



Cultural Heritage Agency  
Ministry of Education, Culture and Science

## The Roman villa at Voerendaal-Ten Hove

*Excavations of a Late Iron Age enclosure, a Roman villa complex, a Late Roman-Early Medieval settlement and burials*

**Part IV - Structure catalogue**

**H.A. Hiddink (ed.)**

Nederlandse  
Oudheden

20



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provincie limburg



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Part IV - Structure catalogue

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## **Part IV - Structure catalogue**

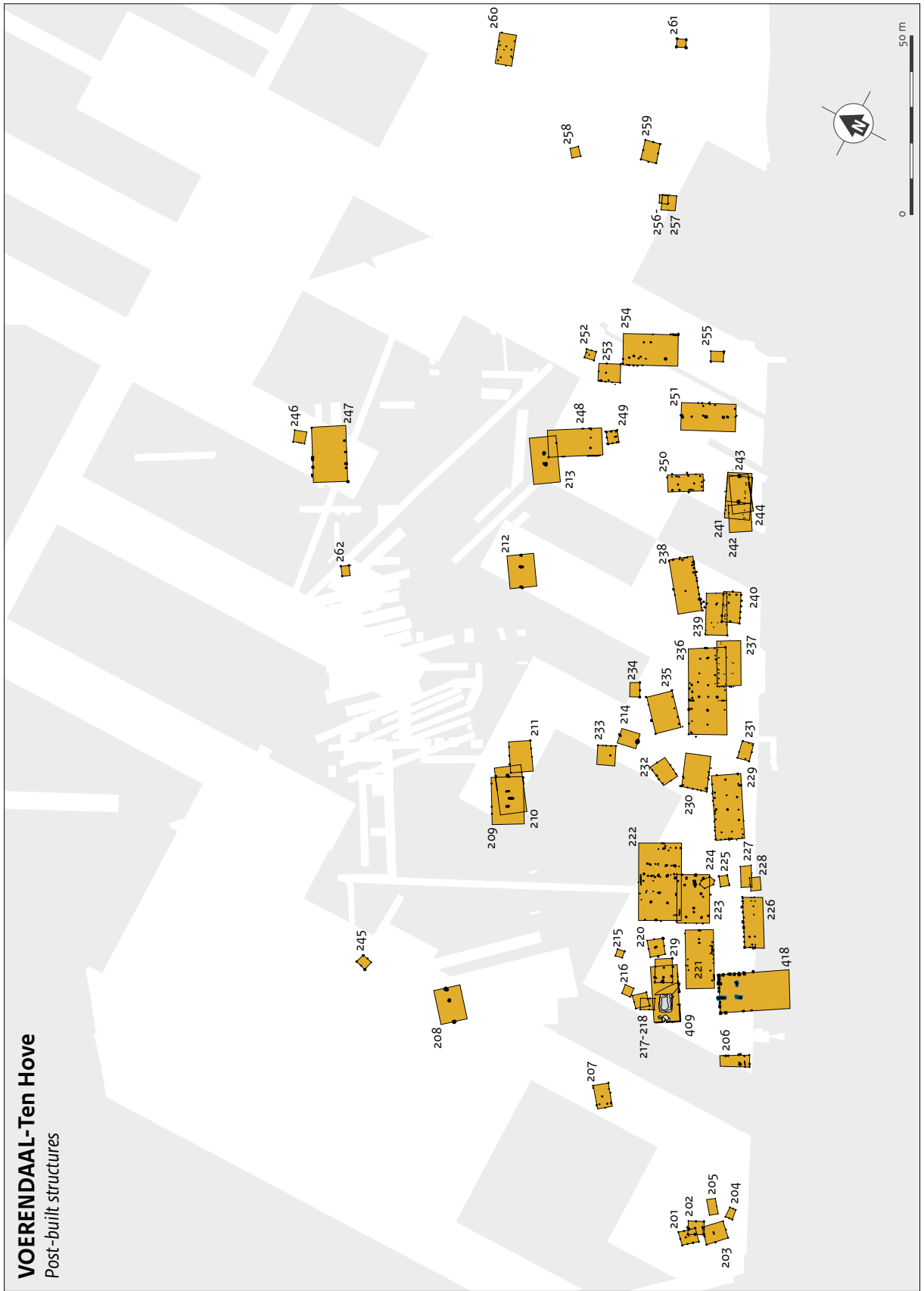


Fig. 40.1 Voerendaal-Ten Hove. The post-built structures with their numbers.



# 40 Post-built structures

*Diederick Habermehl and Henk Hiddink*

## 40.1 Introduction

Below, 61 post-built structures are described. Their location is shown in figure 40.1.

The catalogue of post-built structures has a format used in several other publications on excavations in the Southern Netherlands.<sup>3271</sup>

It was first developed by Frans Theuws and slightly modified by the second author.<sup>3272</sup>

The descriptions can contain the following captions, although often only a few are relevant due to the limited size or incomplete state of the building plans:

### *investigation and reconstruction*

Here the (possible) reasons for missing features are dealt with, the available or absent documentation is mentioned, and it is explained why a specific reconstruction was preferred over alternatives.

### *construction*

The most important elements of the descriptions can be found here. The main dimensions of the building and depths of features are given and the most important elements of the construction, the framework or core, are discussed. The larger buildings were two aisled with central roof-bearing posts, three aisled with inner posts or had a combination of both.

### *walls*

Here the position and construction of the walls is discussed.

### *entrances*

Indications for the position of entrances.

### *roof*

For some buildings the roof form can be reconstructed, but only if the position of the outer roof-bearing posts relative to the short walls is known. When they are positioned in these walls, the roof was gabled, when they were some distance apart, it was hipped.

### *special features*

Special or unusual elements were no part of the construction of the building, but features possibly associated with it. They are very rare however, both in Voerendaal and other settlements on the (Dutch) loess and sandy soils. On these soils, agricultural activities often completely disturbed features with a

lesser depth, like hearths, inner walls and the stalls/bails for cattle. On loess soils, erosion is an extra factor in the disappearance of features. In a number of house plans, pits were found that possibly could have been storage or 'cellar' pits. In most cases however, it is impossible to prove that they were associated with the building.

### *repairs and alterations*

When a feature belonging to a building intersects another or is very close and seems redundant, this could be an indication for repairs, alterations or reinforcement. This kind of evidence is quite scarce however, and most buildings apparently had a rather short lifespan.

### *disappearance of the building*

In theory, the layers or subdivisions inside features can point to the way in which a structure was demolished or dismantled. Often larger posts were salvaged for reuse by digging (building 208, 213) or wrenching them out. The latter method leaves mostly no clear traces however, because the remaining hole was filled in and has the same appearance as a pipe of a slowly decayed post. At the same time, it is possible that a salvaged post was cut at ground level, again leaving the same traces as a decayed post. In practice, the majority of the postholes in Voerendaal show no layers or subdivisions at all, due to homogenisation or the excavation method by which features had disappeared at a lower level before they could be sectioned. In the past, a considerable percentage of the wooden buildings probably were destroyed by fire (accidents, lightning, raids). One should expect evidence for this in the form of charcoal or burnt loam (of the walls), but in practice it is seldom found, because the change that the material mentioned reached the lower levels of small postholes is very slim. Many features in Voerendaal have a fill that was described as dark grey or black, often with the presence of charcoal explicitly mentioned. Nevertheless, the impression is that we are primarily dealing with the refuse of 'normal' activities during the long period the site was used.

<sup>3271</sup> The sunken huts are described in chapter 44.

<sup>3272</sup> Theuws *et al.* 1988, 364ff. (Dommelen); Theuws 1999, 253ff.; Hiddink 2005a, 286-288.

*finds and dating evidence*

Here the dating of the structure is discussed, with attention to intersections or overlaps with other structures, <sup>14</sup>C-dates and the find material. Not only the datable finds are mentioned, but also special finds per se or

material that is possibly be connected to the function of structures. The indications for the dating of the structure on basis of building typology and the general phasing of the site, is not addressed here but in chapter 6.

## 40.2 Description of the post-built features, associated finds and dating evidence

### BUILDING 201 / trench 70, 78 (Fig. 40.2)

*investigation and reconstruction*

The features of this building were documented at excavation level 3. Building 201 overlaps with 202, resulting in some uncertainties with regard to its reconstruction (see below). All posts were sectioned, and the sections were drawn.

*construction*

Building 201 consists of twelve posts and has a rectangular plan measuring 4.85 x 3.90 m. The two outer rows of posts (southeast-northwest) are set with regular intervals: c. 1.5-1.6 m. In the central row, however, features 70.024 and 26 are placed more closely together. As a result, posts 70.026 and 29 are not in line with posts 70.019 and 28 or 32 and 35 respectively. As a result of the overlap with building 202, the allocation of posts 70.029 and 70.035/78.017 to building 201 is not entirely clear and certain. They fit the reconstruction of both buildings. Possibly, posts were reused or replaced at the same location after one of the buildings was dismantled. The interval between the rows is c. 2.0 m. The depth of the post-pits ranges between 12 and 38 cm.

*repairs and alterations*

Feature 70.031 can possibly be interpreted as a post that was inserted at a later moment. However, it can also have been part of the primary construction.

*finds and dating evidence*

This building overlaps with 202, so both did not exist at the same time. On basis on the finds, 3 sherds (10 g) of handmade pottery, a prehistoric dating is possible. The residues of the archaeobotanical samples from this structure and both 202 and 203 were quite clean, consisting only of loess, some small pieces of gravel and occasionally some minute rounded pieces of brick.

### BUILDING 202 / trench 70, 78 (Fig. 40.2)

*investigation and reconstruction*

The features of this building were documented at excavation levels 3 and 4. Building 202 overlaps with building 201, resulting in some uncertainties with regards to its reconstruction (see above). All posts were sectioned and the sections were drawn.

*construction*

Building 202 probably consists of three parallel rows of three posts, measuring a total of 4.35-4.55 x 3.60-3.80 m. As a result of the overlap with building 201, the allocation of posts 70.029 and 70.035/78.017 is not entirely certain. They fit both the reconstruction of buildings 201 and 202 as proposed. Possibly, posts were reused or replaced at the same location after one of the buildings was dismantled. The depth of the postholes ranges between 8 and 35 cm.

*repairs and alterations*

Posts 70.039 and 43 are placed directly next to each other. Possibly, the original post was replaced by a new one over time.

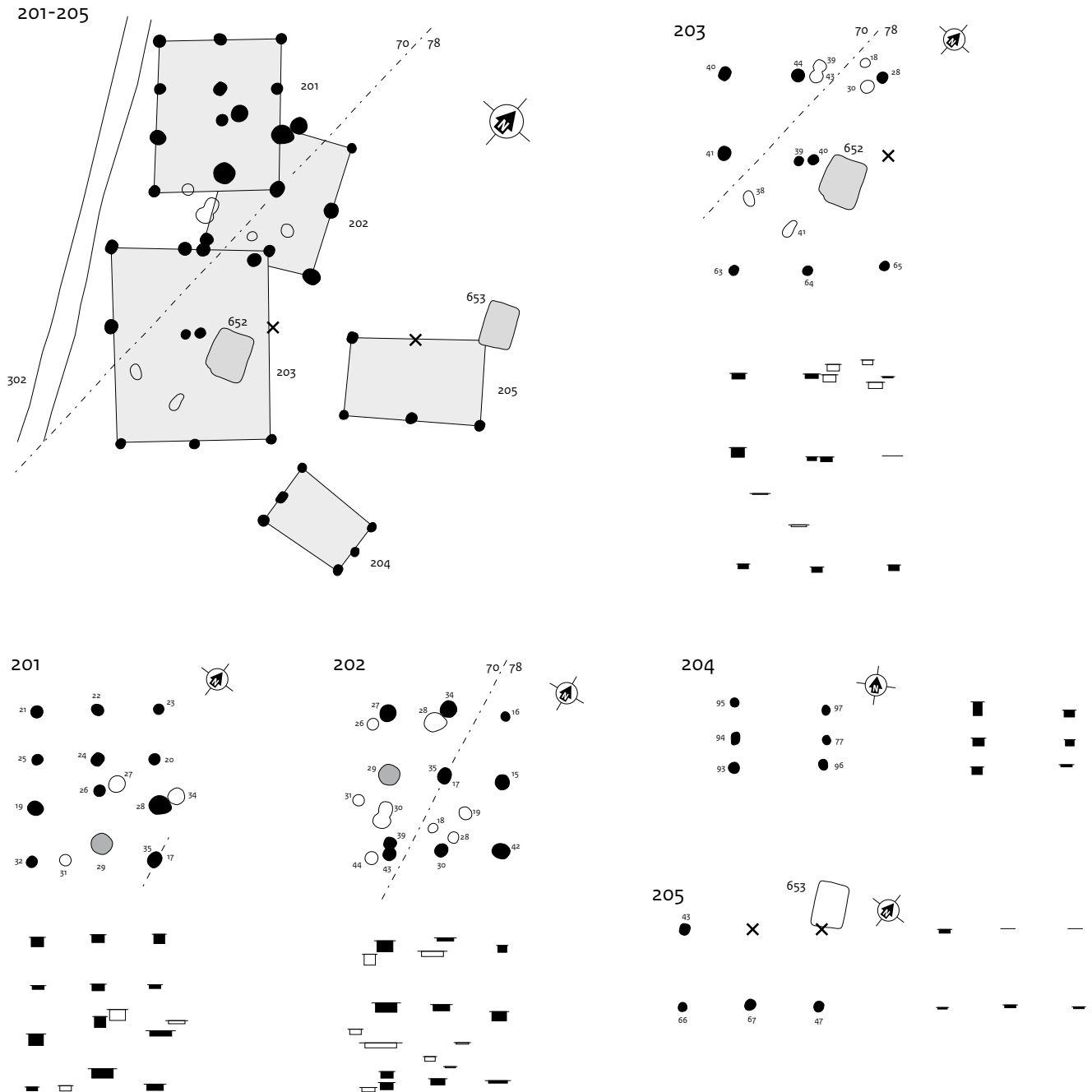


Fig. 40.2 Voerendaal-Ten Hove. Plans and posthole depths of building 201-205. Scale 1:200. (source: D.S. Habermehl & H.A. Hiddink)

#### finds and dating evidence

This building overlaps with 201, so both did not exist at the same time. The finds are a combination of material from different periods: 4 handmade sherds (113 g), 3 Roman sherds (16 g), 2 *tubulus* fragments (100 g), 1 sherd (7 g) from the Early and 5 (27 g) from the High Middle Ages! All the Roman and Medieval material was found in feature 78.030. Therefore it is possible that only this feature is younger than the rest, that the find material is an intrusion or even that it was attributed based on an administrative error. There was no sieved residue from this feature (cf. structure 201).

## BUILDING 203 / trench 70, 78 (Fig. 40.2)

*investigation and reconstruction*

Most features of this building were documented at excavation level 4, only the three southern post holes at level 5. All posts were sectioned, but only those at level 4 were drawn.

The reconstruction of this building is not certain, because the unequal distances between the features in the north – alternatively forming a six post granary – and those in the south. There are no other features in the vicinity of the latter however to reconstruct a second building.

*construction*

This building consists of four posts and measures 5 x 6.2 m. The depth of the postholes ranges between 5 and 31 cm.

*repairs and alterations*

Either feature 78.039 or 40 could be a replacement of an unstable post.

*finds and dating evidence*

This building overlaps with 202, so both did not exist at the same time. The finds consist of a piece of flint (10 g) and 2 sherds (61 g) of handmade prehistoric pottery.

## BUILDING 204 / trench 78 (Fig. 40.2)

*investigation and reconstruction*

The features of this building were documented at excavation level 6. All posts were sectioned, but only three of the six features were drawn. The spacing of the posts and the size of the building are reminiscent of a sunken hut, but the orientation is not found in the other sunken huts in Voerendaal.

*construction*

This building consists of six posts and measures 1.75-2.10 x 2.90-2.95 m. The depth of the postholes ranges between 7 and 44 cm. The western posts are brownish in colour; the posts in the eastern row are grey.

*finds and dating evidence*

The only sherd is one of handmade pottery (8 g).

## BUILDING 205 / trench 78 (Fig. 40.2)

*investigation and reconstruction*

The south-eastern row of three posts was documented at excavation level 5 of trench 78, while the other post(s) were documented already at level 4. Possibly, this circumstance played a role in the fact that no definitive building can be reconstructed here. All posts were sectioned, but only those at level 4 were drawn.

*construction*

Four posts can probably be attributed to this (somewhat hypothetical) building. The south-eastern row of three posts has a length of 4.9 m. The posts are spaced 2.4 and 2.5 m respectively (southwest-northeast). Post 40 (of building 203?) was situated 3.60 m the northeast of the row of posts, opposite post 64 that is centrally positioned within the row of three. The depth of the postholes ranges between 15 and 18 cm. The construction of this building cannot be reconstructed definitively. Possibly, two posts were missed at level 4 and the original building was a six-post granary-type building. Alternatively, this building has an atypical construction plan with only four posts in total.

*finds and dating evidence*

Feature 653 seems to be younger than building 205. The only find is a piece of flint.

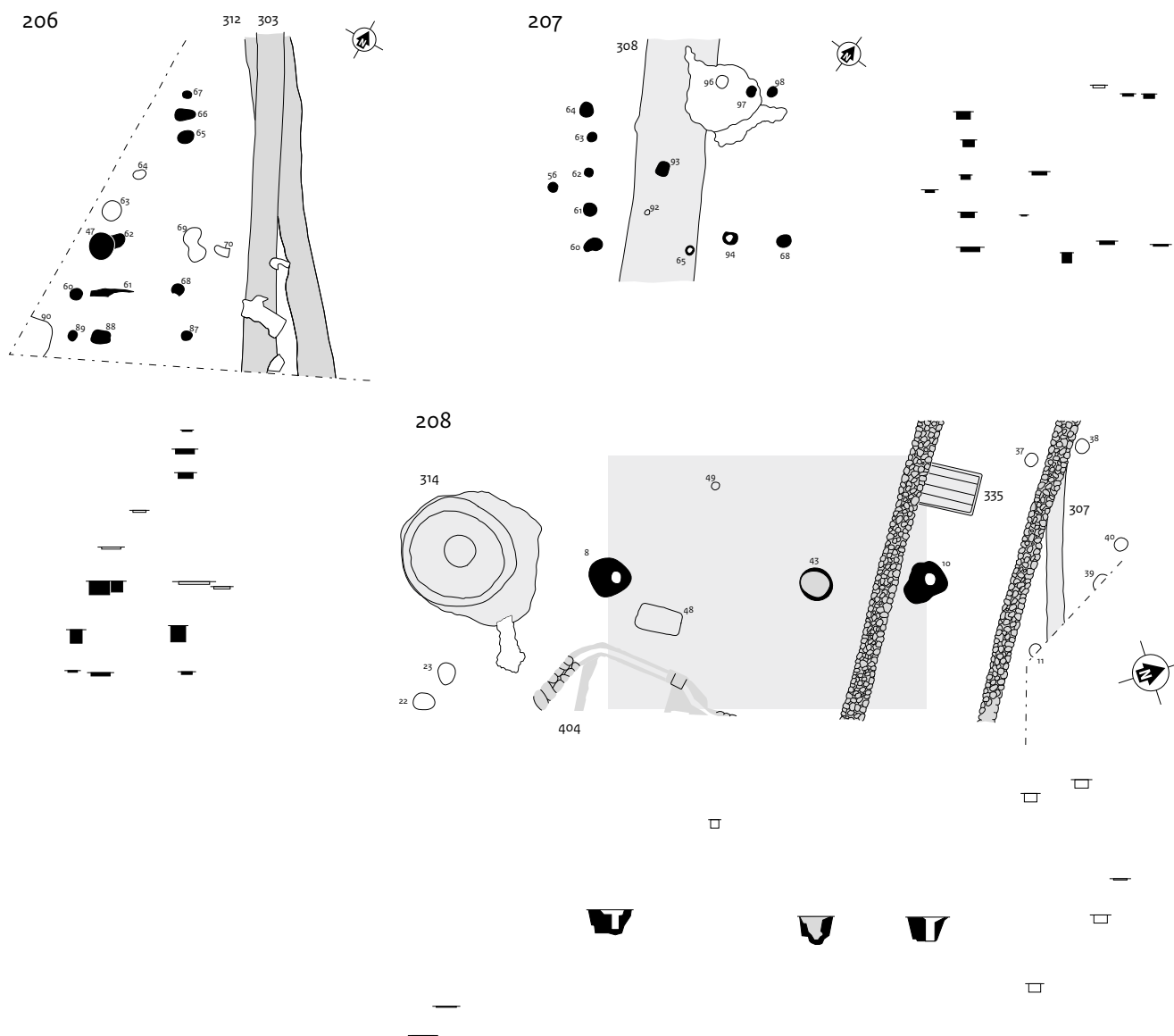


Fig. 40.3 Voerendaal-Ten Hove. Plans and posthole depths of building 206-208. Scale 1:200. (source: D.S. Habermehl & H.A. Hiddink)

#### BUILDING 206 / trench 69 (Fig. 40.3)

##### *investigation and reconstruction*

The features of building 206 were documented at excavation levels 4 and 5 in trench 69.

Only part of the original building has been excavated, the rest is situated outside the investigated area. All posts were sectioned and five of these sections were drawn.

##### *construction*

Feature 65-68 and 87 were probably part of the north-eastern wall of the building (7.15 m long). The depth of these postholes range between 4 and 48 cm. It is not clear if this wall was the long or the short wall of the building. The length does correspond with the general width of several other buildings within the settlement, though. The southernmost features 87, 88 and 89 could be part of the south-eastern wall, although cannot be substantiated any further. Remarkable are the deep postholes 60, 68 and 47/62 (40, 48 and 40/32 cm). A fragment of a ditch (feature 61) between these posts can possibly also be associated with this building.

##### *disappearance of the building*

In none of the postholes post pipes were documented.

##### *repairs and alterations*

The features 47 and 62 represent two phases: feature 47 cuts through feature 62. Possibly, the post in feature 47 could have been a replacement of that in feature 62.

*finds and dating evidence*

The only finds are one piece of flint (101 g) and 2 fragments of handmade pottery (8 g).  
The building can be prehistoric or younger.

## BUILDING 207 / trench 106 (Fig. 40.3)

*investigation and reconstruction*

The features of building 207 were documented at excavation levels 2 and 3 in trench 106.  
All posts were sectioned, but none of the sections were drawn.

*construction*

Building 207 is a relatively small rectangular construction measuring c. 5.70 x 4 m. In the interior, the 'central post' 106.093 was only 10 cm deep. The remaining features were 5-22 cm deep (average 13 cm).

*disappearance of the building*

For two of the features (65 and 94) the presence of post pipes is suggested in the plan, but the sections were not drawn.

*finds and dating evidence*

The features of building 207 intersected the upper fill of ditch 308. Consequently, this building must be younger. There are no finds.

## BUILDING 208 / trench 114 (Fig. 40.3)

*investigation and reconstruction*

The features of this building were documented at excavation levels 1 and 2 in trench 114. All three features were sectioned and the sections were drawn. It is possible that the building had more central posts, but were not observed (to the east) or were destroyed when well 314 was dug (west).

*construction*

The three postholes on the longitudinal axis are situated at distances of 5.9 and 3.4 m from each other, forming a building of (at least) 9.3 m long. Their depth was 75, 84 and 73 cm.

*walls*

Some features in the vicinity in theory could have been part of the walls, but it is unlikely that wall post should have been preserved.

*disappearance of the building*

In two of the features, post pipes were recognized. The post of 114.043, however, seems to be dug out.

*finds and dating evidence*

This building is clearly older than portico 20b and phase 2 of the bath. No finds were collected in the features.

## BUILDING 209 / trench 89 (Fig. 40.4)

*investigation and reconstruction*

The features of building 560 were documented at excavation levels 1 and 2 of trench 89.  
All features were sectioned and all sections were drawn. Only a part of the building was situated inside the excavated area, to the west at least one more central post is to be expected.

*construction*

Of building 560 two central posts were documented, 4.25 m apart. Their depth was only 58 and 38 cm but in section they showed the typical asymmetrical form ('holster shape') of the central posts in Roman post-built houses.

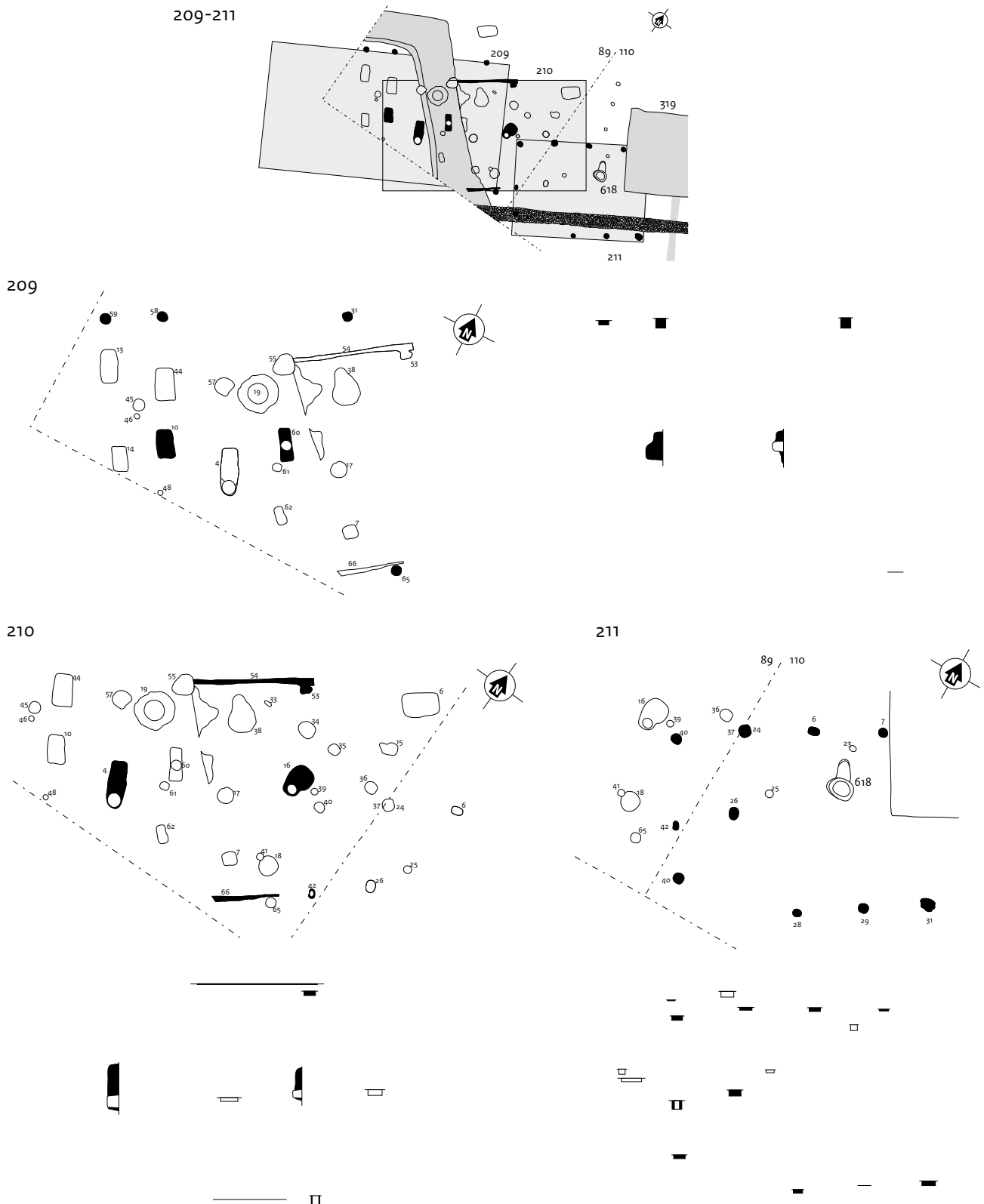


Fig. 40.4 Voerendaal-Ten Hove. Situation, plans and posthole depths of building 209-211. Situation plan scale 1:400, buildings 1:200. (source: D.S. Habermehl & H.A. Hiddink)

It must be remarked that around 89.010, a number of other features were documented that seem to resemble it in shape and filling (features 13, 14 and 44). Two of these were only very shallow, however (8 and 11 cm). Only feature 14 has a depth of 37 cm. These pits have straight sides and a flat bottom. It remains unclear how these features must be interpreted in relation to building 209 and 210.

*walls*

Four postholes at distances of 4.5 m from the central axis on first sight could have been part of building 209, but a width of 9 m seems unlikely (cf. building 210). Perhaps we are dealing with outer posts rather than wall posts. Their depth was 14-35 cm.

*disappearance of the building*

Only in one of the two central posts a post pipe was documented.

*finds and dating evidence*

Feature 89.060 was dug into the fill of ditch 308. The building overlaps with 210, so both were not in existence at the same time. Only one sherd (11 g) of handmade pottery was present, next to some Roman material. This consisted of an *imbrex* fragment (200 g), a sherd (2 g) of a terra sigillata dish Dragendorff 18 from South Gaul (c. AD 70-120), one (8 g) of a colour-coated beaker in technique b (second century AD) and 2 (184 g) of a pot Niederbieber 89, which suggest the building was in use or dismantled after c. AD 125.

## BUILDING 210 / trench 89 (Fig. 40.4)

*investigation and reconstruction*

The features of building 210 were documented at excavation levels 1 and 2 of trench 89. Except for the ditch 66, all features were sectioned. Three of these sections were drawn. One or more central posts of this building could have been situated west of the excavated area.

*construction*

The two central posts are situated at a distance of 6.3 m from each other. Their depth was only 40 and 32 cm.

*walls*

The ditches 89.054 and 66 were probably part of the long walls, making the building 7.6 m wide. Only the depth of 54 is known (3 cm). It is not clear if 89.042 was part of this building or of 211.

*disappearance of the building*

In all the postholes a post pipe was present.

*finds and dating evidence*

Wall ditch 89.066 intersected ditch 308. There is one iron fragment. Four finds are certainly Roman: a square *bessalis* (900 g) and 3 sherds (59 g) of Roman pottery. A fragment of a pot Niederbieber 89 dates after c. AD 125 (cf. 209 above).

## BUILDING 211 / trench 89, 110 (Fig. 40.4)

*investigation and reconstruction*

The features of building 562 were documented at excavation level 1 of trenches 89 and 110. Except one, all posts were sectioned, but only one of the sections was drawn. Possibly one feature of the building was destroyed when basin 319 was constructed (but see below).

*construction*

Building 562 is a rectangular building measuring c. 8.85 x 6.20 m. Only 110.026 is a possible central post, with a depth of only 22 cm.

*walls*

The northern long wall consisted of four (probably five) postholes, the southern of at least 3 posts. These wall posts are not situated opposite each other. Two features were part of the western short wall (although 89.042 could belong to building 210. The depth of the postholes was 9-16 cm.

*roof*

The position of central post 110.026 suggests that the building had a hipped roof.



*disappearance of the building*

Only in 89.042 a post pipe was recorded.

*finds and dating evidence*

The finds date the structure in the Roman period or after, based on 3 pieces (1 kg) of roof tile, and 2 sherds (11 g) of pottery. It seems to be associated with 209 and 210, although this structures could not all have existed at the same time. A rather early date is also suggested by at least one missing post, apparently caused by the construction of basin 319. However, in theory it is possible that the posthole was not observed in the fill of the basin. If 211 should succeed 319, also wall 419 should be taken into account. A length of wall should be demolished for making the construction a building possible. All in all, the building belonged most likely to period 2.

## BUILDING 212 / trench 12 (Fig. 40.5)

*investigation and reconstruction*

The features of this structure were documented at excavation level 1 in trench 12; the sections were drawn. The structure can either have been a Alphen-Ekeren house or part of a fence between the 'pars urbana' and 'pars rustica' of the villa, as a wooden continuation of wall 419. If a house, it is possible that at least one more central post is situated to the west of the excavated area.

*construction*

The three postholes of structure 212 were situated at a distance of 5.7 and 3.3 m of each other. Their depth was 20, 28 and 32 cm.

*disappearance of the building*

At excavation level, post pipes seemed present in all three features. In the sections, these were only visible in 12.027 and 28.

*finds and dating evidence*

In two of the features 3 Roman tile fragments (c. 200 g) and a tiny handmade sherd (1 g) were found.

## BUILDING 213 / trench 24 (Fig. 40.5)

*investigation and reconstruction*

The features were found at excavation level 2 and both sections were drawn. It is possible that one or more central posts were situated on either side of the excavated area.

*construction*

The distance between both postholes is 3 m, their depth 55 and 71 cm.

*walls*

None of the documented features in trench 24 can be associated with the walls of the building, although 24.010 is at the right distance from the central axis.

*disappearance of the building*

In 24.011 a post pipe was present; the post of 9 seems to be dug out.

*finds and dating evidence*

The non-ceramic finds consist of 3 iron fragments, one slag (5 g), 2 pieces of limestone (300 g) and 2 of roof tiles (c. 1 kg). Some of these finds suggest that the building was built or dismantled at a time with at least one stone building present. Roman pottery is represented by 2 sherds (38 g) of terra nigra, one being a base probably of a Holwerda BW 26 or 27 (Fig. 40.5; mostly until early Flavian). One sherd (10 g) from a coarse-walled strainer, produced at Heerlen, dates from c. AD 70.

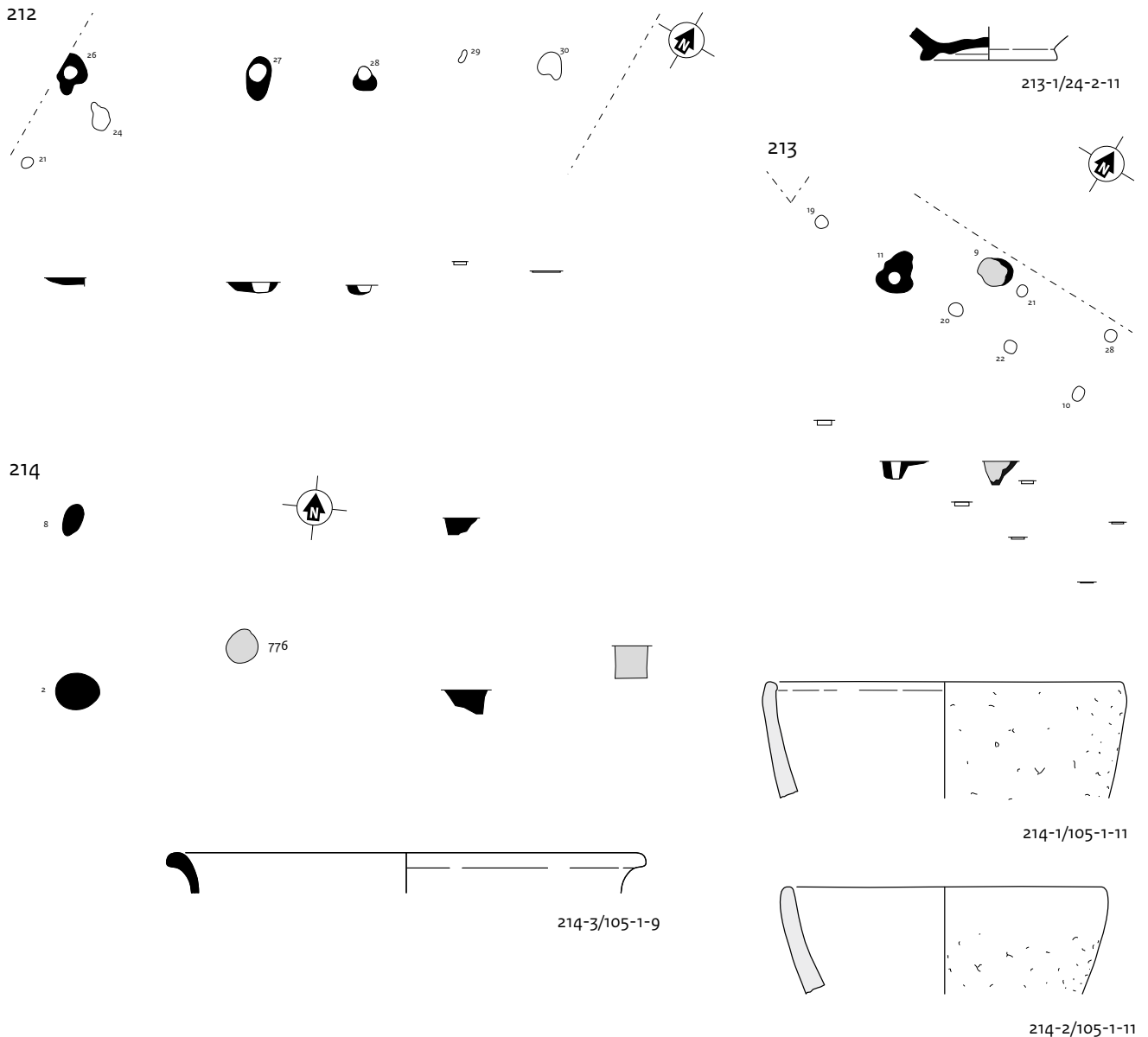


Fig. 40.5 Voerendaal-Ten Hove. Plan and posthole depths of building 212-214, as well as pottery of 213 and 214. Buildings scale 1:200, pottery 1:3. (source: D.S. Habermehl & H.A. Hiddink)

#### BUILDING 214 / trench 105 (Fig. 40.5)

##### *investigation and reconstruction*

Three deep features in trench 105 suggest a building was present here. As regards the orientation, a combination of 105.002 and 5 (pit 776) is the most preferable. The latter feature has steep walls and a flat bottom, however, the shape of a silo. Feature 105.008 more to the north has a typical 'holster shape' in section like 2, although it results in a building with an unusual orientation. That this hypothetical building really existed is also suggested by the finds, however.

##### *construction*

The two features lie 5.2 m apart (also the distance between 105.002 and 776). Feature 105.002 was 75 cm deep, 8 had a depth of 50 cm.

##### *finds and dating evidence*

Apart from a piece of flint and 10 iron slags (224 g), the two features contained quite a lot of pottery. There is a rim of a terra nigra jar and no less than 64 sherds (1,213 g) of handmade pottery (Fig. 40.5). The handmade material on its own dates to the Middle Iron Age, but if the terra nigra is no intrusion, the building must be Early Roman (also suggested by its construction with heavy posts). The type of the terra nigra vessel is not identifiable, possibly a bowl but certainly not a jar Oberaden 60 as previously thought.

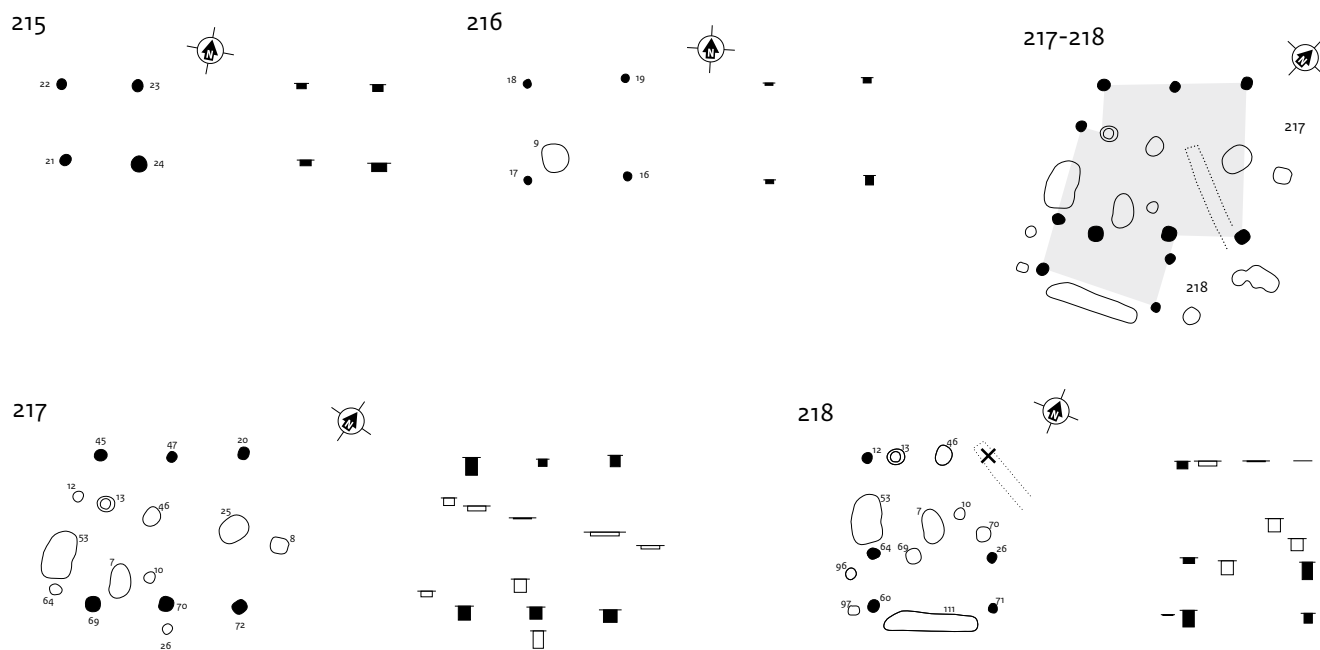


Fig. 40.6 Voerendaal-Ten Hove. Situation, plans and posthole depths of building 215-218. Situation plan scale 1:400, buildings 1:200. (source: D.S. Habermehl & H.A. Hiddink)

#### BUILDING 215 / trench 68 (Fig. 40.6)

##### *investigation and reconstruction*

The features of this building were documented at excavation level 1 in trench 68. All features were sectioned and all sections drawn. This building was already recognized during excavation.

##### *construction*

This granary measured 2 x 2 m and the depth of the four postholes ranged from 14 to 22 cm.

##### *finds and dating evidence*

The only finds are 2 iron fragments and 6 pieces (10 g) of burnt animal bone. In the residue of the archaeobotanical samples, no mortar or pieces of brick were present.

#### BUILDING 216 / trench 68 (Fig. 40.6)

##### *investigation and reconstruction*

The features of this building were documented at excavation level 1 in trench 68. All posts were sectioned and the sections were drawn. This building was already recognized during excavation.

##### *construction*

Granary 216 measured 2.6 x 2.6 m and the depth of the postholes ranged from 6 to 25 cm.

##### *finds and dating evidence*

No finds; and no mortar or pieces of brick in the sieve-residue.

#### BUILDING 217 / trench 68 (Fig. 40.6)

##### *investigation and reconstruction*

The features of this building were documented at excavation levels 1 and 2 in trench 68. All posts were sectioned. All sections were drawn.

##### *construction*

Building 217 measured 4 x 3.8 m. The depth of the six postholes ranged from 19 to 47 cm.

##### *finds and dating evidence*

Building 217 overlaps with building 218 and it is very close to building 409 and probably not existed at the same time. Neither finds nor mortar or brick in the sieve-residue were present.

## BUILDING 218 / trench 68 (Fig. 40.6)

*investigation and reconstruction*

The features of this building were documented at excavation levels 1 and 2 in trench 68. All posts were sectioned and all sections drawn. The reconstruction presented here is somewhat hypothetical. The shape and fill of 68.012 differed (more rounded bottom, lighter) from the other features and it has no counterpart, although this could have been destroyed by a recent disturbance.

*construction*

The building as reconstructed measured 4 x 3.1 m. The depth of the postholes ranged from 15 to 46 cm.

*finds and dating evidence*

Building 218 overlaps with building 217 and 409. Apart from 5 fragments of iron and 9 slags (36 g), there are 6 Roman sherds (17 g) of various wares, among which a rim of a Dragendorff 33 and painted coarse-walled pottery (after c. AD 70).

## BUILDING 219 (409) / trench 68, 95 (Fig. 40.7; 43.21)

*investigation and reconstruction*

The features of building 219 and 409 were documented at excavation levels 1, 2 and 3 in trenches 68 and 95. All features were sectioned. Several of these sections were drawn, especially those of the interior construction. These buildings are situated within a section of the excavation with a high density of features, with among others 217, 218 and 220. In the 1980's, only a predecessor with a cellar (C') of the barn 403 (C) was recognized. During the first stages of our analysis, it was observed that the pottery in the cellar belonged to the later first or early second century AD. In some post pits in the eastern half of the building however, pottery was present possibly dating from the first century BC. Therefore it seemed wise to assign the rectangular configuration of post in the east a separate number (219). The description of building 409 can be found in chapter 43.

*construction*

Building 219 consists of three rows of three postholes each, measuring 4.4 x 4.8 m. Feature 95.022 is aligned with the southern row, pointing to the possibility that the building originally consisted of twelve posts. In this respect, it seems significant that the preservation of the features gets worse to the east, with the possibility that some features disappeared completely. The depth of the features ranges from 8 to 49 cm (average 31 cm).

*repairs and alterations*

Feature 68.065 consists of three separate postholes and next to it lies another one, 68.051. Feature 67 is a combination of two postholes. Probably the extra features are related to repairs to the structure.

*finds and dating evidence*

<sup>14</sup>C-date (68-2-76; cremated bone); 1685 ± 50 BP (GrM-22629); 258-280, 332-421 cal AD (1 sigma); 245-440, 453-479, 495-535 cal AD (2 sigma).

The non-ceramic finds consist of a piece of iron, sandstone, burnt loam and – most interesting – a fragment of a D-shaped La Tène-bracelet (Fig. 40.7). Most pottery is handmade and dates to the Late Iron Age (Section 21.3.2; Fig. 40.7). In contrast to these 125 handmade sherds (1,243 g), only 6 sherds (19 g) of wheel-turned Roman pottery were found. The youngest sherd is a sherd (1 g) of black-slipped pottery (after c. AD 200). The Roman finds originate from four features (68.051, 65, 66; 95.017) and could theoretically be the result of intrusive processes in older features. However, there is also the possibility that the handmade sherds are older settlement waste/residue from the original ground surface, becoming 'trapped' in the features when the posts were installed or decayed/removed. The radiocarbon date for bone from feature 68.065 (eastern part) suggests the structure was probably Late Roman or Early Medieval. However, the

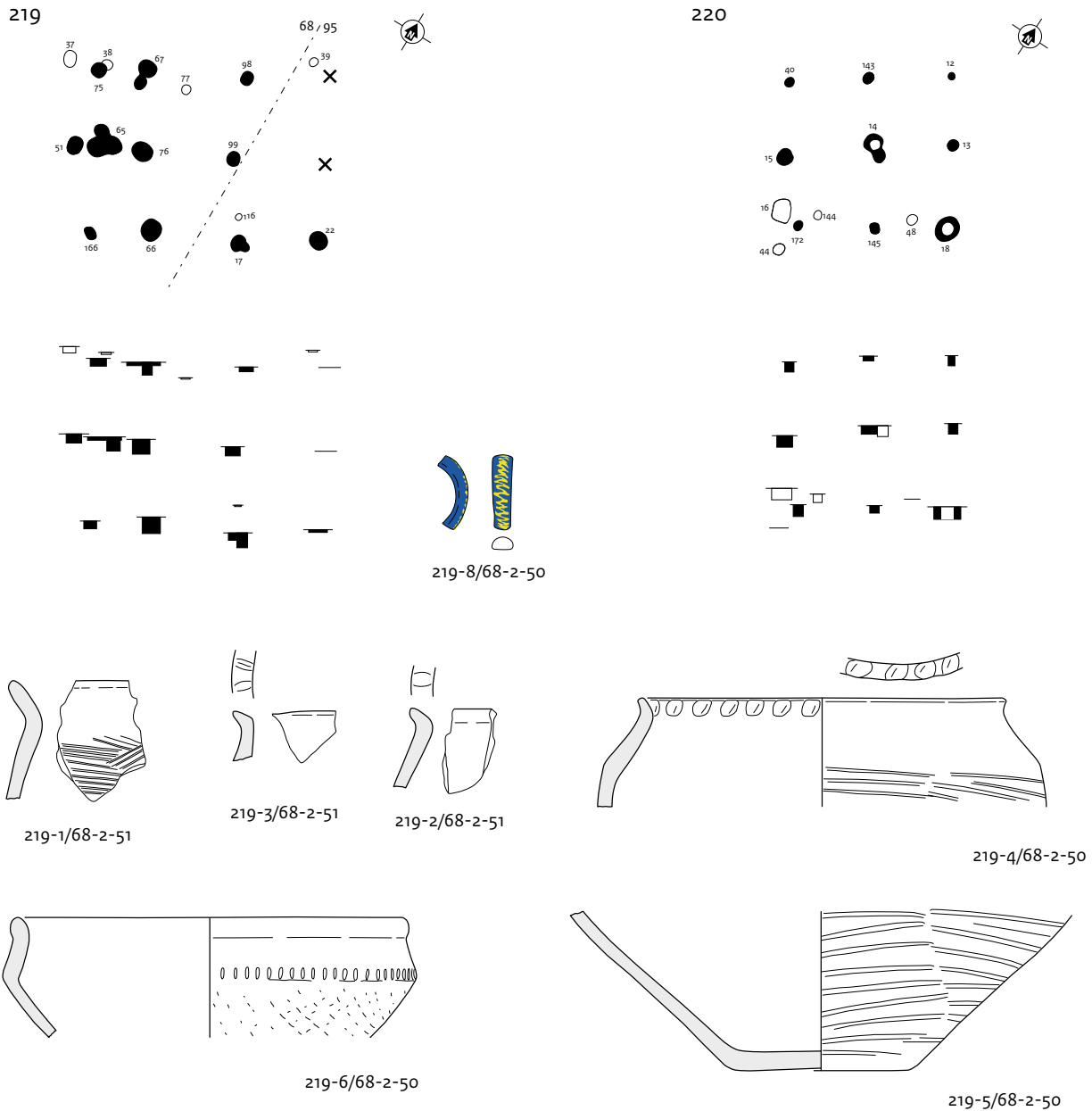


Fig. 40.7 Voerendaal-Ten Hove. Plan and posthole depths of building 219 and 220, with glass and pottery of 219. Buildings scale 1:200, finds 1:3. (source: D.S. Habermehl & H.A. Hiddink)

puzzle remains unsolved, because the bone itself could be an intrusion (although e.g. no mortar-pieces in feature. The structure is located at the edge of the area with Late Roman pottery, but this also contributes not much to the dating.

#### BUILDING 220 / trench 95 (Fig. 40.7)

##### *investigation and reconstruction*

The features of this building were documented at excavation levels 1, 2 and 3 in trench 95.

All posts were sectioned; most sections were drawn.

##### *construction*

Building 220 had nine posts and measured 4.8 x 4.6 m. The depth of the postholes was considerable: seven were 30 cm or deeper (-37 cm; depth of 95.172 reconstructed). Two others were 14 and 22 cm deep respectively. The drawn sections show that the postholes of this building are characterized by straight sides and flat bottoms.

##### *disappearance of the building*

In feature 95.014 and 18 post pipes were documented.

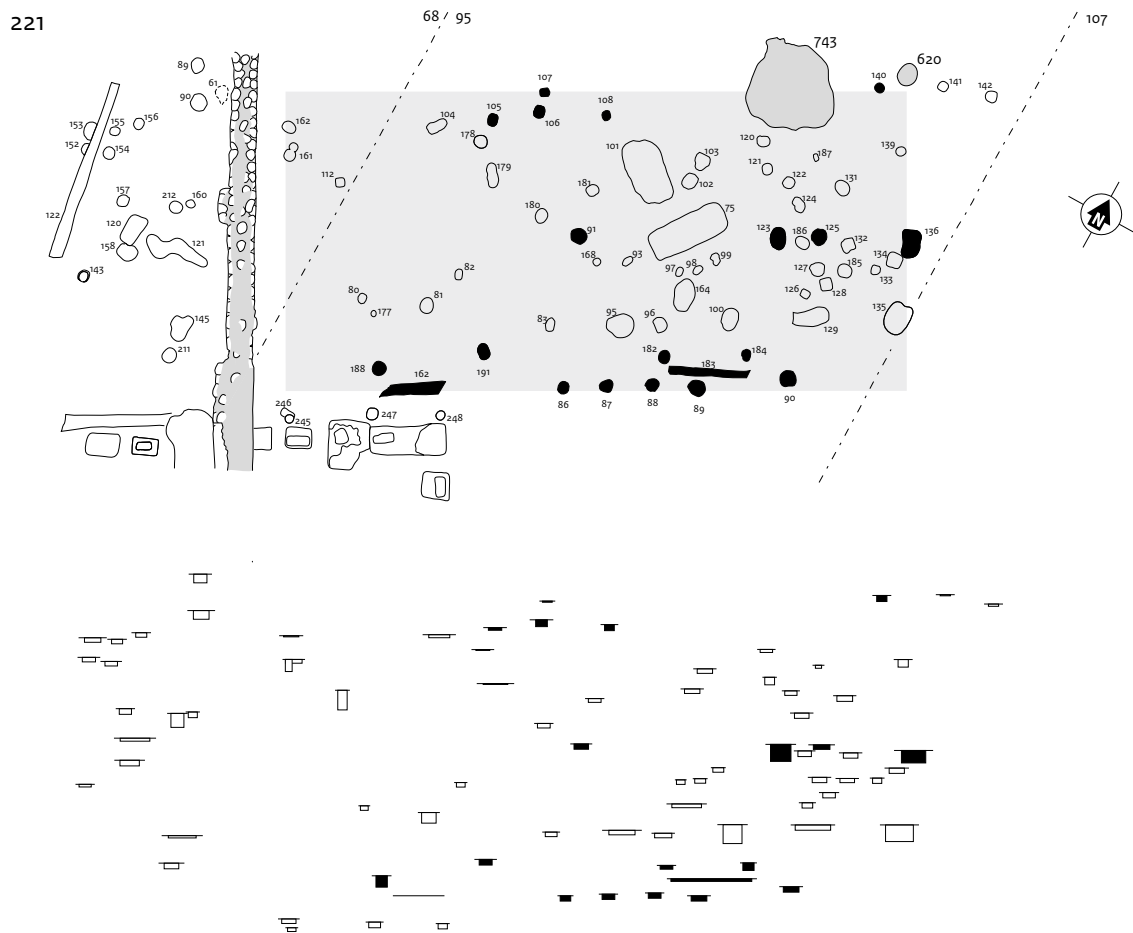


Fig. 40.8 Voerendaal-Ten Hove. Plans and posthole depths of building 221. Scale 1:200. (source: D.S. Habermehl & H.A. Hiddink)

#### *finds and dating evidence*

The only finds were a piece of iron and Roman tile, the size of the latter is unknown.

#### **BUILDING 221 / trench 95 (Fig. 40.8)**

##### *investigation and reconstruction*

The features of this building were documented at excavation levels 2 and 3. Not all features were sectioned; a considerable number were only drawn on the plan of excavation level 2, and were no longer present at excavation level 3. Their approximate depth had to be reconstructed. Of the sectioned features, only few were drawn. The area in which 221 was situated had a high density of features and the reconstruction remains somewhat hypothetical.

##### *construction*

As reconstructed here, the building was at least 14 m long and c. 8 m wide. The best recognizable part is a stretch of the southern long wall, with postholes and small pieces of ditches. Perhaps not all features belonged to the wall proper (also inner and outer posts?). Their depth was 15 cm maximum.

Here is chosen for a two aisled construction, with four possible central post(hole)s. Two of these were not sectioned, but were probably 12-14 cm deep; the other two were 45 and 33 cm deep. From the position of the southern wall respective to the central axis, the position of the northern wall can be deduced. Only five features possibly could have been part of this wall.

##### *special features*

With regard to the interior construction, the eastern section is characterized by a higher feature density than the western section, something also visible in building 226. Possibly, this situation can be associated with the original function of the respective sections. Although an interpretation as a byre section comes to mind, this hypothesis cannot be substantiated any

further. A handful of features (95.095, 96, 100, 129 and 135) are aligned and also could have been part of the core of a three-aisled building (with no clear counterparts however).

*finds and dating evidence*

Building 221 is positioned between 222-223, 403 (stone), 409 and 418, but does not overlap with these (possibly with the exception of building 403). The orientation of these post-built structures is almost the same, but they are dated to period 1 and 2. The features of 221 yielded only a few finds, consisting of 2 pieces of slag (37 g) and 5 sherds of handmade pottery (35 g). The latter suggest a dating to the Iron Age, but strictly speaking it is only a terminus post quem and a date in the Roman period is also possible.

**BUILDING 222 / trench 95, 107 (Fig. 40.9-40.10)**

*investigation and reconstruction*

The features of this building were documented at excavation levels 1 and 2. The north-eastern corner lies beyond the boundaries of the excavation. All features were sectioned, some sections were also drawn.

*construction*

Building 222 measured approximately 21.8 by at least 10 and probably 11.4 m. In the eastern half of the building, two rows of postholes can be recognized, running across the width of the building. Each row consists of between 10 and 13 postholes with generally only little space between them (c. 0.7-1.5 m) and depths of 3-52 cm. In the western row, feature 107.064 and 65 both had a post pipe and flanked an interval of 2.5 m. Possibly, a similar interval was also present between 107.121 and 123 in the eastern row, c. 2.20 m wide. Both in the eastern (107.004/12, 17, 128) and western half of the building (95.021, 67; 107.055, 91) features are present that suggest a constructive core with a combination of central and inner posts (two/three-aisled).

*walls*

In both long walls short sections of ditches were documented (5 and 7 cm deep). It is not entirely clear what other features were part of the long walls. With regard to the short walls, especially the eastern one is recognizable. This wall consists of six posts, with depths ranging between 7 and 29 cm. Directly east of this wall a short segment of a ditch was documented at excavation level 1. At level 2, this ditch was no longer present. By lack of a section, the maximum depth of the ditch can be calculated as being 25 cm, but in reality it would have been far less deep. Of the western short wall, four posts were documented, with depths ranging between 12 and 25 cm.

*roof*

On the basis of the configuration of the main posts in the interior of the building, the west side of the roof could have been hipped, while the eastern side probably had a gabled roof.

*disappearance of the building*

Post pipes were observed in only four of the features.

*finds and dating evidence*

Building 222 possibly overlaps with 223 and both are in any case so close that they could not have existed at the same time. Feature 107.120 and 121 were found beneath the pit of sunken hut 501 and a lighter fill than the postholes of the latter.

The find material was found in a relatively small number of features. Non-ceramic finds are 3 fragments (31 g) of animal bones and 2 pieces (439 g) of sandstone – part of a millstone and an implement with unknown function (222-2; Fig. 40.9) – and 3 iron fragments. The latter are intuitively associated with the Roman period. Certainly Roman are 6 of small fragments of smooth and coarse walled ware (9 g; most retrieved from the residue of archaeobotanical samples). Four Late Roman sherds belong to a Alzey 27 and 30 (222-1; Fig. 40.9); their weight is 97 g. Important is these fragments share a single find number (95-1-48; feature 95.021) and could be intrusive. The majority of the pottery belongs to the Iron Age: 30 sherds (571g), with as most

222-224



Fig. 40.9 Voerendaal-Ten Hove. Plan of building 222-224, with finds of 222 and 223. Plan scale 1:200, finds 1:3. (source: D.S. Habermehl & H.A. Hiddink)

remarkable sherd the rim of a briquetage vessel (222-3; Fig. 40.9). These suggests a Late Iron Age rather than a Late Roman dating (cf. building 223, below).

#### BUILDING 223 / trench 95, 107 (Fig. 40.9-40.10)

##### *investigation and reconstruction*

The features of building 223 were documented at excavation levels 2 and 3 in trench 107 and at levels 1 and 2 in trench 95. Nearly all features were sectioned, some were also drawn.

##### *construction*

This building measured c. 13.8 x 9.6 m. Its core construction consisted of a central row of posts: features 135, 133, 132, 155, 161 and 230 (30, 26, 17, 18, 33 and 11 cm deep). Then there are three pairs of interior posts, positioned opposite each other, perpendicular to the central axis but not in line with the central posts. The space (aisle-width) between the paired posts varies: 4.3, 3.6 and 4.7 m. This is too low to represent the width of the building and therefore the posts must have been part of the core. In conclusion, building 223 had an alternating two and three-aisled construction.



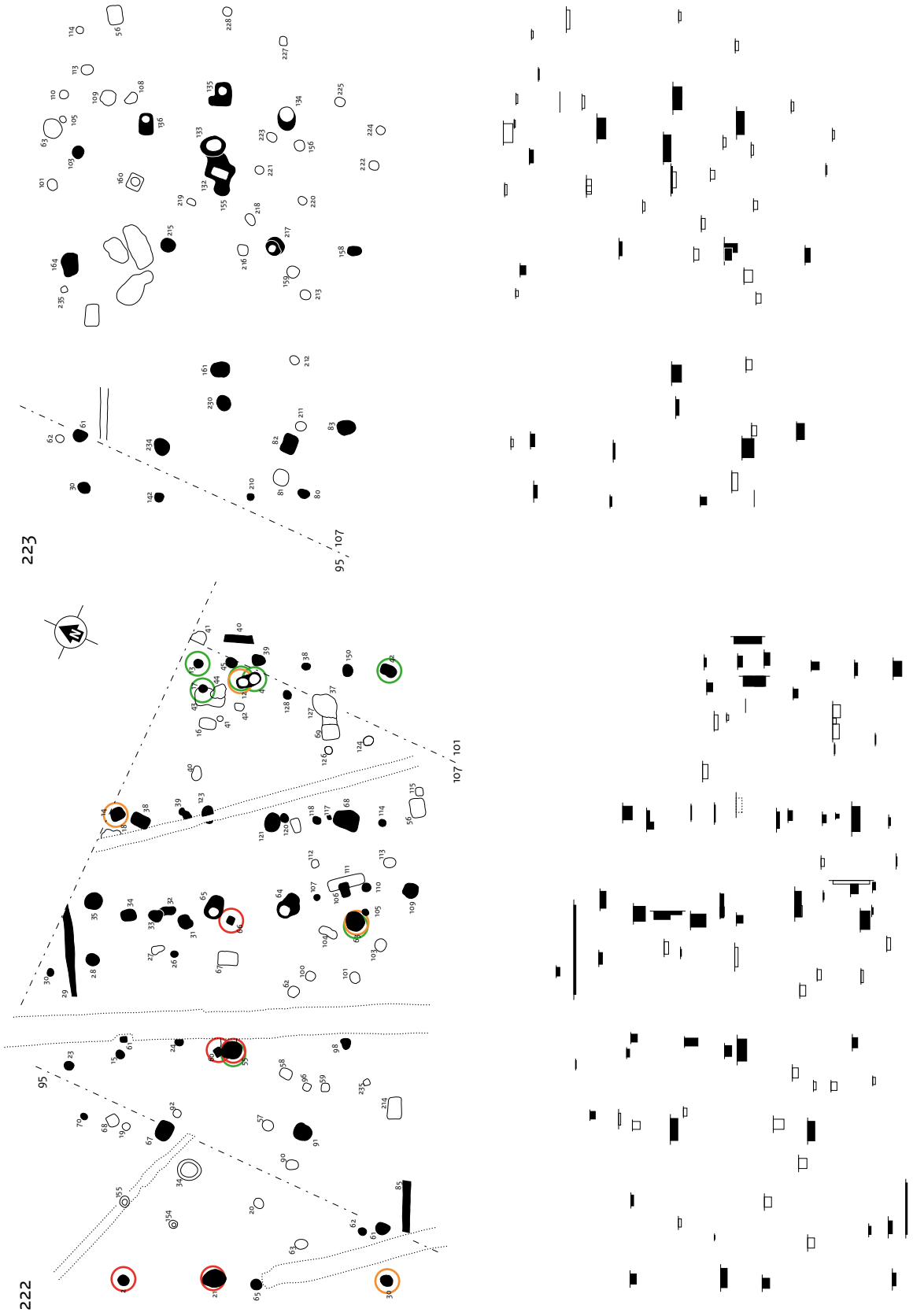


Fig. 40.10 Voerendaal-Ten Hove. Plans and posthole depths of building 222 and 223; red circles indicate features with finds providing conflicting dating evidence. Scale 1:200. (source: D.S. Habermehl & H.A. Hiddink)

*walls*

The reconstruction of the walls is far from straightforward. A number of posts could have been part of a northern long wall: features 95.030, 61 (both possibly part of building 222), 107.164 and 103 (12-19 cm deep). However, the overlap with building 539 complicates a definitive reconstruction. Features 107.083 and 158 (26 and 17 cm deep) were possibly part of the hypothetical southern long wall. A row of four posts could possibly be interpreted as the western short wall: 107.080, 201 (20-25 cm) and 95.142 (6 cm).

*roof*

The western side of the roof can probably be reconstructed as a hipped roof. For the eastern side, there are no indications for the roof construction.

*repairs and alterations*

The central posts 107.132, 133 and 155 were situated close to each other. Possibly, the postholes represent different phases of rebuilding or reparations.

*disappearance of the building*

In six of the features – all part of the core construction – post pipes were observed. These features were all situated in the eastern half of the building.

*finds and dating evidence*

This building overlaps with 222 and 224; a post hole is intersected by the Roman basin 334. Apart from 3 pieces of flint (280 g) and 2 fragments of animal bone, all the finds are pottery sherds. Only two sherds are Roman wheel-turned ware (coarse ware 6 g, amphora 305 g) and 50 sherds (545 g) are handmade, probably dating to the Late Iron Age. One of the latter is decorated with a line flanked with small round impressions (223-1; Fig. 40.9).

## BUILDING 224 / trench 107 (Fig. 40.11)

*investigation and reconstruction*

The features of this building were documented at excavation level 3. All posts were sectioned but none of the sections were drawn.

*construction*

This six post building measured 4.3 x 2.4 m. The depth of the postholes ranged from 4 to 15 cm.

*finds and dating evidence*

Building 224 overlaps with building 223, so both could not have existed at the same time. There are no finds.

## BUILDING 225 / trench 101, 107 (Fig. 40.11)

*investigation and reconstruction*

The features of this building were documented at excavation level 3 in trenches 101 and 107. All posts were sectioned. Four of the sections were drawn.

*construction*

Building 225 measured 3.00 x 2.40-2.45 m. However, the reconstruction of this (hypothetical) building is somewhat problematic. The southern posts (203, 204 (trench 107) 187 and 188 (trench 101)) are placed as pairs and have a small diameter. They are relatively deep (38, 17, 53 and 26 cm deep). Three of these posts are pointed. The association of these posts with building 549 is not certain. Their situation, colour and form could also suggest that they have to be associated with the sunken hut 502. Both northern posts are single and have flat bottoms (8 and 17 cm deep).

*disappearance of the building*

In none of the postholes cores were documented.

*finds and dating evidence*

A fragment of burnt loam is the only find from this structure.

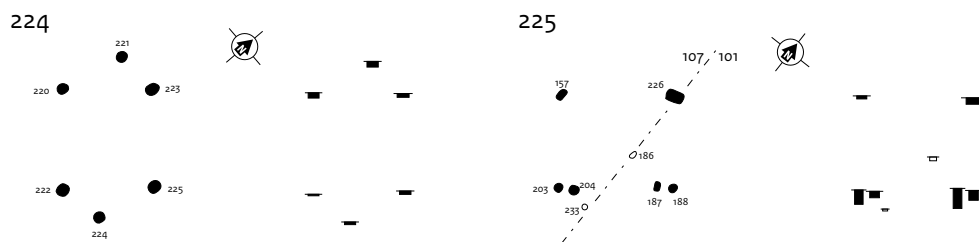


Fig. 40.11 Voerendaal-Ten Hove. Plans and posthole depths of building 224-225. Scale 1:200. (source: D.S. Habermehl & H.A. Hiddink)

## BUILDING 226 / trench 107 (Fig. 40.12)

### investigation and reconstruction

Half of building 226 could be excavated, the remainder lies beyond the boundaries of the excavation. All the features were found at excavation level 3 (c. 87.63-87.93 NAP). Building 226 is easily recognized, as the density of features in the surroundings is relatively low and especially the northern long wall stands out clearly.

### construction

Building 226 had a length of 14 m and a width of probably some 6 m. The reconstruction of the constructive core of the building is not without problems. Possibly, the features 143, 171, 185 and 190 functioned as central, roof-bearing posts, although they are relatively shallow (20 cm max). The space between features 171 and 185 is quite large (6.1), but possibly the relatively deep wall post 178 (45 cm) points to the existence of a cross beam in this bay. Feature 172 could have been part of an internal division, but possibly points to a partly three-aisled construction.

### walls

The long, northern wall consists of eleven or twelve posts which are spaced relatively evenly. The preserved depth of the posts ranges from 5 to 45 cm. Especially the posts in the western part of this long wall are shallow.

Of the western short wall at least three posts have been documented. Possibly, feature 143 can be identified as a central post within this wall. In the eastern short wall, a remarkable constellation of posts can be recognized (features 198, 199, 149 and 150), positioned on the reconstructed central axis of the building. Probably, these posts had a constructive function in the short wall of the building. Possibly the posts in the western short wall (features 143, 167, 168 and 169) could be regarded as a similar constellation, although their appearance is less uniform.

### entrances

Within the northern long wall, the posts are spaced relatively evenly and as such offer no clear indications for the position of an entrance. Possibly it was situated between the larger features 146 and 148 and was 1.6 m wide in that case. In the eastern short wall there was a relatively large opening (c. 2 m) in the northern corner, perhaps the location of (another) entrance.

### roof

As the reconstruction of the constructive core is somewhat problematic, it is difficult to reconstruct the roof type.

### special features

In the western part of the building, the post in feature 172 could (in combination with 171) have been part of an interior division. In the eastern part of the building, quite a number of small posts have been found. If related to it, they could have been related to a byre, although this suggestion cannot be substantiated further in any way.

### repairs and alterations

Some of the double posts in the eastern part of the long northern wall could be the result of repairs. Furthermore, feature 148 cuts through the especially deep post 178.

### disappearance of the building

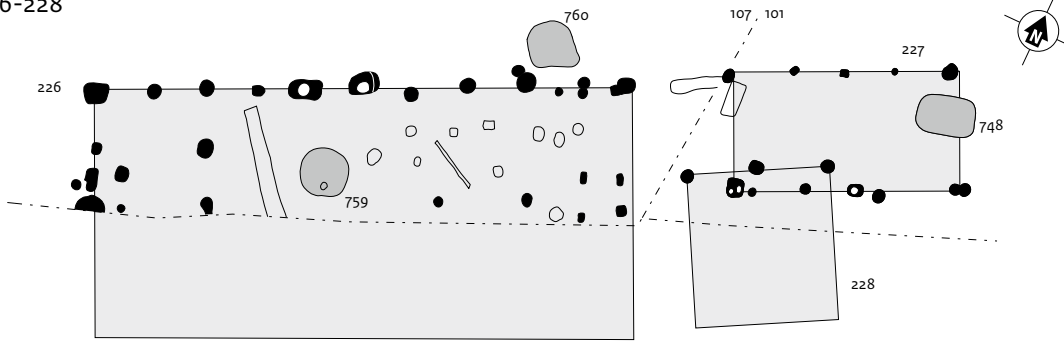
Only in feature 145 and 148 post pipes were observed.

### finds and dating evidence

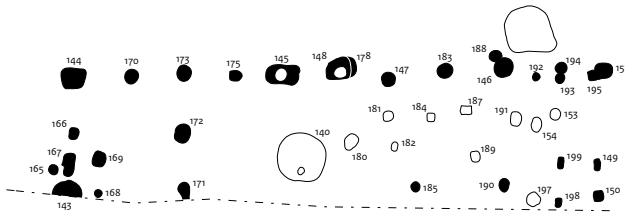
<sup>14</sup>C-date (cremated bone; 107-3-21): 1670 ± 40 BP (GrM-22632); 263-276, 346-427 cal AD (1 sigma); 255-286, 325-441, 450-479, 495-535 cal AD (2 sigma).

Apart from a fragment of horse bone, the finds consist of no more than 5 sherds of coarse ware (234 g). Two are of pots Niederbieber 89 (after c. AD 125) and one is a large-base fragment of Mayen ware (c. AD 350-450; 226-1; Fig. 40.12).

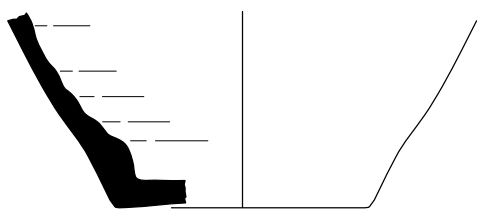
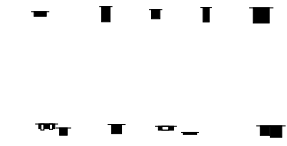
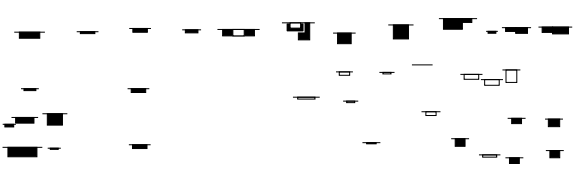
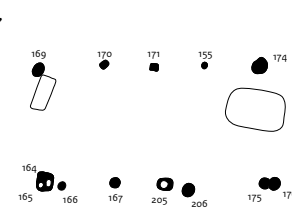
226-228



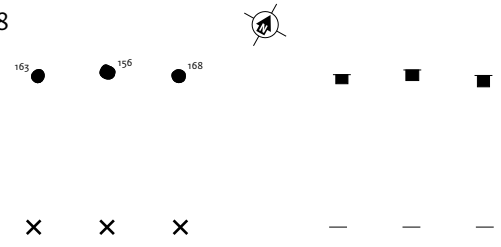
226



227



228



226-1/107-3-30

Fig. 40.12 Voerendaal-Ten Hove. Situation, plans and posthole depths of building 226-228, as well as pottery from 226. Buildings scale 1:200, pottery 1:3. (source: D.S. Habermehl & H.A. Hiddink)

The Late Roman sherd gives strictly spoken only a terminus post quem and theoretically, the building could be Early Medieval. The radiocarbon date allows for a date in the latter period, but suggests that the pottery date has to be preferred.

**BUILDING 227 / trench 101 (Fig. 40.12)**

*investigation and reconstruction*

This building lies east of 226 and it was taken in consideration if it was part of 531. However, the northern walls have a slightly different orientation and the gap between 107.151 and 101.169 is quite large. The features of 227 were found at excavation levels 3 and 4. All were sectioned and all but one sections were drawn.

*construction*

The building measured 6-6.2 x 3 m. The northern side had five postholes, 12-40 cm deep. In the southern row the seven postholes were 5-30 cm deep. The posts at this side were less evenly spaced.

*roof*

If the features represent the whole building, and not only a core without missing wall posts, the presence of a gabled roof is the most likely option.

*repairs and alterations*

Some of the closely spaced posts in the southern wall could indicate repairs.

*disappearance of the building*

Post pipes were observed in three features.

*finds and dating evidence*

The only find is a rim-fragment of a handmade dish (8 g).

## BUILDING 228 / trench 101 (Fig. 40.12)

*investigation and reconstruction*

Only a half of this building, probably a six post structure, lies within the excavated area.

The features were found at level 3 and sectioned; all sections were drawn.

*construction*

The features delineate a building with a length of 3.7 m and were 23, 27 and 30 cm deep.

*finds and dating evidence*

A rim-fragment (10 g) of a handmade pot, probably with a cordon, is the only find from this structure.

## BUILDING 229 / trench 101, 104 (Fig. 40.13)

*investigation and reconstruction*

The features of building 229 were documented at excavation level 2 in trench 101 and at excavation levels 1 and 2 in trench 104. All features were sectioned but only few sections were drawn. Some features at the south side possibly were destroyed by a younger ditch.

*construction*

This building measured at least 18.4 x 8.5 m. The reconstruction of the constructive core of the building is not without problems. A number of features can be suspected to have been part of this core. In feature 104.060 a central post could have been placed, although it was only 21 cm deep. The postholes 104.071, 72 and 73 were even less deep (? , 12 and 5 cm); moreover, 71 was very vague. It is also possible that the building was both two and three-aisled. Possible inner posts were 101.119 (28 cm deep) and 121 (3 cm), although somewhat off. In trench 104 also a number of features could have belonged to inner posts.

*walls*

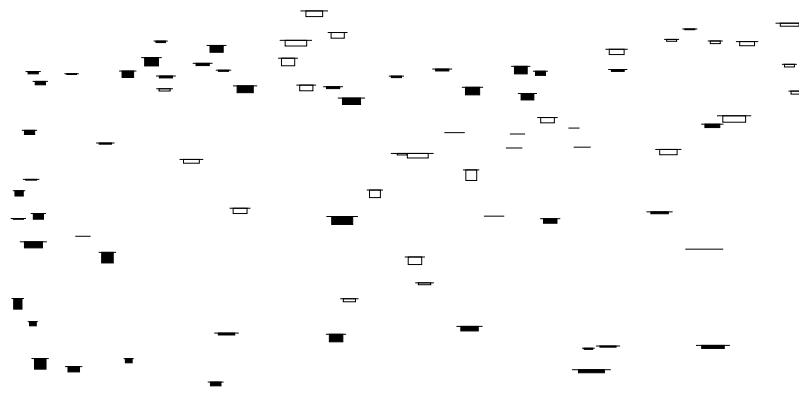
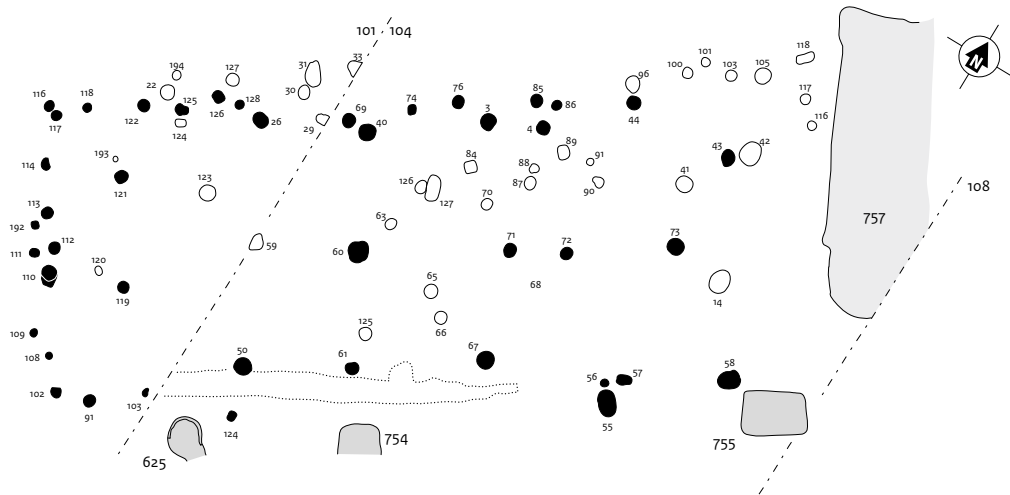
Both the western short wall and the northern long wall can be reconstructed quite well.

