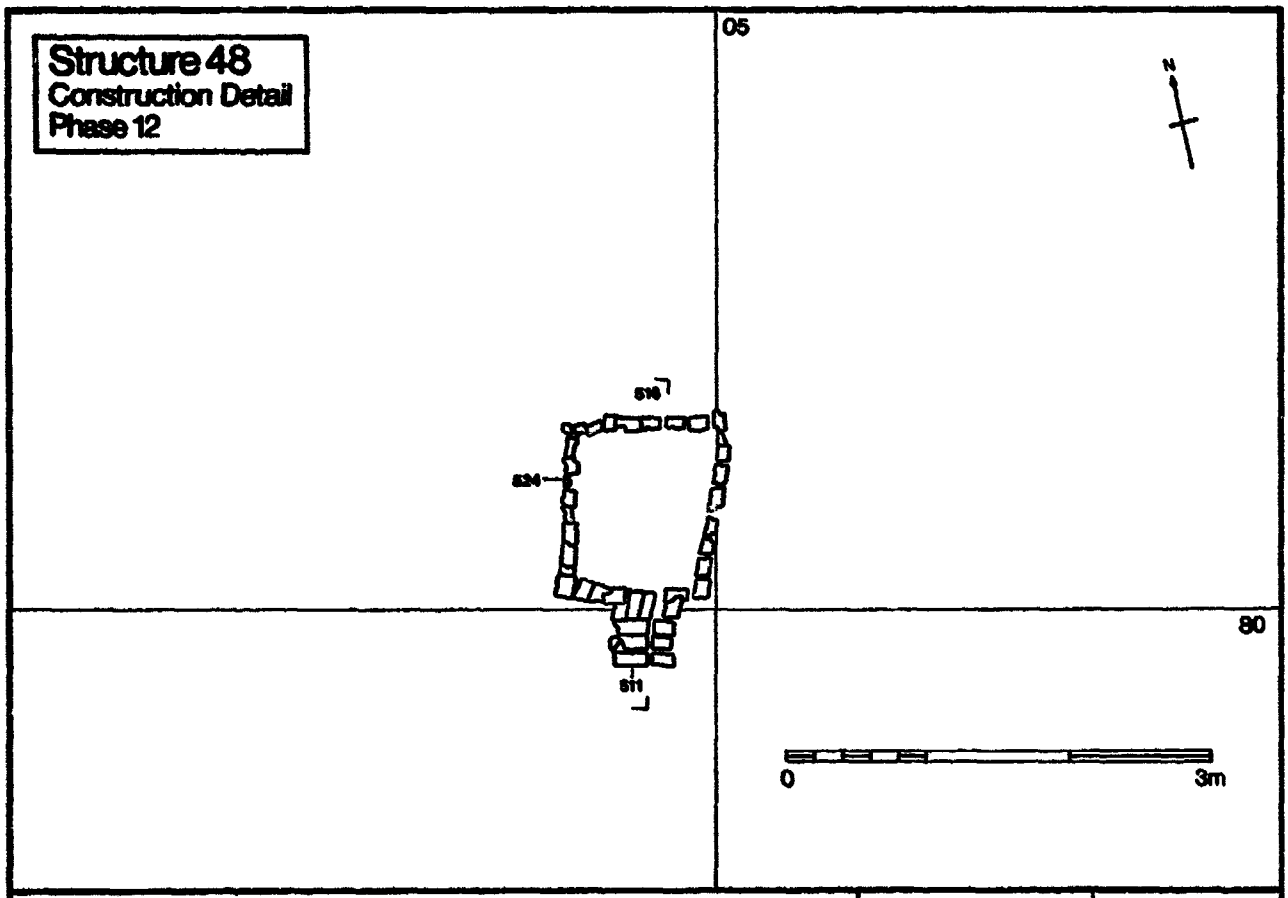

Structure 45
Construction
Phases 4-5
00
05
75
N
755
753
752
741
742
733
737
727
729
736
738
739
732
760
740
757
758
759
0
2m
Profiles
W
729
E
SW
732
NE
SW
733
NE
SW
736
NE
SW
737
NE
760
E facing
S
757
N
S
758
N
S
759
N
S
N
0
1m


Structure 46
Construction
Phases 6-9
05
10
15
N
80
75
633
707
708
1073
1077
1134
0
5m

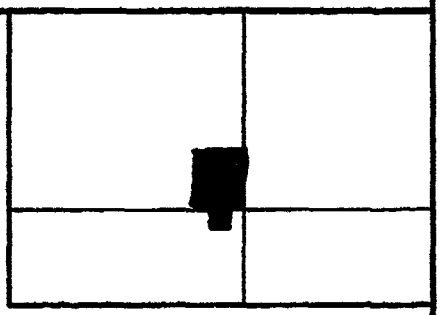


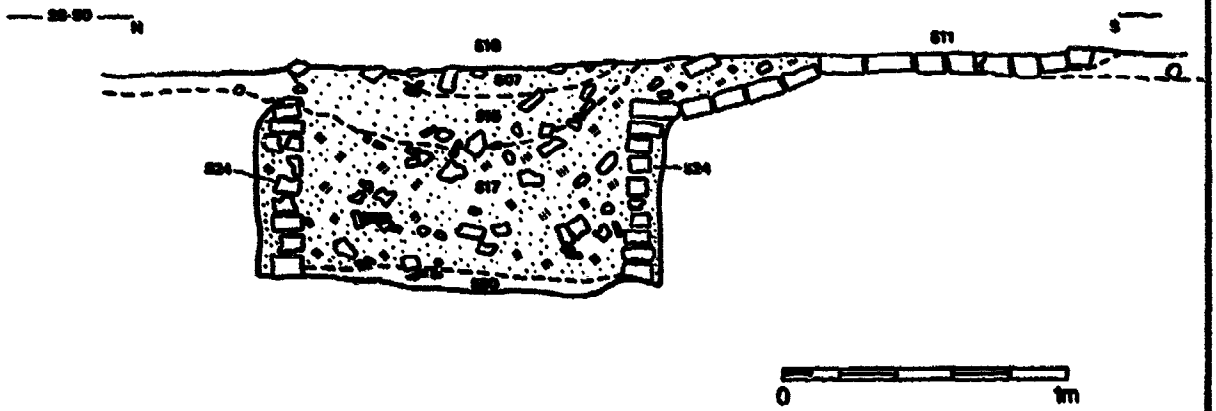

Structure 47
Construction
Phases 6-9
05
N
543
80
0
3m
Section
542
541
543
563
SW
NE
0
1m

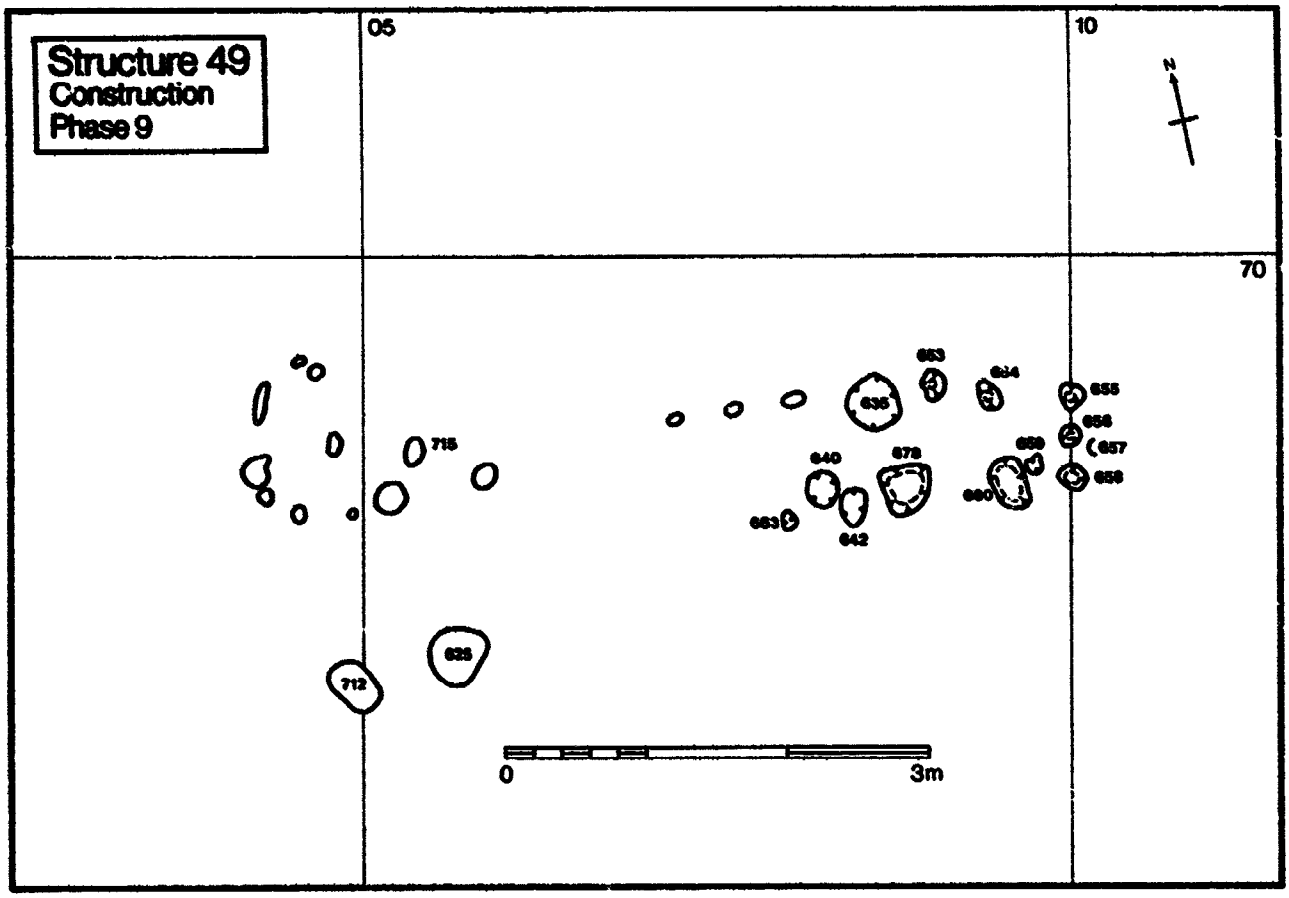
Structure 48
Construction Detail
Phase 12



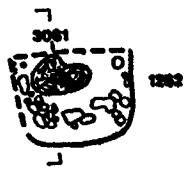
Section





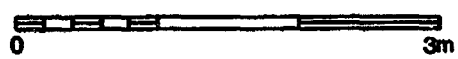

Structure 49
Construction
Phase 9
05
10
70
N
715
712
628
635
633
634
655
656
657
658
640
678
659
660
663
642
0
3m

Structure 50
Construction Detail
Phase 5

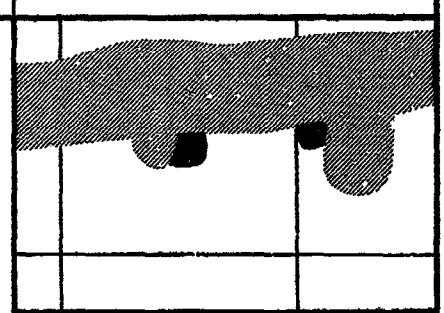


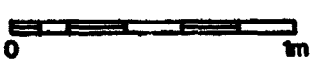
20

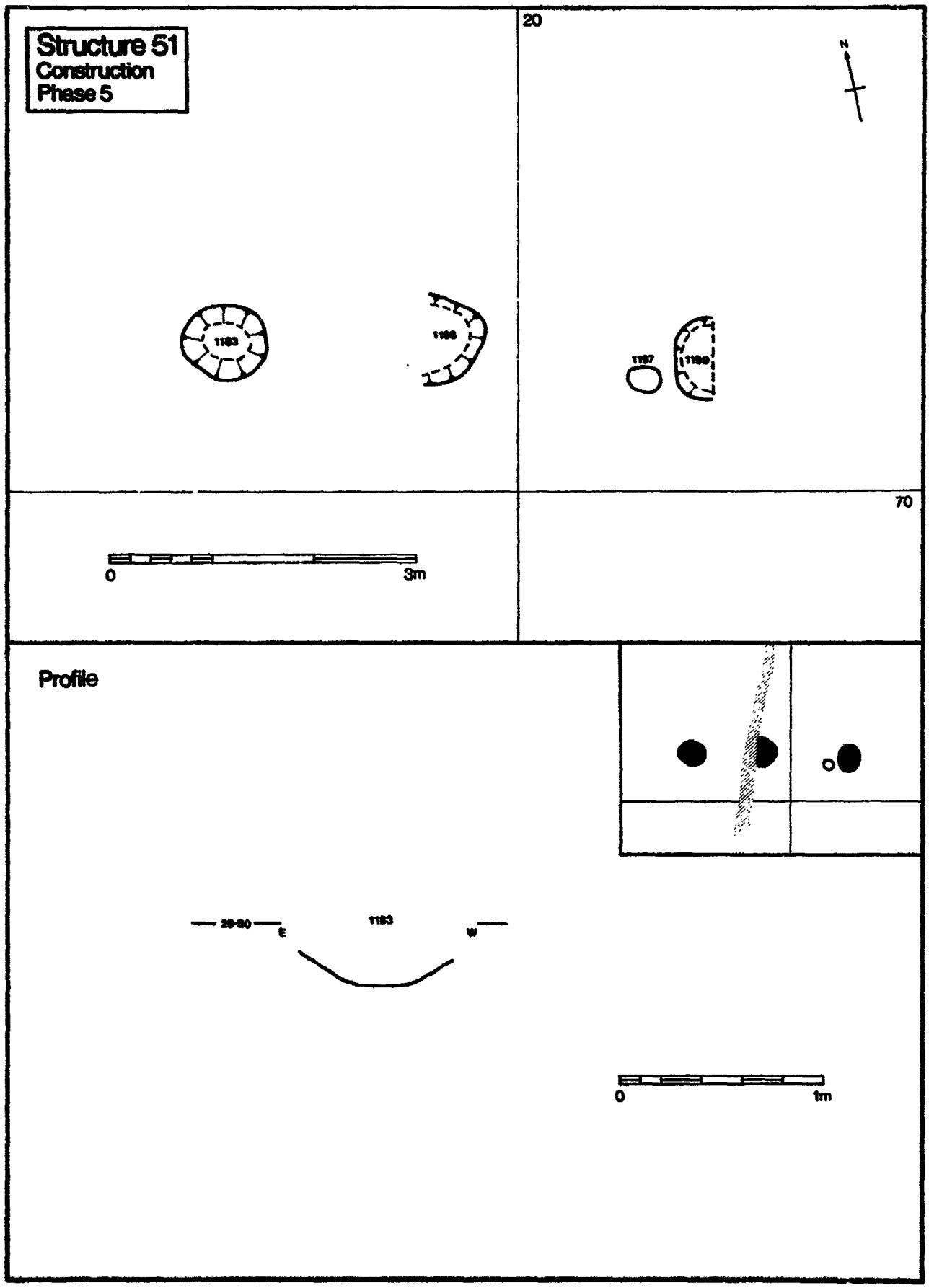
75



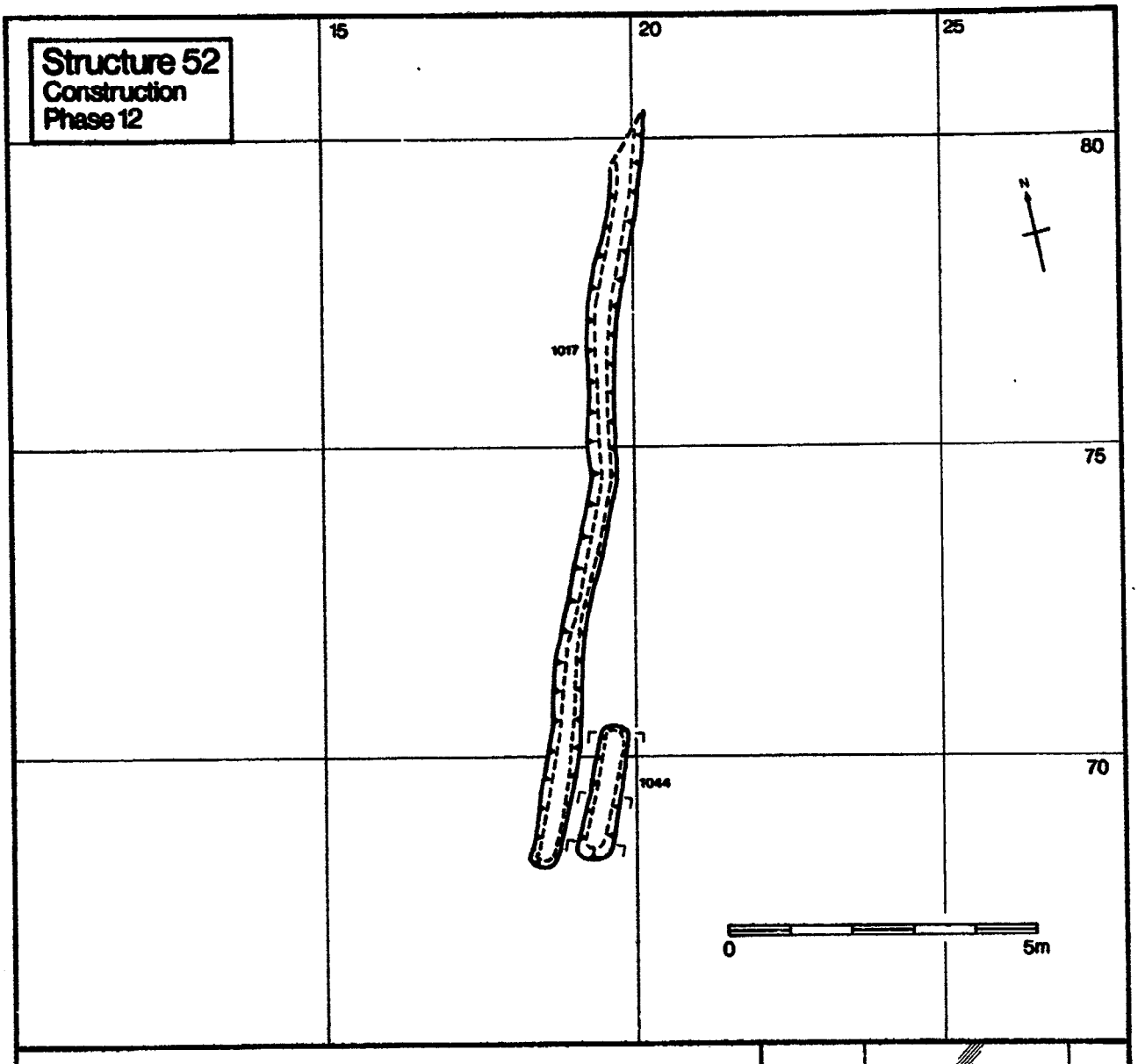
Section



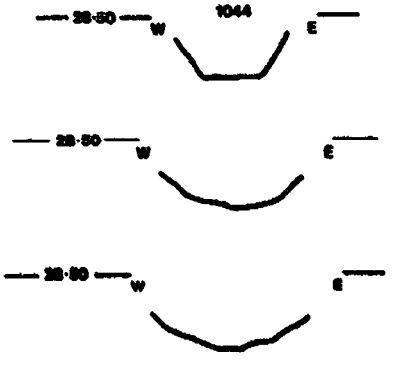


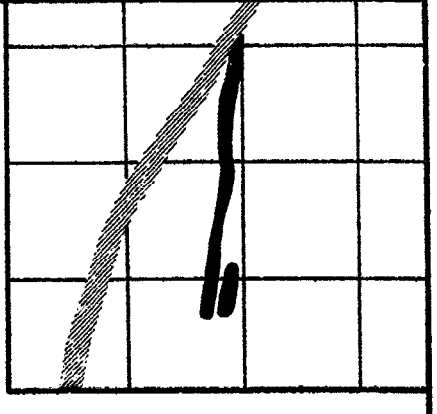

Structure 51
Construction
Phase 5
20
N
1153
1156
1157
1158
70
0
3m
Profile
20-50
E
1153
W
0
1m