The eastern short wall is at least partly missing and the southern long wall has for a large part been disturbed. Both short and long walls consist of posts, being organised in an alternating pattern, sometimes resulting in double posts. The wall posts are partly very shallow (c. 2-10 cm) and some are significantly deeper (c. 15-28 cm). Compared to the posts that can be presumed to have been part of the core construction, these wall posts are substantial. Probably, they will have carried part of the roof load. Remarkable are the wall posts 61 and 40 (trench 104) that are relatively deep (17 and 20 cm) and are standing in line with the presumed central post 60 (trench 104). Possibly, the same could be suggested for posts 3 and 67 (trench 104) (12 and 20 cm deep).

*finds and dating evidence*

Because the length and position of the eastern short wall are unknown, it cannot be established if pit 757 is younger or older than the building. The postholes of this building contained some stone: a piece of flint (8 g) and two pieces of stone (c. 200 g). One handmade sherd (5 g) could be

229



230

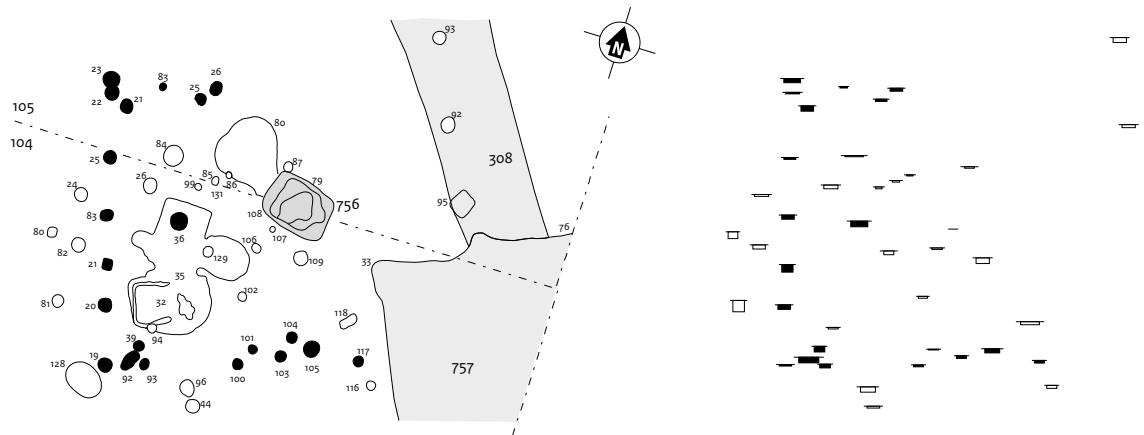


Fig. 40.13 Voerendaal-Ten Hove. Plans and posthole depths of building 229-230. Scale 1:200. (source: D.S. Habermehl & H.A. Hiddink)

prehistoric or (much) later. The only wheel turned sherd (8 g) is of course-walled ware and suggests a Roman date. The same holds true for a small fragment of a *tubulus* (100 g).

## BUILDING 230 / trench 104, 105 (Fig. 40.13)

*investigation and reconstruction*

The features of this building were documented at excavation levels 1, 2 and 3. All features were sectioned but only one sections was drawn. Only the western half of the building was found, part of the southeast side was probably destroyed when pit 757 was dug.

*construction*

Building 230 was 7.4 m wide and at least 6.8 m long. The only feature that was possibly part of the core of the building was 104.036, situated on the central axis (but only 15 cm deep).

*walls*

The western short wall consisted of 7 or 8 postholes, regularly placed and with a depth of 4-20 cm. The postholes in the long walls are placed less even, in a kind of zigzag pattern. Their depth is 2-15 cm.

*entrances*

The distance between features 104.093 and 100 is remarkably large (2.50 m). An entrance at the corner of a building is exceptional, but cannot be exclude.

*roof*

At the western side of the building a hipped roof can be reconstructed.

*finds and dating evidence*

The building seems to be older than pit 757, although this is not completely certain. The finds consist of 3 handmade sherds (31 g), a fragment (17 g) of (Late?) Roman coarse ware and a small sherd (2 g) of Late Roman terra nigra (the fabric with orange core; cf. Chapter 26).

## BUILDING 231 / trench 108 (Fig. 40.14)

*investigation and reconstruction*

The features were documented at excavation levels 1, 2 and 4. All features were sectioned but none of the sections were drawn.

*construction*

Building 231 is a rectangular structure measuring roughly 5 x 3.4 m. The building consists of nine posts in total, with depths of 3-40 cm (average 20 cm).

*repairs and alterations*

Post 13 and 15 are positioned close together. Possibly, post 13 can be understood as a replacement of post 15, or an extra support at this position.

*finds and dating evidence*

Feature 28 and 34 intersected ditch 308. There are no finds to give a more precise dating.

## BUILDING 232 / trench 105 (Fig. 40.14)

*investigation and reconstruction*

The features of this building were documented at excavation levels 1 and 2. All posts were sectioned, but none of these sections were drawn.

*construction*

This small building measured 6.4 x 5 m. Feature 42 and 82 were situated on the central axis and had a depth of 24 and 4(!) cm.

*walls*

Each wall originally consisted of four postholes, of which one is missing. Their remaining depth was 2-7 cm.

*roof*

The building had a gabled roof.

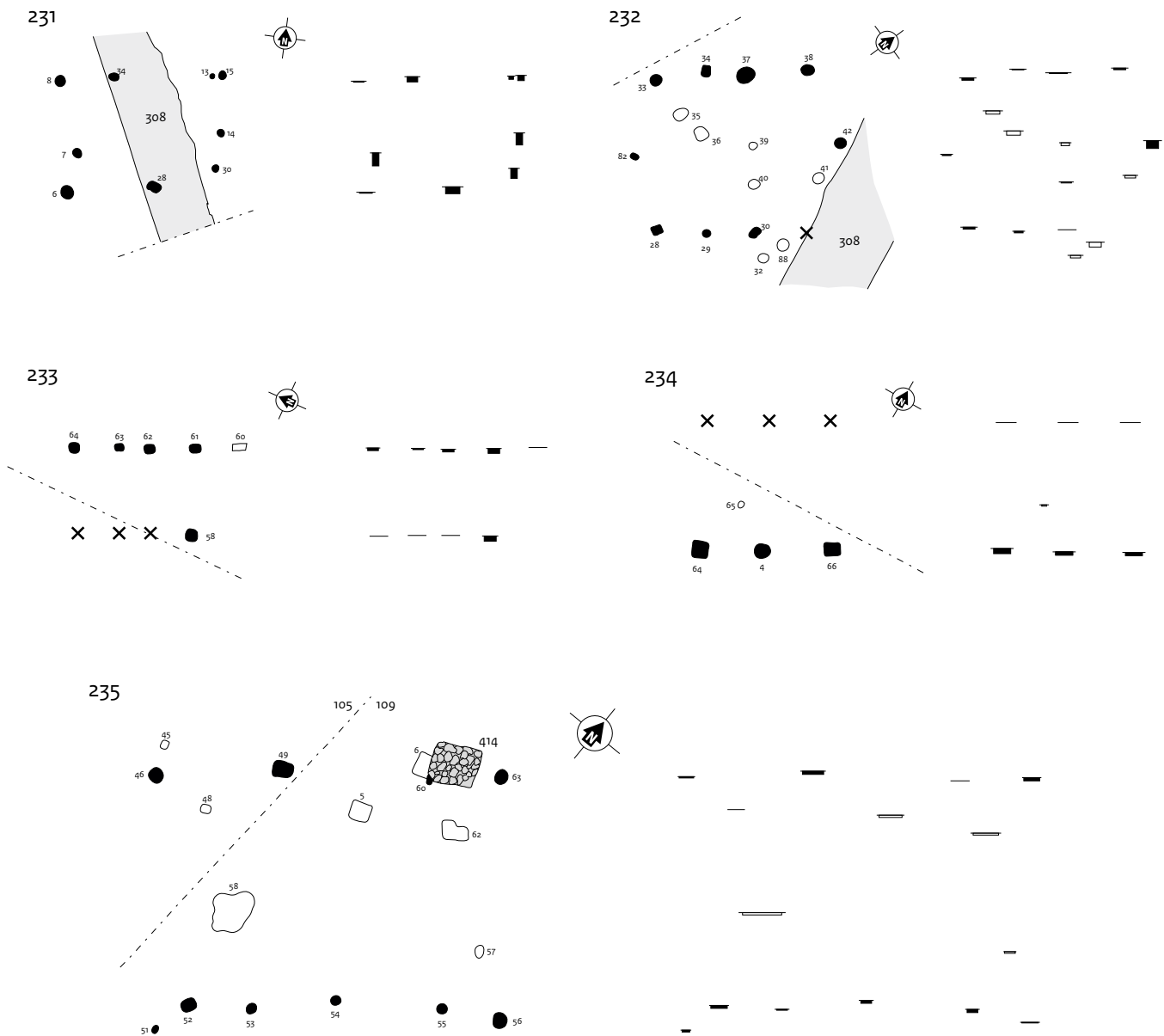


Fig. 40.14 Voerendaal-Ten Hove. Plans and posthole depths of building 231-235. Scale 1:200. (source: D.S. Habermehl & H.A. Hiddink)

#### *finds and dating evidence*

A posthole at the eastern corner of the building is missing and at first sight, the explanation seems that it was cut by ditch 308. As most features were shallow, however, it is possible that the posthole in fact intersected the ditch fill but was not present (or visible) anymore at the excavation level(s). No finds were present.

#### BUILDING 233 / trench 105 (Fig. 40.14)

##### *investigation and reconstruction*

The features of this building were documented at excavation level 1. All posts were sectioned, but none of these sections were drawn. A number of features are situated outside the excavated area.

##### *construction*

Building 233 probably was a eight post building, of which five posts were documented.

It measured c. 4 x 2.6 m. It is unlikely that 58 was a central post (with the implication that the width was 3.2 m), although it cannot completely ruled out. The features were 4-15 cm deep.

##### *finds and dating evidence*

No finds.



## BUILDING 234 / trench 109 (Fig. 40.14)

*Investigation and reconstruction*

The features of this building were documented at excavation level 1. All three posts were sectioned, but none of these sections were drawn. The building probably had six or eight posts, but it is possible that it was even larger.

*construction*

The building measured at least 4 x 3.4 m. The three features were 10-16 cm deep.

*finds and dating evidence*

No finds.

## BUILDING 235 / trench 105, 109 (Fig. 40.14)

*investigation and reconstruction*

The features of this building were found at excavation level 1. All were sectioned, but none of the sections were drawn.

*construction*

This somewhat hypothetical building consists of two opposite rows of posts and measured c. 10.7 x 7.6 m. The south-eastern row is made up of five or six posts. The depth of the postholes ranges between 2 and 10 cm. The north-western row consists of four posts, with depths between 4 and 10 cm.

*finds and dating evidence*

Feature 109.060 intersects a pit (feature 109.006) and apparently is intersected by the rectangular stone foundation 414. The latter intersection was not sectioned, however. It is well possible that the post in 109.060 was put up against 414 only, being later. No finds were present in the features of building 235.

## BUILDING 236 / trench 15, 109 (Fig. 40.15)

*investigation and reconstruction*

The features of building 534 were documented at excavation levels 1 and 2 in trench 109 and 1 in trench 15. All features were sectioned but only few sections were drawn. The southwestern corner of the building was destroyed when pit 757 was dug. Already at a first glance at the excavation plan, it is clear that more than one building is present in this area. Building 237 was clearly recognizable as a separate unit, but still a large number of features remained, especially in trench 15. In the light of the excessive width of 236 for a prehistoric building, a scenario was considered in which two successive buildings shifted one or two meters in a northerly or southerly direction, on a first glance suggesting a single plan. However, there are not enough central posts for such a scenario.

*construction*

Building 236 was at least 22 and probably 25 m long, and some 10 m wide. In the western half a row of central posts was present: 109.075, 12 and 11 with 4 and 3.8 m between them and a depth of 10, 30 and 23 cm. In the eastern half, 15.072 and 76/70 could also have been the locations of central posts. They were 10 and 20/30 cm deep. In feature 15.072 some Roman material was found, but possibly this is intrusive. In the eastern half of the building, a number of features perhaps mark the locations of inner posts. This hypothetical three-aisled part of the core construction is not very regular, however. Only 109.014 and 32 are at the 'right' distance respective to the central axis/central post 11.

*walls*

Especially at the north-western side of the building, the position of the walls is recognizable. We are dealing with a combination of wall posts proper and outer posts, supporting the edge of

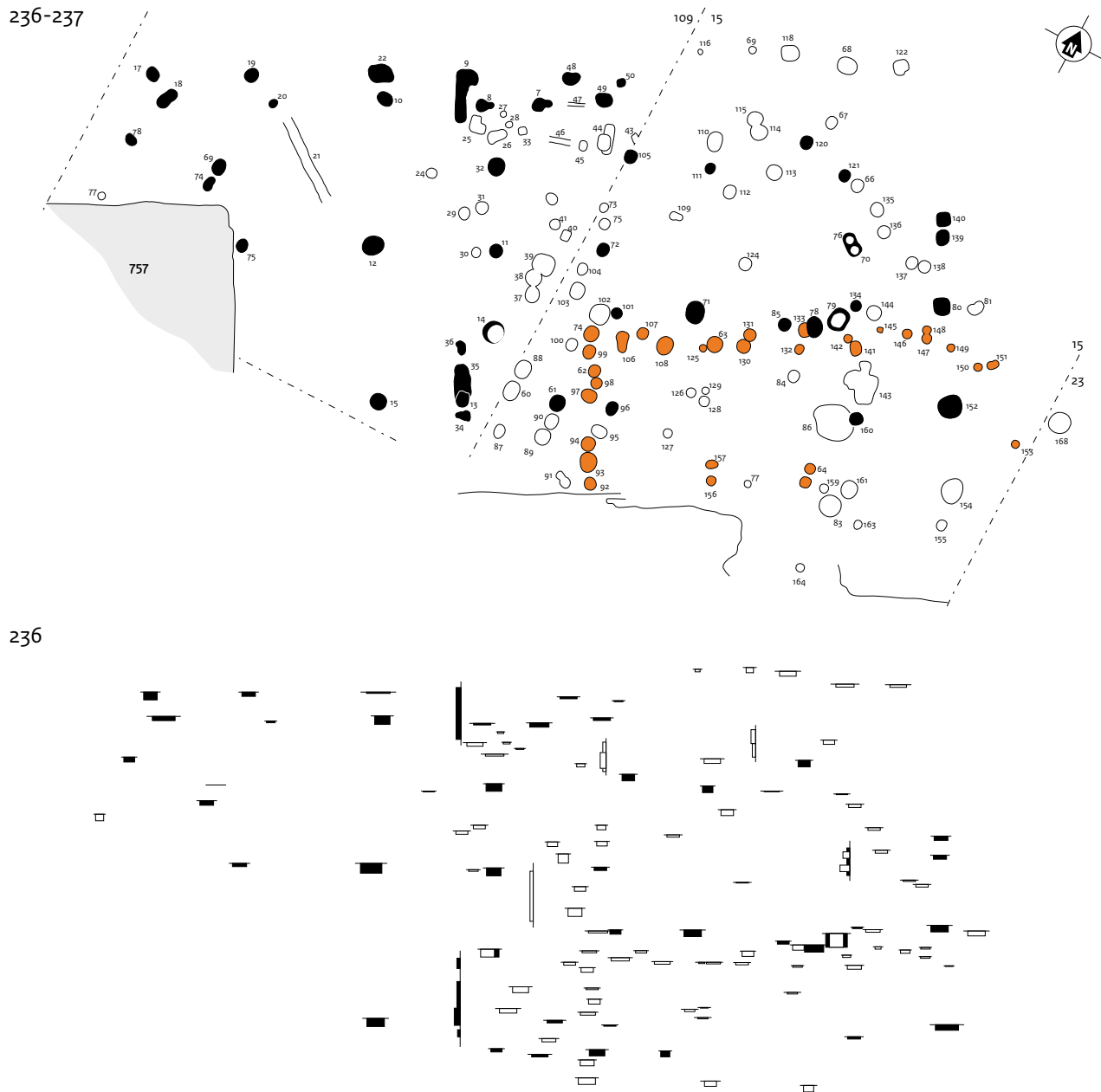


Fig. 40.15 Voerendaal-Ten Hove. Plan and posthole depths of building 236, with the features of building 237 in red. Scale 1:200. (source: D.S. Habermehl & H.A. Hiddink)

the roof. These posts were 4-26 cm deep. The posts of the southern wall range between 4 and 25 cm in depth; they are all outer posts. The eastern short wall was partly preserved, with a single row of a number of (outer) posts (12-17 cm deep).

#### *entrances*

The entrances are clearly recognizable by the L-shape of 109.009 and the alignment of 109.013, 34-36. Their counterparts are 109.010/22 and 15, showing that the entrances were 2.3 and 2.5 m wide.

#### *roof*

Assuming that 109.075 and 15.070/76 were the last central posts and the short walls were situated 2.5-3.5 m further out, the building had a hipped roof at both side.

#### *special features*

The amount of posts within the interior of the eastern part of 236 remarkable. Possibly, these can be associated with the use of this part of the building as a stable.

#### *disappearance of the building*

In four features post pipes were observed.

*finds and dating evidence*

<sup>14</sup>C-date (cremated bone; 15-1-21); 2155 ± 35 BP (GrM-23107); 349-310, 207-148, 137-111 cal BC (1 sigma); 356-279, 257-247, 233-91, 79-54 cal BC (2 sigma).

The sieving-residues from this building were all 'clean', without pieces of mortar or brick.

Therefore the cremated bone used for dating seems not to be an intrusion (of course, also indicated by the date itself). Apart from 13 pieces of burnt loam, building material is represented by a piece of tile. This was small (max. 100 g) however, and cannot prove a date in the Roman period or later. It was found in the same feature (15.072) as a small sherd in coarse-walled ware (Late Roman?), that was not found or recognized in 2019. Two other coarse-walled sherds (6 and 1 g) are also quite small. Because there are 9 handmade sherds (one with calcite, total 101 g), the building type is reminiscent to the Haps-type and on basis of the radiocarbon date, the structure is considered to be Late Iron Age in date. The radiocarbon date does not exclude a Middle Iron Age-date, but this is less likely and probably related to the wiggle-problem (cf. Section 5.3.2).

## BUILDING 237 / trench 15 (Fig. 40.16)

*investigation and reconstruction*

Compare above (building 236). The southern side of the building is partly destroyed by a series of ditches and disturbances/cart tracks. All features were sectioned but only few sections were drawn.

*construction*

This building was at least 10 m long (probably 13 m) and 5 m wide. The core construction could either have been two-aisled, with the central axis between 156/157 and 64/158, or more to the north marked by 153.

*walls*

The western short wall consists of closely spaced postholes, 5-20 cm deep. The northern long wall consists of a substantial number of features with a somewhat irregular placing, sometimes doubled. Their depth ranges from 4 to 16 cm. The structure of the western short wall is comparable to the northern wall. The depth of these posts ranges between 5 and 20 cm.

*finds and dating evidence*

Apart from 4 pieces of burnt loam and a very small piece of tile, the only find is a rim (86 g) of a handmade bowl (237-1; Fig. 40.16). It is not certain if this is an Iron Age or Late Roman product (cf. Section 26.5.1). In the residue of some archaeobotanical samples, small pieces of brick were present.

## BUILDING 238 / trench 23 (Fig. 40.16)

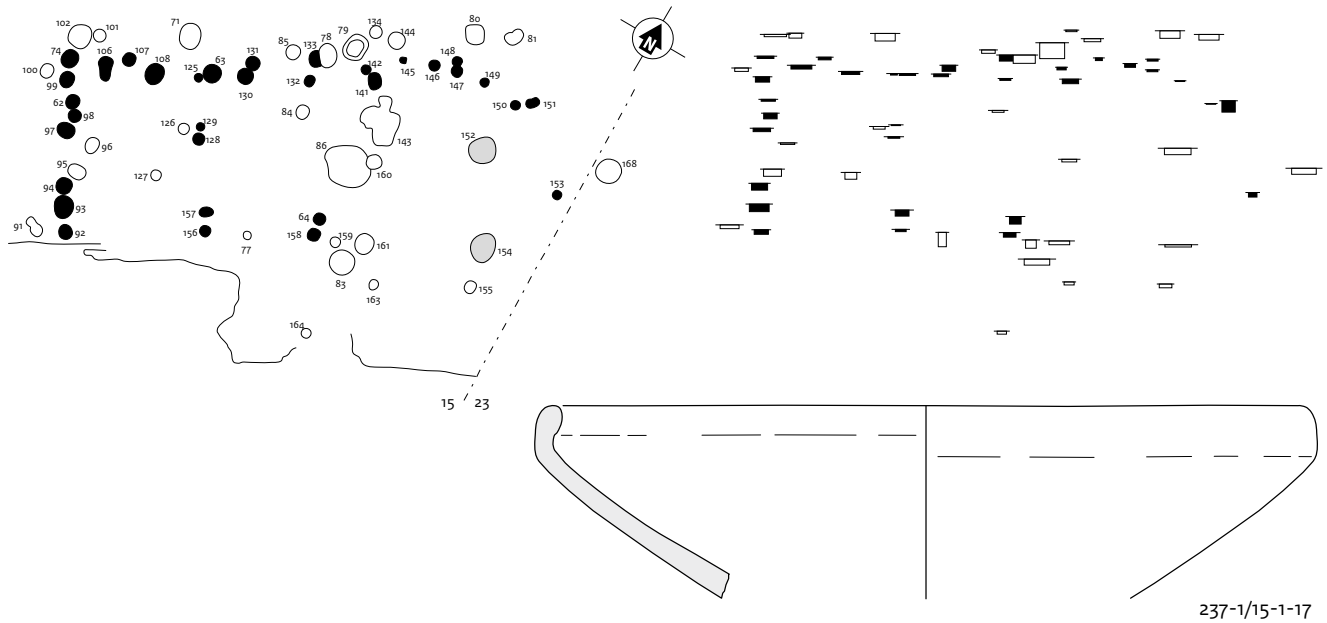
*investigation and reconstruction*

The features of building 238 were documented at excavation levels 3, 4 and 5. Only part of the features were sectioned and only from level 5 onwards. At this level, many of the features present at higher levels had disappeared. Consequently, for a considerable number the exact depth is unknown and a maximum depth was calculated on the basis of the NAP-levels of the excavation levels.

*construction*

This building was at least 15.5 m long and had a width of c. 7 m. Feature 47 possibly marks a central post, but it is impossible to make a reliable reconstruction of its depth (c. 15-20 cm?). The presence of some double posts in the southern wall suggests that cross beams played a role in the construction.

237



238

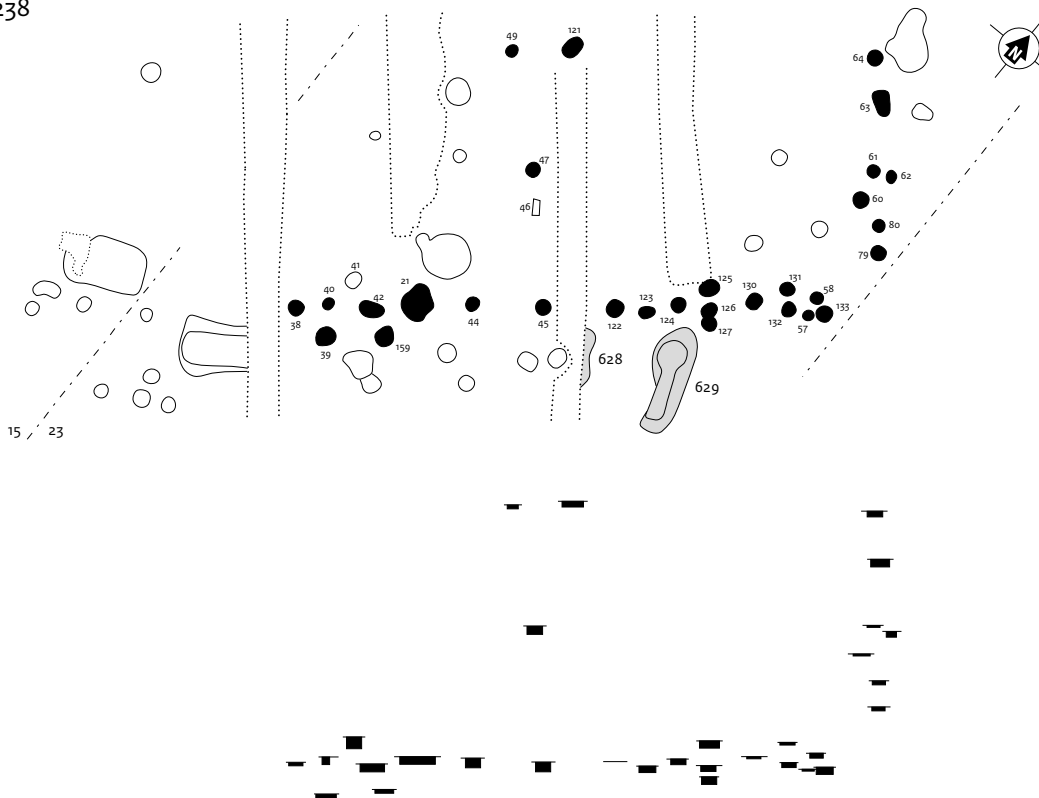


Fig. 40.16 Voerendaal-Ten Hove. Plan and posthole depths of building 237-238, with pottery of 237. Buildings scale 1:200, pottery 1:3. (source: D.S. Habermehl & H.A. Hiddink)

#### walls

The walls consists of a substantial number of posts with a somewhat irregular placing. Some posts were double. The depth of the postholes ranged from 5 to 25 cm (average 13 cm).

#### finds and dating evidence

The only find is a sherd (18 g) of a plate in Argonne terra sigillata.

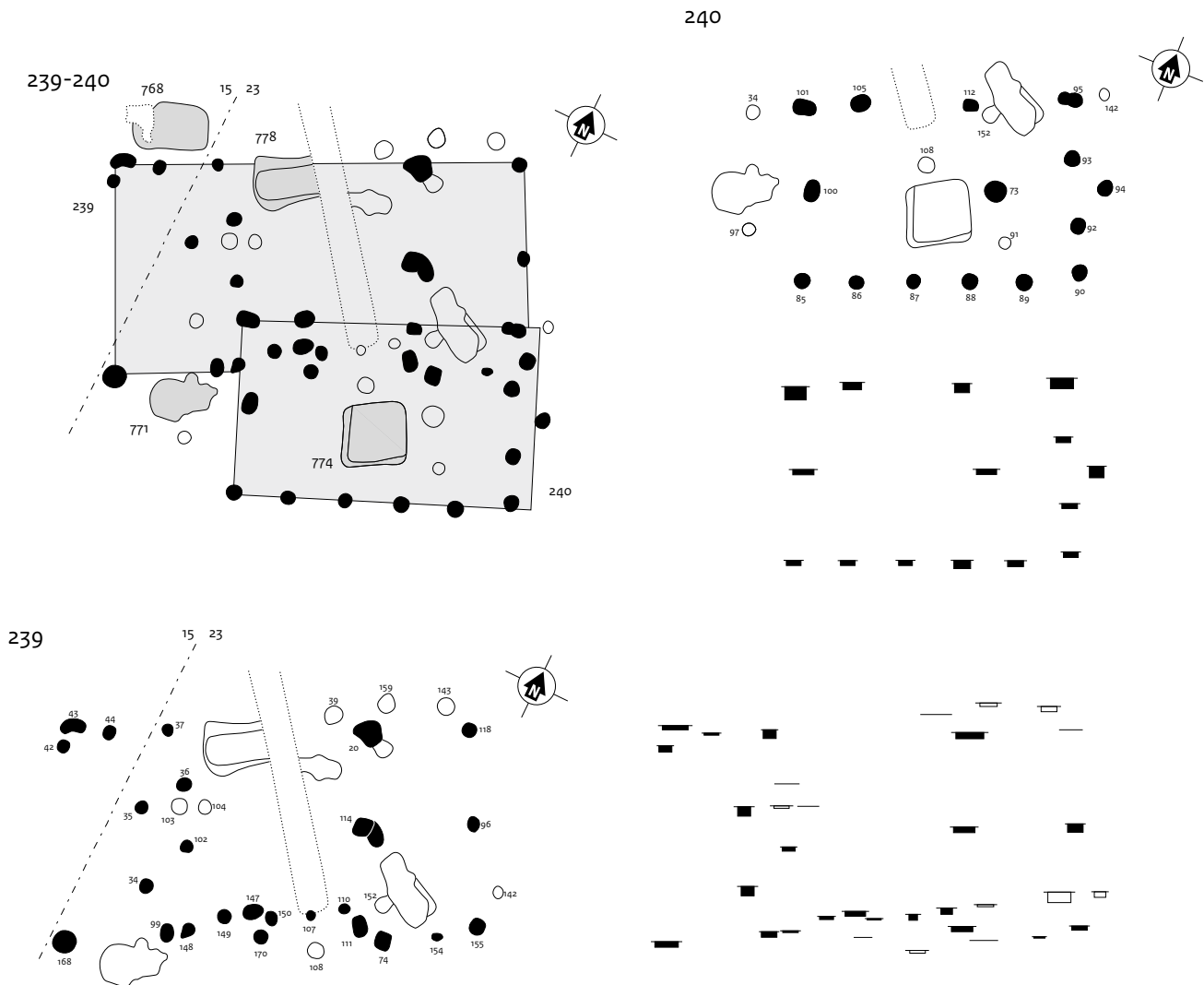


Fig. 40.17 Voerendaal-Ten Hove. Situation, plans and posthole depths of building 239-240. Scale 1:200. (source: D.S. Habermehl & H.A. Hiddink)

#### BUILDING 239 / trench 15, 23 (Fig. 40.17)

##### *investigation and reconstruction*

The features of this structure were documented at excavation levels 4 and 5 in trench 23 and level 2 in trench 15. All features were sectioned. In trench 23, most features were found at level 4, but were sectioned at level 5, if still present. The depth of the features was calculated/estimated on the basis of the NAP-levels of both excavation levels.

##### *construction*

Building 239 measured c. 12 x 6 m. Feature 23.096 and 114 – with a depth of 24 and 16 cm – are situated on the central axis, but in the western half no clear, let alone regular core construction seems present. Probably cross beams between the long walls formed an important part of the principal construction.

##### *walls*

Especially at the south side of the building a substantial number of features were present, but it is not clear which were wall posts, double posts or outposts. The depth ranged from 4 to 16 cm.

##### *roof*

The roof at the east side of the building seems to be gabled, the roof type at the west side is unknown.

##### *finds and dating evidence*

The finds do not provide a precise date, but (probably) belong to the Roman period. They consist of 2 iron fragments, a small sherd (3 g) of coarse-walled ware and 2 fragments of roof tile

(max. 200 g). The latter fragments suggest a date in a rather late phase of the Roman period. Pieces of mortar were present in the residue of the archaeobotanical samples.

#### BUILDING 240 / trench 23 (Fig. 40.17)

##### *investigation and reconstruction*

The features of building 240 were documented at excavation levels 4 and 5 trench 23 and the depth of the features had to be estimated in the same way as for 239.

##### *construction*

This structure measured 8.8 x 5 m. Feature 100, 73 and 94 were dug for central posts; their depth was 15, 15 and 33 cm.

##### *walls*

The southern long wall consisted of six evenly spaced posts of 14-24 cm. Of the northern long wall only four posts were found (21-38 cm), but originally there were also six, with two destroyed by later features.

##### *roof*

The building had a gabled roof.

##### *repairs and alterations*

On the basis of the form, feature 95 seems to be a double post and is partly the result of a repair.

##### *finds and dating evidence*

Two fragments (52 g) of a pot Niederbieber 89 date this building after c. AD 125 and 3 fragments of brick (100 g) perhaps suggest a date in later phase of the Roman period or beyond.

#### BUILDING 241 / trench 16 (Fig. 40.18)

##### *investigation and reconstruction*

The features of this building, formerly known as W, were found at excavation level 5. Unfortunately none of the features were sectioned and levels were not taken. Consequently, the depths of the features cannot be reconstructed. Although it cannot be ruled out that the building was longer, it probably did not extend far beyond the borders of the excavation. A number of features not belonging to this building obscure the interior, but no postholes of 241 seem to be present. The situation at the southeast corner of the building was obscured by a patch of paving stones. Some features may have been destroyed by drain 317.

##### *construction*

The building measured 12.5-13.5 x (at least) 5.5 m. The roof was completely supported by the walls, in which doubled/paired posts can have supported cross beams.

##### *special features*

Approximately 1.80 m from the southern wall three posts were present that possibly were part of a short portico or annex to the building.

##### *finds and dating evidence*

<sup>14</sup>C-date (charred seeds): 1763 ± 21 BP (GrM-23710); 247-258, 280-332 cal AD (1 sigma); 237-352 cal AD (2 sigma).

<sup>14</sup>C-date (charred seeds): 1810 ± 50 BP (UtC-1572); 131-254, 303-315 cal AD (1 sigma); 84-335 cal AD (2 sigma).

The second radiocarbon date was from charred seeds from a posthole of 'building W', but it not known which one. Anyway, the first date – obtained in 2020 – gives a later *terminus post quem*. GrM-23717 from sunken hut 511 is more or less the same as GrM-23710, so the question which is the oldest is not solved. Four sherds of three types of wheel-turned pottery (34 g) point to a date in the Roman period or later.

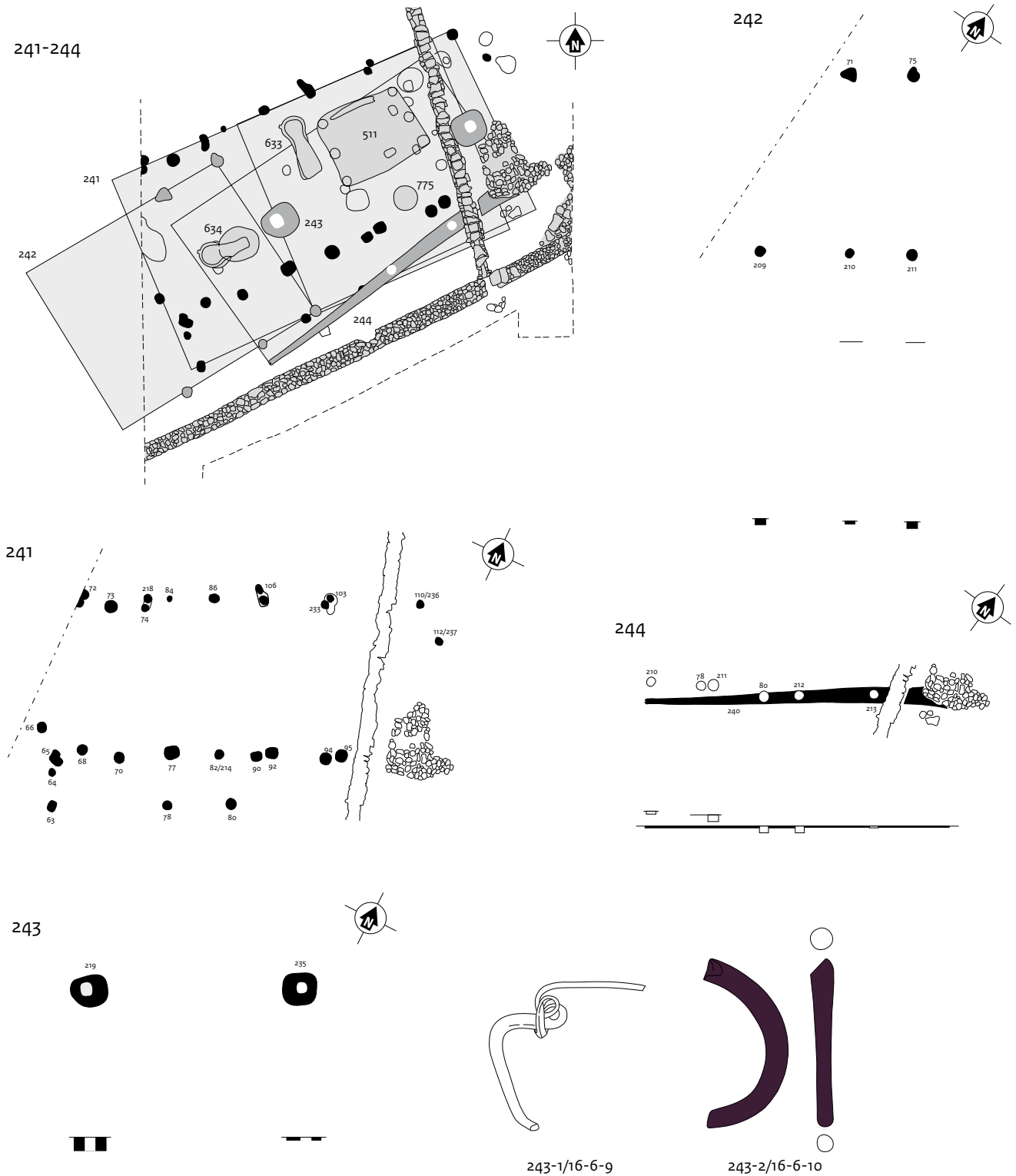


Fig. 40.18 Voerendaal-Ten Hove. Situation, plans and posthole depths of building 241-244, as well as bronze and glass from 244. Buildings scale 1:200, finds 1:3. (source: D.S. Habermehl & H.A. Hiddink)

**BUILDING 242 / trench 16 (Fig. 40.18)**  
*investigation and reconstruction*

This features of this somewhat hypothetical building were documented at levels 5 and 6. Only the features at level 6 were sectioned, and because levels were not taken, the depth of the northerly features is unknown. Part of the building lies west of the excavated area.

*construction*

This building was at least 5.2 m long and had a width of 6.2 m. There were no internal supports (found). The depth of the sectioned features was 10-23 cm.

*finds and dating evidence*

No finds.

## BUILDING 243 / trench 16 (Fig. 40.18)

*investigation and reconstruction*

This features of this hypothetical building were documented at levels 5 and 6. Both features were sectioned at excavation level 6, but only the section of feature 219 was drawn. Possibly the building extended westwards outside the excavated area and an extra feature could be situated under the not excavated strip between trench 16 and 22.

*construction*

The two features belong to a building of at least 7.3 m long. Feature 219 has a depth of at least 46 cm and of 235 only 10 cm remained when it was sectioned.

*disappearance of the building*

In both features post pipes were visible.

*finds and dating evidence*

<sup>14</sup>C-date (charred grain: 1780 ± 50 BP (UtC-1573); 145-150, 170-194, 210-265, 271-332 cal AD (1 sigma); 129-381 cal AD (2 sigma).

The pottery found in the two features of this building is rather young. There is a fragment (16 g) of a Niederbieber 89 and two other large fragments (1,370 g) are of a 'dolium-bottle' Lenz 50G; a type that seems quite late. This is certain of the two sherds (4 g) of (a) beaker(s) with a glossy black slip, dating from c. AD 200 onwards. Non-ceramic finds are a Middle Roman wire brooch and a glass bracelet (243-1 and 2; Fig. 40.18). On the basis of the radiocarbon date, the building can be Late Roman as well.

## BUILDING 244 / trench 16 (Fig. 40.18)

*investigation and reconstruction*

Directly south of building 241 a narrow ditch with a number of posts was documented at excavation levels 6. Possibly it represents part of the long wall of a building, although in earlier reconstructions it was considered part of ditch 305/e. All features were sectioned but none of these sections were drawn.

*construction*

This ditch was 10.4 m long, 20-60 cm wide and 4-6 cm deep. Posts 212 and 213 possibly stood in the ditch; they were 23 and 6 cm deep. Feature 80 was attributed to building 241.

*finds and dating evidence*

The only find is a fragment of animal bone (9 g).

## BUILDING 245 / trench 102 (Fig. 40.19)

*investigation and reconstruction*

The features of building 245 were documented at excavation level 3. All features were sectioned but none of the sections was drawn.

*construction*

Building 245 measured 3-3.4 x 2.8 m. The six postholes were 5-13 cm deep.



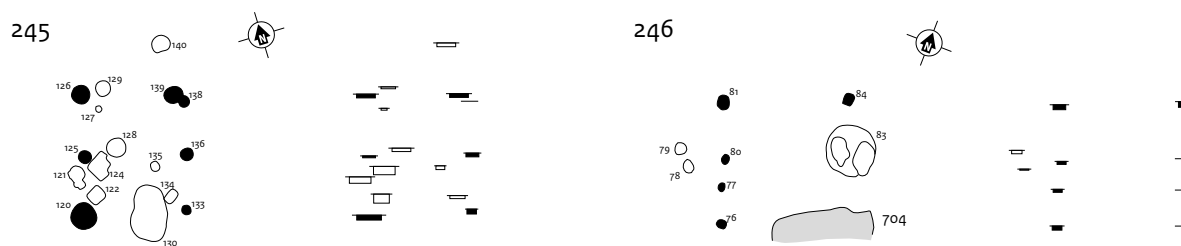


Fig. 40.19 Voerendaal-Ten Hove. Plans and posthole depths of building 245 and 246. Scale 1:200. (source: D.S. Habermehl & H.A. Hiddink)

#### repairs and alterations

Feature 138 and 139 are placed very close together. Possibly, one of these was meant as a repair or as an extra support for the other.

#### finds and dating evidence

It is likely that building 245 is older than *horreum* 408. In the features a fragment of animal bone (4 g) and 2 pieces of burnt loam were found, together with 7 sherds. Three of the latter were of handmade pottery (24 g) and 4 of wheel-turned coarse ware (15 g). The structure apparently dates to the Roman period, assuming the wheel-turned sherds are no intrusions.

#### BUILDING 246 / trench 10 (Fig. 40.19)

##### investigation and reconstruction

The features of this building were documented at excavation levels 2 and 3. Almost half of the postholes were destroyed by later features.

##### construction

This building was square, with sides of 3.3 m. The depth of the features ranged from 8 to 15 cm.

##### finds and dating evidence

This building seems to be older than pit 704. In its features 5 pieces of roof tile were found (max. 2.5 kg), together with a small sherd (2 g) of colour-coated ware (fabric b). The latter suggests that it was built (or demolished) not before the second century AD.

#### BUILDING 247 / trench 10 (Fig. 40.20)

##### Investigation and reconstruction

The features of building 247 were documented at excavation levels 2 and 3. The sections were made from level 3; some were drawn. There are no indications that the building extended (far) beyond the borders of the excavation/trench 10.

##### construction

This building measured at least 15.5 m and was 9.5 m wide. Because the features in each wall have no counterparts in the other, they must have been fitted with wall plates to carry the roof.

The presence of inner posts is likely and they could have been situated under the foundations of building 405. The core of the building was 5.5 m wide if this hypothetical inner posts really existed. Of the northern long wall four postholes were documented. The depth of these posts ranges between 6 and 26 cm. Possibly, the remarkable curve in the ditch 306, exactly in line with the northern long wall, can be interpreted as another wall post that was not recognized as such during excavation.

Another four postholes can be associated with the southern long wall. Their depth ranged from 6 to 35 cm. A fifth post (10.098) was far deeper (90 cm). The dark grey post pipe had at an angle of c. 70 degrees. It remains open if this feature was part of building 247.

##### roof

This building probably had a gabled roof.

##### repairs and alterations

Possibly, feature 72 represents a repair of an original element in feature 114.

##### finds and dating evidence

Probably one or more postholes of this structure were cut by pit 704, although there are no intersections proper. The plan and a section suggest that a feature of 247 was cut by ditch 306,

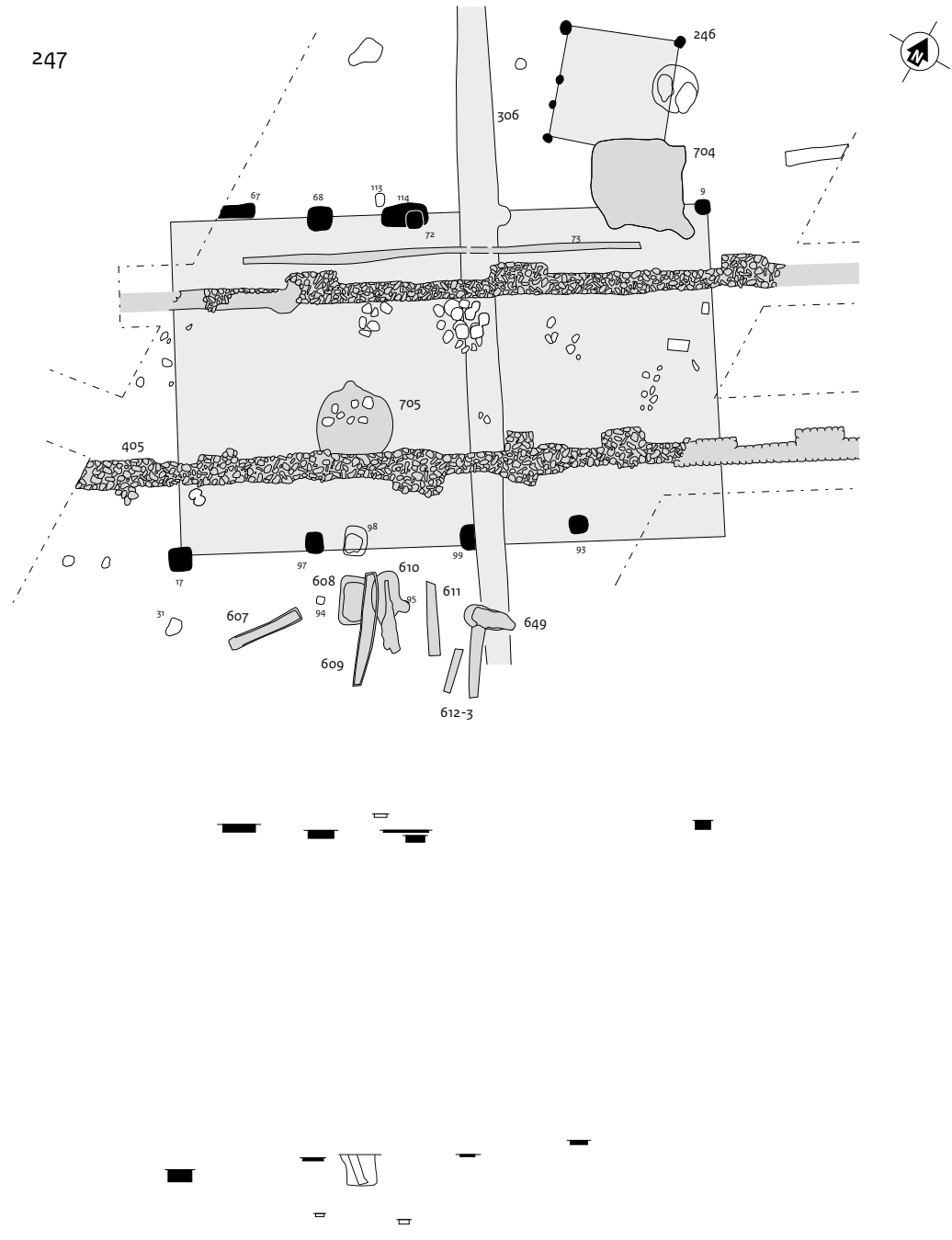


Fig. 40.20 Voerendaal-Ten Hove. Plan - with surrounding features - and posthole depths of building 247. Scale 1:200. (source: D.S. Habermehl & H.A. Hiddink)

but this is inconclusive on closer inspection. Moreover, the fill of 306 is clean, suggesting that there was no activity in this area when it (was) filled up. In any case, building 247 must have preceded 405. The finds consist in the first place of 5 fragments of iron and 2 pieces of roof tile (c. 200 g). All the pottery is wheel-turned: one sherd terra nigra (5 g), at least 2 of smooth-walled ware (min. 2 g), 2 of dolium (86 g) and a rim of a coarse-walled pot Niederbieber 87 (62 g). The structure is clearly Roman, even Middle Roman (after AD 70).

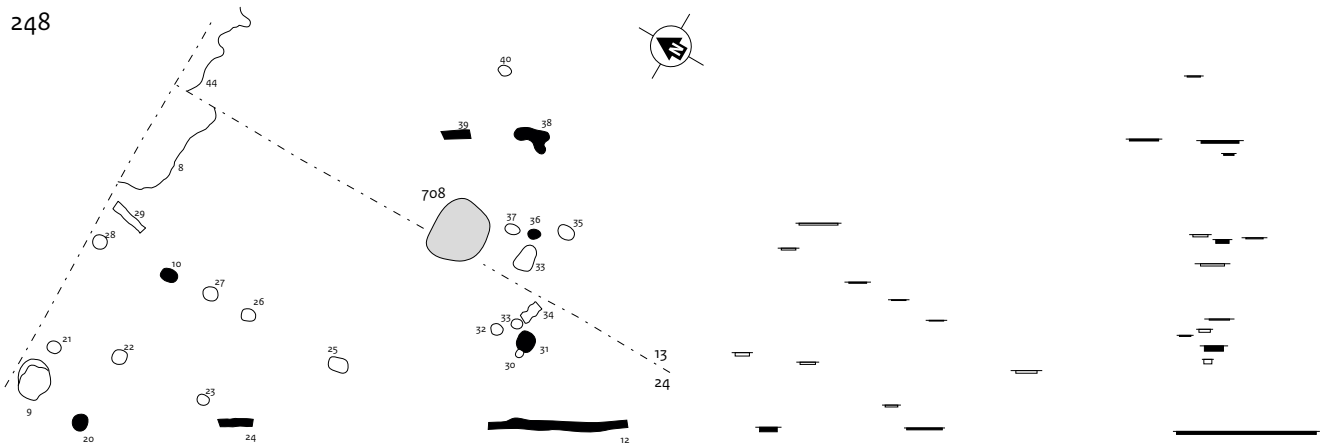


Fig. 40.21 Voerendaal-Ten Hove. Plan and posthole depths of building 248. Scale 1:200. (source: D.S. Habermehl & H.A. Hiddink)

### BUILDING 248 / trench 13, 24 (Fig. 40.21)

#### *investigation and reconstruction*

The features of building 248 were documented at excavation level 1 in trench 13 and at level 2 in trench 24. A small part of this building is situated beyond the boundaries of the excavation.

All features were sectioned; no sections were drawn.

#### *construction*

This somewhat hypothetical structure measured 14.5 x 7.7 m. Only feature 24.010 could be dug for a central post. Feature 13.036 and 24.031 possibly mark the spot of inner posts, although their distance to the walls is not the same. The depth of this three features was only 3, 10 and 14 cm.

#### *walls*

In both the eastern and western long wall, small sections of ditches were documented (max. 3.70 m long). These were only between 5 and 8 cm deep. Two postholes were part of the wall: 13.038 and 24.020, 12 and 5 cm deep.

#### *finds and dating evidence*

The finds of this structure are a small piece of tile and one sherd of smooth-walled ware (5 g).

### BUILDING 249 / trench 13 (Fig. 40.22)

#### *investigation and reconstruction*

The features of this building were found at excavation level 1. All were sectioned and the sections were drawn.

#### *construction*

This square building measured 3.5 x 3.4 m. The structure basically consisted of six postholes 32-46 cm deep. At the central axis, there were three postholes, with a depth of 3, 4 and 20 cm. Four extra postholes, at the corners, were quite small and therefore probably no repairs, but original features (depth 20-33 cm). The posts in these pits could have supported an extension of the floor only, not the whole weight of the building and its contents.

#### *disappearance of the building*

In three features post pipes were present. The other postholes had even, dark grey fillings.

#### *finds and dating evidence*

<sup>14</sup>C-date (charred seeds): 1759 ± 21 BP (GrM-23712); 248-260, 279-299, 306-336 cal AD (1 sigma); 238-361 cal AD (2 sigma).

In the features of this granary 2 sherds were found, terra sigillata and coarse-walled ware (both 2 g). Also an iron slag (20 g), a piece of chalk and a piece of sandstone were collected (c. 200 g), along with a piece of roof tile (300 g). This material suggest the granary was built or was decaying (some time) after the villa fell in ruins, which is confirmed by the radiocarbon date. Of course, this provides only a terminus post quem.

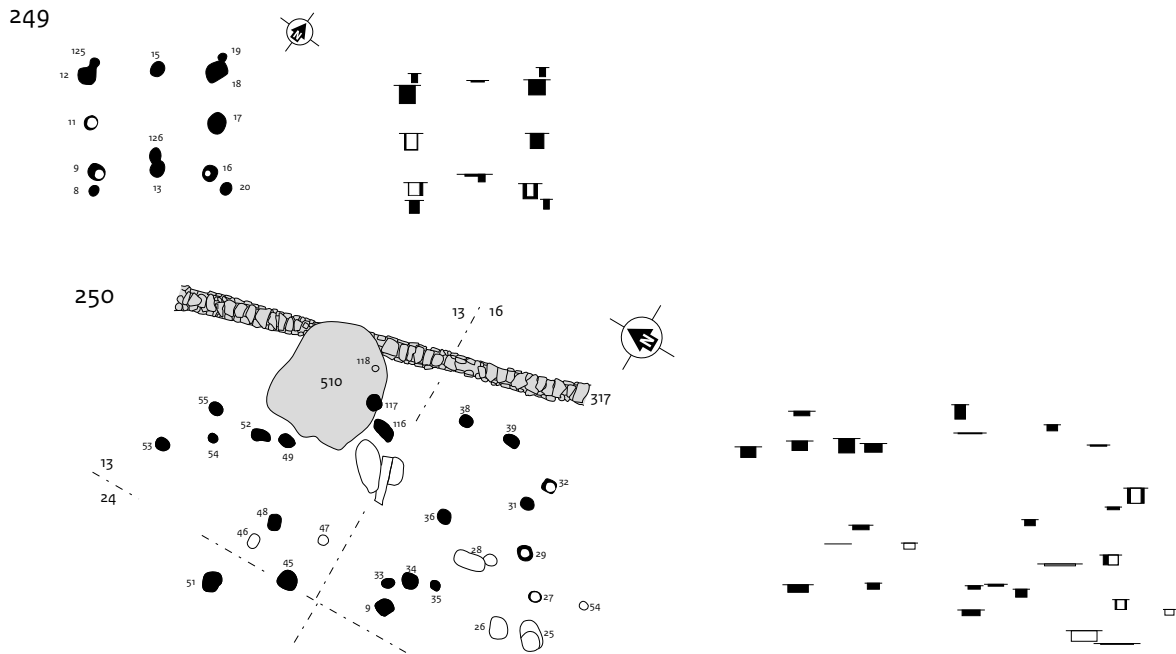


Fig. 40.22 Voerendaal-Ten Hove. Plans and posthole depths of building 249 and 250. Scale 1:200. (source: D.S. Habermehl & H.A. Hiddink)

#### BUILDING 250 / trench 13, 16, 24 (Fig. 40.22)

##### *investigation and reconstruction*

The features of this building were documented at excavation level 3 in trench 16 and 24 and at levels 2 and 3 in trench 13. All features were sectioned and most sections were drawn.

The structure is more a rectangular concentration of postholes than a clear structure.

##### *construction*

The building measured c. 9.5 x 4 m. Feature 13.048 and 16.036 could have been dug for central posts, but they are off the central axis. Their depth was 12 and 16 cm. Possibly the relatively deep features outside the building, 13.055, 117 and 16.009 supported cross beams.

##### *walls*

Both long walls consist of a number of somewhat irregularly placed posts with depths of 2 to 38 cm.

##### *entrances*

Probably 2.6 m wide entrances were situated north of the features 13.116/117 and 16.009/33.

##### *disappearance of the building*

In three features post pipes were found.

##### *finds and dating evidence*

Feature 13.117 cuts through the fill of sunken hut 510. Although it is not absolutely certain that the posthole belongs to this building, it is well possible, considering the finds. Besides a piece of sandstone (100 g) and at least 8 pieces of roof tile (1.5 kg), 5 sherds (14 g) were collected. These are of handmade pottery, terra sigillata and coarse-walled ware. Of the two fragments of the latter category, one could be Merovingian but this is not certain.

#### BUILDING 251 / trench 13, 22, 27 (Fig. 40.23)

##### *investigation and reconstruction*

The features of this building were documented at excavation level 2 in trench 13, at level 6 in trench 22 and at levels 4 and 6 in trench 27. A number of features came to light when the treshing-floor 420 was removed.

Almost all features were sectioned, except for some features that were already found at higher levels but disappeared somewhere between the excavation levels.

##### *construction*

This building was at least 12.4 and possibly c. 15 m long and 8 m wide. Seven large features are situated on the central axis. Their depth ranged from 4 to 20 cm (average 14 cm). It is not certain

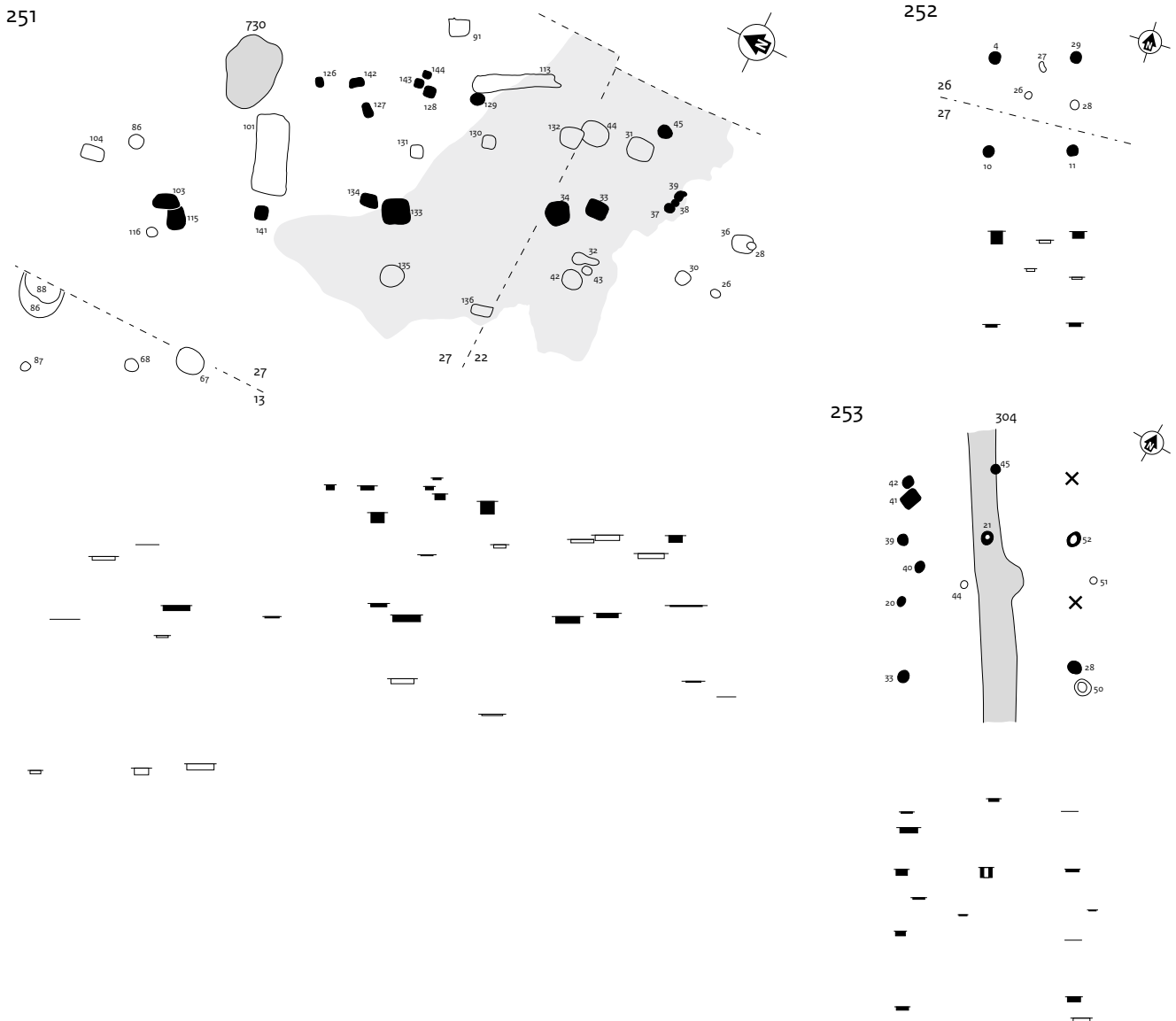


Fig. 40.23 Voerendaal-Ten Hove. Plans and posthole depths of building 251-253. Scale 1:200. (source: D.S. Habermehl & H.A. Hiddink)

that 27.103 and 115 belong to the structure, because they were already found at level 4, while the paving of 420 was found at level 6 and because of the finds (see below).

#### walls

A number of features could have been part of the eastern wall (depth 5-38 cm); 22.037-39 and 45 possibly were part of the southern short wall.

#### repairs and alterations

Possibly a post in 27.103 replaced one in 115. However, as feature 115 was not sectioned, this idea cannot be substantiated any further.

#### finds and dating evidence

Threshing floor 420 in front of building 401 covers some features of building 251. Consequently, this must be older than 420 (and 401).

The non-ceramic finds are not relevant for dating this building: a piece of animal bone, of chalk and 5 iron fragments. All the pottery is wheel-turned Roman material. Six sherds (188 g) were found in 27.103, a feature that possible does not belong to this building. The pottery it contains is however not necessarily very young, with a 'circle-pot' Brunsting 4 (from c. AD 70 onwards), a colour-coated beaker in fabric b (second century AD) and a mortarium Brunsting 37, which dates after c. AD 130. In the other features, only 3 sherds were found (10 g). A smooth-smoked sherd and a colour-coated

one in fabric b suggest a second-century dating (the third sherd is in coarse ware). In the residue of the archaeobotanical sample of feature 27.126, small pieces of brick were present.

#### BUILDING 252 / trench 26, 27 (Fig. 40.23)

##### *investigation and reconstruction*

This granary was found at excavation level 2. All features were sectioned but only one sections was drawn.

##### *construction*

The four posts formed a rectangle of 2.8 x 2.5 m. The southern two posts were relatively shallow (8 and 10 cm), while the northern two were significantly deeper (38 and 20 cm).

##### *finds and dating evidence*

Besides a piece of burnt loam, one sherd (3 g) of coarse ware, possibly Late Roman, was found. The residue of the archaeobotanical samples contained tiny pieces of brick.

#### BUILDING 253 / trench 27 (Fig. 40.23)

##### *investigation and reconstruction*

The features were documented at excavation level 2. All features were sectioned and two sections were drawn.

##### *construction*

Building 253 measured 6-6.4 x 5 m and basically consisted of two rows of four posts 1 m apart. Feature 21 was situated on the same line as 39 and 52 and possibly was a central post, also because its depth was 30 cm. The depths of the other features ranged from 8 to 18 cm.

##### *repairs and alterations*

Posthole 41 can be a repair of 42. Feature 50 was probably part of building 254.

##### *disappearance of the building*

In two of the features post pipes were observed.

##### *finds and dating evidence*

Two features of building 253 intersected ditch 304. The finds consist of only 3 pieces of limestone (1 kg) and 3 of roof tile (c. 1.2 kg). Pieces of brick can also be found in the residue of some archaeobotanical samples.

#### BUILDING 254 / trench 20, 27 (Fig. 40.24)

##### *investigation and reconstruction*

The features of building 254 were documented at excavation level 1-3 in trench 20 and at 2-6 in trench 27. A 1.15 wide strip between trench 20 and 27 was not excavated. All features were sectioned, but only few sections were drawn. This building remains hypothetical because a large number of features on the four supposed lines are missing. Because only one feature is situated inside building 401, it is conceivable that in reality only an wooden annex to the latter existed.

The excavators saw the possibility that the row of postholes formed part of fences between 401 and the annex 326 (paragraph 5.1.4).

##### *construction*

If it indeed existed, building 254 measured c. 15.3 x 8.8 m. The features representing possible inner posts are situated 2-2.2 m from the walls, resulting in a c. 4.6 m wide central bay.

The features 20.083 and 82, making up the eastern 'row' are only 6 and 10 cm deep. The posts in the western row have depth ranging from 6 to 28 cm.

##### *walls*

The depth of the 11 possible wall posts ranged from 7 to 16 cm.

254



Fig. 40.24 Voerendaal-Ten Hove. Plan and posthole depths of building 254. Scale 1:200. (source: D.S. Habermehl & H.A. Hiddink)

#### roof

Possibly, the building had a gabled roof.

#### repairs and alterations

Some of the inner posts of the western row could have been repairs or alterations.

#### finds and dating evidence

The finds provide no precise dating of this structure. Besides a hinge of iron and a piece of a *tegula* (300 g), only two sherds were found, one of smooth-walled (10 g) and one (6 g) of coarse-walled ware. Building 254 as reconstructed here predates building 401 and in a reduced version can be contemporary with it. It could only have been succeeding 401, if this was almost completely demolished. The pieces of brick in the residue of some archaeobotanical samples can either be related to material present at the site during phase 2 (first villa) or just the result of bioturbation.

#### BUILDING 255 / trench 20 (Fig. 40.25)

##### investigation and reconstruction

The features of building 577 were found at excavation level 3. Although the granary was recognized already during fieldwork, none of the features were sectioned and their depth had to be estimated on basis of the levels of excavation level 3 and 4 (max. 25 cm).

##### construction

This structure measured 3.8 x 3 m, with at least four posts. On the 1:50 plan, a question mark was put next to feature 146, so it remains unclear if it was part of the building.

##### repairs and alterations

Feature 150 has a remarkable shape, possibly indicating the presence of two posts besides each other, probably the result of a repair

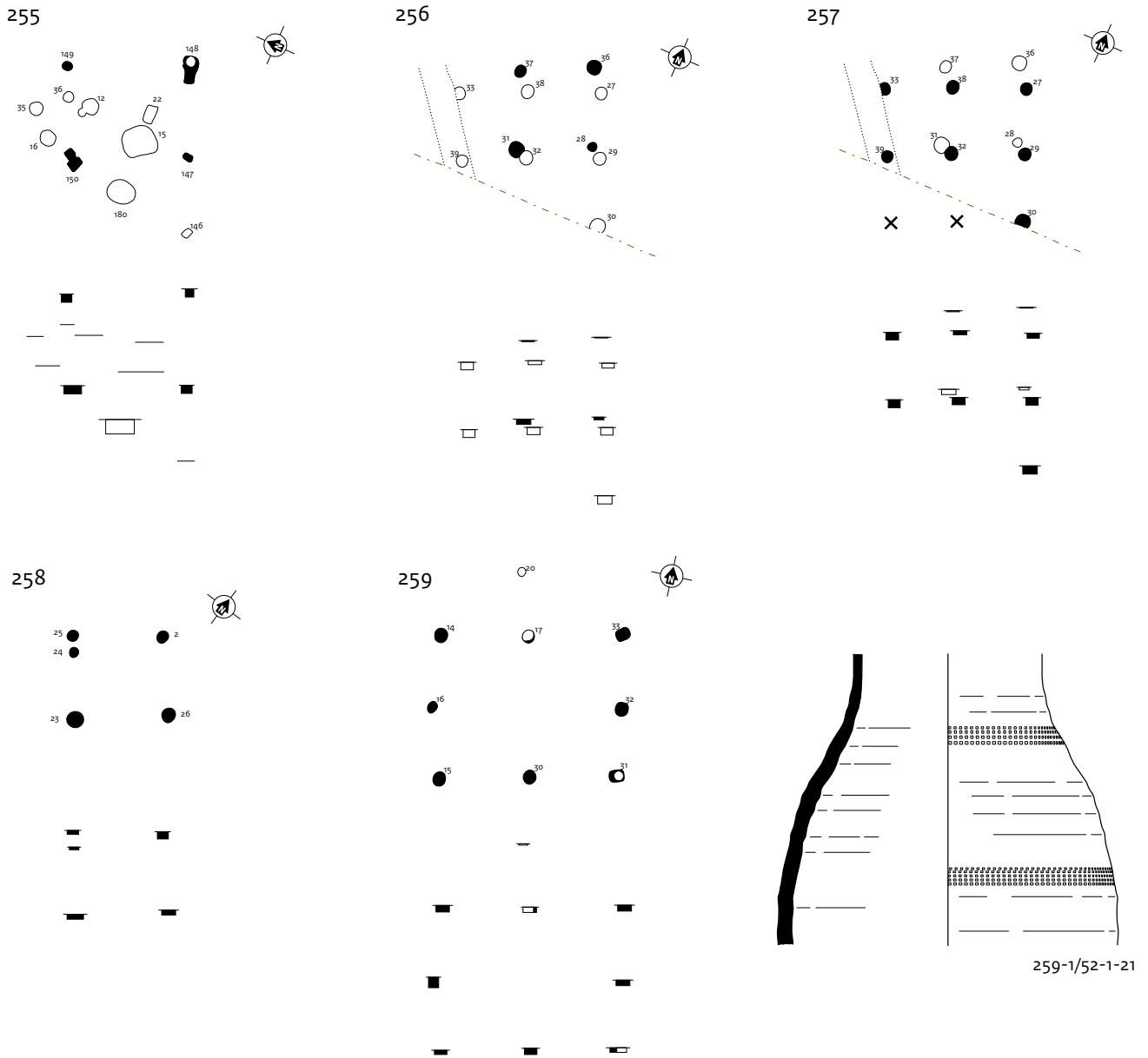


Fig. 40.25 Voerendaal-Ten Hove. Plans and posthole depths of building 255-259, with pottery of 259. Buildings scale 1:200, pottery 1:3. (source: D.S. Habermehl & H.A. Hiddink)

*disappearance of the building*

In one of the postholes, a post pipe was documented.

*finds and dating evidence*

No finds.

**BUILDING 256 / trench 29 (Fig. 40.25)**

*investigation and reconstruction*

The features of this building were documented at excavation level 2. All posts were sectioned. Both features at the north side are too far apart from 36 and 37 of building 257 to be repairs of the latter. Taking 256 as a separate structure seems therefore justified.

*construction*

This granary measured 2.3 x 2.4 m, with postholes of 2-16 cm deep.

*finds and dating evidence*

Feature 31 is cut by post 32 of 257. As a result, building 256 must be the oldest of the two.

The finds consist of 8 sherds (37 g) of handmade pottery. The dating of this granary is most likely Iron Age (cf. 257 below).



## BUILDING 257 / trench 29 (Fig. 40.25)

*investigation and reconstruction*

The features of this building were also found at level 2. All posts were sectioned. Part of the structure was situated beyond the excavation limits.

*construction*

This building was probably a nine-post building, measuring 4.2 x 4 m. The depth of the postholes ranged from 12 to 25 cm.

*finds and dating evidence*

Building 257 must be younger than building 256 (see above). One piece of Roman tile was found, but it was very small and must be contamination. The other finds are 9 sherds (155 g) handmade pottery.

## BUILDING 258 / trench 29 (Fig. 40.25)

*investigation and reconstruction*

The features of this building were found at excavation level 1. All posts were sectioned.

*construction*

This building measured 2.8 x 2.6 m and had postholes of 8-22 cm deep. Remarkable is the yellow-grey fill of the postholes.

*repairs and alterations*

Possibly, the post in feature 24 was added later as either an extra support or a replacement for that in 25.

*finds and dating evidence*

The only find is a single sherd of handmade pottery (4 g).

## BUILDING 259 / trench 52 (Fig. 40.25)

*investigation and reconstruction*

The features of this building were documented at excavation levels 1 and 2. All posts were sectioned and the sections were drawn.

*construction*

Building 259 measured 5.5 x 4.4 m and consisted of eight evenly spaced posts of 13-32 cm deep.

*disappearance of the building*

In two of the features a post pipe was visible.

*finds and dating evidence*

Besides 3 pieces of roof tile, 5 sherds of pottery were found (206 g). Four are coarse-walled, of which one is either Late Roman or Early Medieval. A large fragment (170 g) of a smooth-walled jug belongs certainly to the Early Middle Ages (259-1; Fig. 40.25).

## BUILDING 260 / trench 36 (Fig. 40.26)

*investigation and reconstruction*

The features of building 554 were documented at excavation level 1. All features were sectioned but none of the sections were drawn. The structure is an isolated concentration of features and therefore recognizable as a possible building.

*construction*

This structure measured c. 9 x 4.5-5 m. The features had a depth between 5 and 30 cm and had a distinctive yellow-grey fill.

*finds and dating evidence*

Besides pieces of limestone (600 g) and iron, the finds consist of 2 sherds of handmade pottery (both 22 g) and one of Late Medieval stone-glazed pottery.

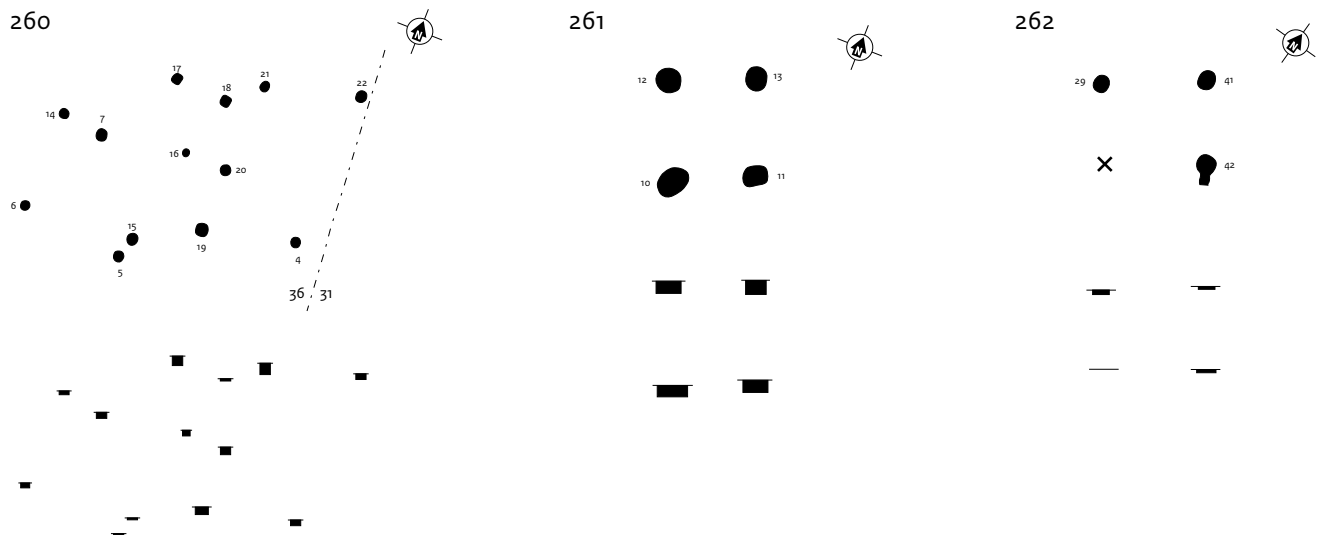


Fig. 40.26 Voerendaal-Ten Hove. Plans and posthole depths of building 260-262. Scale 1:200. (source: D.S. Habermehl & H.A. Hiddink)

#### BUILDING 261 / trench 55 (Fig. 40.26)

##### *investigation and reconstruction*

The features of this granary were observed at level 2; all were sectioned and all sections were drawn.

##### *construction*

The granary measured 2.8 x 2.4 m. The postholes were quite large and deep, ranging from 30 to 38 cm.

##### *finds and dating evidence*

No finds.

#### BUILDING 262 / trench 115 (Fig. 40.26)

##### *investigation and reconstruction*

The features of this structure were found at level 2. The sections were not drawn.

##### *construction*

This small building measured 2.8 x 2.2 m; the depth of the postholes was 12, 7 and 8 cm.

##### *finds and dating evidence*

A wall fragment of smooth-walled pottery is the only find (5 g).

#### BUILDING 418

See chapter 43.

# 41 Ditches, water-related features, planting holes, annex, lime-pits

*Henk Hiddink*

## 41.1 Introduction

The descriptions in this part of the catalogue are quite straightforward. Like in those of the post-built structures in the previous chapter, they start with some remarks on the investigation and documentation and end with remarks on the finds and dating evidence.

The descriptions themselves are often short, providing data on the length, depth, shape (in the drawn section(s)) and infill.

The orientation of ditches is expressed in a

number of degrees, between 0-179°; where e.g. 0° stands for north-south, 90° for west-east and 135° for northwest-southeast. For the deep ditch 308 the layers in several sections are described. The locations of the sections through various kinds of features are shown in figure 41.1 (ditches), 41.10 (drains, aqueduct etc.) and 41.20 (planting holes, annex).

The different groups of features are also discussed in the following chapters (Table 41.1, last column):

**Table 41.1. Voerendaal-Ten Hove. Structures discussed in this chapter.**

Section	Structures	Former designation	See also chapter
41.2	ditch 301-337	a-g	11, 15-3
	ditch 308	h	7
	311-313, 331-332	-	11, 15-3
	ditch 333	-	9
41.3	well 314, aqueduct 316, drain 317-318	n, p, q-f	10
	basin 319, 336	s, -	11
41.4	planting holes, annex 322-326	-	11
41.5	lime pits 335, 338	-	9

## 41.2 Ditches

DITCH 301 (Fig. 41.1-41.2)

### *investigation*

This ditch, in the preliminary reports designated 'a', was seen in most trenches along its course. However, in the east, there are parts missing and the last c. 40 m were not uncovered.

The second location where it supposedly was cut by ditch 302 south of trench 32 was not uncovered. In trench 70 and 78 the last 4 m were not observed in or between level 5 and 6.

### *description*

The parts of ditch 301 form a rectangular enclosure of which three sides were found. The western side has a length of 160 m an orientation of 151°, the northern of 262 m and 29° and the eastern of at least 137 m (c. 60 m not present) and 148°. The recorded depth of the ditch lies between 11 and 40 cm. In section, the shape varies from concave to V-shaped with a flat bottom. The infill is mostly described as light grey.

### *finds/dating evidence*

Ditch 301 is cut by 302 and 331 in trench 28, although both intersections are described as 'vague'. As said above, a second intersection with 302 was not uncovered. The relatively early date of this ditch is reflected in the small quantity of Roman pottery (3 sherds, 12 g), especially in relation to the handmade sherds (10, 50 g), probably prehistoric material scattered over the site. A fragment of animal bone, 4 of burnt/baked loam and 3 or iron are not in disagreement with an early date.

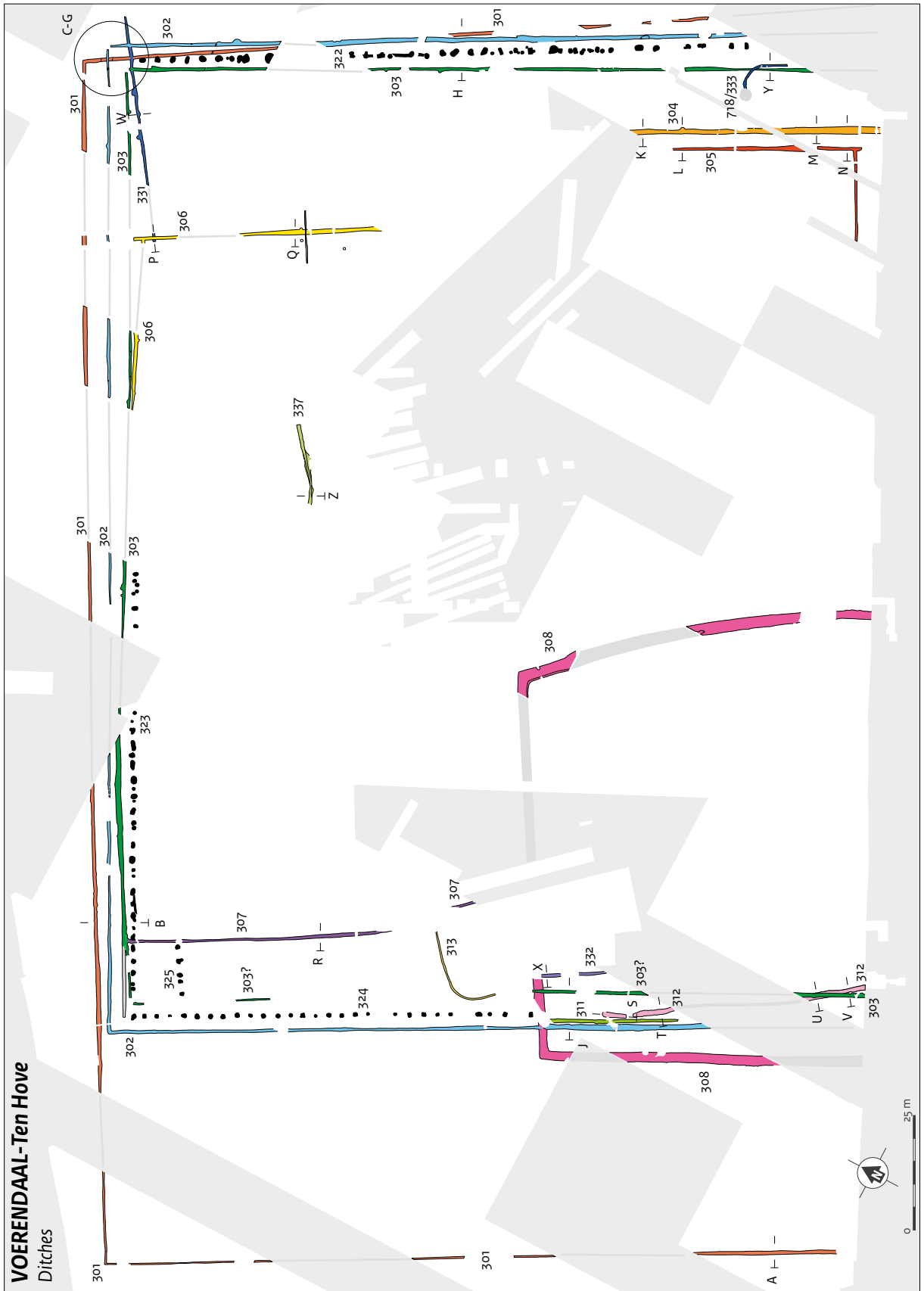


Fig. 41.1 Voerendaal-Ten Hove. The ditches with their structure-numbers and the location of the sections of figure 41.2, 5, 8 and 9.

## 301-303

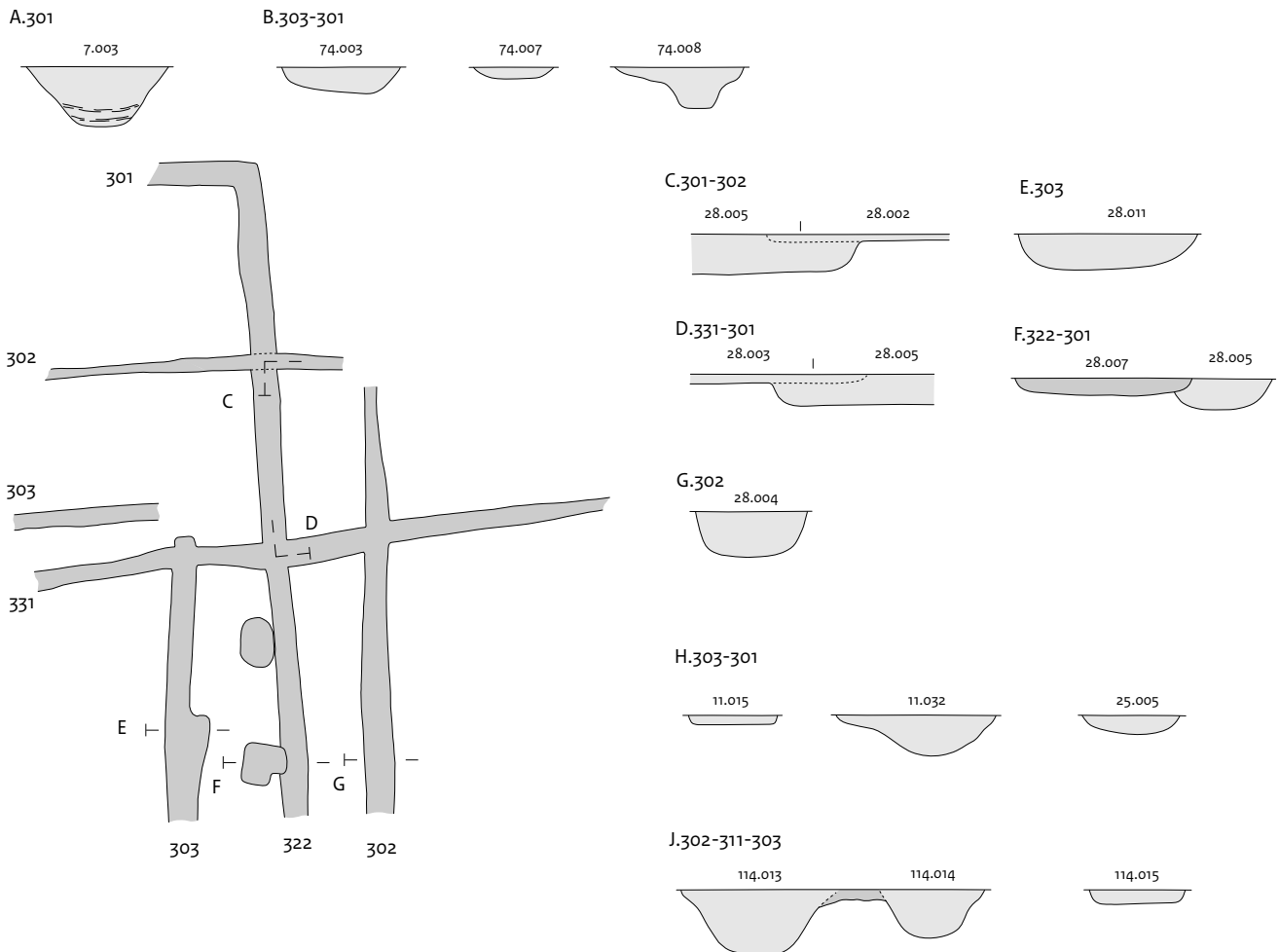


Fig. 41.2 Voerendaal-Ten Hove. Sections through ditch 301-303, with a detail of the situation in the northeast. Plan scale 1:200, sections 1:50.

The presence of two other categories asks for an explanation, however. Firstly, there were stones found in the ditch (45 fragments, c. 6-7 kg). Some stone finds, like pieces of flint and tephrite, can be quite old or indeed are (like the flint arrowhead 301-1/70-3-4; Fig. 37.4). However, 4 pieces of limestone (c. 4 kg) are not expected on the site until the construction of the first villa. The same holds true for c. 8 pieces of roof tile and a *bessalis* (max. c. 2.5 kg). Perhaps ditch 301 was only filled up after the first villa was built, or the inhabitants did not bother to fill it up entirely further away from the buildings. A considerable part of the stone and brick finds were collected in trench 4, 5, 6 and 74 at the back of the villa.

## DITCH 302 (Fig. 41.1-41.4)

*investigation*

Ditch 'b' was not uncovered between the Steinweg and trench 106 in the west and the same road and trench 20 in the east, in both cases some 30 m are missing. It was not seen or overlooked in the tip of trench 69.

*description*

The west side is completely recorded over 130 m; the orientation here is 151°. The northern part has a length of 215 m and an orientation of 28°. The west side was uncovered over 140 m and the orientation is also 151°.

The depth ranges from 6 till 44 cm, while the shapes and infill resembles that of 301. Ditch 302 functioned as boundary of the villa yard and discharge of the water from drain 327-330 (belonging to the bath).

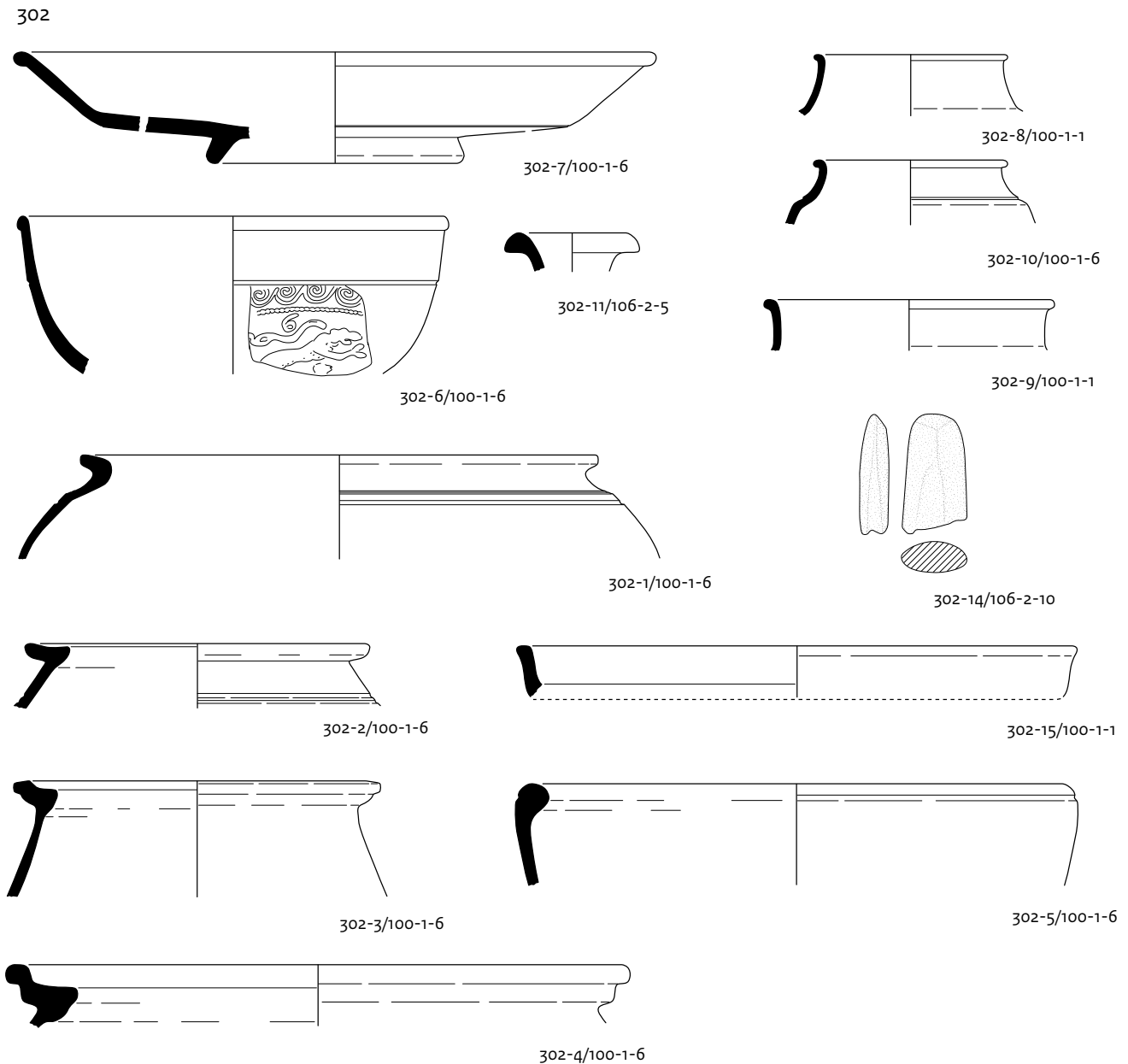


Fig. 41.3 Voerendaal-Ten Hove. Finds from ditch 302. Scale 1:3.

#### *finds/dating evidence*

Ditch 302 intersects 301 and 308 (although the latter intersection was not recorded and nearly destroyed by Braat). The quantity of finds from this ditch is considerable: 16 sherds (247 g) of handmade and 746 (14 kg) of Roman pottery, 22 fragments of metal (mainly iron), 11 pieces (c. 2 kg) of stone (mainly tephrite), 9 of flint (c. 800 g), 6 pieces of iron slag (569 g) and some brick and tile (see below). Most finds were collected from trench 100 and 106, where the drains from the bath ended up. Interesting are the indications that the feature lay open until the third century AD (at least). Only a tiny sherd of coarse ware (1 g) could be Late Roman, but this is not certain. Two or three black-slipped beakers Niederbieber 33 are represented by 16 sherds (51 g; 302-8; Fig. 41.3). Among the terra sigillata, a bowl Dragendorff 37 from Central or Eastern Gaul was made between AD 120-190 (302-6; Fig. 41.3). Some 40% of the database records with dated pottery types relate to forms dating after c. AD 150. That the ditch was filled after the bath fell in ruins, is shown by a piece of window glass (3 g) and especially 46 fragments (max. c. 12 kg) of brick and tile, among which several pieces of *tubuli* and part of a 'chimney' (302-12; Fig. 41.4). A last find worth mentioning is a jar Niederbieber 87, probably intact when deposited (302-13; weight 4 kg; Fig. 41.4). It was not found near the bath, but in trench 19, at the other end of the site.

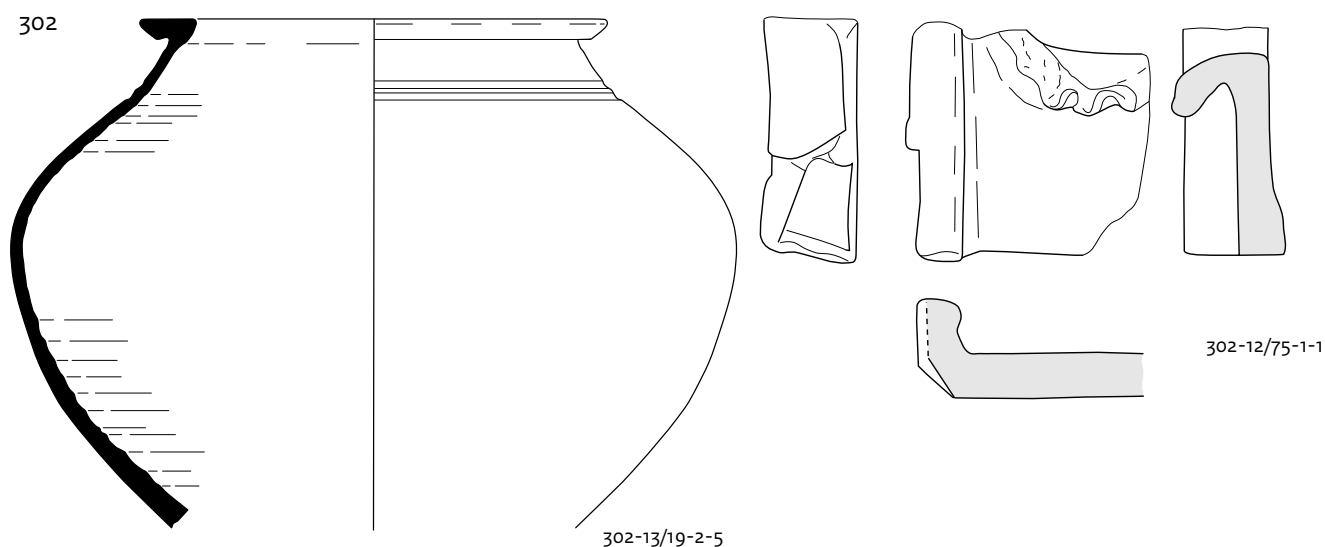


Fig. 41.4 Voerendaal-Ten Hove. Finds from ditch 302, cont. Scale 1:4.

#### DITCH 303 (Fig. 41.1-41.2)

##### investigation

Like ditch 302, 303 (formerly named 'c') was not completely uncovered in the east. The western part was not well preserved and it is not certain that all the fragments really belong to the same structure.

##### description

The eastern part of ditch 303 is the most clear-cut, with 150 m uncovered (orientation 152°). The northern section is c. 204 m long. Starting from the east, the orientation is 28° at first and then shifts to c. 30°. At the same time, the distance between 303 and 302 decreases from 4.5 to 2-3 m. In the east, ditch 306 and 331 run alongside 303, while to the west the expected row of planting holes is present. At the western end, the ditch splits and the least impressive branch seems connected to the west side of this phase of the enclosure. The latter side is represented by smaller segments, only some 50 m in total. The depth of 303 lies between 3 and 38. Like 301 and 302, the shape in the sections varies and the colour of the infill is (light) grey.

##### finds/dating evidence

The relation between 303 and 331 was investigated, but in the section it was impossible to see which ditch was the oldest. If the segment in trench 114 really belongs to 303, this ditch is younger than 308; the segment in trench 68/69 is younger than 312. The excavators thought that 303 was older than 302, because it had an opening allowing entrance to annex 326, which 302 lacked. Moreover, 303 runs quite close to building 401 and 402 and it is intersected by ditch 333 belonging to the latter building. Another indication that 303 was older than 302, is that the finds are similar to those of 301. The quantity of Roman pottery is quite small: 40 sherds (2,206 g including 1,830 g of a Dressel 20 amphora) against 42 (671 g) of handmade material. The only datable form is a jar/bowl Stuart 201/210 (OX-Heerl-JA3/BO1; c. AD 70-200). There are few fragments of iron (6), animal bone (2) and flint (3). However, 16 pieces (max. c. 1.7 kg) of brick and tile and 12 of limestone (c. 8.5 kg) were collected. Therefore this ditch, like 301, seems to have been in use when the first stone building(s) were constructed at the site.

#### DITCH 304 (Fig. 41.1; 41.5)

##### investigation

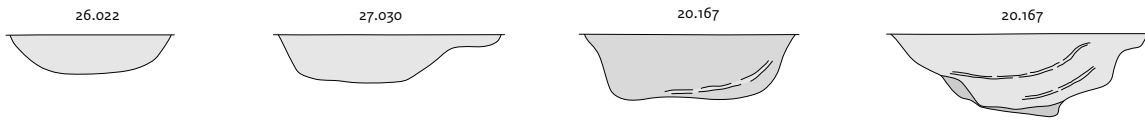
Ditch 304/d was found in the southern trenches 20, 26 and 27. It was not observed in Holwerda's trenches of 1929, but this can be explained by their width and the light fill. The ditch was also absent in ROB trench 6 and/or 28 in the north, so it is clear it did stop somewhere halfway the villa yard.

##### description

This feature was at least 54 m long and had an orientation of 151°. Its width varied from 80 to 170 cm, and its depth from 25 to 52 cm, with the latter value near the Steinweg. The infill was light grey-yellow spotted in most parts and grey-brown downhill.

## 304-307, 331

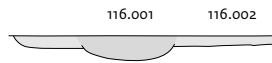
## K-N.304



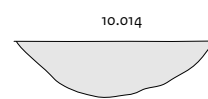
## L/N.305



## P.306/331



## Q.306



## R/307

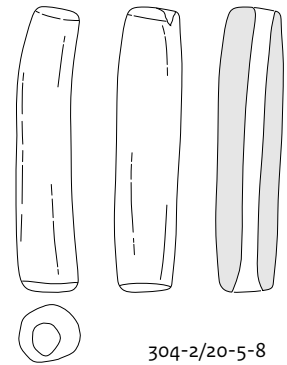
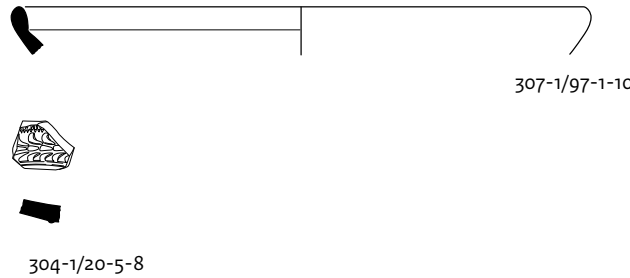
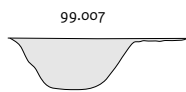


Fig. 41.5 Voerendaal-Ten Hove. Sections of ditch 304-307 and 331, with finds from 304 and 307. Sections scale 1:50, finds 1:3.

*finds/dating evidence*

This ditch is, together with 305, older than building 401. The composition of the small collection of finds is similar to that of 301 and 303. The pottery consists of 3 sherds (55 g) of handmade and 9 (409 g) of wheel-turned Roman wares. A fragment of terra sigillata comes from a bowl Dragendorff 29, dating from AD 70-85 (304-1; Fig. 41.5). Also a sherd of terra nigra is present and 5 of a Gauloise-amphora, probably from the second half of the first century or beyond. Two iron fragments were found and 6 (152 g) of animal bone, among which a kind of handle out of antler (302-2; Fig. 41.5). Nine fragments (c. 2 kg) of roof tile were collected. Apart from a small piece (16 g) of tephrite, all stone is limestone (8 pieces, c. kg). Finally, 5 pieces (c. 1.5 kg) of flint were found.

## DITCH 305 (Fig. 41.1; 41.5)

*investigation*

See above, 304. It was not observed in trench 13, probably because it was eroded completely.

*description*

This ditch has an orientation of 151° over at least 80 m, in the south makes a 90° turn and disappears after 40 m. The width varies between 50 and 75 m; the depth between 15 and 30 cm. The infill was light grey-yellow spotted.

*finds/dating evidence*

Very few finds were present in ditch 205: a handmade (5 g) and coarse-walled sherd (15 g), 2 fragments (185 g) of animal bone, one of a roof tile (max. 200 g) and 2 of limestone (c. 2.5 kg).

## DITCH 306 (Fig. 41.1; 41.5)

*investigation*

This ditch was only found in the northern half of the villa yard. That it was not observed in Holwerda's trenches is not remarkable, but it is not present in trench 13 and 24, so it was very shallow and eroded, or stopped somewhere in the yard.



*description*

The main part of this ditch was 54 m long and had an orientation of 150°, then it ran for 37 m with an orientation of 24° in the direction of ditch 303. The width of the feature was 60 to 130 cm, its depth 16-38 cm (maxima in the centre of trench 10). The infill was light brown-grey spotted.

*finds/dating evidence*

Both building 405 and oven 649 are younger than the ditch. Ditch 306 intersects 331, but the latter seems to be part of the same system. The excavation plan and a section suggest that the ditch cut a feature of building 247, but this is not certain. It is remarkable that the ditch contained only a single piece of a *tegula* (in trench 10; the only other find is a small piece of stone from trench 8). This suggests a 'virgin area' without activities; if building 247 preceded the ditch, one would expect far more finds scattered around it and later ending up in 306.

## DITCH 307 (Fig. 41.1; 41.5)

*investigation*

It is not completely certain that feature 114.009 belongs to ditch 307, because it was not present in most parts of trench 114, due to the disturbances by Braat's excavation and its limited depth.

*description*

The ditch was at least 58 m and probably more than 77 m long. The orientation was 151° in trench 74 and turned to 135° in trench 114. Its width was some 50-80 cm and the depth varied from 5 to 35 cm; the infill was light grey.

*finds/dating evidence*

Among the fourteen sherds (213 g) of Roman pottery from ditch 307, there are two fragments of terra nigra. One of these is from a dish Holwerda BW 79, Late Tiberian until Flavian (307-1; Fig. 41.5). A sherd of a Gauloise(?) amphora dates from the second half of the first century AD. Next 3 pieces (70 g) of tephrite belonging to a millstone were found and one iron slag (40 g). Only 3 small fragments (max. 300 g) of roof tile were collected.

## ENCLOSURE DITCH 308 (Fig. 41.6-41.7)

*investigation*

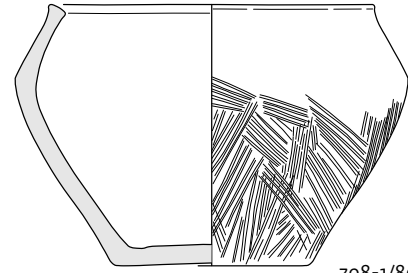
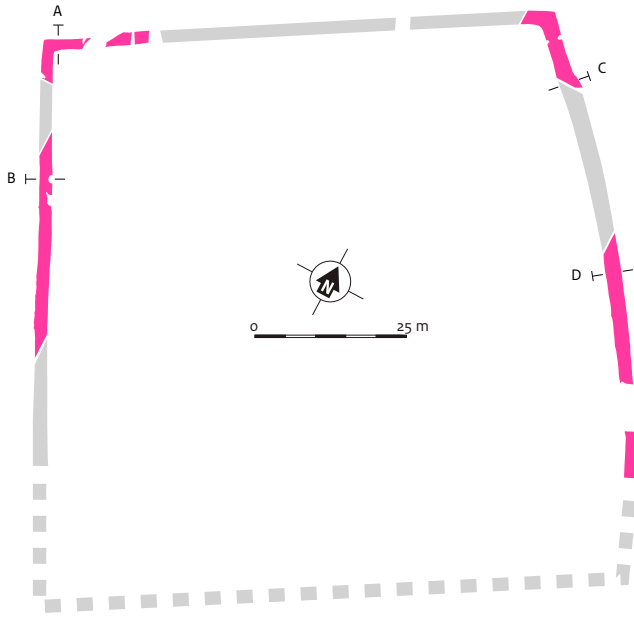
Only parts of this enclosure ditch were uncovered, it was not observed by Braat and it disappeared under the Steinweg. Still enough is known to reconstruct the overall-shape of the enclosure. It is important to keep in mind that most sections were only documented from level 2 or 3 and that the exact vertical position of the levels/find numbers was not recorded.

The indication of level 3, 5 and 6 in section D (Fig. 41.6) is not exact, while the section was drawn at the northern end of the trench, while the lower levels were only documented at the southern end (through levelling, not by drawn sections). During the analysis, we try to collect material suitable for dating of the lowest level(s) of the fill (like charcoal, (burnt) bone), but nothing was available, something already noted by the excavators. Therefore, the dating completely depends on the pottery (see below).

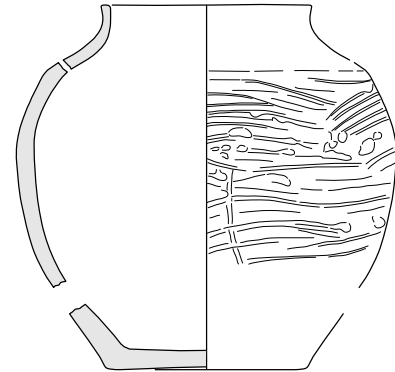
*general description*

The west side of the enclosure was formed by a ditch which must have been at least 70 m long; it had an orientation of 153°. The northern ditch was 82 m long with an orientation of 31°. While these parts were straight, that on the east side was curved and c. 76 m long. Its orientation shifted from c. 35 to 143 and ultimately 156°. It can only be guessed where the southern ditch was located. If the enclosure was roughly square in shape, it can be expected approximately under the modern ditch along the southern edge of the Steinweg. If the southern and northern ditch had the same length, only half of the enclosure was investigated (a rectangle of 80-95 x 145-150 m). However, in this scenario the enclosure would have extended far into the Hoensbeek

308

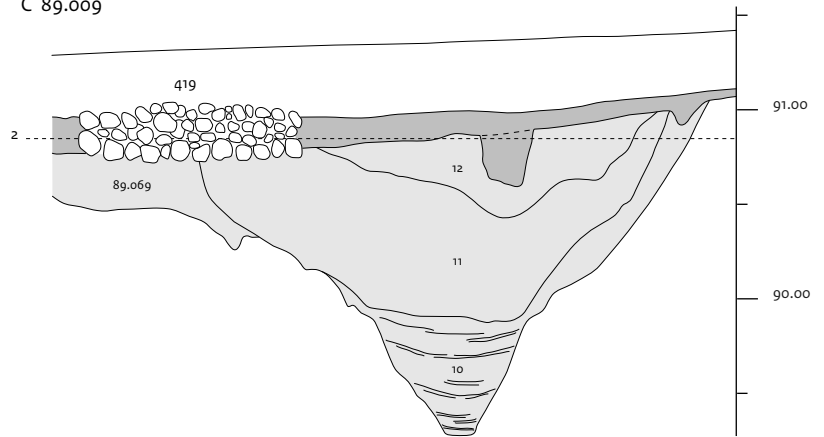


308-1/89-1-7

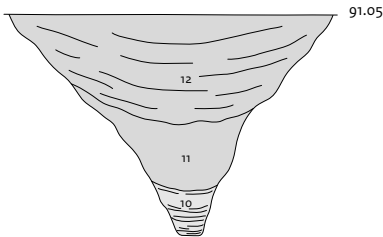


308-13/89-2-6

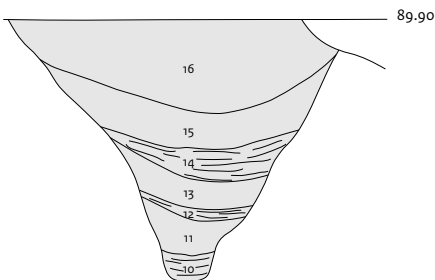
C 89.009



A 100.013



B 106.015



D 105.001

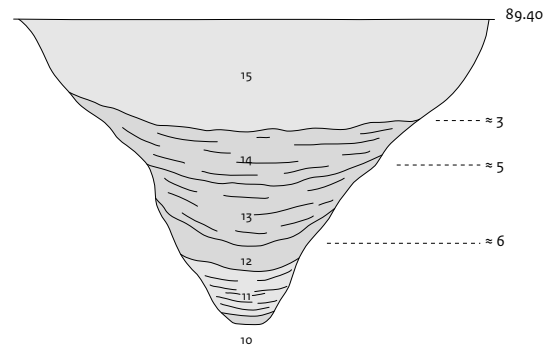


Fig. 41.6 Voerendaal-Ten Hove. Plan with sections and pottery of ditch 308. Plan scale 1:250, sections 1:40, pottery 1:3.

valley, where it must have been very wet through parts of the year. It is more likely that the length (north-south) of the enclosure was some 90 m, resulting in an interior surface of 8,000-8,500 m<sup>2</sup>. Entrances were not observed in the excavated area, but one has to consider that only 110 m (almost 50%) of the 227 m of circumference north of the Steinweg was actually observed in the trenches.

The depth of the ditch ranged from 125 to 170 cm, its width at the top from 170 to 260 cm.

The lowest layer was everywhere light grey-white with thin bands, the result of the ditch silting up a bit shortly after it was dug. On a higher level, in some places the same kind of layers were seen, sometimes in an alternation with light brown bands, maybe related to temporary stagnation of the silting up process. There are no clear signs of an asymmetrical layering – except for layer 14 in section B perhaps – indicative of the presence of an earthen bank inside or outside the ditch.

The original sides of the ditch were quite steep, with a slope of c. 60-70%. At the highest level the sides are less steep while the erosion and filling up nearly halted after some time.

#### *sections*

In the illustrated sections, the following layers are present:

A 100.013 (top section= level 2)

12 light brown-grey layered

11 light brown

10 light grey/yellow/white layers

B 106.015 (top section= level 3)

16 light brown-grey spotted

15 light brown

14 light yellow layers

13 light brown

12 light yellow layers

11 light brown

10 light yellow layers

C 89.009 (level 1= c. 91.05 m NAP; 2 = c. 90.85)

12 yellow-brown(grey)

11 grey spotted

10 light brown-yellow/light yellow layers

D 105.001 (top section= level 2)

15 light grey(yellow)

14 grey-brown layered

13 grey layered

12 brown, quite sterile

11 white-yellow layered

10 grey

#### *finds/dating evidence*

This ditch is intersected by a large number of buildings, pits and ditches. As said above, for the dating of the feature itself, only pottery finds are available. This material is described in section 21.3 and here especially the formation processes and material relevant for dating are discussed. To begin with, the quantity of Roman pottery (9 sherds, 114 g) is negligible compared to that of the handmade prehistoric material (456 sherds, 8,470 g). Most of this 1-2% – together with some brick and tile – was found in the upper levels of the ditch and can be considered contamination or is related to later features dug in.

The pottery collected in trench 89, dated to the Late Iron Age, was for the main part collected at level 1 (possibly partly while digging towards it). It concerns c. 75% of the sherds, both by number and weight. The rest was collected/assigned to level 2. Both levels are situated high in the section, at c. 91.05 and 90.85 m NAP (Fig. 41.6). Although level 3 does not exist in this trench and in theory finds from the lower fill can be hidden in 89-2-xx find numbers, it is clear that the vast majority of pottery was collected from layers representing the final phase(s) of filling up the ditch.

The sherds from especially trench 105 were collected at all different levels (Table 41.2) and more evenly distributed. Roughly half of the pottery (61% of the sherds 48% of the weight) was found at the two highest levels, the upper final fill (cf. trench 89; Fig. 41.6, 41.7 upper part). Some of this

**Table 41.2. Voerendaal-Ten Hove.  
Quantitative data on pottery from ditch  
308 at different levels.**

Level	N	Wt (g)
<i>Trench 105</i>		
1	33	605
2	61	872
3	7	155
4	33	946
5	18	342
6	3	138
<i>Trench 108</i>		
all	22	368

handmade pottery is identifiable as belonging to the Late Iron Age. The other half of the sherds were collected from level 3 downwards, from layers that are the result of a gradual silting up of the ditch (assuming that the non-documented sections were identical to those in Fig. 41.6). In this lower layers fragments of several barrel-shaped pots Van den Broeke 23 and bowls 21 were found (Fig. 41.7, lower part). This material gives an initial impression of belonging rather to the Middle Iron Age than to the Late Iron Age.

Although one might conclude that the ditch itself silted up already during the latter period and in theory even could have been dug long before (although e.g. Neolithic pottery was not found), this does not have to be the case. The pottery was found in a quite small area only, at the border of trench 105 and 108 (we do not know if the lower levels of the ditch were thoroughly investigated everywhere). Moreover, the forms found could still have been made in the Late Iron Age, especially in the first half, La Tène C. The last is based on material at Oss, where the types just mentioned allow for a date until phase J (225/200-150/125 BC ≈ La Tène C), as can be read from Van den Broeke 2012, Fig. 3.30. Even a construction or rather start of the filling in process later in the Late Iron Age cannot be excluded. Bowls like Van den Broeke 21 – ignoring details concerning shape and fabrics – are for instance found at Eschweiler-Laurenzberg and Hambach 382.<sup>3273</sup> Barrel-shaped pots are known throughout the Late Iron Age in Belgium,<sup>3274</sup> and in the Rhineland sites just mentioned and in Eschweiler-Lohn as well.<sup>3275</sup>

If the suggested later date is valid, the difference between the assemblages at different locations perhaps is determined by function, the ‘coarse’ forms of trench 105/108 used for storage and food preparation only. Another explanation for the differences between the assemblages could be that ditch 308 was dug and started to silt up e.g. in the first half of the Late Iron Age, while the filling in was completed in the second half of that period.

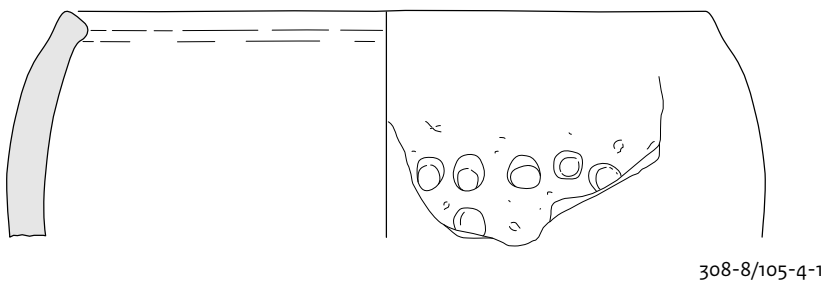
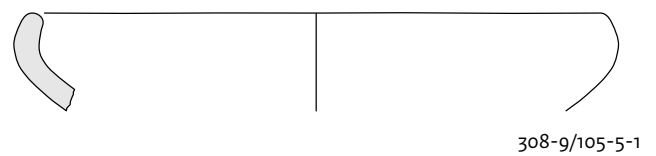
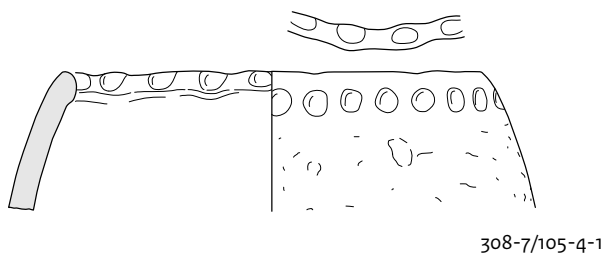
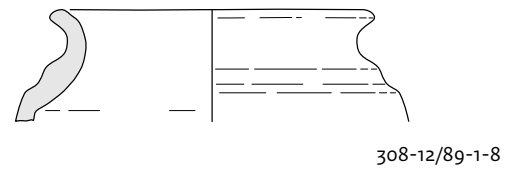
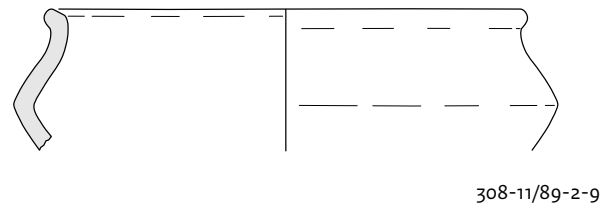
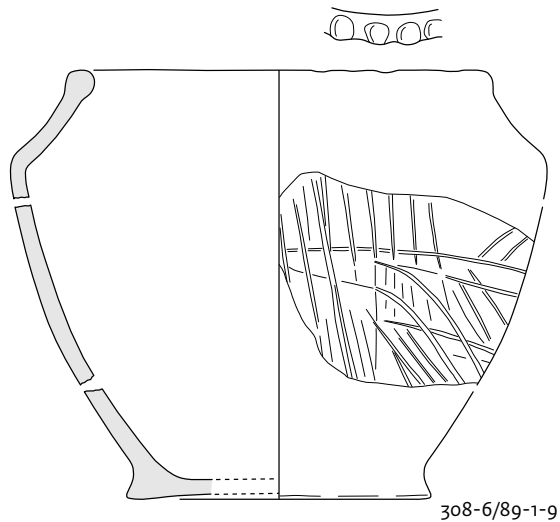
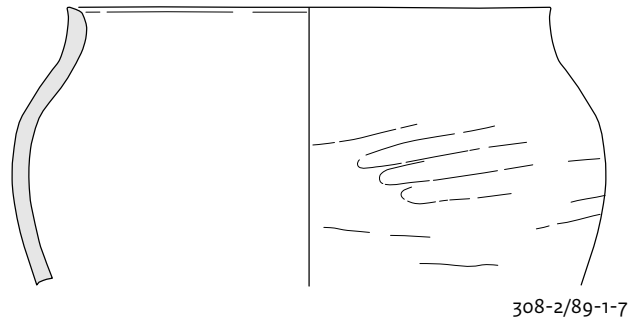
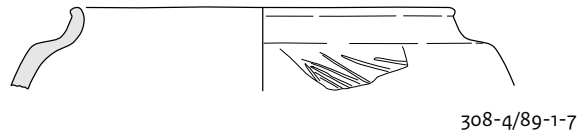
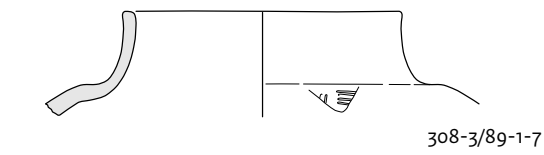
Even other alternatives are possible, the material of trench 105/108 also ending up here later in the Late Iron Age (in a phase before the pottery in the upper layers was deposited) by a number of ways, although none of these alternative explanations can be proven. In the area of trench 105 and 108 Middle Iron Age activities took place, as shown by the pits 756, 773, 776, 800 and finds from building 214. A considerable amount of pottery would have been present at or just below ground level. Material from all these contexts could have been thrown or shoved in the ditch in the Late Iron Age, although it was mainly filled up by natural processes. Even seemingly far-fetched explanations could have been at play. One of this would be that Middle Iron Age pits and their contents were disturbed when 308 was dug, their infill becoming part of an embankment, much later (re)used as the source of the soil constituting the infill of 308.

<sup>3273</sup> Joachim 1980, fig. 19, no. 4, 17-18; 26, no. 16, 18; 30, no. 12-17; 2007, pl. 1, no. 16-19; 2, no. 12-13, 19-20, 26; 4, no. 17-20; pl. 5; 6, no. 2-5; pl. 7.

<sup>3274</sup> Martin 2017, 261-263, type P1b.

<sup>3275</sup> Joachim 1980, fig. 19, no. 11, 15; 20, no. 13-15; 35, no. 1-4; 44, no. 2-4, 15, 20; 2007, pl. 8, no. 13-16; 9, no. 1; 12, no. 11, 13-16.

308



308-10/105-2-1

Fig. 41.7 Voerendaal-Ten Hove. Pottery of ditch 308, cont. Scale 1:3.

#### DITCH 311 (Fig. 41.1-41.2)

##### investigation

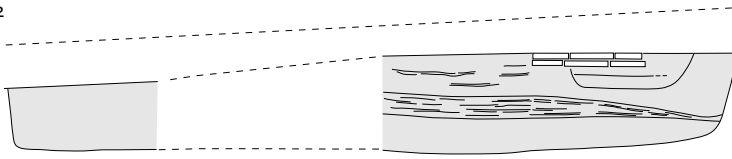
Parts of this ditch were dug away by Braat and therefore the exact relation to drain 328 is unknown. Because no section was made in trench 106, the relation to ditch 312 is not clear.

##### description

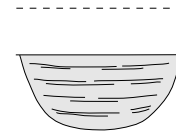
The ditch apparently was connected to drain 328 of the bath and ran parallel to ditch 302. It was more than 27.5 m long and had an orientation of 152°. In trench 114 its depth was 32 cm, in trench

312

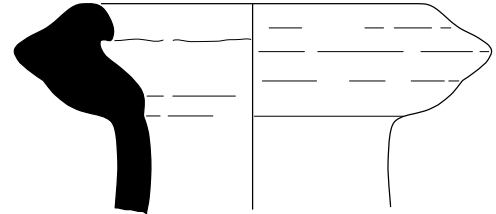
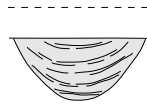
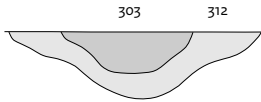
S.312



T.312



U-V.312



312-1/106-2-7

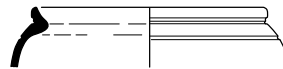
331

W.331



332

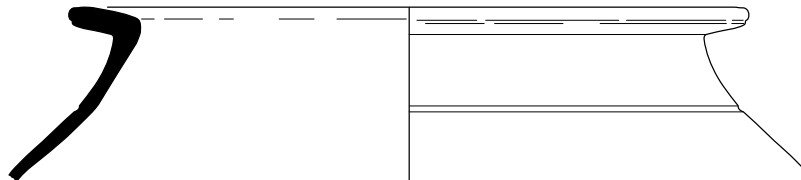
X.332



332-1/114-1-4

337

Z.337



337-1/9-1-52

Fig. 41.8 Voerendaal-Ten Hove. Sections and pottery of ditch 312, 331, 332 and 337. Sections scale 1:50, pottery 1:3.

106 it was not sectioned, but was less than 18 cm deep (level 1 at c. 90.44 m NAP, and 2 at c. 90.26 were 311 was not found anymore). The infill was (light) grey.

#### *finds/dating evidence*

Ditch 311 is older than the (drains of) the bath. It runs alongside 302 and even could be an earlier phase of this. No finds were recovered.

#### DITCH 312 (Fig. 41.8)

##### *investigation*

This ditch consists of three parts. In trench 106, there is an elongated pit that was partially dug through by Braat (106.026). Although not connected because there was a 1 m wide gap in level 1, a ditch (106.029) is aligned to the pit. Both features were seen in level 1, but sectioned in level 3 some 30-40 cm lower. Ditch 106.029 had a somewhat more southerly orientation in level 1, so it maybe it had no connection to a second ditch in trench 69 (69.081), but the orientation in level 3 suggests that a connection is possible. The character of the infill also points to a relation.

##### *description*

Pit/ditch 106.026 was 5 m long, 1.4 m wide and had an orientation of 157°. Its depth was 60-70 cm and the infill consisted of light coloured soil (light brown-grey), with a set of thin brown-yellow layers halfway.

Ditch 106.029 was at least 12 m long, with an orientation 146° in level 1 and 143° in level 3. Its width was 1.9 m in level 1 and c. 1 m in level 3, its depth 80 cm. The infill consisted of light grey-brown thin layers; in the upper parts there was a lot of limestone rubble. Ditch 69.081 was 14 m long, 60-130 cm wide and 44-55 cm deep. The infill was light grey-brown, with in one of the sections thin layers with these colours.

*finds/dating evidence*

Pit 106.026 is older than drain 330 and ditch 69.081 was intersected by ditch 303. The latter intersection suggests that 312 is quite early. The number of 19 sherds (406 g) of handmade pottery, against 4 (321 g) of Roman material, is in line with this. The weight of the latter is quite high, due to a rim (292 g) of an amphora Dressel 20 from the middle of the second century AD (312-1; Fig. 41.8). It is important to note that all the Roman sherds come from a high level at the northern end of 106.026. Here, near drain 330, contamination could have taken place and it is even unclear if this part of the feature belongs to 312. The rest of the finds consist of one piece of iron and 48 pieces (2,103 g) of flint. No Roman building material, like brick and limestone, was observed.

## DITCH 313 (Fig. 41.1)

*investigation*

No section drawings were made because of the insignificant depth.

*description*

The ditch consisted of a nearly straight part of 12.5 m long with an orientation of 40°. At the western end of this part, it curved over c. 10.5 m and the final orientation was 134°. The depth in four sections was 6-12 cm (9 cm mean). The colour of the infill was (light) grey. From the fact that the feature curls around well 314, suggests that it has some relation to the water supply of the main building (cf. Chapter 10).

*finds/dating evidence*

The only find is part of a cattle mandibula (97 g).

## DITCH 331 (Fig. 41.2; 41.5; 41.8)

*description*

Ditch 331 was at least 45.5 m long and had an orientation of 35°. Its depth was 5-16 cm, its fill light grey-brown.

*finds/dating evidence*

The ditch is intersected by 306, but ends at the same location and therefore seems related to it. It looked like ditch 331 intersected ditch 301, although not very clear. The stratigraphic relation to 302 and 303 is unknown, as no colour differences were seen in the sections. The only find is a sherd (9 g) of colour-coated ware in technique b, pointing to a date in the second or third century AD.

## DITCH 332 (Fig. 41.8)

*investigation*

Parts of this ditch were destroyed during Braat's excavation, but it was certainly not present to the north (trench 99-100) and to the south (trench 68).

*description*

The ditch was at least 14 m long and its orientation was 149°. The depth recorded was 24 cm in the drawn section and only 10 cm at the southern end. The infill was dark grey-grey spotted.

*finds/dating evidence*

Although destroyed by Braat, the intersection of 332 and the bath/drain 330 would have shown that the ditch was the older structure. From this ditch, 3 fragments (159 g) of animal bone were collected, and a single small (76 g) piece of limestone. The pottery consists of a small sherd (3 g) of terra nigra, and 2 (19 g) of a colour-coated beaker Stuart 1/Heerl-BE4, dating from c. AD 70-120 (Fig. 41.8).

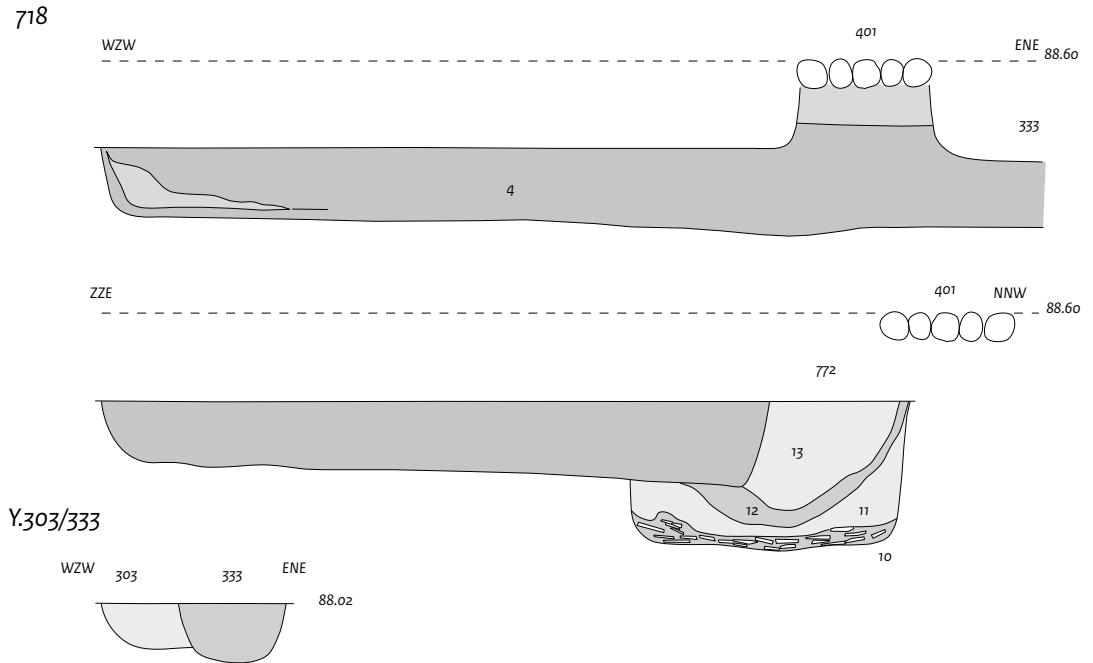


Fig. 41.9 Voerendaal-Ten Hove. Sections of ditch 333 and pit 718. Scale 1:30.

#### DITCH 333/PIT 718 (Fig. 41.1; 41.9)

##### investigation

The ditch was sectioned thrice, twice at intersections with postholes of sunken hut 515 and once at that with ditch 303 (Fig. 41.9). Pit 718 was cross-sectioned at level 4, but was already visible at level 1.

##### description

Ditch 333 drained pit 718, that was situated inside building 401. The drain ran underneath the foundations at the eastern side of the building and turned towards the south, running parallel to ditch 303 (orientation 151°). About 11.5 m of the ditch could be observed, further south it merged with a layer of dark soil. The depth was c. 18 cm and the fill dark grey with lots of tile and limestone fragments.

Pit 718 had a diameter of 2.65 m and a depth of 65 cm. The fill was apparently black at a higher level and dark grey lower down; it was full of pieces of brick and limestone.

Several iron collars found near the ditch (Fig. 10.10) suggest that it was not open, but that a wooden water-pipe ran through it.

##### finds/dating evidence

Ditch 333 intersected ditch 303, while pit 718 cut pit 772 (Iron Age). Both features are contemporaneous with building 401. The ditch was intersected by posts of sunken hut 515.

<sup>14</sup>C-date (charred seeds from 718): 1900 ± 40 BP (GrN-19134); 53-138, 200-206 cal AD (1 sigma); 23-222 cal AD (2 sigma).

<sup>14</sup>C-date (charred seeds from 718): 1880 ± 70 BP (Utc-1575); 61-225 cal AD (1 sigma); 39 BC-260, 280-325 cal AD (2 sigma).

The ditch yielded only 2 sherds of a Gauloise(?) amphora (45 g) and a glass bowl Isings 3 (10 g). Only one piece of tile (300 g) and one of limestone (400 g) were collected. Finally 7 fragments of iron and 3 (80 g) of animal bone were found. The finds from the pit are also not very informative about the moment at which it was filled. The pottery consists of 1 sherd (10 g) of handmade pottery, probably from pit 772, and 25 sherds (248 g) of Roman material. Datable types are a circle-pot Brunsting 4 (AD 70-270) and jar Niederbieber 89 (AD 125-270). Three pieces of roof tile (c. 3 kg) and one of window-glass (1 g), suggest that the pit was filled in when building 401 or others at the site were demolished. Finally, one piece of bronze, 48 fragments of iron and 4 (47 g) of animal bone.



DITCH 337 (Fig. 41.1; 41.8)

*investigation*

This ditch at the back of the main building was sectioned once, but probably not emptied completely, because the whole trench was not destined for a full investigation.

*description*

The feature has an orientation of 66° for the first 3.8 m and then one of 50° for the last 13.8 m. Its depth was 18 cm and the fill consisted of dark-grey soil with chips of limestone.

*finds/dating evidence*

Forty-one (765 g) sherds of Roman pottery were collected from this ditch. A fragment (12 g) of a South-Gaulish bowl Dragendorff 37, dates from c. AD 90-120 AD. A find from approximately the same period is a jar Niederbieber 87/OX-Noor1-JA1 (337-1; Fig. 41.8). Other pottery is much later however, like fragments of a colour-coated beaker Niederbieber 87/Heerl-BE7 (from AD 150) and a smooth-walled/smoked beaker Vanvinckenroye 87 (third century AD). Other finds are 2 fragments (19 g) of animal bone, a piece of iron and 14 of roof tiles (4-5 kg).

### 41.3 Structures for the supply, storage and drainage of water

WELL 314 / feature 100.009, 114.002 (Fig. 41.11-12)

*investigation*

This well was excavated incompletely, because the 'bad weather conditions' around the middle of November 1987 prevented the investigation to go on.<sup>3276</sup> One should ask why such an important feature was investigated under bad conditions at all! Although discovered in trench 100, the depth of the feature indicated its function and it was sectioned in trench 114 (with an excavator). Four levels (1, 2, 3 and 3a) are indicated on the section drawing, but these apparently were not documented. From about 7 m below the surface, the remaining part of the well was investigated by coring.

*description*

At level 1 (91.75 m NAP), the well had a diameter of c. 3.9-4.45 m. At level 2, 20 cm down, the diameter was c. 3.2 m and this remained the same to a depth of 4 m. After this, the diameter quickly increased to 5.4 m at a depth of c. 5.5 m. Then it decreased again, to c. 1.85 at a depth of 7 m. The coring in the centre of the well reached a layer of gravel at 80.40 m NAP, possibly marking the base or a level just above it. Therefore the depth of the well was c. 13 m (from the surface). There are two possible explanations for the presence of gravel: either as part of the slope deposits north of the Kunrade Fault or as a filter preventing the influx of soil (Section 4.1.1; 10.2.3).

There is no information at all about the lining of the well. One should expect a stone lining in a deep well on a villa site, but it would be exceptional if this was completely removed. Perhaps only the uppermost part of the lining had been of stone, the rest of wood, completely decayed since the Roman period. The fact that no iron nails were found is not remarkable, because deep wells could have been constructed without using them. At a level of c. 83.50 m NAP a piece of wood was found in the core, but probably this has nothing to do with the lining. The abrupt widening of the well at a depth of 5.5 m suggest a collapse, which could only have taken place either when the well was still under construction with a sudden influx of (rain)water or after the lining failed, was removed or rotted away. The lower infill of the well above the gravel was dark blue grey, but most of the layers consist of fairly 'clean', light brown and/or grey material. Were the shaft had its maximum diameter, the infill showed various layers with traces of erosion and re-deposition by water ('*spoellagen*') with 'rust' marking the boundaries. The uppermost meter of infill was dark brown-grey with blocks of limestone.

<sup>3276</sup> Willems & Koostra 1988, 143.

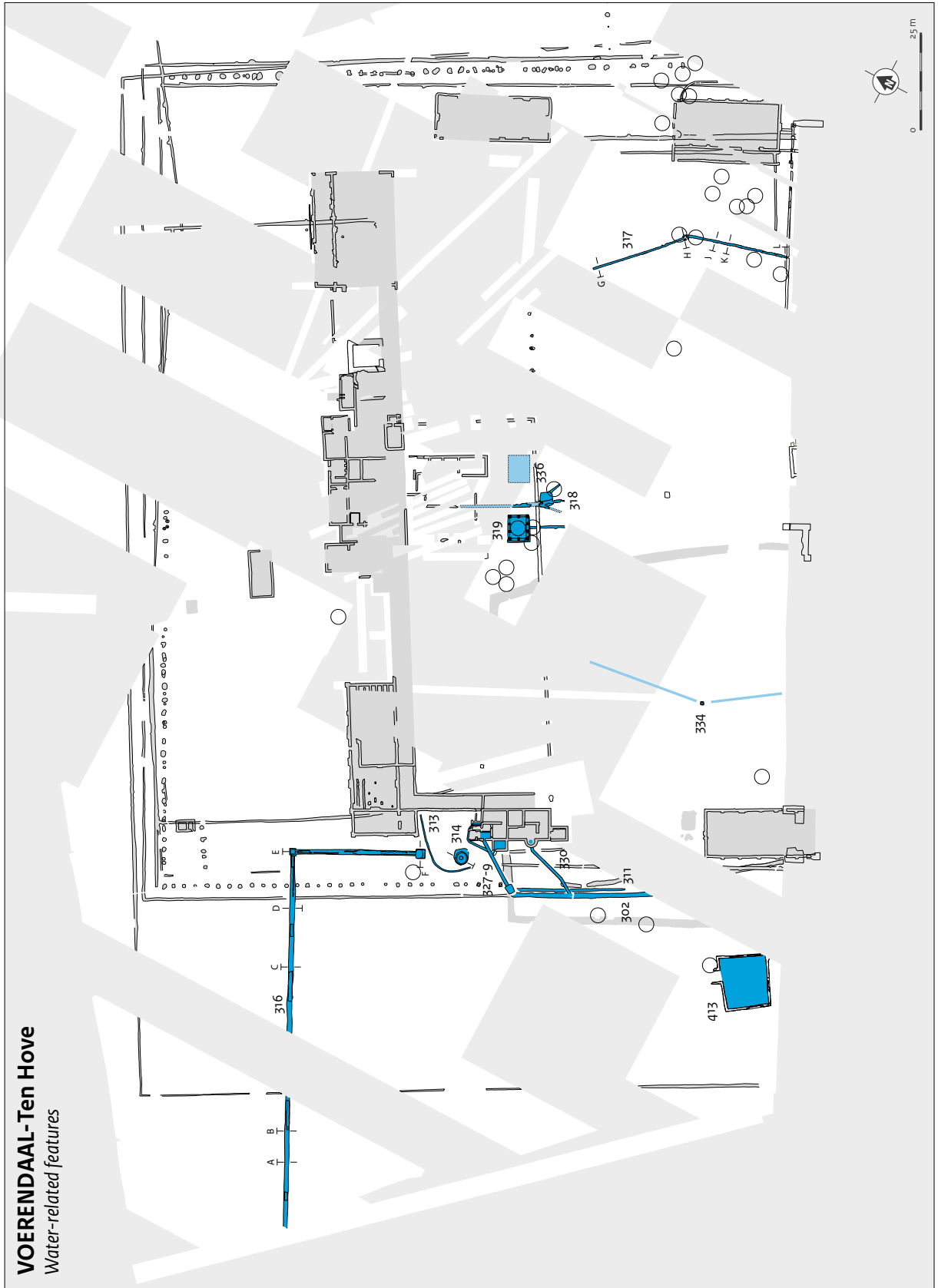


Fig. 41.10 Voerendaal-Ten Hove. Features related with the supply and drainage of water, with the location of the sections of fig. 41.11; 13 and 14; circles for iron collars.

314

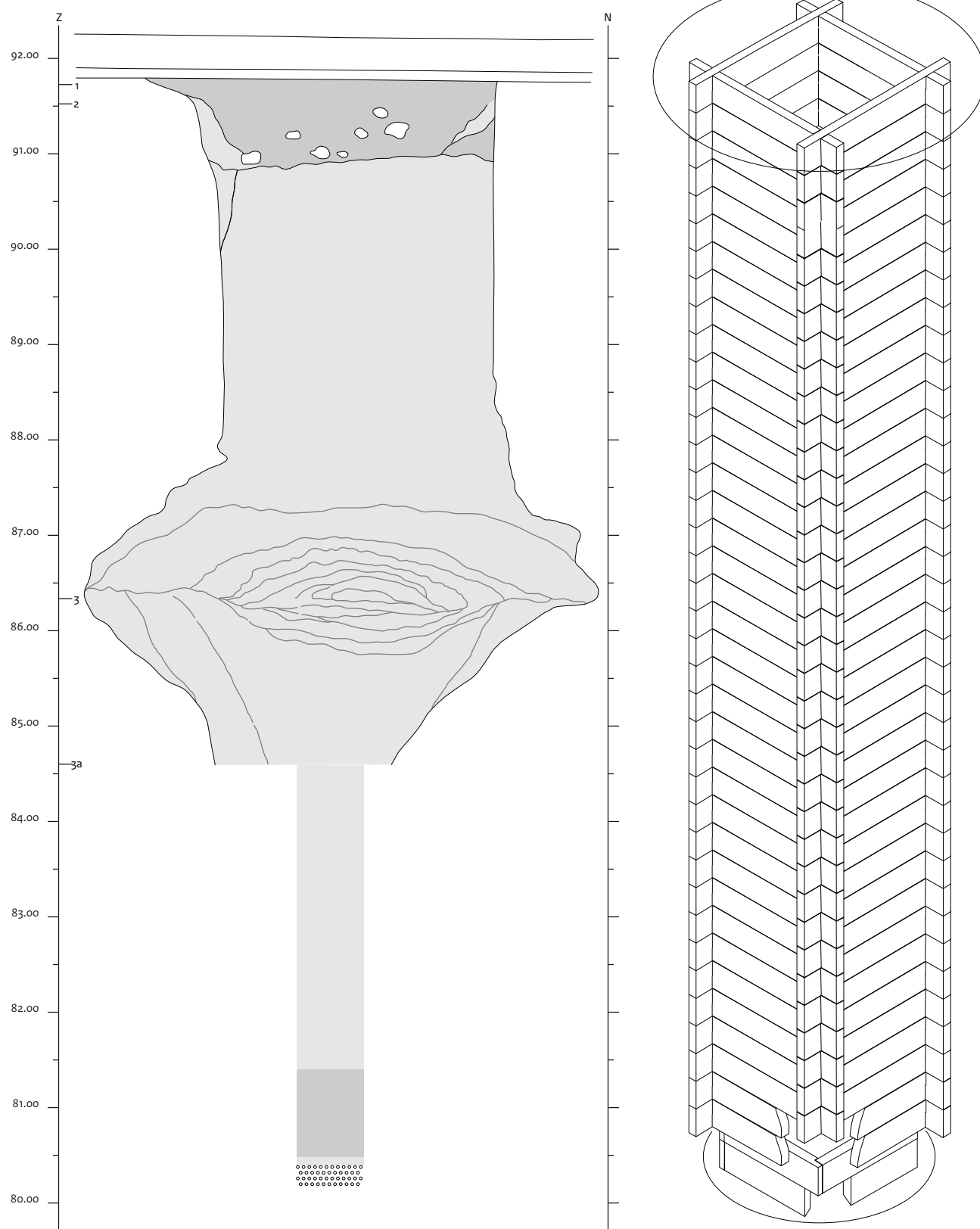


Fig. 41.11 Voerendaal-Ten Hove. Section through well 314 with a hypothetical reconstruction of the wooden well lining in isometric projection. Scale 1:60.

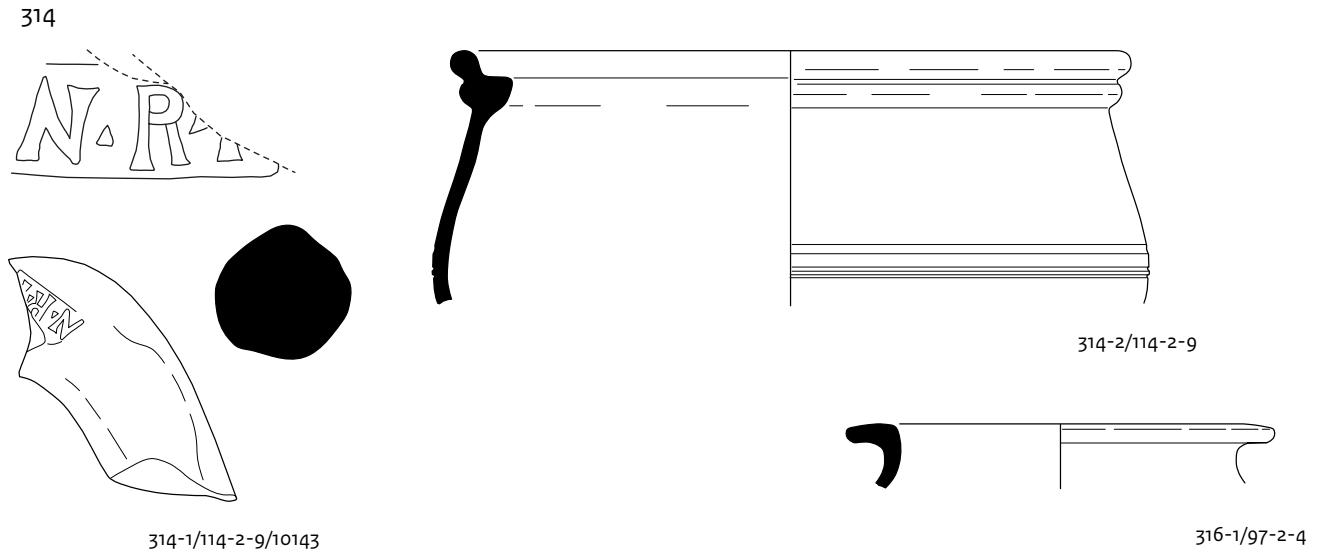


Fig. 41.12 Voerendaal-Ten Hove. Pottery of well 314 and aqueduct 316. Scale 1:3, stamp 1:1.

#### *finds/dating evidence*

The most prominent category of finds is animal bone, of which 522 fragments (3,580 g) were collected. A few bones belong to chicken, pig, sheep/goat and cattle, but the vast majority are of dogs. In fact, in the darker upper infill of the well, five nearly complete skeletons were found. The animals were of different breeds/sizes. Broken legs and crushed skulls pointed to a violent death of these animals. The quantity of Roman pottery – like all finds mainly from the upper subsided infill – seems not very small with 89 sherds (579 g), but many fragments belong to a single smooth-walled flagon and a Dressel 20 amphora (314-1; Fig. 41.12). This amphora bears a stamp of S(exti) N( ) R(uffi) P(ortus) and can be dated c. AD 145-165. According to the excavators, finds of the ‘...late third and probably even the beginning of the fourth century.’ were present.<sup>3277</sup> However, the only vessel substantiating this observation is a coarse-walled pot Niederbieber 89 from the Eifel-region, dating c. AD 150-300 (314-2; Fig. 41.12). Seven fragments (5 kg), including *tubuli*, 2 of limestone (1 kg) and 13 (775 g) of painted wall-plaster, are indications that the upper fill was formed after the villa fell in ruins. Finally, 6 iron fragments and 2 slags were collected.

#### AQUEDUCT 316 (Fig. 10.3; 41.10; 41.13)

##### *investigation*

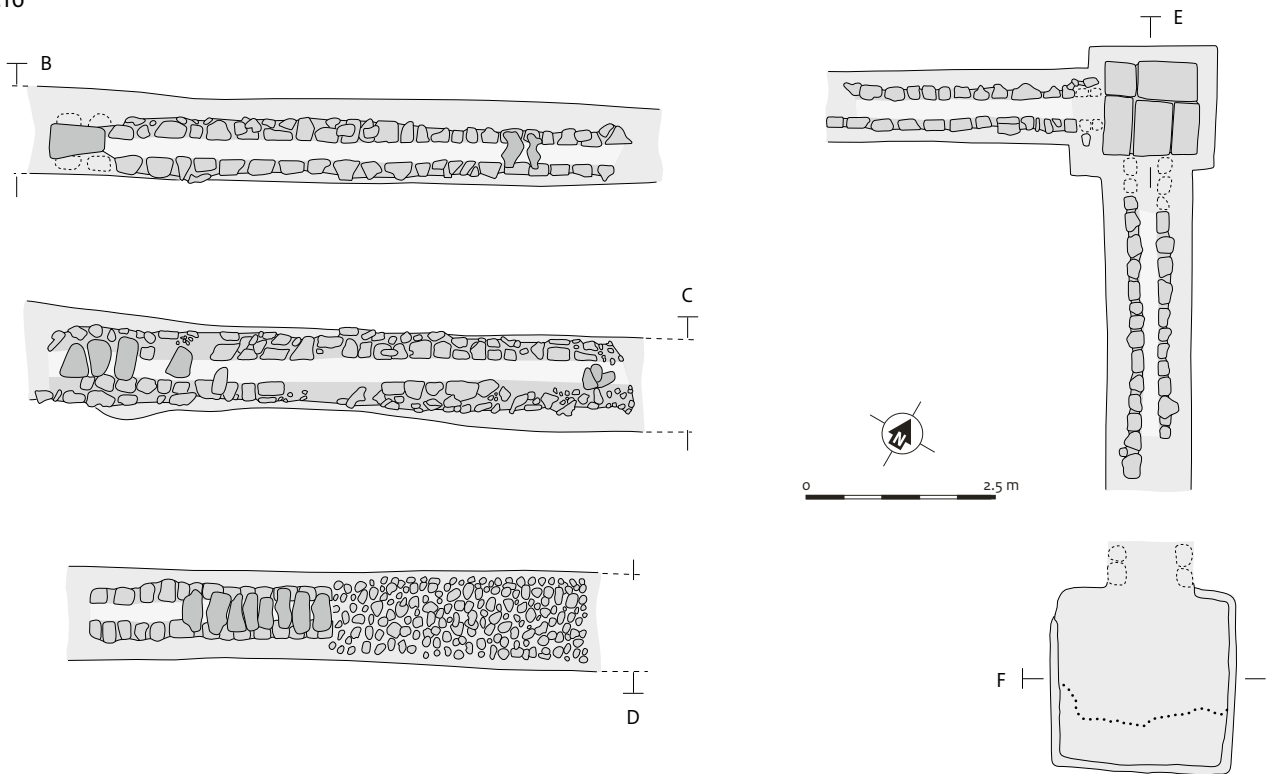
Apparently, the ditch of the aqueduct was missed in trial trench 126 and trench 72. Although the rest of the feature is well documented, it is not always clear were the original stonework and/or its clay sealing were present or missing. In a number of sections, only the ditch is shown, without clay or stone, which indicates that they were not present anymore. The walls were straight and the bottom was flat however, something one would not expect in a robber trench. Moreover, the infill is quite clean, without much rubble and no lumps of clay. Some of the sections showing the ditch only are near well preserved parts of the stonework, which suggest that the robbing stopped abruptly (?). On the drawings 1:50, in some stretches of the ditch only four straight lines were drawn, apparently marking the borders of the clay lining and the stone walls of the aqueduct. It is not certain if these elements were still present everywhere. More details on the functioning of the aqueduct and the water source can be found in chapter 4 and 10.

##### *description*

From the west of trench 88, to the settling basin in trench 97, the feature is 96 m long with an orientation of 63°. Past the tank, it runs for another 31 m (orientation 153°), to a second basin. The ditch was 1-1.2 m wide and 60-70 cm deep. The infill of stretches without stonework was light grey-brown-yellow and quite clean (only some layering and stone rubble in Fig. 41.13, section B). At the bottom, at several locations a thin layer of white-yellow sandy material was observed. Intact sections of the aqueduct show a stone conduit sealed by clay: c. 15 cm underneath and 15-20 along the side (Fig. 41.13, section D). The conduit had walls of regular

<sup>3277</sup> Willems & Kooistra 1988, loc. cit.

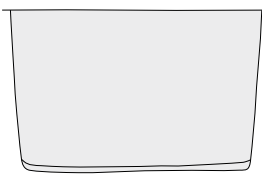
316



A.316

88.002

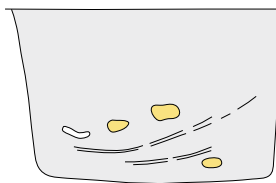
93.07



B.316

80.001/4

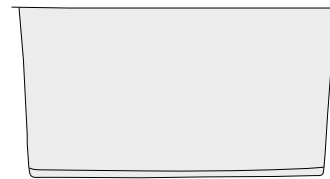
93.05



C.316

82.001

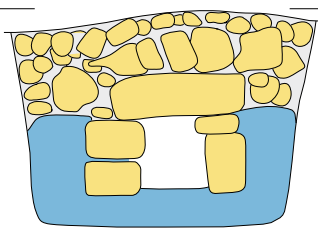
93.05



D.316

93.016/17

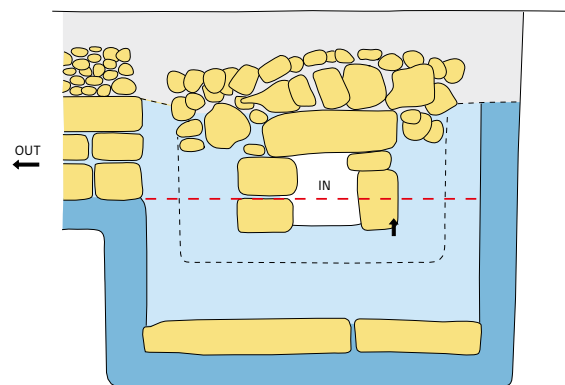
93.52



E.316

97.021

93.34



F.316

100.033/41

92.00



Fig. 41.13 Voerendaal-Ten Hove. Aqueduct 316, plans of the parts better preserved or documented, with five sections. Plans 1:100, sections 1:30.

blocks of limestone, one or two courses high. In trench 82 some flint is used in the walls. It was covered by large limestone slabs, creating a channel of c. 25-30 cm square. These were covered by irregular blocks, large at first and smaller at the top. Occasionally some flint and tile was used in the construction, mainly to create a level for the covering slabs. The settling basin measured c. 1.7-1.45 (exterior-interior) square. The bottom was made of five rectangular slabs of limestone, c. 12 cm thick. Below these slabs and along the walls, a layer of 10-18 cm of clay was applied. The level of the inlet was situated 10 cm below the outlet. In figure 41.13, E the basin is reconstructed using the section in trench 97 as well as that through the conduit in trench 93. The aqueduct ended in a rectangular basin 2.5 m square. Unfortunately, the southern end of the conduit and the receiving basin were disturbed, probably by stone robbing or one of the older excavations (both Habets' and Braat's drawings don't show the aqueduct, however). The plan 1:50 suggests of the receiving basin (c. 2.4 x 2.4 m) some traces of a revetment in the form of a 10 cm wide band, but this was not observed in the section. The infill of the basin consisted of c. 24 cm of clay and 10-12 cm of light brown-grey soil, in the disturbed parts with lumps of clay.

*disappearance of the structure*

It is not clear if a clay-lining and stone construction was present everywhere originally (cf. Chapter 10), but at least in some sections material must have been removed to use in new constructions, or to get rid of stones in the subsoil/arable (see below).

*finds/dating evidence*

A small sherd (1 g) of Late Medieval pottery in trench 80 could point to the demolition of parts of the aqueduct (see above). All the other finds seem to date from periods in which the structure was out of use. They were recovered in sections in trench 97 and 99, where the covering stones were missing. A fragment of window-glass (5 g) and 4 pieces (c. 2-2.5 kg) of brick and tile, indicate the late date of the fill, most likely after the villa and bath fell in ruins. Most of the 6 sherds (84 g) of Roman pottery are Middle Roman in date. Only a 'Pompeian red' dish Niederbieber 53(?) could be made in the fourth century, although it was already in use in the second half of the second century. The other sherds are smooth and coarse-walled, one sherd maybe belongs to a colour-coated beaker Stuart 10/Heerl-BE18 and a rim is of a coarse-colour-coated jar Niederbieber 87var./Heerl-JA4b (316-1; Fig. 41.11).

DRAIN 317 / trench 13, 16, 24 (Fig. 10.12A; 41.14)

*investigation*

The plan of trench 24 presents the same problem as parts of those of aqueduct 316, showing not all the stones of the walls but suggesting their presence by lines only. When parts of the covering slabs, the infill and the soil outside were already removed (and sieved) in trench 13, it was discovered that the stone drain was preceded by a ditch. A small portion of the infill of the drain and the ditch was sieved separately. It is remarkable that in trench 24 only one section was made, no comments were made on the absence of the earlier ditch in this section and no extra sections were made to investigate this question. A number of sections (seven!) were documented near the point where the drain passed the wall of the villa complex, but it is absolutely not clear where each section was situated. It is possible that some of the stonework found in one of Holwerda's trenches (178) to the north belonged to this drain, but further data on these features is not available.