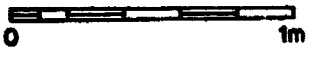
Structure 52
Construction
Phase 12

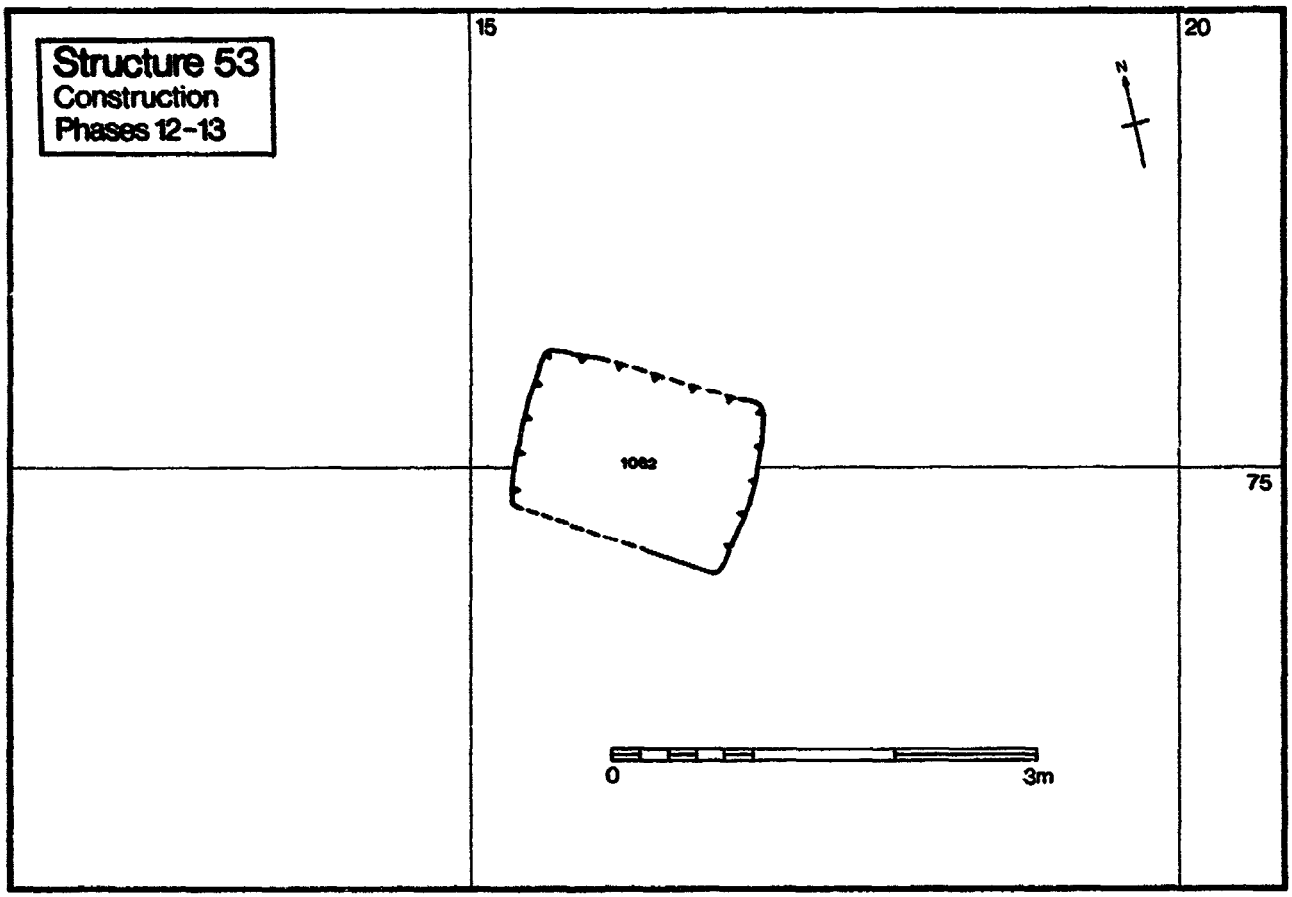


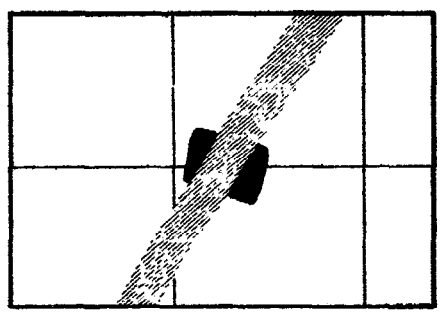
Profiles



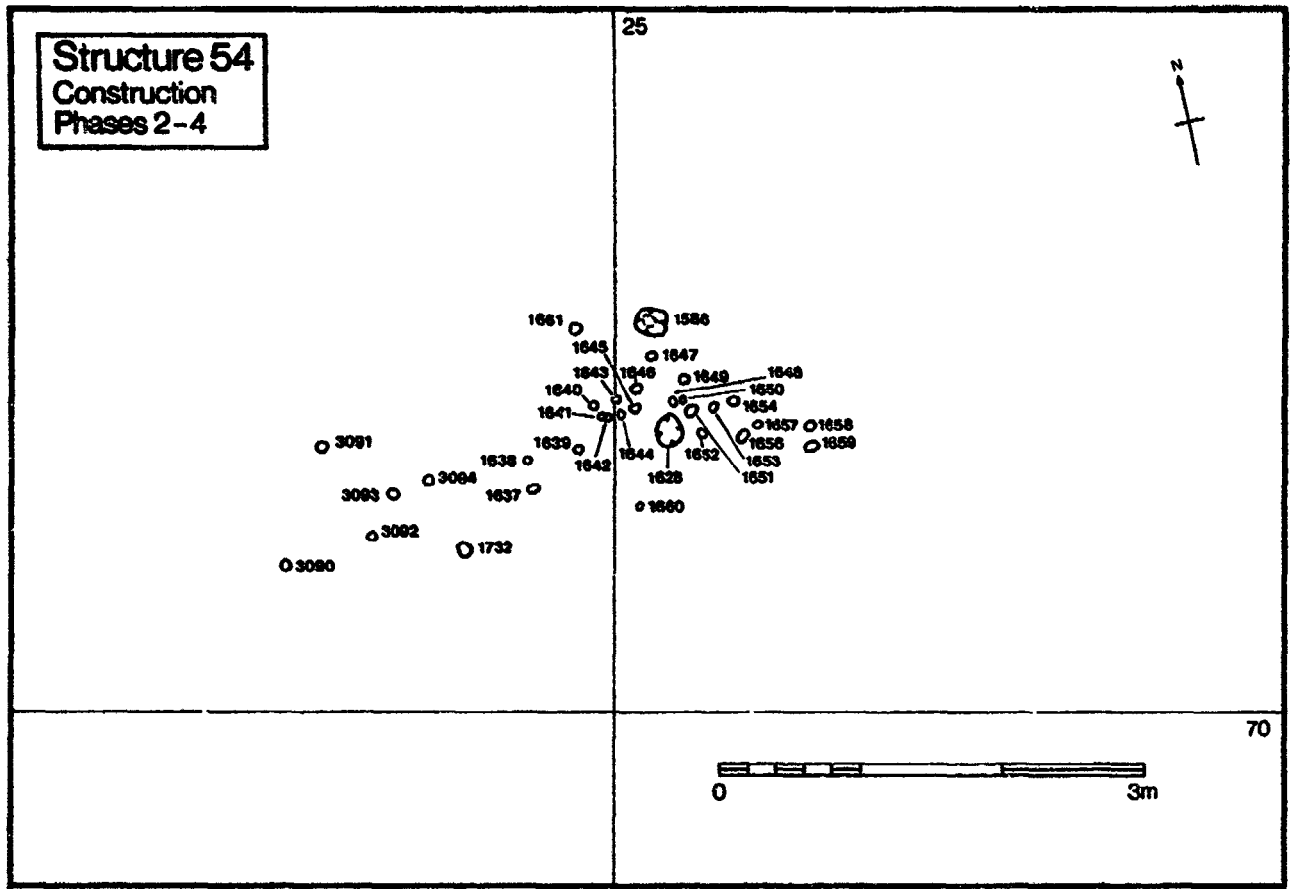




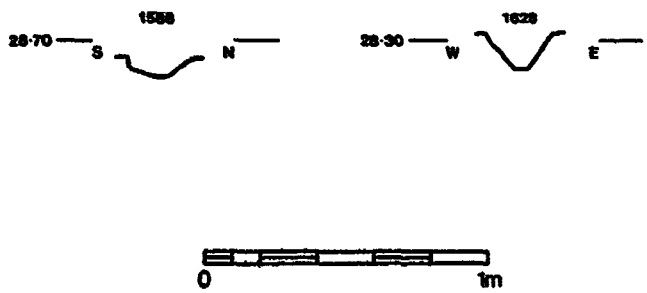

Structure 53
Construction
Phases 12-13
15
20
N
1062
75
0
3m

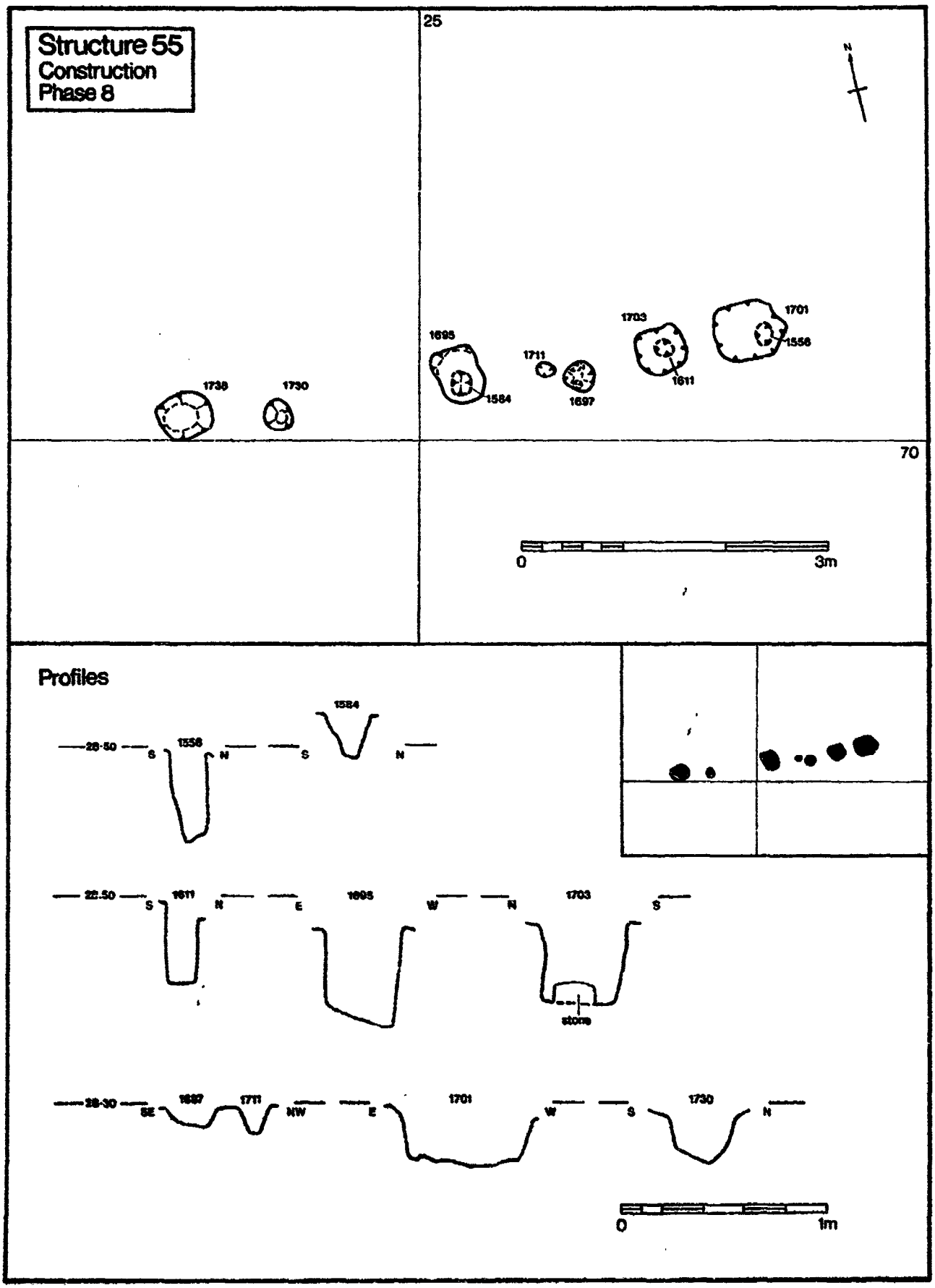


Structure 54
Construction
Phases 2-4

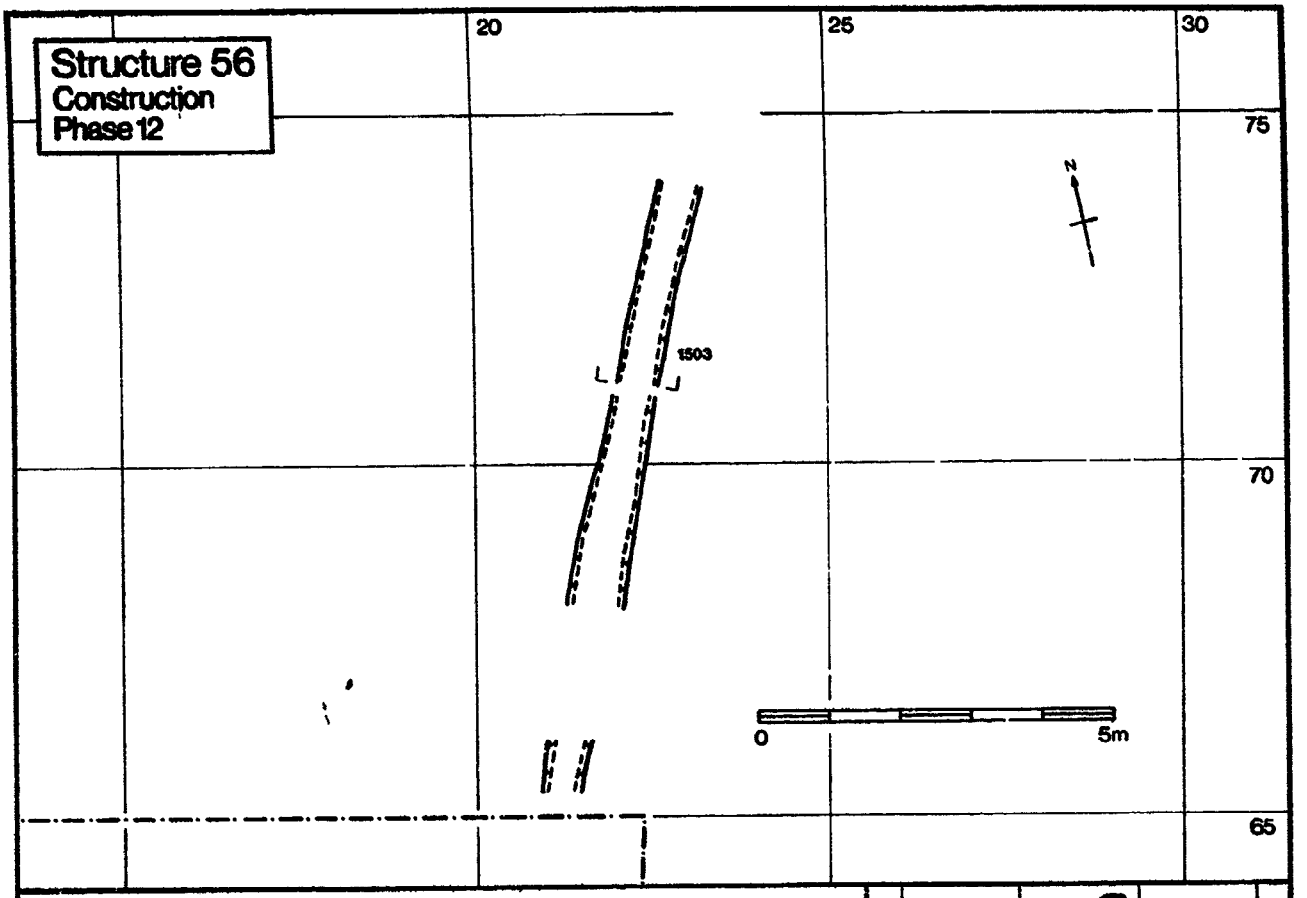


Profiles

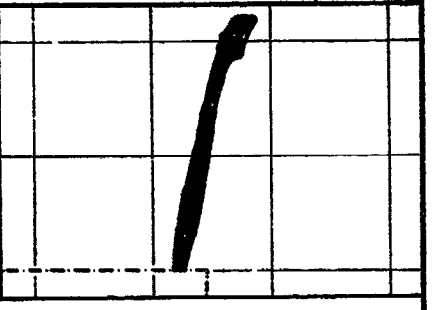


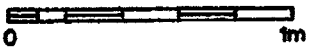

Structure 55
Construction
Phase 8
25
N
1738
1730
1695
1584
1711
1697
1703
1611
1701
1556
70
0
3m
Profiles
28-50
S
1556
N
S
1584
N
22.50
S
1611
N
E
1695
W
N
1703
S
stone
28-30
SE
1697
1711
NW
E
1701
W
S
1730
N
0
1m