*description*

This drain runs 26 m through trench 24 and 13 with an orientation of 133° and past the inspection basin for another 26.4 m with an orientation of 164°. The walls consist of one or two courses of limestone blocks, often one large block with small pieces of stone added to get to the desired height. Large flat slabs of limestone weighing up to 30 kg apiece, and flint or 'tauw' – the latter comprising 30% of the slabs – cover the drain, with smaller pieces of limestone to close the gaps

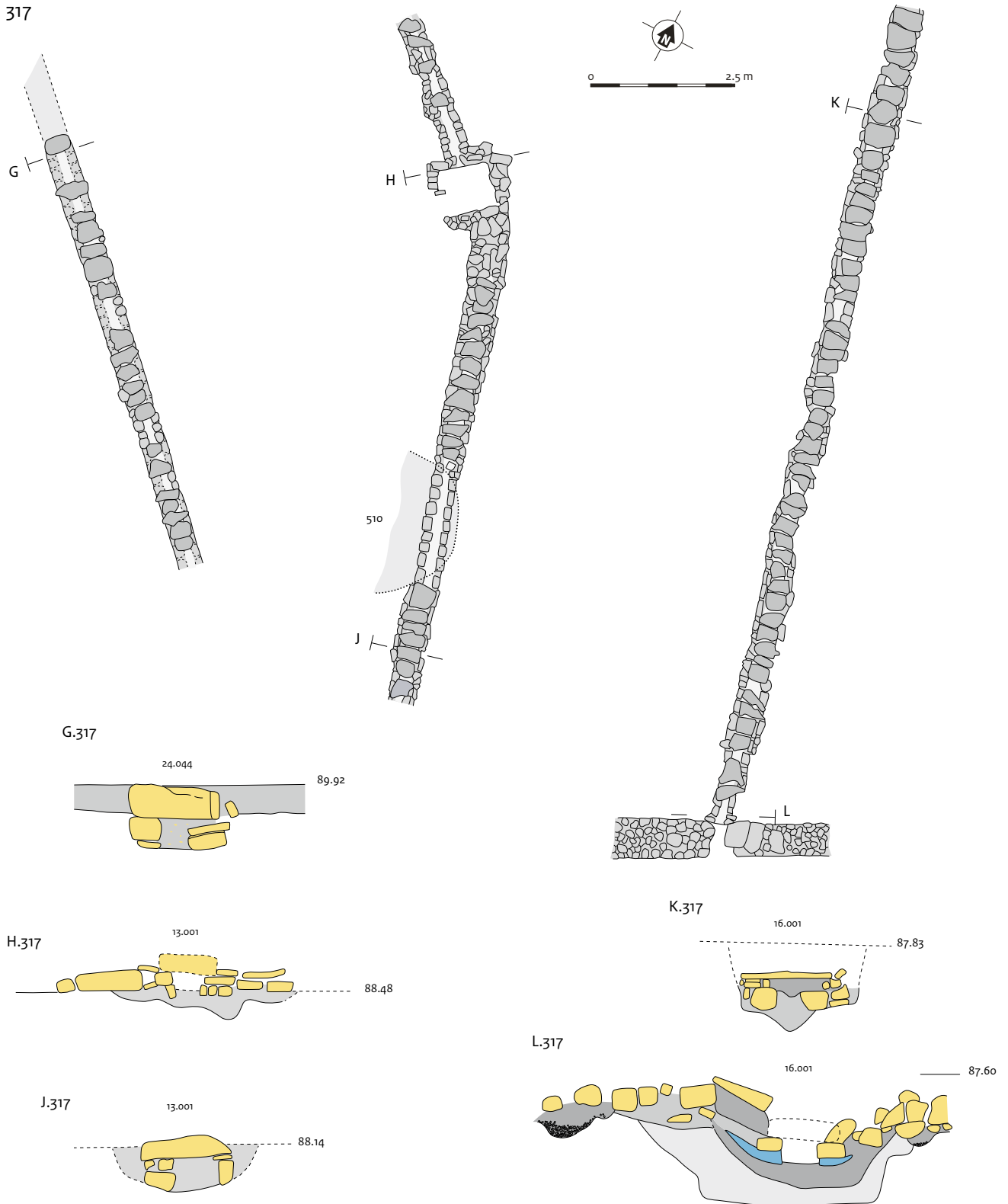


Fig. 41.14 Voerendaal-Ten Hove. Drain 317, plan of three stretches and five sections. Sections scale 1:30.

between them. Once a slab of 'red sandstone' is indicated on a drawing (trench 13). On top of the stones a layer of mortar was used to seal the drain. The internal dimensions of the drain were c. 15 (width) x 10-20 cm (height). The square basin in trench 13 measured 80 x 90 cm (internal dimensions). It was meant for inspection and cleaning rather than a settling tank, because the inlet and outlet were situated at almost the same level. Only near the point where the drain met

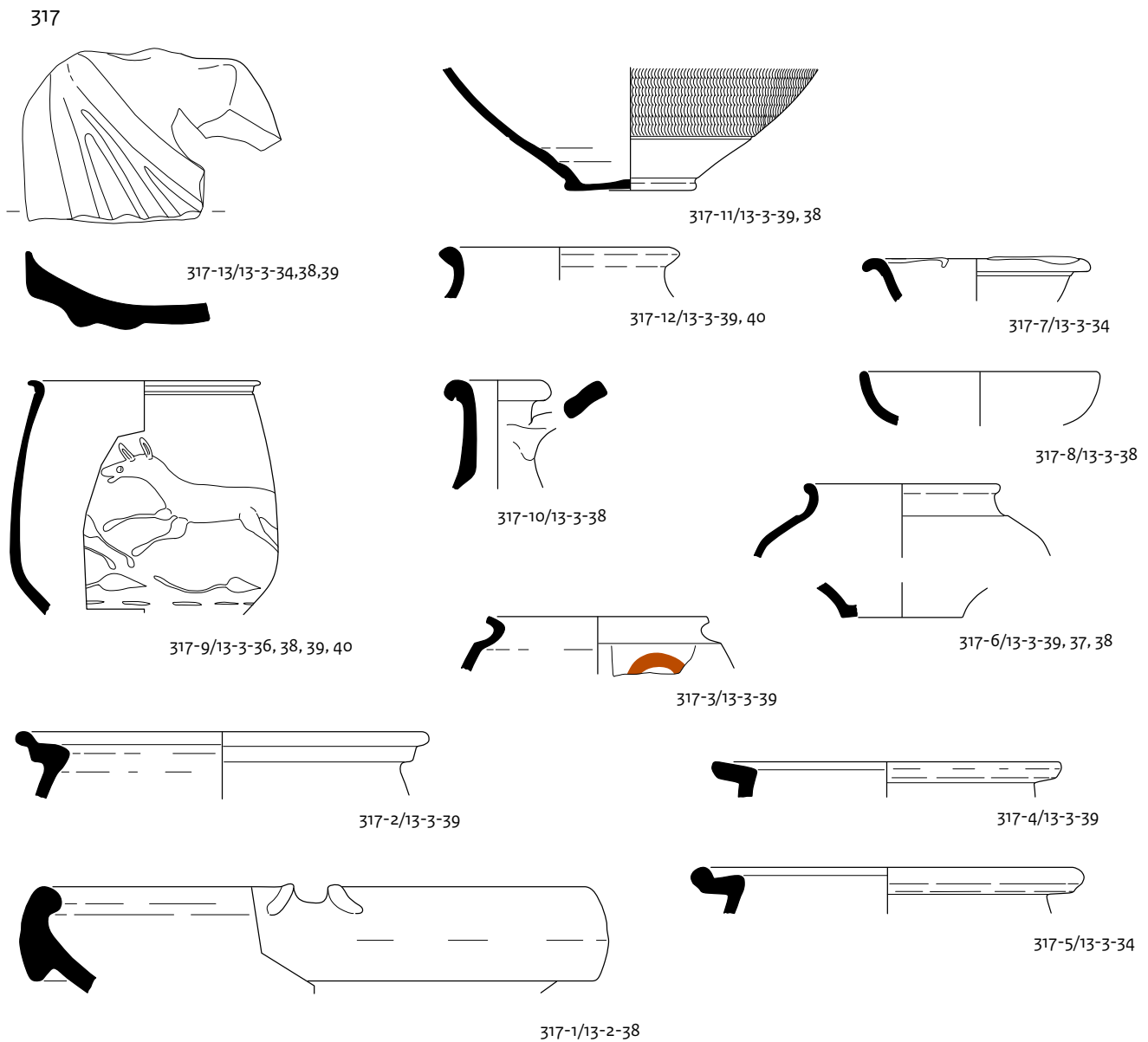


Fig. 41.15 Voerendaal-Ten Hove. Statuette and pottery from ditch 317. Statuette scale 2:3, pottery 1:3.

the wall of the villa complex, some 'green' clay was used to seal the walls. At some stage, a piece of limestone blocked the passage through the wall, but it is not certain if it deliberately was put there, or got there when part of the wall collapsed. The earlier ditch seems for the most part as wide as the stone drain (c. 60 cm), or 70-90 cm at the most. It was as deep or maximal 10 cm deeper than the drain. Only at the south end its original width was 1.5 m and its depth was 40 cm. The infill was (light) grey. The infill of the drain consisted of rather dark soil with sherds and pieces of tile. On the field drawings it is suggested that openings in the walls, because a clay seal was absent, allowed soil to enter the drain. The fill of the earlier ditch and the surrounding subsoil have a rather light brown or grey colour however and it is not easy to explain a lot of sherds coming through the gaps in the walls. Possibly the drain only silted up when part of the covering stones and the lid(s) of the inspection basin(s) had disappeared.

#### *finds/dating evidence*

The second, stone phase of the drain seems to be younger than pit 726 (after c. AD 150; cf. Chapter 46) and older than sunken-hut 510. A large quantity of finds were collected from this feature, among which 1029 sherds (8,699 g) of Roman pottery (with fragments of a statuette; Fig. 41.15), 16 sherds (74 g) of vessels and window panes, 12 pieces (c. 1 kg) of tile and 106 of iron



(among which a collar for a water pipe). The quantity of stone is not listed, because it was part of the drain itself.

However, for the majority, if not all the finds, it is not known precisely where they originated, because it was only discovered at a later stage of the investigation that the fill of the older phase/ditch got mixed up with the finds inside the drain. Although this cannot be proven, a large part of the finds probably dates (just) before the construction of the second, stone phase. This was put or dug into the older ditch and because the stone drain had no stone bottom, older material could enter it. Moreover, the drain later retained much of its covering stones, the change of finds ending up in it after it went out of use is quite small. Still, at some stretches the covering stones were removed and also the inspection/settling basin lay open, making the deposition of later material possible. However, it is a fact that among the large amount of pottery collected, no Late Roman sherds were recognized. Moreover, no fragments of third-century black-slipped ware is present. The only obvious intrusion is one sherd (4 g) of Late/post-Medieval stoneware. Of the three find-numbers supposedly containing finds from the first phase exclusively, 13-3-39, 16-6-18, 16-6-21, only the former has a significant number of finds. Most material in figure 41.15 falls under this number, although many times there are fitting sherds from other numbers. Among the earliest pottery are sherds of Gallo-Belgic beakers HBW15 (from Heerlen) and terra nigra 'bottles' HBW 25var (317-11 and 12; Fig. 41.15), as well as several sherds of South Gaulish terra sigillata. This material dates up to c. AD 120, although the bottles can be somewhat later. If it represents the time of the first ditch or just the first activities in this area, is not clear. A Central/East Gaulish cup Dragendorff 35 dates between AD 100-150 (317-7; Fig. 41.15), but East Gaulish material (dishes Dragendorff 31; cup 40 (Fig. 41.15)) dates beyond the latter year. Vessels like a colour-coated hunting-beaker Stuart2/Heerl-BE18 (317-9), flagon Stuart 110b/Heerl-FL3d (317-10), pot from Cambrai (317-6); coarse-walled 'circle-pot' Brunsting 4/Heerl-P1 (317-3) and jar Niederbieber 87/Heerl-JA1 (317-4; all Fig. 41.15) are mainly second-century forms, although some can be somewhat later. The youngest types are, among others, c. 4 colour-coated beakers Niederbieber 32(?), c. 14 pots Niederbieber 89 (317-2 and 5) and c. 8 mortaria Brunsting 37 (317-1; Fig. 41.15). Together with the sigillata already mentioned, this vessels suggest that the stone drain was constructed (well) after AD 150 (cf. pit 726; Chapter 46), but before c. AD 175/200. If this is true, the drain could belong to rooms later added to the villa, at its eastern side.

#### DRAIN 318 / trench 110-111 (Fig. 10.12B; 41.16)

##### *investigation*

Part of this drain, where it crosses the 'garden wall' 419, was disturbed by one of the older excavations. On the ROB-field drawing Braat is the suspect ('recent excavation Braat'), but although he searched for the aforementioned wall, he dug only a very small trench in this area. On Habets' drawings however, both the drain and wall are present, so the damage was probably done in the nineteenth century already. The ROB drawing only mentions Habets name in connection with a small band along the drain (110.014). During the 1987 excavation, no sections of the drain were recorded.

##### *description*

This drain most likely originated at the main building and it is possible that the 'dividing wall' in the hall of the earliest villa in reality was the same drain (cf. the line on Habets' drawings; Braat depicts a normal wall). The section recorded in 1987 is located at c. 25 from the main building and is 13.4 m long. It is clear that multiple phases are represented by the stonework present. The eastern drain supposedly is the oldest. The exact construction is, because of the absence of sections, not clear. The walls consisted of one row of square-rectangular stone blocks (mainly limestone, some flint). Its width was c. 60 cm, while some levels suggest a height of c. 30 cm.

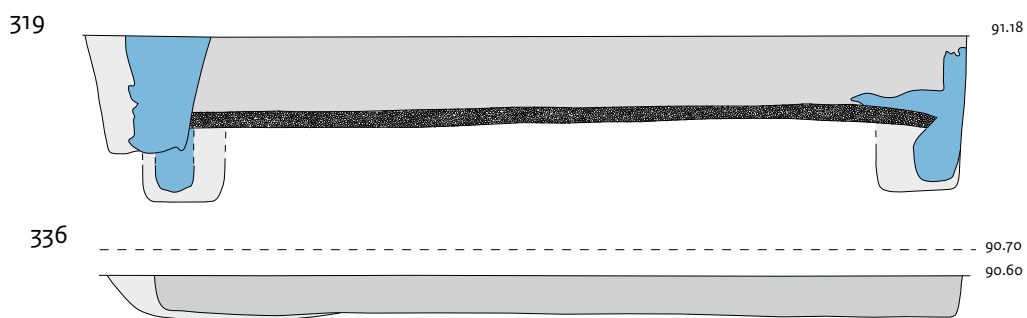
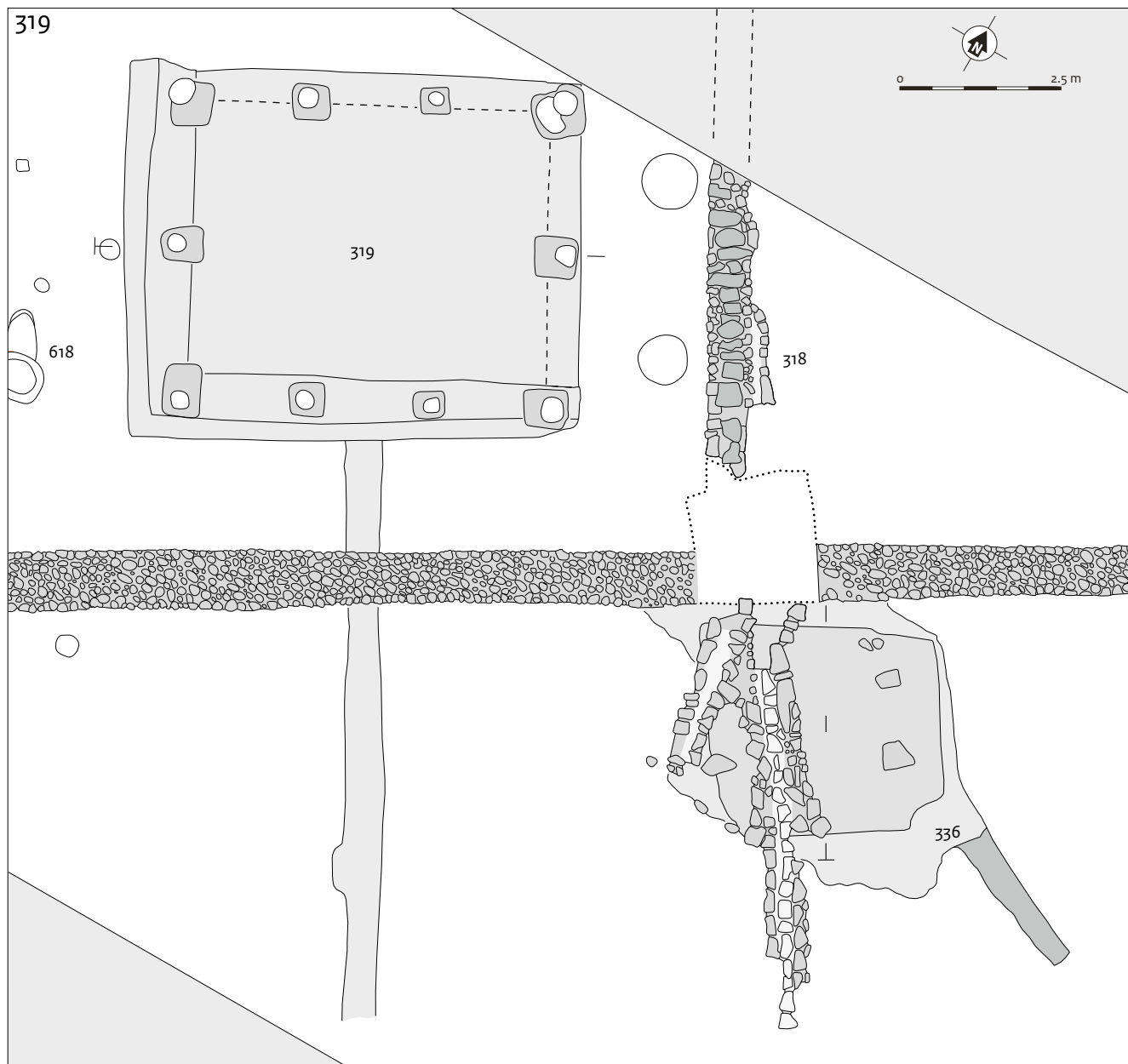


Fig. 41.16 Voerendaal-Ten Hove. Plan of drain 318, basin 319 and 336. Section 319 scale 1:60, 336 scale 1:30.

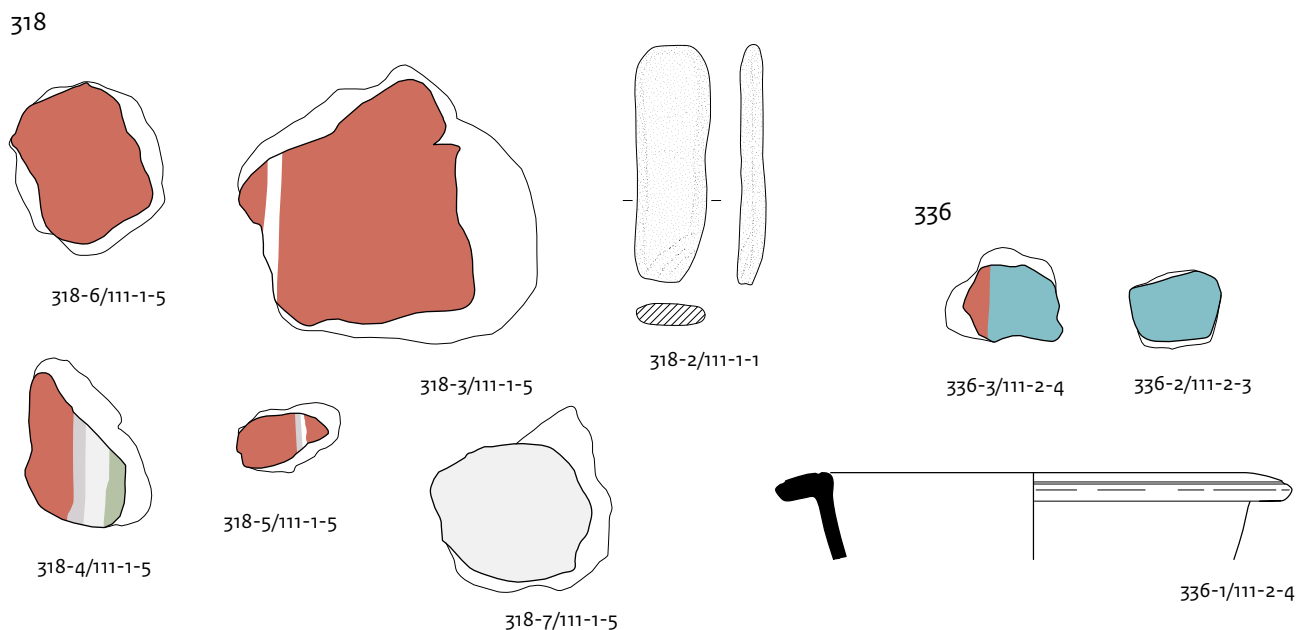


Fig. 41.17 Voerendaal-Ten Hove. Painted wall-plaster of drain 318 and basin 336, stone of 318 and pottery of 336. Plaster scale 1:2, stone and pottery 1:3.

Nothing is noted on the field drawings about a bottom of the ditch in this or the next phase, but a photograph clearly shows that it consisted of stones, at least in the southern part of phase 1. The second phase was well preserved north of wall 419. The drain was 60-65 cm wide and the construction was the same as described for the first phase. It was covered by slabs of limestone and flint. The height of the drain is unknown. It is remarkable that this drain turns south of the garden wall. Possibly it had a connection with the ditch linked to basin 319 (see below).

#### *finds/dating evidence*

The problem with the finds ascribed to this drain, is that some may originally have been in basin 336 (see below), especially because both the drain and basin were later disturbed to some extent. Most remarkable are 35 fragments (565 g) of painted-wall plaster (Fig. 41.17), but these came probably out of the fill of 336. All or some of the 6 fragments (c. 9-10 kg) of *tegulae* and one square *bessalis* may have been part of the drain itself. Besides one sherd (4 g) of handmade pottery, 26 (779 g) of Roman pottery were collected. Fragments of a colour-coated beaker in technique b, an amphora Dressel 20 and a coarse-walled beaker/circle pot Brunsting 4 and a jar Niederbieber 89/Heerl-JA2a could have been used in both the second and third century AD. Finally, a small fragment (3 g) of animal bone, a piece of Nivelstein sandstone (48 g) and a whetstone of phyllite (56g; 318-2; Fig. 41.17) were collected.

#### BASIN 319 / trench 110 (Fig. 41.16)

##### *investigation*

The basin was already visible in level 1 but the two sections (only one shown here) were made at level 2. The levels on the field drawings do not differ significantly, however; one wonders if the values of the first level are incorrect. The level from which the sections are drawn is max. 91.18 m NAP. Under the basin ten post pits were encountered at a level of c. 90.48. Each was sectioned, but only two are mounted in the section depicted here.

##### *description*

The pit measured 7 x 5.7 m. Along the west and south side, there was a band of 25-35 wide of light brown-grey spotted soil. This band bordered on a 50-70 cm broad band of 'Cerithium clay'. The same lining was present on the north and east side, but here it had collapsed and was not visible on the surface. At least parts of the lining extended below the bottom of the 70 cm deep basin. The lower fill of the basin consisted of 10-20 cm of gravel, the upper of dark brown grey soil with lumps of clay, lots of sherds and building material.

319

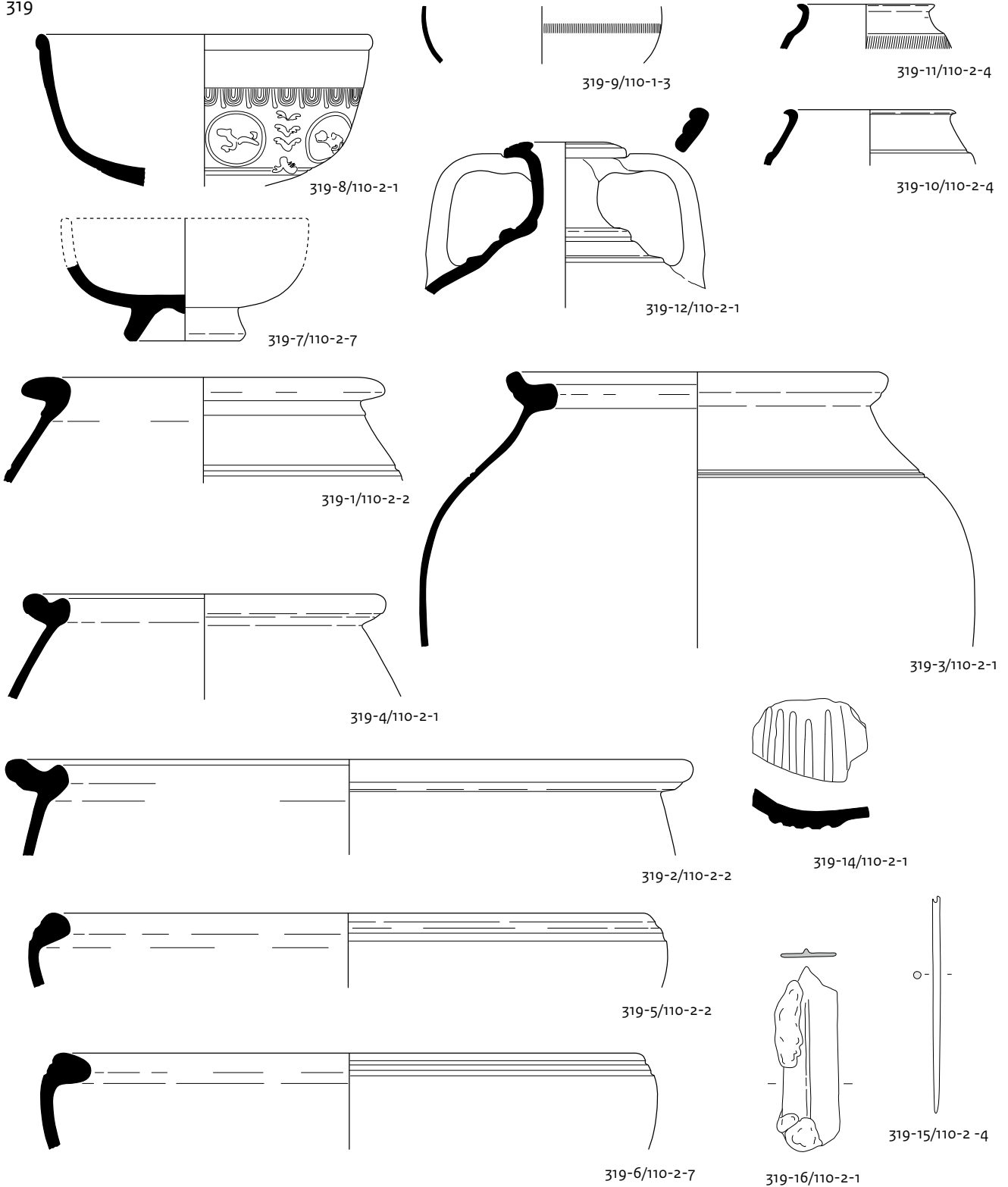


Fig. 41.18 Voerendaal-Ten Hove. Pottery, mask fragment, bone and iron from basin 319. Scale 1:3.

The ten post pits were situated more or less under the centre of the clay lining. Their depth ranged from 30 to 40 cm. The packing soil was light brown and because each post hole was filled with Cerithium clay, the posts must have been part of an earlier phase of the basin. In the section, no connection was visible between the basin and the ditch departing from it at the south side (110.032). Its depth was 35 cm at the border of the basin, but quickly diminished and

after 9 m the feature disappeared. The relation between the ditch and wall 419 seems not to be investigated.

*finds/dating evidence*

Except for a small rim-fragment of a mortarium, all the finds come from the fill of the basin. The mortarium fragment was apparently found in the soil outside the clay lining at the western side of the basin and thus must have ended up there during the construction (of its second phase). The type mentioned was initially identified by the present author as a Stuart 149, on the basis of the absence or a pronounced ridge on the flange/rim. The pottery specialist identified it as a Vanvinckenroye 352, implicating a date of AD 175 or beyond (probably influenced by the age of the other sherds). As such, a late date for the second phase of the basin is feasible, because it functioned probably well into the third century AD.

The total amount of Roman pottery collected was 367 sherds with a weight of 7,790 g. Five sherds (20 g) of black-slipped beakers Niederbieber 33 date in the third century AD (319-11; Fig. 41.18). Nearly all the terra sigillata comes from Eastern Gaul, but the vessels present could as well (later) second and third-century products (like 319-7; Fig. 41.18). Only the bowl Dragendorff 37 dates certainly in the late second or third century (AD 185-260; 319-8; Fig. 41.18). A colour-coated beaker Niederbieber 32 is in technique c, suggesting a similar date. Four jars Niederbieber 89 belong to the variant Heerl-JA2c, with a rim with some likeness to that of the Alzey 27 (319-2, 3, 4; Fig. 41.18). Two bowls Niederbieber 104/Heerl-BO3a/b could have been made as early as the Flavian period, but are more probably also third-century AD (319-5, 6; Fig. 41.18). The Heerl-JA10 probably also dates in the third century (319-1; Fig. 41.18).

The amount of building material is quite low for a context presumably post-dating the destruction of the villa: a fragment of a *imbrex* and two *tubuli* (c. 400 g), 2 pieces of stone (554 g), 10 (20 g) op painted wall-plaster and 3 (10 g) of window panes.

The remaining find material from basin 319 consists, to start with, of 93 fragments (2,011 g) of animal bone, 2 sherds (7 g) of glass vessels, a piece of flint (21 g) and 64 pieces of iron. One of the latter is a fragment of a collar for a wooden water-pipe (supply of the basin? 319-16; Fig. 41.18).

Finally there are a fragment of a pipe clay mask(?) and a bone needle (319-14, 15; Fig. 43.21).

A small fragment of a glass vessel could date from the fourth century, but this is not certain.

DRAIN 327-330 (Fig. 43.14)

These drains were part of the bath and are described along with that building in chapter 43.

BASIN 334 / feature 107.163 (Fig. 10.12C; 41.19)

*investigation*

This feature was sectioned and photographs were taken.

*description*

The walls of this rectangular feature of c. 90 x 85 cm were lined with one course of stone; one side was disturbed and most blocks were missing here. The stone used was quite soft and cut with a saw, designated 'marl' on the field drawings. The pit lined by the stones had a maximum depth of 18 cm. On two sides, the walls were sealed on the outside with clay.

This feature has the appearance of a inspection or settling basin in a drain. Its orientation of 65° (long sides) suggests a relation with the water management system of the villa (cf. the 63° orientation of the aqueduct 316). It was probably part of a drain which completely disappeared.

The question remains from which building the water came from.

*finds/dating evidence*

The basin intersects a post pit of building 223, which fits in with the supposed prehistoric date of the latter. Among the finds, there are 4 pieces of iron, 10 of limestone (2,228 g) and one of

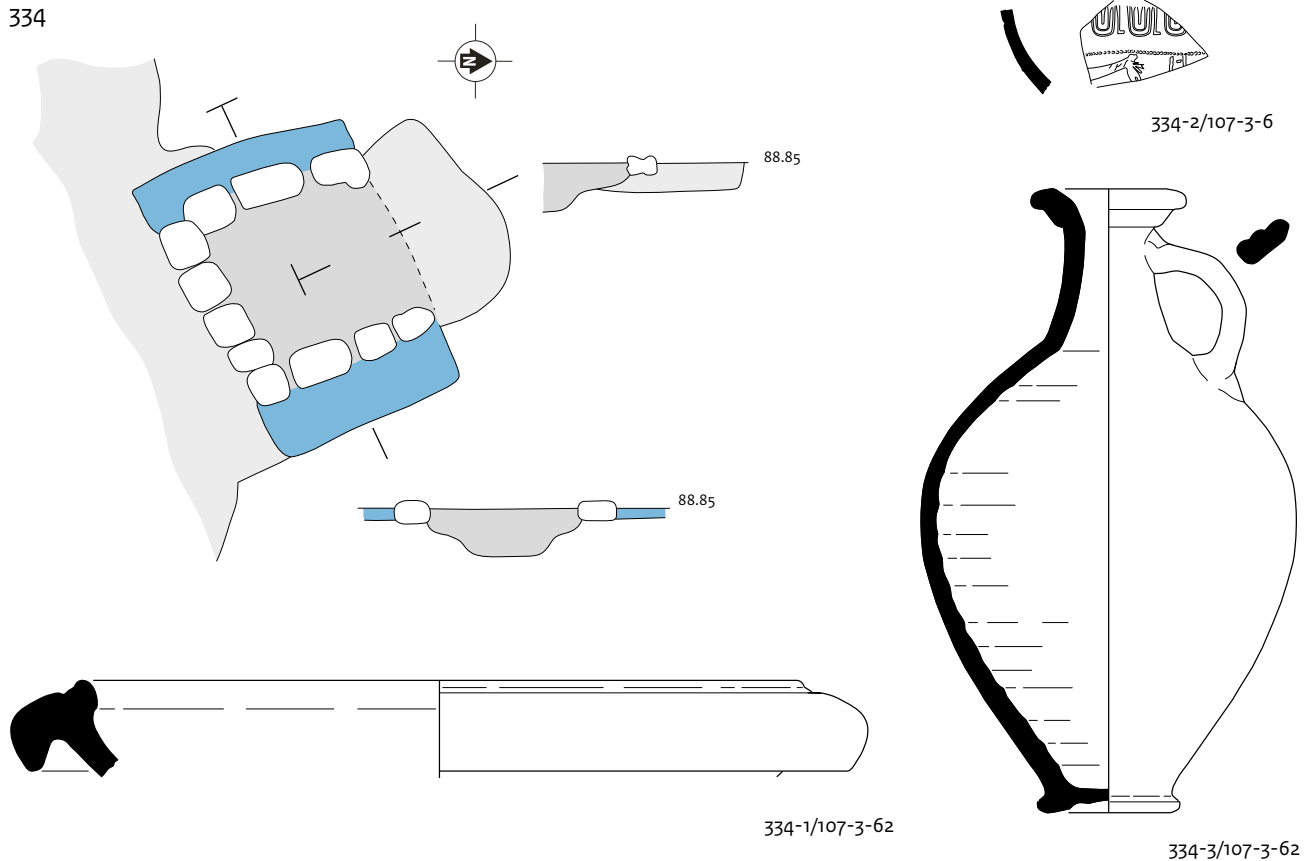


Fig. 41.19 Voerendaal-Ten Hove. Plan, sections and pottery of basin 334. Basin scale 1:30, pottery 1:3.

window glass (11 g). The latter find, but also the fact that one of the stone fragments seems to have traces of decoration, suggest this feature was filled in after the villa fell in ruins. Among the 47 sherds (1,533 g) of Roman pottery, there are 24 (691 g) of a flagon Stuart 110A (334-3; Fig. 41.19) and also – more relevant for dating – 2 fragments of a bowl Dragendorff 37 produced between AD 165-210 and a mortarium Vanvinckenroye 352, made from the late second century onwards (334-2 and 1; Fig. 41.19).

#### BASIN-PIT 336 / feature 111.004 (Fig. 10.12B; 41.16)

##### *investigation*

This pit was observed in level 1 at c. 90.70 m NAP, drawn again in level 2 (90.65) and sectioned at a slightly deeper level (90.60). Two cross-sections were made, but only one is reproduced here.

##### *description*

In level 1, pit 336 measured c. 4 m square with irregular edges and a band of blue clay at the east side. The infill consisted of dark brown soil with rubble, tile fragments and gravel. A small ditch with essentially the same infill, somewhat darker, departed from the south eastern corner. It was not found again in the next level.

At the level where it was levelled, the pit was almost square (3 x 3.25 m) and max. 17 cm deep.

The infill was brown and contained lumps of blue clay, mortar and other rubble.

##### *finds/dating evidence*

This pit predates drain 318. As noted in the description of the drain, some of the finds of both structures could have become mixed up. The excavators wrote of this pit that it had a fill ‘...with building material from the first villa! Besides the rubble, the many other finds provide a good date for the dismantling and thus for the building of the large villa. They prove anyway that the date by Braat was correct and that the transformation must be placed very early in the second century, or even around AD 100.’<sup>3278</sup>

There was indeed a considerable quantity of finds found in the pit, but the claim that it provided a precise date is nonsense. Only 10 sherds (198 g) of Roman pottery were found: 3 (45 g) smooth-

<sup>3278</sup> Willems & Kooistra 1988, 141.

walled ware, 4 (31 g) coarse-walled (31 g), one of a mortarium (39 g) and one of a dolium (17 g). The only datable find is the rim (75 g) of a coarse-walled bowl Stuart 210/Noor1-BO1a, from the period c. AD 70-200 (336-1; Fig. 41.16).

The bowl was also the only type mentioned on the original, hand-written forms of the ceramics specialist from the eighties; and the number of other sherds of find no. 111-2-4 was the same; no finds were therefore lost prior to our analysis. Even if all the pottery of drain 318 should have been related to this structure, this still would have provided no precise date. Besides the pottery, 23 fragments (445 g) of decorated wall-plaster were found (Fig. 41.17), along with 20 fragments (c. 40 kg) of building-stone (Nivelstein sandstone; limestone). The plaster and stone may well have been part of the first villa, but there is no definitive proof; it could also have been the result of changes to the second villa. Finally, a piece (8 g) of animal bone, one of iron and one of flint (4 g) were found. Although the find material is not conclusive about the date of this basin, there is one indication, still not mentioned, that it could belong to villa 399. The feature is situated south of wall 419 and therefore outside the 'garden' of the second villa.

#### 41.4 Planting holes, annex

##### PLANTING HOLES 322 (Fig. 41.20-41.21)

###### *investigation*

The pits in trench 32 were not sectioned, they were not found again in level 2 (but were not more than 10 cm deep). In some parts of the row there were a kind of ditches between pits, these were not sectioned either (but were shallow). In row 322 as well as in 323-325, there are some features that may or may not belong to it. Some are somewhat out of line or have a shape differing from neighbouring features.

###### *description*

Structure 322 consists of 40-50 pits. The row was at least 132 m long and had an orientation of 151°. The interval between the pits varied somewhat, with a mean distance of 3.55 m in trench 28 and 32, 3.25 m in trench 11 and 3.85 m in 19 and 20. The form of the pits also varies: round, oval or quite rectangular; in the sections the sides are mostly not very steep, the bottoms are often quite flat. The depth varied from 5 to 44 cm (mean 19 cm) and the infill was often grey, sometimes darker grey and in trench 11 tile fragments were found.

###### *finds/dating evidence*

Because in virtually all planting holes of structure 322-325 only one layer was observed, the dating value of the finds is limited (Table 41.3). Material could have ended up in the features while (re)planting trees or shrubs, or when they were uprooted or decayed. The youngest pottery in 322 and 323 are small fragments of black-slipped beakers Niederbieber 33, in all four rows quite a number of brick fragments are found, among which in 324 fragments of *tubuli* were present. These finds point to a period in which the villa and/or its outbuildings were in decay.

##### PLANTING HOLES 323 (Fig. 41.20-41.21)

###### *investigation*

All pits were sectioned, but not all sections were drawn. The few short ditches were not sectioned.

###### *description*

This row of more than 30 pits was at least 91 m long and had an orientation of 28°. Somewhere between trench 4 and 8 it ends, and its absence perhaps can be explained with ditch 306 and 331 filling up the space south of ditch 303. The interval between the larger (primary?) pits varies from 2.5 to 3.6 m. The form and infill of the pits were comparable to those of row 322. Their depth varied between 2 and 38 cm (mean 15 cm).



Fig. 41.20 Voerendaal-Ten Hove. The planting-holes 322-325 with their structure-numbers and the location of the sections of figure 41.21.





*finds/dating evidence*

See above, structure 322 and table 41.3.

## PLANTING HOLES 324 (Fig. 41.20-41.21)

*investigation*

All pits were sectioned, but not all sections were drawn.

*description*

This row was 87 m long and had an orientation of 152°. Twenty-eight pits were found and three seem to have disappeared, because there are three wider intervals in the otherwise quite regular structure. The distance between the pits varied between 2.4 and 3.1 m, but most intervals were about 2.7 m, the mean. The depth of the pits was 3-33 cm, with a mean of 12 cm. The infill was light grey-brown, with a centre (post-pipe?) with some charcoal in feature 100.011-12 (section V and W; Fig. 41.21).

*finds/dating evidence*

See above, structure 322; table 41.3.

## PLANTING HOLES 325 (Fig. 41.20-41.21)

*investigation*

Like 324.

*description*

This structure consists of five pits in a line of 10.3 m long with an orientation of 32°. The distance between the pits is 3 m, apart from one interval 1.35 m long. The pits were 10-30 cm deep (mean 20 cm) and the infill was grey.

*finds/dating evidence*

See above, structure 322; table 41.3.

## ANNEX 326 (Fig. 41.22)

*investigation*

The features in trench 19 that could belong to this structure were not sectioned.

*description*

The north side of the enclosure was some 55 m long (orientation 32°). Probably the small features 19.019 and 29 belonged to the structure, because they were situated on the locations one would expect posts. As said before, these features were not sectioned, however. One posthole must have been disappeared when ditch 903 (feature 14.015) was dug, another when oven 637 was constructed. The section through this feature was also not made and/or drawn. The east side of the enclosure was at least 52 m long and had an orientation of 150°. The largest features in the north side are c. 2.95 m apart, those in the east side c. 3.10 m. A number of postholes were square or rectangular and as a whole, the features are more regular than those of structure 323-325. The depth of the features varied from 5 to 98 cm (mean 40 cm), but on the north side they only measured 5-39 cm (mean 21 cm) and the greater depth of the remaining features (39-98 cm; mean 69 cm) is related to the better preservation downslope. It is not clear why the features in trench 31 were quite small and not very deep, because the level they were found in did not differ much from that in trench 46. A large number of the postholes showed a post-pipe; in trench 55 these had lighter layers in the infill, suggesting silting up after removal of the complete posts. The infill of the features was in most cases (brown) grey, with the postholes somewhat darker.

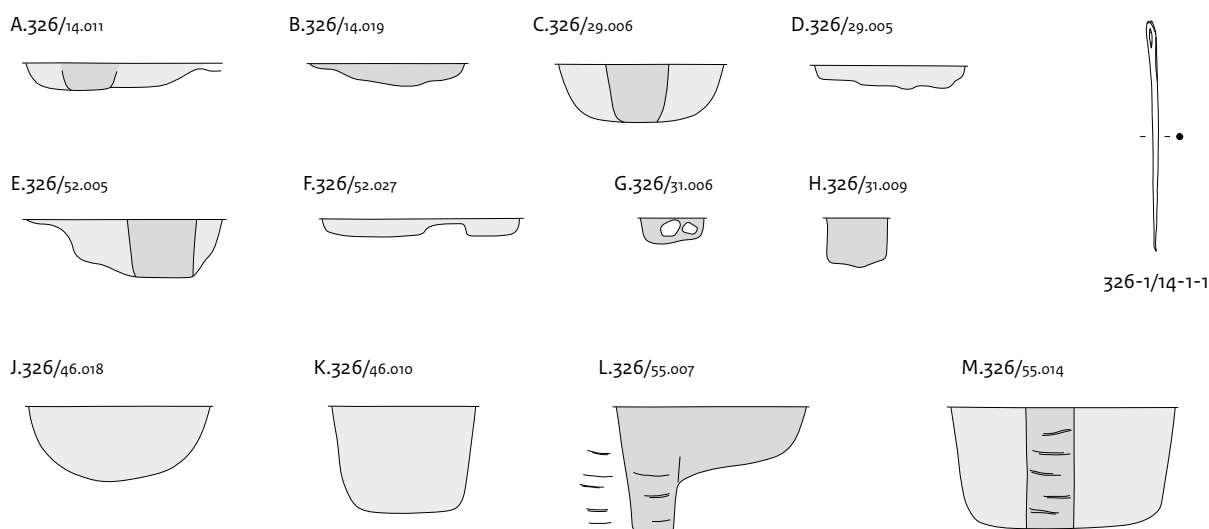
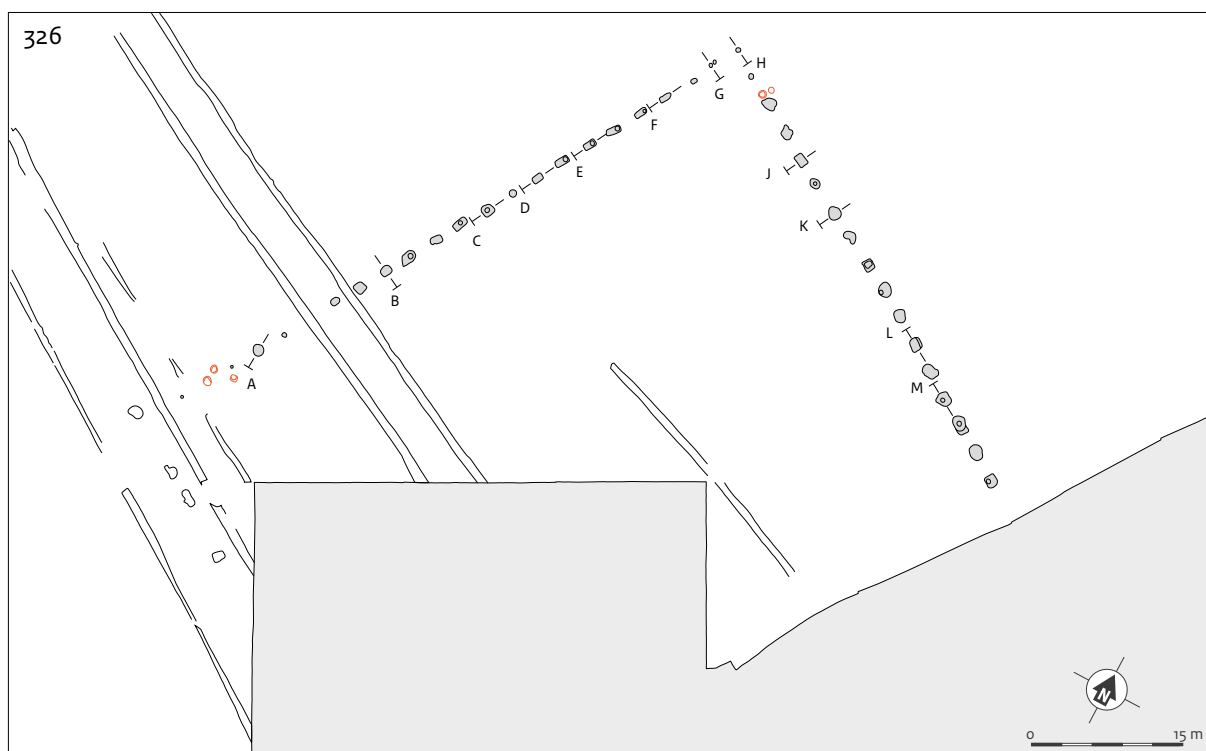


Fig. 41.22 Voerendaal-Ten Hove. Plan, sections and bronze of annex 326. Sections scale 1:50, bronze 1:3.

#### finds/dating evidence

Although in some features of 326 post-pipes were observed, finds from them were not kept separate from those from the packing soil. The youngest pottery (Table 41.3) dates from the second half of the second century AD, e.g. mortaria Dragendorff 45 and Brunsting 37/Heerl-M5, and the third century (3 sherds of black-slipped beakers Niederbieber 33). Only one small sherd (2 g) of coarse-walled ware could be Late Roman, but its identification is uncertain and it could be intrusive anyway. Quite some building material, suggesting a late date for the decay or removal of the posts, was collected: 23 fragments (6 kg) of brick and tile, 3 pieces (3.5 kg) of limestone and a fragment (2 g) of window glass. The only find interesting enough to illustrate is a needle (326-1; Fig. 41.22).

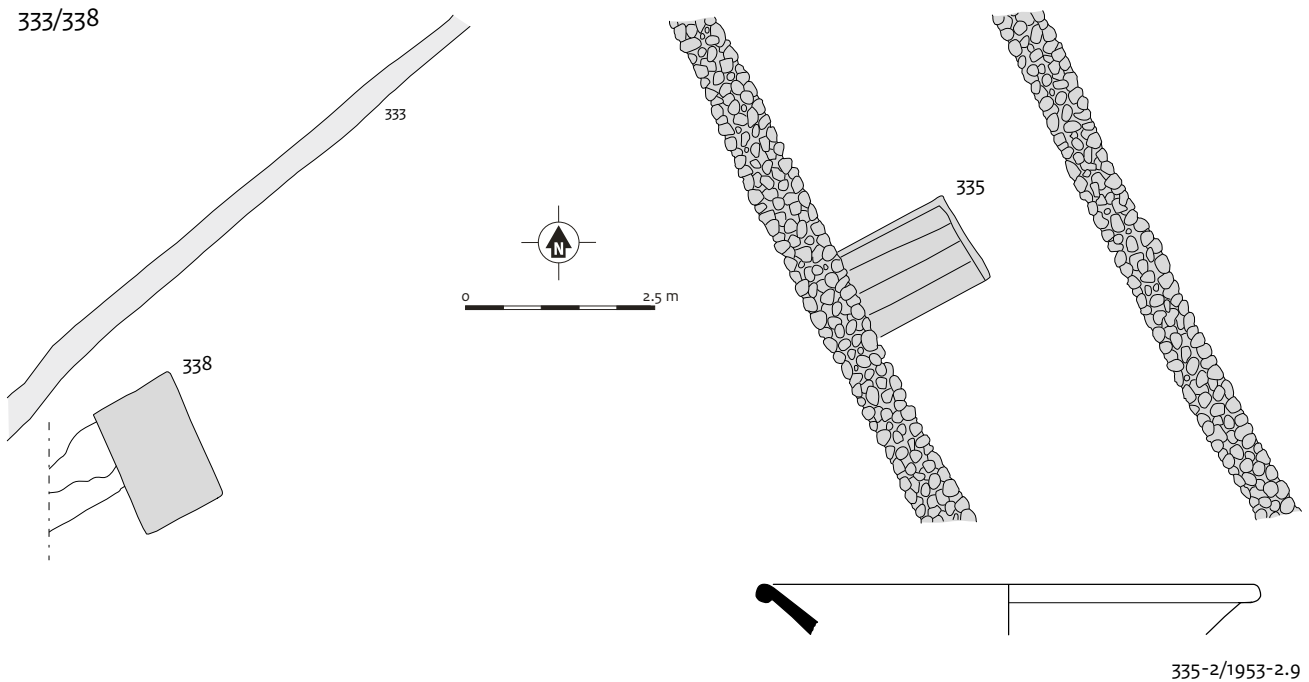


Fig. 41.23 Voerendaal-Ten Hove. Plan of lime-pits 335 and 338 with some surrounding features, as well as pottery from 335. Pottery scale 1:3.

### 41.5 Lime pits

#### LIME PIT 335 / feature 114.033 (Fig. 41.23)

##### *investigation*

This pit was investigated by Braat: drawn on one of his 1:100 plans and described only there. It was found again in 1987 and documented as a recent disturbance. It is not clear if the excavators checked if the wood imprints on the bottom really had gone.

##### *description*

The pit measured 1.65 x 1.25 m and was only 8 cm deep. The bottom was originally lined with four planks c. 29 cm wide.

##### *finds/dating evidence*

The only find from this pit is a rim fragment (7 g) of a terra sigillata dish Dragendorff 18/31 from East Gaul, dating c. AD 100-200 (Fig. 41.23).

#### LIME PIT 338 / feature 114.044 (Fig. 41.23)

##### *investigation*

This pit was found in 1987 as a (sub)recent disturbance, which must be the result of Braat's excavation, although it is not on his plans. A section was made by the ROB, but this was not drawn. It is not clear what the feature west of the pit represents; it was not observed in trench 100.

##### *description*

This rectangular pit measured 1.75 x 1.15 m, was 14 cm deep and had a flat bottom. The disturbed infill consisted of dark brown soil with dispersed fragments of lime.

##### *finds/dating evidence*

In 1987 a small piece of the original infill was collected: flaky lime with large cavities, freshly slaked lime, with the cavities as the result of the gasses formed during the slaking. Six sherds (29 g) of smooth-walled pottery and one (4 g) of rough-walled ware were found.

# 42 Graves and possible graves

Henk Hiddink

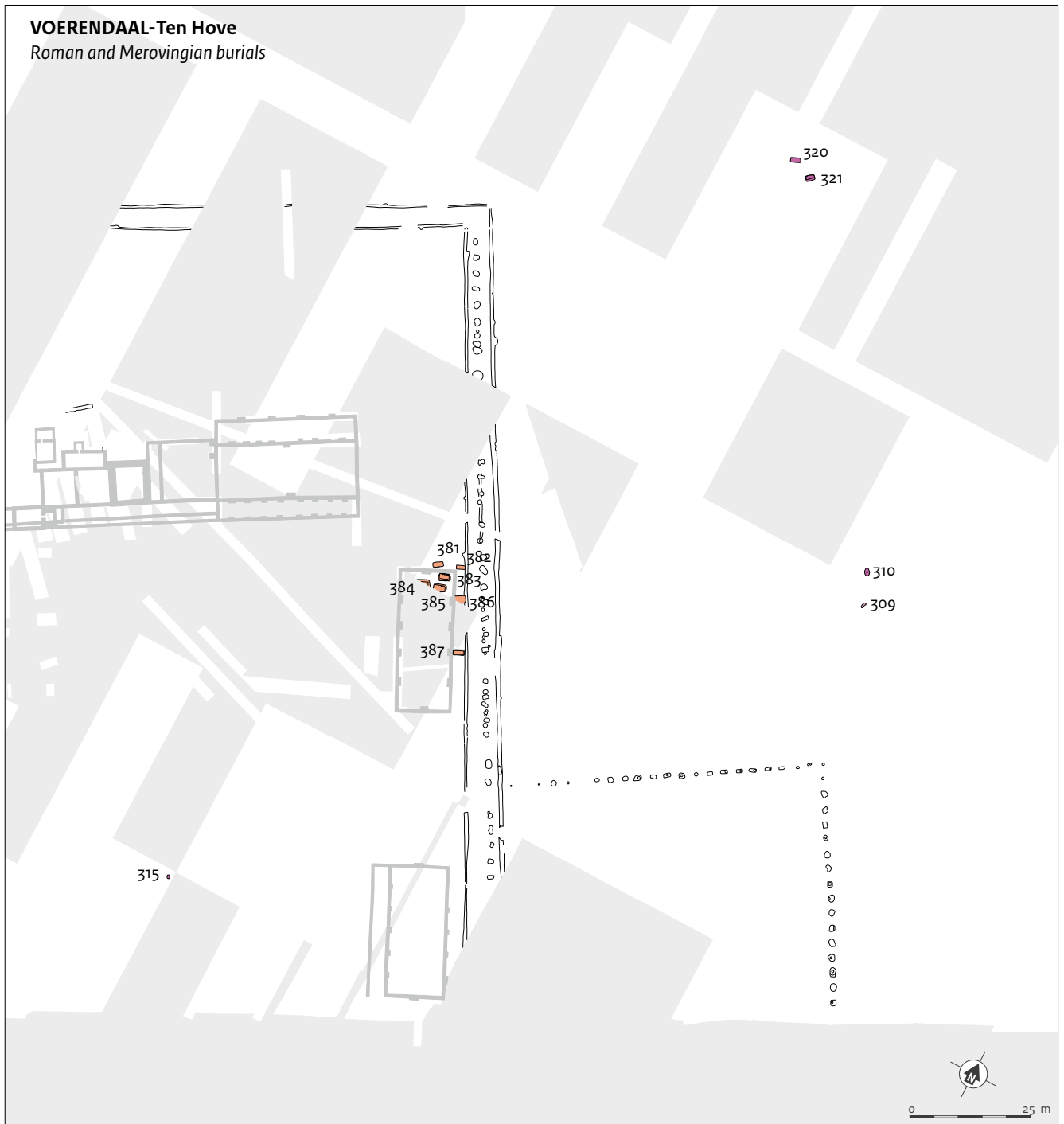


Fig. 42.1 Voerendaal-Ten Hove. Burials from the Roman period and Early Middle Ages.

## 42.1 Introduction

Human bone was not only collected from (some of) the burials described below, but also as an isolated diaphysis of a right humerus (9-1-1/12169). It is not known if it was found

more or less in its original position, the villa trench 9 previously dug by Habets and Braat. Being preserved by the limestone of the villa, its date is probably Roman or later, for prehistoric or Early Roman bone would have been dissolved in the loess. During and after the

excavation, a number of pits were interpreted as cremation graves (table 42.1). Besides 315 discussed below, this holds true for 745 and 794, but the cremains in these pits are of animal origin and the other finds show that they have nothing to do with burials (Chapter 46). The first two captions in the entries for each grave are similar to those of the pits (investigation, description). Next, for two graves some remarks are made on the interpretation (315) or missing finds (381); then the dating evidence is given, if available. The data on the cremains in grave 320,

human and animal, were provided by Liesbeth Smits and the same holds true for the unburnt bone from 315. Most information on the skeletal elements of the Medieval burials is simply an identification of the skeletal elements visible on the plans. Only a few teeth were seen by the specialist. Finally, a short description of the finds is given. If the item number is between parentheses, it is not certain if the finds are grave goods. The location of the graves is shown in Figure 42.1 and 7.

**Table 42.1. Voerendaal-Ten Hove. Graves discussed in this chapter.**

Section	Structures	Former designation	See also section
83.2	grave 309-310	j	13.1
83.3	grave 320-321	t	13.1
83.4	grave/pit 315	h	-
83.5	grave 381-383	M, L, N	13.2
	grave 384-386	-	13.2
	grave 387	U	13.2
	grave 388	-	13.2

## 42.2 Middle Roman graves

GRAVE 309 / feature 36.002 (Fig. 42.2)

### *investigation*

This feature is mapped as a grave in a preliminary report.<sup>3279</sup> The section was not drawn, only a depth is given (part of section reconstructed in Fig. 42.2).

### *description*

The pit measured c. 125 x 40-50 cm and had a depth of 20 cm; with an irregular bottom. The infill had a dark brown colour, but no (burnt) bone and/or charcoal was present. The interpretation as a grave is based on the presence of a complete glass flask.

### *dating evidence*

The small glass bottle has not many parallels, so it cannot be firmly dated. A grave from Köln-Luxemburgerstraße, containing two examples, possibly to be dated by a sestertius of Severus Alexander, after AD 222 (cf. Section 61.2.2).

### *finds*

309-1/36-1-2/5729 flask Von Boeselager 41, nearly complete, part of rim missing (65 g); thin-walled, colourless with a hint of very light green (Fig. 42.2).

GRAVE 310 / feature 42.002 (Fig. 42.2)

### *investigation*

This feature was also mapped as a grave in a preliminary report. The section was drawn and both the soil from the pot and the pit was sieved, but this produced no bone or charcoal.

<sup>3279</sup> Willems & Kooistra 1987, 37, fig. 2.

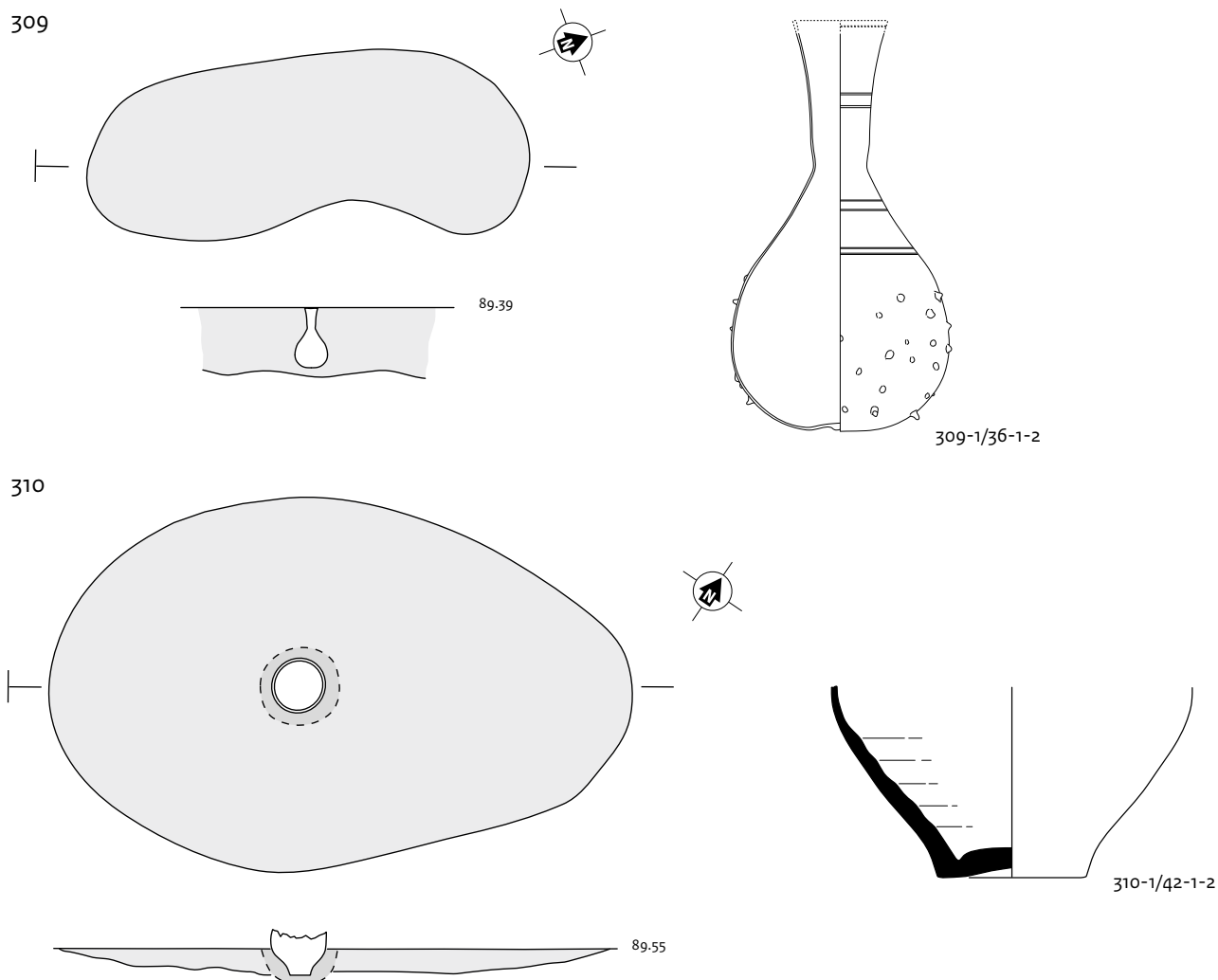


Fig. 42.2 Voerendaal-Ten Hove. Plan, section and finds of grave 309 and 310. Graves scale 1:20, pottery and glass 1:3.

#### *description*

At level 1 an oval pit of 160 x 105 cm was found. This feature was 6 cm deep and had a light yellow-grey-brown infill. In the centre there was a 'decapitated' pot, with a vague small (possible) pit around it. This had a brown-grey colour.

#### *dating evidence*

Because the vessel is only preserved in part, the type is unknown. Although it could be a jar (cf. grave 320 and 321), intuitively it is rather a jar (Niederbieber 89?). The fabric is white, coarsely tempered and a Heerlen product; probably it dates to the later second or the third century AD.

#### *finds*

310-1/42-1-2                      coarse-walled pot or jug, lower half present (3 wss/1 bs; 321 g; Fig. 42.2).

### 42.3 Late Roman graves

GRAVE 320 / feature 60.001 (Fig. 42.3A; 42.4)

#### *investigation*

It is not certain if the feature was instantly recognised as a grave, possibly the rim of the jug was observed first. Only one level was drawn, but with the help of the levels, the section could be reconstructed.



A



B

Fig. 42.3 Voerendaal-Ten Hove. Late Roman graves.

A grave 320 from the south, with the spearhead to the left and the jug and rake prongs to the right; B grave 321 from the north, with the jug to the left and terra sigillata flagon to the right.

#### *description*

The grave measured 185 x 85-95 cm, with a depth of c. 20 cm. The infill was light grey-spotted. The cremains were deposited in the western half of the pit, the spearhead was put on top of them. The coarse jug stood in the eastern half and was found toppled over. Around it lay the other iron objects.

#### *dating evidence*

The type of knife to which 320-4 belongs, is considered typical for the fourth century AD (cf. Section 20.3.9), but obviously, the dating of iron objects in general is not very precise.<sup>3280</sup> The jug 320-2 can be classified as a Niederbieber 96, a Middle Roman form. A date in this period is also suggested by the fabric, indicating a Heerlen product. However, as Willems already pointed out in his publication of grave 320 and 321, the type was still made in the fourth century AD.<sup>3281</sup> This is based on finds from Tongeren-Southwest cemetery and Krefeld-Gellep.<sup>3282</sup> The conclusion is, also based on the association with grave 321, that this grave dates at the end of the third or the first half of the fourth century.

#### *cremation*

320-1 (60-2-7/6066) sex probably male; age c. 20-25 years; weight 1,136 g; identifiable (skeletal region) 276 g (24.3%); burn intensity (on basis of colour) 3-5. Sex indicator: crista supramastoidea (right) +2; age indicators: open sutures (sagittalis), first vertebra of sacrum not fused; no pathologies observed.

<sup>3280</sup> See Willems 1989, 148-149 and section 13.1.2.

<sup>3281</sup> Willems 1989, 148; cf. section 26.4.3.

<sup>3282</sup> Vanvinckenroye 168-169, fig. 11.10, pl. 98-100 (grave 179, around middle of the fourth century); Pirling 1966, 72-73, type 66 (first half of the fourth century)



320

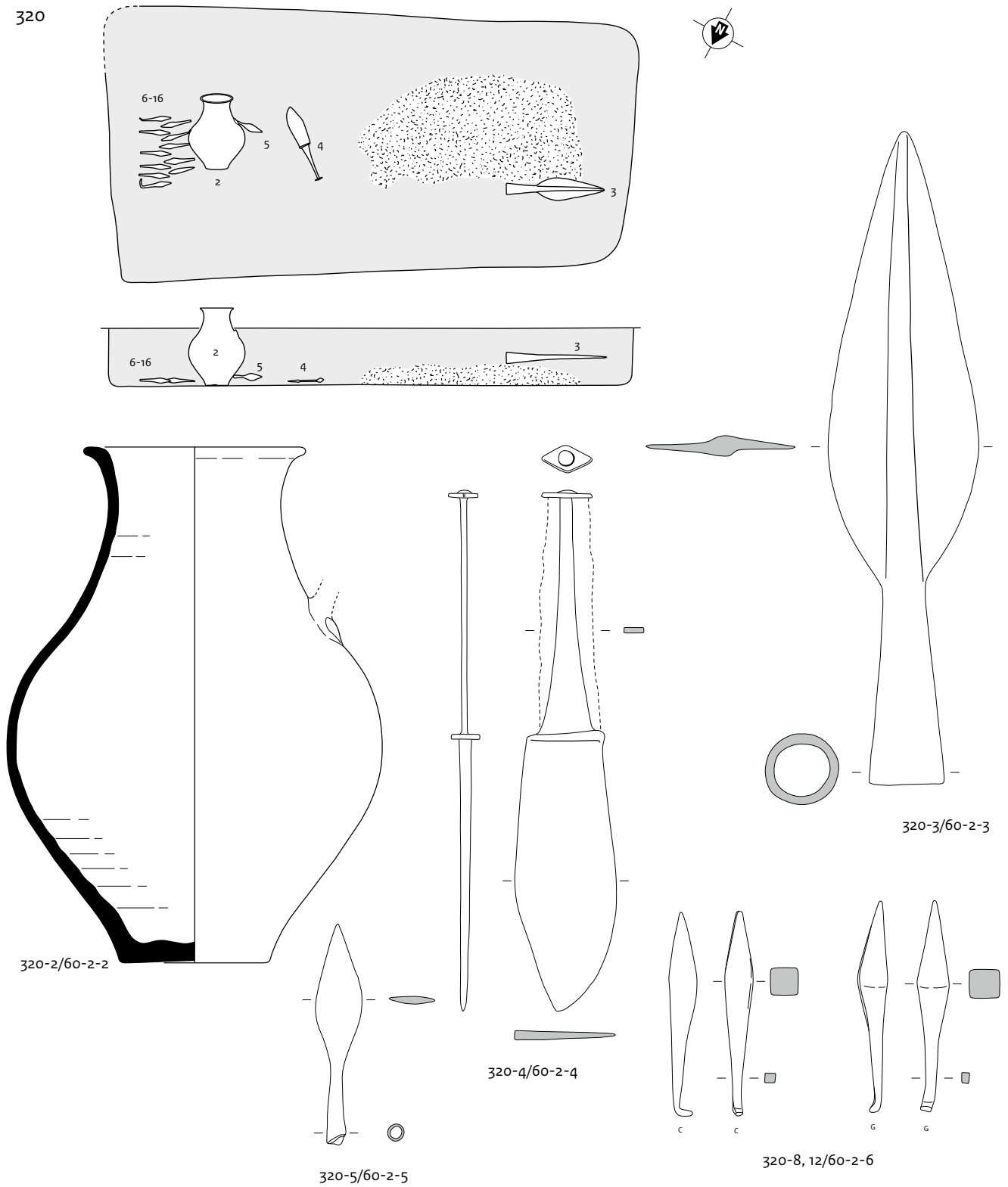


Fig. 42.4 Voerendaal-Ten Hove. Plan, section and finds of grave 320. Grave scale 1:30, finds 1:3. (source: H.A. Hiddink & F. Horbach)

animal bone

320-7 (60-2-7) pig (70 g).

finds

320-2 (60-2-2/6062) coarse jug Niederbieber 96, only handle missing (1,062 g; Fig. 42.4).

320-3 (60-2-3/11459) iron spearhead, some remains of shaft present (Fraxinus excelsior) (Fig. 13.5; 42.4)

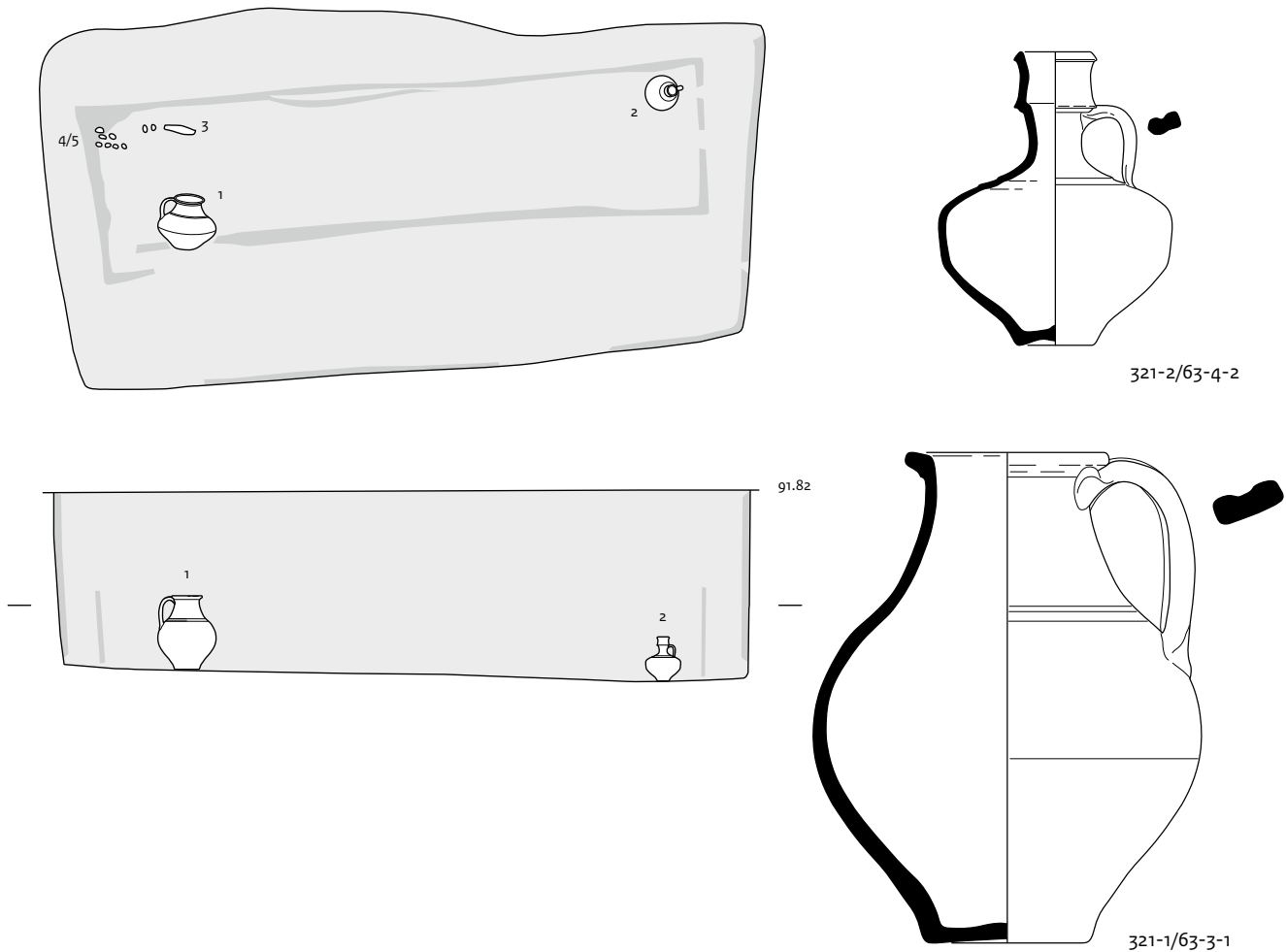


Fig. 42.5 Voerendaal-Ten Hove. Plan, section and pottery of grave 321. Grave scale 1:30, pottery 1:3. (source: H.A. Hiddink & F. Horbach)

- 320-4 (60-2-4/11456) iron knife, some remains of handle present (*Fraxinus excelsior*, not shown in Fig. 13.5; 42.4)
- 320-5 (60-2-5/11457) arrow head (Fig. 13.5; 42.4).
- 320-6>16 (60-2-6/11458) eleven rake prongs, some adhering wood remains not identifiable (two in Fig. 42.4; all in 13040; 42300).

#### GRAVE 321 / feature 63.004 (Fig. 42.3B; 42.5)

##### investigation

This grave was instantly recognised as such, also because the presence of 320 in the vicinity. The grave was documented in three levels, but no section was made (it is reconstructed in Fig. 42.5). Only level 2 is shown here, combined with the finds of level 3.

##### description

The grave measured 190 x 100 m and the depth was c. 50 cm. The infill was brown-yellow, with a grey band along the sides, possibly indicating some kind of revetment. In level 2 the dark grey outlines of a coffin were found and while they were still visible in level 3, no traces of a bottom were observed, however. There are some finds of iron, but no indications of the use of nails in the revetment and/or coffin. Some dark grey patches were seen at the bottom of the grave, but these can't be interpreted as a body silhouette.

A course jug was found in one corner, a terra sigillata flagon in the opposite corner. Near the jug, several small nails were present. Probably they are shoe nails, which would imply that the feet of the deceased were located here and the head in the western part of the coffin.

*dating evidence*

The dating of the jug Niederbieber 96 was already discussed with grave 320 (321-1 is also a Heerlen product). Flagons Chenet 345 seem to be made and used mainly in the first half of the fourth century AD.<sup>3283</sup>

*finds*

321-1 (63-3-1/6141)	coarse-walled jug Niederbieber 96, complete (789 g; Fig. 13.5; 42.5).
321-2 (63-4-2/6139)	terra sigillata flagon Chenet 345, complete (176 g; Fig. 13.5; 42.5).
321-3 (63-3-3/6146)	iron nail?
32-4/5 (63-3-2/6145; 63-4-1/6147)	small iron nails, 27 pieces/fragments.

**42.4 Late Roman grave or pit with human bone**

GRAVE-PIT 315 / feature 23.018 (Fig. 42.6)

*investigation*

It is unknown if this pit was already interpreted as a grave during the excavation. It was not mentioned in the report over 1985, when it was found, but in that about 1986.<sup>3284</sup> Perhaps the skull fragment was recognized in the meantime. The section of the pit was drawn, but the infill was not sieved.

*description*

This more or less rectangular pit measured 85 x 58 cm. Its depth was 20 cm and the infill was dark grey with charcoal.

*remarks*

This pit could be interpreted as a grave because fragments of a male skull are present, as well as relatively large parts of the three 315-1, 2 and 3. However, it is certainly no normal inhumation grave: bones of the post-cranial skeleton are missing and the pit is quite small. Secondly, the vessels are not complete, although a fair portion is present. Thirdly, besides these vessels and maybe fragments of a jet bead (315-5), all other finds 'do not qualify' for grave goods, it concerns the same 'settlement refuse' as in the other pits and is partly composed of Middle Roman material. The charcoal in the infill of the pit also seems to be waste (none of the finds show traces of heat/burning). Although the pit in theory could be some special deposit, the presence of especially *tegula* fragments and Middle Roman pottery – although small sherds – seems out of place.

*dating evidence*

The terra sigillata bowl Chenet 320 (315-1) has a roller-stamp decoration dating around the middle of the fourth century AD (cf. Chapter 25); the handmade vessels are Late Roman (AD 270-450; Section 26.5.1).

*skeletal remains*

315-4 (23-3-1/15)	sex probably male; age 20-30 years; 133 g (unburnt). Sex indicators: margo orbita thickened and rounded, thick/robust skull; age indicators: basilaris closed (>20 y), crown M3 maxilla slightly worn (<30 y).
-------------------	--

*finds*

315-1 (23-3-1)	terra sigillata bowl Chenet 320, 1 rs (237 g; Fig. 42.6).
315-2 (23-3-1)	handmade bowl Gennep 7/Wijster VII, 6 rs/9 ws (359 g; Fig. 42.6).
315-3 (23-3-1)	handmade bowl Gennep 3/Wijster IV, 6 rs/29 ws (522 g; Fig. 42.6).
315-5 (23-3-1)	jet(?) bead, some tiny splinters (1 g).
315-6 (23-3-1)	handmade prehistoric pottery, 2 ws (5 g).
315-7 (23-3-1)	colour-coated beaker, technique b, 1 ws (1 g).
315-8 (23-3-1)	smooth-walled? 1 ws (2 g).
315-9 (23-3-1)	coarse-walled, 1 rs (1 g).

<sup>3283</sup> Cf. Willems *loc.cit.*; section 13.1.2 and 25.2.

<sup>3284</sup> Willems & Kooistra 1987, 37, fig. 2h.

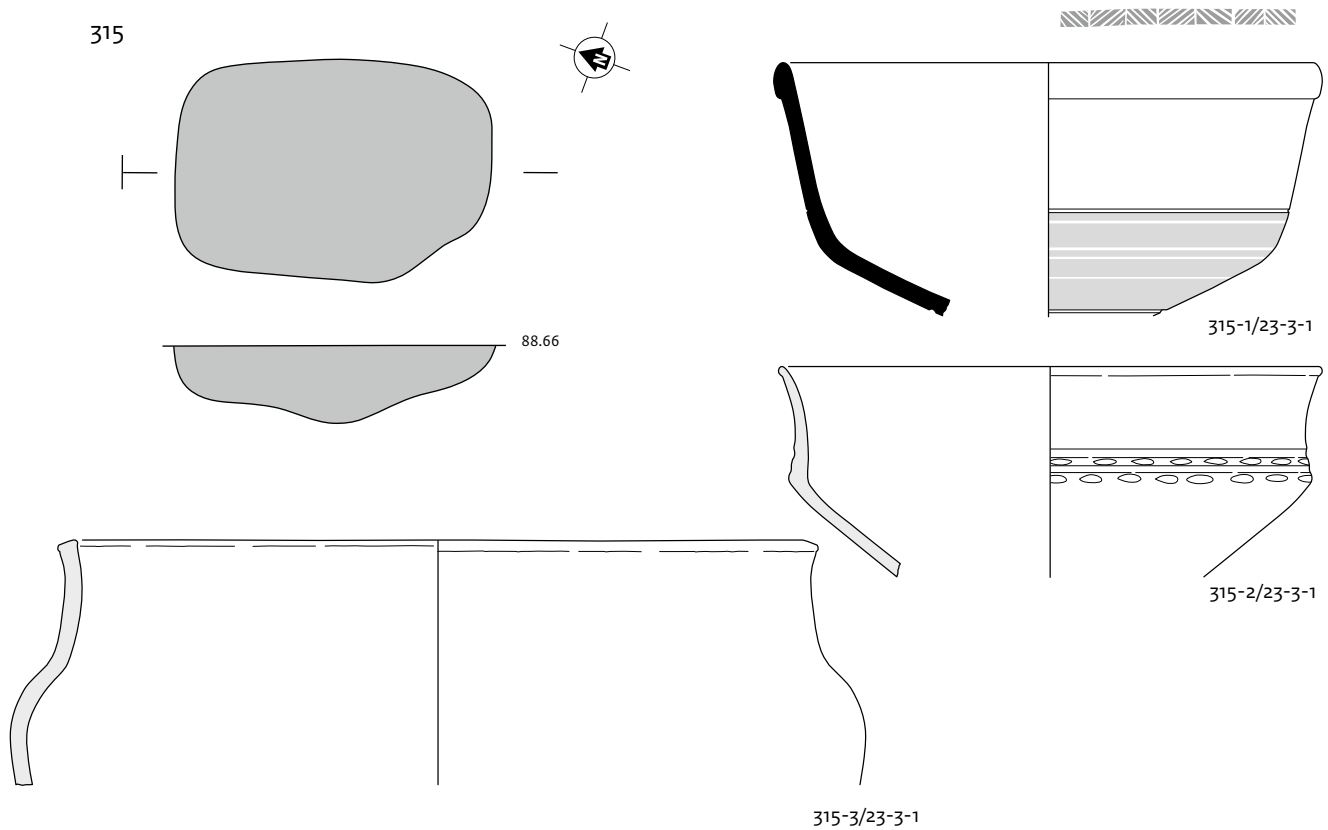


Fig. 42.6 Voerendaal-Ten Hove. Plan, section and pottery of pit 315. Pit scale 1:30, pottery 1:3.

315-10 (23-3-1)	tegula, 2 frgm (max. 400 g).
315-11 (23-3-1)	iron, 3 frgm.
315-12 (23-3-1)	granite, 1 frgm (42 g).
315-13 (23-3-1)	tephrite quern, 6 frgm (1,190 g).

## 42.5 Early Medieval graves

### GRAVE 381 / feature 11.008 (Fig. 13.7A-B; 42.7; 42.7-42.8)

#### investigation

This grave (formerly designated as grave 2 or M) was identified as such during of soon after skimming because of the form of the feature and probably the rim of pot 381-9. There were no sections made (that in Fig. 42.8 is a reconstruction), but the level of the pit was carefully lowered. Two levels were drawn on scale 1:20 and all finds were levelled; the position of the beads was recorded on scale 1:10. A number of finds whose position was recorded, proved to be tile fragments and are left out of the figures; only the nails are shown.

#### description

The grave measured 215 x 95-100 cm, with a depth of only 13 cm. Inside the pit with an infill of yellow-brown material, a rectangular feature of 205 x 70 cm was observed. This coffin/grave chamber had a dark grey infill and the impressions of two beams underneath. The skull of the deceased was at the western end of the coffin. Near it, the clavicae and upper arms were identified. Where the chest had been and lower on the torso, two groups of beads were found. The buckle 381-10 and strap end 381-11 were found where the pelvic region must have been; only traces of the leg bones were observed. The pot 381-9 stood opposite the lower legs.

#### remarks

The glass beads from this grave went missing after they were registered in the OD and up till now, they have not been located. At least, they show that the grave belongs to a woman. The colour-code BLGR is translated as blue green below, although the abbreviation GR is usually taken as grey in Dutch.

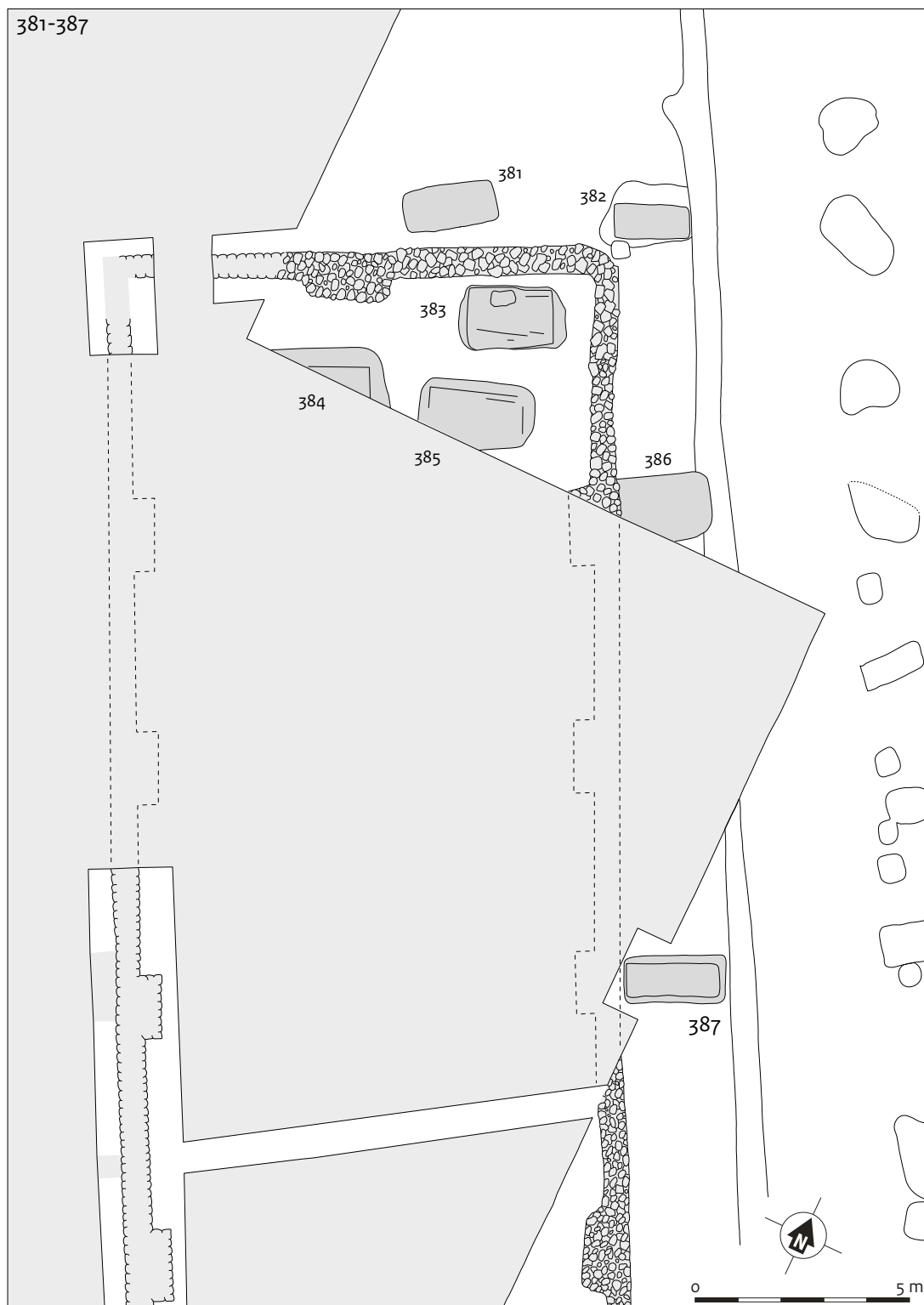


Fig. 42.7 Voerendaal-Ten Hove. Plan of the Merovingian cemetery around building 402.

#### dating evidence

Biconical pot 381-9: FAG phase 7-8 (AD 610/20-670/80); Northern France phases MR1-MR3 (AD 600/10-700/10; cf. Section 27.4.2).

Biconical pot 381-41: FAG phase 3-7 (AD 460/480-640/650); possibly not intentionally deposited in this grave.

Buckle 381-10: F/S phase 10-11, AD 670-740; FAG phase 9-10, AD 670/680-before 750 (Section 20.3.7).

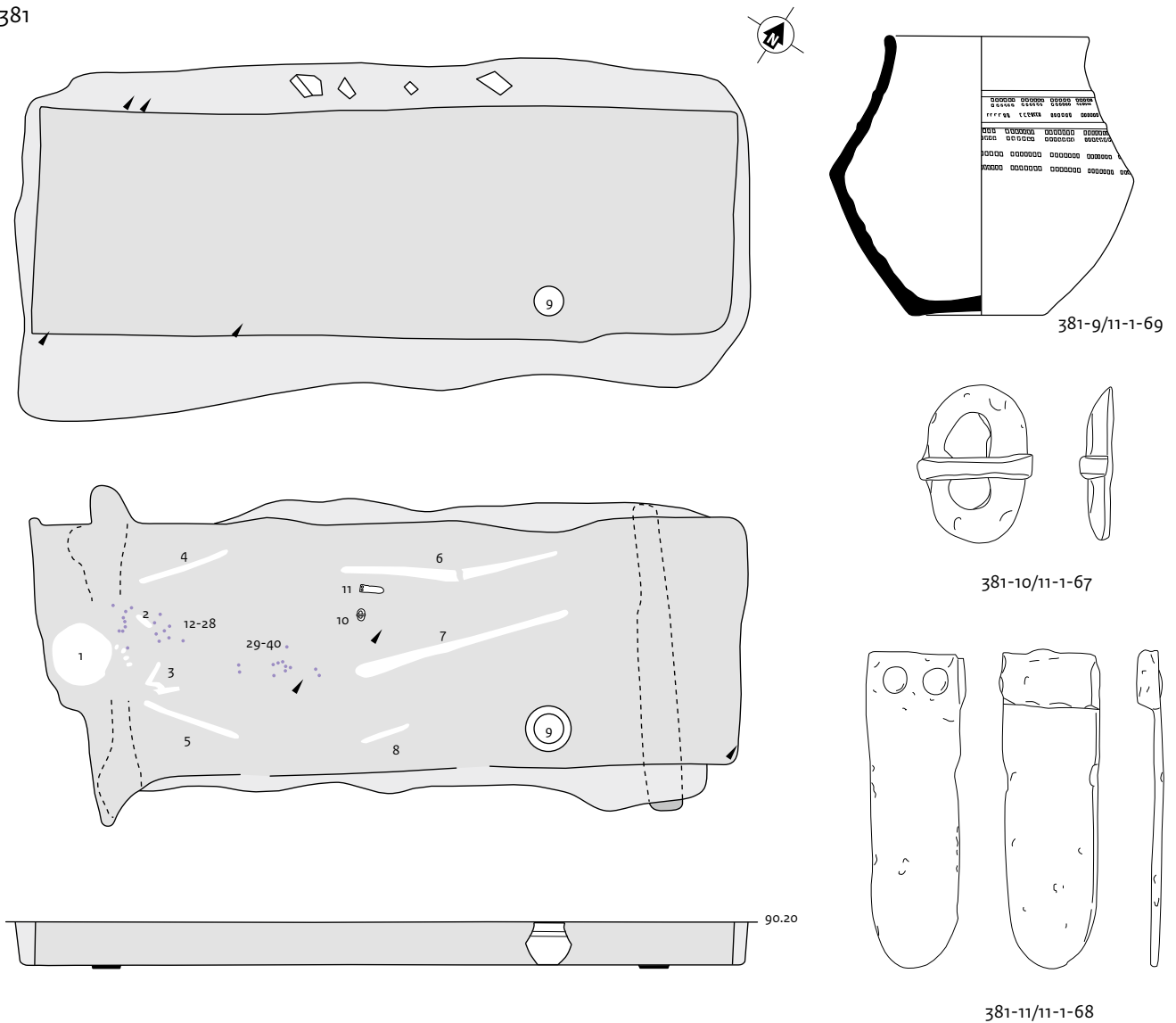


Fig. 42.8 Voerendaal-Ten Hove. Plan, (reconstructed) section and finds of grave 381. Grave scale 1:20, pottery 1:3, and iron 2:3. (source: H.A. Hiddink & F. Horbach)

Strap end 381-11: probably late sixth-seventh century AD.

These objects taken together, they suggest a date in the later seventh century AD.

*skeletal remains*

- |                    |  |
|--------------------|--|
| 381-1 (11-1-80/87) | skull, only fragment remaining crown of a premolar (maxilla), not worn (but not observable if erupted or not). |
| 381-2 (11-1-72)    | left clavicle.   |
| 381-3 (11-1-71)    | right clavicle.  |
| 381-4 (11-1-74)    | left humerus.  |
| 381-5 (11-1-70)    | right humerus.   |
| 381-6 (11-1-75)    | left femur and tibia/fibula.   |
| 381-7 (11-1-75)    | right femur and tibia/fibula.  |
| 381-8 (11-1-73)    | right ulna/radius?   |

*finds*

- |                  |  |
|------------------|--|
| 381-9 (11-1-69)  | biconical pot KWT 5c, complete (453 g; Fig. 42.8). |
| 381-41 (11-1-37) | biconical pot, 1 rs/1ws (8 g).                     |
| 381-10 (11-1-67) | iron buckle S-Gür 6.1 (Fig. 42.8).                 |
| 381-11 (11-1-68) | iron strap end (Fig. 42.8).                        |
| 381-12 (11-1-47) | bead, biconical, yellow.                           |
| 381-13 (11-1-48) | bead, blue-green, 2 frgm.                          |

381-14 (11-1-49)	bead, biconical, red.
381-15 (11-1-50)	bead, biconical, yellow.
381-16 (11-1-51)	bead, biconical, yellow.
381-17 (11-1-52)	beads, series of 3, blue-green.
381-18 (11-1-53)	bead, biconical, yellow.
381-19 (11-1-54)	bead, biconical, red.
381-20 (11-1-55)	bead, biconical, yellow.
381-21 (11-1-56)	bead, small round, blue-green.
381-22 (11-1-57)	bead, biconical, blue-green.
381-23 (11-1-58)	bead, biconical, bright yellow.
381-24 (11-1-59)	bead, biconical, bright yellow.
381-25 (11-1-60)	bead, small round, blue-green, 3 frgm.
381-26 (11-1-61)	bead, round, green.
381-27 (11-1-65)	bead, small round, blue-green.
381-28 (11-1-66)	bead, small round, blue-green.
381-29 (11-1-62)	bead, biconical, yellow.
381-30 (11-1-63)	bead, biconical, red.
381-31 (11-1-64)	bead, biconical, blue-green.
381-32 (11-1-77)	bead, biconical, yellow.
381-33 (11-1-78)	bead, biconical, red.
381-34 (11-1-79)	beads, series of 2, blue-green.
381-35 (11-1-81)	bead, biconical, blue-green.
381-36 (11-1-82)	bead, biconical, bright yellow.
381-37 (11-1-83)	bead, small round, blue-green, 2 frgm.
381-38 (11-1-84)	bead, biconical, red.
381-39 (11-1-85)	bead, small, blue-green.
381-40 (11-1-86)	bead, biconical, red.
(381-42) (11-1-37)	flint, fragment (3 g).
(381-43) (11-1-37)	flint, blade (1 g).

#### GRAVE 382 / feature 11.014 (Fig. 13.7C; 42.9)

##### *investigation*

This grave (1 or L) probably was identified not instantly after opening the trench because it was dug into a tree-fall. In any case, it was investigated after the infill of ditch 303 at its eastern end was removed. The pit was present at c. 90.20 m NAP and a 1:20 drawing was made at c. 90.10.

##### *description*

The pit was at least 2 m long (not more than 2.35 m) and 60-80 cm wide. The depth was c. 18 cm (base at 90.02 m NAP). The infill consisted of grey soil with pieces of tile. Most finds were found in the area where the lower torso or pelvic region must have been, possibly next to the body.

Only the axe (head) was put near the right hand.

##### *dating evidence*

Axe 382-7: F/S phase 6-7 (AD 570-610); FAG phase 5 (c. AD 565-580/590).

This form occurs at least in settlements until much later (Section 20.3.9) and this grave could be even late seventh-century.

##### *skeletal remains*

382-1 (11-1-29)	skull.
382-2 (11-1-28)	left humerus, ulna/radius.
382-3 (11-1-24)	right humerus, ulna/radius.
382-4 (11-1-27)	left femur.

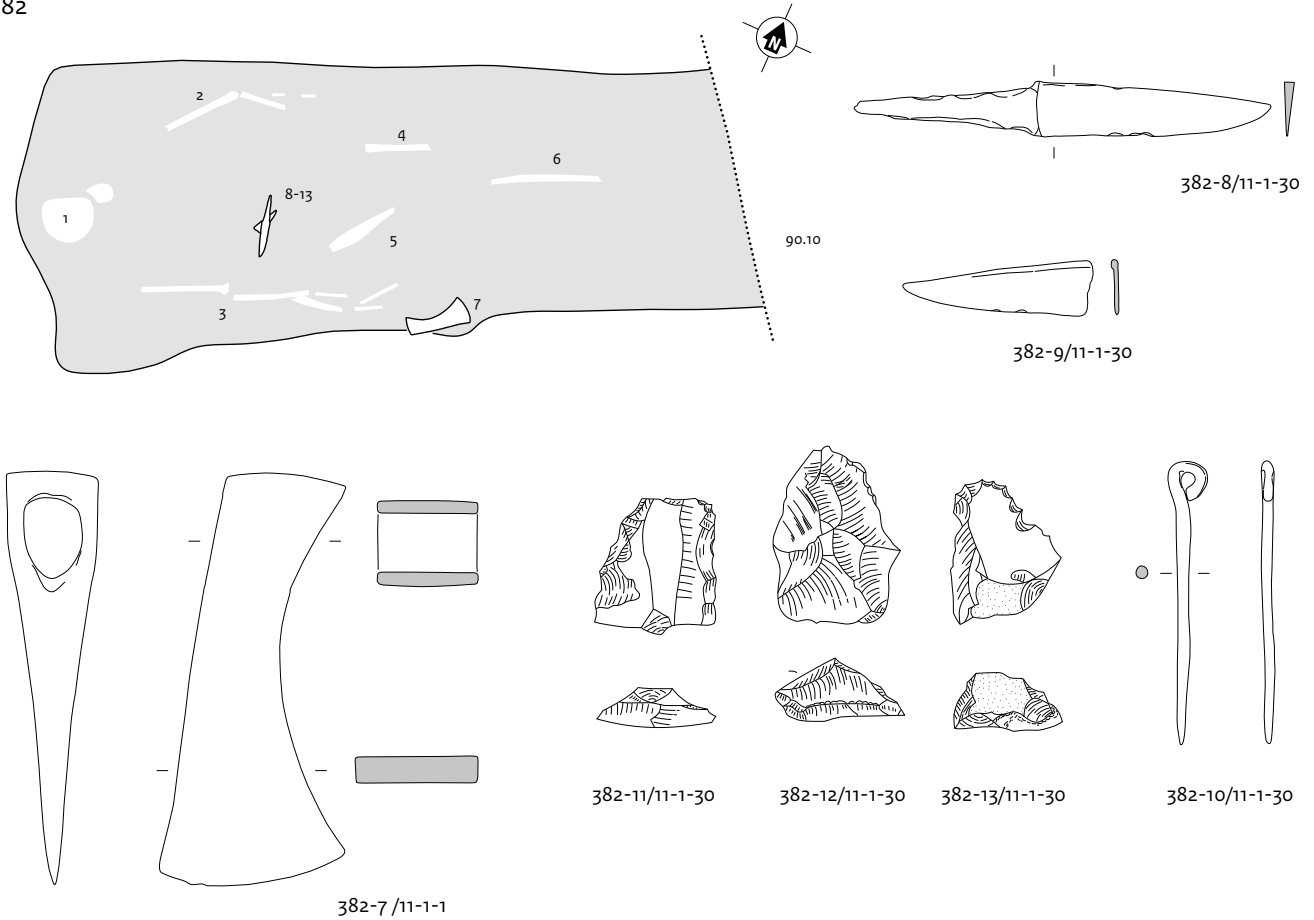


Fig. 42.9 Voerendaal-Ten Hove. Plan and finds of grave 382. Grave scale 1:20, iron 1:3, flint 2:3. (source: H.A. Hiddink & F. Horbach)

- |                  |  |
|------------------|--|
| 382-5 (11-1-25)  | right femur.                             |
| 382-6 (11-1-26)  | left? ulna/radius.                       |
| <i>finds</i>     |  |
| 382-7 (11-1-1)   | iron axe head, S-FBA 2.1 (Fig. 42.9).    |
| 382-8 (11-1-30)  | iron knife (Fig. 42.9).                  |
| 382-9 (11-1-30)  | tip of iron knife or shears (Fig. 42.9). |
| 382-10 (11-1-30) | iron fire striker (Fig. 42.9).           |
| 382-11 (11-1-30) | piece of flint (Fig. 42.9).              |
| 382-12 (11-1-30) | piece of flint (Fig. 42.9).              |
| 382-13 (11-1-30) | piece of flint (Fig. 42.9).              |

**GRAVE 383 / feature 11.045 (Fig. 13.7D; 42.10)**

*investigation*

This grave (N) was found after the dark soil inside (the foundations) of building 302 was removed. It was investigated after a small part of a new trench (17) was opened. Two levels were drawn and only the beams under the coffin were sectioned.

*description*

The pit measured 2.6 x 1.6 m in the first level drawn in scale 1:20 (c. 90.07 m NAP); its infill was yellow brown with pieces of tile. Inside was a rectangular feature measuring 2 x 1.2 m, filled with grey soil with tile fragments. Some light grey bands 80 cm apart seem to have been the remains of planks. At a deeper level (c. 89.85) the boundaries of the pit became more straight. The total depth of the grave was c. 35 cm. Two halved logs under the chamber were found in the form of light grey material with a small layer of rust around it. In the first level, the base of a pot (383-27) was found; probably this pot was placed on top of the burial chamber. The trace of bone (383-1)



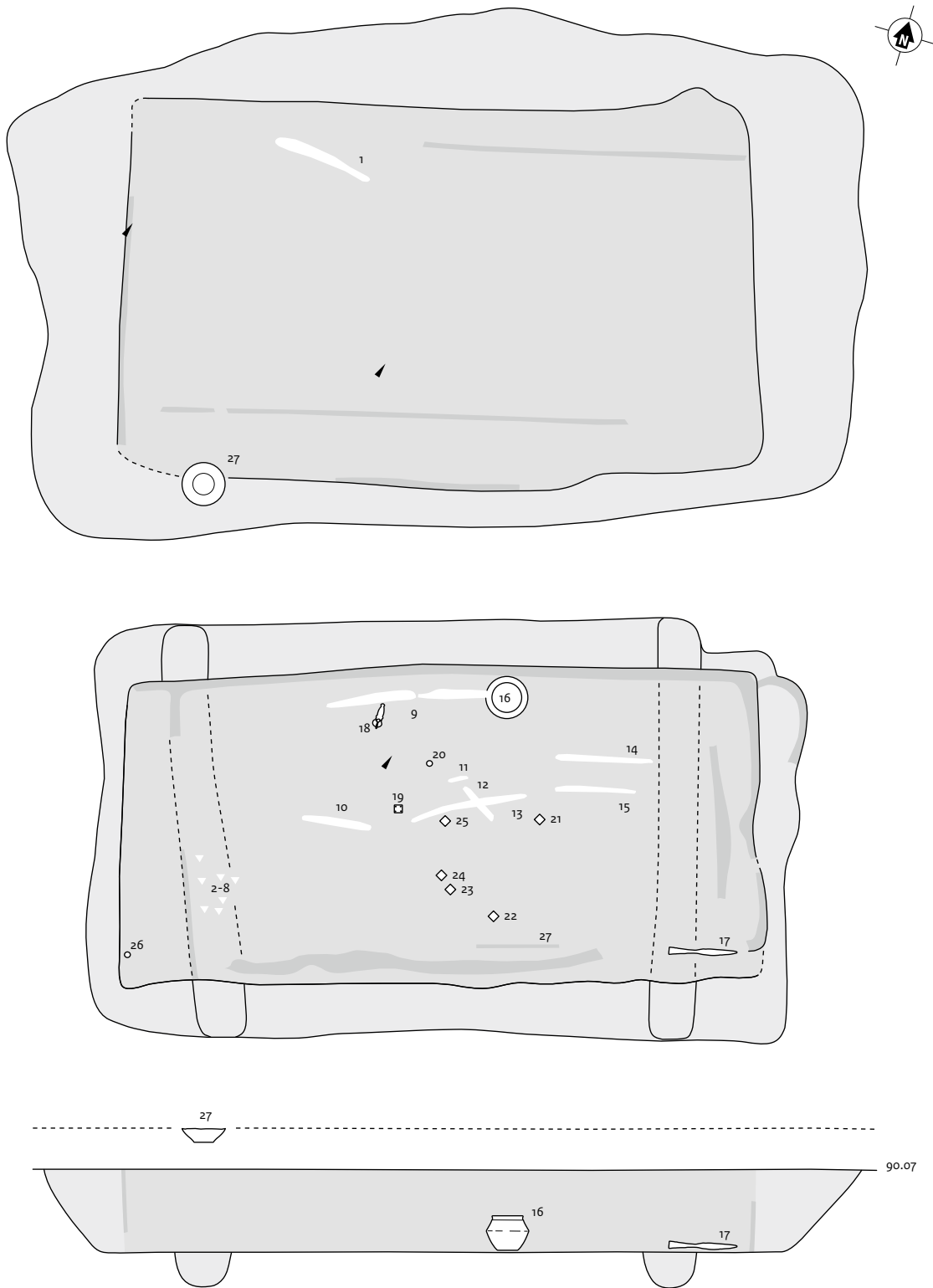


Fig. 42.10 Voerendaal-Ten Hove. Plan and (reconstructed) section of grave 383. Scale 1:20. (source: H.A. Hiddink & F. Horbach)

was probably not of the deceased, but an animal. The molars 383-2 up till 8 suggest that the skull was moved or rolled away from the corpse. The position of the limbs is roughly recognizable by means of fragments/traces of the arm and legs. Some finds are not quite in their original position. The buckle item 18 was found near the left underarm, somewhat too high. A rivet (item 20) of the belt plate 383-19 was found some decimetres away. The lower half of the pot 16 was found in situ, but parts of it were recovered up to 60 cm away from it (21-25). The spearhead 17 was positioned in the southeast corner of the grave, far from the body but probably in the original position. Perhaps the dark band 27 is indicating part of its shaft.

*dating evidence*

Biconical pot 383-16: for the region, FAG phase 6-7, AD 580/590 - 640/650 (cf. Section 27.4.2).

Biconical pot 383-27: FAG phase 4-6, mainly 4-5, AD 510/525-580/590 (-610/620).

Buckle/belt plate 383-18/19: F/S phase 8 (AD 610-640), FAG phase 7 (AD 610/620-640/650; cf. Section 20.3.7).

Spearhead 383-17: F/S phase 5-10 (AD 550/560-710); FAG phase 4-9 (AD 510/525-c. 710).

The date ranges of these objects overlap in the first half of the seventh century AD.

*skeletal remains*

383-1 (11-1-96)	human bone?
383-2>8 (11-1-98-101, 112-113, 119)	several crowns of molars of an adult, not worn, estimated age c. 17-25 years.
383-9 (11-1-110)	left ulna/radius and femur.
383-10 (11-1-108)	right ulna/radius?
383-11 (11-1-118)	unidentified bone.
383-12 (11-1-109)	unidentified bone.
383-13 (11-1-122)	right femur.
383-14 (11-1-120)	left tibia/fibula.
383-15 (11-1-121)	right tibia/fibula.

*finds*

383-27 (11-1-91)	biconical pot, FAG 3a, base/lower wall and small fragments of shoulder, 8 ws/2 bs (149 g; Fig. 42.11).
383-16 (11-1-111)	biconical pot, KWT S-2.42, 3 rs/13 ws/4 bs (263 g; Fig. 42.11).
383-21> 25 (11-1-103>106, 116)	parts of wall and rim of 16, 4 rs/3 ws (90 g; Fig. 42.11).
383-17 (11-1-107)	iron spearhead, S-Lan. 2.4 (Fig. 42.11).
383-27 (--)	trace of wooden shaft of 17?
383-18 (11-1-102)	bronze buckle, Gür 3D (Fig. 42.11).
383-19 (11-1-117)	bronze belt plate (Fig. 42.11).
383-20 (11-1-114)	bronze rivet, belonging to 383-19 or another plate.
383-26 (11-1-97)	bronze ring, diam. 28 mm, 2.5 mm thick (Fig. 42.11).

GRAVE 384 / feature 17.007

*investigation*

Grave 384, 385 and 386 were not investigated, because they were situated in a part of the site to be preserved. Therefore, only some dimensions of the pits can be given.

*dimensions*

Pit of at least 2.5 x 1.4 m, with a coffin/burial chamber inside. Infill of grey and dark grey soil with tile fragments and burnt loam.

*finds*

No finds.

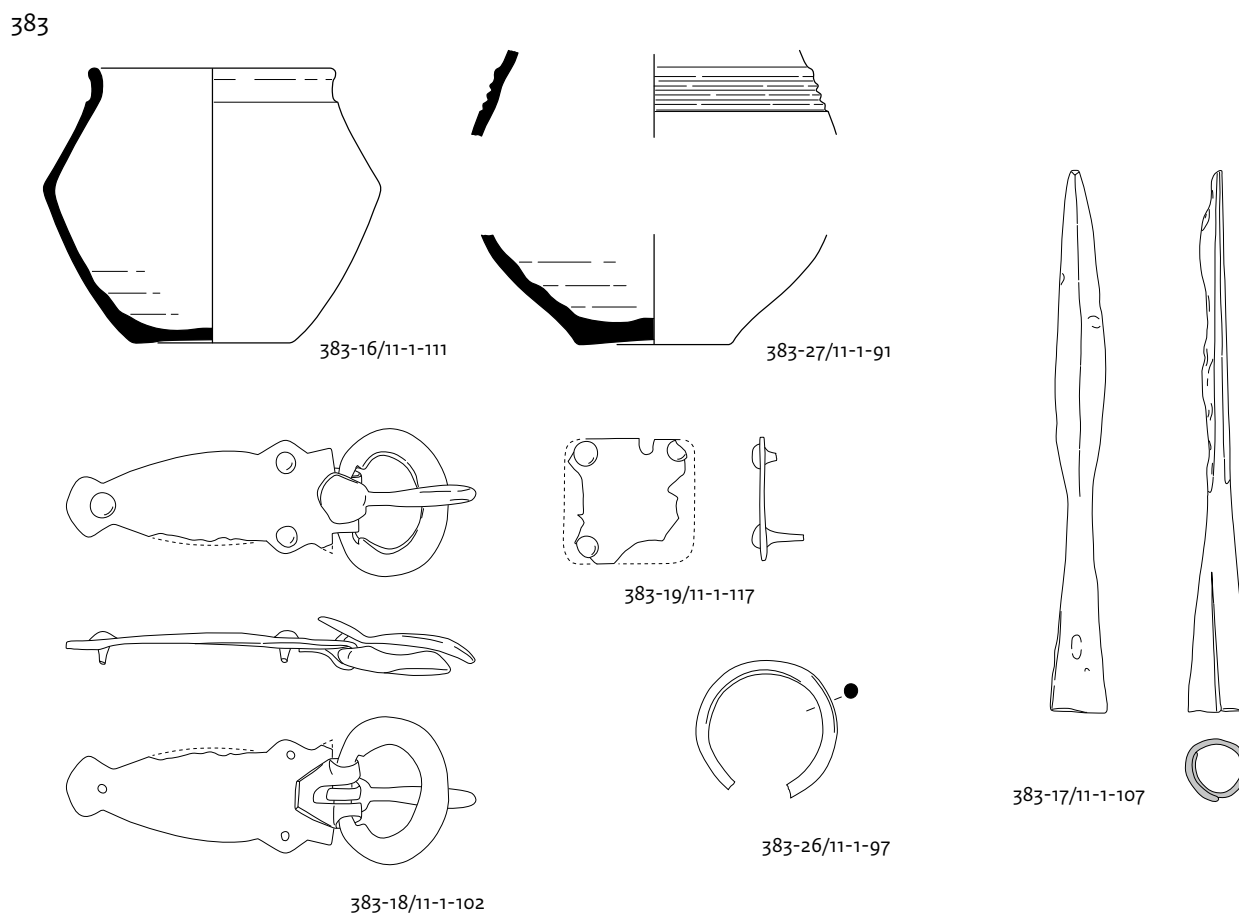


Fig. 42.11 Voerendaal-Ten Hove. Finds of grave 383. Pottery and spearhead scale 1:3, ring, belt buckle and fittings 2:3. (source: H.A. Hiddink & F. Horbach)

#### GRAVE 385 / feature 17.006

##### dimensions

Pit of 2.7 x 1.55 m with an infill of brown grey soil with tile fragments and burnt loam. Thin grey lines of a coffin/chamber of c. 2.15 x 90 cm.

##### finds

No finds.

#### GRAVE 386 / feature 17.005

##### dimensions

Pit of 2.1 x 1.55 m; infill (very) dark brown soil with tile fragments.

##### finds

No finds.

#### GRAVE 387 / feature 26.021 (Fig. 42.12)

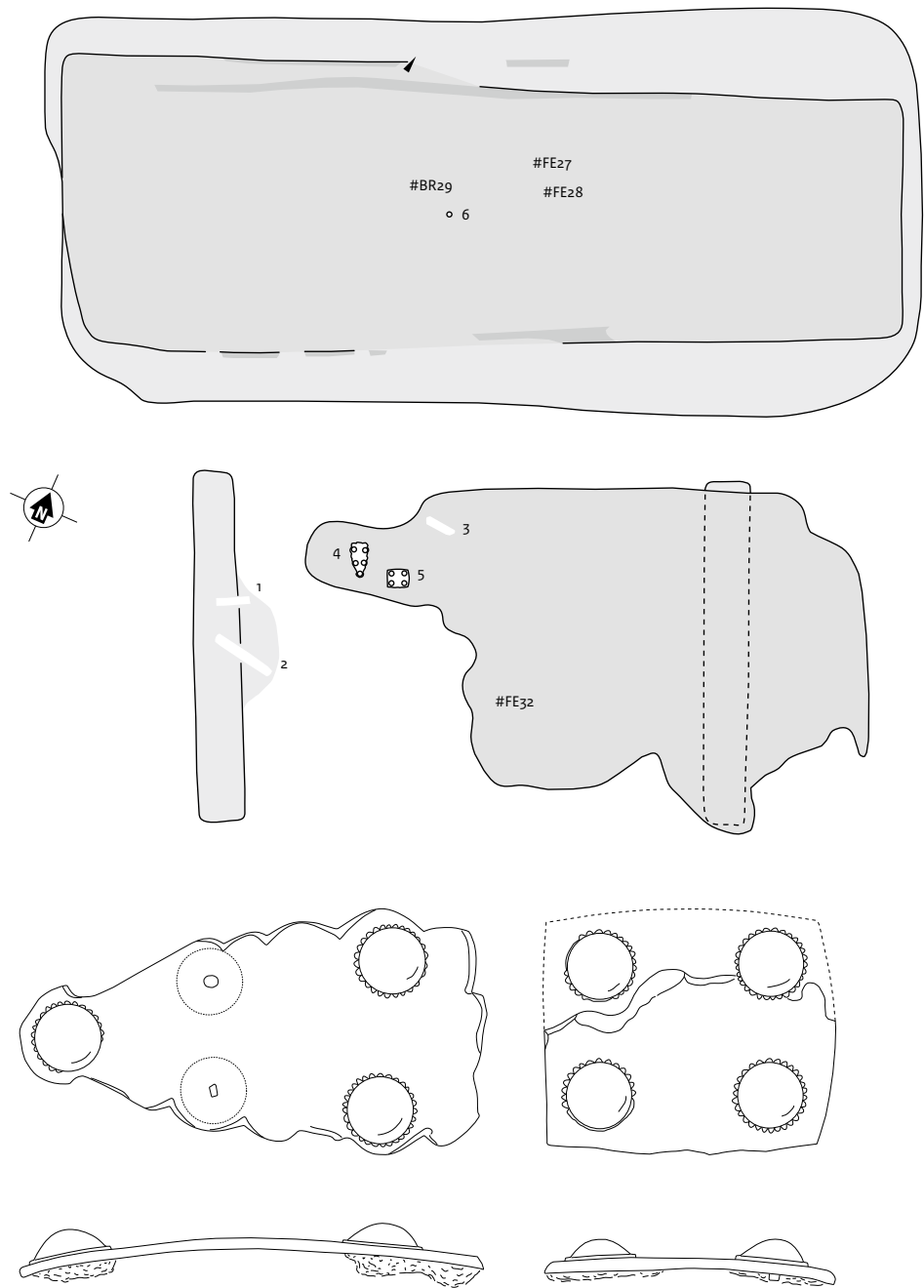
##### investigation

This grave was instantly recognized because feature 381–386 were found before. It was first observed at a level of c. 90.00 m NAP and levels were drawn at c. 89.85 and 89.80 m NAP.

##### description

The grave measured 2.15 x 1.05 m and was c. 20 cm deep. Inside the pit with an light grey-brown infill, a chamber of 205 x 80 cm was present. It had small bands of 'charcoal' (decayed wood?) along part of the sides and an infill of grey soil with lots of small tile fragments. The impressions of two planks underneath the chamber were present. Only three parts of long bones were observed, maybe indicating the legs were situated in the western half of the pit.

387



387-4, 5/26-2-37, 36

Fig. 42.12 Voerendaal-Ten Hove. Plans and finds of grave 387. Grave scale 1:20, belt fittings 2:3.

*dating evidence*

Belt plates 387-4/5, F/S phase 8, c. AD 610-640; FAG phase 6-7, c. AD 580/590-640/650 (cf. Section 20.3.7).

These dates combined: c. first half of the seventh century AD.

*skeletal remains*

387-1 (26-2-34)	bone.
387-2 (26-2-35)	bone.
387-3 (26-2-33)	bone.

*finds*

- 387-4 (26-2-36) iron belt plate with bronze rivets, buckle missing, Gür 3F (Fig. 42.12).  
 387-5 (26-2-37) square iron belt plate with bronze rivets (Fig. 42.12).  
 387-6 (26-2-26) bronze rivet, belonging to 387-4 or 5.

## GRAVE 388 / feature --

*investigation*

An eighth grave was not recognized in the field, as far as we know. However, the finds suggesting its existence were done by Habets, who maybe realized he had found a grave, but passed away before he could report it. Anyway, in the nineteenth century his 'excavation' reached building 402, so the interpretation is not farfetched. Braat published the sax, but did not comment on the interpretation as 'Frankish scramasax'.<sup>3285</sup> Of the finds listed in the inventory book of the RMO, only this sax was seen and documented by us in 2020.

*dating evidence*

Sax 388-1: F/S phase 6-9 (AD 570-), mainly 7-9 (AD 580/590-670); FAG phase 5-8 (AD 565-670/680), mainly 6-7 (AD 580/590-640/650; cf. Section 20.3.9).

*finds*

- 388-1 (1895-12.112) iron sax, Sax 2.1, badly preserved, corroded (Fig. 20.15).  
 388-2 (1895-12.113) iron knife, length 17.5 cm ('Small knife, belonging to the previous').  
 388-3 (1895-12.114) bronze rivet, diam. c. 15 mm ('Bronze, Button, decoration of the scabbard').  
 388-4 (1895-12.115) iron ring, diam. 2 cm ('Iron, Ring, probably belonging to the previous weapons').

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<sup>3285</sup> Braat 1953, 69, fig 12., no. 14.

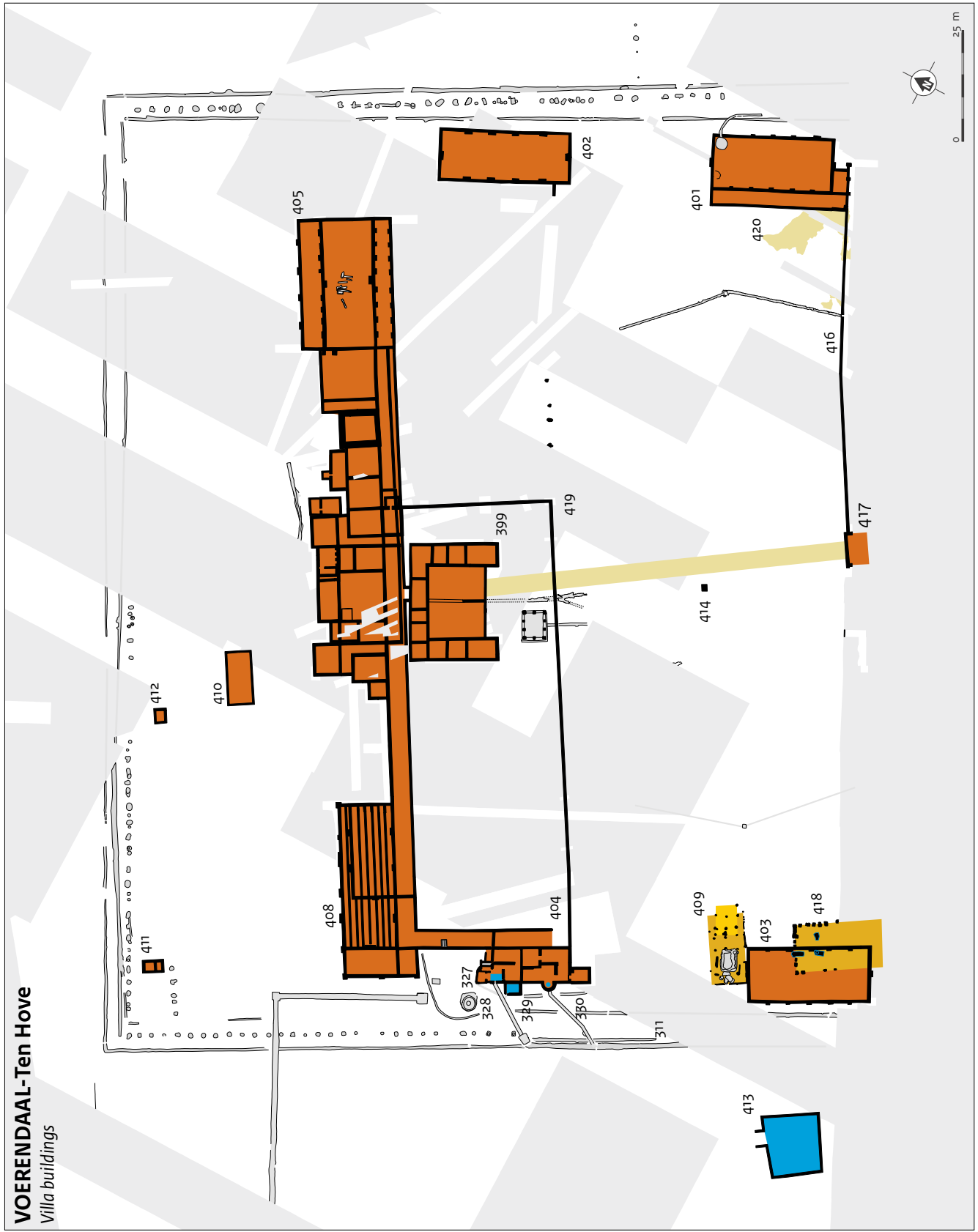


Fig. 43.1 Voerendaal-Ten Hoe. The stone-built structures described in this chapter, including the wood-built structures 409 and 418.

# 43 Buildings and other structures in stone belonging to the villa

*Henk Hiddink*

## 43.1 Introduction

In this chapter the descriptions can be found of the main-buildings of the villa and the other stone-built structures (Fig. 43.1). Also described here are two wooden outbuildings, 409 and 418, (almost) certainly belonging to the first villa. The reason is that their plans are more clear and convincing than 247, 251, 253 and 254, in fact the reason that they were already recognized by the excavators. Many descriptions are extensive, but some descriptions are rather short because the lack of data collected during the excavations. In any case, information is provided about:

### *Investigation*

The year(s) in which the building was excavated, specific methods used, problems during the excavation (weather, errors) or analysis (lack of data), etc.

### *Description*

Main dimensions of the building as a whole, specific rooms, walls. Building materials used, etc.

### *Disappearance of the building*

Indications for the way in which the building was dismantled or destroyed.

### *Finds/dating evidence*

Intersections with other structures and features; finds relevant for dating the structure.

The reconstruction and possible function of the buildings and structures is not discussed in this catalogue, but in chapter 8, 9 and 11 (Table 43.1). Relevant here is the basic information about the stone buildings gathered during the various excavations. Those by Habets resulted only in crude plans and provided no details about the constructions, except for the pencil drawings made of some rooms and walls, especially the cellar of the main building.

Concerning Braat's work, especially his representation of the stonework is problematic. On the plan in his publication, both irregular and regular blocks are drawn in a way suggesting walls proper: facings of stones with a core of mortar. The original field drawings are however not precise and clear enough to use. For that reason,

Braat's foundations and walls are shown in a grayscale, with a stylised outline that applies to both rounded and quite rectangular blocks. For the bedding of foundations only found by Braat, the same grayscale is applied, but without outlines.

During the ROB excavations, most walls were only represented by their foundations, made of irregular blocks of limestone without mortar. On the field drawings, these blocks are represented in a realistic, but not necessarily accurate manner. For this publication, they drawings were traced individually, but completely accurate copying was not the

**Table 43.1. Voerendaal-Ten Hove. Structures discussed in this chapter.**

Structure no.	Type	Designation Braat	Designation Willems/Kooistra	See section
399	villa 1	-	-	8.1
400	villa 2	-	-	8.2
401	'stable'	-	A	9.1-3
402	building	A	B	9.1-3
403	'smithy'	-	C	9.1-3
404	baths	-	D	8.4
327-328	drains baths	$\alpha$ - $\beta$	-	8.4
329	drain baths	-	-	8.4
330	drain baths	$\gamma$	-	8.4
405	building	B	E	9.1-3
406	building	C	F	9.1-3
407	tower granary	D	G	8.3
408	horreum (phase 2)	E-G	H	9.1-3
409	building	-	I/B	9.1-3
410	building	-	J	11.3.1
411	grave monument?	-	K	11.3.2
412	temple	-	L	11.3.3
413	horse pond	-	M	9.4
414	Jupiter column?	-	N	11.2.1
415	horreum phase 1	-	-	9.1-3
416	wall along Steinweg	-	-	11.1.4
417	gate	-	P	11.1.4
418	building	-	Cl	9.1-3
419	wall 'pars urbana'	-	(P)	11.2.2
420	threshing floor	-	-	9.5

objective, considering the schematization in the original drawings (Fig. 43.2, 3a). The top of the foundations or footing of the walls proper, consisted of more regular stones bonded with layers of mortar (Fig. 43.2, 1-2). This is clearly shown on the drawings from the eighties by the square outlines of the blocks. The majority of the stones were however not measured in the field, but sketched. We digitized these stones as accurately as possible from the field drawings.

In the side views of walls (of building 401 and 403), some courses were not drawn at all in the eighties. They are 'reconstructed' in our drawings.

Unfortunately, other aspects of the records of the ROB excavations are not as detailed as one should wish. The top of the walls/foundations was levelled, but often only with intervals of 5 m or more. Their base was not levelled and only relatively few side views or sections through walls were drawn.

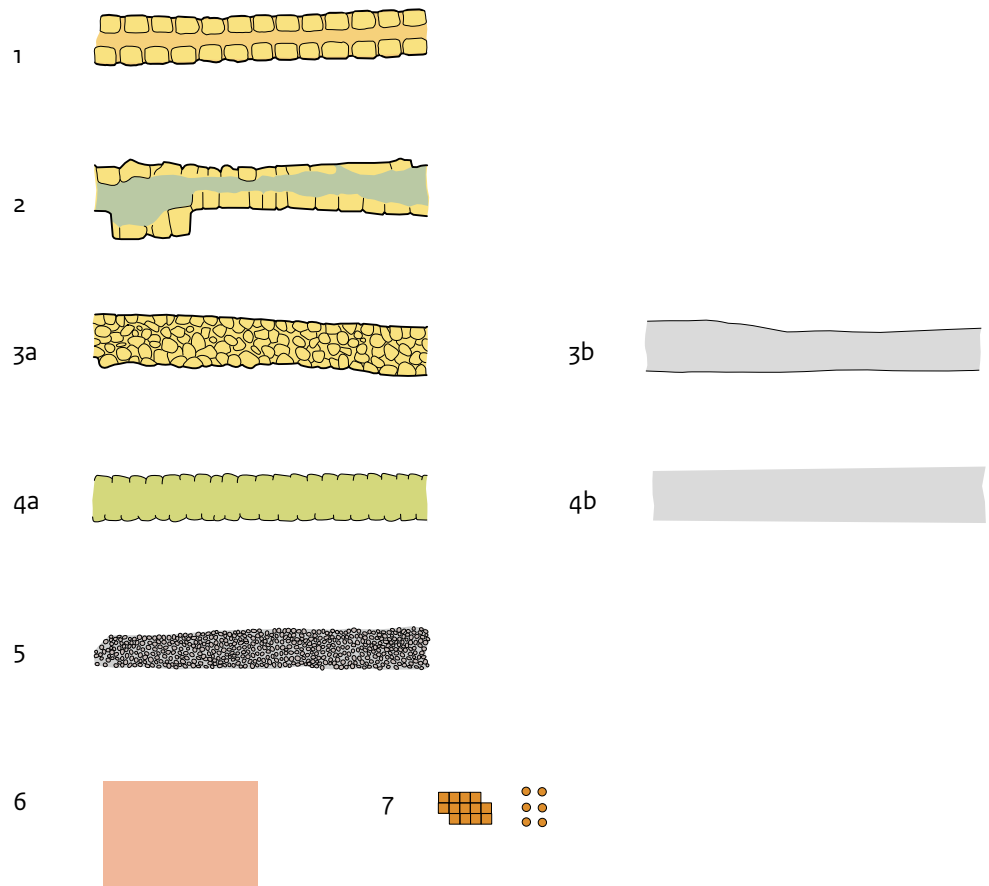


Fig. 43.2 Voerendaal-Ten Hove. The different types of foundations, masonry and other building material as represented in the figures of this chapter. Scale 1:100. 1 masonry above ground level or upper courses of foundations (ROB); 2 idem, with layers of mortar (ROB); 3a foundation of limestone rubble (ROB); 3b idem, nearly gone or robbed; 4a masonry or limestone rubble (Baat); 4b idem, nearly gone or robbed; 5 gravel foundation (ROB); 6 lower floor of hypocaust in situ; 7 brick and tile in situ.



## 43.2 Descriptions of the structures

MAIN BUILDING 399 / trench 9, 89, 150-153 (Fig. 43.3)

### *investigation*

Both the 'great villa' 400 and its predecessor 399 (Braat's building H) were investigated in 1892/93, 1947/48 and 1985-1987. In the latter years, trench 9 and 115 in the eastern half of building 400 were investigated. The foundations in these trenches, with those in trench 10, 89 and 102, provided 'anchor points' to check the accuracy of Braat's drawings and position them in the overall plan. Small errors in the surveying during the old excavations and the rather crude pencil lines on the 1:100, resulted in walls seemingly shifted 20 up to almost 50 cm since the late forties, also regarding the levels taken). By slightly rotating and (non-uniform) scaling of segments of the old drawings, a new plan of building 399 and 400 was produced. It has no claim to represent the 'real situation', but is certainly acceptable in the scale in which it is reproduced in this report.

Although building 399 was discovered by Habets, it was not fully uncovered and understood. Braat excavated parts of the building in several years, using narrow trenches. In the eighties, only the north(east) corner and a tip of the south(west) corner were investigated again (trench 9, 89). It is remarkable that Braat documented the foundations of the west side as robbed, while Habets found stone here; the southwest corner found in trench 89 also consisted of stone.

### *description*

The overall dimensions of building 399 were 26.6 x 20.2 m (exterior), in *pedes monetales* c. 90 x 68 p.m. As reconstructed in figure 43.3 thirteen different rooms were defined. The building consists of one or two large central hall(s), surrounded on three sides by eleven rooms in total. A front portico can be expected to have been part of this building as well, although no traces of a front wall or column bases have been found (see Section 8.1). In the core of the building, room 1 measured c. 12.6 x 8.2 m and room 2 c. 12.6 x 7.5 m (interior). The interpretation of the dividing wall is problematic. Only 3.5 m of this wall was documented in two different trenches and it is a bit off the general orientation of the building. The wall is aligned with drain 318 in trench 110/111 and could have been a part of this. Either way, rooms 1 and 2 took a central position within building 399. Rooms 3 and 6 formed corner pavilions (*Eckrisalite*), protruding in front of the building. Room 3 measured 6.2 x 4.1 m; room 6 was 6.50 x 4.30 m. Most other rooms were arranged around the central hall(s) and were quite small:

4	4.0 x 3.9 m	9	3.4 x 3.3 m
5	4.0 x 3.8 m	10	3.9 x 3.4 m
7	4.2 x 3.5 m	11	2.4 x 3.0 m
8	4.0 x 2.8 m		

Room 12 and 13 in the north eastern part of the building cannot be reconstructed with any degree of certainty. Wall 150.020 dividing them can also be part of the drain (structure 318) mentioned above and in our reconstruction, 9.022 does not align with the east wall of room 2. Its form does resemble that of a stairwell in a cellar, but no such feature was observed here. Although the ROB investigated only one level, no distinctive infill of a possible cellar was seen. Braat dug somewhat deeper at two spots, but apparently he also saw no indications for a cellar.

### *disappearance of the building*

The features of this building are said to show absolutely no traces of fire, contrary to those of 400.<sup>3286</sup> Braat suggests that the villa building 400 was possibly first constructed behind building 399, before it was deliberately torn down. An argument for this should be the fact that the walls of building 399 were demolished up to a deeper level than many of the other stone buildings.<sup>3287</sup> This argument is questionable, because of almost all walls on the site nothing more than the last one-two layers of foundation remained. However, it is well possible that 399 still stood while 400

<sup>3286</sup> Braat 1953, 53.

<sup>3287</sup> Braat 1953, 53-54.

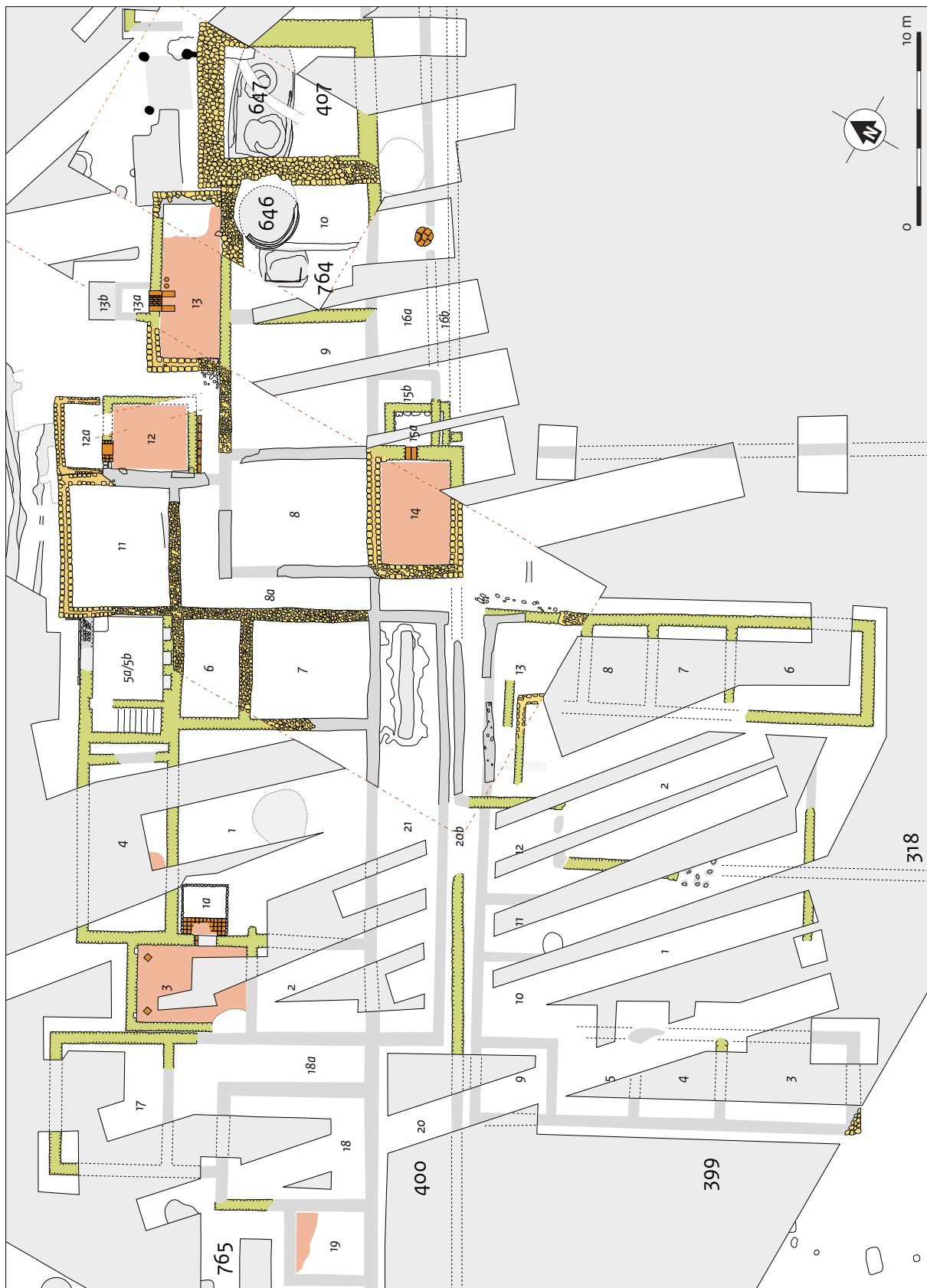


Fig. 43.3 Voerendaal-Ten Hove. Plan of the excavated remains of building 399 and 400 with room numbers.

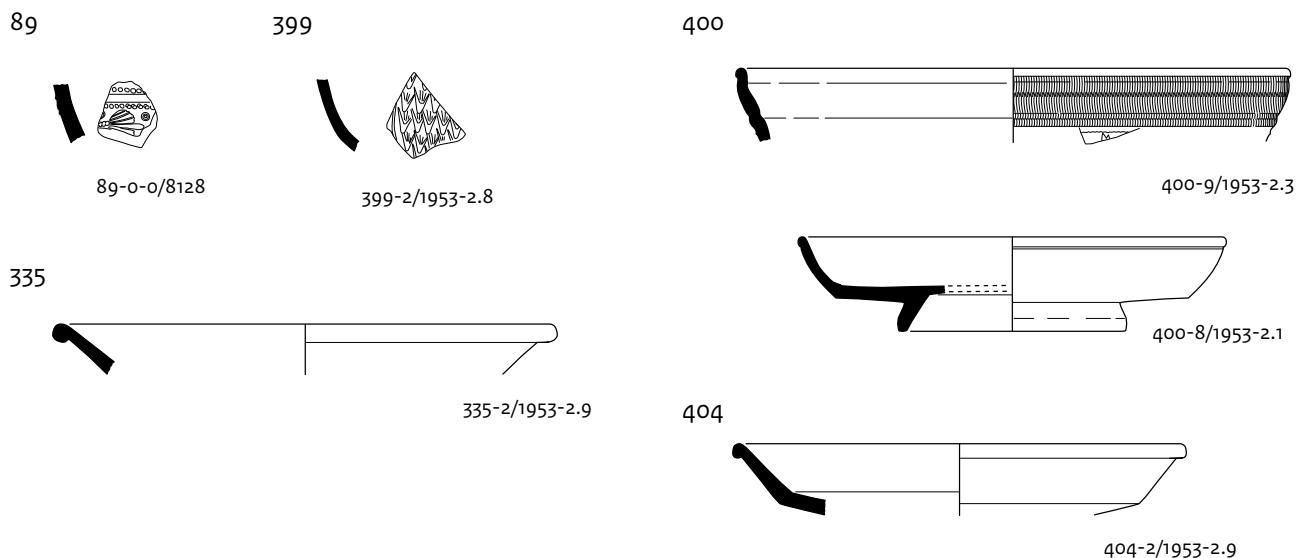


Fig. 43.4 Voerendaal-Ten Hove. Terra sigillata, which according to Braat dates the construction/early phases of building 399, 400 and 404. Scale 1:3.

was built (providing the owners with a roof over their head). Moreover, wall 9.022 – if it really belongs to 399 – was better preserved, with at least one course of wall proper (or the highest course of the foundation) in place.

#### finds and dating

Braat point to the finds from villa H that ‘... make it very unlikely that this building existed after c. AD 120.’<sup>3288</sup> These ‘Finds from the foundations of building H’,<sup>3289</sup> were however not (all) found in the foundations or robber trenches themselves. Only the find-spots of an amphora (Dressel 20) and a *sestertius* of Trajan (1953-2.13/11433; RIC 663, AD 114-117) are indicated on the 1:100 plan, with two crosses in pencil ‘inside’ room 10. Of course, the finds were found below ground level and could have been in unrecognized, younger pits or post-holes, or even in bioturbation. The only other finds mentioned are a smooth-walled flagon Brunsting 2/Stuart 106 and a fragment of a terra sigillata bowl Dragendorff 29. This bowl, 399-2/1953-2.8/11430, was made in La Graufesenque between c. AD 50-85 (Fig. 43.4; cf. Chapter 22). Another fragment of one such bowl was found in the topsoil of trench 89 (89-0-0/8128) ‘in front’ of the building. The decoration of this specimen points to Celadus, working from c. AD 50-70 (Fig. 43.4). It was seen by Willems as an indication for the construction date of building 399,<sup>3290</sup> although he admitted that it could be related to earlier post-built structures as well. There are no relations to other features that provide firm clues for dating building 399, besides the position in front of building 400. The suggestion that pit 336 was filled in when 399 was demolished cannot be proven<sup>3291</sup>; the same holds true for pit 765.<sup>3292</sup>

#### MAIN BUILDING 400 / trench 9, 115, 148-149 (Fig. 43.3)

##### investigation

The main building of the villa was investigated in 1892/93, 1929 (eastern part), 1947/48 (central and eastern part) and 1985-1987. In the latter years, trench 9 and 115 in the eastern half of the building were investigated.

##### description

The description of the remains below is for the most part based on that of Braat,<sup>3293</sup> supplemented with observations made in the eighties and the (interior) dimensions of the rooms. The building as a whole measured 57 x 21 m. Room 1 is the central space of the villa, measuring 10.6 x 9.7 m. Because of the discussion about the question whether central spaces in villas had a roof or not, Braat searched for a hearth place (cf. Section 8.2.3). He found a large pit (diameter c. 2.7 m) with burnt material,<sup>3294</sup> but it was completely disturbed during Habets activities and therefore the interpretation as hearth was uncertain. In the northwest corner of room 1, the *praeurnium* of room 3 was situated. It was a pit of 2.5 x 2.2 m, lined with two courses of limestone blocks and c. 36 cm under the bottom surface

<sup>3288</sup> Braat 1953, 74.

<sup>3289</sup> Braat 1953, 73.

<sup>3290</sup> Willems & Kooistra 1987, 31-32.

<sup>3291</sup> Willems & Kooistra 1988, 141; cf. section 5.1.3; 41.3.

<sup>3292</sup> Braat 1953, 74; cf. chapter 46.

<sup>3293</sup> Braat 1953, 54ff.

<sup>3294</sup> Braat 1953, 74, feature ‘m’ (149.048 in our database).

of room 4 [sic]. The floor of the stoke hole was partly covered with square *bessales* of c. 20 cm. The passage to room 3 was lined with 'tiles'.

About room 2, west of the central space, only the size seems to be relevant: 5.5 x 4.3 m.

The *praefurnium* of room 3, measuring 5.6 x 3.9 m, was already described above. Except for a disturbance in the southwest corner, the whole bottom surface of the hypocaust was found, with two *pedales* in situ. The floor was made up of a 18 cm thick layer of stone chippings with ? cm of gravel and 6 cm *opus signinum* (called '*testa contusa*' by Braat). A plastered layer of *opus signinum* protected the walls from heat. Two small receding bays for conducting the hot air were still present in the north west wall. Braat writes that two also remained in the south west wall, but these are not discernible on the drawings. The walls of room 3 and 17 had separated foundations, but Braat did not see this as an indication for 3 as a later addition.

About room 4-8 nothing much can be said. In 4 only a small part of the bottom surface of the hypocaust remained. Room 5(a) was slightly larger than the cellar 5b under it. Room 8a is a L-shaped corridor between the core and the east wing of the building. The dimensions of these rooms were as follows: 4) 8.7 x 4.4 m; 5) 7.0 x 3.6 m; 6) 5.1 x 2.9 m; 7) 6.2 x 4.9 m; 8) 8 7.0 x 5.5 m; 8a) 1.5-1.9 m wide. The cellar 5b under room 5 is described in a separate section below.

Room 9 measured 7 x 6.4 m. Braat mentions a peculiarity at the side next to room 13.<sup>3295</sup>

The foundation of room 9 at this spot was dug up again in the Roman period, trying to pack it up with extra stones. This operation was not successful, because the stones provided no support (they instantly came loose during Braat's excavation). According to Braat, the original plan was to provide room 13 with a bottom surface at a deeper level, but this had to be abandoned when strengthening the wall of 9 did not succeed.

Room 10 had originally about the same size as room 10. The north wall had, according to the plans of Braat, a width of about 50 cm, but in trench 115 it was almost twice as wide.

Braat interpreted pit 764 as a hearth, with its stones *ex situ* on top of a 30 cm thick rectangular layer of burnt loam with charcoal underneath.<sup>3296</sup>

The dimensions of room 11 were 6.1 x 5 m. According to Braat, the foundation of the south east wall abutted the wall of room/cellar 5, while the masonry was bonded.<sup>3297</sup> His explanation was that the cellar wall was built separate for the most part, because it reached a greater depth. The records of the ROB excavations provide no extra information, although the exterior of the walls of both room 5 and 11 are sealed by the same layer of clay, suggesting they were constructed at the same time (for the use of clay, cf. Hoensbroek).<sup>3298</sup>

Room 12 measured 3.8 x 3.4 m. It is without doubt a later addition to the main building.

Its *praefurnium* 12a had a size of 3.2 x 1.9 m. The original borders of Braat's trench are indicated on the plan because most of the walls were not present anymore during the 1985 excavation.

During Braat's investigations, the room still retained its complete bottom surface, with the floor and walls of the hypocaust plastered with *opus signinum*. The *praefurnium* or flue was found as a c. 110 m wide gap, with a floor consisting of a tile 57 cm square (*bipedalis*), marking the original width. Three rows of tile fragments probably were the remains of the walls of the *praefurnium*, protecting its limestone walls. On the outside of one of the walls, a row of *imbrices* was present, probably meant as a moisture repellent measure.

The heated room 13 measured 8 x 3 m; divided in two according to Habets. Its walls abutted that of room 9 (Baat) and 10 (Baat/ROB). The bottom surface was not level and positioned c. 20 higher than that of room 12. It consisted of c. 10 cm stone chippings below c. 9 cm *opus signinum*; two round *bessales* were still present. *Opus signinum* was also used to protect the walls of the hypocaust. The flue had a floor of tile fragments, 10 (drawings)-12 (text; pl. 7,2) strips of 75 cm long and 9 cm high. Each wall consisted of two strips of the same kind of tile, 75 cm x 30 cm (but cf. Section 32.4.3).

Of the *praefurnium* 13a (1.3 x 1.2 m) little was left and only Habets observed a second small 'room' 13b. 'Inside' room 13 some fragments of painted wall-plaster were found (cf. Chapter 35).

<sup>3295</sup> Braat 1953, 56, pl. 6, 4.

<sup>3296</sup> Braat 1953, 56.

<sup>3297</sup> Braat 1953, *loc.cit.* and published plan; not clear on field drawings.

<sup>3298</sup> Habets 1887, 319.

Room 14 of 5.4 x 3.6 m is situated at the front of the building, also a later addition to the villa. The bottom surface was complete and the walls were clad with *opus signinum*; the same holds true for the walls of its *praefurnium* 15. Two half tiles, presumably *bipedales*, formed the bottom of the stoke hole. Not mentioned by Braat, but visible on his drawings (and that of the ROB), is a bevelled or quarter round profile at the bottom of the wall.

The remaining height of *praefurnium* 15a, belonging to room 14, was 20 cm. Eight cm below the top, protruding irregular stones formed a ledge, and at the same height the infill showed a thin layer of charcoal, both indicating the original floor level. The walls of this room abutted those of room 14. In its first phase 15 measured 2.5 x 1.6 m. In a second phase 15b, the room was made smaller and extended eastwards (3.3 x 2.7 m). The walls of the first *praefurnium* were not completely demolished.

Portico 16a was 31.5 m long and 2.3 m wide (internal dimensions). Braat saw it as a late addition to the villa, because it was in line with the wall of *praefurnium* 15a (the small, later phase) and the kind of material of which the foundation was made. Whereas most walls were founded on gravel with limestone rubble, in this case flint nodules, with characteristic shapes, like tree branches.<sup>3299</sup> Under the foundation some tiles were found (with mortar on top and underneath), worked to create a small round floor; a base for a column?<sup>3300</sup> Perhaps this portico was no later addition, but on the contrary: a first phase. The flint in its foundations was also found in those of building 405. It may have had the same width as room 15b, but at the point where both foundations would have met, no remains were found. Room 14 and *praefurnium* 15 are later additions to the building anyway, so the identical width of 16a and 15b could be coincidental. Our hypothetical portico 16b is not mentioned by Braat. It would have been the counterpart of portico 20 in the western half of the complex, with the same width/depth. The only indications for its existence are the stones next to *praefurnium* 15a and a wall stub on the corner of building 405 (Fig. 43-17; see further below).

Room 17-19 constituted the west wing of the villa. Room 17 is the counterpart of 11 and measured 6.2 x 5.2 m. Corridor 18a was 1.2-1.9 wide and was the counterpart of 8a. Room 18 is a mirror image of 8. In this room of 7 x 5.3 m, fragments of painted wall plaster were found, rosettes in brown on white inside red concentric circles and pieces of borders in grey-blue, purple-red and green (cf. Chapter 35). Room 19 has no counterpart in the other wing. It measured 19 of 3.5 x 3.2 m. Part of the floor – bottom surface of a hypocaust? – was preserved. It consisted of a layer of gravel with *opus signinum*.

Braat thought that portico 20 was a later addition to the villa, replacing 21. This seems logical and to our opinion another reason to assume that 16a in the west represented a first phase (width 2.7 m nearly the same as that of 21). The length of portico 21 was c. 22.5 m (external) and only formed a front for room 2, 1 and 7, perhaps an indication that a small first phase of building 400 did exist (cf. Section 8.2.2). Portico 20 was 3.7 m wide/deep and 85 m long, extending from room 7 in the east to the *horreum* in the west; there it changed direction towards the bath. Near the central axis of building 400, the foundation of portico 20 is interrupted and on the east side of this a 6 m long wall was found (indicated as 20b in Fig. 43.3). Braat assumed it was part of the stairs leading up to the portico, but considering the gentle slope in front of the building, a kind of ramp is a more likely option.

#### *disappearance of the building*

According to Braat, the whole of the villa was covered by a destruction layer of burnt material, consisting of ash and charcoal with tile fragments.<sup>3301</sup> The layer was especially thick over room 1 and 17.

#### *finds and dating evidence*

According to Braat, the second villa 400 was built early in the second century AD, on the basis of the find material: 'As appears from quite a lot of rather early second-century sherds among the remains of the great villa...';<sup>3302</sup> and 'The many finds of pottery sherds from the period around AD

<sup>3299</sup> Braat 1953, 57.

<sup>3300</sup> Braat suggests it was the sole foundation for a column made in this manner, or perhaps the only foundation preserved.

<sup>3301</sup> Braat 1953, 54-55; layer also over the *horreum*.

<sup>3302</sup> Braat 1953, 54.

100 in the large villa and some outbuildings, clearly prove that the former was built in the early second century.<sup>3303</sup> Of course, these finds prove nothing because none were retrieved from under or between the stones of the foundations. The same holds true for an additional argument, concerning the transition between Braat's periods II and III: 'The find of some Flavian sherds in the robbed foundations between room 8 and hallway 8a...'<sup>3304</sup> Among these finds were a rim of a terra sigillata bowl 400-9/1953-2.3 (Fig. 43.4),<sup>3305</sup> a rim fragment of a flagon and a colour-coated beaker Stuart 1.<sup>3306</sup> Finds from a robbed foundation trench could have ended up there anytime between the Late Roman period and post-Medieval times and these could as well originally be associated with building 399 or another structure. The same holds true for a find like a dish Dragendorff 18, from the area or room 8-16 (400-8; Fig. 43.4).

There are no intersections of building 400 with other structures, but the dating of building 209-213 is relevant, because their location in front of the villa (Chapter 40). Also the chronology of 403, 409 and 418 is highly relevant (see below).

#### BUILDING 400-CELLAR 5B (Fig. 43-5-7)

##### *investigation*

The cellar of the main building was excavated three times, but never properly recorded. Habets investigation resulted in a plan 1:500 and two drawings (one colour, one pencil) made by an artist. Because of his death in 1893 no description of the remains was made. Braat writes that 'Unfortunately, lack of time and funds prevented emptying the cellar completely in 1947. ... This was already done by Habets however ... Therefore important finds were not to be expected anymore.'<sup>3307</sup> On the RMO-field drawing is scribbled: 'At the bottom the thickness of the wall was intact, higher up chopped off. / Floor of rammed loam with pulverized brick.' These notes show Braat did reach the floor of the cellar, at least in part. Probably because of the damage done to them, he made no detailed drawings of the walls. In July 1985 the ROB investigated the cellar again, but used Braat's plan for a sketch of the outlines on their own 1:50 plan (trench 18). A beautiful detailed drawing 1:10 of the northeast wall was made, but this has one flaw: the distance between the 5 and 6 m mark on the drawing is only 90 cm! Possibly the width of the cellar was 10 cm larger in reality, or the thickness of the south wall was 10 cm less; the niche was probably 10 cm deeper.

##### *description*

The cellar measured c. 3.4-5 x 5.8-9 m, which is smaller than room 5a above it; a result of the position of the west wall of the stairwell. Excluding the width of the latter, the cellar was only some 4.4 m long. The walls were 55-65 cm thick, except for the south wall, with a thickness of c. 1 m. The core of the wall consisted of smaller, irregular stones with layers of mortar in between. The facing was made of larger and more regular blocks of limestone. It should be noted that in reality, only the two courses at the bottom of the east wall remained and were drawn at 1:10 in 1985. In the right lower corner, a few grooves produced by a small trowel were found, imitating the joints between perfectly square blocks of stone (*Fugenstrich* in German; also at e.g. Bocholtz-Vlengendaal).<sup>3308</sup> Maybe the wall was plastered white originally, with the joints painted red. On the outside, measures were taken to make the wall watertight: 'They had covered the foundations on the outside completely with tiles [on their side], hold in place with nails and plastered with a thin layer of *opus signinum*.'<sup>3309</sup>

##### *finds and dating evidence*

For a discussion on the question if the cellar could have been a later addition to building 400, see Section 8.2.2-3. It is useless to sum up the finds retrieved from it by Braat (find no. 1953/2.7) and the ROB (9-1-3; 18-1-1). Although during the eighties among others 92 sherds (1,954 g) of pottery was retrieved, this material is not relevant because Habets had already emptied it, so the backfill was probably contaminated by finds originally in the arable.

<sup>3303</sup> Braat 1953, 74.

<sup>3304</sup> Braat *loc.cit.*

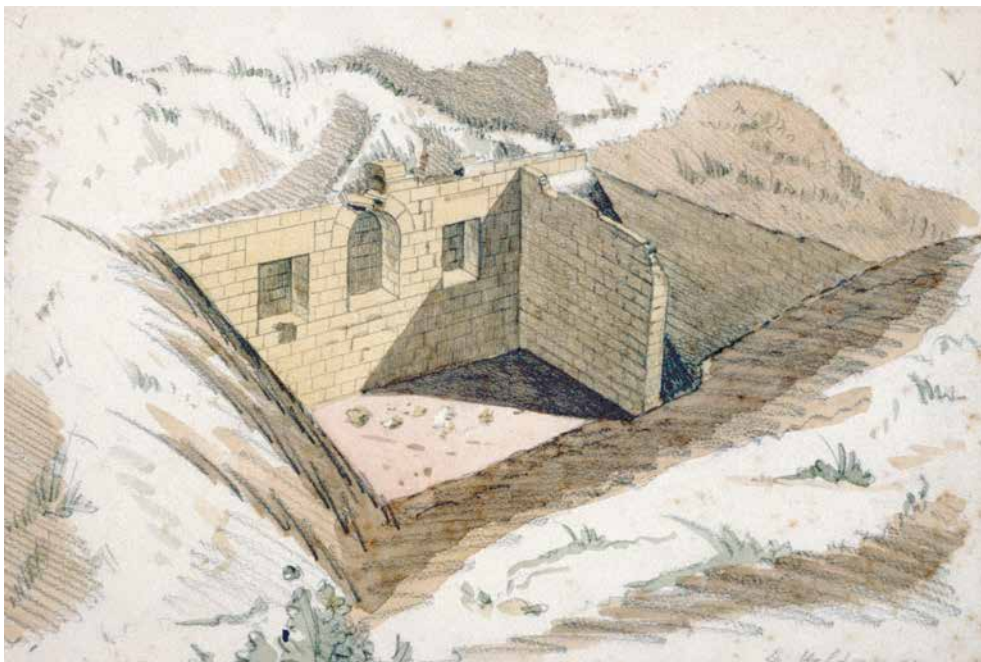
<sup>3305</sup> Braat 1953, 71.