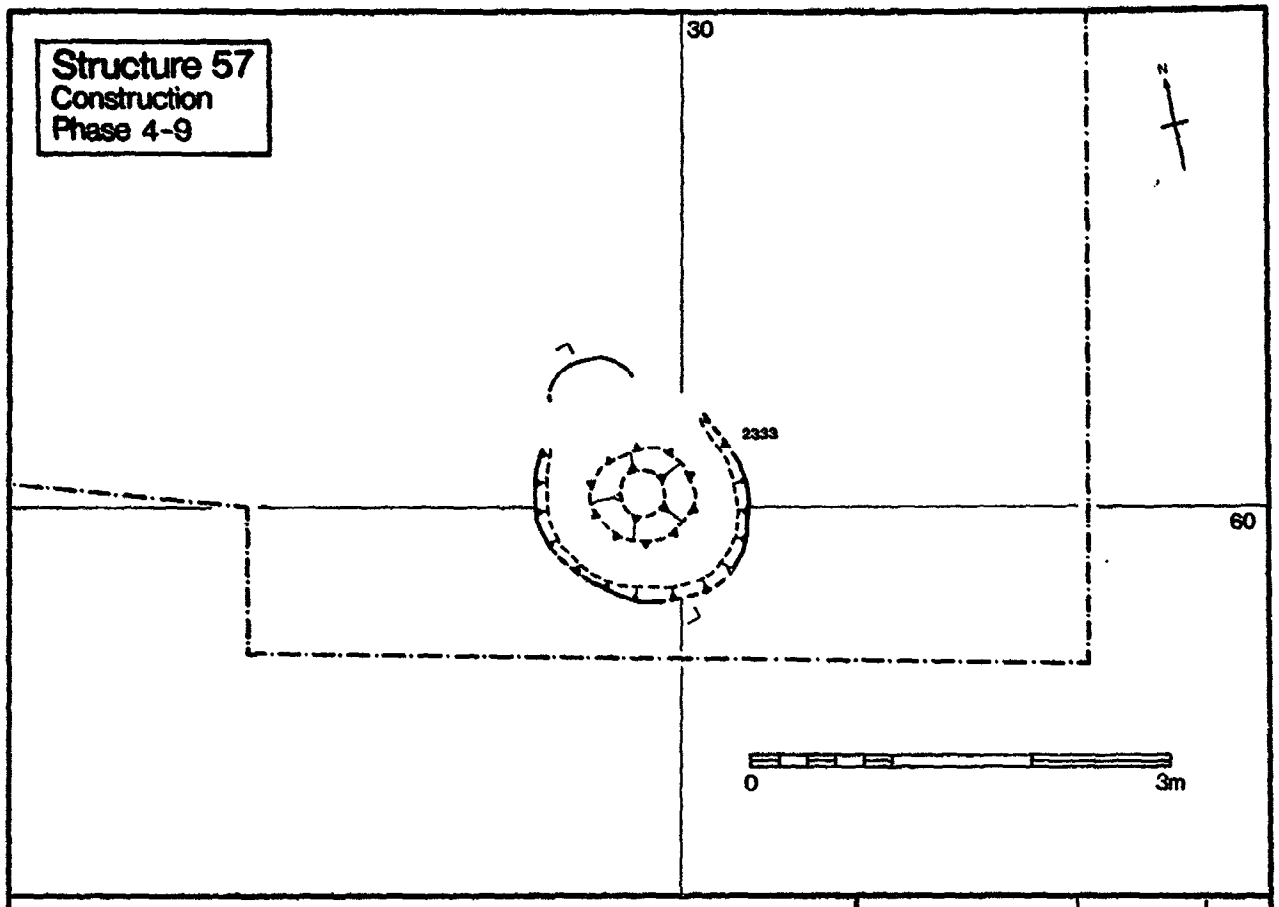
Structure 56
Construction
Phase 12



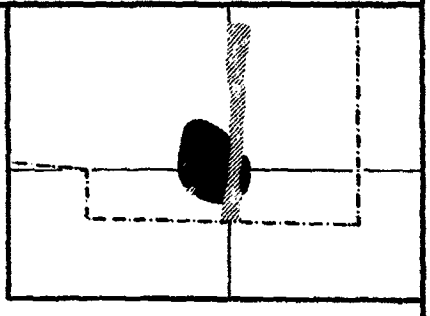
Profile



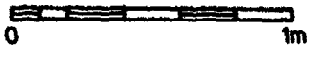



Structure 57
Construction
Phase 4-9
30
N
2333
60
0
3m

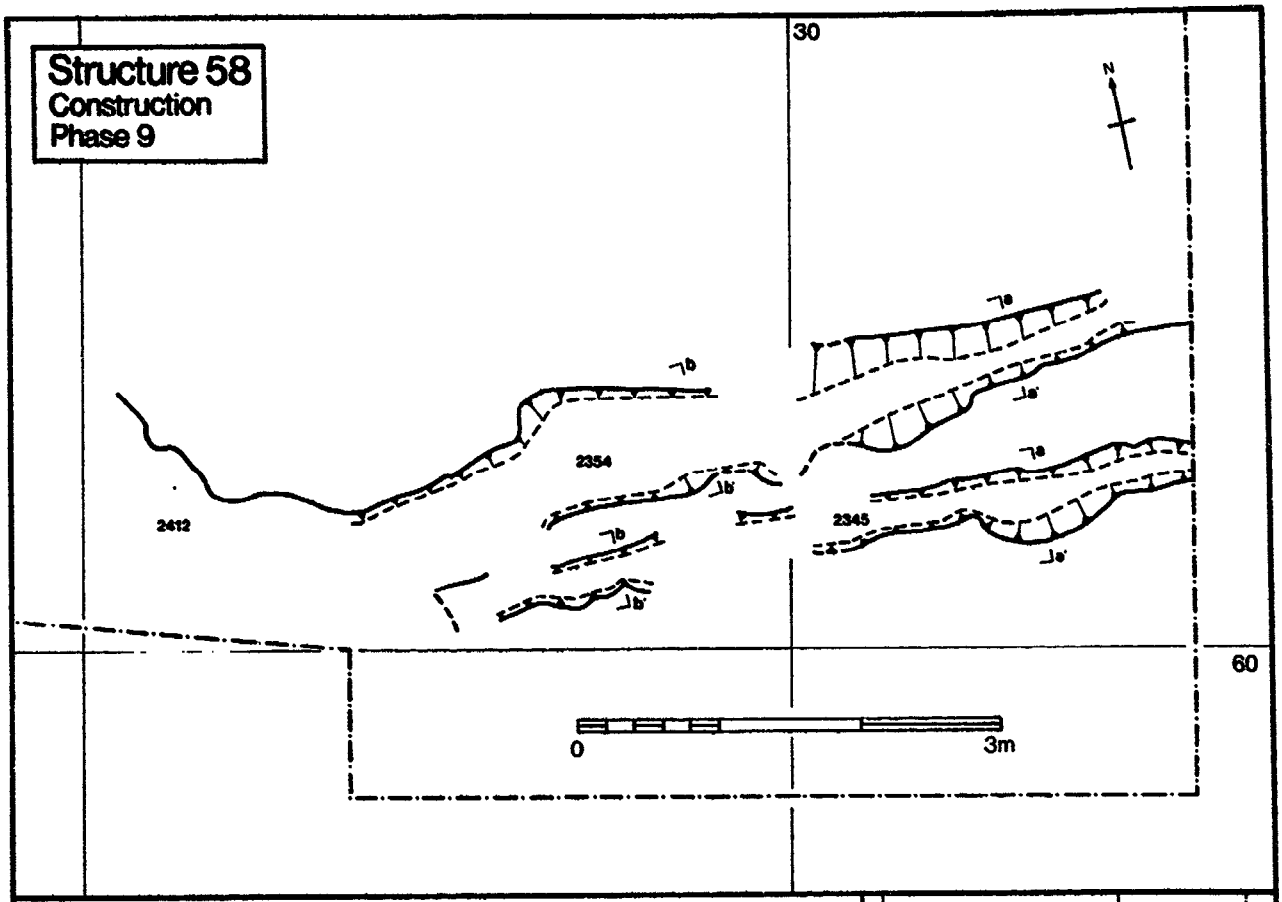
Profile



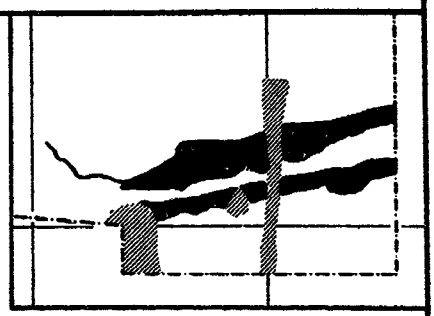

28-60
N
2333
S

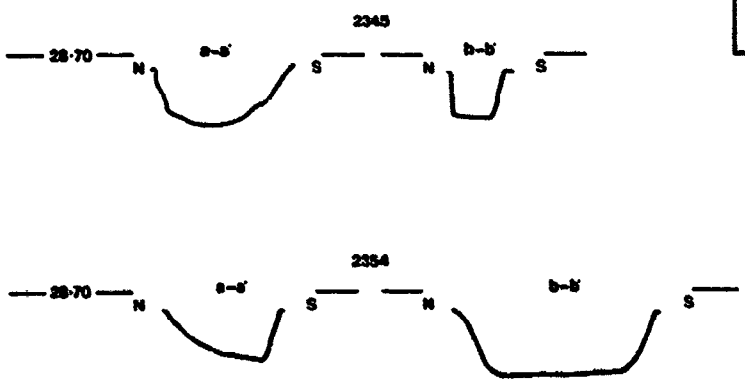

0
1m

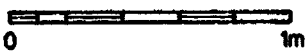
Structure 58
Construction
Phase 9

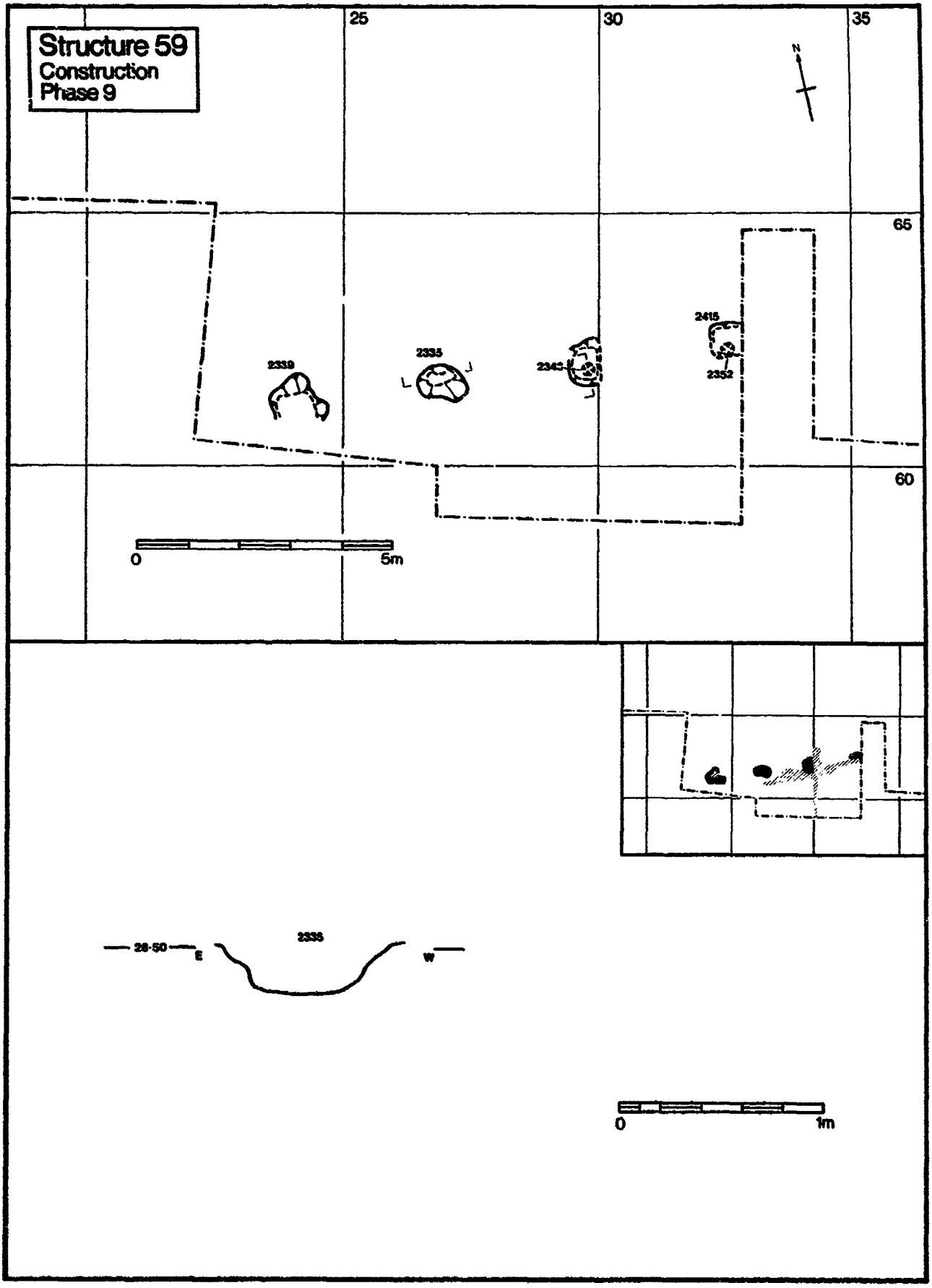


Profiles

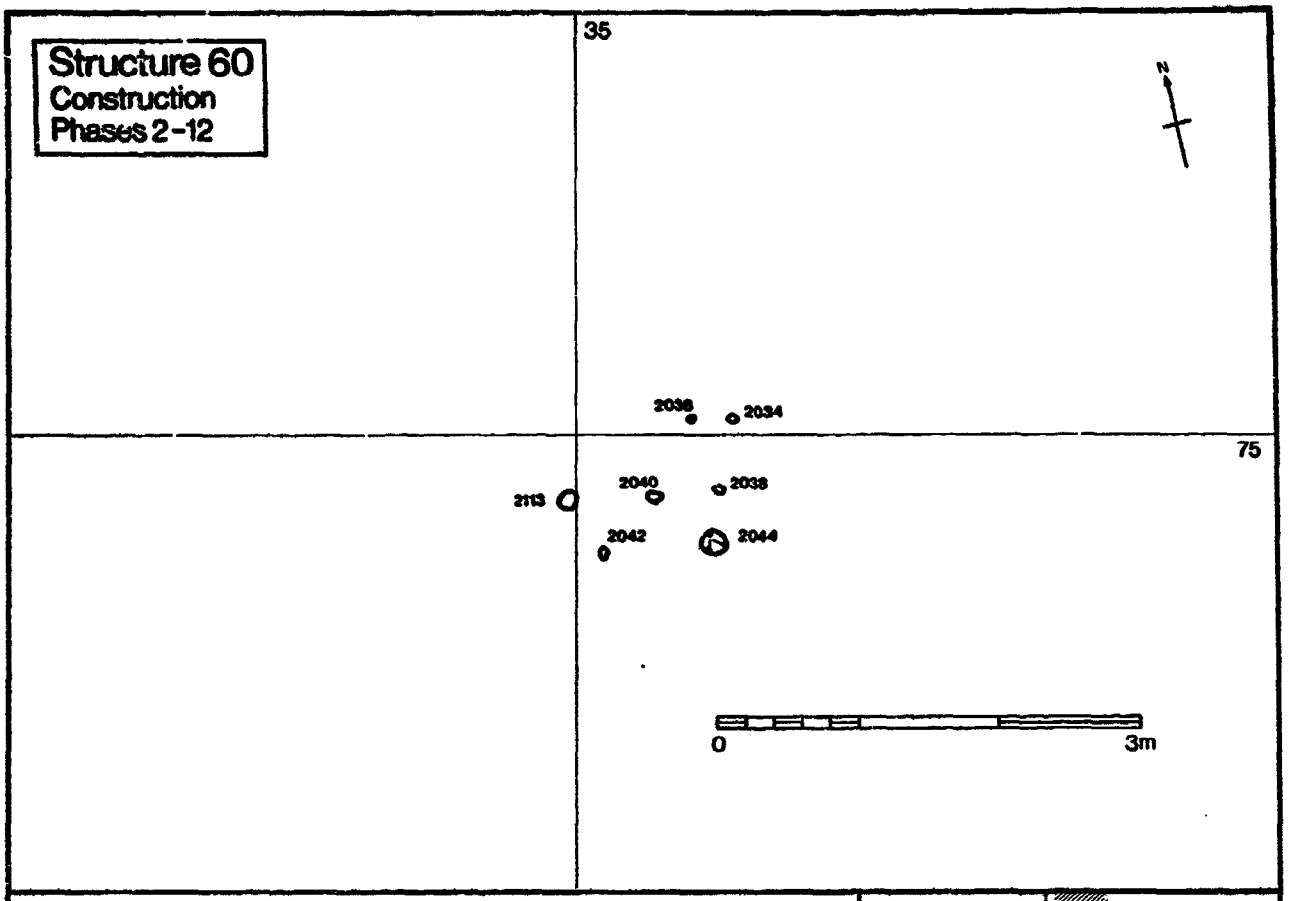




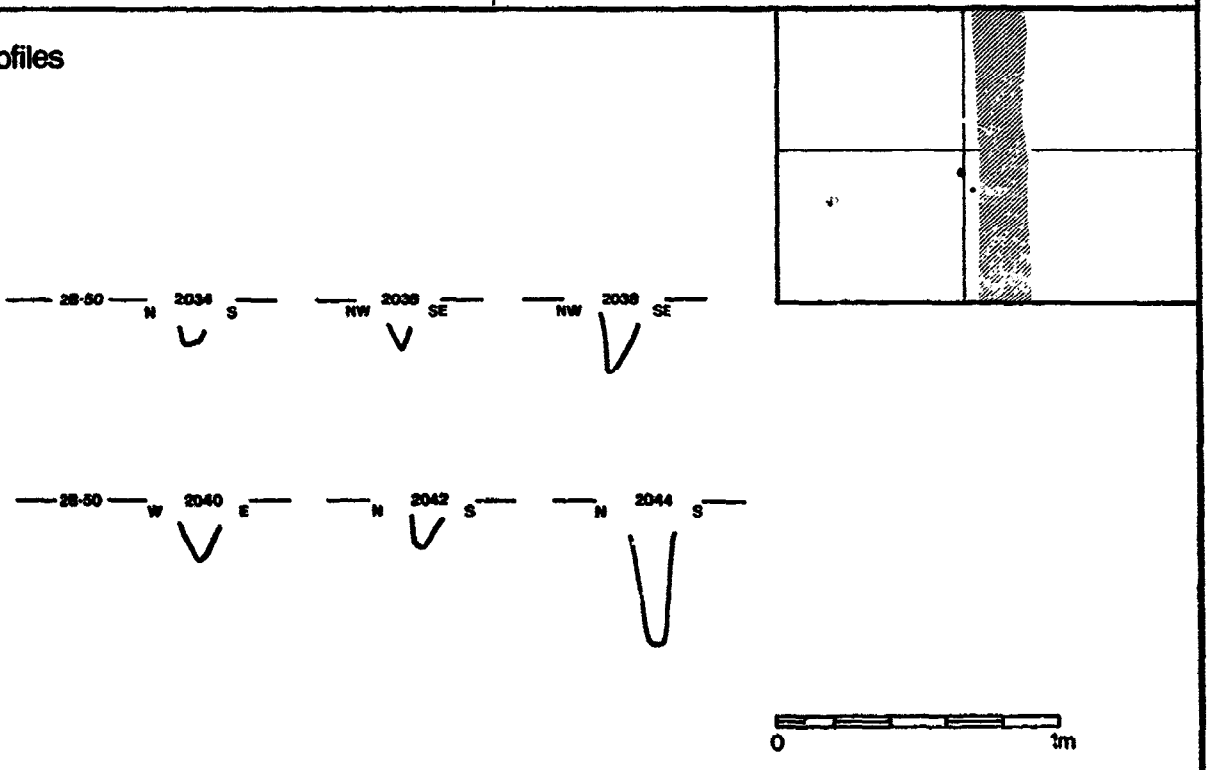


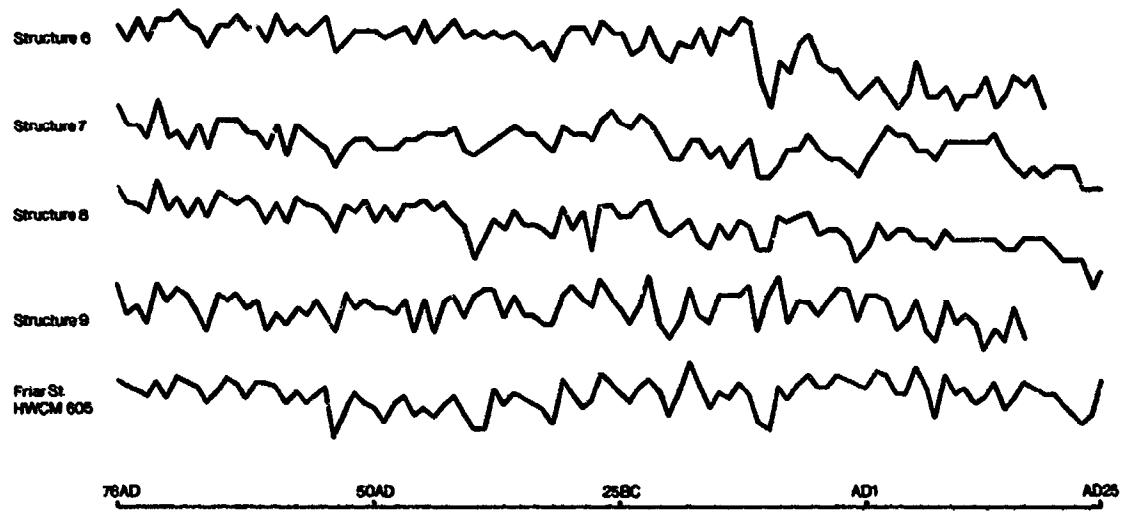

Structure 59
Construction
Phase 9
25
30
35
65
60
N
2339
2335
2343
2415
2352
0
5m
28·50
E
2335
W
0
1m

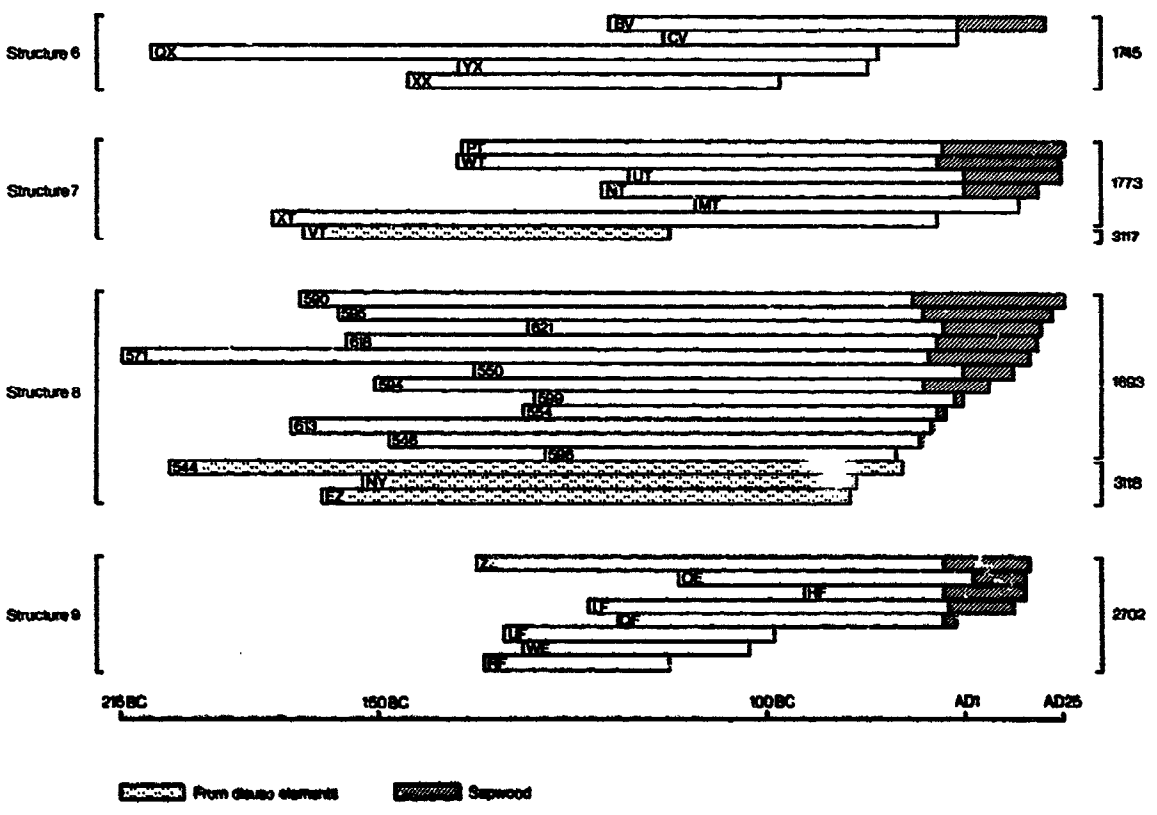
Structure 60
Construction
Phases 2-12

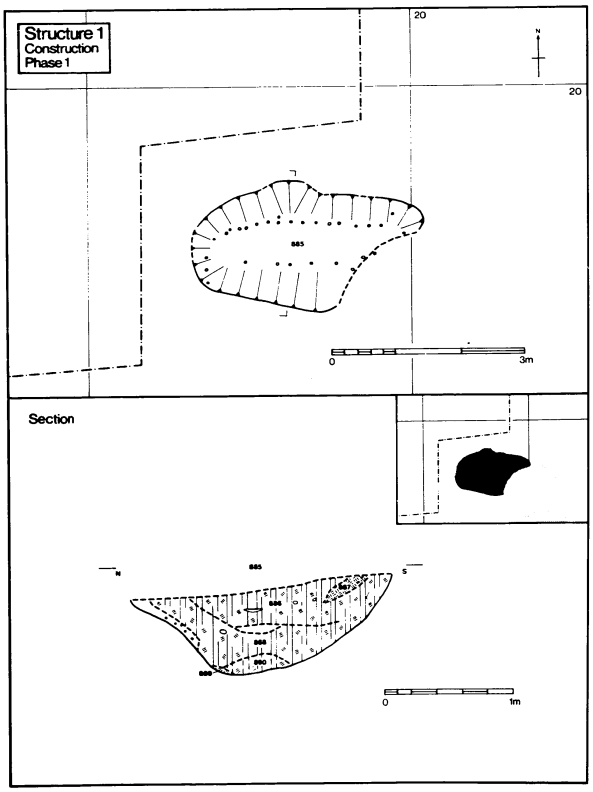


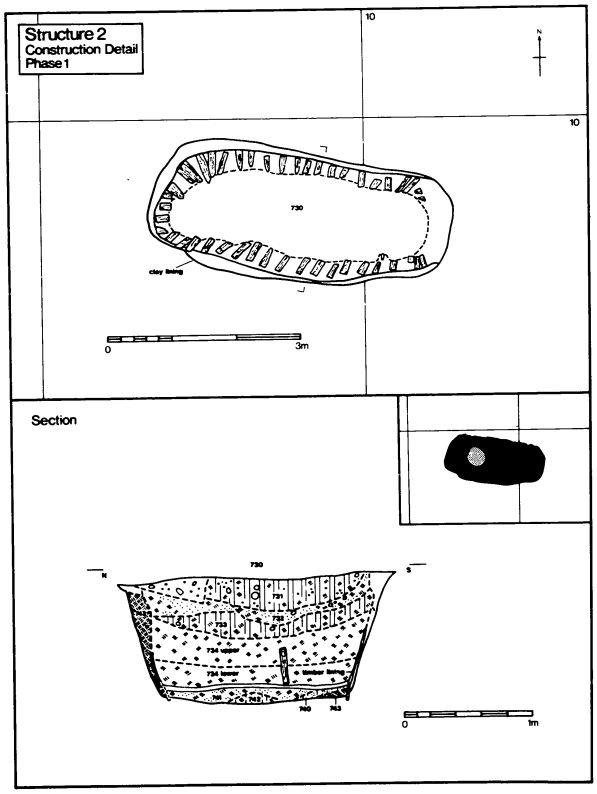
Profiles

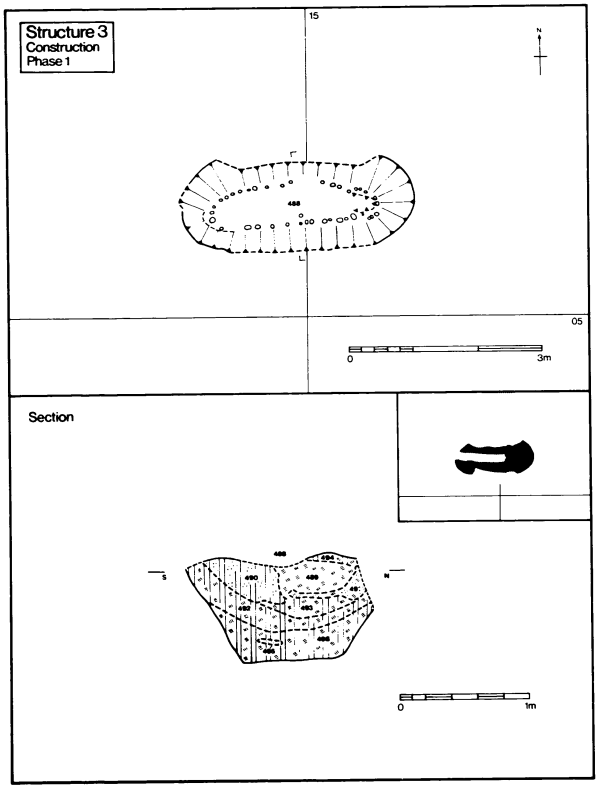