<sup>3306</sup> Braat 1953, 68, fig. 13, no. 49-50.

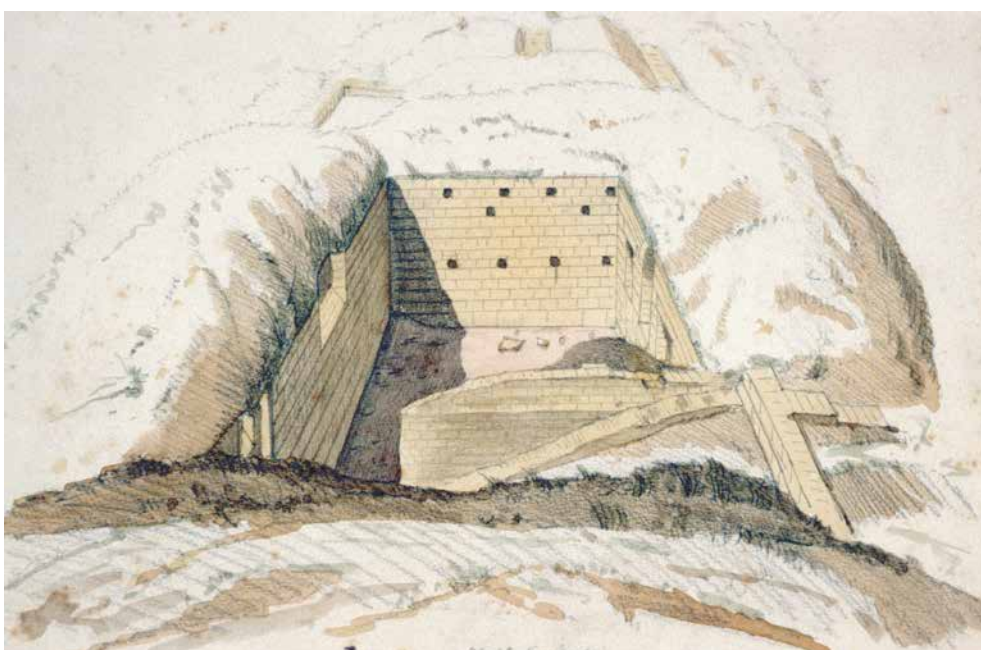
<sup>3307</sup> Braat 1953, 56.

<sup>3308</sup> Goossens 1916, 8.

<sup>3309</sup> Braat 1953, 55.



A



B

Fig. 43.5 Voerendaal-Ten Hove. Watercolours of the cellar commissioned by Habets. (source: C. Hoffmann)  
A north wall with alcoves and stairwell; B east wall with putlogs(?).

#### reconstruction

While Braat recorded a height of c. 1.95 m, in 1985 only 1.7 m of the walls of the cellar remained. Their original height must have been at least 2.4 m; an estimate based on the courses of stonework on the drawing of the east wall commissioned by Habets (but see below). The number of courses from the floor surface up to/including the small 'putlog holes' on this drawing was identical to that calculated from the two courses recorded in 1985. The putlog holes ran through the whole of the wall, and were originally blocked at their east end. Normally, one would interpret these holes as belonging to scaffolding, as is depicted on an artist impression of the



A



B

Fig. 43.6 Voerendaal-Ten Hove. The same walls as in fig. 43.5 in 1985, much deteriorated.

construction of one of the caves in the villa of Jemelle (B/NA).<sup>3310</sup> Perhaps the holes were part of a rack or a series of shelves instead.

The vertical position and height of the three niches in the south wall is based on the number of courses on the second nineteenth-century drawing. The evenly distribution of their width and the spaces in between is based on the 1:500 plan of Habets excavations. The presence of a splay window/light well in the north wall is also based on the mentioned nineteenth-century sources. The artist impression suggests a kind of blind niche, but an opening is shown on one of the excavation plans (1:500; State Archive 455, II; scan 1990-20763). For our reconstruction, a common form was chosen, with a receding back and a window-opening only above ground level. Gridirons preventing burglars entering cellars (or other rooms) are attested at many sites,

<sup>3310</sup> Mignot *s.a.*, 23; another example in Gorhambury (Neal *et al.* 1990, Fig. 60).



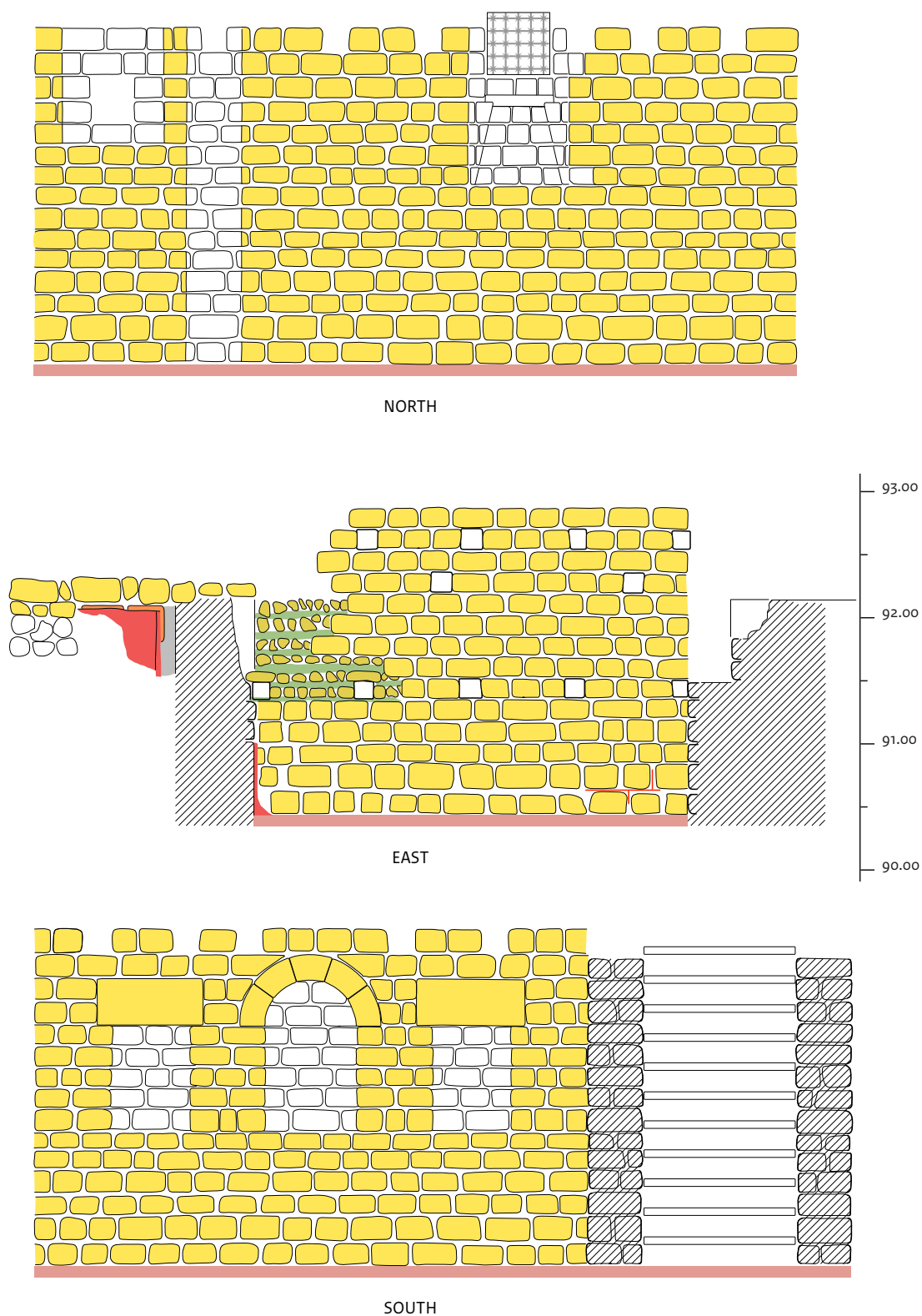


Fig. 43.7 Voerendaal-Ten Hove. Reconstruction of three walls of the cellar; in the short wall part of the core of the wall is shown.

for instance at Kerkrade-Holzkuil.<sup>3311</sup> Opposite of the stairwell a second splayed niche is depicted on the 1893 artist impression. It seems to be smaller and shallower and on the right side some kind of vertical slot is suggested, maybe indicating a doorpost. The excavation plan positions the niche opposite the wall of the stairwell, but in the reconstruction it is moved to the left (west) to light the stairwell, probably not with daylight but a lamp placed in it. No remains of the stairs into the cellar were found, so the steps must have been constructed in wood (see below).

<sup>3311</sup> Tichelman 2005, fig. 5.2.18 and Hoss & Van der Chijs 2005, 222, fig. 7.1. For other examples see Mutz 1960-61; Kienzle 2011, 12-14.

Above, the height of the cellar was reconstructed to at least 2.4 m. This is already quite high, for Roman cellars sometimes measured only 1.8 m high,<sup>3312</sup> although most are at least 2 m high. The reconstructed height of the cellar at Kerkrade-Holzkuil is 2-2.2 m under the beams and 2.3 m at Houtem-Ravensbosch.<sup>3313</sup> However, a photograph of one of the cellars at Jemelle suggests a height of c. 2.5 m, with still no rafter holes present.<sup>3314</sup> Photographs of a cellar at Gerpinnes-Augette (B/HT) suggest a same height, on basis of the niches being 70 cm high.<sup>3315</sup> The cellar at Basse-Wavre (B/WB) is described as being 2.7 m high.<sup>3316</sup> To the minimum of 2.4 m at Voerendaal, at least one more course of stonework has to be added, on top of the central niche in the south wall (the beam slots at Bocholtz-Vlengendaal are in the stone course directly on top of the niche). The beams of the ceiling/floor of room 5a could have been placed in this course at c. 2.9 m above the cellar floor/c. 93.10 m NAP.

The latter level lies 1.30-1.35 m above the minimum floor height of room 13 and 14 (91.79-91.74 m NAP) at the front of the building (south side). Although our reconstructed cellar is very high, there are no indications that the number of stone courses in the nineteenth-century drawings are incorrect, or that the upper courses were lower than those lower down. For now, we will assume that the reconstructed height is correct. A different level of the floors in the southern and northern part as such could be possible, but both the plans of Braat (with incorrect levels in relation to NAP) and the ROB (trench 9) suggest that it was not more than c. 30 cm. The floor of room 5a must have been on a level 1 m above that of surrounding rooms.

A last question concerns the position of the stairs, because its centre line is at the same location as the wall between room 1 and 6/7 (!), where the presence of a door is illogical or even impossible. A possible solution is that there was a small landing/broader step at the top of the stairs, with a trapdoor giving access to room 5.

#### STRUCTURE 401 / trench 20, 21, 27 (Fig. 43.8-43.9)

##### *investigation*

This large building was almost completely excavated in 1985, except for the southeast corner and a 1.35 m wide north-south running strip.

##### *description*

Building 401 is the best preserved stone building on the site. In the north only some 20 cm of the foundation of irregular limestone blocks remain, as in the other buildings, but to the south the height is at least 30 cm (the drawing shows the outer face of the wall of the largest room, thus with the buttresses not visible). Here, this base layer is covered by ever more regular limestone blocks, alternating with 5 cm thick layers of mortar. It's not sure if the rectangular blocks of the two upper courses were already above-ground or still part of the foundations. Some blocks showed red staining (presumably caused by fire) and must have been very near the ground level.

The largest part of the building measured 27.7 x 12.7 m (exterior) and had walls 60-70 cm thick. Each long wall had at least four, but probably five buttress-like projections; facing inwards at the west and outwards at the east side. Their dimensions were 40 x 100 cm. In the southern short wall, an outward facing projection was present (40 x 200 m). In the northern wall, there would also have been a projection, but it was situated for the most part under the baulk between trench 20 and 27; moreover pit 728 could have destroyed it partly (see below).

At the west side, a longitudinal room of 3.4-3.6 m wide was attached to the core of the building. It is not possible to say if this feature was original. The plan suggests that the foundations at the north side of the building were made in one go, but the documentation is not meticulous enough to prove this. The absence at the south side of a wall connecting the corridor or portico to the core of the building, rather suggests that the former was a later addition. It is remarkable that the preserved part of the wall is some 15 cm off-centre of its foundation (Fig. 43.9). The wall in

<sup>3312</sup> E.g. Bocholtz-Vlengendaal (Goossens 1916, pl. 2/fig. 6, pl. 5 section C); vicus Walheim (D/BW) house 19, under the beams (Planck 1988, 7).

<sup>3313</sup> See Tichelman 2005, 62-70 (Kerkrade) and Remouchamps 1925, 48-50 (Houthem-Ravensbosch).

<sup>3314</sup> Mignot s.a., 12.

<sup>3315</sup> Brulet 2008, 335-336, fig. 94.

<sup>3316</sup> De Maeyer 1940, 31.

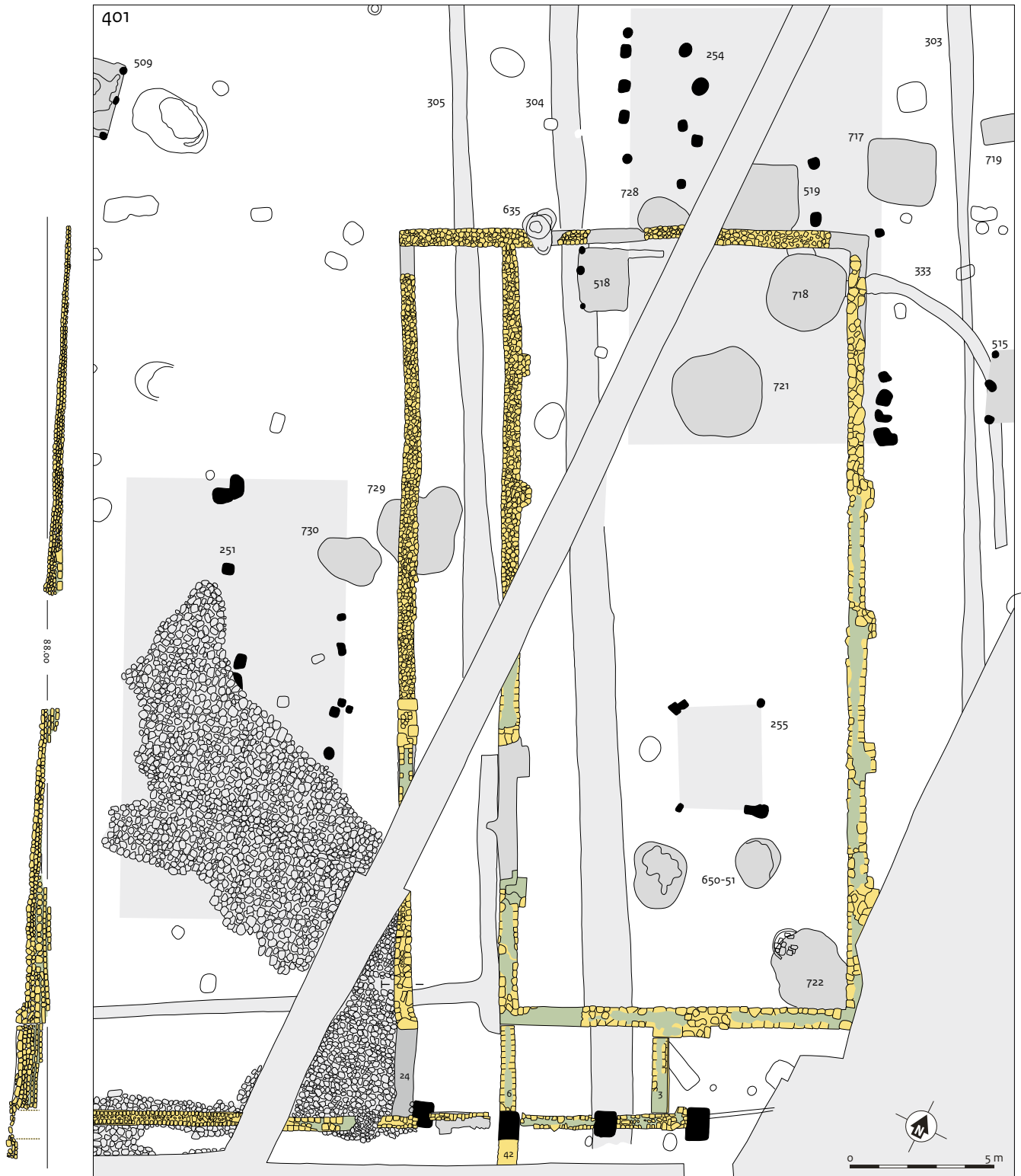


Fig. 43.8 Voerendaal-Ten Hove. Plan of building 401 with side view of the west wall (core) seen from the outside/portico (cf. figure 43.9) and adjacent structures.

this section was 55 cm wide, with a core of 15 cm between the facing, filled with mortar and smaller pieces of limestone.

For sure a later addition are the short walls abutting the south wall of building 401 (21.003 and 6) and wall 416 (21.003 only). A third short wall (21.024) is represented by a layer of gravel only.

The short walls show an extension of building 401 by at least 3 m. Four large rectangular post pits must have been part of the same extension. Drawings of the sections/side views of wall 416 and

the post pits were not made, but the wall seems to be cut to accommodate the posts. A note on the field drawing states: 'Post hole ... on stone foundation [of wall 416]; the latter is broken up to a great depth to place the post.' Wall fragment 21.042 is an extension of 6, but continues outside the excavation. Its dimensions and function therefore remain unknown.

*layout and entrances of the building*

There is no hard evidence for the locations of the entrances (barn-doors) in the west wall, but the location of the projections in the long walls makes one single central entrance impossible. The alternatives are two entrances next to each other in bay 3 and 4 or in bay 2 and 5; the latter weakening the structure less. Probably, there were no barn-doors in the east wall (cf. building 402 below). Anyway, the building was probably divided in two halves which could have been used for store both the unprocessed crop and treshed grain that still needed cleaning. The function of the portico or hallway at the west side is not known, maybe it was intended for intermediate storage, protected by a roof, of material (to be) processed at the threshing floor 420. It would also be used to access the addition at the south side of the building. The large post-holes suggest an open front and a quite substantial construction; a kind of platform for loading and unloading? Alternative interpretations are that of a stall for the oxen used in treshing and/or the equipment used.

*special features*

Pit 718 and drain 333 connected to it are special features, albeit with an unknown function (cf. Section 9.3.3). Pit 721 is situated near 718 and could have been contemporaneous, but this is not certain, it could be later.

In theory it is possible that hearth 650 and 651 were operational when building 401 still stood upright and had its roof, but these features could as well date from a phase the building was in ruins (see hearth 635 below). Pit 722 is certainly Late Roman (or later), as already suggested by its position against the foundations of 401 (weakening them).

*disappearance of the building*

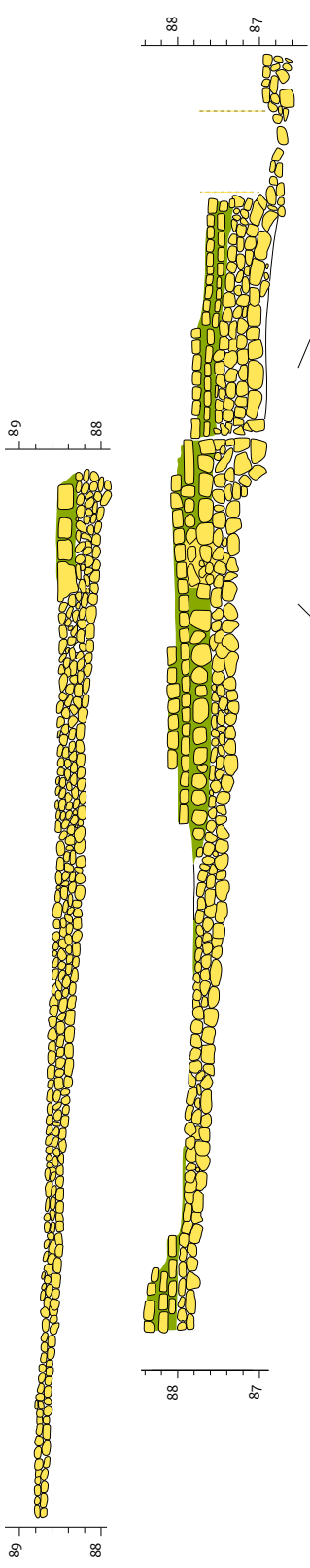
The staining of some stones as mentioned above, made the excavator think that the building was destroyed by fire. This seems to be the only indication, however. There is no documented burn layer, let alone such a layer covered by the tiles of a collapsed roof.<sup>3317</sup> It is not possible to say when 401 ceased to function as a roofed structure. The presence and alignment of some younger features and find material only suggest that its walls were still present/visible in the Late Roman period and Early Middle Ages.

*finds/dating evidence*

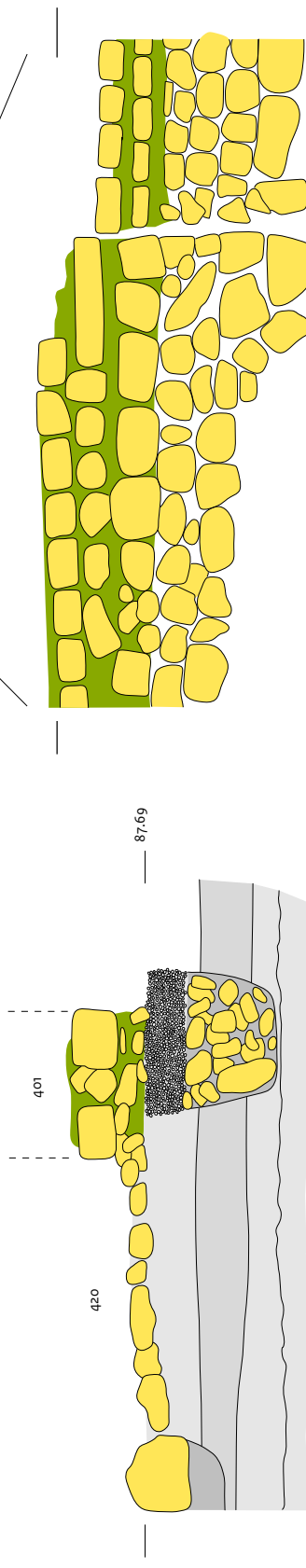
It is obvious that ditch 304 and 305 precede building 401, with the infill of the latter ditch dating from the second half of the first century AD (or beyond). Building 254 also precedes the barn and is at least Roman in date, but its features contain no finds providing an accurate terminus post quem. At first sight, pit 728 and 729 also seem to be intersected by the walls. However, pit 728 was already visible at a high level and is certainly younger than the building. The plans suggest that the wall of 401 was built over pit 729. Although the drawing of the outer facing of the wall (Fig. 46.11) shows that it was severely damaged precisely at this location, most finds from the pit also suggest it preceded building 401 (Chapter 46). The activities that damaged the walls, could have been the explanation for some later pieces of pottery. An alternative explanation is that this wall was a later addition to the building. Hearth 635 is younger than building 401, because the top of the foundation was demolished when the hearth was constructed. The only find is a small (shoe?) nail. The features of 401 do not contain datable finds, because there are no foundation trenches wider than the foundations themselves and nothing was found between the stones. A black-slipped beaker Niederbieber 33 has an item number referring to 401, but it was actually found near/against the wall outside the building (401-1; Fig. 23.50).

<sup>3317</sup> Willems 1986, 147.

401. West wall (core) from outside/portico



401/420. Portico wall and foundation from the South



403. West wall from inside

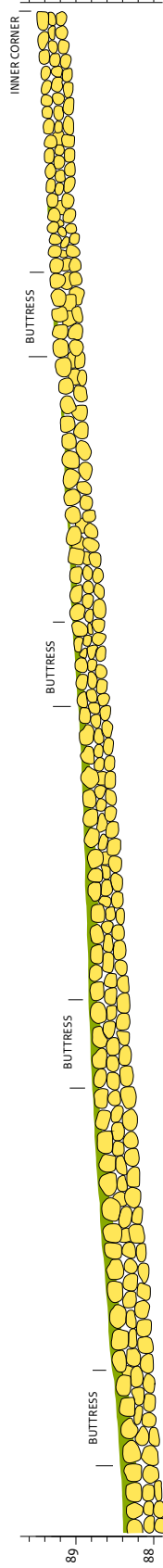


Fig. 43.9 Voerendaal-Ten Hove. Side views of walls/foundations of building 401 and 403, with section and detail of the latter building. Side views scale 1:90, detail and section 1:30.



Fig. 43.10 Voerendaal-Ten Hove. Plan of building 402 and adjacent features.

**STRUCTURE 402 / trench 11/17, 26, 174-1767 (Fig. 43.10-43.11)**

*investigation*

Small parts of this building, mainly the west wall, were investigated in the trenches of 1929. In 1985 the northeast and southeast corners were excavated. These parts formed the anchor points for those excavated earlier. The width of the building was already established in 1929 by means of a small trench. The interior of the building was not uncovered by the ROB because it was in the centre of the Early Medieval cemetery and part of the area to be preserved anyway.



Fig. 43.11 Voerendaal-Ten Hove. The north wall of building 402 with 'buttress'; inside the building the Early Medieval graves 383-385 are visible and in the background 386.

#### *description*

The building was 30 m long and 11.6-12 m wide (exterior), with walls of 40-80 cm. Each long wall must have had four projections, each short wall two, all facing the interior or the building. Their dimensions were 40-55 cm x c. 1.6-2 m. The remaining height of the walls, or foundations to be more precise, was c. 25 cm. It is not certain how three short stubs of stonework on the outside of the west wall, recorded by Holwerda, have to be interpreted. Neither of them is aligned with the wall (419) between the '*pars rustica*' and '*pars urbana*' further west and the middle one would have blocked a hypothetical entrance (see below). Nevertheless, the southern one is depicted as a possible part of 419.

#### *layout and entrances of the building*

The location of the projections in the long walls show that the building had 5 bays. There could have been two entrances, similar to building 401 and 403, but in this case, a single entrance in bay 3 is also a possibility. The presence of the planting holes and ditch 302, make one or two entrances in the east wall unlikely.

#### *finds and dating*

Building 402 neither intersects or is intersected by other features. Needless to say, the Merovingian graves in and around it were dug long after its construction (cf. Section 13.2 and 42.5).

### STRUCTURE 403 / trench 68, 69, 95, 96, 181, 182 (Fig. 43.9, 43.12)

#### *investigation*

Building C as it was formerly known, was discovered in 1986. In 2004 the southern end of the building was investigated via two trenches. The exact position of these is unknown, but the deviation is not more than 10-30 cm.

#### *description*

This building measured 27.8 x 12.6 m (exterior). The foundations were 55-75 cm wide. At the north side of the building, they were preserved over a height of 35-40 cm, downslope increasing to 55 cm. Here a layer of mortar was present on top of the three courses of irregular limestone blocs, perhaps marking the bottom of the wall proper. Each long wall had five buttress-like projections, c. 3.4 m apart and pointing to the west. In the north wall, one such projection was present. The location of a possible counterpart at the south side was not excavated.

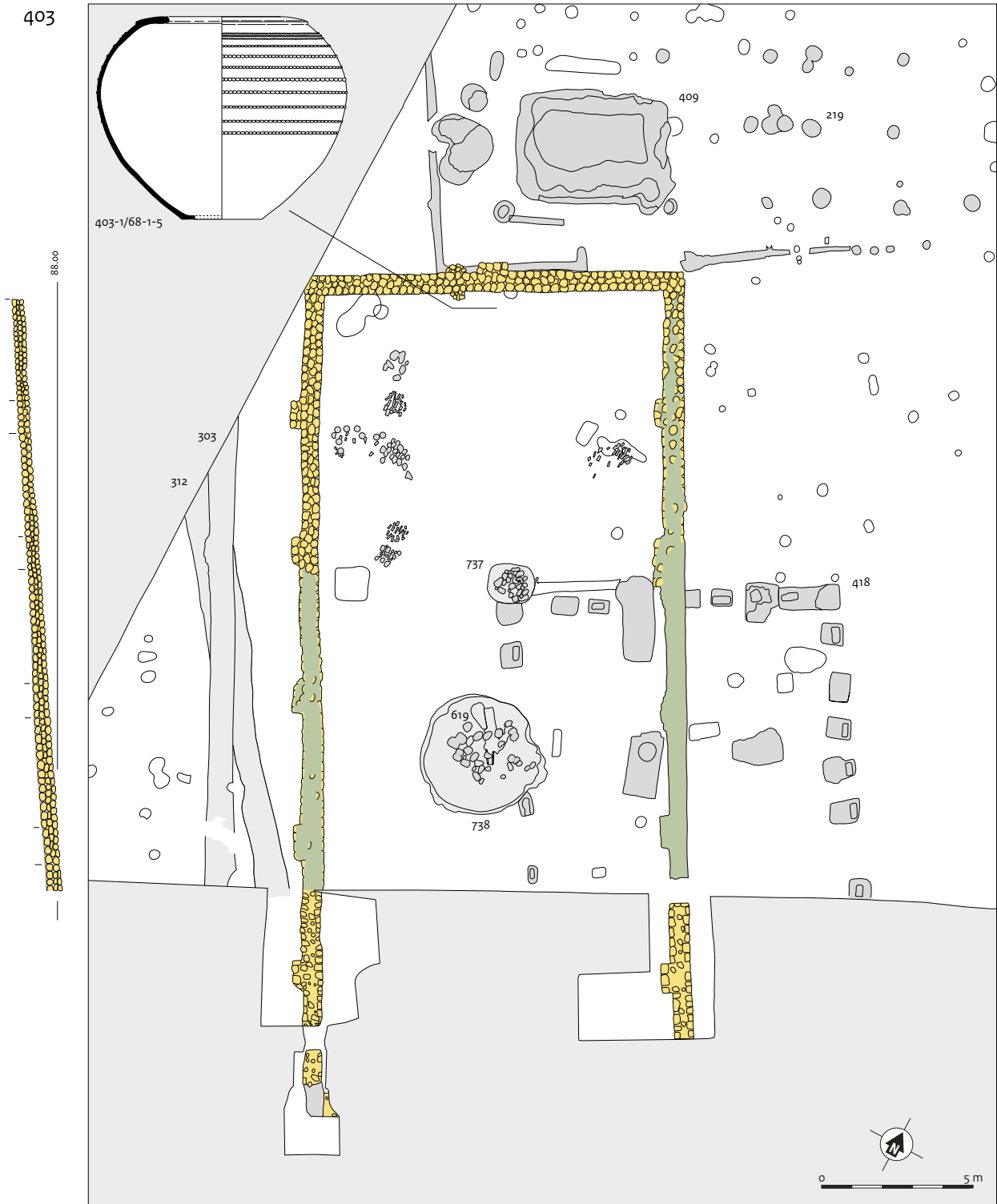


Fig. 43.12 Voerendaal-Ten Hove. Plan of building 403 with side view of the west wall from inside (cf. figure 43.9) and adjacent structures.

*layout and entrances of the building*

Like building 301, this structure had 6 bays, and possibly the same location of the barn-doors in bay 2 and 5. If building 403 had anything to do with the cattle-dip 413, entrances in the west wall are to be expected. Regrettably, the area between both was not excavated, so there is no information on a bridge or culvert for passing ditch 302.



*special features*

In the interior of the building, in the northern part, six concentrations of either limestone blocks or tile found. Each measured up to one meter in diameter, with a thickness of 20 cm. The form and size suggests a function as pads for aisle posts, but it is unlikely that the original structure had these elements. The weight of the roof would have been entirely supported by the (posts in the) walls, as in the similar buildings on the site (401, 402, 405). Perhaps the 'pads' were part of internal walls or a secondary feature, such as extra supports when the roof construction weakened.

*finds and dating evidence*

The sherds of what once was a complete dolium were found near the north wall of the building (cf. Fig. 23.45).

Building 403 is preceded by 409 and 418 and especially the upper infill of the cellar of the former building is important, for it is intersected by 403 and contains many finds (dating around or shortly after AD 125, see below). In theory pit 619 could have been dug during the use of the building, although it is more likely that it belongs to a later period, when 403 was already (partly) in ruins.

## BATH 404 / trench 114, 141 (Fig. 43.13-16)

*investigation*

The bath was completely investigated in 1949 by Braat. In 1987 parts of the old excavation were incorporated in ROB-trench 114, but only the south-west corner of room 7 was indicated on the plan. The corner of drain 327 was indicated on the drawing, but not the stonework itself. Therefore it is not clear were some levels indicated on the drawing were taken, but probably the indicate the top of the walls of the drain. The drain is shown on some photographs. As all Braat's plans, '... drawn at the site by myself...', that of the bath is in scale 1:100 and sometimes rather vague. Some details on the plan presented here, are interpretations inspired by Braat's description of the remains.<sup>3318</sup> The levels taken by Braat as found on his field drawings are incorrect, as already mentioned in section 2.3.3 (also see Table 2.1). There are some spots where we can compare them with those of the eighties, however (Table 43.2).

The difference between the old and new levels ranges from 1.78 to 1.89, with a variation between the latter of not more than 11 cm, which is negligible. We therefore take the average difference of 1.83 m, assuming that 93.00 m NAP on Braat's drawings equals c. 91.20 m NAP in reality. In the description, only the original levels are mentioned. A second important assumption is that Braat's levels may be incorrect in absolute terms, but are correct respective to another. There is some danger is this, because the old and new levels in the portico directly outside the bath differ by 2-2.1 m. Moreover, we have to ignore the presence of different values on the plan in the publication of 1953 (which are still false). We must rely on the fact that Braat did see the remains of the bath in front of him, and that he could observe which floors were situated higher or lower than others.

**Table 43.2. Voerendaal-Ten Hove. Comparison of some levels taken by Braat and during the ROB-campaign of 1987.**

Location	Braat	ROB	Difference	Remarks
SW-corner room 7	93.23	91.34	1.89	top of foundations somewhat lower in eighties
NW-corner drain 327/α	93.10	91.32	1.78	c. 1.88 if Braat's level was taken inside drain and that by ROB on its wall
End of drain 328/β	92.85	91.06	1.79	both on top walls (tiles)
End of drain 330/γ	92.12	90.26	1.86	

<sup>3318</sup> Braat 1953, 59-62.

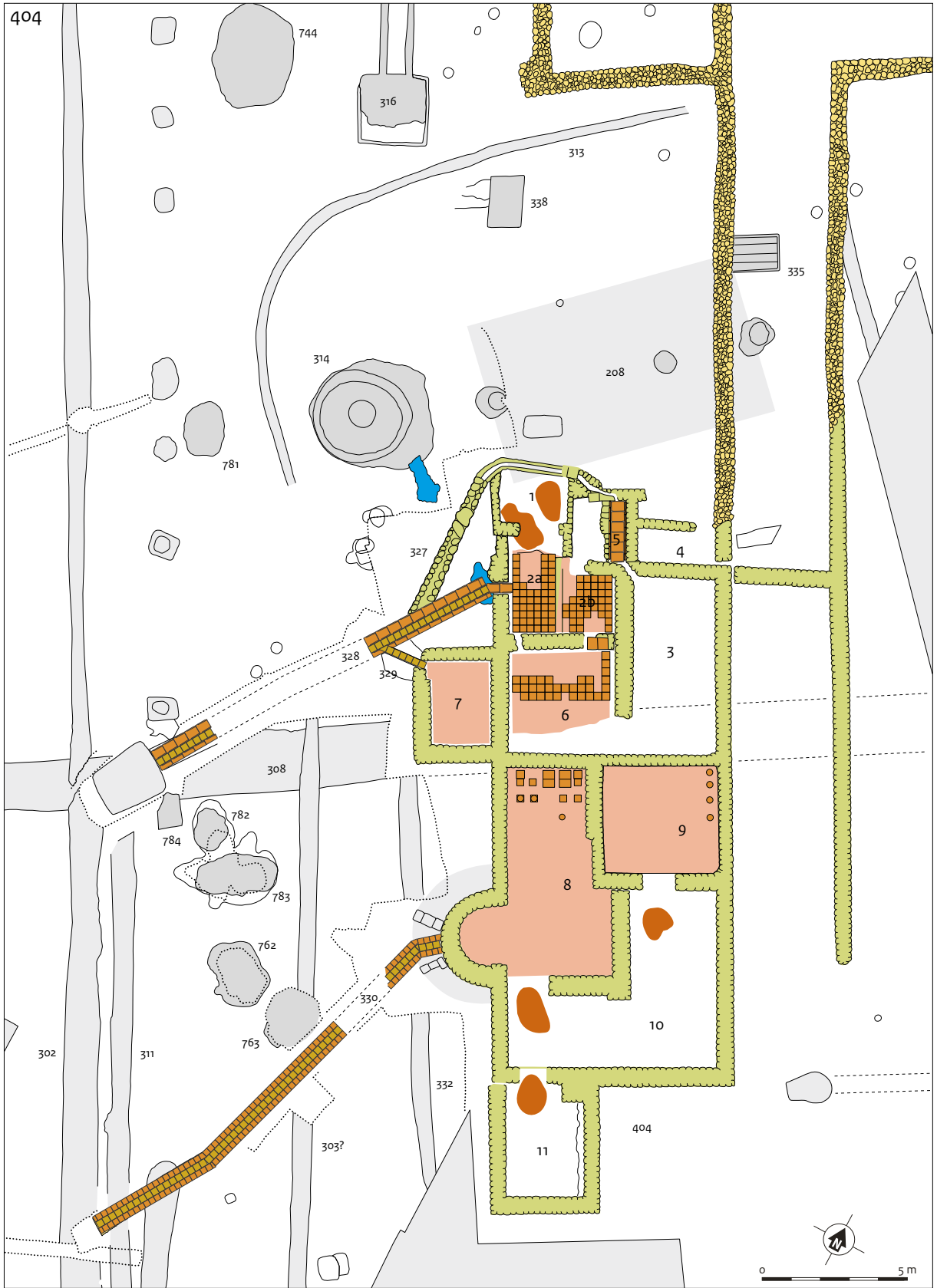
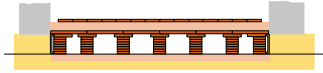


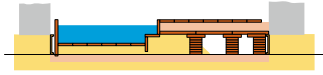
Fig. 43.13 Voerendaal-Ten Hove. Plan of building 404 and adjacent features.

404

A. phase 1



B. phase 2



328

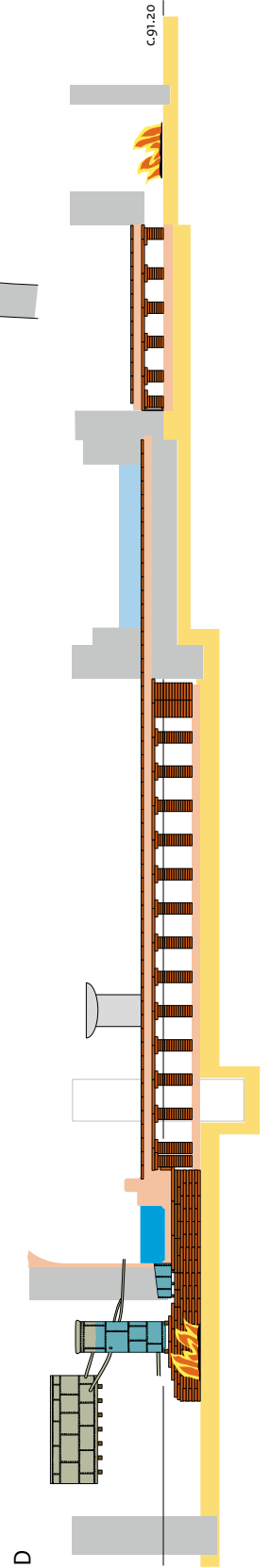
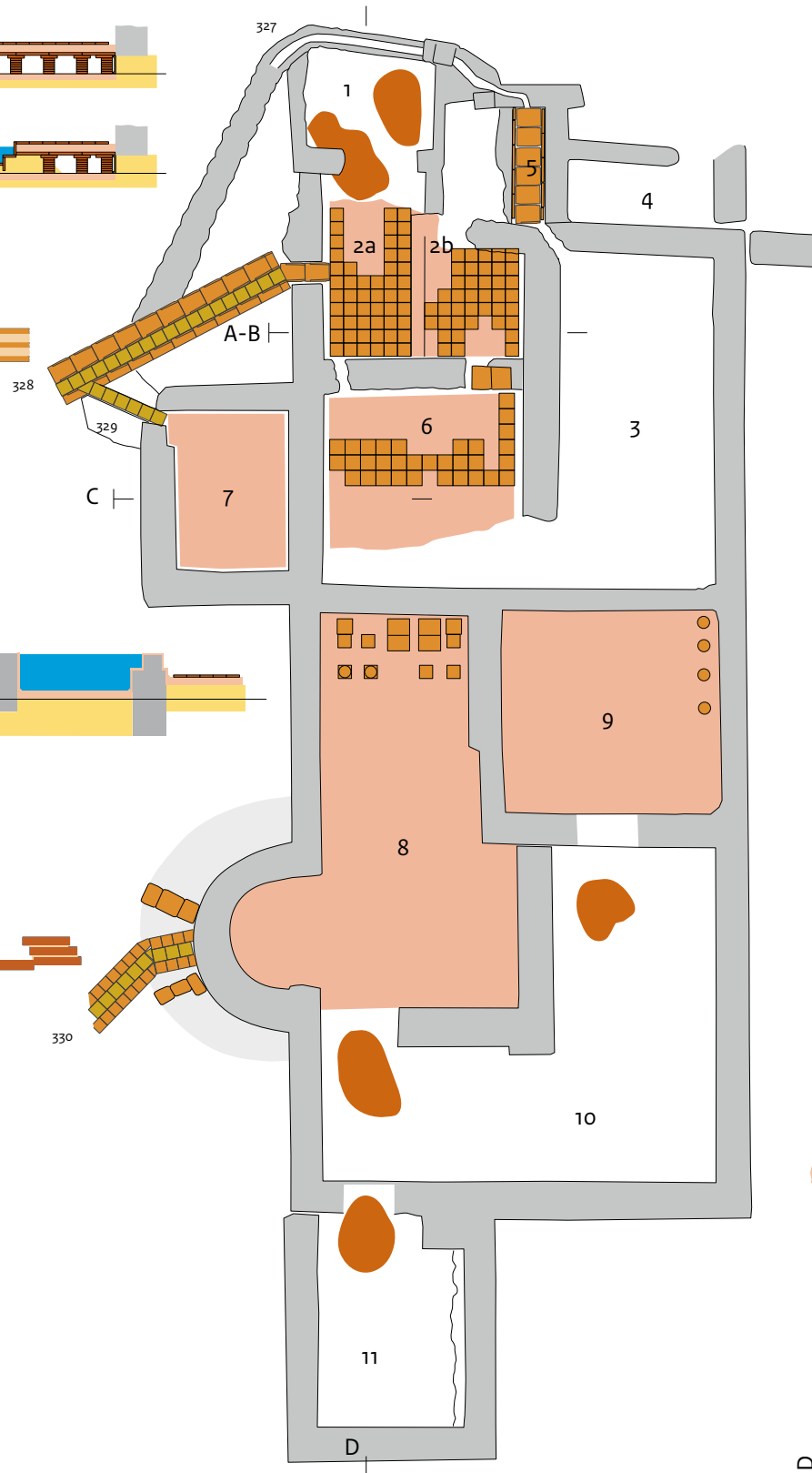
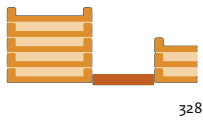


Fig. 43.14 Voerendaal-Ten Hove. Plan of building 404 with reconstructed sections through its lower levels (A-D) and two drains. Scale 1:125, drains 1:30.

## 404. phase 1

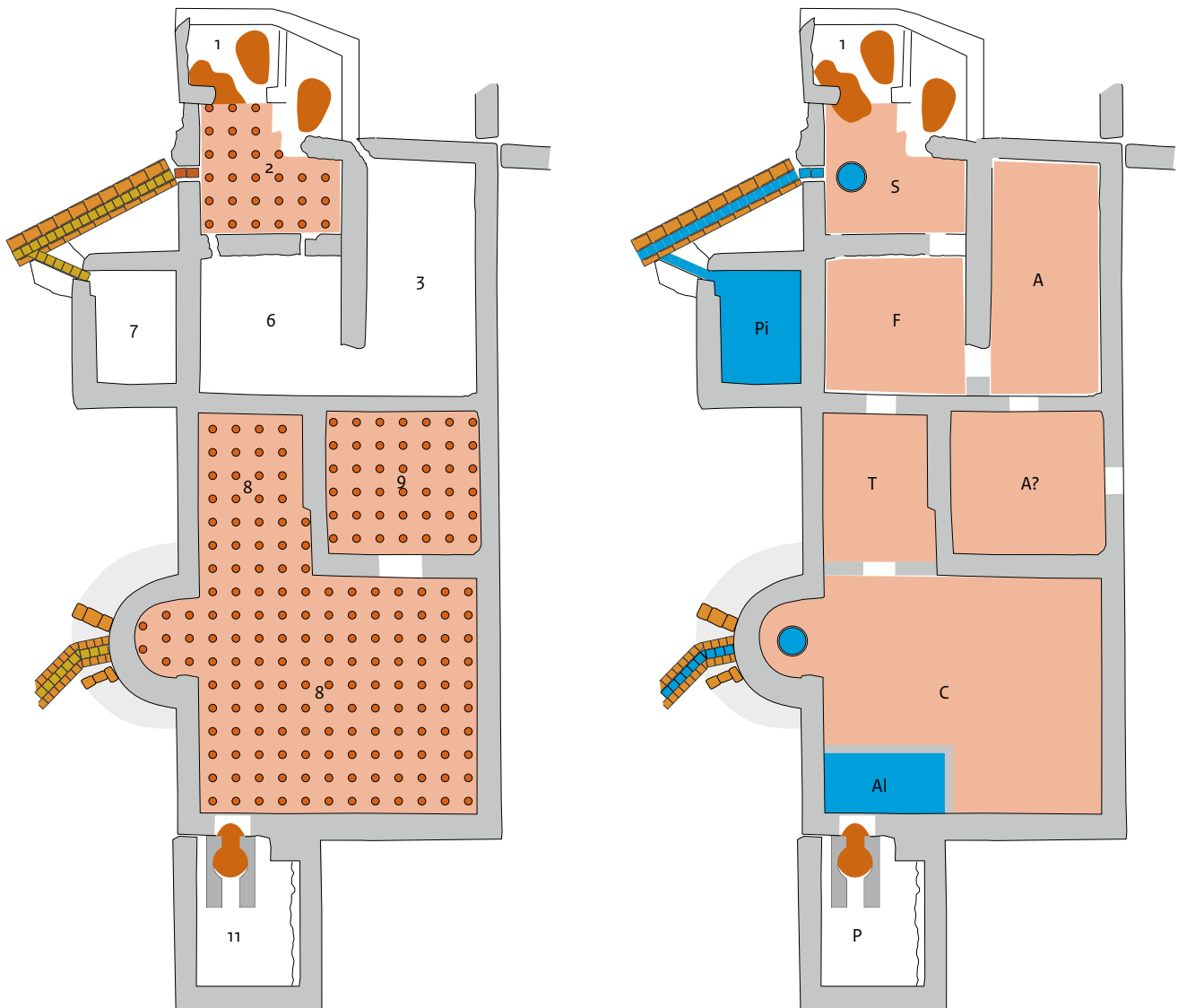


Fig. 43.15 Voerendaal-Ten Hove. The baths in phase 1; simplified plan of the lowest level (hypocaust) and the floor-level with indications of (possible) functions of the rooms. Scale 1:175.

A apodyterium; Al alveus; C caldarium; F frigidarium; Pi piscina; S sudatorium; T tepidarium.

#### description

In general, the remains of the bath consisted of the foundations only. Braat wrote on the drawing: 'All the foundations consist of irregular stone blocks, stones not neatly placed and cut.'

Although the preservation of the plan was fairly good, in only one of the heated rooms parts of the *suspensura* remained and nowhere were the lower courses of the walls with *tubuli* encountered. Room 1 measured c. 3.2 x 1.6 m on the interior. It was a *prae-furnium* with a floor of rammed loam and 'remains of fire', especially near the stoke hole. The position of the wall between room 1 and 2 in a second phase (see below) – if still present – remains obscure.

The dimensions of room 2 were 3.6 x 3.3-1.9 m. It was heated by a hypocaust, with a layer of concrete ('*opus signinum*') as a bottom surface and was probably a *sudatorium* (the functions of the rooms in the baths are discussed in Section 8.4). The columns were made out of seven square *bessales* (21 x 21 x 4 cm), with a *pedalis* (29 x 29 x 4.5 cm) on top. The corners of *bipedales* (60 x 60 x 6 cm) rested on four columns and were covered by c. 15 cm of concrete and square tiles of 24 cm square. The foundations reached no deeper than the bottom surface, an potentially unstable construction. In a second phase, half of the hypocaust was filled in and the floor was lowered by 40 cm to create a basin. Its walls were lined by tiles and the water was probably supplied by a pipe

## 404. phase 2

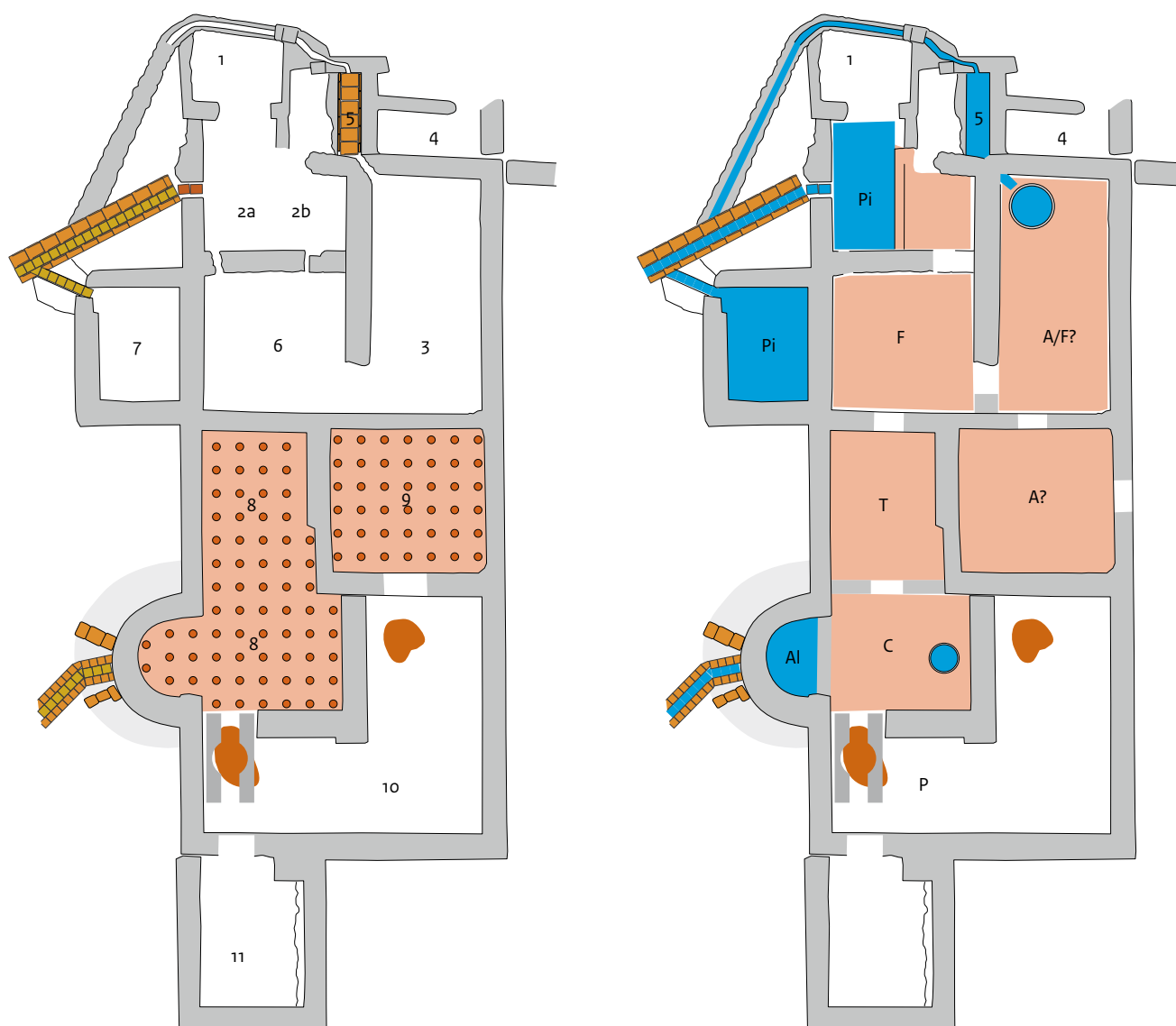


Fig. 43.16 Voerendaal-Ten Hove. The baths in phase 2; simplified plan of the lowest level (hypocausta) and the floor-level with indications of (possible) functions of the rooms. Scale 1:175.

A apodyterium; Al alveus; C caldarium; F frigidarium; Pi piscina; S sudatorium; T tepidarium.

through an opening in the wall to room 6 and '...a fragment of a tile, projecting from the corner of the floor [of 2b],<sup>3319</sup> would have been related to the water supply.'<sup>3320</sup>

Room 3 (6.1 x 2.7 m) originally had a floor of broken tiles and stones ('*testa contusa*'). In the northwest corner, an *imbrex* covered an passage through the wall, which opened into 'room' 5. That room 5 was a later addition, is shown by the butting of wall 50 and 52 against 49 and 53. It is part of what Braat interpreted as a lavatory (room 4) and had a grade of 15 cm from south to north. At the latter end the water flowed into drain 327/α and because its opening lay 17 cm higher, heavier material settled in 5. Braat provides us with no other details, but his field drawing suggests that at least the walls and probably the bottom of 5 consisted of *tegulae*. Indeed, a photograph made by the ROB shows that the east wall of the settling tank consisted of at least five *tegulae*, standing on their sides and with the flanges knocked off.

Room 6 measured 3.6 x 3.6 m and had a floor that was largely intact. On a layer of concrete a number of tiles were found, whilst others left their impressions. The concrete was moulded in a bevelled edge/oblique moulding ('*schuine richel*') against the walls (on the field drawing '*rondstaf*' = quarter-round moulding is crossed out and replaced by '*schuin afgemaakt*' = finished oblique). The floor of room 7 (2.9 x 2 m) to the west had the same design. Most important is that both

<sup>3319</sup> Braat 1953, pl. 9,2.

<sup>3320</sup> Braat 1953, 60.

floors apparently were not the bottom surfaces of a hypocaust. The floor of room 6 lies c. 17 cm below that of 2b (93.41 vs 93.58 m NAP). Because this room was situated next to 7, it must have been the *frigidarium*.

The floor of room 7 was situated even 45 cm lower (93.13) than that of room 2. It functioned as a basin (*piscina*) and not as a heated room according to Braat, based on the presence of another oblique moulding. It is interesting that foundation of the south wall of 7 was much less deeper than that of that of 6/8 (feature 25), but that both were built at the same time. On the drawing it was noted: '[The] wall of the small room with the quarter-round moulding much less deep than that of the hypocaust, but appeared absolutely interconnected during the demolition.'

The bottom of the foundations lay at 92.75 and 92.31 m NAP respectively.

Room 8 and 9 were both heated, as shown by some remaining *bessales* and the level of both floors (92.51 and 92.78 respectively with top of the wall at max. 93.23 and 93.24). The latter room was almost square (3.9 x 3.7 m). The former was reduced in size by wall 14/15, with a 90 cm deeper foundation than that of feature 11. Room 8 originally measured 7.2/2.7 x 10.3 m and later 3.6/2.7 x 7.3 m; without the apse. This apse was 1.5 m deep and had a compact 32 cm thick layer of rubble against the outside of the foundation. Room 8 included both the *caldarium* and *tepidarium*.

Created in phase 2, room 10 functioned as a *praefurnium* for 8 and 9, with two stoke holes accompanied by traces of fire. The floor level was indicated by a ledge (92.98 m NAP) and above it the wall was plastered and decorated with imitation joints (*Fugenstrich*).

Room 11 was the original *praefurnium* for room 8/10; it measured 3.8 x 2.7 m. A 'dark patch of ash' was seen on the floor before the stokehole. The latter was observed as a passage through the foundation according to Braat, but this is not clearly indicated on the plan.

Drain 327-330 led away the water from the bath. Drain 327/α was already mentioned. It was constructed from pieces of tile and covered by large blocks of stone. The fact that it runs over the location were the north wall of *praefurnium* 1 must have been, shows that it must belong to a later phase of the bath. It discharged into drain 328/β, that was constructed of five courses of *tegulae* on the north side and three courses of half *tegulae* on the other side, with tiles in between.

A patch of Cerithium clay was found between the wall of the building and the drain. Drain β is best explained in relation to basin 2a of the second phase and the connection to α (the discharge of the lavatory 4/5) also seems to be an indication that it is a later addition. However, as Braat remarked, the *piscina* of room 7 already was a feature of the first phase, and it also used drain β.<sup>3321</sup> A drain only for room 7 in phase 1, would have been connected directly to its north- or southwest corner. The connection between α and β was eventually blocked with stone and lumps of mortar, implying the disuse of the lavatory. A third drain was 329, a short connection between room/basin 7 and β, of which only the bottom made of tiles remained. The last drain was γ/330, connected to the apse of room 8 and made of *pedales* and walls of square *bessales*.

Drain 328/β ended 13 m from the bath in a pit of c. 2.2 x 1.7 x 0.2 m. Probably the waste water ran off through ditch 302, which had a primary function in enclosing the yard. Drain γ/330, ending after some 15 m, also discharged in 302. Braat did not realize both drains ended at ditch 302, because he observed '...a depression in the terrain, through which the water ran off.'<sup>3322</sup>

He mentions a depth of 57-100 cm for this depression, which is more or less in accordance with the 90 cm depth of ditch 302 at the end of drain 330. In the 1949 excavation ditch 308 was also missed, assuming that it ran continuously through the trench.

#### *finds/dating evidence*

Braat thought the bath was constructed at approximately the same time as the second villa.<sup>3323</sup> He acknowledged that there was only a small amount of material, because not much pottery was used in a bath, and that this prevented far-reaching conclusions. The finds came from 'In between the foundations...'<sup>3324</sup> but this probably does not mean in the foundation trenches or under/between the stones, but probably in the soil between two or more walls (see the dating of building 399 and 400). He lists a rim of a Dragendorff 18/31, dated to the first half of the second

<sup>3321</sup> Braat 1953, 62.

<sup>3322</sup> Braat 1953, 61.

<sup>3323</sup> Braat 1953, 52-53, 73.

<sup>3324</sup> Braat 1953, 53.



Fig. 43.17 Voerendaal-Ten Hove. Plan of building 405 and adjacent features.

century (1953, 73), but this find 1953-2.9/11452 (Fig. 43.4) is identified as an East Gaulish dish of this type, dating from c. AD 100-200; thus with a less precise date. The exact type of 'the neck of a flagon from the Flavian period' is unknown while it is not illustrated by Braat. Finally, there were 'Two rims of quite early forms of cooking pots with heart-shaped section.' which were early forms of Niederbieber 89, dating from c. AD 125. Most significant is perhaps the fragment of a Dragendorff 18/31 from lime-pit 335 (335-1/1953-2.9/13048; Fig. 43.4) in the portico. It was made in Central or East Gaul and has the same date as the piece mentioned above.

#### BUILDING 405 / trench 10, 165, 168-173 (Fig. 43.17)

##### *investigation*

Building 405 (E) was (partly) excavated in all campaigns between 1892 and 1987. The drawings by Habets are of limited use for reconstructing building 405, although he is the only excavator who documented the southernmost walls of the building. Holwerda documented part of the northern

hallway, parts of the eastern and western walls, as well as all four corners and the connection between building 405 and 406. Willems re-excavated parts of the northern hallway and a small section of the interior wall of the southern hallway.

*description*

As in many of the other buildings only the foundations remain, consisting of irregular limestone blocks, in this case supplemented with flint nodules and some tile fragments. The use of flint forms a similarity with the foundations of portico 16a. In the western wall of trench 10, the foundation was preserved up to a depth of 46 cm. The width of the foundations was c. 60 cm. Although building 405 was only partly excavated, it can be reconstructed with a considerable degree of certainty. The overall dimensions of this building are 29.5 x 21.0 m (exterior). The layout of building 405 is symmetric, with a large rectangular hall, sided by narrow hallways on the north and south. The central hall measures 28.6 x 10.7 m (interior). The northern aisle or hallway is 4.30 wide (interior), while the southern one was slightly narrower; c. 3.65 m. Both foundations of the northern aisle are characterized by buttress-like projections. In the northern wall three were documented, 4.5 and 5 m apart and projecting outwards. In the southern wall, the buttresses were less well preserved. Probably, five of them can be reconstructed. Remarkably, although most buttresses in this wall project towards the north, the central buttress projects south. Probably, this buttress had a constructive function in relation to the central core of the building. Probably, the stonework in the southernmost tip of trench 10 was its counterpart while pointing inwards. The projections (at least seven) in the same wall drawn by Habets pointed outwards, to the south. In figure 43.17 eight buttress-like projections are reconstructed.

*special features*

Hearth 607-613 and 649 are situated 'inside' building 405, but there are no intersections and the hearths can as well be older, contemporaneous or younger (cf. Section 9.3.2 and 9.6.4).

*finds/dating evidence*

Building 405 was preceded by 247, which was demolished in the Middle Roman period (Chapter 40). It also intersects ditch 306 and pit 705, but they cannot be dated with accuracy (both are (Early?)Roman).

**BUILDING 406 / trench 115 (Fig. 43.18)**

*investigation*

Building 406 was also investigated in almost all campaigns, but every time only partly and not in detail.

*description*

Of the wall section documented by Willems in 1987, only a 40 cm wide and 4 cm deep part of the foundation remained, consisting of mortar and roof tile fragments. The overall dimensions of building 406 were 14.2 x 12.8 m (exterior). Building 406 is fronted by portico 16a, which is 2.4 m wide (interior). The layout of building 406 consists of a large square room, measuring 11.7 x 11.0 m (interior), sided by a long narrow space of 11.7 x 2.0 m (interior). There are a number of indications that this is not the original plan of the building. Firstly, it can be suspected that the northernmost wall was constructed when the Late Roman tower 407 was already built. Furthermore, Braat's (or in fact: Holwerda's) drawing seems to indicate that this same wall was not integrally connected with the western outer wall of building 405.

*finds/dating evidence*

No finds.



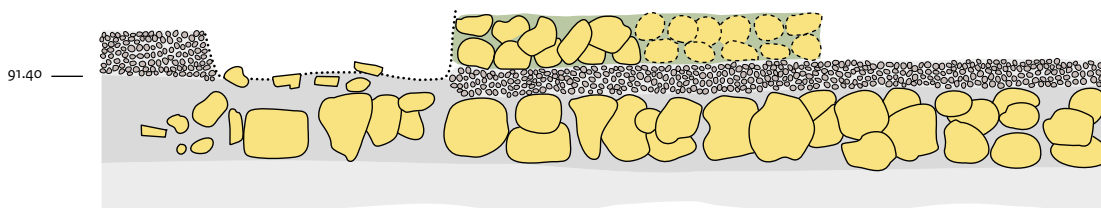
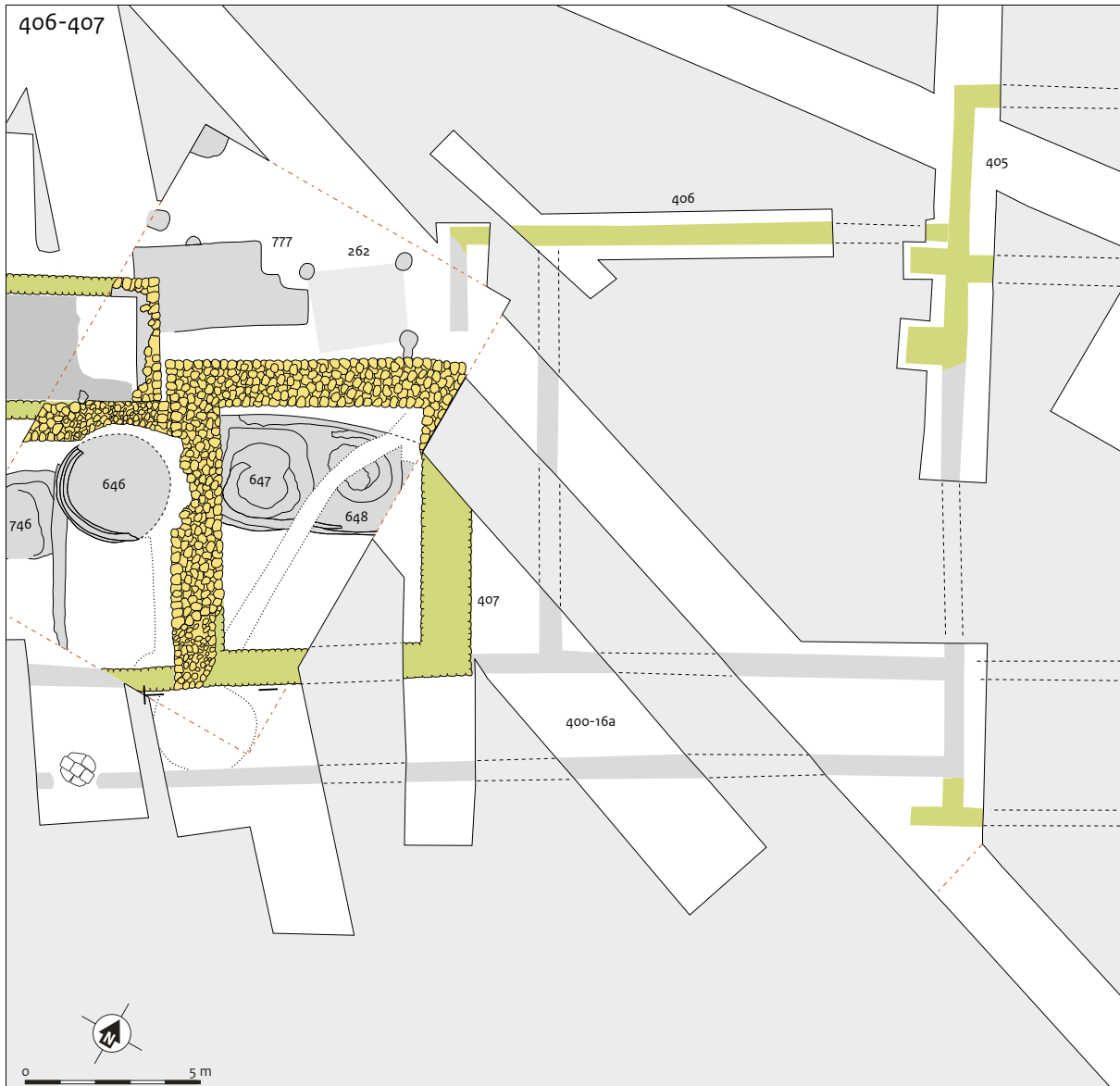


Fig. 43.18 Voerendaal-Ten Hove. Plan of building 406-407 and adjacent features. Side view foundations scale 1:30.

#### STRUCTURE 407 / trench 115 (Fig. 43.18; 43.19)

##### investigation

This structure was already recognised by Habets; notes on one of his drawing mention ‘walls of 140 wide 1 deep’. Braat dedicates not more than three sentences to his building D,<sup>3325</sup> and does not specify the (relatively large) depth of its foundations (supposed meant to support a multi storey building). The structure was already found by Holwerda and probably this is the reason the depth was not recorded. During the ROB excavations, only one section was drawn, but the observation was made that the foundation was much deeper in the opposite corner near hearth

<sup>3325</sup> Braat 1953, 59.



A



B

Fig. 43.19 Voerendaal-Ten Hove. Structure 407 during the 1987 excavations.

A the tower seen towards the north, with to the left of it pit 746 and kiln 646, with part of room 13 behind it; B detail of the corner of the tower, location of the section in fig. 43.18.

646. Remarkable is the broad wall (1 m) at the west side of the structure, that was recorded as 50 cm wide in the RMO excavations.

*description*

The building measured 8.5 x 9.2 m (exterior) or 5.7 x 6.8 (interior), with foundations 1-1.4 m wide. Over a layer of at least 30 cm of limestone blocks, possibly the remains of earlier buildings, a 10 cm thick layer of gravel was spread out. On top of that, 20 cm of limestone blocks bounded in mortar remained (Fig. 43.18).

*finds and dating*

Tower 407 is a later structure added to or succeeding the villa. It intersects kiln(s) 647/648, but these are not dated and thus provide no dating evidence for 407.

HORREUM 408-415 / trench 99, 100, 102, 103, 145-146 (Fig. 9-5; 9.14A; 43.20)

*investigation*

The *horreum* was investigated by Habets, Braat and the ROB. While the western half of the building is located exactly in the Dutch grid system through the ROB-excavations, the eastern half in Braat's trenches 145 and 146 is not. Of course the walls documented in the eighties showed the direction of the northern and southern outer walls, as well as that of the portico. The position of the eastern wall in Braat's trench 146 is not exactly known however, because the trench has no real anchor points at its southern end 70 m away in trench 107. The portico is only anchored some 50 m to the east by the remains documented in trench 9. Two plans of Habets' investigation already show the outlines of the two phases of the building. One is not very accurate but suggests the presence of the floor-supporting walls in the interior of the first phase.<sup>3326</sup> The other provides exact dimensions but shows nothing in the interior.<sup>3327</sup> It is a real mystery why Braat missed the western wall of the first building in his trench 145. It was not lost since Habets' times, because the ROB uncovered it again. The first building is even present on a plan made by the Leiden Museum, probably in 1947 or early 1948: it is a compilation of yet another plan from the nineteenth century,<sup>3328</sup> the trenches made by Holwerda and those of Braat's first campaign in the centre of the main building. Moreover, the fact that his reconstructed supporting walls were not straight, should have alerted Braat that the two phases were a reality.

Most patches of stones on the drawing of trench 145 are not shown in figure 43.20 because they don't align with the walls both to the west and the east. There are differences in Braat's field drawings concerning the number of floor-supporting walls against the west wall in trench 146: five on *Overzicht 14/scan 1990-19117* and six (one not found) on *Overzicht 22/scan 1990-19125* (as archived by the ROB/RCE). In figure 43.20 five are shown, because the field drawing with this number seems more accurate (but see below).

*phase 1, horreum 415*

The first, smaller *horreum* 415 or 'room 1' in figure 43.20, measured 21.6 x 10.2 m (exterior). In 1987 the foundations were present in the form of one or more layers of limestone blocks, covered by a layer of mortar. However, only one photo taken some over 10 m away shows part of the walls at the south side. The western wall is extended to form the end of the 4.3 m deep portico 20. This wall and the front of the portico were also covered with mortar. The western wall of the granary had a buttress-like projection at the outside. A counterpart in the eastern wall was not present or not observed by Braat. The long walls must have had two 'buttresses' each, all at the north side. The building had five floor-supporting walls, with a mean distance of 1.35 m.

*phase 2, horreum 408*

The building was extended with 11.5 and 2.45 m and measured 33.1 x 12.65 m. The position of the remains of the supporting walls in the western half (room 2), suggests that the walls of phase 1 were still in use. The seventh, most northerly wall either ran along the outer wall of phase 1 or the latter wall was used as floor support. The outer walls had buttress-like projections of different width, but at roughly the same intervals (c. 6 m). Next to the grain storage space proper (room 1/2), two more rooms were added. Room 3 was 12.7 m long and 6.8 m wide, room 4 measured 4.2 (=depth of portico) x 6.8 m. The symmetrical position of the buttresses in the west wall suggest that both rooms were added at the same time, probably at the same time phase 2 of the *horreum* was built.

*disappearance of the building*

Braat mentions a layer of burnt material in the trench wall at the north side, covering the remaining walls and with a layer of tile fragments on top.<sup>3329</sup> The second indication for a fire were the large quantities of burnt grain, most likely the material stored in the building (>900 grains/l).<sup>3330</sup>

<sup>3326</sup> RAL 455, blad I.

<sup>3327</sup> RAL 455, blad II.

<sup>3328</sup> Cf. Braat 1953, fig. 9. Here the north wall of the first *horreum* has a large number of buttresses.

<sup>3329</sup> Braat 1953, 59.

<sup>3330</sup> Willems & Kooistra 1988, 142.

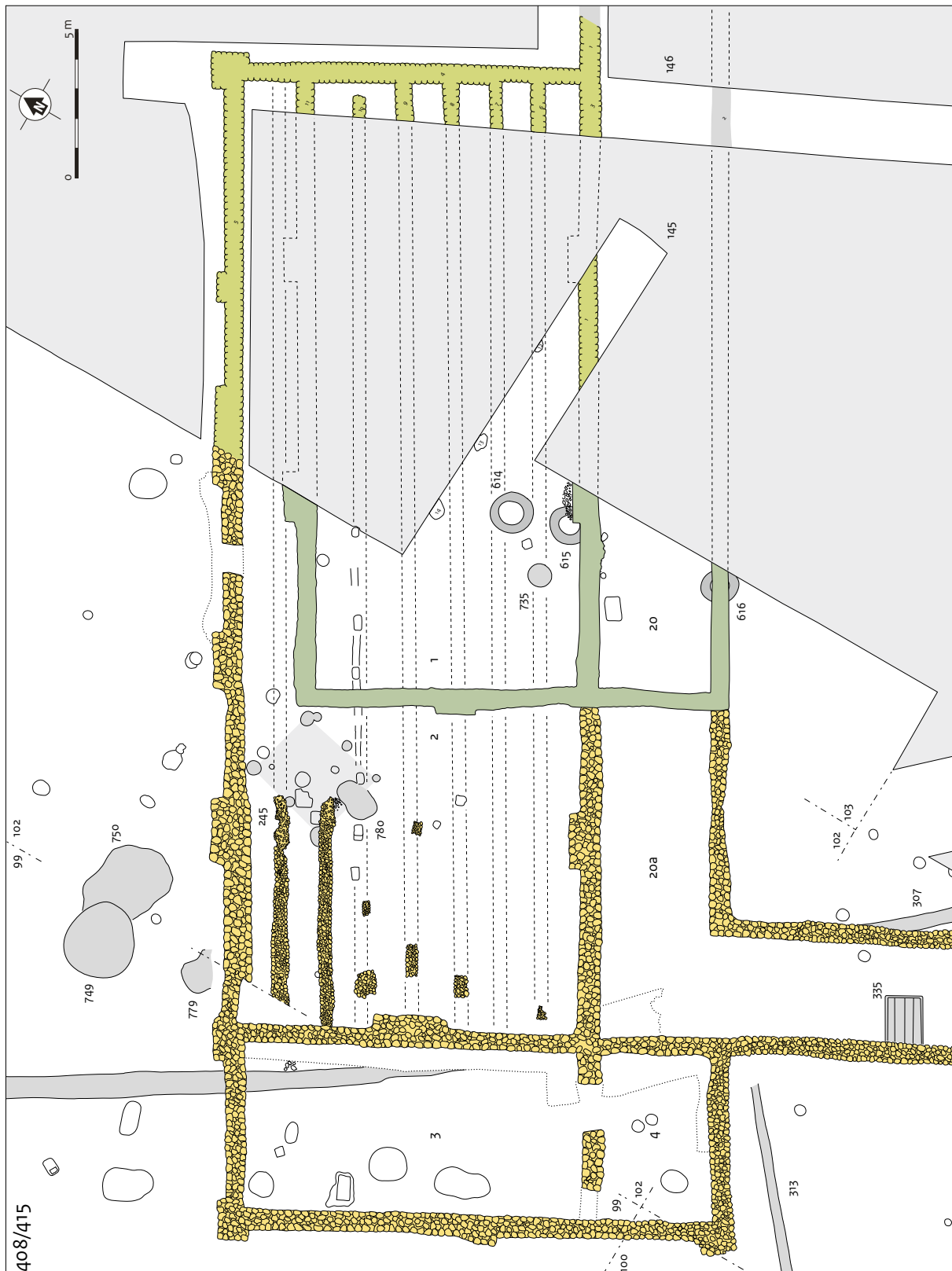


Fig. 43.20 Voerendaal-Ten Hove. Plan of building 408/415 and adjacent features.

*finds/dating evidence*

That the smaller *horreum* precedes the larger one is obviously the most likely option. The extended side wall appears the end of portico 20 and thus a feature older than the bath. However, it is possible that the wall was provided with a passage above ground (leading into a

wooden portico later to be rebuilt in stone). Two other indications are more important. Firstly, the stones of the *foundation* of phase 2 were drawn abutting the wall of phase 1 (no photographs of this location were made). In theory, it is however possible that the stones of the *walls proper* were joined. A second indication for the relative age of the buildings is the fact that the north wall of the *horreum* in phase 2 had foundations dug in 30 cm deeper than those of phase 1 (section drawings trench 102 and 103 in Appendix 22). Should phase 2 have been the oldest, its south wall also should have been quite deep, with only the north wall of phase 1 as a later addition possibly less deep. Structure 245 lies under phase 2 of the building; it seems to be Roman in date (Chapter 40). Hearth 615, 616 and probably 614 preceded phase 1 of the building. They belong to either the first villa 399 or the building phase of the second villa 400 (Section 9.6.3; 64.4.3), but are not dated as such. Ditch 307 is older than phase 2 of the *horreum* and is also not dated with accuracy, although its infill is clearly Roman in date, perhaps from the period the furnaces were in use.

There are three radiocarbon dates related to the *horreum*:

<sup>14</sup>C-date (charred grain): 1720 ± 50 BP (UtC-1578); 255-302, 316-385 cal AD (1 sigma); 145-150, 170-194, 211-423 cal AD (2 sigma).

<sup>14</sup>C-date (charred grain): 1710 ± 35 BP (GrN-19137); 259-282, 324-388 cal AD (1 sigma); 246-401 cal AD (2 sigma).

<sup>14</sup>C-date (charred grain): 1739 ± 21 BP (GrM-23787); 252-290, 320-361 cal AD (1 sigma); 247-384, 398-401 cal AC (2 sigma).

All three radiocarbon dates, all obtained by another method/instrument, are more or less the same. Only the UtC-1578 AMS date has a quite early terminus post quem (2 sigma) due to the larger standard deviation. The similarity is important, because the dates obtained in the nineties, are from the infill of an excavation trench dug by Braat. Our date from 2020 comes from the 'dirty' subsoil under the *horreum*; it confirms that the other dated grain also comes from the end phase of the *horreum*. It is interesting that the radiocarbon dates associated with the threshing-floor 420 as such are somewhat earlier, have another 'centre of chronological gravity' than those from the *horreum*.