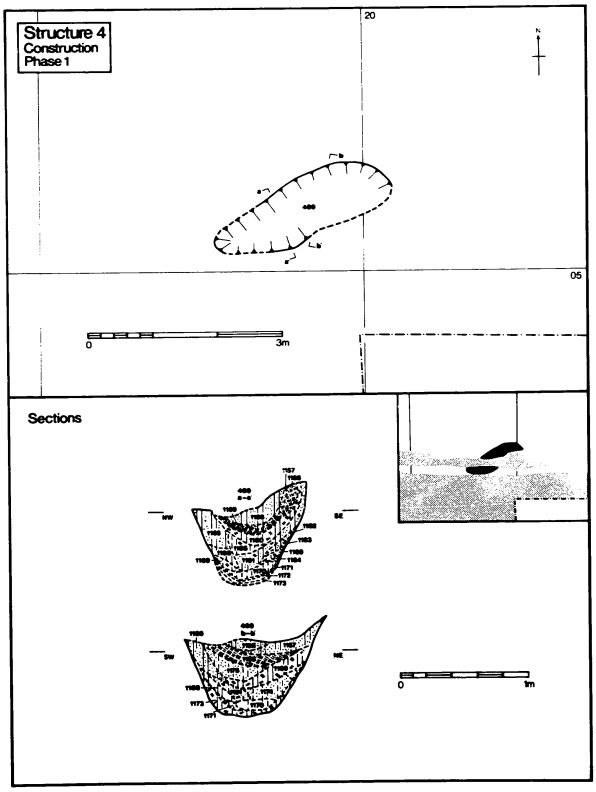

Structure 6
Structure 7
Structure 8
Structure 9
Friar St.
HWCM 605
76AD
50AD
25BC
AD1
AD25

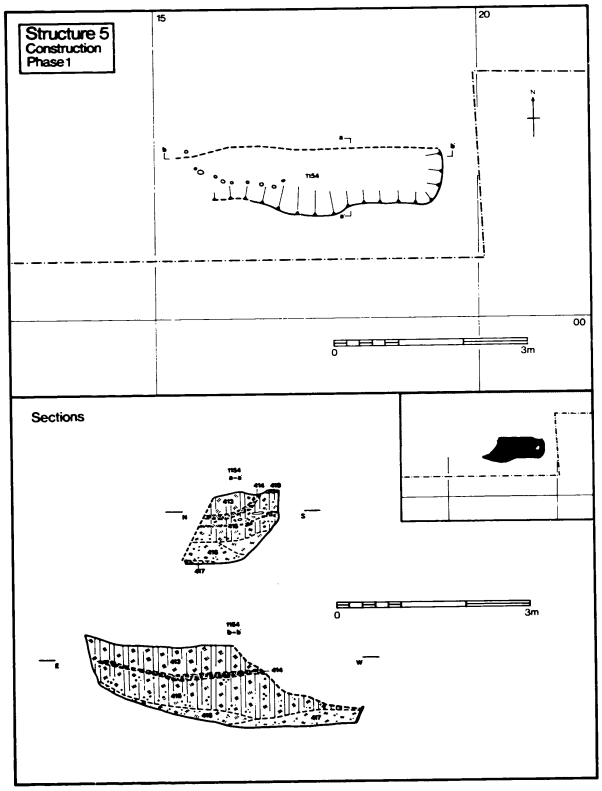

Structure 6
Structure 7
Structure 8
Structure 9
1745
1773
3117
1693
3118
2702
215BC
150BC
100BC
AD1
AD25
From dated elements
Sapwood

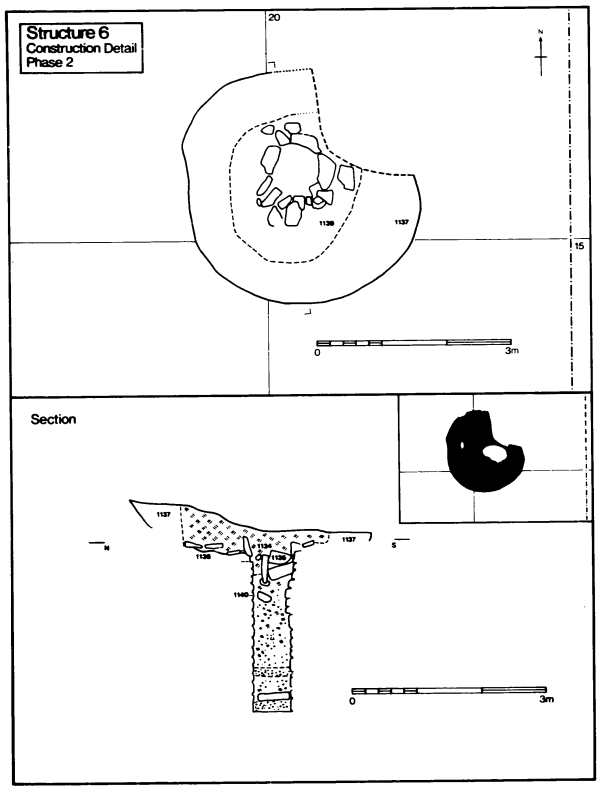

Structure 1
Construction
Phase 1
20
20
N
885
0
3m
Section
N
885
S
0
1m

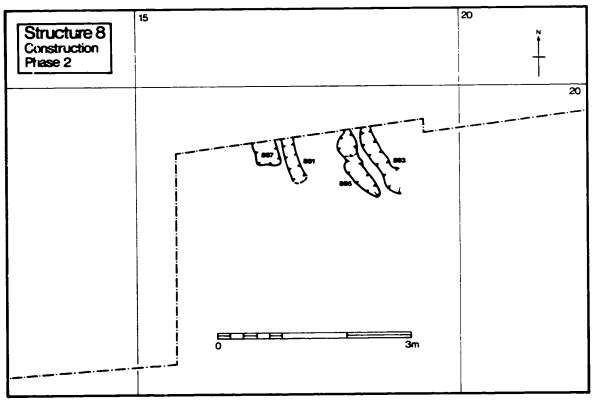

Structure 2
Construction Detail
Phase 1
10
10
N
730
clay lining
0
3m
Section
730
N
S
734 upper
734 lower
timber lining
760
763
0
1m

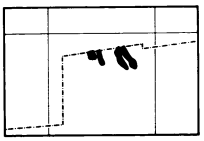

Structure 3
Construction
Phase 1
15
05
0
3m
Section
0
1m

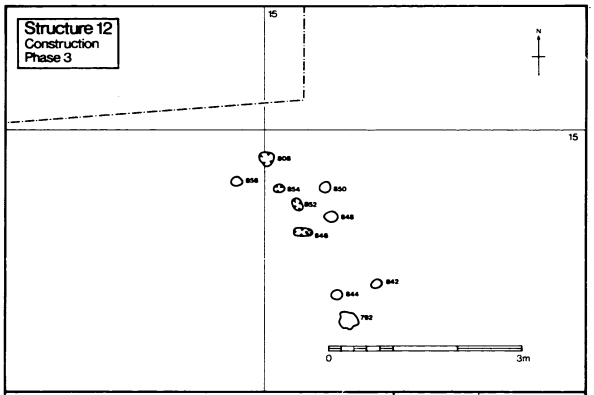

Structure 4
Construction
Phase 1
20
05
0
3m
Sections
0
1m

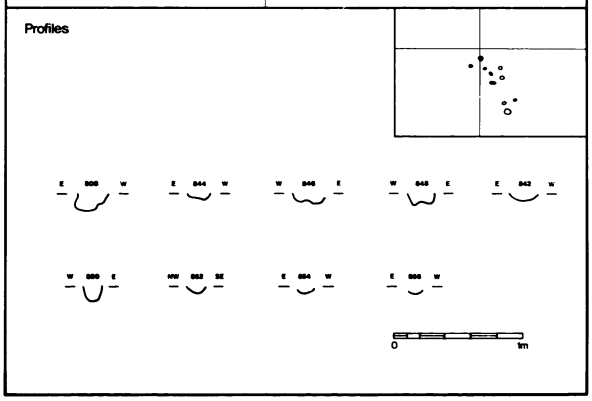

Structure 5
Construction
Phase 1
15
20
00
N
1154
0
3m
Sections
1154
N
S
0
3m
1154
E
W

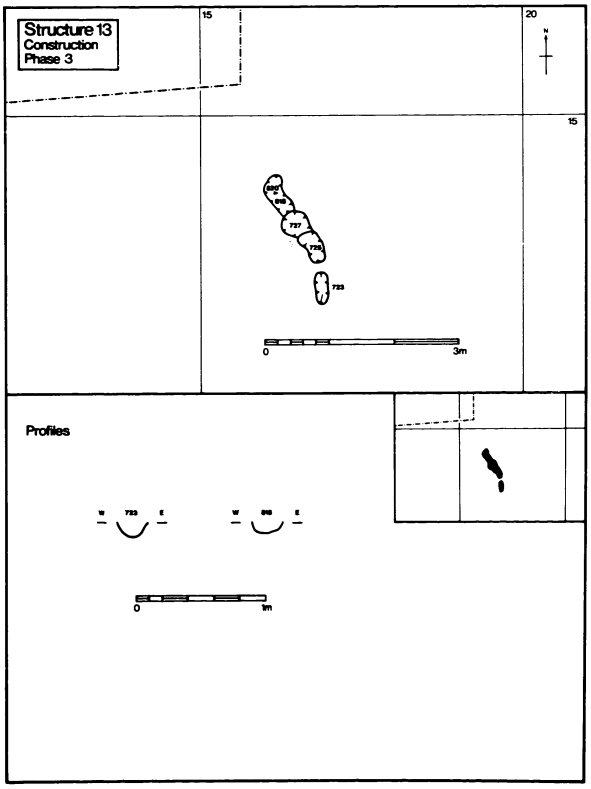

Structure 6
Construction Detail
Phase 2
20
15
N
1138
1137
0
3m
Section
1137
N
1137
1134
1138
1140
S
0
3m

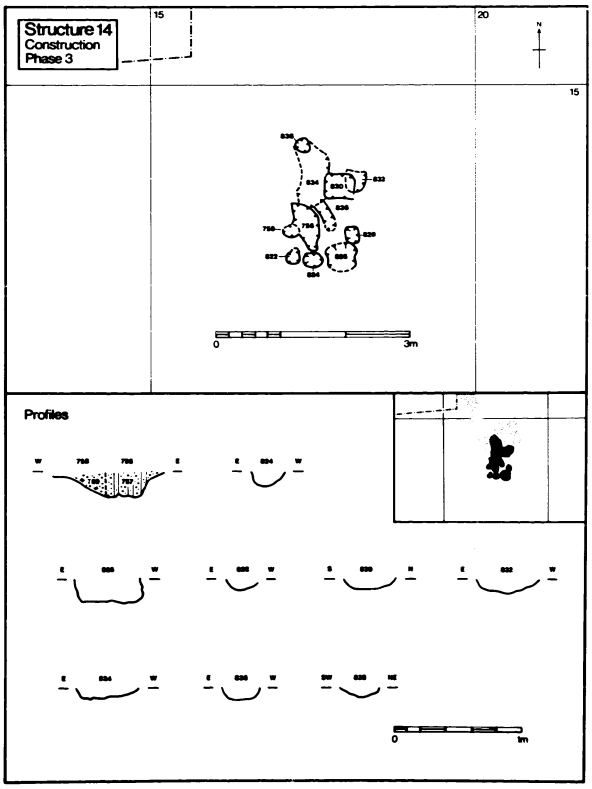

Structure 8
Construction
Phase 2
15
20
20
N
0
3m

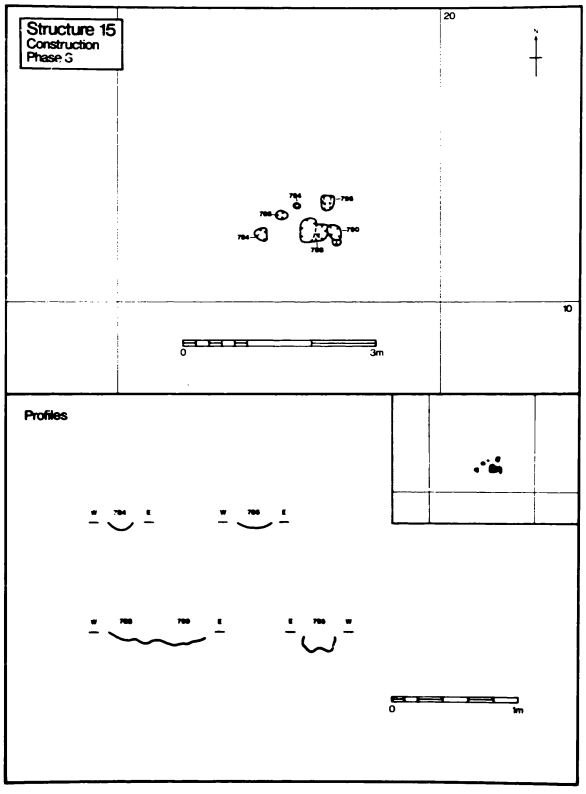


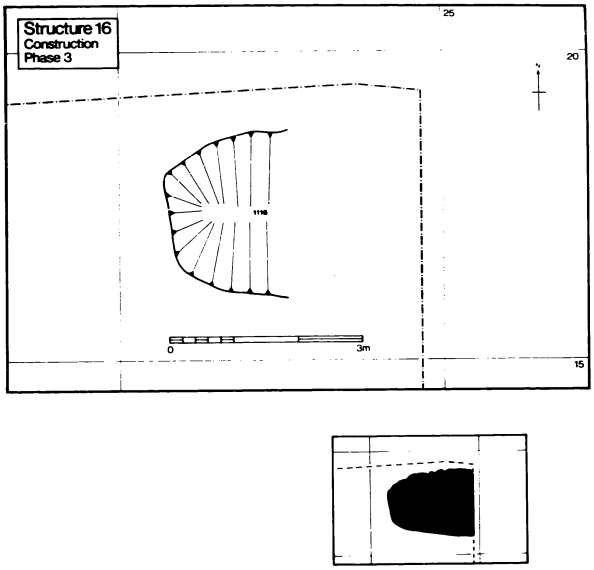

Structure 12
Construction
Phase 3
15
15
N
0
3m

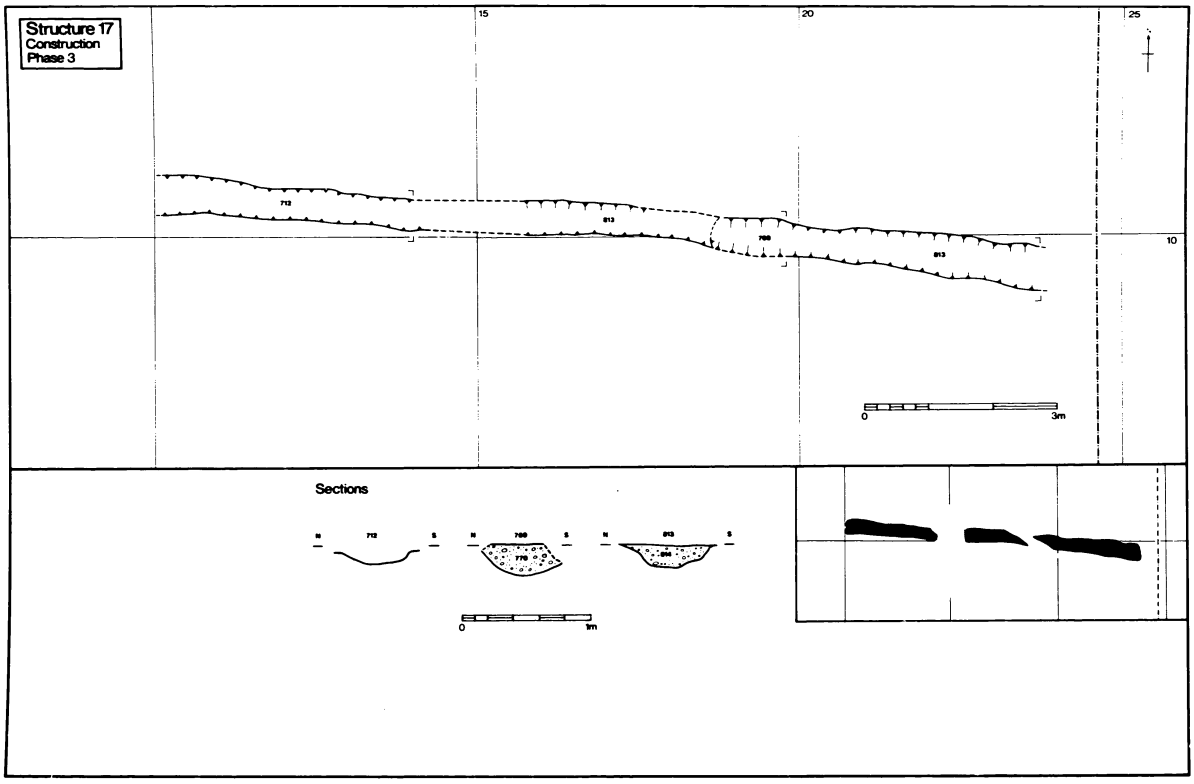

Profiles
0
1m

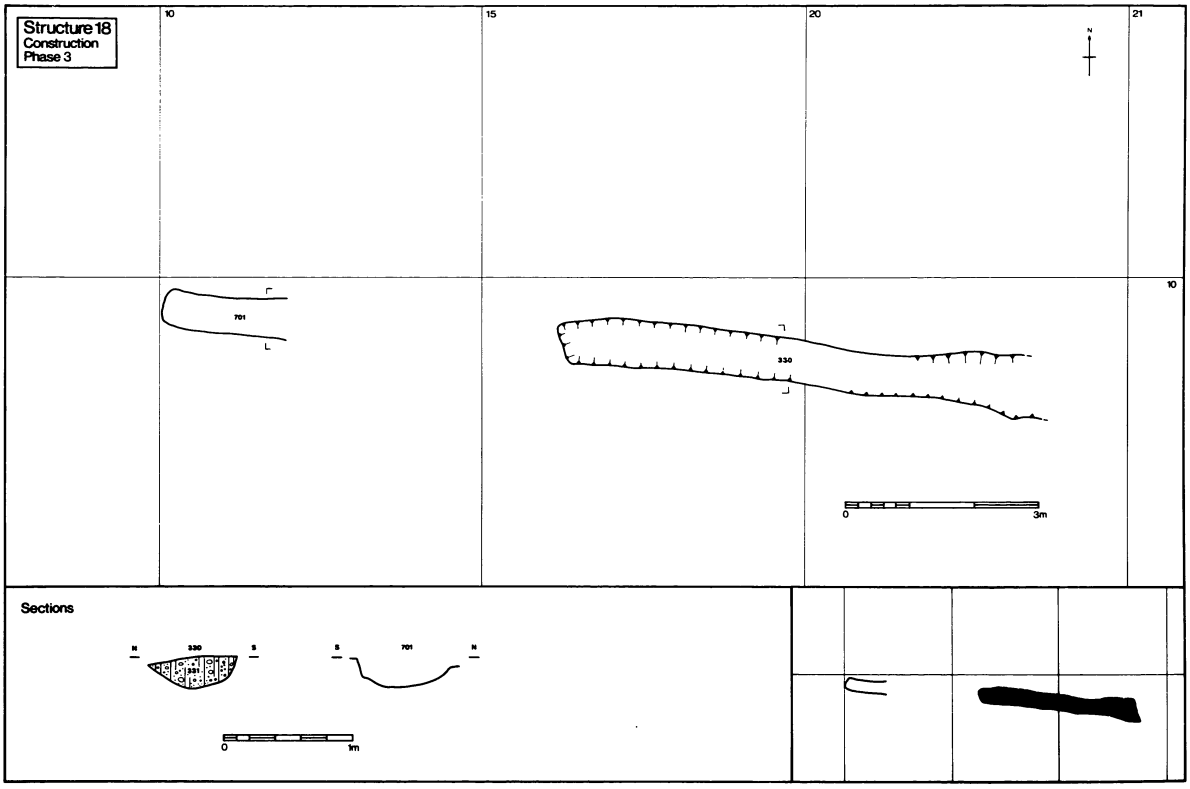

Structure 13
Construction
Phase 3
15
20
15
N
0
3m
Profiles
W
E
0
1m

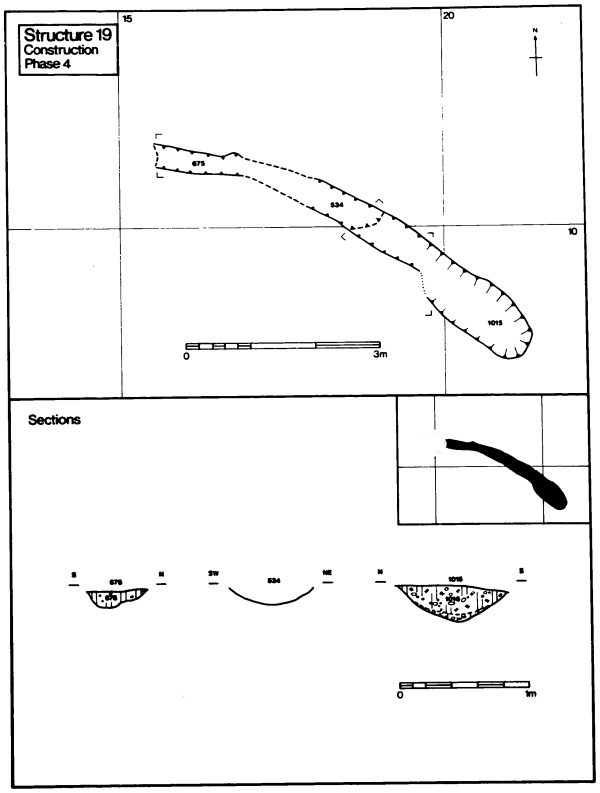

Structure 14
Construction
Phase 3
15
20
15
N
0
3m
Profiles
W
E
0
1m

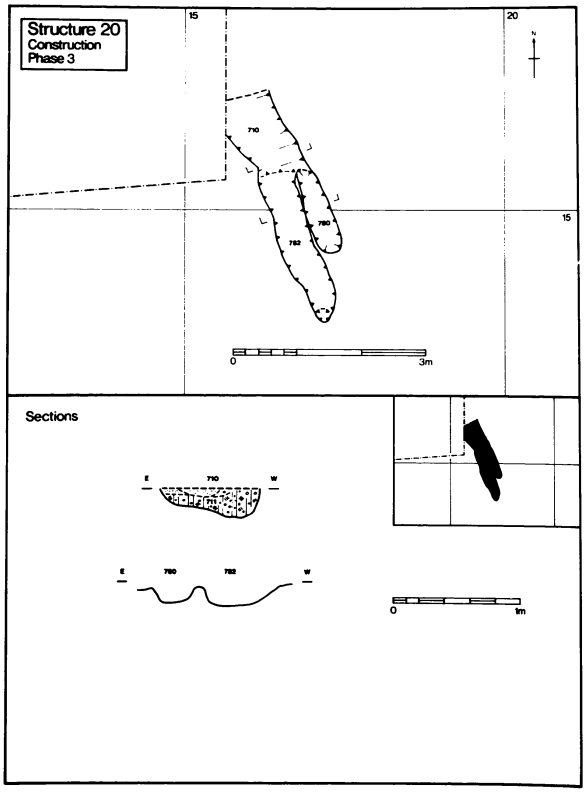

Structure 15
Construction
Phase 3
20
10
0
3m
Profiles
0
1m

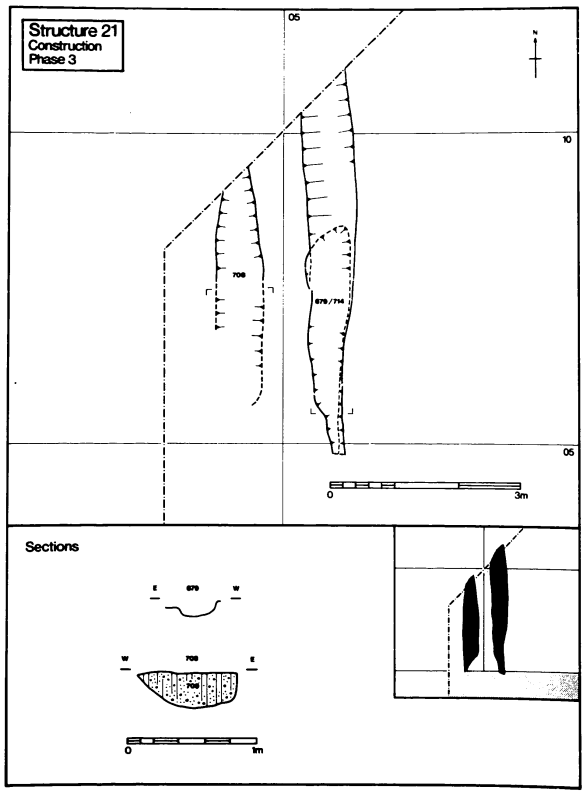

Structure 16
Construction
Phase 3
25
20
15
0
3m

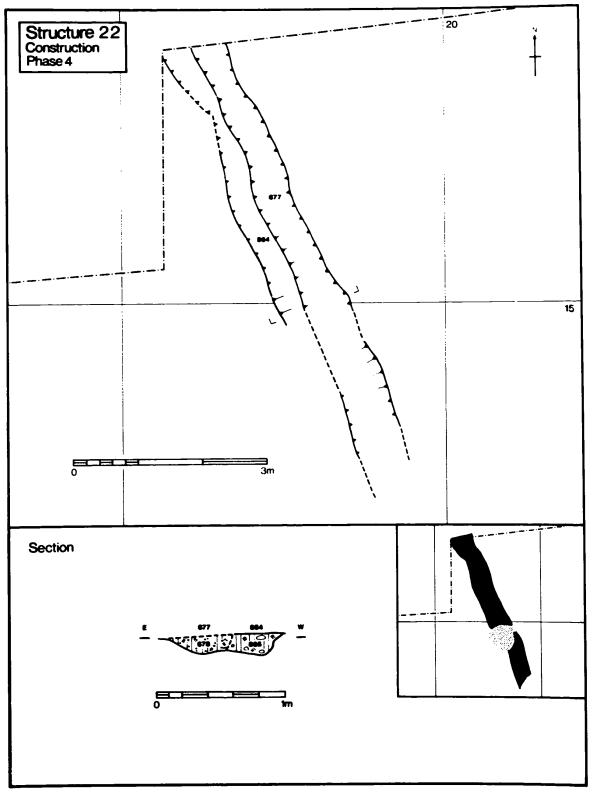

Structure 17
Construction
Phase 3
15
20
25
10
0
3m
Sections
N
S
0
1m

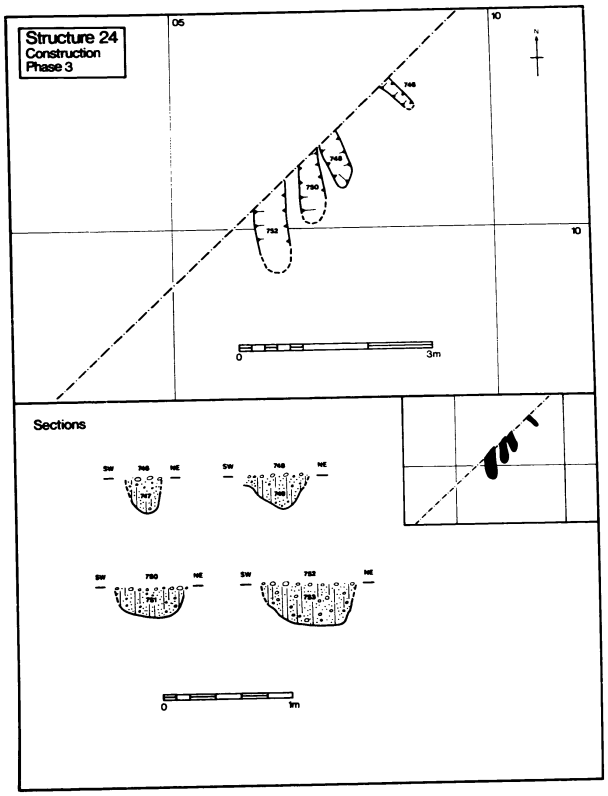

Structure 18
Construction
Phase 3
10
15
20
21
N
10
701
330
0
3m
Sections
N
330
S
S
701
N
0
1m