#### BUILDING 409 (219) / trench 68, 95 (Fig. 43.21-43.22; 43.23-43.26)

##### *investigation*

The features of building 409 and 219 were documented at excavation levels 1, 2 and 3 in trenches 68 and 95. All features were sectioned. Several of these sections were drawn, especially those of the interior construction. These buildings are situated within a section of the excavation with a high density of features. In the 1980's, only a predecessor with a cellar (C' now 409) of the barn 403 (C) was recognized. Willems described the building as a single aisled building with a width of c. 5 m, surrounded by a kind of portico, indicated by small ditches. During the first stages of our analysis, the dating of the pottery in the cellar proposed by the excavators was confirmed (later first or early second century AD). In some post pits in the eastern half of the building however, pottery was present possibly dating from the first century BC. Therefore it seemed wise to assign the rectangular configuration of post in the east a separate number (219). This building is described in chapter 40.

##### *construction*

Perhaps the most striking elements of this building, apart from the cellar, are the narrow ditches at the west and south side of the structure, here not seen as part of a portico, but of the walls. In the sections no postholes underneath were observed and they probably were dug for sleeper beams/base plates. At the eastern end there are a number of small postholes however, so different constructions of the walls are possible. The ditches and postholes delineate a surface of c. 16 x 8 m. As pointed out above, at first we supposed the building had a core with posts (13.2 m

409/(219)



Fig. 43.21 Voerendaal-Ten Hove. Plan of building 409 and 219 with depths of the postholes. Scale 1:200.

long). If it is accepted that 219 is a separate building, only a small core surrounding the cellar remains, measuring 5.6 x 5 m. The four postholes at the corners have a depth of 28-46 cm (average 33 cm). Two short ditches could have been part of this core: 68.116 was interpreted as a burnt beam (6 cm high) and of 111 only the depth is known (9 cm). A row of post holes 3 m north of the building suggests the presence of a portico (not the same as proposed by Willems; here indicated by a dark grey fill). One of these features is interpreted as being part of 218, however. Their depth ranges from 9-13 cm. At the south side of the building there are also a number of postholes (dark grey), but their spacing is not very regular and four could belong to building 221.

#### entrances

In the southern long wall an entrance is present, although it is not certain that it was 3.1 m wide.

*roof*

The position of feature 68.063 and 187 relative to the western wall suggest a hipped roof at this side of the building.

*special features*

Within building 409 a cellar pit was present, measuring c. 5 x 3.8 m at level 4. At this level, narrow bands of darker material suggested the presence of planks. They were found outside the rectangular contours of the pit at level 5, so they apparently were not part of a revetment of the cellar walls. Possibly the planks formed a kind of boundary around the pit when the cellar was put out of use, preventing people or animals falling in. From level 4 two cross sections were drawn, showing an alternation of light grey, darker grey and light brown layers with some blocks of limestone. At higher levels, the pit was larger and probably its walls had eroded before it was filled in. Another possibility is subsidence took place at a later stage. East of the cellar, a number of pits were dug which appear to be also related to building 409. Feature 192 and 193 were only 15 and 7 cm deep (sections not drawn), 181 only 14 cm and 191 was 22 cm deep. The three remaining pits had a depth of 36-40 cm. The fill of the pits resembled that of the cellar: light-dark grey soil, with some bands of charcoal.

*finds and dating*

The southern wall ditch of building 409 is intersected by the foundation (trench) of building 403. A large amount of find material was collected from the features (Table 43.3-4), mostly from the large rectangular cellar pit, a relative large amount from the pits next to it and almost nothing – except for slag – from the wall ditches and post holes from the building itself (for the dating of building 219, see Chapter 40). A considerable amount of finds was found at level 1, but is not

**Table 43.3. Voerendaal. Quantities of finds from six categories related to building 409.**

Context	Pottery n	Wt (g)	Iron n	Slag n	Wt (g)	Bone n	Wt (g)	Stone n	Wt (g)	Brick n	Wt (g)
Cellar pit 2	923	18744	299	582	41511	88	2682	7	4861	20	6200
Cellar pit 3	160	3240	37	44	2621	13	683	2	3300	11	3300
Cellar pit 4	52	5362	1	12	216	9	727	6	13129	11	5900
Cellar pit 5	0	0	0	0	0	0	0	0	0	0	0
Pits 4-5	106	4306	34	161	6955	13	801	7	3782	8	3200
Building	1	11	0	29	1360	0	0	0	0	0	0
<b>Total</b>	<b>1242</b>	<b>31663</b>	<b>371</b>	<b>828</b>	<b>52663</b>	<b>123</b>	<b>4893</b>	<b>22</b>	<b>25072</b>	<b>50</b>	<b>18600</b>

**Table 43.4. Voerendaal. Quantities of finds from four categories related to building 409.**

Context	Glass n	Wt (g)	Bronze n	Handm. n	Pottery Wt (g)	Flint n	Wt (g)
cellar pit 2	5	15	7	5	115	1	4
cellar pit 3	0	0	0	2	8	1	2
cellar pit 4	2	13	0	11	94	4	224
cellar pit 5	0	0	0	0	0	0	0
pits 4-5	0	0	0	2	20	1	5
building	0	0	0	1	3	1	221
<b>Total</b>	<b>7</b>	<b>28</b>	<b>7</b>	<b>21</b>	<b>240</b>	<b>8</b>	<b>456</b>

409

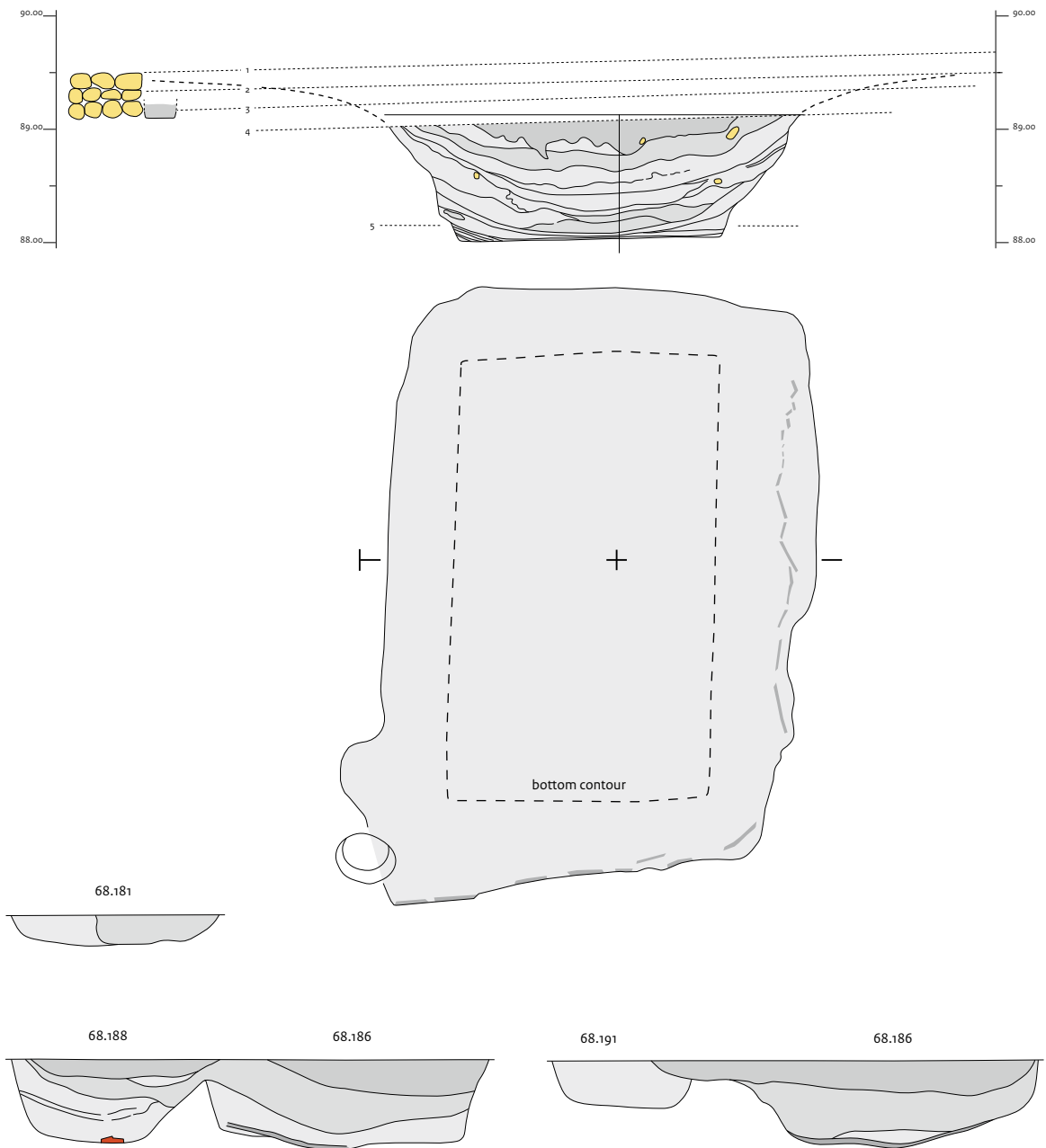


Fig. 43.22 Voerendaal-Ten Hove. Plan (level 4) and section of the cellar pit of 409, with an indication of the excavation levels above the section and the relative position of the wall-ditch of 409 and foundation of 418; sections of the pits in the western half of 409 (from level 4). Cellar scale 1:60, pit sections 1:30.

linked to building 409 here, because the layers involved extend beyond the limits of the building's plan.

The find material provides no date for the construction or demolishing/decay of building 409 itself. In the wall-ditches and post hole, as well as in the bottom layers of the cellar pit's fill (level 5) no (datable) finds were recovered. The amount from level 4 (and below) is considerable, but this level lies c. 90 cm above 5, and it is unknown if the finds mainly come from the upper part or from the lower part as well. Anyway from level 4, 3 and 2 the same fabrics and types of pottery were recovered. Moreover the shape of the layers (in section) at all levels above 5 suggest that they essentially originated from one episode of infilling, possibly even after a period during which the cellar was still an open pit with the wooden lining intact and only a slight influx of soil. Perhaps this period is more or less the same as that in which building 418 existed. Important is the presence of some limestone (5 fragments; 9.4 kg) and brick (19 fragments; 9.1 kg) below



409

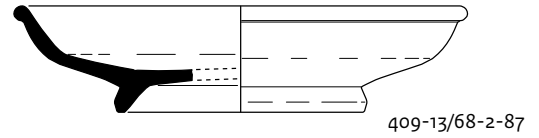
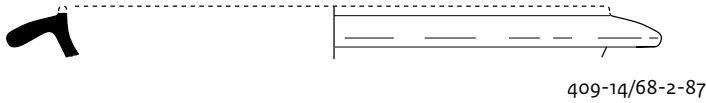
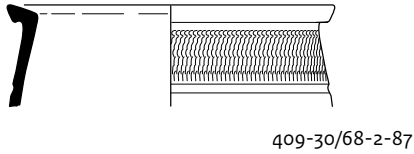
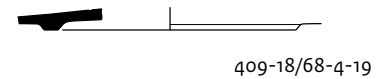
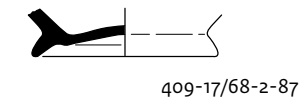
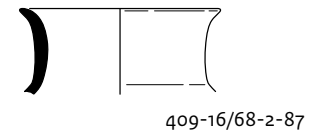
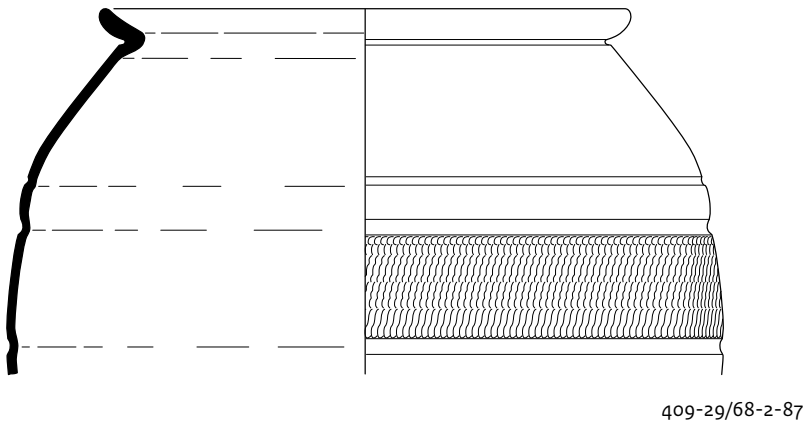
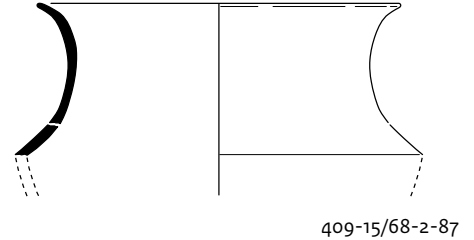
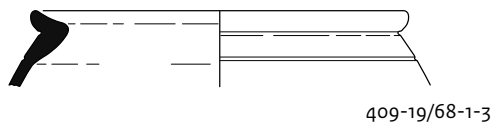
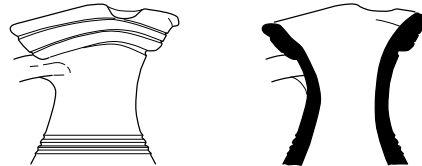
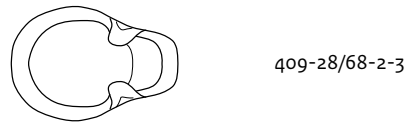
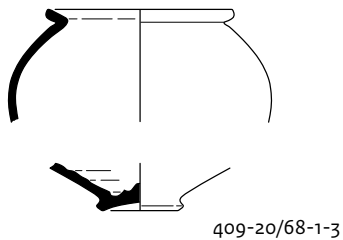
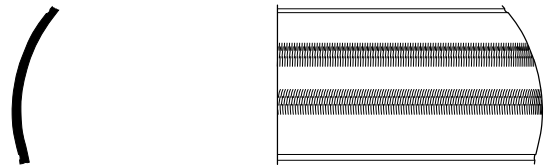
**TERRA SIGILLATA****GALLO-BELGIC****TERRA NIGRA****COLOUR-COATED****SMOOTH-WALLED/SMOKED**

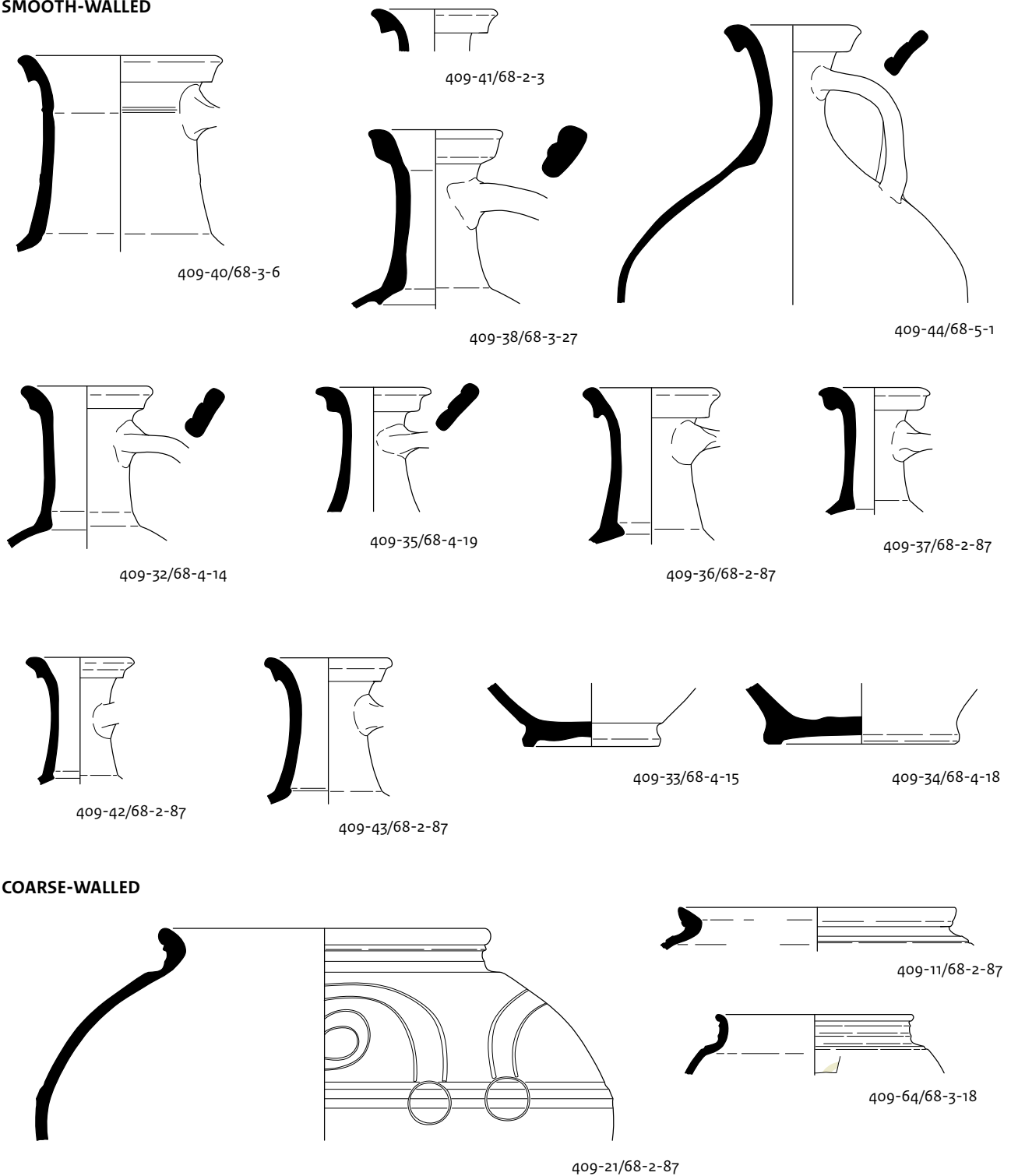
Fig. 43.23 Voerendaal-Ten Hove. Pottery from building 409. Scale 1:3.

level 4 in the cellar – with more brick above it – and the pits next to it. This points to the fact that one or more stone buildings were present or being constructed in the proximity (especially building 403). A special find is a small crucible from level 3 (409-54). The grey colour and porous structure show that it was used (Fig. 43.25).

The amount of pottery is too large to specify every fabric, form or type here, but a list and illustrations of the datable types (together with some glass and metal) summarize the finds

409

## SMOOTH-WALLED



## COARSE-WALLED

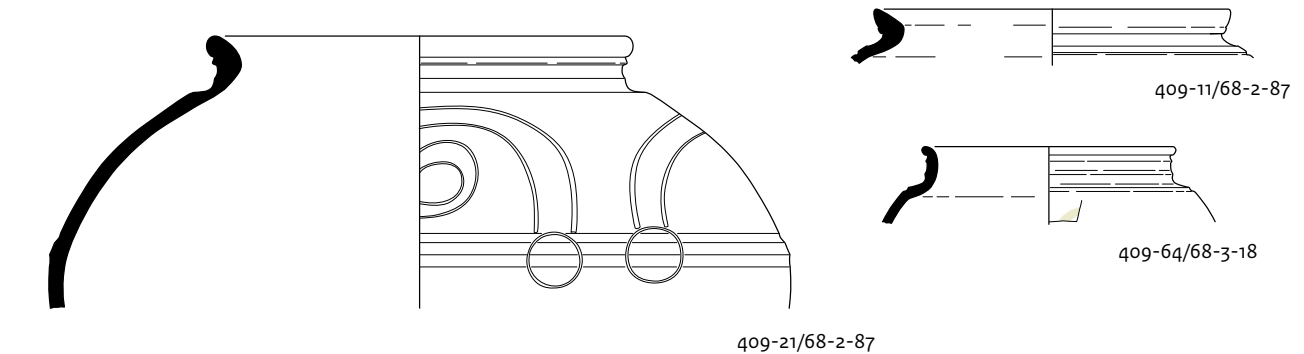


Fig. 43.24 Voerendaal-Ten Hove. Pottery from building 409, cont. Scale 1:3.

adequately (Table 43.5; Fig. 43.23-43.26). Only 3 MNI (3.7%) were produced during the first century AD only. Some 33 MNI (40.7%) belong to types produced no later than the first quarter of the second century. Forty-one vessels (50.7%) could be made later, but do well fit in the period before AD 125. Of 4 MNI (4.9%) only, the production started around AD 125/130. Among these is a smooth-walled/smoked beaker. However, it was found at level 2 and could be intrusive or may

**Table 43.5. Voerendaal-Ten Hove. Summary of dated finds from the features of building 409.**

Type	Date (years AD)	N	MNI	Figure
Terra nigra jar/beaker HBW 27	25/30-125	7	3	43.23
Bronze wire brooch with angular bow	30/70-150/180	1	1	43.25
Terra nigra beaker HBW 26	40/50-75	2	1	43.23
Flagon Stuart 107	40-90	4	1	43.24
Gallo-Belgic beaker HBW 15	40/70-125	37	5	43.23
Amphora Dressel 20	50-80	3	1	43.26
Flagon Stuart 108	50/70-120	23	4	43.24
Amphora Gauloise 4	50-125	3	1	43.26
Mica-dusted beaker Stuart 301	50-150	2	1	-
Mica-dusted collared bowl Stuart 302	70-120	1	1	-
Colour-coated beaker Heerl-BE1-4/Stuart 1	70-120	22	6	43.23
Colour-coated jug Heerl-JU1/Brunsting 14	70-120	4	1	43.23
Coarse colour-coated Heerl-JA1	70-120	6	2	43.25
Coarse colour-coated Heerl-JA4a-d	70-120	16	5	43.25
Coarse colour-coated Heerl-PL1	70-120	1	1	43.25
Coarse-walled jar Stuart 201 (Heerl/Noor1-JA4)	70-120	2	1	43.25
Amphora Dressel 20	70-120	1	1	43.26
Ribbed glass bowl Isings 3	70-120(-270)	2	2	-
Glass jar Isings 67	70-120/150	2	1	43.25
Coarse-walled jar Niederbieber 87 (Heerl/Noor1-JA1)	70-120/150	8	5	43.25
Mortarium Stuart 149/Heerl-M7	70-170	9	5	43.25
Coarse colour-coated Heerl-BO1	70-200	19	7	43.25
Coarse-walled bowl Stuart 210 (Heerl/Noor1-BO1)	70-200	4	2	43.25
Coarse-walled beaker Brunsting 4 (Heerl/Noor1)	70/90-200	11	7	43.24
Terra sigillata (South Gaul) collared bowl Curle 11	80-120	2	1	43.23
Terra sigillata (South Gaul) dish Dragendorff 18	90-120	4	2-3	43.23
Flagon Heerl-FL3a-b/Stuart 109-110a	90-140/170	8	8	43.24
Colour-coated beaker Heerl-BE18/Stuart 2	90/100-230	5	1	-
Colour-coated beaker Stuart 4	125-175	1	1	-
Mortarium Stuart 149/Heerl-M8	130-170	1	1	43.26
Mortarium Stuart 149-Brunsting 37 (level 2)	130-300	2	1	43.26
Smooth-walled/smoked beaker VV484-487 (level 2)	150/175-300	2	1	43.23
<b>Total</b>		<b>215</b>	<b>81-82</b>	

have come from a unrecognized context, post hole or pit, dug into the upper level of the cellar fill. To our opinion, it can be excluded for dating purposes. In this respect, also a base fragment of an Early Medieval *Wölbwandtopf* must be mentioned. It was found at level 1 (68-1-2/6217) above the cellar-pit, an indication of later activities at the spot.

For convenience sake, we will consider the infill of the cellar and pits in building 409 to date around AD 125. Besides the evidence provided by the material present, some missing material is also significant. For instance, no terra sigillata from Central or Eastern Gaul was found, only one

409

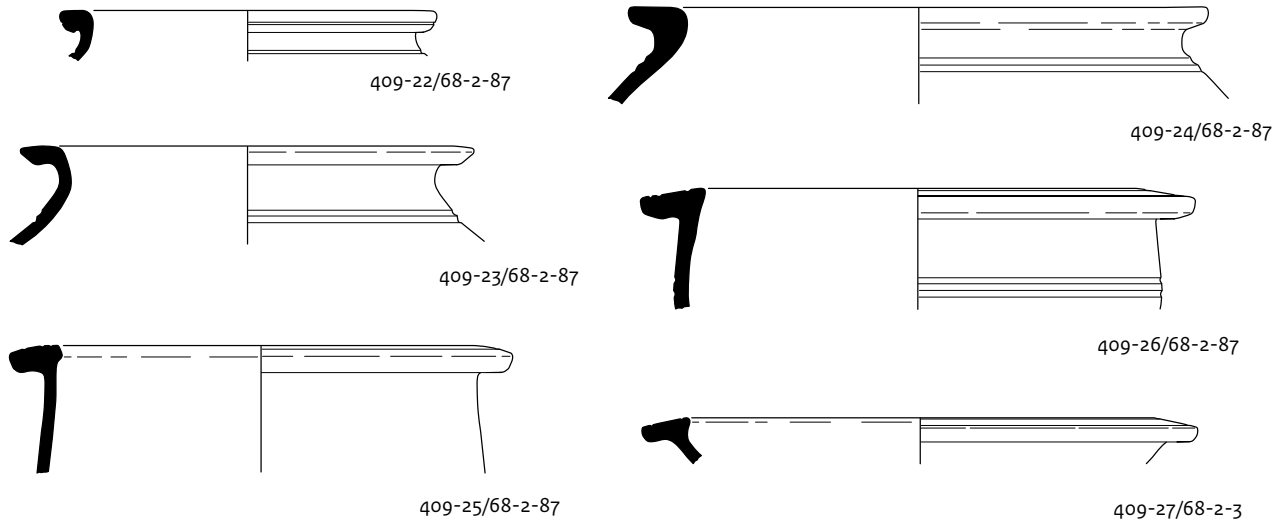
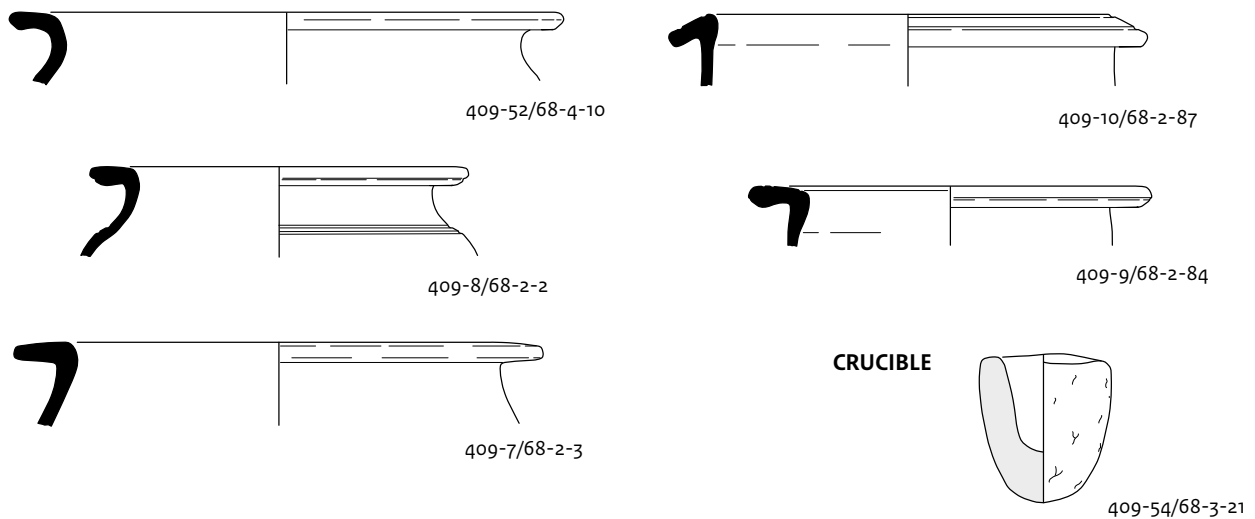
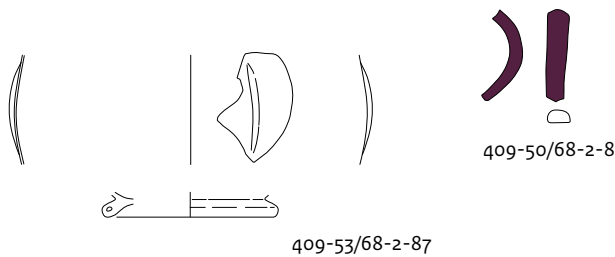
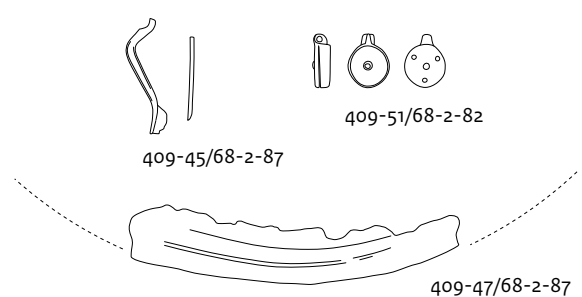
**COARSE COLOUR-COATED****COARSE-WALLED****GLASS****METAL**

Fig. 43.25 Voerendaal-Ten Hove. Pottery (cont.), glass and metal from building 409. Scale 1:3.

beaker Stuart 4 (let alone Niederbieber 32 or dishes Stuart 10), no flagons like Stuart 110B, Brunsting 5c/Niederbieber 61 or Niederbieber 62, nor mortaria of 'real' Brunsting 37 variants. Most important is that no single rim of a lid-seated jar Stuart 203/Niederbieber 8g was found. Although most popular after c. AD 150, this type was already produced in the second quarter of the second century. At Voerendaal, it is represented by nearly twice as much MNI as other types. If the cellar pit was filled after AD 125, at least a 5-10 rim fragments would have been present. It is

409

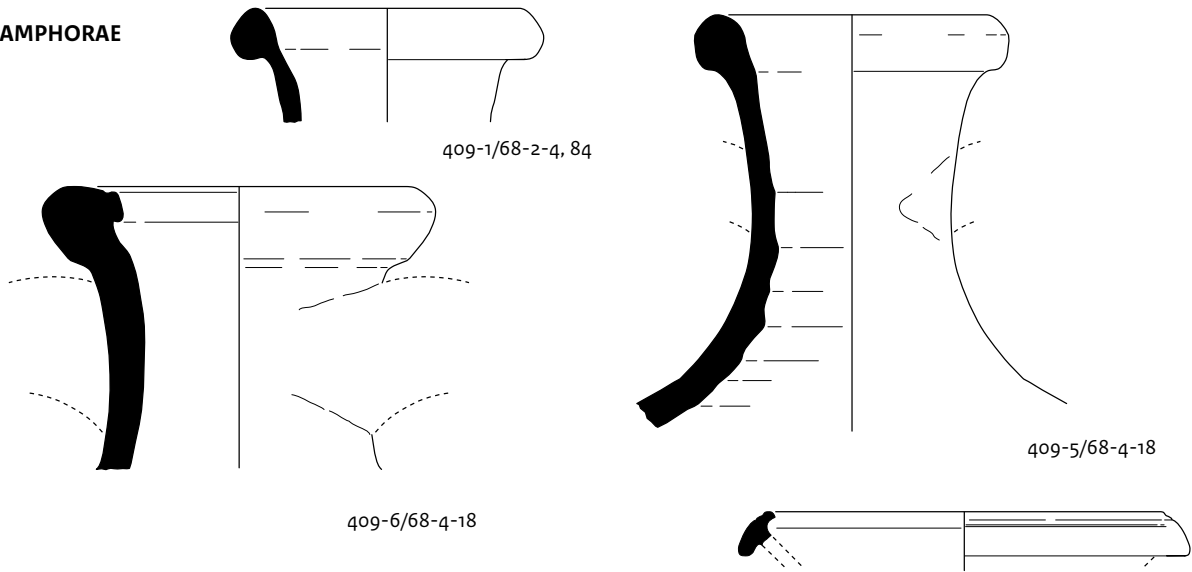
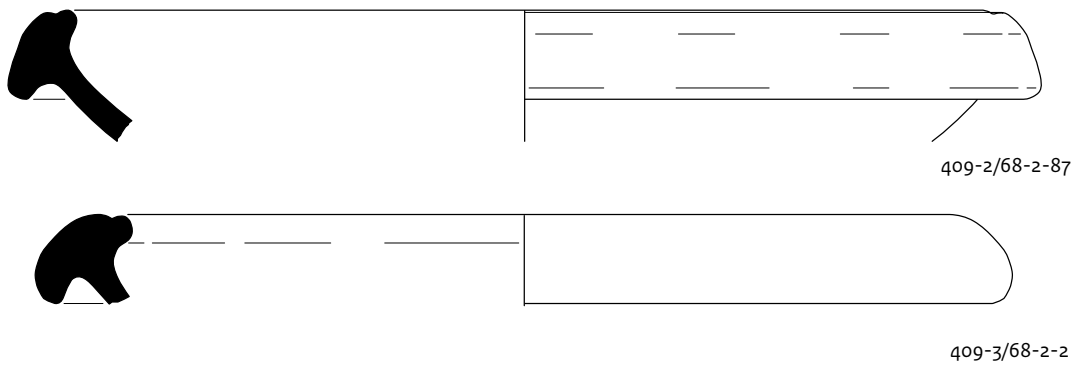
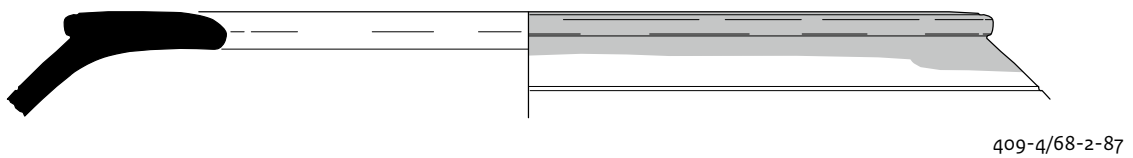
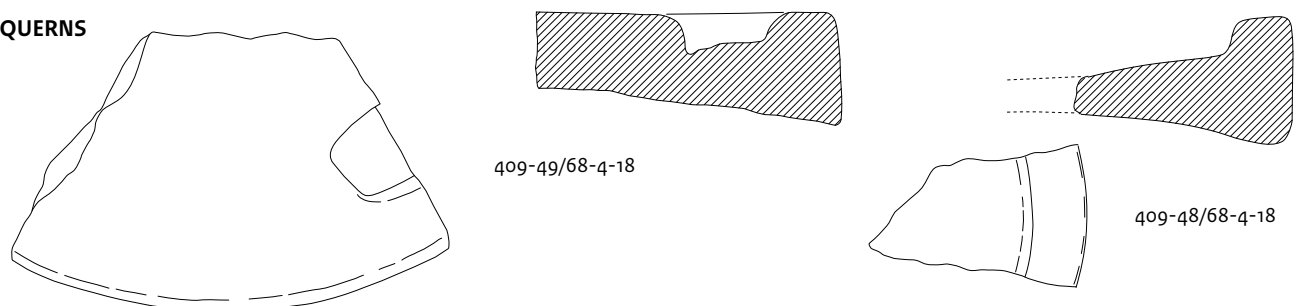
**AMPHORAE****MORTARIA****DOLIUM****QUERNS**

Fig. 43.26 Voerendaal-Ten Hove. Pottery (cont.) and stone querns from building 409. Pottery scale 1:3, stone 1:5.

remarkable that a large numbers of coarse-walled lids were found in structure 409, so these preceded the appearance of lid-seated/heart-shaped rims.

## STRUCTURE 410 / trench 7 (Fig. 43.27)

*investigation*

This building was excavated in two parts and not entirely because it was at the border of two fields and that of the excavated area. The eastern half was investigated in April 1985 and the western in September 1986. Opened shortly before a holiday period, the former was not completely investigated and the trench was filled in by mistake. The trench wall was not documented and it remained unclear what the remains in this location exactly represented. If the stretch of wall outside the trench was really excavated is also not clear, probably only the top was cleaned. The investigation in two phases explain why various layers in and around the building are not connected.

*description*

The building measured 12.25 x 6.1-6.2 m (exterior), with walls 40-70 cm wide. The walls, or to be precise: foundations, were made of limestone blocks and 25-40 cm high. East of the building, a number of tiles were found just inside the trench (one square *bessalis* was kept). With a lot of tile fragments in the vicinity outside the trench, these could have been part of a floor (of a stove hole?), or just of the foundations of an annex. South of the building, a (very) short row of stones was found. The notes on the field drawings suggest that the building could have been larger on this side, because the 'dirty soil' present inside the building was also found here. The dirty soil consisted of two concentrations of black soil with charcoal and dark brown-black layers with 'burn stains'. Everywhere in and around the building the soil contained pieces of tile.

*finds/dating evidence*

There were many fragments of brick and tile, animal bone, some window glass and pottery found in the layer(s) in and outside the foundations. It is very likely that most of these finds originally were related to the main building, not to 410. Anyway, the pottery covers a large part of the Roman period, dating from the Flavian period/early second century (South Gaulish sigillata) until the third century AD (piece of black-slipped beaker Niederbieber 33). Even a fragment of Late Medieval pottery is present.

## STRUCTURE 411 / trench 74 (Fig. 43.28)

*investigation*

This foundation was not sectioned.

*description*

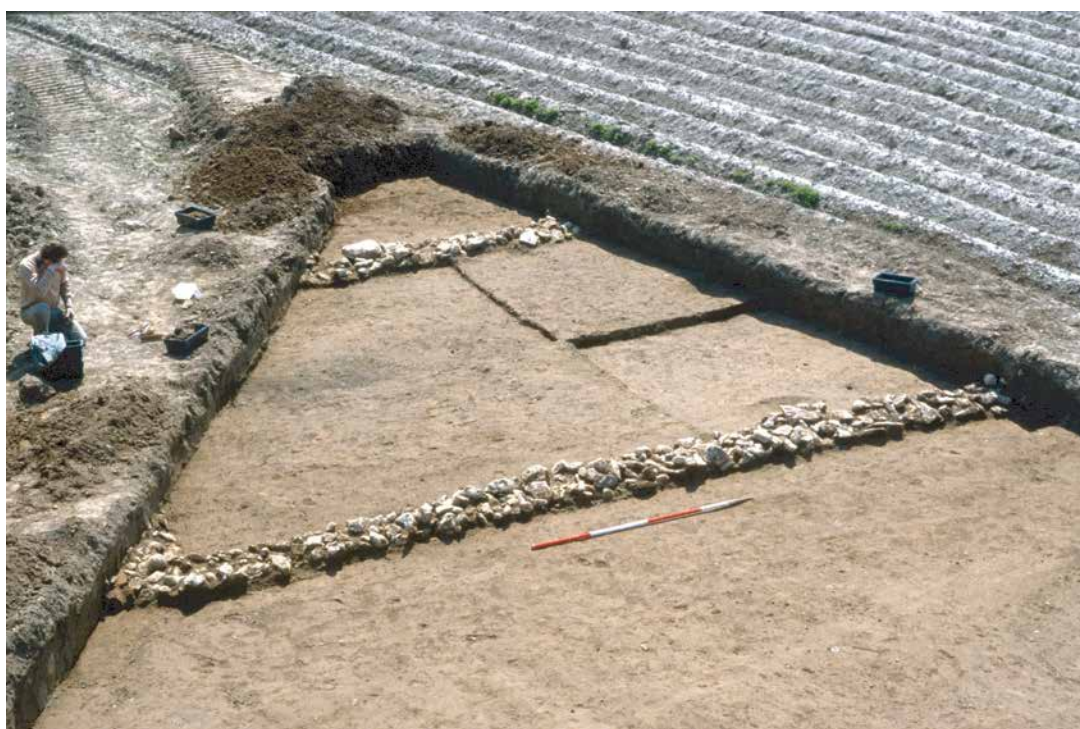
This structure measured 4.85 x 3.1 m (exterior) and was divided in a smaller and larger room (at 40/60% of the length). The foundation consisted of one layer of c. 20 cm high, consisting of large, irregular limestone blocks and was 55-70 cm wide. A small part was robbed or damaged by agricultural activities.

*finds/dating evidence*

Structure 411 was built over ditch 307, which belongs to period 2. It is impossible to establish a link between finds from trench 74 and this structure. Some are probably related to the hearths 601-606 (like a fragment of Argonne-sigillata). Like building 410, in the vicinity of 411 and in planting-holes near it (feature 323, 325), a considerable number and variety of finds were present. Again, the pottery spans a long period, with some Early Roman material (terra nigra, beaker Holwerda BW15), a considerable number of Middle Roman finds and black-slipped ware of the third century AD. Perhaps relevant in the light of the finds associated with building 412, is that around (=trench 74) structure 411 also terra nigra is 'over-represented', albeit the type/form for none of the sherds can be identified. From trench 74, 23 fragments (71 g) of terra nigra were collected, c. 2.9% of all the terra nigra from the excavation in the eighties (806 fragments/1,161 g, including (possible) Late Roman fragments). The total number of Roman sherds from trench 74 is 122, or only c. 0.7% of all sherds from the excavations.



A



B

Fig. 43.27 Voerendaal-Ten Hove. Building 410. (source: H.A. Hiddink & RCE)  
A plan, scale 1:150; B the eastern half, seen from the north.

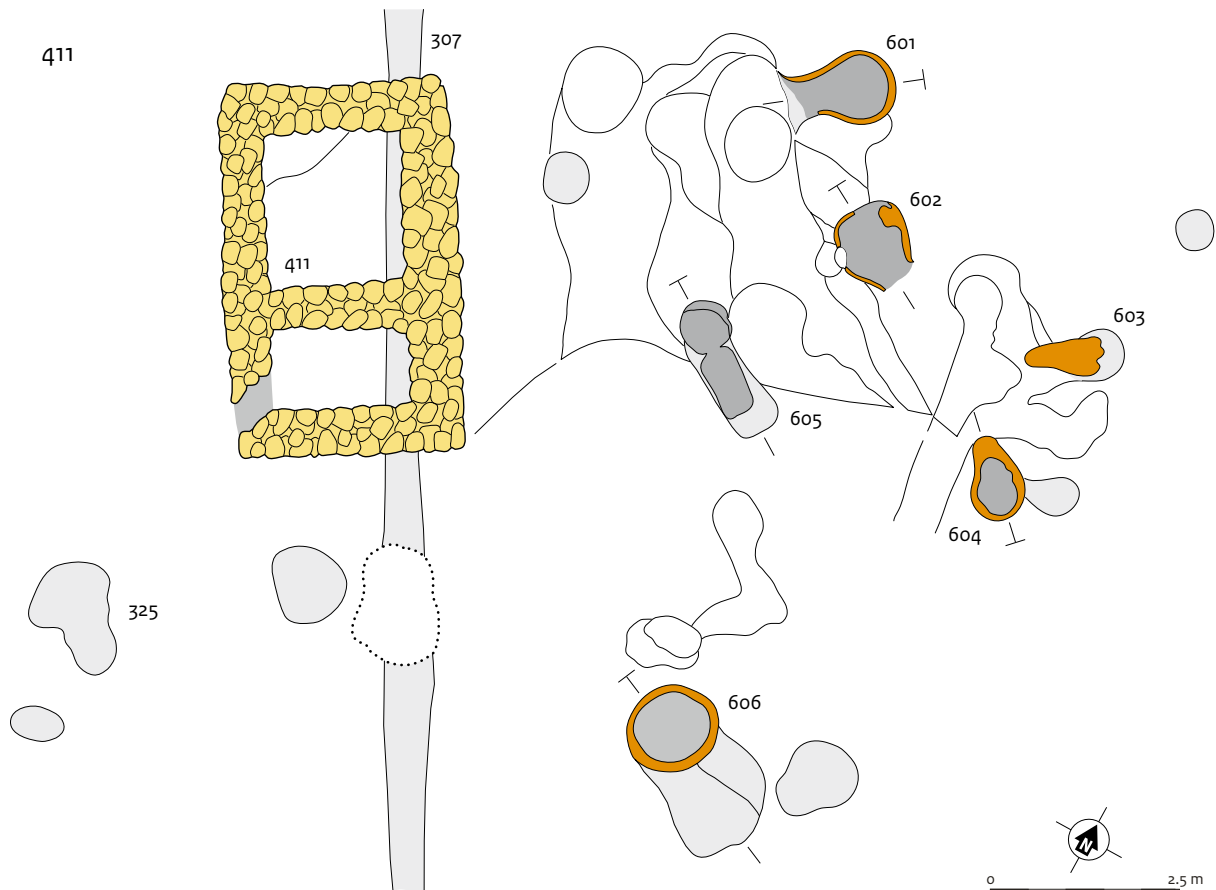


Fig. 43.28 Voerendaal-Ten Hove. Plan of building 411 and adjacent features.

#### STRUCTURE 412 / trench 79 (Fig. 43.29)

##### *investigation*

This small building was investigated in two stages, because it was situated beneath two different plots of arable. The southern part came to light in November 1986, in the form of a damaged gravel foundation with scattered pieces of limestone in the surroundings. At the second level a large patch of 'dirty' grey soil was present, the remains of the layer in which the foundations was dug in. The trench wall was drawn (see below). In March 1987 the northern part of the building was investigated. In the second level beneath the foundations, the dirty grey layer of 1986 was found in the form of two small, shallow 'pits' with a brown-grey infill.

##### *description*

The building measured 3.5 x 2.9 m (exterior). The foundation trench was 50-55 wide, 20 cm deep and filled with coarse gravel.

##### *section*

The topsoil on this location was 30-35 cm thick and covers a dark brown humic layer of 23 cm. On the drawing this was described as a '...L[ate] ME[dieval] (?) arable layer, on this location somewhat thicker in a shallow depression'. The layer must be pre- or Early Roman however, because it already existed when the foundations were dug in. However, the dark colour of the layer was partly the result of infiltration and bioturbation from the arable above (see below). The dark layer covers the virgin soil of reddish yellow-brown loess.

##### *finds and dating*

The fact that the dark layer was in part formed after the Roman period, is shown by a sherd of Elmpst ware and one of Late Medieval white pottery. One of the find numbers near the foundations of 412 contained a post- Medieval coin (*oord*, c. AD 600-1800) and a piece of roof-slate. The find-numbers 79-1-4, 5, 6, 7 and 79-2-4 and 8 were given to material collected near the structure. As the coin and slate show, not all material was originally associated with the structure. At the same time, it is well possible that some finds that were deposited near 412 were later scattered by ploughing etc. and ended up in find number 79-1-1 (trench as a whole).



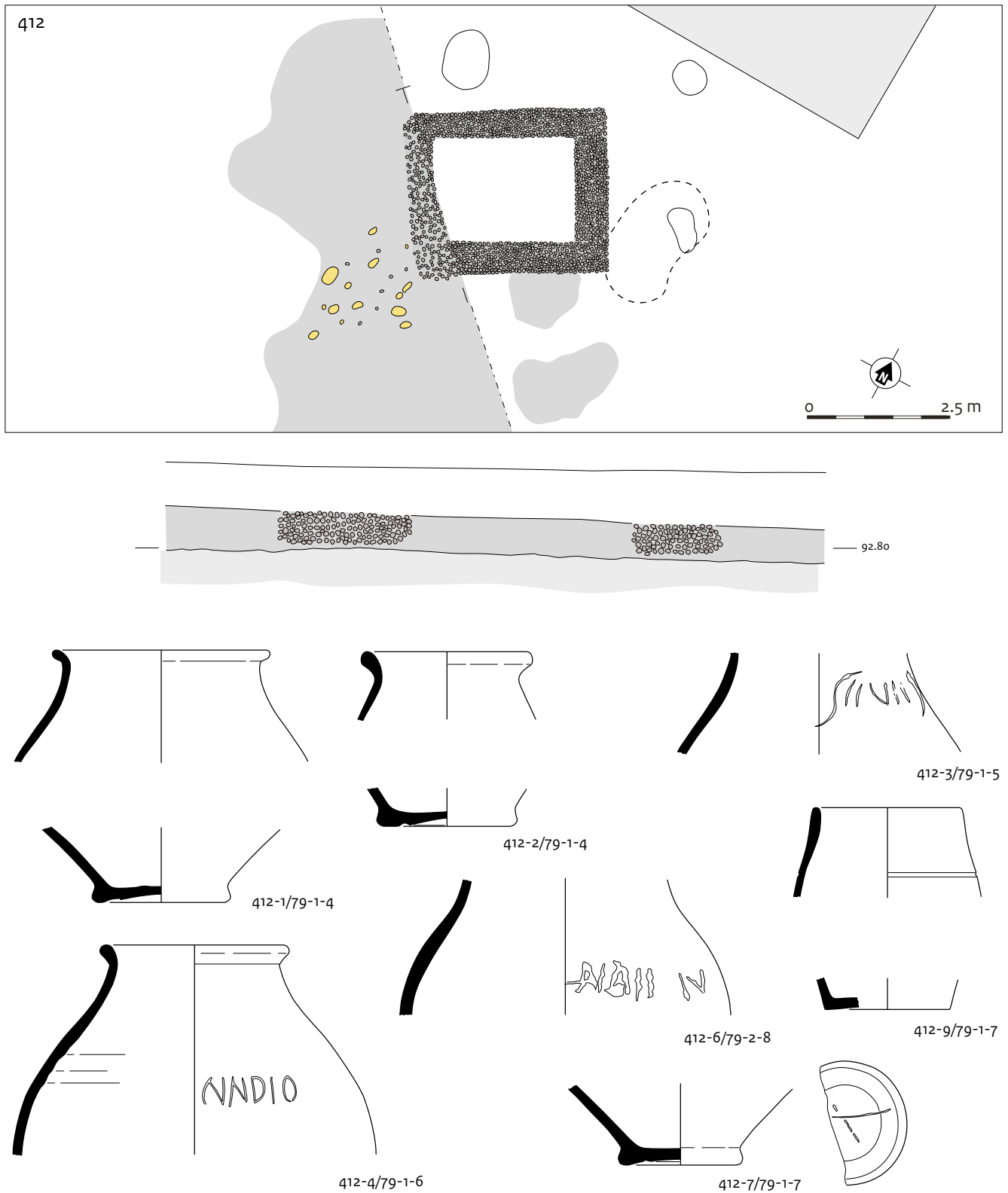


Fig. 43.29 Voerendaal-Ten Hove. Plan of building 412 and adjacent features, with section through the gravel foundations and a selection of the pottery around it, mainly terra nigra. Section scale 1:40, pottery 1:3.

The non-ceramic finds of the find-numbers mentioned, consist of 3 pieces of animal bone (57 g), 2 pieces of flint (126 g), the piece of slate already mentioned (28 g), one of a tephrite quern (354 g), the bronze coin and 17 fragments of iron. The ceramic finds firstly number 6 fragments of brick and tile (c. 2.8 kg); a *tubulus* fragment again shows that some finds had nothing to do with the building.

Besides one sherd (12 g) of handmade pottery, all pottery is wheel-turned Roman ware: 644 sherds with a total weight of 14,892 g. It is no use mentioning the numbers of weights of everything present. The possible oldest sherds are two of a terra nigra beaker from the Early Roman period; too little to prove that the structure already existed then. Only a tiny sherd of a Dragendorff 18 from Southern Gaul and 4 of a coarse-walled pot Stuart 201 were produced before 120 AD. There are quite a number sherds belonging to types from the advanced second and possibly third century, like a terra sigillata dish Dragendorff 32, a smoked beaker Vanvinckenroye 528var (412-9; Fig. 43.29), a colour coated dish Stuart 10 and nine coarse-walled pots Niederbieber 89. A coarse-walled dish Stuart 218 made in Urmitz and fragments of mortaria from Sollar are probably third century in date.

The sorts of pottery and types represented are nothing out of the ordinary, except for one form: a pot with a tall shoulder and a narrow neck that can be best classified as a 'bottle' Holwerda BW 25(var.), on the basis that most sherds are in a terra nigra fabric (Fig. 43.29). Some have a white surface and at first sight rather resemble honey pots, but their fabric is more like the smooth-walled/smoked material of e.g. the dish Vanvinckenroye 90. This is not to say that the bottles are quite as young; they probably date before c. AD 150. A considerable number of sherds is even more difficult to classify (and therefore not on the distribution map). It concerns 117 sherds (2,549 g) of apparently 'normal' smooth-walled pottery, but rather pots than flagons. Item 79-1-5/7972 was identified as a honey pot, but ears to 'prove' this are missing; 412-7 has a base rather similar to that of a flagon (with graffito). However, these vessels could as well be variants of the terra nigra (like) bottles. Sherds of bottles Holwerda BW 25 (var.) were outside trench 79 only found in trench 13, 27 and 115, represented by 48 sherds/158 g, 3 sherds/68 g and 12 sherds/273 g. In trench 79 it concerns 444 fragments with a weight of 8,273 g (exclusive the 117 'smooth-walled' sherds, if included 561 sherds weighing 10,822 g)! Besides the large quantity found around building 412, it is remarkable that 6 fragments have graffiti, 3 of which are more or less complete names (Section 29.3). Our bottles are not decorated with grooves, lines or rouletting and the shape is not very common.<sup>3331</sup> Two examples from Heerlen are quite similar however, and it probably the pieces from Ten Hove were made there. The presumed dating for the former in Heerlen is c. 130-170 AD,<sup>3332</sup> but this is only based on two finds. Terra nigra bottles are difficult to date; the chronological significance of specific shapes and decorations is not clear (or absent). For the model found around building 412, a date in the second half of the first or first half of the second century AD is the most likely. The first period is that in which the first wheel-turned pottery appears at the site, the second is the end date of c. AD 150 found in literature.<sup>3333</sup>

#### HORSE POND 413 / trench 78, 94 (Fig. 9.10; 43.30)

##### *investigation*

The top of the walls of this structure are shown on the 1:50 plan of level 4, the side views from the inside on a separate 1:20 drawing. The levels on these drawings are inconsistent. The NAP-values in figure 43.30 are derived from a drawing of the trench wall, which crosses the eastern corner of the structure. The 'outcrop' of the pavement inside the walls was drawn at level 5, the lowest part at level 6 and a 2-2.5 m wide strip in between had to be filled in with some imagination to produce the plan shown here. It is not clear if the pavement was also present in the northwest corner. The plan of level 4 shows a concentration of tile fragments, with the remark '...directly below the tile fragments a layer of coarse limestone blocks...', which also can be read as '...directly below [the level with] the tile fragments...', without the implication that the stone pavement was present everywhere.

##### *description*

The plan of the structure comes close to a trapezium, but none of the walls runs parallel to another. The dimensions on the inside are 12.6-13.3 x 10.5-11.9 m. The width of the walls lies

<sup>3331</sup> A bit like Holwerda 1941, pl. 5, no. 173.

<sup>3332</sup> Van Kerckhove & Boreel 2014, 255, Fig. 5 (TN-Heerl-BOT2).

<sup>3333</sup> E.g. Brunsting 1937, 119-120, pl. 6, type 9a (until c. AD 125); Deru 1997, 138-141, BT 3, 4.4 (until period VIII, c. AD 150).

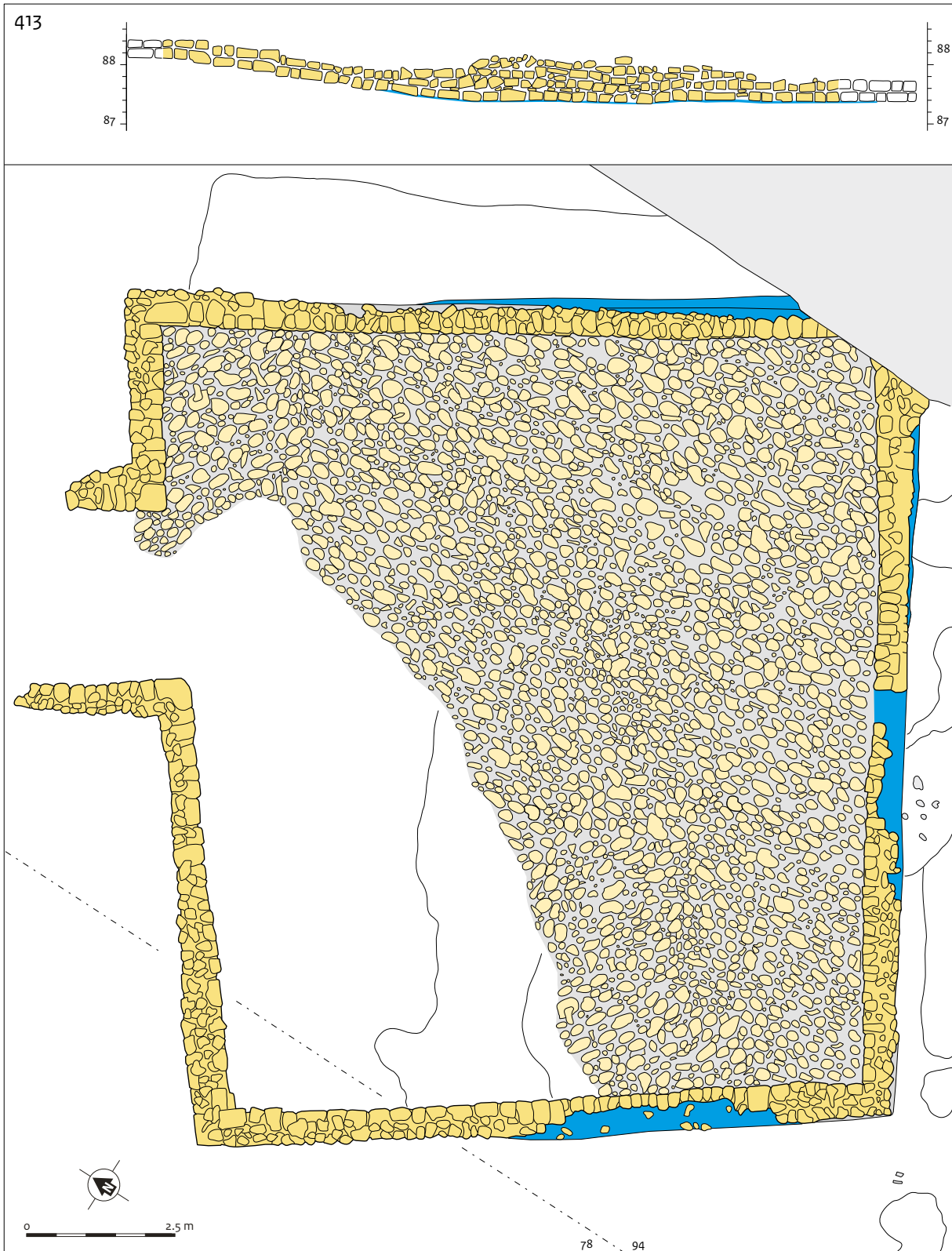


Fig. 43.30 Voerendaal-Ten Hove. Horse-pond 413, plan and side view of the eastern wall from inside.

between 45 and 70 cm. On the north side there is a 2.8 wide opening with two short walls leading up to it. The remaining height of the walls is some 25 to 75 cm. The difference in height between the level at which the 'virgin soil' outside the structure was encountered to the top of the stone layer, was only some 40-45 cm. The original depth was probably at least twice that. The base of the wall is a thin layer of brook or Cerithium clay. The inside facing is made of big, fairly regular

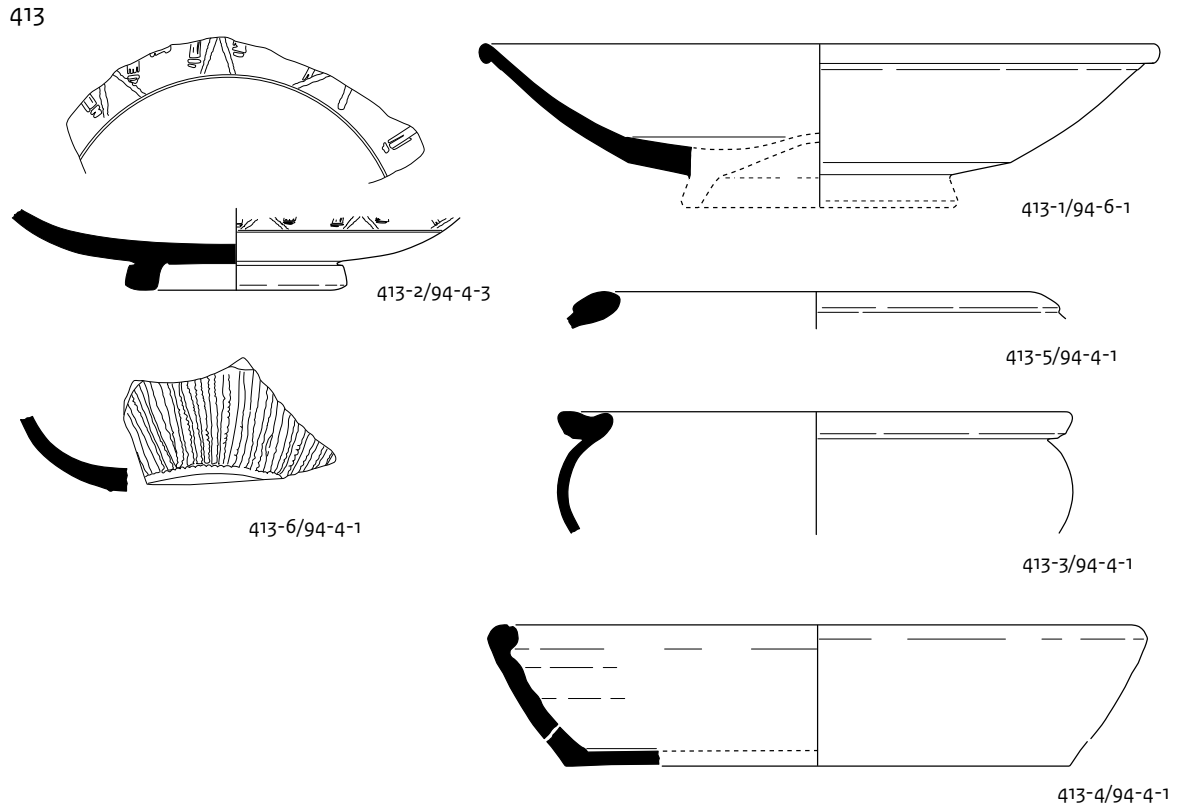


Fig. 43.31 Voerendaal-Ten Hove. Pottery finds from the horse-pond 413. Scale 1:3.

blocks of limestone. The rest is made of more irregular stones, both limestone and flint. This construction was possible because the whole structure was dug in. Between the soil, the south wall and the deepest parts of the west and east wall there was a clay lining. The interior of the structure had a floor of blocks of limestone and flint, with dirty brown-grey silt in between. It is not clear if the tile-fragments in the northwest corner were part of the pavement.

#### *finds/dating evidence*

Although the contours of this feature were partly visible at level 3, only from level 4 down it is clear which find(number)s came from the infill. The non-ceramic finds consist of 2 pieces (165 g) of flint (and no other stone!), 39 fragments of iron, 3 fragments (13 g) of window-glass and 12 fragments (338 g) of animal bone. The ceramic finds are 17 fragments (9,919 g) of brick and tile and 174 pottery sherds (4,642 g). Of course, all these finds have no connection to the function of the pond, for all or most waste will have been removed during its period of use. The value of the finds for dating of the structure is also nihil. The only finds apparently from underneath the stone pavement are 2 fragments of animal bone (dog) and 6 sherds (67 g) of smooth-walled pottery. Fragments of a terra sigillata dish Dragendorff 31/Ludovici Sa are the only finds directly on/ between the stones of the pavement (413-1; Fig. 43.31) The dish dates from c. AD 140-270. Although not very useful for dating, it is noticeable that material from the middle of the second-third century AD is well represented in the fill (like the dish Niederbieber 111, item 413-4; Fig. 43.31). Early Roman pottery like the cork-urn 413-5 (Fig. 43.31) is very rare. Of two bowls Dragendorff 37, one could in theory date to the third century, a second certainly does (413-2 and 6; Fig. 43.31). There are also 9 sherds of black-slipped ware dating to the third century. However, the pond was finally filled up only in or after the Late Roman period, as 2 rims of an terra sigillata bowl Chenet 320 from level 4 show.

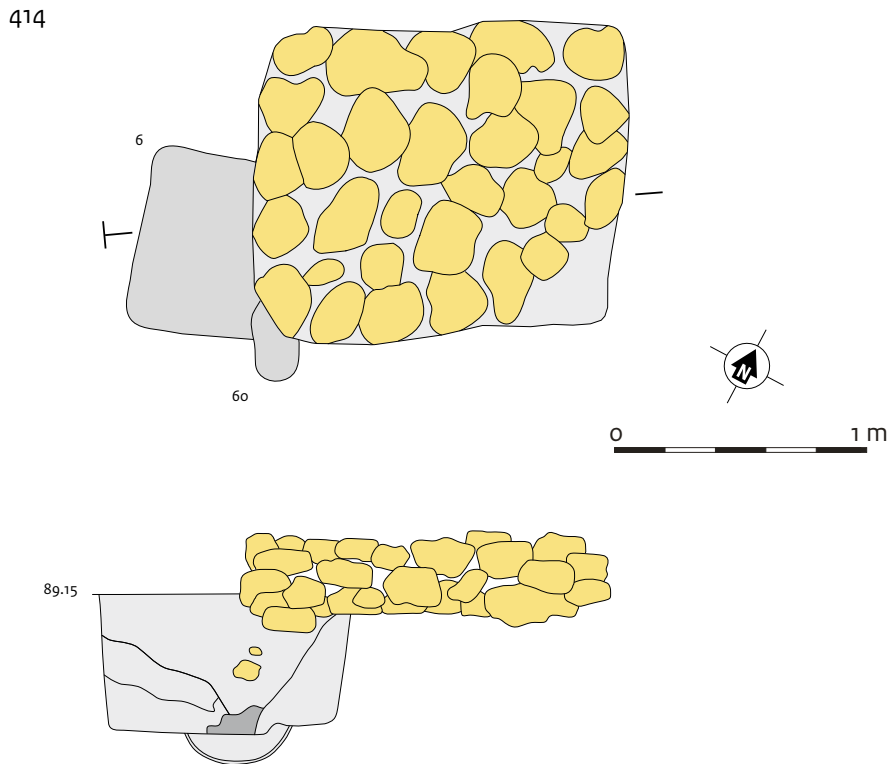


Fig. 43.32 Voerendaal-Ten Hove. Plan and section of foundation 414. Scale 1:30.

#### FOUNDATION 414 / feature 109.061 (Fig. 43.32; 43.33)

##### *investigation*

The plan of this foundation was drawn at scale 1:50 only, but a section was made and drawn at 1:20.

##### *description*

This rectangular structure measured 1.45 x 1.2 m and was 30 cm high. It was mainly built of limestone, with a few blocks of sandstone and flint.

##### *finds and dating evidence*

The foundation is laid over a (post) pit, 109.006 (Fig. 43.33B). A second post pit, 109.060 of building 235, is not included in the section, but the 1:50 drawing suggests it was younger than the other pit.

#### WALL 416 / trench 16, 21, 22 (Fig. 43.34)

##### *investigation*

The wall was found in three neighbouring trenches, but was not observed further to the west, probably because its direction changed. It was also not firmly established in trench 183 of the 2004 investigation by Grontmij.

##### *description*

The wall consisted of one or two (locally three?) courses of rectangular blocks of limestone and had a maximum height of 25-30 cm. The wall was put on top of the stones of pavement/threshing floor 320, which was levelled by a thin layer of gravel (Fig. 43.34). Between the facings of the 40 cm thick wall, the core of 10 cm wide was filled in with mortar and smaller pieces of limestone. The excavated length of wall was 47 m long and had an orientation of 64°.

The westernmost point observed in trench 16 lies c. 35 m from the 'gatehouse' 416.

Perhaps some stone material at the southern end of trench 23 is related to it. In trench 183 a possible wall was found at the border of the old ROB trench 108 (feature 183.013). It consisted of some blocks of Kunrade limestone in a row, not very convincing. In any case, if this was the south wall of the villa-complex, it still had to change direction to pass south of building 403.



A



B

Fig. 43.33 Voerendaal-Ten Hove. Foundation 414 in trench 109 of 1987.  
A the foundation with surrounding features of post-built structures; B section of 414 and post pit 109.006.

#### *finds and dating*

The wall was built at the same time as the threshing floor 420 (or only slightly later), which in turn was laid when the longitudinal room was added to building 401.

## GATEHOUSE 417 / trench 112-113 (Fig. 11.2; 43.34-35)

*investigation*

Only a small part of this building could be excavated, the largest part goes hidden under the Steinweg.

*description*

The building measured 7.7 m (c. 26 p.m.) by much more than 1.85 m. Its walls were 70-80 cm thick; the depth of the foundations is unknown. Both at the west and east sides there are short stubs of wall, but it is not certain that they are part of wall 416 (see Section 11.1.4). At the east side some additional stones were observed.

*finds and dating*

No finds or intersections.

## BUILDING 418 / trench 68, 69, 95, 96 (Fig. 9.9B; 43.36)

*Investigation*

The features of building 418 were documented at excavation levels 4 and 5. All features were sectioned and all sections were drawn, except for 69.058 which was probably forgotten. A large part of this building was situated beyond the boundaries of the excavation.

*construction*

This building measured 10.6 x at least 10 m and was not completely rectangular, an irregularity which contrasts the regular shape of the postholes. Perhaps the 'parallelogram' shape of the building is in part the result of the position on a slope and in four separate trenches.

The remaining depth of the postholes ranges from 8 to 70 cm (37 cm on average). The packing soil of the posts consisted of yellow, grey and brown clods. The cores were dark brown-grey. At excavation level, the cores were long-rectangular, pointing to the use of rectangular posts of c. 45-50 x 20-25 cm.

*special features*

Inside the building a significant number of small postholes pointed in section were present. Their depth is up to 33 cm. Some are found outside the building, so they were probably not related to it. A second kind of atypical features are the spade marks that were documented (not shown in Fig. 43.36). Possibly these marks can be associated with the construction of building 418 or the preparation of the subsoil before building. Finally, four sizeable postholes or pits do not seem to have been part of the construction of 418, although they seem to have been associated to it. Feature 68.216/95.278, 95.176/96.010, 95.229 and 230 were 35, 90, 60 and 60 cm deep. The fill of these features is similar to those of the postholes of the building 418: a varied yellow-grey-brown filling with clods.

*disappearance of the building*

In almost all features of building 418 post pipes were present, except for 95.273 where the post was probably dug or wriggled out. In the fill some pieces of limestone were present.

*finds/dating evidence*

Building 418 is clearly older than building 403 and pit 738. Finds from the fill of post-pipes and the 'packing soil' (*insteek*) were not collected separately, but experience shows that most finds come from the former, rather related to the (later) periods of use and dismantling than the moment of construction. Starting with the non-ceramic finds, there are 3 fragments (19 g) of animal bone, one of flint (47 g) and a whetstone of amfibiolite (418-2; Fig. 43.36). Next, 6 fragments of iron-slag (173 g) and 5 iron fragments were collected. Glass is represented by a small fragment of an bangle (418-3; Fig. 43.36). Interesting are 3 fragments (c. 300 g) of roof tiles, suggesting the presence of a stone building (probably the first villa 399) on the site when 318 was used/demolished. The pottery consists of 5 sherds (45 g) of handmade prehistoric pottery and 10 sherds (155 g) of Roman wheel-turned ware. Only some of the latter provide chronological



Fig. 43.34 Voerendaal-Ten Hove. The area with the yard wall 416 and gate house 417, detailed plans of both and section through 416. Plans scale 1:500 and 1:150, section 1:30.



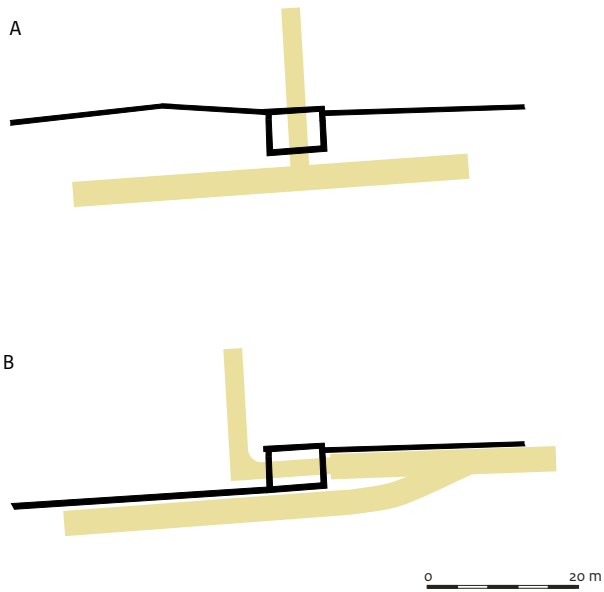


Fig. 43.35 Voerendaal-Ten Hove. Two alternatives for the lay-out of the gatehouse, wall and roads.

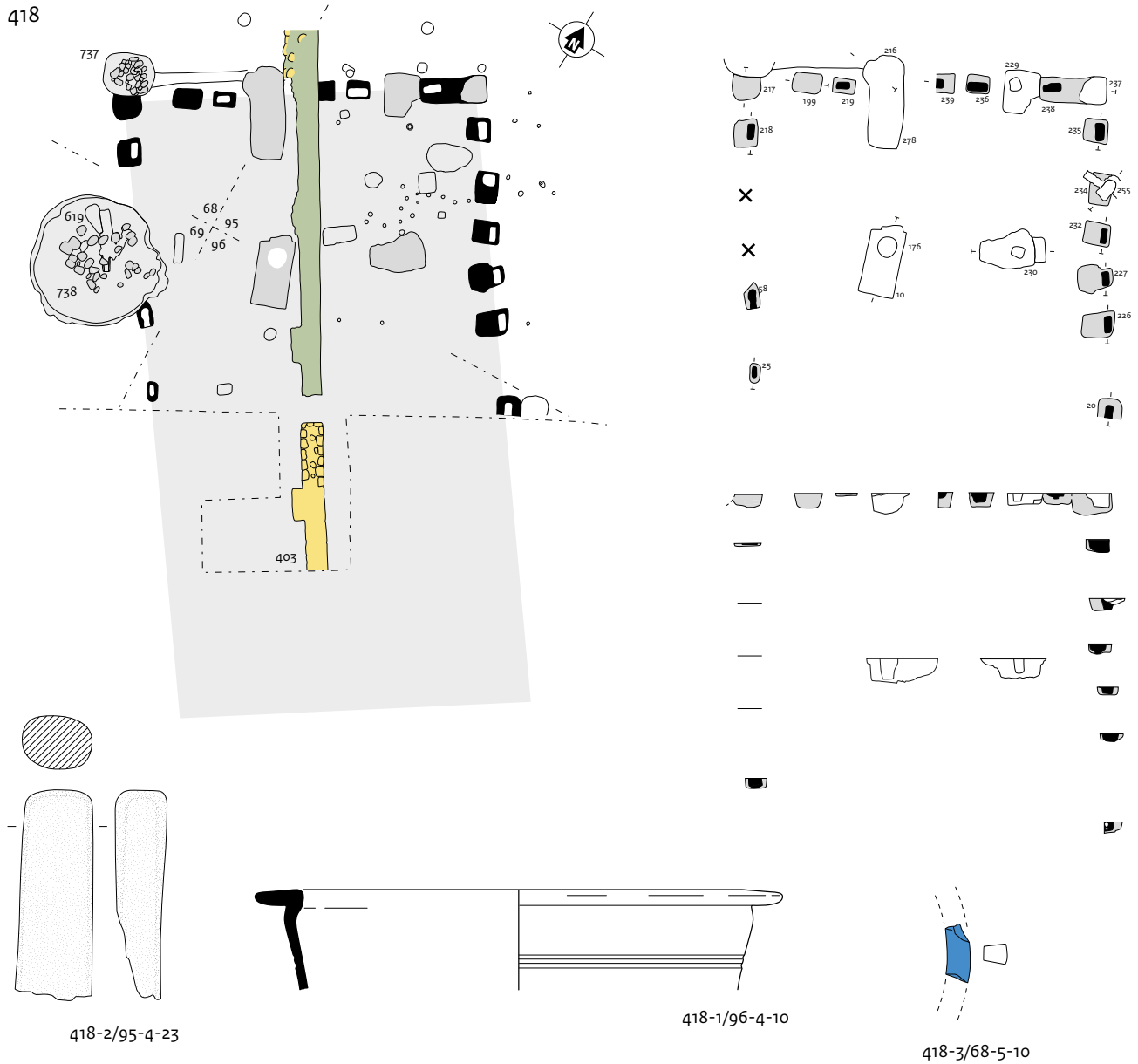


Fig. 43.36 Voerendaal-Ten Hove. Plan of building 418, sections of its post-holes and glass, pottery and stone. Building scale 1:200, finds 1:3. (source: H.A. Hiddink & D.S. Habermehl)

information. A piece of South Gaulish terra sigillata was made before c. AD 120, and both a coarse-walled bowl Stuart 210/OX-Noor1-BO1a (Fig. 43.36) and a circle pot Brunsting 4 provide a terminus post quem of AD 70.

#### WALL 419 / trench 89, 110, 111, 141-144, 153-159 (Fig. 41.16; 41.6C; 43.37)

##### *investigation*

This wall was already discovered by Habets, but interpreted as part of a building in front of the second villa. Braat traced it by means of a series of small trenches and finally a large portion was uncovered by the ROB (trench 89-111). Braat did not find the part of the wall connecting to the villa, and confesses that he possibly did not recognize it: 'At this location, among others, we were confronted with the disadvantages of the use of small trenches. When investigating room 14 in 1948 we found some rubble, but did not recognize it as the last remains of a robbed wall.'<sup>3334</sup> The connection to the bath was also not found, but the cause was that the wall was not preserved at all (except for a small patch of stones) as the trench was larger here and was better suited to observe possible remains. Willems and Kooistra suggested that a wall-fragment near building 402 was part of a division in the eastern part of the yard, connected to 419.<sup>3335</sup> Furthermore, the post-holes of building 212 are situated at this hypothetical border (cf. Chapter 40). These are depicted in the figure just mentioned, albeit barely visible.

##### *description*

The wall has a 33.5 m long side with an orientation of 150° and one of 100 m with an orientation of 59°. Large parts were robbed (see above), but in trench 89, 110 and 111 some 30 meters were still present. The foundations had a width of 80 cm, which is quite large compared to that of most other stone structures. They consisted of relatively small stones (limestone) and were 20-35 cm high (cf. Fig. 41.6C).