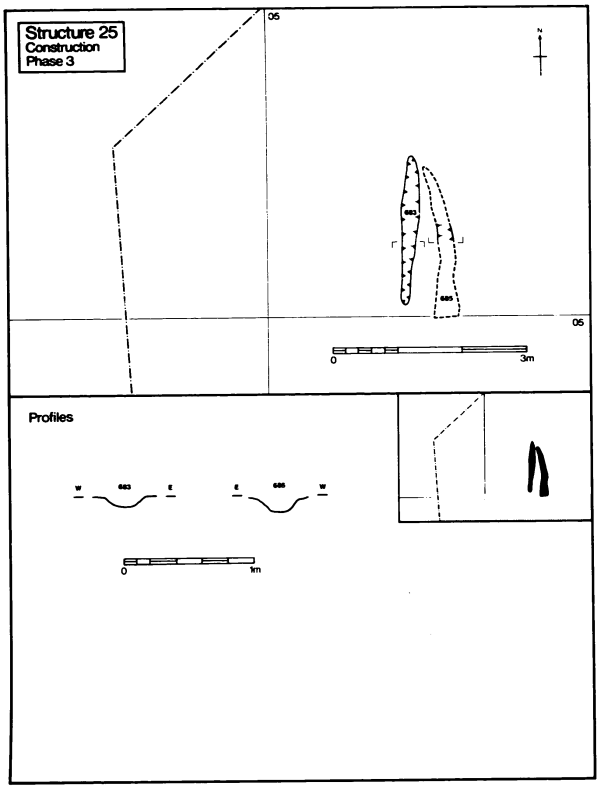

Structure 19
Construction
Phase 4
15
20
10
N
675
534
1015
0
3m
Sections
S
675
N
NW
534
NE
N
1015
S
0
1m

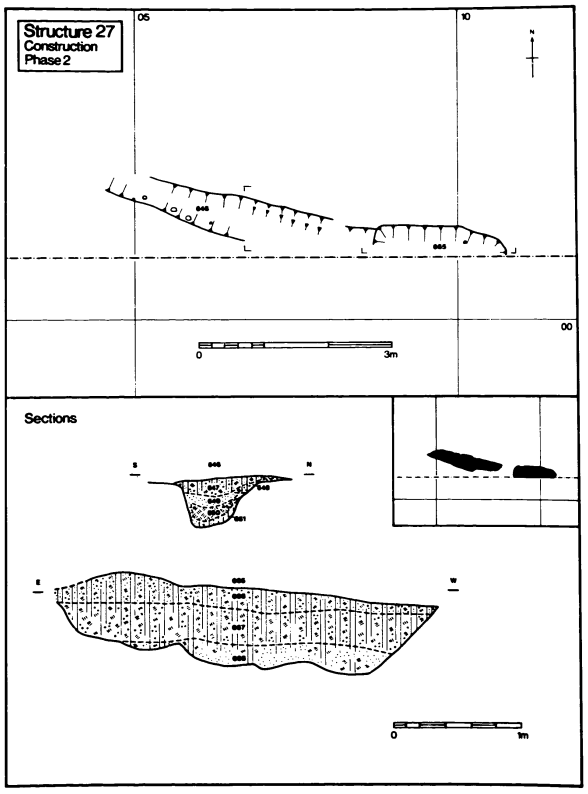

Structure 20
Construction
Phase 3
15
20
15
N
710
780
782
0
3m
Sections
E
710
W
E
780
782
W
0
1m

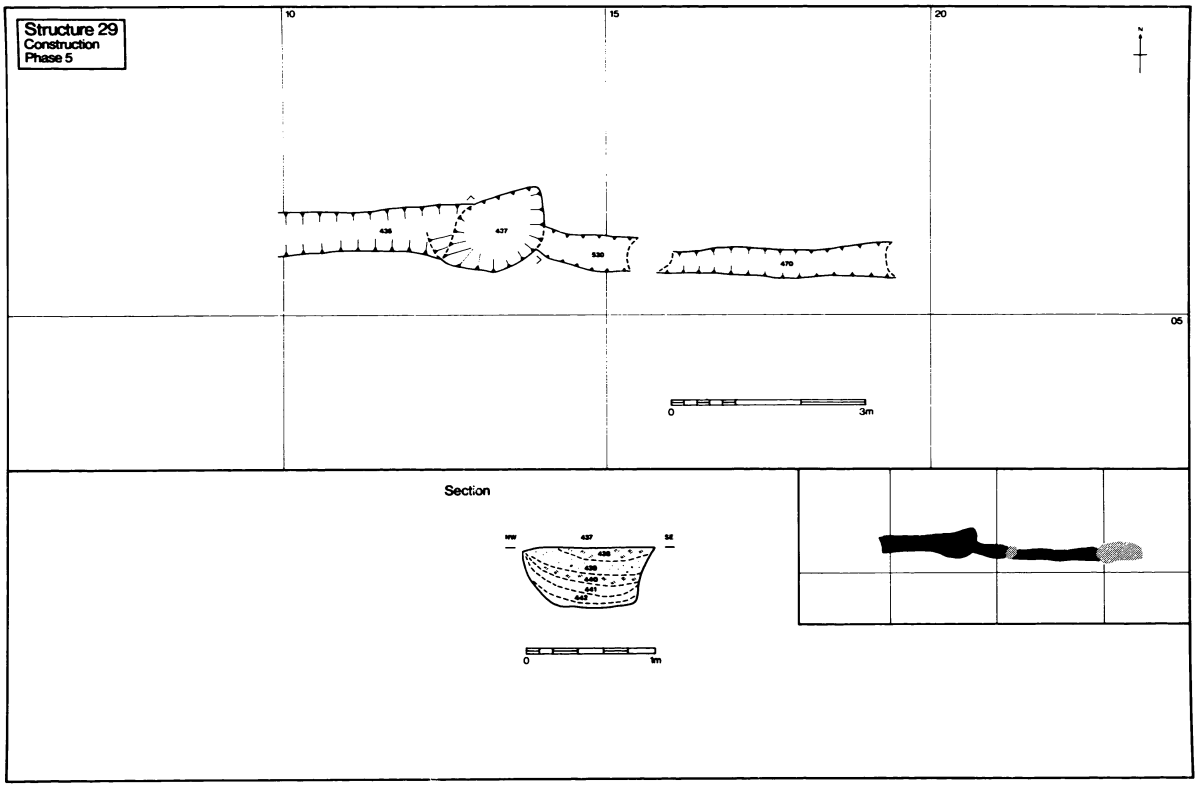

Structure 21
Construction
Phase 3
05
10
05
708
679 / 714
0
3m
Sections
E
679
W
W
708
E
0
1m

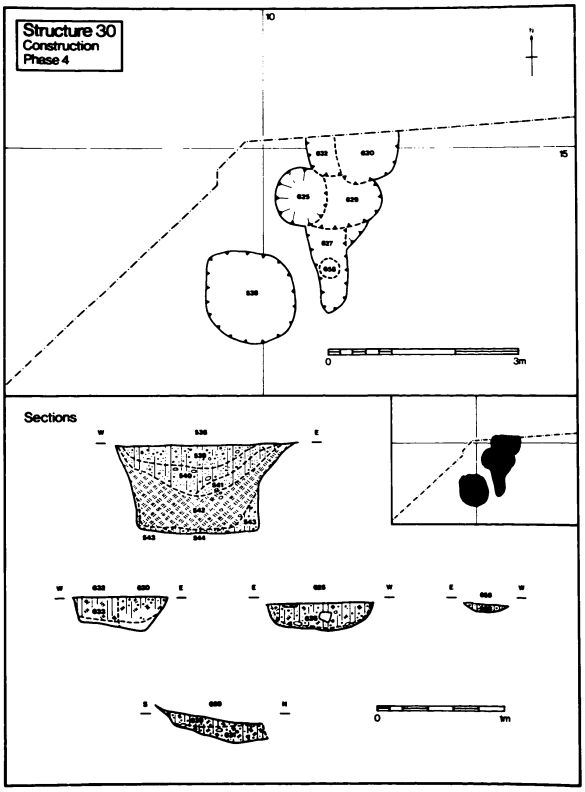

Structure 22
Construction
Phase 4
20
15
677
684
0
3m
Section
E
677
684
W
679
0
1m

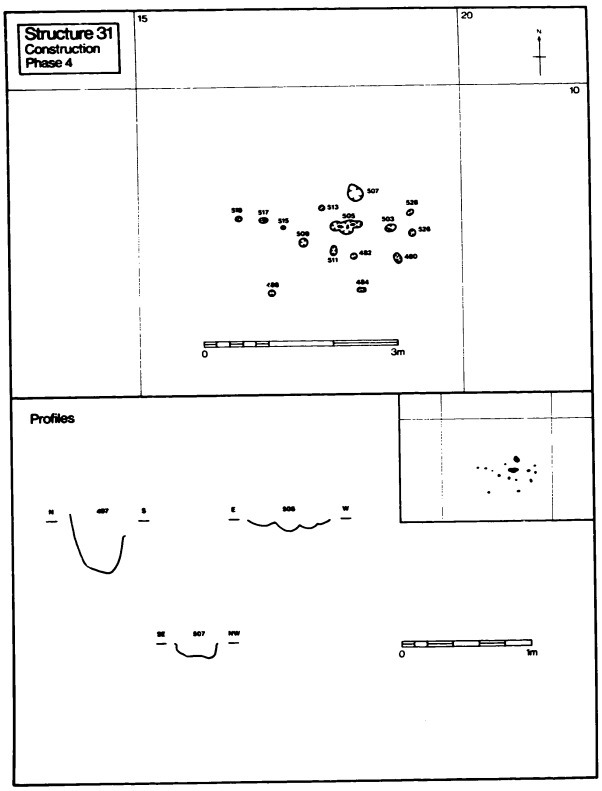

Structure 24
Construction
Phase 3
05
10
10
N
746
748
750
752
0
3m
Sections
SW
NE
746
747
748
749
750
751
752
753
0
1m

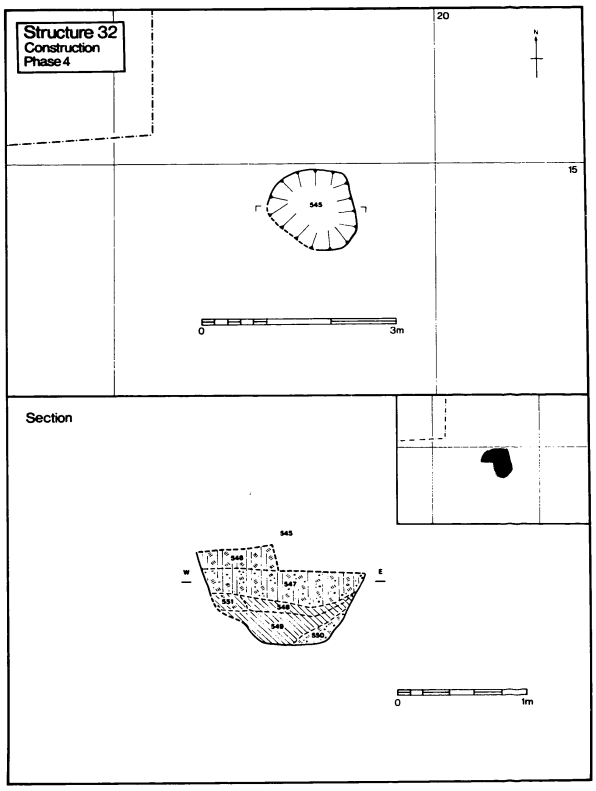

Structure 25
Construction
Phase 3
05
05
N
681
685
0
3m
Profiles
W
683
E
E
686
W
0
1m

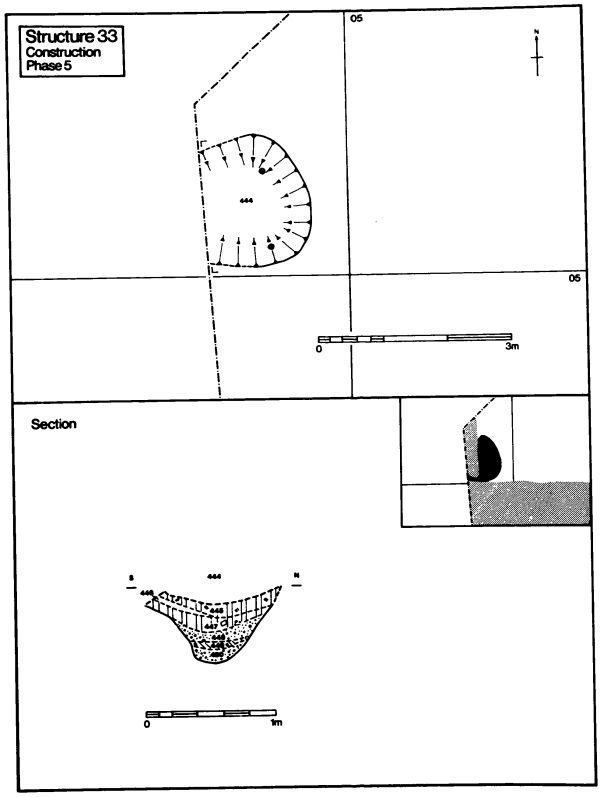

Structure 27
Construction
Phase 2
05
10
00
N
0
3m
Sections
S
N
S
W
0
1m

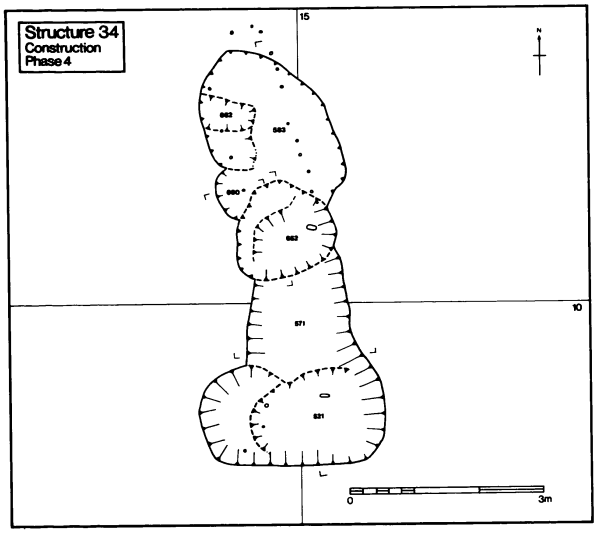

Structure 29
Construction
Phase 5
10
15
20
05
436
437
530
470
0
3m
Section
NW
437
SE
438
439
440
441
442
0
1m

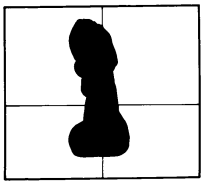

Structure 30
Construction
Phase 4
10
15
0
3m
Sections
0
1m

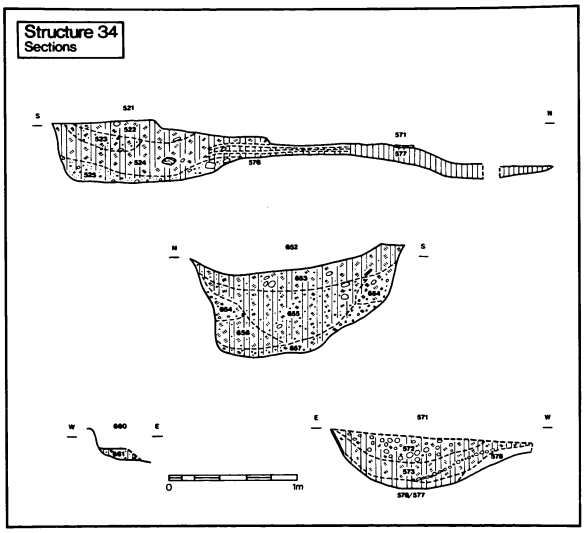

Structure 31
Construction
Phase 4
15
20
10
0
3m
Profiles
0
1m

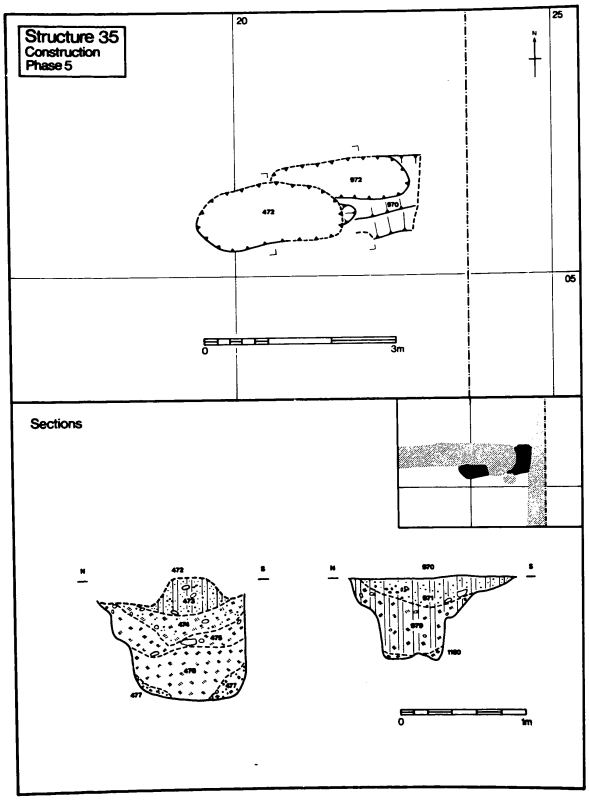

Structure 32
Construction
Phase 4
20
15
N
545
0
3m
Section
545
546
547
548
549
550
551
W
E
0
1m

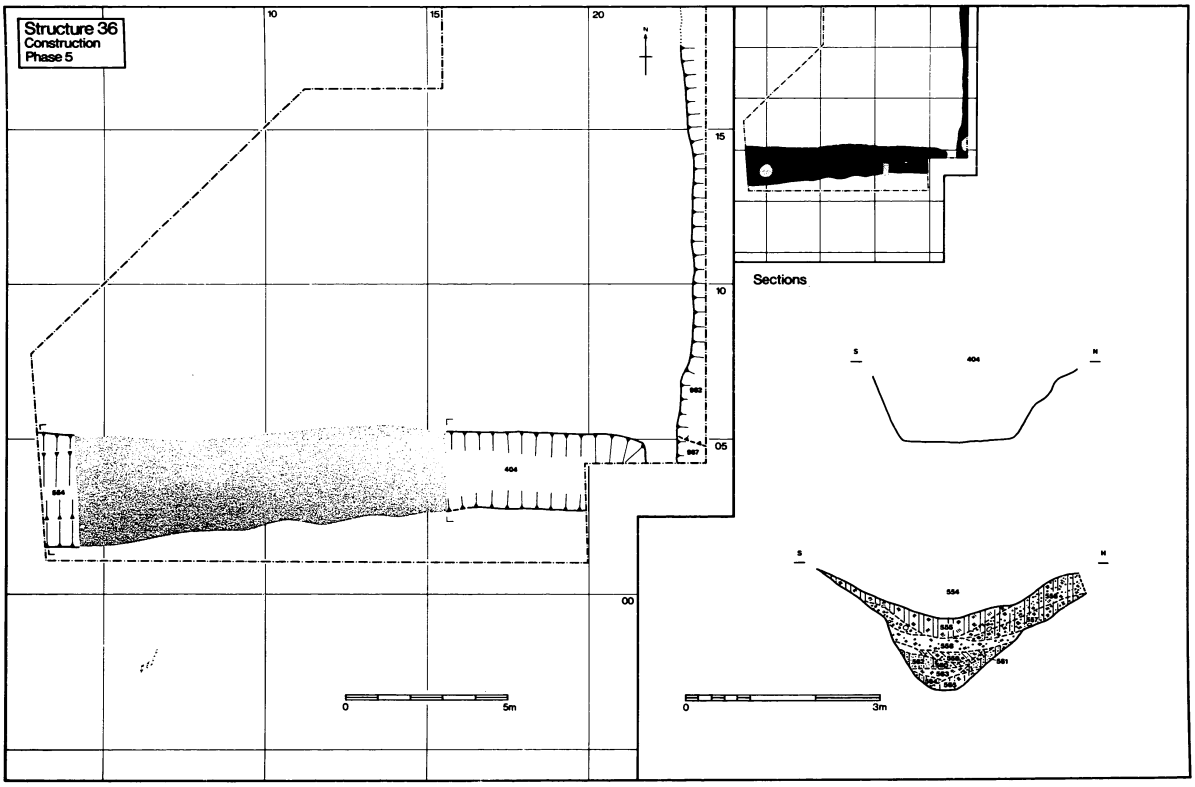

Structure 33
Construction
Phase 5
05
05
N
444
0
3m
Section
444
445
446
447
448
S
N
0
1m

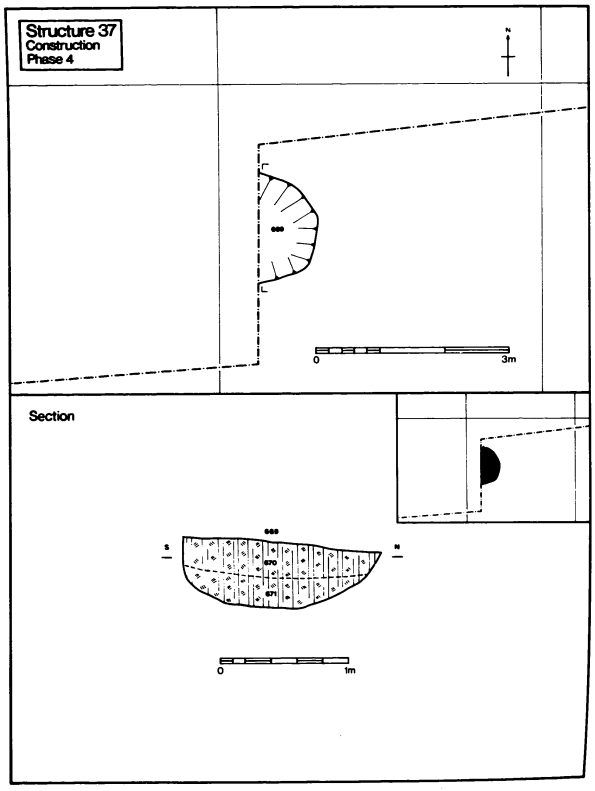

Structure 34
Construction
Phase 4
15
10
N
0
3m

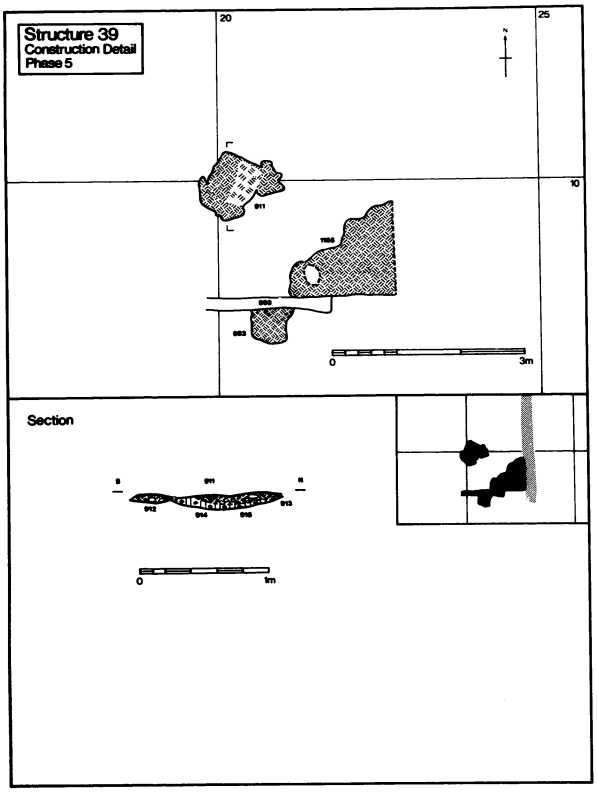


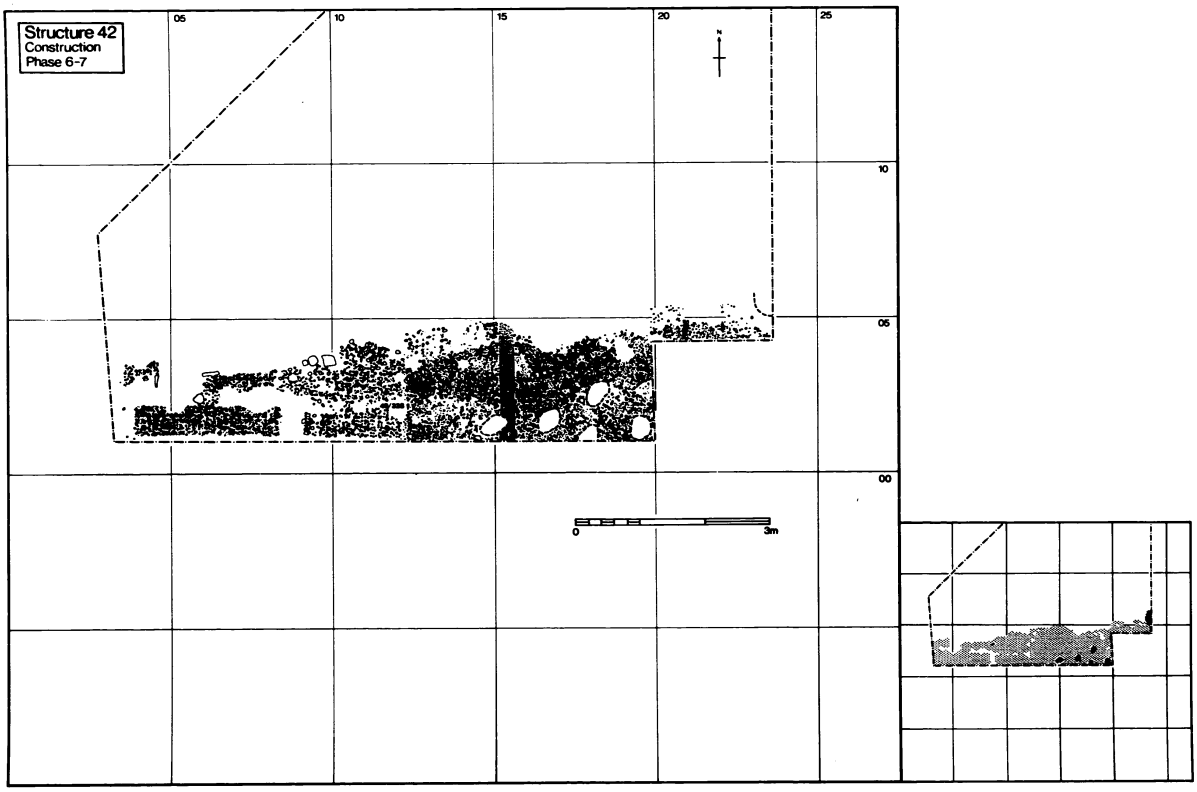

Structure 34
Sections
S
N
521
571
578
W
E
660
0
1m
578/577

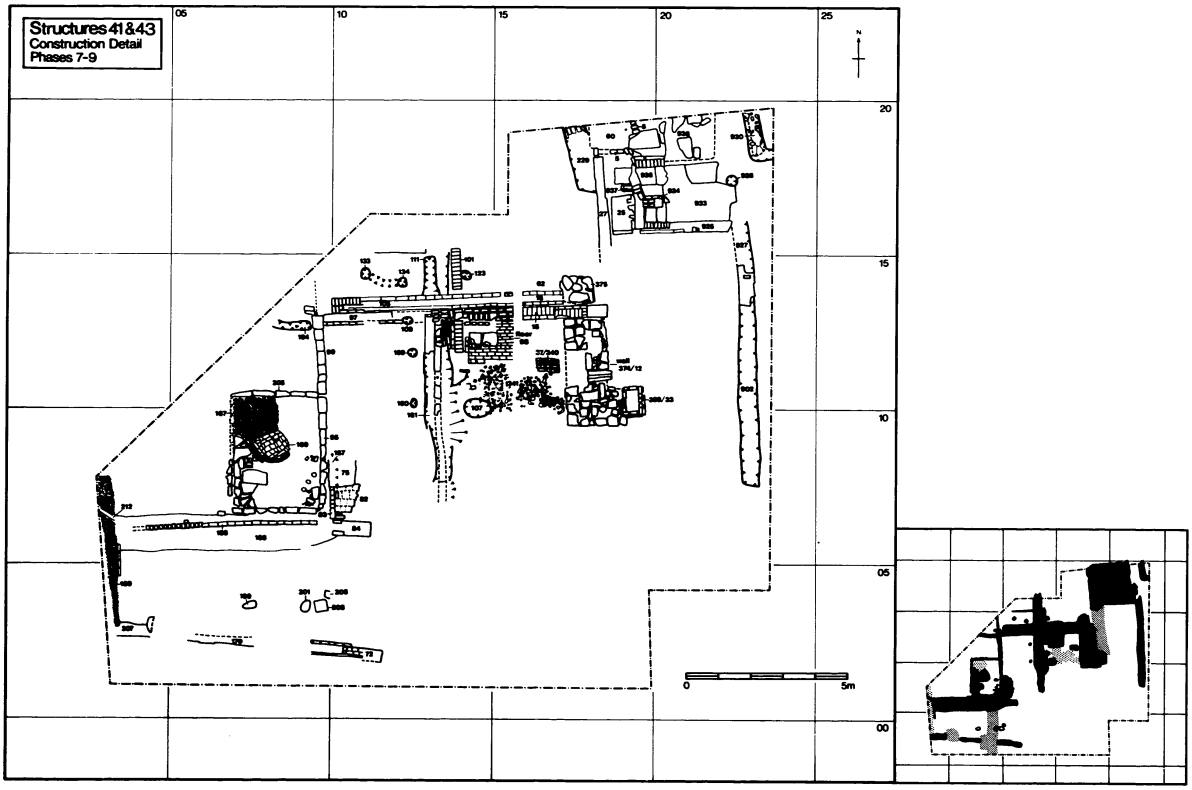

Structure 35
Construction
Phase 5
20
25
05
N
672
472
670
0
3m
Sections
N
S
472
476
477
N
S
670
671
679
680
0
1m

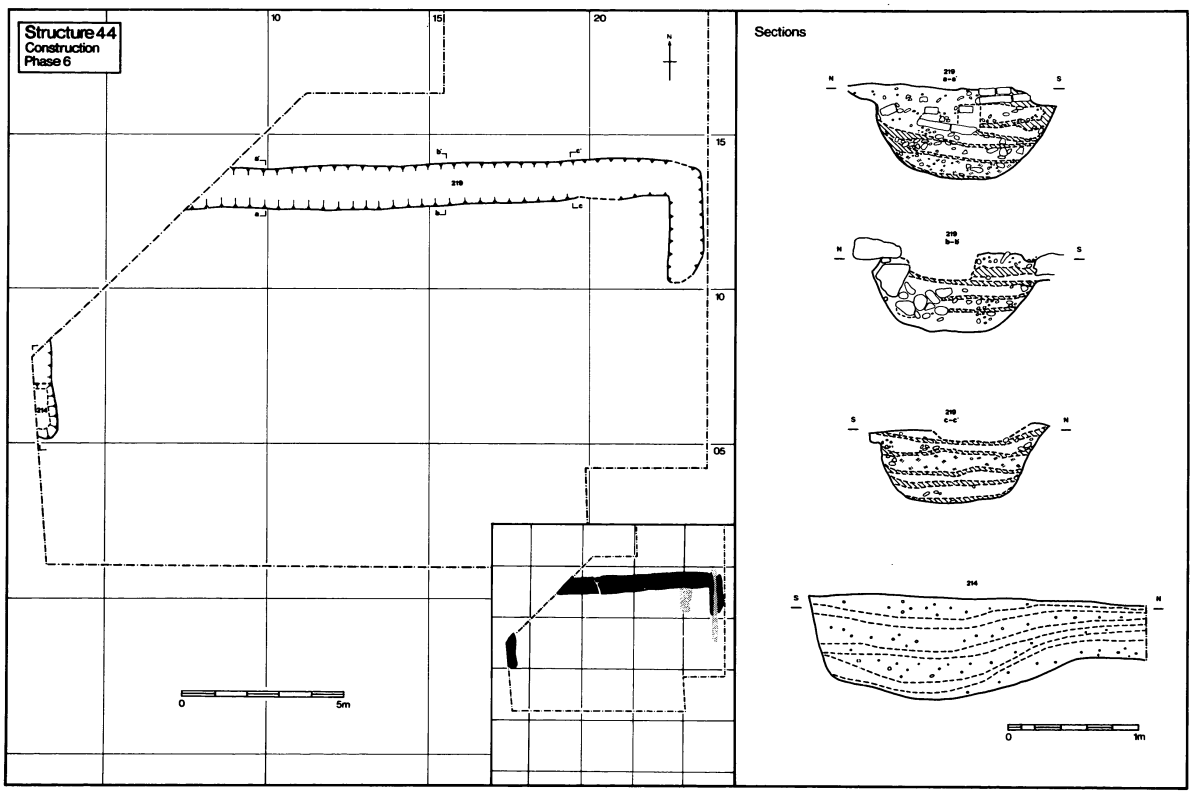

Structure 36
Construction
Phase 5
10
15
20
15
10
05
00
N
404
554
557
0
5m
Sections
S
404
N
S
554
N
0
3m

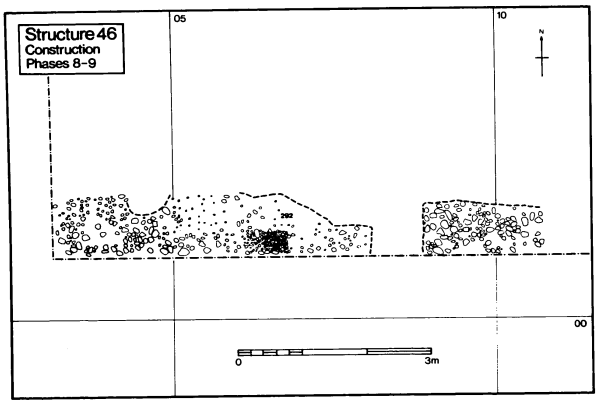

Structure 37
Construction
Phase 4
N
669
0
3m
Section
669
S
N
670
671
0
1m

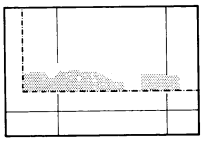

Structure 39
Construction Detail
Phase 5
20
25
10
N
911
1154
952
953
0
3m
Section
S
911
N
912
913
914
915
0
1m

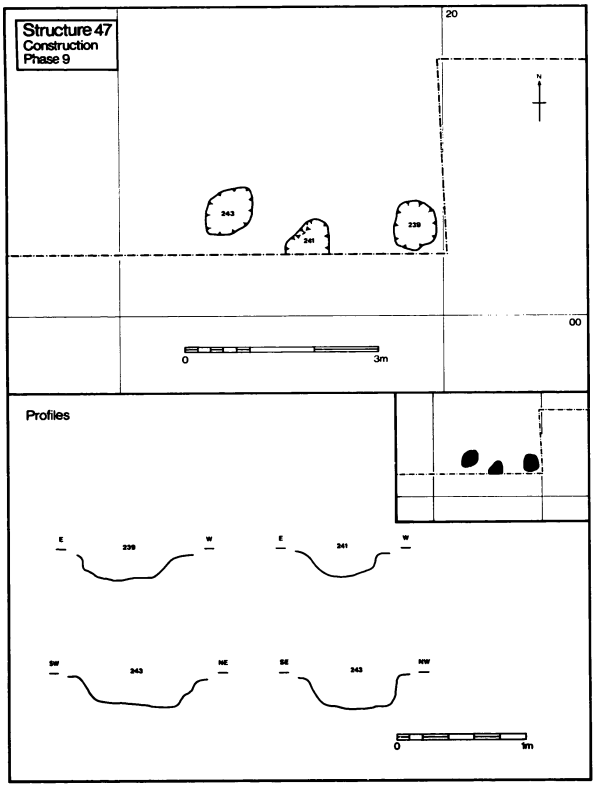

Structure 42
Construction
Phase 6-7
05
10
15
20
25
10
05
00
0
3m

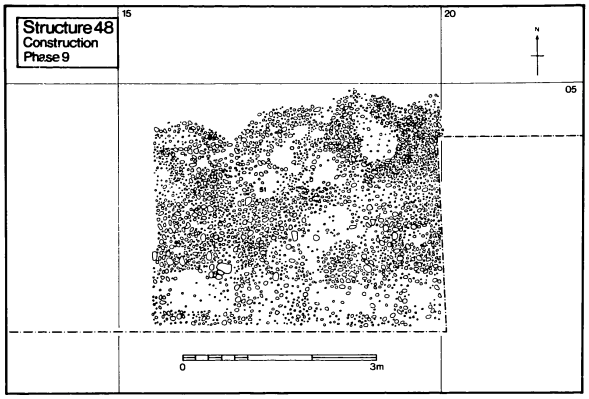

Structures 41&43
Construction Detail
Phases 7-9
05
10
15
20
25
N
20
15
10
05
00
0
5m

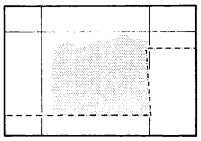

Structure 44
Construction
Phase 6
10
15
20
N
15
10
05
0
5m
Sections
N
S
S
N
S
N
214
0
1m

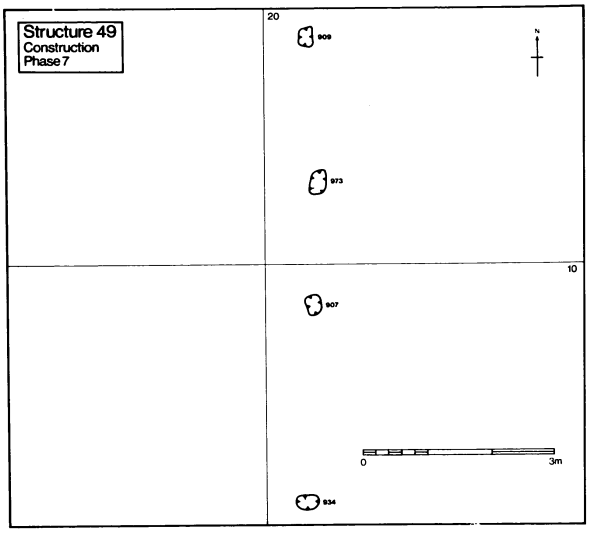

Structure 46
Construction
Phases 8-9
05
10
00
N
292
0
3m

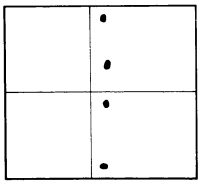


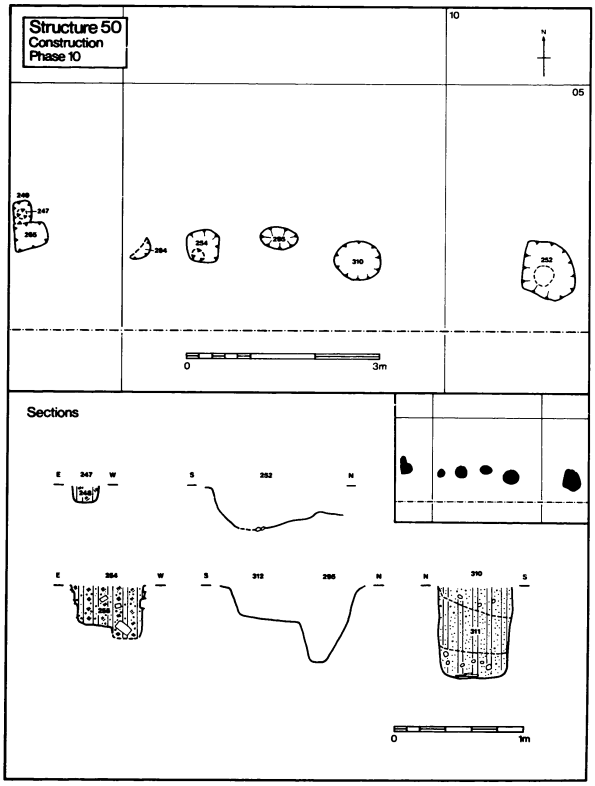

Structure 47
Construction
Phase 9
20
00
N
243
241
239
0
3m
Profiles
E
239
W
E
341
W
SW
343
NE
SE
343
NW
0
1m

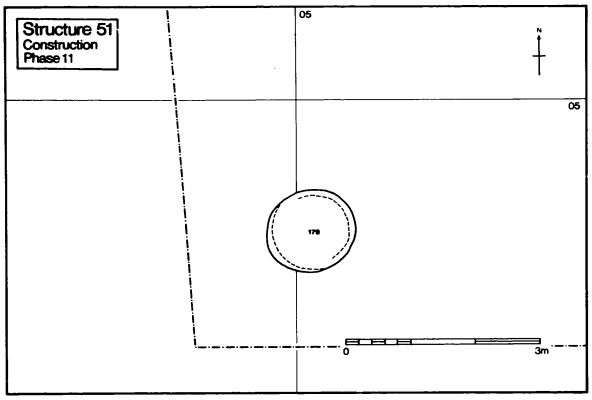

Structure 48
Construction
Phase 9
15
20
05
N
0
3m

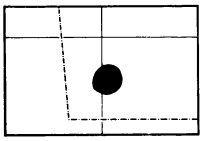


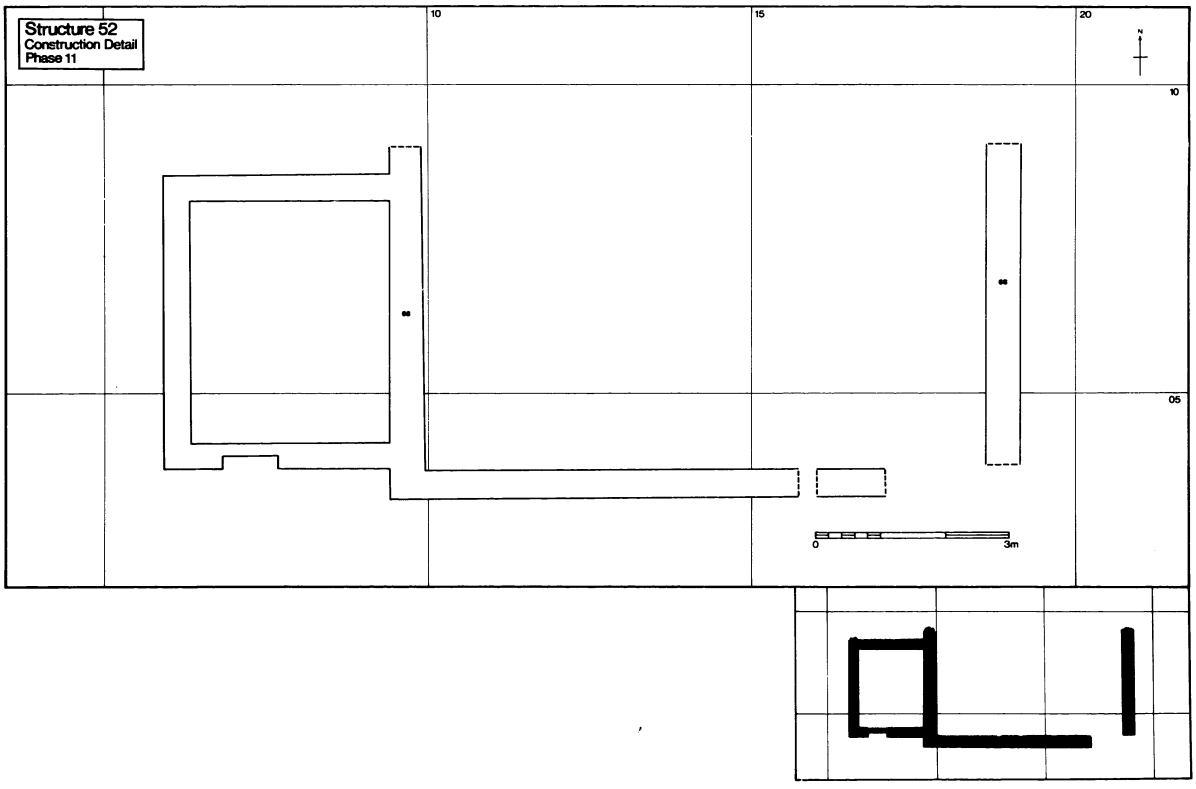

Structure 49
Construction
Phase 7
20
10
909
973
907
934
N
0
3m

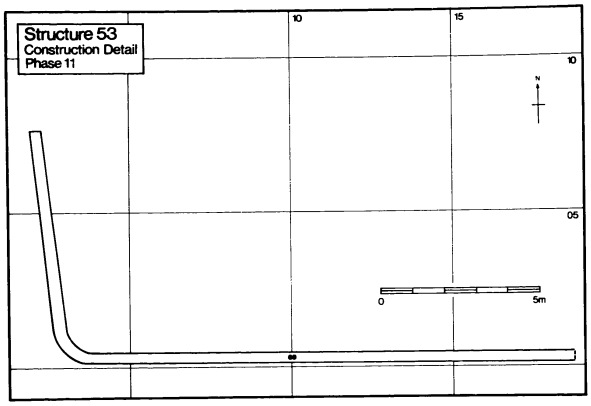


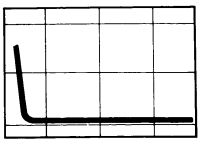

Structure 50
Construction
Phase 10
10
05
N
0
3m
Sections
E 247 W
S 252 N
E 284 W
S 312 298 N
N 310 S
0
1m

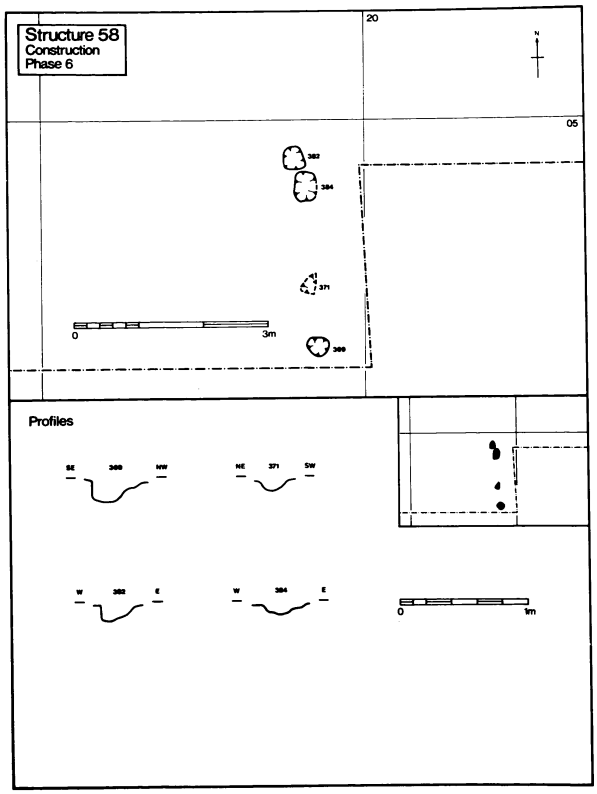

Structure 51
Construction
Phase 11
05
05
N
178
0
3m

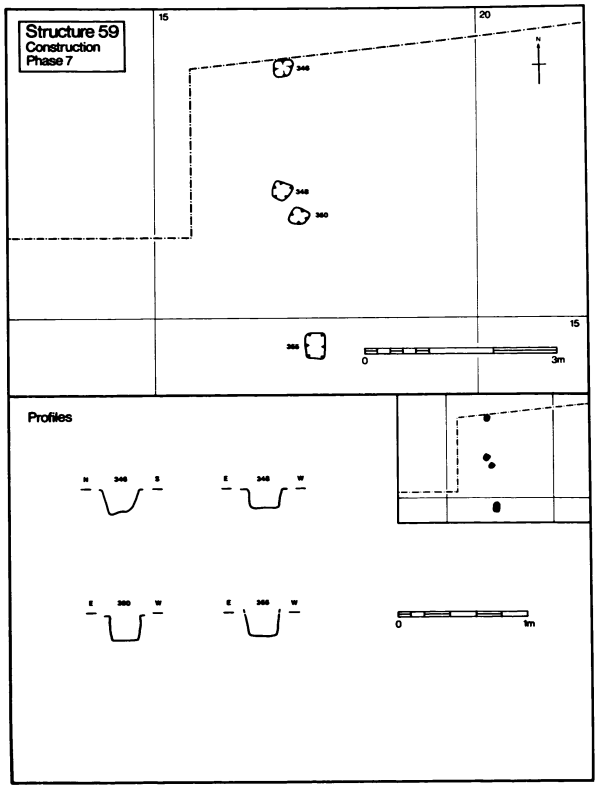


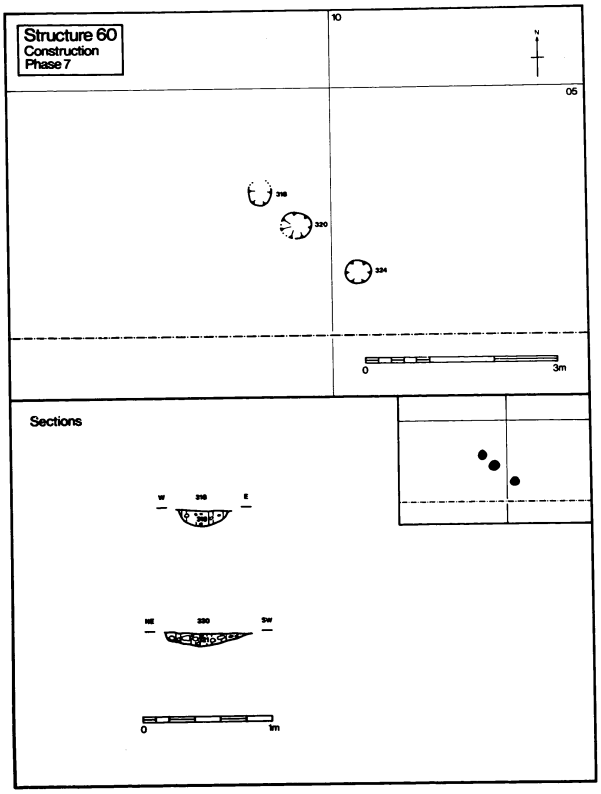

Structure 52
Construction Detail
Phase 11
10
15
20
10
05
N
0
3m

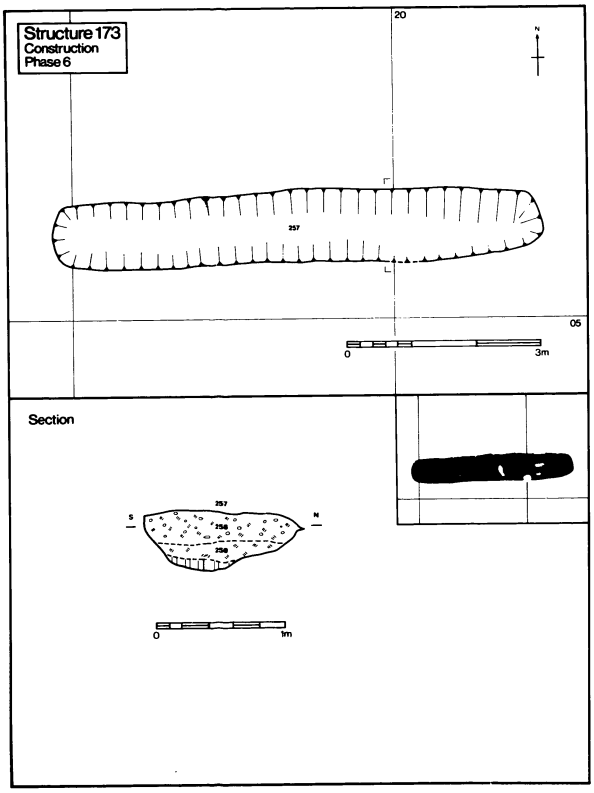

Structure 53
Construction Detail
Phase 11
10
15
10
05
0
5m

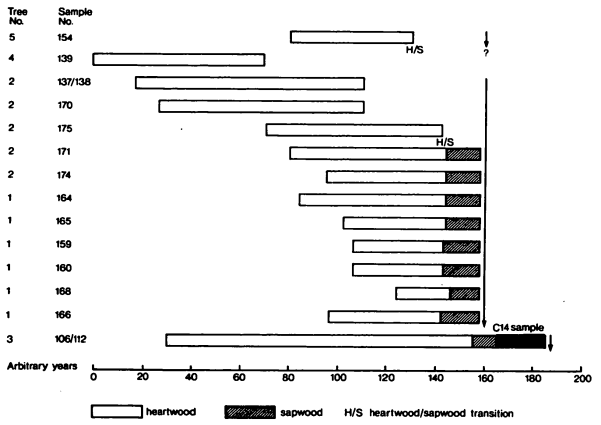


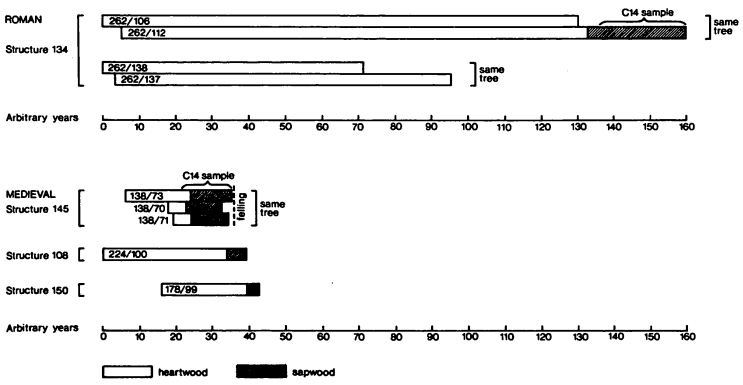

Structure 58
Construction
Phase 6
20
05
382
384
371
369
0
3m
Profiles
SE
369
NW
NE
371
SW
W
383
E
W
384
E
0
1m


Structure 59
Construction
Phase 7
15
20
15
N
346
348
360
366
0
3m
Profiles
N
346
S
E
346
W
E
360
W
E
366
W
0
1m


Structure 60
Construction
Phase 7
10
05
N
318
320
334
0
3m
Sections
W
318
E
NE
330
SW
0
1m


Structure 173
Construction
Phase 6
20
N
257
05
0
3m
Section
S
N
257
256
256
256
0
1m


Tree No.
Sample No.
5 154
4 139
2 137/138
2 170
2 175
2 171
2 174
1 164
1 165
1 159
1 160
1 168
1 166
3 106/112
H/S
?
H/S
C14 sample
Arbitrary years
0 20 40 60 80 100 120 140 160 180 200
heartwood
sapwood
H/S heartwood/sapwood transition


ROMAN
Structure 134
262/106
262/112
C14 sample
same tree
262/138
262/137
same tree
Arbitrary years
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160
MEDIEVAL
Structure 145
C14 sample
138/73
138/70
138/71
felling
same tree
Structure 108
224/100
Structure 150
178/99
Arbitrary years
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160
heartwood
sapwood