##### *finds and dating evidence*

A part of a quern was found on top of the foundation in trench 111 (419-1/111-1-3; Fig. 33.14). This piece of stone could either have been used in the foundation, or ended on top of the stones by coincidence when the wall was robbed or destroyed.

#### THRESHING FLOOR 420 / trench 21, 22, 27 (Fig. 43.8, 43.34; 43.37)

##### *investigation*

The layer of stones forming this structure was documented in the eastern wall of trench 22 and in a section over wall 316 in trench 21.

##### *description*

The area covered with blocks of limestone measured at least 20 x 11 m, but was probably much larger and covering the whole area in front of building 401. The size of most blocks ranged from 25 to 40 cm. If the interpretation as a threshing floor is correct, the stones must have been covered by a layer of loam to obtain a smooth surface. It is remarkable that wall 416 and the west wall of building 401 were built on top of the threshing floor, with a thin layer of gravel in between. At least the wall of building 401 was planned before the pavement however. Its foundation was made first and after the pavement was put in place, the wall of the building was constructed somewhat off its foundation below.

##### *finds and dating evidence*

<sup>14</sup>C-date (22-5-18): 1810 ± 50 BP (UtC-1577); 131-254, 303-315 cal AD (1 sigma); 84-335 cal AD (2 sigma).

<sup>14</sup>C-date (22-5-18): 1825 ± 55 BP (GrN-19136); 94-96, 125-252, 307-311 cal AD (1 sigma); 70-335 cal AD (2 sigma).

<sup>3334</sup> Braat 1953, 53.

<sup>3335</sup> Willems & Kooistra 1988, fig. 2.



Fig. 43.37 Voerendaal-Ten Hove. The only part of threshing-floor 420 on a photograph, with sunken hut 512 west of it and the top of wall 419 in the foreground (trench 22, 1985).

<sup>14</sup>C-date (22-5-5): 1801 ± 22 BP (GrM-23785); 228-252, 291-319 cal AD (1 sigma); 210-259, 280-330 cal AD (2 sigma).

The two dates from grain collected from a spot outside wall 416, have a broad range, covering the second-beginning of the fourth century AD. The new date from 2020 (GrM-23785), from material in front of building 401, narrows this period down to the third or the beginning of the fourth century AD (UtC-1577 and GrN-19135 have nearly the same end date). It is interesting that the radiocarbon dates associated with threshing-floor 420 as such are somewhat earlier, have another 'centre of chronological gravity' than those from the *horreum*. The finds from under the stones, mainly from features (probably) belonging to building 251 (cf. Chapter 40) and some layers, date in the second century AD. Fragments of a mortarium Brunsting 37 date after c. AD 125/130, which is in accordance with the date for the 'large villa' suggested in this report. This fits in with the association of 420 to building 401, also a feature of period 3.



# 44 Sunken-floored huts

Henk Hiddink

Figure 44.1 shows the location of the sunken-floored huts described in this chapter. The pits of the sunken huts were never sectioned. Apparently their fill was removed by the crane and it is unknown if the finds were collected during this operation, or before while skimmed with a shovel. When the pit was removed, the postholes were drawn in the next level and sectioned. In this chapter, these structures are

depicted on a scale of 1:100. The sections of the pits are crude reconstructions, based on the 1:50 field drawings. The exact depth is almost never known, because the levels were mostly taken not on the centre of the structure, but at some distance around it. The height of the top and bottom of a pit had to be estimated (by interpolation).

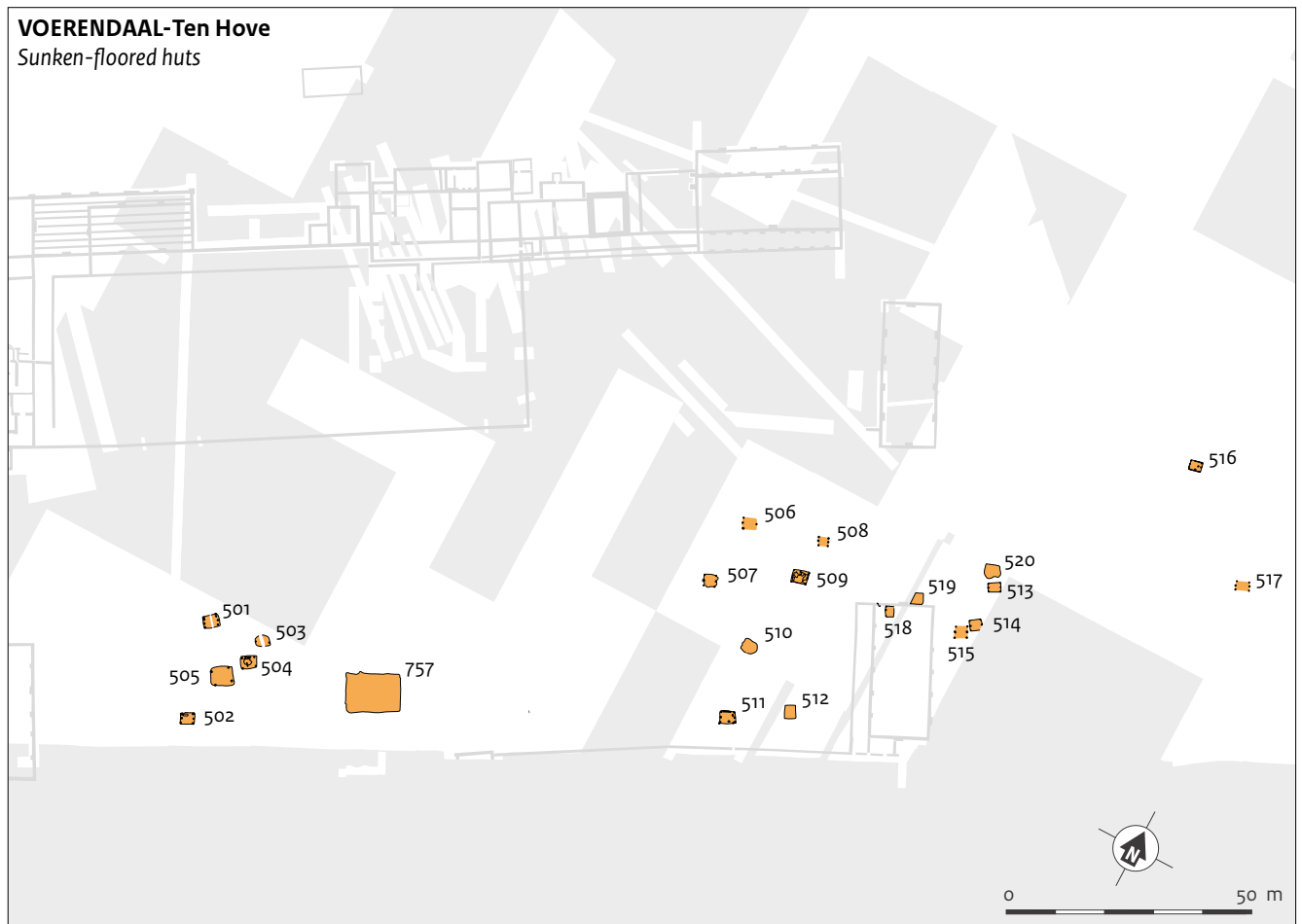


Fig. 44.1 Voerendaal-Ten Hove. Location of the sunken-floored huts.

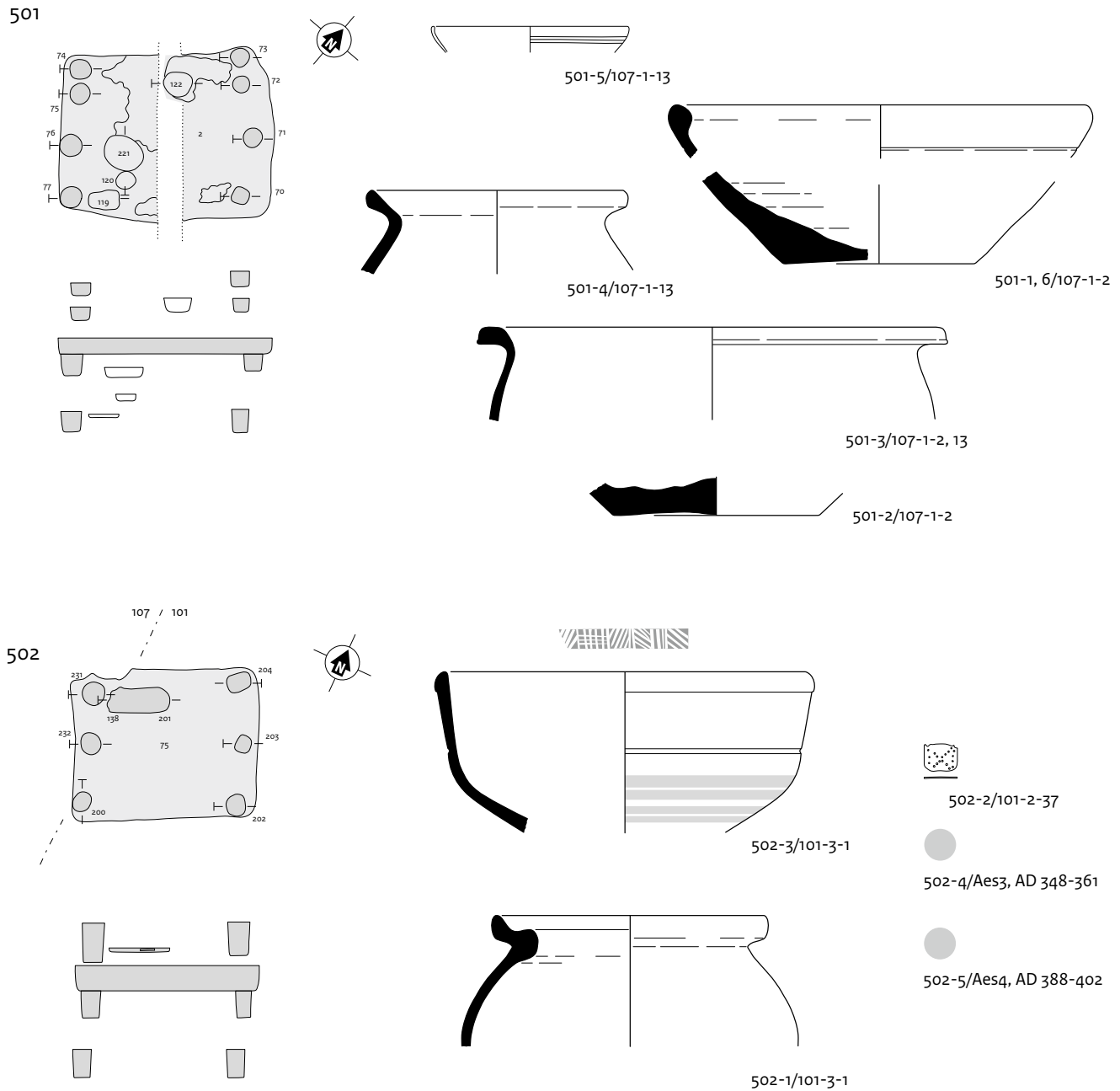


Fig. 44.2 Voerendaal-Ten Hove. Plan, feature-depths and finds of sunken hut 501 and 502. Features scale 1:100, finds 1:3, roller stamp 1:2.

#### SUNKEN HUT 501 / trench 107 (Fig. 44.2)

##### *investigation*

This sunken hut was first observed in level 1 (c. 89.00 m NAP). The postholes were found in level 2, c. 25 cm deeper.

##### *description*

The pit measured 3.35 x 2.6 m, with a depth of c. 25 cm. The depth of the eight postholes was 20-37 cm (mean 27 cm). It is not clear why the posts on the west side are doubled. The infill of the pit was spotted black with tile fragments in the northernmost corner, that of the post mostly black, in some instances dark grey.

##### *special features*

Four postholes or pits under this sunken hut, especially 120, 122 and 221, are possibly older (as indicated on the field drawing).

*finds and dating evidence*

<sup>14</sup>C-date (charred seeds): 1520 ± 50 BP (UtC-1580); 433-489, 532-601 cal AD (1 sigma); 424-632 cal AD (2 sigma).

<sup>14</sup>C-date (charred seeds): 1583 ± 24 BP (GrM-23715); 435-466, 474-502, 507-516, 530-538 cal AD (1 sigma); 424-547 cal AD (2 sigma).

Both radiocarbon dates provide a similar terminus post quem, but the one from the 1990's covers a greater time-span due to the larger standard deviation. Some find material from this sunken hut is, or could be Middle Roman, like 5 pieces (1,500 g) of brick, a small piece (58 g) of Nivelstein sandstone, 3 iron fragments, a small fragment (5 g) of animal bone and 6 of burnt loam. Apart from 2 sherds (39 g) of handmade pottery, probably Iron Age in date, there was no Middle Roman pottery found. The 23 sherds (822 g) are all younger, with some fragments of globular jars (*Wölbwandtöpfe*), like a very late 'crescent shaped' rim (501-4), the upper part of a jar with a thickened rim (501-3), a wide flat base of a similar jar (501-2) and a bowl Mayen A7 (501-1 and 6; Fig. 44.2). The latter dates from c. AD 350 onwards, but the other forms must be later than c. AD 450. Among the 2 fragments (2 g) of glass vessels, there is the rim of a beaker Pirling 239, dating to the second half of the fourth century AD (501-5; Fig. 44.2). Both the radiocarbon dates and the finds provide a terminus post quem of c. AD 450, the most recent radiocarbon date suggesting that the feature is not later than the first half of the sixth century AD.

## SUNKEN HUT 502 / trench 101, 107 (Fig. 44.2)

*investigation*

This sunken hut was first observed in level 2 (c. 87.95 m NAP), the postholes beneath the pit were found in level 4 (c. 87.55).

*description*

The pit measured 2.9 x 2.3 m, with a depth of 40 cm. The depth of the six postholes was 42-61 cm (mean 49 cm). The infill of both pit and postholes was black spotted with charcoal.

*special features*

Feature 101.201/107.138 was an oblong pit (97 x 38 cm), with a depth of 5 cm and a black infill (with a piece of tile).

*finds and dating evidence*

Most finds from this sunken hut predate the Late Roman period: 6 sherds (106 g) handmade Iron Age and 6 (68 g), 6 fragments of iron, 3 fragments (19 g) animal bone and a single piece (200 g) of limestone. Eight pottery sherds (227 g) are, among others, of a coarse walled jar Alzey 27 (AD 350-450; 502-1) and a terra sigillata bowl Chenet 320 (AD 375-425; 502-3; Fig. 44.2). One coin (502-4) dates AD 348-361, another (502-5) AD 388-402. The latter provides a terminus post quem for the feature at the very end of the fourth century; there are no indications that the hut was used later than the first half of the fifth century, although this is possible.

## SUNKEN HUT 503 / trench 101 (Fig. 44.3)

*investigation*

The pit was observed in both level 1 and 2 (c. 89.11 and 88.84 m NAP), the postholes in 3 (c. 88.65).

*description*

The pit measured 2.9 x 2.2 m and must have been some 45 cm deep and where parts remained in level 3 even 10 cm deeper. The infill was black for the most part and dark grey at the bottom. Both postholes are off the axis of the pit. They were 42 and 30 cm deep and had a dark brown-black colour.

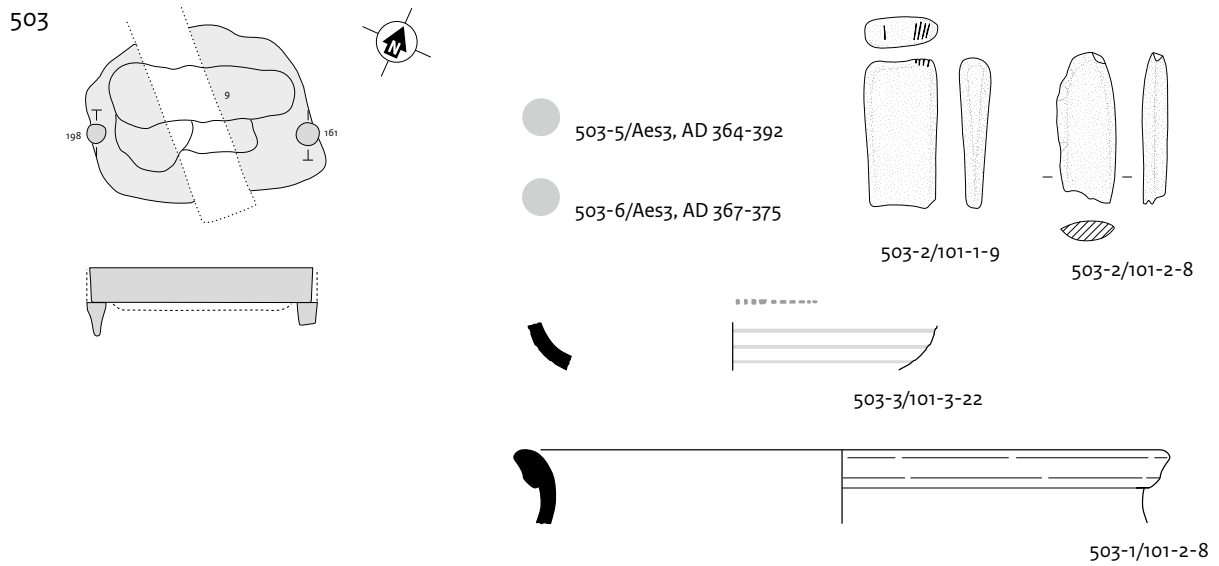


Fig. 44.3 Voerendaal-Ten Hove. Plan, feature-depths and finds of sunken hut 503. Features scale 1:100, finds 1:3, roller stamp 1:2.

#### *finds and dating evidence*

Firstly, the finds from this feature consist of 4 pieces (6.7 kg) of limestone, 1 (3 g) of animal bone and 9 iron fragments. Some of these are possibly older, like one sherd (12 g) of prehistoric pottery and one (18 g) of a coarse-walled Niederbieber 8g. Two whetstones of phyllite (59 g; Fig. 44.3) could well be used by the builders of the sunken hut. Five pottery sherds are Late Roman: to start with, one in terra nigra, two handmade ones and the rim of a terra nigra bowl like Alzey 24/25 (503-1; Fig. 44.3). This material is only datable as 'Late Roman', c. AD 270-450. A terra sigillata bowl Chenet 320 with a stamp of 'group 2' dates c. AD 325-375 (502-3; Fig. 44.3). Two bronze Aes3 coins (503-5 and 6) were struck in the third quarter of the fourth century, one perhaps even in the fourth quarter. The sunken hut could still be constructed after this period, however.

#### SUNKEN HUT 504 / trench 101 (Fig. 44.4)

##### *investigation*

This sunken hut was first seen in level 3 (c. 88.94 m NAP). The last remainders of the infill were found in level 6 (c. 88.53), so the approximate depth is known. The postholes were seen at the same level.

##### *description*

The pit measured 3.3 x 2.5 m and was c. 40 cm deep. The depth of the four postholes was 22-46 cm (mean 36 cm). While the infill of the pit was described as black on the field drawing, it's colour seems to be dark grey in reality. The fill of the postholes was dark brown to black.

In feature 101.159 the packing soil was grey and the fill of the post-hole black with charcoal.

##### *special features*

Under the pit a stain of 'phosphate rich' soil was seen (101.197) and a larger remainder of the infill on the north side.

##### *disappearance of the structure*

In feature 101.159 a post-pipe was present.

##### *finds and dating evidence*

Among the finds there are some prehistoric ones: a small fragment of a La Tène glass bracelet and 5 sherds (56 g) Iron Age handmade pottery. Besides, 16 fragments of iron, a fragment (9 g) of animal bone, 2 pieces (168 g) of Nivelstein sandstone and 11 sherds (111 g) of Middle Roman pottery. The 49 sherds (966 g) of Late Roman pottery consist, apart from one in terra nigra and another, a rim of a coarse-walled bowl (504-1; Fig. 44.4), entirely of a kind of 'cork ware', used for jars and bowls (Fig. 44.4). Almost all of this specific fabric from Ten Hove was found in this feature and therefore its date is uncertain. Elsewhere an Early Medieval date for this kind of pottery is suggested, but it is certain that cork ware was made in the Late Roman period. The bowl 504-1 dates possibly to the middle of the fifth-early sixth century AD, although this is



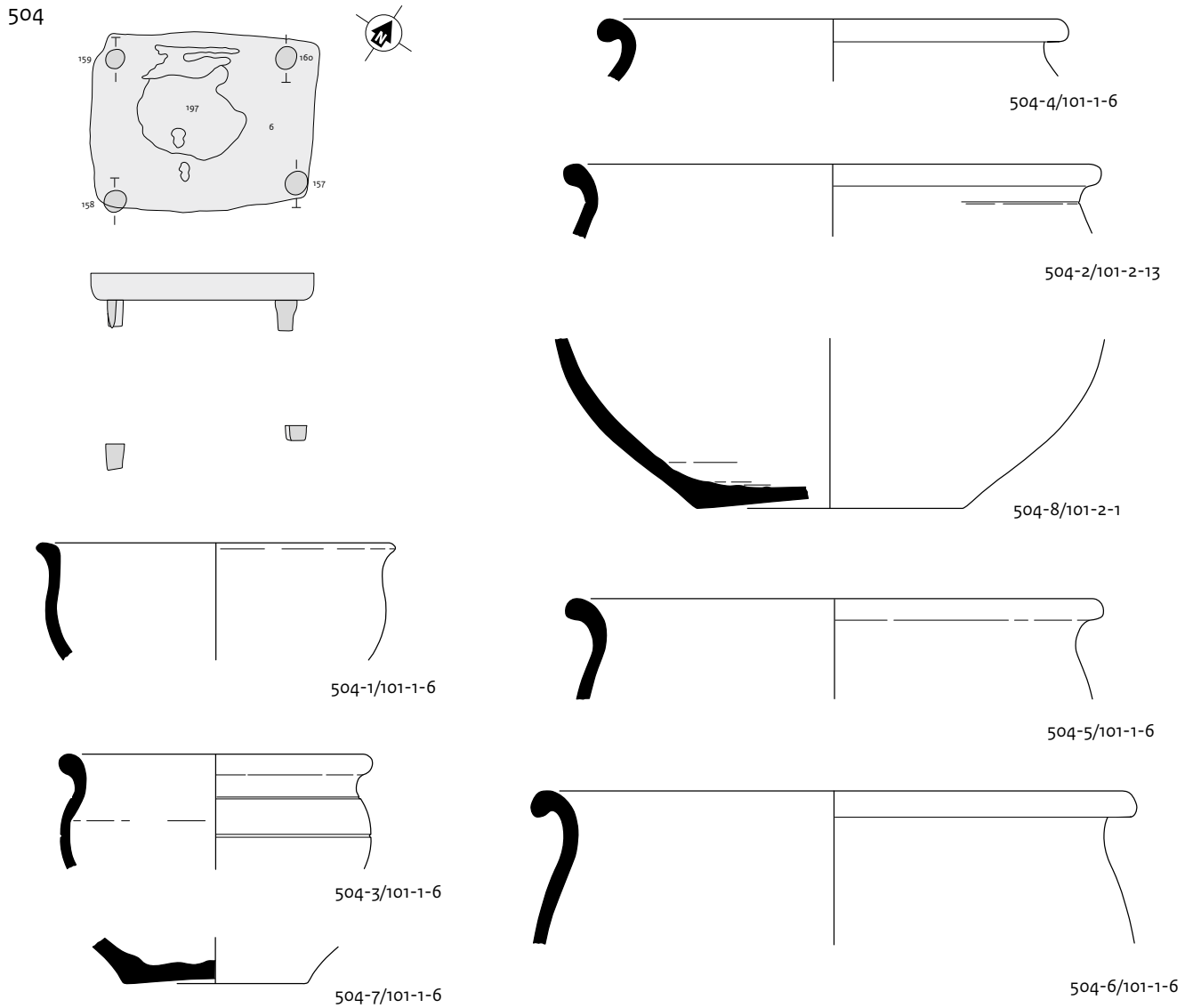


Fig. 44.4 Voerendaal-Ten Hove. Plan, feature-depths and pottery of sunken hut 504. Features scale 1:100, pottery 1:3.

not certain and it could be earlier. Therefore this sunken hut cannot be exactly dated, it belongs sometime after AD 350/375. Anyway, the date of c. AD 300 given by Proos is probably far-off.<sup>3336</sup>

#### SUNKEN HUT 505 / trench 101 (Fig. 44.5)

##### investigation

The pit was observed in level 1 (c. 88.85 m NAP), but the outlines were not clear; possibly the explanation for the difference in orientation from the postholes. The features under the pit were uncovered in level 2 (88.60 m NAP). Only the sections of the corner posts were drawn.

##### description

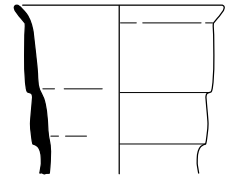
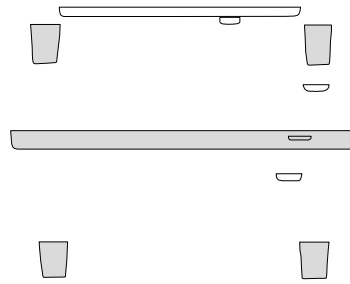
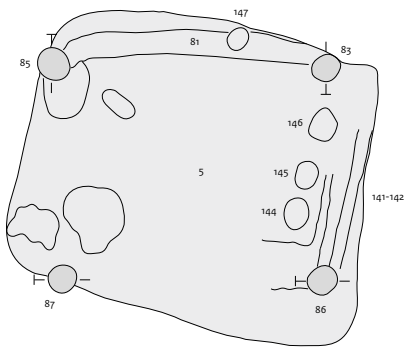
The dimensions of the pit were 4.5 x 4 m, its depth was c. 25 cm. The infill had a black(brown) colour. The four corner posts had a depth of 47-53 cm (mean 50 cm) and a black-grey coloured infill.

##### special features

On the northwest side a ditch of 12 cm deep was encountered. Two narrow ditches were seen on the northeast side, but their depth is not known. Feature 144-146 may belong to posts related to the sunken hut, although it is also possible that they were mere remains of the pit. This surely applies to the other traces observed.

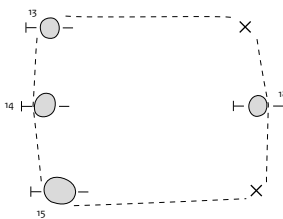
<sup>3336</sup> Proos 2019, 221, n. 6.

505

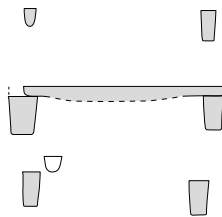
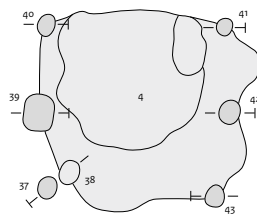


505-1/101-2-33

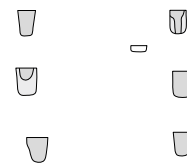
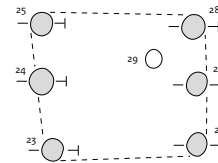
506



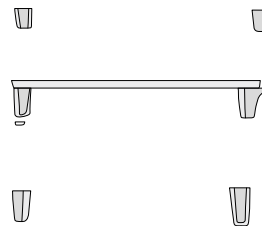
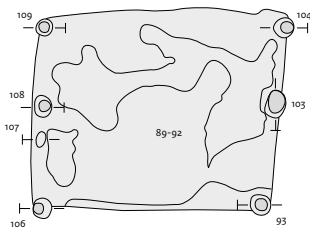
507



508



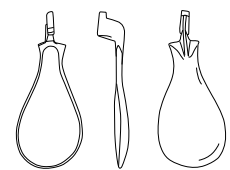
509



509-3/Aes4, AD 388-402



509-2/13-2-14



509-1/13-2-13

Fig. 44.5 Voerendaal-Ten Hove. Plan, feature-depths of sunken hut 505-509, pottery of 505, as well as metal and glass from 509. Features scale 1:100, finds 1:3.

*finds and dating evidence*

This feature has not yielded many finds: a piece of flint (168 g), a bronze rivet, 5 sherds (57 g) of prehistoric pottery, 4 Middle Roman sherds (48 g), 8 fragments of iron and 2 Late Roman/Early Medieval sherds (98 g). One of the latter is coarse-walled (oxidizing) and the other of terra nigra (505-1; Fig. 44.5).The terra nigra fragment seems to belong to some kind of beaker. At present no exact parallels are known to us, but there is some similarity to beakers from the Early Middle Ages (seventh century AD; Section 26.6.3), although these have a thicker wall and more (and rounded) ribs. This sunken hut was dated around AD 300 by Proos.<sup>3337</sup>

<sup>3337</sup> Proos *loc.cit.*

## SUNKEN HUT 506 / trench 24 (Fig. 44.5)

*investigation*

The size and orientation of this set of postholes in level 2 suggests that we are dealing with a sunken hut rather than a granary. The sections of the features were not drawn and are reconstructed.

*description*

Four of the six postholes are preserved, pointing to a structure of c. 3.1 x 2.5 m. Their depth varied from 15 to 31 cm (mean 20 cm) and their infill was rather dark.

*finds and dating evidence*

No finds.

## SUNKEN HUT 507 / trench 24 (Fig. 44.5)

*investigation*

This sunken hut was found in level 2 (c. 88.94 m NAP) and in level 3 (c. 88.81) part of the pit remained; its depth was not recorded however.

*description*

The pit originally measured c. 2.7 x 2.5 m and was c. 20 cm deep. In level 2 the infill was spotted black-brown-grey with fragments of limestone, tile and some gravel. The deepest part was dark grey-black with charcoal. The postholes with a dark grey colour were 24-50 cm deep (mean 42 cm).

*finds and dating evidence*

From the features belonging to this sunken hut, 4 pieces (900 g) of Roman tile, 7 iron fragments and 2 sherds (26 g) of pottery were collected. The sherds have quite indistinct coarse-walled/reduced fabric, but could be fifth century in date.

## SUNKEN HUT 508 / trench 13 (Fig. 44.5)

*investigation*

Of this hut, only the postholes were found (already in level 1).

*description*

The six postholes indicate a structure of 2.3 x 1.9 m. Their depth varied from 30 to 36 cm (mean 33 cm) and most had an infill of dark grey soil with charcoal. In two features this was the colour of the post hole, whilst the packing soil was light brown-grey.

*finds and dating evidence*

Besides 2 small Middle Roman sherds (3 g), one coarse-walled, reduced sherd was found, probably dating to the fifth century AD.

## SUNKEN HUT 509 / trench 13 (Fig. 44.5)

*investigation*

The pit belonging to this structure, came to light in level 2 (88.76 m NAP) the postholes in level 3 (88.67).

*description*

This building also had six posts, with a depth between 27 and 50 cm (mean 37 cm). The pit measured 3.25 x 2.65 m and was c. 9 cm deep.

*disappearance of the structure*

In all six postholes with light brown-grey packing soil a dark grey post-pipe was present.

*finds and dating evidence*

<sup>14</sup>C-date (charred seeds): 1816 ± 26 BP (GrM-23716); 210-250, 295-311 cal AD (1 sigma); 131-144, 156-258, 282-329 (2 sigma).

Collected from this feature were in the first place, 2 tiny iron slags (5 g), a fragment (6 g) of animal bone, 4 iron fragments, two (max. 200 g) of Roman tile and one of window glass (8 g). An interesting find is part of a silver(ed) spoon (509-1; Fig. 44.5). The pottery consists of 6 sherds (33 g) of Middle Roman pottery only, no ceramic finds relevant for dating are present. A date is provided by a Late Roman or Early Medieval glass beaker 1106 or a later variant, dating after the middle of the fourth, probably the fifth century AD. A bronze Aes4 gives a terminus post quem of AD 388 (-402). The sunken hut could have been constructed in the late fourth or fifth century. The radiocarbon date is too early, the dated grains obviously being residual.

#### SUNKEN HUT 510 / trench 13 (Fig. 44.6)

##### *investigation*

This feature is described on the field drawing as sunken hut; there is no comment on the missing of postholes. The only possible post hole is 117, but it seems to be dug into the pit and therefore younger. We assume that the post hole in the section is 117, but the section line did not run through this feature. There is another line indicated on the field drawing, but if sectioned, it was not drawn. Moreover, it should have been slightly rotated to run through postholes at the west and east side of the feature, where they are expected.

##### *description*

The pit measured 3,3 x 2,7 m and was max. 20 cm deep (with a rather irregular bottom). The infill was dark grey to black. The post hole was 39 cm deep and had the same kind of fill.

##### *finds and dating evidence*

Although the plan of figure 44.6 suggests otherwise, structure 510 was younger than the drain 317. The walls of the latter were still present, but the slabs covering it were removed when the pit was dug.

The amount of finds from this feature is quite considerable, with a large portion of Middle Roman 'residue' (pottery, brick and tile, building stone; Table 44.1). Relevant for dating is of course the Late Roman pottery, firstly represented by two bowls Chenet 320, one perhaps a 324 (510-2 and 3; Fig. 44.6). Also the group of terra nigra-like pottery is represented, with a pedestalled bowl/foot-vessel Chenet 342var. and a jug Alzey 18var. (510-4 and 1; Fig. 44.6). The vessels 510-5 and 8 are not easily classified, the first is perhaps a product of Northern France, the second of unknown provenance (see below). Like the pottery, a cup Isings 96 is Late Roman in date (510-7; Fig. 44.6). Two Aes3 coins show that the infill of the sunken hut dates in the second half of the fourth century AD or after (510-9 and 10; AD 364-367 and 367-375). The Early Medieval pottery specialist believes that 510-8 (Fig. 44.6) belongs to the eighth century, but – besides the possibility of being intrusive – to our opinion this is not entirely convincing and it could well be some Late Roman product.

**Table 44.1. Voerendaal-Ten Hove. Summary of the finds from sunken-floored hut 510.**

Category	N	Wt (g)	Category	N	Wt (g)
Prehistoric pottery	2	19	Slag	1	1
Middle Roman pottery	27	368	Brick and tile	25	6400
Late Roman pottery	21	230	Tephrite	16	385
Late Roman glass	2	2	(Building) stone	22	5900
Late Roman coins	2	2	Flint	1	2
Iron	31	-	Animal bone	2	7

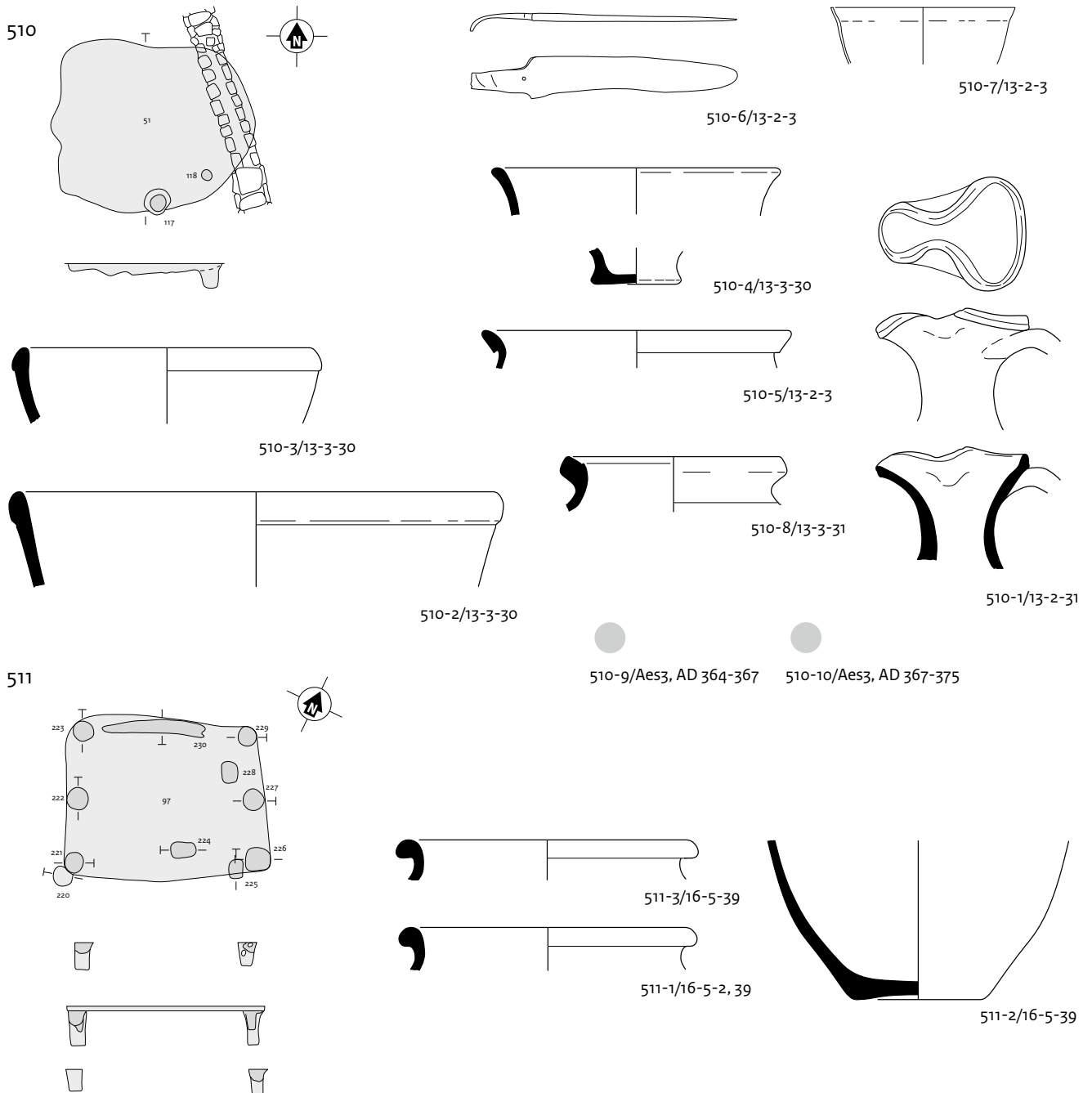


Fig. 44.6 Voerendaal-Ten Hove. Plan, feature-depths and finds of sunken hut 510 and 511. Features scale 1:100, finds 1:3.

#### SUNKEN HUT 511 / trench 16 (Fig. 44.6)

##### investigation

This sunken hut was found at level 5. Because no section of the pit was drawn and also no levels were taken, we don't know its depth. Level 4 lay at c. 87.65 m NAP and 6 at 87.53 m NAP however, so it can't have been very deep however. Sections of the postholes were made from the level last mentioned. The features 20, 21, 22 etc. were numbered 220, 221, 222 etc. to avoid confusion with the feature numbers on higher levels.

##### description

The pit of this structure measured 3.0-3.3 x 2.7 m and was probably some 8 cm deep. The six postholes were 35-55 cm deep (mean 45 cm). Their infill was dark grey, with in most cases an black-dark grey fill in the upper part, related to the post-pipe.

*special features*

At the bottom of the pit there were a small ditch (230, 12 cm) and two postholes (224, 16 cm; 228, ? cm). The former possibly was a part of the wall, the latter could have been part of implements.

*alterations or repairs*

Feature 220 and 225 had a depth of only 2 cm and therefore could not have been replacements or reinforcements for the original corner posts.

*disappearance of the building*

At least in feature 222 and 227 a (part of) the post-pipe was visible.

*finds and dating evidence*

<sup>14</sup>C-date (charred seeds): 1783 ± 22 BP (GrM-23717); 240-254, 287-324 cal AD (1 sigma); 224-262, 276-339 cal AD (2 sigma).

<sup>14</sup>C-date (charred seeds): 1740 ± 50 BP (UtC-1571); 241-354, 366-380 cal AD (1 sigma); 141-197, 209-402 cal AD (2 sigma).

Both radiocarbon date give about the same terminus post quem, although UtC-1571 is less precise. GrM-23717 is more or less the same as GrM-23710 from house 241, so the question which is the oldest is not solved.

The find material is not very abundant, but diverse. Firstly, it consists of a fragment (24 g) of animal bone, a piece (91 g) of slag, 3 fragments of iron and 3 of stone (150 g). Certainly Middle Roman are a splinter (1 g) of pottery and 2 fragments of tile (200 g). The 9 other sherds (429 g) of pottery are all in coarse-walled, reduced fabrics. Two rims and the lower half of a vessel are reminiscent of *Wölbwandtöpfe*, but the base of the latter suggests a Late Roman rather than an Early Medieval date (511-1, 2, 3; Fig. 44.6). The pottery possibly belongs to the period c. AD 425/450-525.

## SUNKEN HUT 512 / trench 22 (Fig. 44.7)

*investigation*

This pit was encountered in level 5 (87.49 m NAP), 6 (87.31) and 7 (87.25), where only fragments with a depth of 2 cm remained. The expected postholes were absent, but the form and size of the pit suggest that it is a sunken hut after all. Remarkable is the different orientation compared to most other pits.

*description*

The pit measured 2.75 x 2.25 m and was c. 26 cm deep. The infill was black, with tile fragments in the upper levels.

*finds and dating evidence*

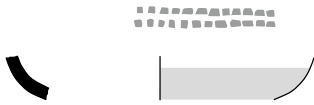
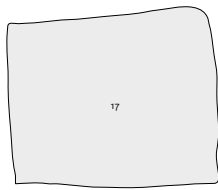
<sup>14</sup>C-date (charred grain): 1880 ± 50 BP (UtC-1576); 72-176, 191-212 cal AD (1 sigma); 19-246 cal AD (2 sigma).

<sup>14</sup>C-date (charred grain): 1885 ± 35 BP (GrN-19135); 69-140, 159-166, 196-208 cal AD (1 sigma); 55-226 cal AD (2 sigma).

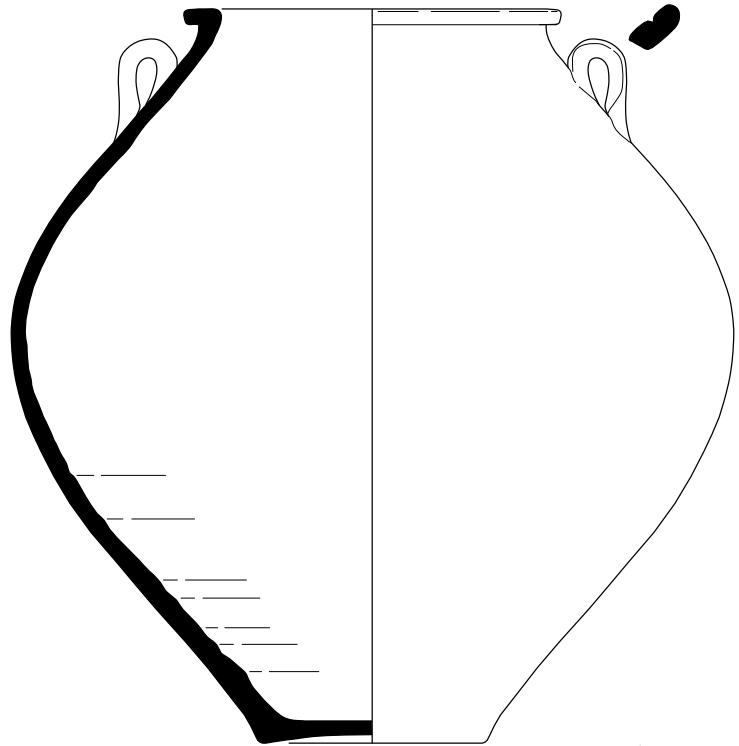
<sup>14</sup>C-date (charred grain): 1825 ± 30 BP (GrM-23718); 171-183, 203-250, 295-311 cal AD (1 sigma); 127-255, 285-325 cal AD (2 sigma).

The finds collected are, to start with, one fragment (20 g) of animal bone, 8 pieces of iron, one of limestone (200 g) and 12 of brick and tile (700 g). Remarkable is the presence of quite a lot of Middle Roman pottery, 158 sherds (2, 904 g). Sherds of a honey pot from Soller make up half of the weight (512-2; Fig. 44.7). A Late Roman coarse-walled bowl mentioned in the original database is missing, the only piece of pottery from this period being one sherd (5 g) of a Chenet 320 with a group 2 roller-stamp decoration (c. AD 325-375; 512-1; Fig. 44.7). Near the feature, two fourth-century coins were found (22-1-32; 22-2-4), but there is no firm association with the structure. In the light of the finds, one wonders if this sunken hut has to be dated relatively early, somewhere in the first half of the fourth century AD. Some of the Middle Roman pottery seems

512

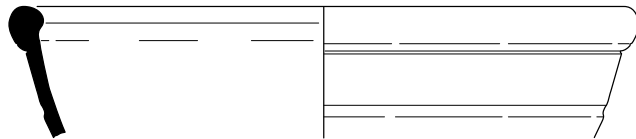
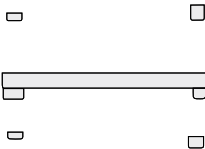
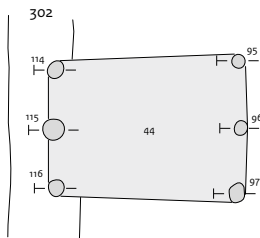


512-1/22-5-12

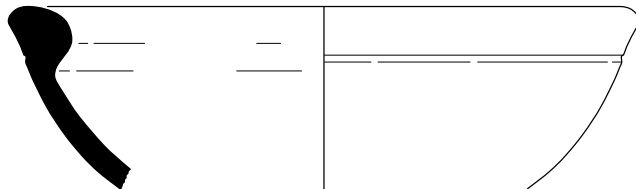


512-2/22-5-12

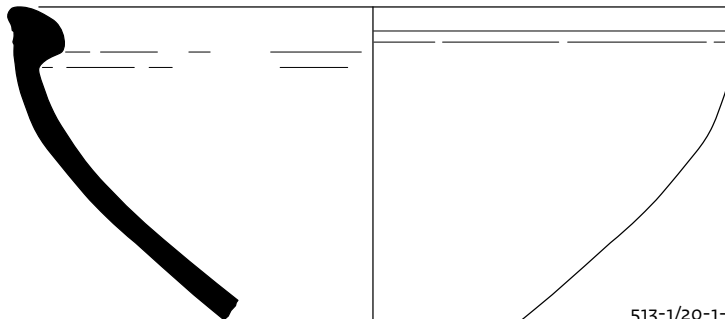
513



513-3/20-1-67



513-2/20-1-67



513-1/20-1-67

Fig. 44.7 Voerendaal-Ten Hove. Plan, feature-depths and pottery of sunken hut 512 and 513. Features scale 1:100, pottery 1:3, roller-stamp 1:2.

to have been still in use. The radiocarbon dates from 1992 can be residual. However, this can apply also to the date from 2020, although it allows for the grain being burned in the first quarter of the fourth century AD.

#### SUNKEN HUT 513 / trench 20 (Fig. 44.7)

##### *investigation*

The pit was observed in level 1 (c. 88.55) and had disappeared in level 2 (88.35). Here the postholes on the east side were present, but they were sectioned some 5 cm deeper in level 3. The western pits only appeared when ditch 302/b was partly removed; this does not mean that the ditch is younger, however.

##### *description*

The pit measured 2.6 x 1.9 m and was c. 20 cm deep; the infill was dark grey-black. The depth of the postholes was c. 9-20 cm.

##### *finds and dating evidence*

<sup>14</sup>C-date (charred seeds): 1852 ± 22 BP (GrM-23719); 133-140, 160-190, 201-234 cal AD (1 sigma); 128-238 cal AD (2 sigma).

The non-ceramic finds consist of 10 pieces (203 g) of animal bone, a piece of flint (21 g), a piece of bronze sheet and 10 iron fragments. Besides 13 sherds (178 g) of Middle Roman pottery, there are 3 (586 g) of Late Roman ware. Item 513-3 is a terra nigra like bowl like Chenet 320 and/or Alzey 24/25, 513-1 and 2 are coarse-walled bowls Alzey 28 (Fig. 44.7). These vessels date to the period of c. AD 350-450; the radiocarbon dated grains are residual without doubt.

#### SUNKEN HUT 514 / trench 20 (Fig. 44.8)

##### *investigation*

The pit was found in level 2 (88.27 m NAP) and the postholes in level 4 (88.87).

##### *description*

The pit was 2.6 m long and 2.2 m wide; its depth was c. 40 cm and the infill was dark grey-black and contained much charcoal. The depth of the postholes varied from 22 to 36 cm (mean 29 cm). Their infill had the same infill as that of the pit.

##### *finds and dating evidence*

<sup>14</sup>C-date (charred seeds): 1769 ± 21 BP (GrM-23720); 247-256, 284-327 cal AD (1 sigma); 236-264, 274-348 cal AD (2 sigma).

<sup>14</sup>C-date (charred seeds): 1600 ± 50 BP (UtC-1581); 407-474, 485-536 cal AD (1 sigma); 344-569 AD (2 sigma).

The collection of finds (Table 44.2) contains several pieces of Argonne sigillata, with two stamped bowls Chenet 320, dating from c. AD 375-400 and 375-425 (514-5 and 7; Fig. 44.8). The coarse-

**Table 44.2. Voerendaal-Ten Hove. Summary of the finds from sunken-floored hut 514.**

Category	N	Wt (g)	Category	N	Wt (g)
Prehistoric pottery	2	9	Bronze	1	-
Middle Roman pottery	15	162	Lead	1	5
Late Roman pottery	24	874	Slag	2	62
Middle Roman glass	2	14	Brick and tile	6	1700
Late Roman coins	3	3	Animal bone	1	14
Iron	58	-			



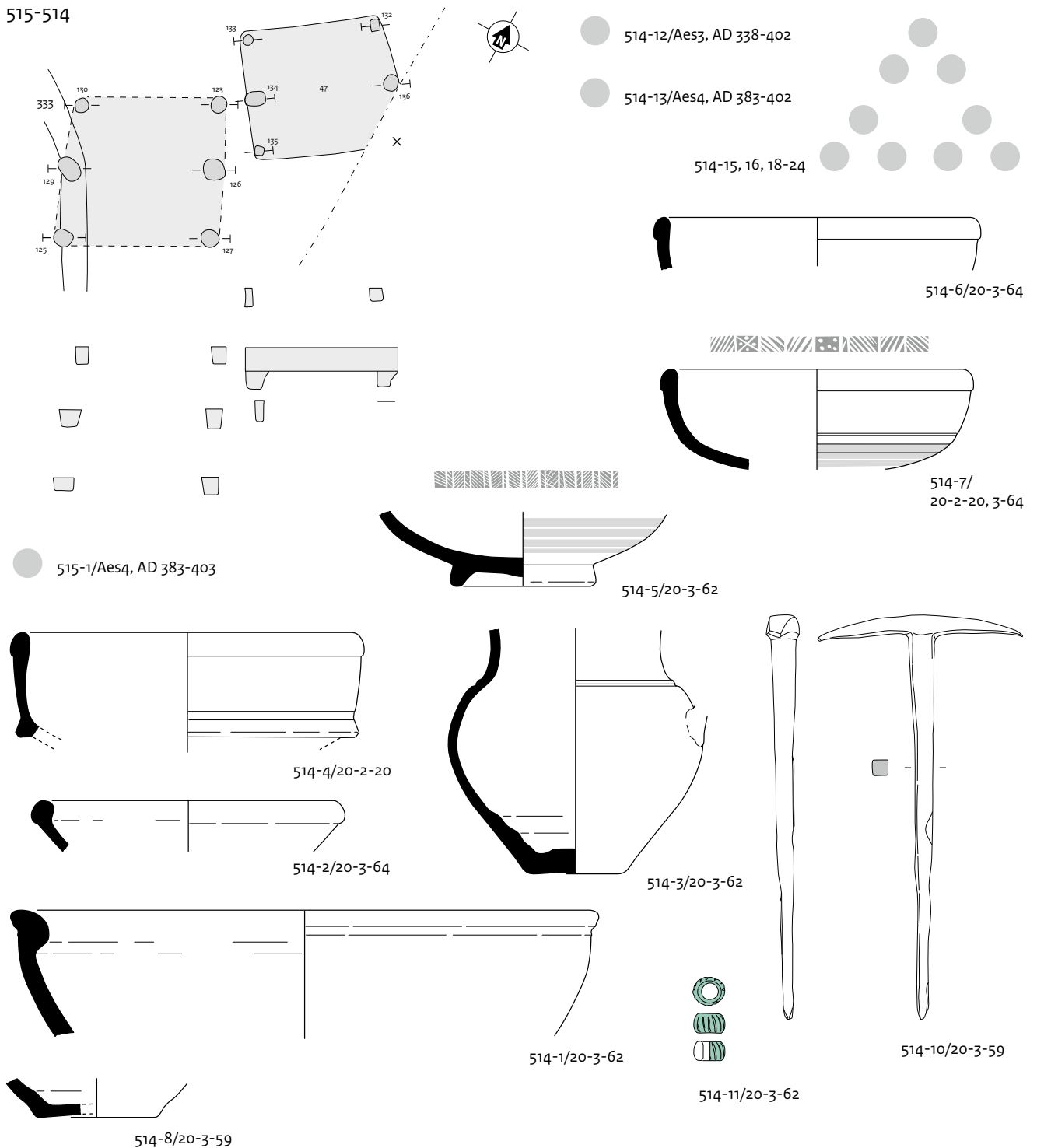


Fig. 44.8 Voerendaal-Ten Hove. Plan, feature-depths and finds of sunken hut 514 and 515. Features scale 1:100, finds 1:3.

walled forms Alzey 28, 29 and 30 (514-1, 2 and 3; Fig. 44.8) also belong to the latter period, or somewhat later, until AD 450. The base 514-8 was identified as Early Medieval (after AD 460/480) by the specialist, but it would be the single find this young and seems not very characteristic (or is it intrusive?). Of the 11 Late Roman bronze coins from the infill, 514-13 provides a terminus post quem of AD 383. Close to the feature, nine other late coins were found. The new GrM-23720 date seems to be related to residual grains. Like the artefacts, both radiocarbon dates allow for a dating of the sunken hut at the end of the fourth or rather the first half of the fifth century.

The date UtC-1581 and most finds point to a date after c. AD 400; this radiocarbon date does not exclude an Early Medieval date (suggested by 514-8).

#### SUNKEN HUT 515 / trench 20 (Fig. 44.8)

##### *investigation*

One corner of a pit seems visible in level 2 (c. 88.24) but in level 3, some 10 cm lower, only the postholes were found.

##### *description*

This hut measured c. 2.7 x 2.5 m. The postholes were 22-33 cm deep (29 cm mean) and had a black infill.

##### *finds and dating evidence*

Two postholes intersect ditch 333.

<sup>14</sup>C-date (charred seeds): 1723 ± 30 BP (GrM-23721); 257-283, 328-384 cal AD (1 sigma); 250-296, 309-410 cal AD (2 sigma).

Most finds from this feature are not relevant for dating: one fragment (9 g) of animal bone, a piece of sandstone (400 g) and 10 (c. 2 kg) of brick and tile. The only datable find is an Aes4 coin struck between AD 383-403 (515-1), but above and next to the sunken hut, 5 more Late Roman coins were found (dating from AD 388). The feature could have been used during the first half of the fifth century AD, although a later date is possible.

#### SUNKEN HUT 516 / trench 29 (Fig. 44.9)

##### *investigation*

The pit was found in level 1 (89.10 m NAP) and although the infill was taken out in four quadrants, no sections were drawn. No separate feature numbers were given to the postholes and traces of the wall.

##### *description*

This sunken hut was 2.5 m long and 2 m wide; the depth was 30 cm and the infill was black with small pieces of tile and charcoal. The postholes were between 19 and 40 cm deep, with a mean of 30 cm. The colour of their fill was identical to that of the pit. The other features were only 2-3 cm deep and partly are from a wall/revetment of the pit.

##### *finds and dating evidence*

Although not exceptionally numerous, the finds are quite diverse (Table 44.3). Datable finds are the bronze pin 516-4, dating to the period AD 350-450 (Fig. 44.9). The pottery consists of one sherd of a terra sigillata bowl Chenet 320, with a decoration dating to AD 375-425 (516-3; Fig. 44.9). The remainder is in Mayen coarse-walled fabric, c. AD 350-450, with as recognizable

**Table 44.3. Voerendaal-Ten Hove. Summary of the finds from sunken-floored hut 516.**

Category	N	Wt (g)	Category	N	Wt (g)
Prehistoric pottery	1	30	Phyllite whetstone	1	42
Middle Roman pottery	3	12	Tephite	1	20
Late Roman pottery	8	239	Sandstone	2	134
Middle Roman glass	2	6	Brick and tile	1	106
Bronze hair pin	1	-	Animal bone	1	7
Iron	16	-	Flint	2	143

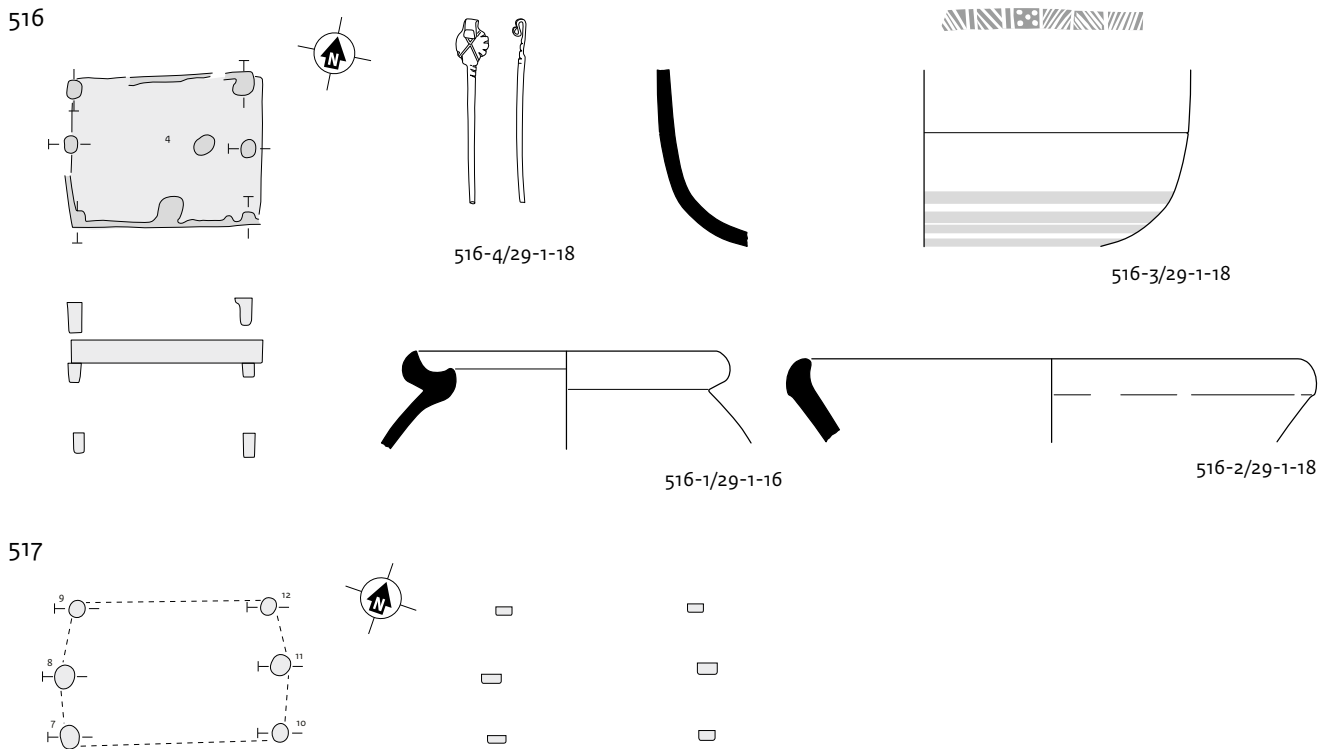


Fig. 44.9 Voerendaal-Ten Hove. Plan, feature-depths of sunken hut 516 and 517, as well as finds of 516. Features scale 1:100, finds 1:3.

types the jar Alzey 27 and bowl Alzey 29 (516-1, 2; Fig. 44.9). The feature seems to have been used sometime in the period AD 375-450.

#### SUNKEN HUT 517 / trench 52 (Fig. 44.9)

##### investigation

In level 1 only six postholes were present. Their configuration suggests that we are dealing with a sunken hut rather than a granary.

##### description

The six features form a rectangle of 2.95 x 1.85 m. Their depth was 10-15 cm (mean 12 cm) and their infill grey.

##### finds and dating evidence

No finds.

#### SUNKEN HUT 518 / trench 27 (Fig. 44.10)

##### investigation

The suggestion that this was a sunken hut, was noted on the field drawing of level 3 (c. 88.60 m NAP?). One reason for this interpretation was the damaged wall of building 401/A next to it. A section was made from level 4 (88.50). In level 6 (c. 88.15) three shallow postholes were observed on the west side. Maybe the pits on the east side were removed unobserved. The depth of the small ditch joining the pit is unknown.

##### description

The pit measured 2.2 x 1.8 m and was c. 10-25 cm deep. The infill was dark grey-black.

The postholes were 3-15 cm deep in the sections, values to be raised by at least 20 cm (bottom pit).

##### finds and dating evidence

Besides 5 fragments (75 g) of animal bone and 2 iron fragments, a sherd (21 g) of Late Roman terra nigra or Early Medieval reduced fine pottery is the only find.

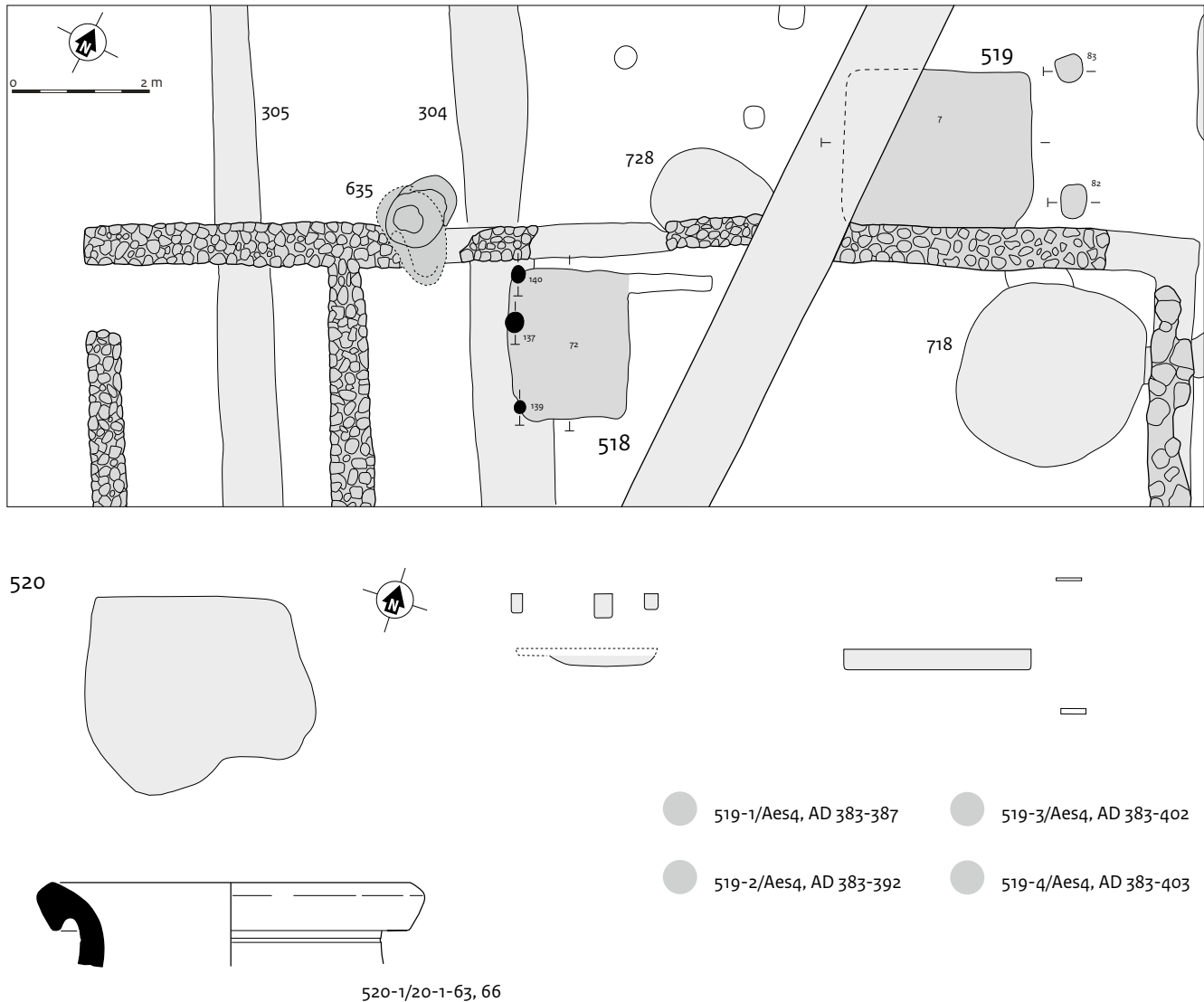


Fig. 44.10 Voerendaal-Ten Hove. Plan of sunken huts 518 and 519 with adjacent structures and feature depths; plan and pottery of 520. Features scale 1:100, pottery 1:3.

#### SUNKEN HUT 519 / trench 20 (Fig. 44.10)

##### investigation

In level 1 (c. 88.75 m NAP) a pit was present and in the next level (c. 88.45) it had disappeared. Two postholes east of the pit possibly were related to it. Underneath the pit no postholes were discovered (as in the case of 510, 512).

##### description

The pit was 2.7 m long and 2.3 m wide. Its depth was c. 30 cm and the infill was dark grey-black. The postholes were at least 4 and 8 cm deep (sections made in level 4, already present in 3).

##### finds and dating evidence

The finds from this sunken hut consist of, to start with, one fragment (1 g) of animal bone, 4 iron fragments, one piece of a *tegula* (100 g) and 11 Middle Roman sherds (76 g). The only younger sherd (7 g) is coarse-walled/reduced and Late Roman or Early Medieval in date. Four bronze coins are all struck after AD 383 (the possibly youngest before AD 403).

#### SUNKEN HUT 520 / trench 19, 20 (Fig. 44.10)

##### investigation

The features 19.012 and 20.027 are interpreted as a sunken hut almost solely on the basis of the size and orientation, comparable with 513 directly south of it. Why it was interpreted and investigated in the wrong way, is not clear, but probably was connected with the absence of field

technician Van Kregten. In trench 19 at level 1, a bundle of recent disturbances was found, partly coinciding with 520 and ditch 302. At level 2, it became clear however, that 520 was a corner of a rectangular pit intersecting 302. In trench 20 at level 1, the pit was found again, here in a more roundish shape. Apparently the situation in trench 19 was not remembered, and not warned by the presence of sunken hut 513 in the vicinity, the pit was sectioned in full, destroying possible postholes. Then the north half of the fill was removed, only looking for finds.

*description*

The pit measured about 3.3 x 2.3 m. In the section drawing, a pit of max. 30 cm deep with a dark grey/black infill is shown. Under this feature, there is another pit, with a depth of 104 cm and a grey fill with a band of charcoal halfway. The shape and colour of this pit suggest that it was a natural phenomenon, most likely a tree-throw.

*finds and dating evidence*

The finds make one doubt the interpretation as sunken hut, because all finds are Middle Roman: 6 pieces (1,400 g) of brick and tile, 2 of glass (3 g), 20 iron fragments, one piece of limestone (200 g) and an iron slag (28 g). A sestertius of Trajan was struck in the years AD 98-103. The 60 sherds (1,237 g) of pottery belong to types dating from c. AD 150, like a 'dolum-flask' from Soller (520-1; Fig. 44.10).

SUNKEN HUT 757 / trench 104-105, 108-109 (Fig. 44.11-44.13)

*investigation*

This feature got a number in the 700-series in an early stage of the analysis and this was not changed because already a considerable number of finds were entered in the database and drawn. However, it was evident from the onset that it was not a 'normal' pit. The feature was first encountered in trench 104 and 105 at level 1 and later at level 2-6. The trench wall was used as a section through the feature. In figure 44.11 the approximate position of the 6 levels (W1-6) respective to the section is indicated, not completely accurate because based on only 1-3 levels per excavation level. In trench 108 and 109 only 4 levels were made (E1-4), with 2, 3 and 4 roughly the same as the earlier levels 4, 5 and 6. In trench 108 also a transverse section was made, but only from level 4, so it is not very informative. This feature was published by Proos as a kind of cellar; below we offer an alternative interpretation of some details.

*description*

The size of the pit at level W4/E2 was c. 11.2 x 7.8 m, with the south wall steeper than the north wall. The feature extended further to the north at higher levels (12.5 x 10 m at level 1) and the deepest part was situated in the southern half (dashed line in the plan of figure 44.11). The total depth of the pit (part dug into the virgin subsoil) was 80-110 cm. At the east side there seems to have been an entrance to the pit. The fill consisted of grey soil at lower levels and dark grey material higher up.

Some of the features around the pit as indicated by Proos,<sup>3338</sup> are part of other structures in our interpretation or were natural features. Most of the remaining post holes were shallow, (much) less than 20 cm. Only 109.068 was 35 cm deep. Proos interpreted a feature in the centre of the pit as a 'central post', but his own section drawing shows it did not reach the bottom of the pit. Because in the part of the site not much or virtually no soil was eroded, the pit as such was not deep enough allowing a person to stand upright. This is not a problem if the pit had low walls and a pitched roof, like a kind of giant sunken hut. The walls and roof would not have needed dug in posts, because it is possible that they rested on a sleeper beam (leaving no archaeological traces).

*finds and dating evidence*

Feature 757 is clearly younger than ditch 308, which it intersects. At level 2 in trench 108, pit 757 is intersected by pit 801. Perhaps 757 was younger than building 230 and 236, but this is not certain.

<sup>3338</sup> Proos 2010, 218, fig. 10.

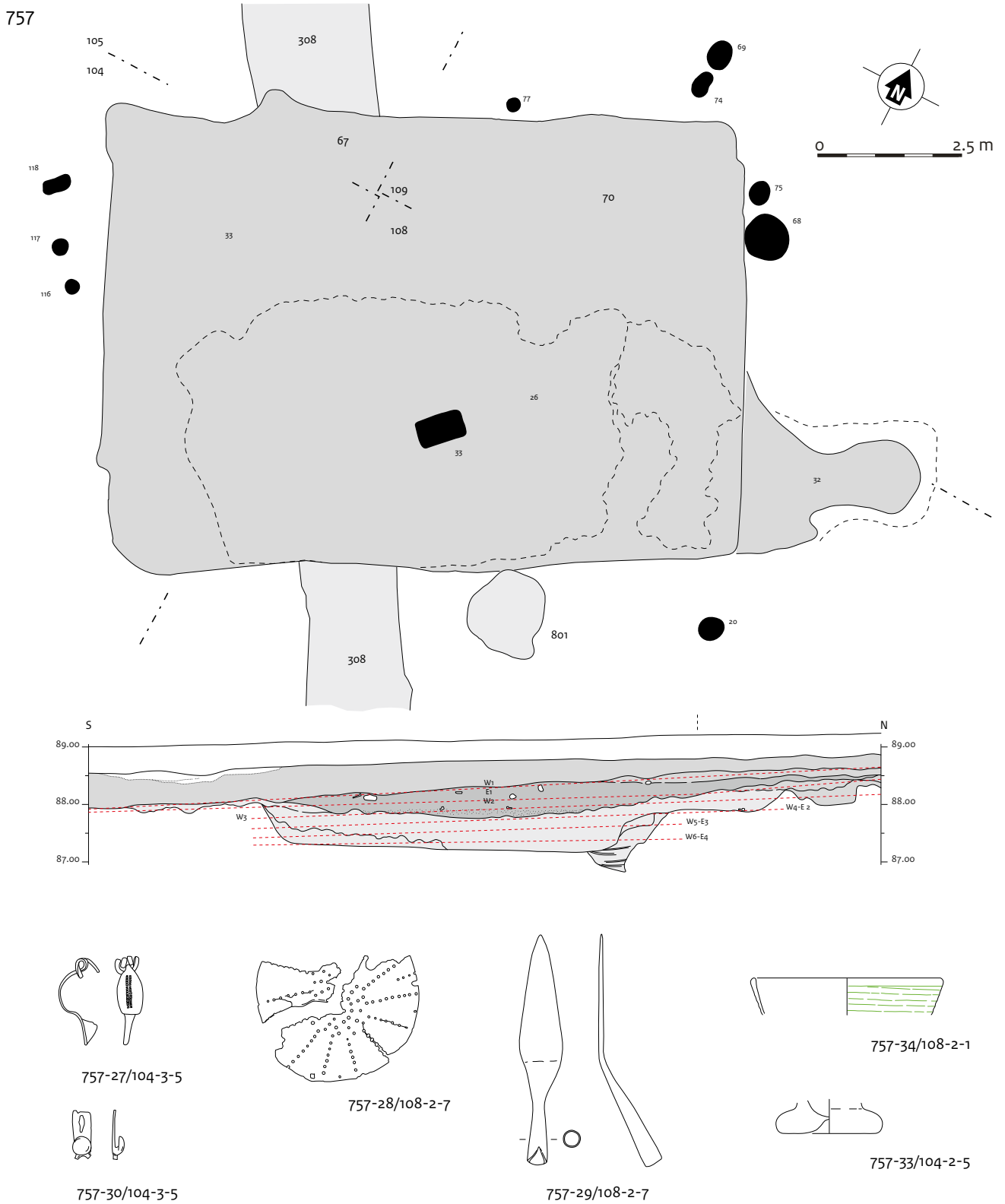


Fig. 44.11 Voerendaal-Ten Hove. Plan of structure 757 at level 3(W) of trench 104-105 and the eastern wall of those trenches; metal and glass finds. Plan and section scale 1:100, finds 1:3.

Like the cellar in building 409, a large quantity of finds was collected from feature 757 (Table 44.4). The vast majority was found in the dark upper infill and only a small portion from the 'primary', lighter infill. It is difficult to isolate the finds from the latter. In the western portion of the feature (in trench 104 and 105) the finds at level 4 and below come from the primary infill. This level is more or less similar to level 2 in the eastern portion, trench 108 and 109. However,

757

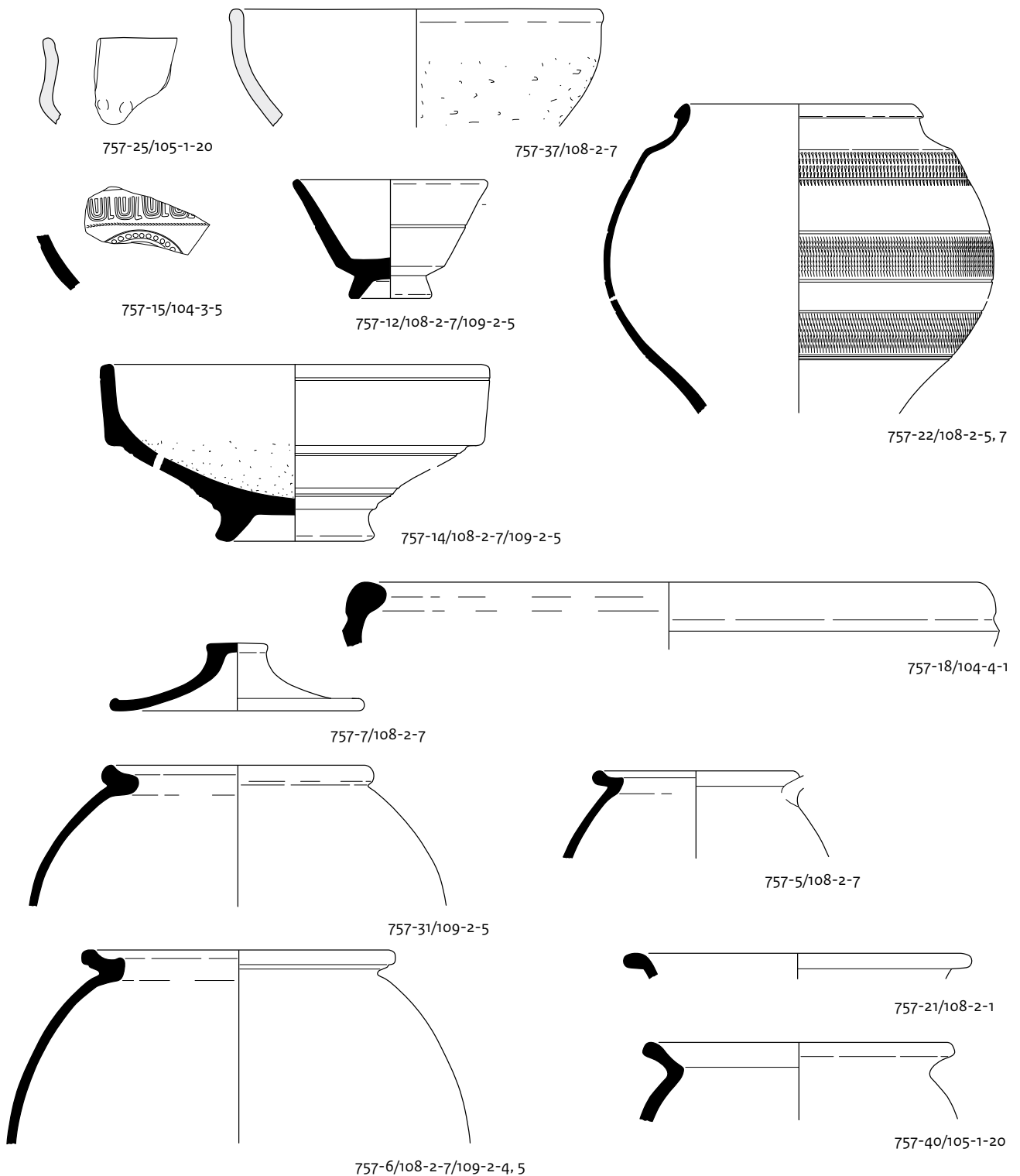


Fig. 44.12 Voerendaal-Ten Hove. Pottery from different periods found in feature 757. Scale 1:3.

the excavation plan shows that in practice, still dark soil is present here. Only at level 3 and below, the whole infill is 'clean' and lighter. If one looks at the finds from the primary infill thus defined, it appears that all the pottery sherds (some 40-50) are either prehistoric or Middle Roman. There was also some brick and tile recovered, including a piece of *tubulus*. While feature 757 seems to have been used at a time the villa (or part of it) lay in ruins, it is impossible to give a precise date.

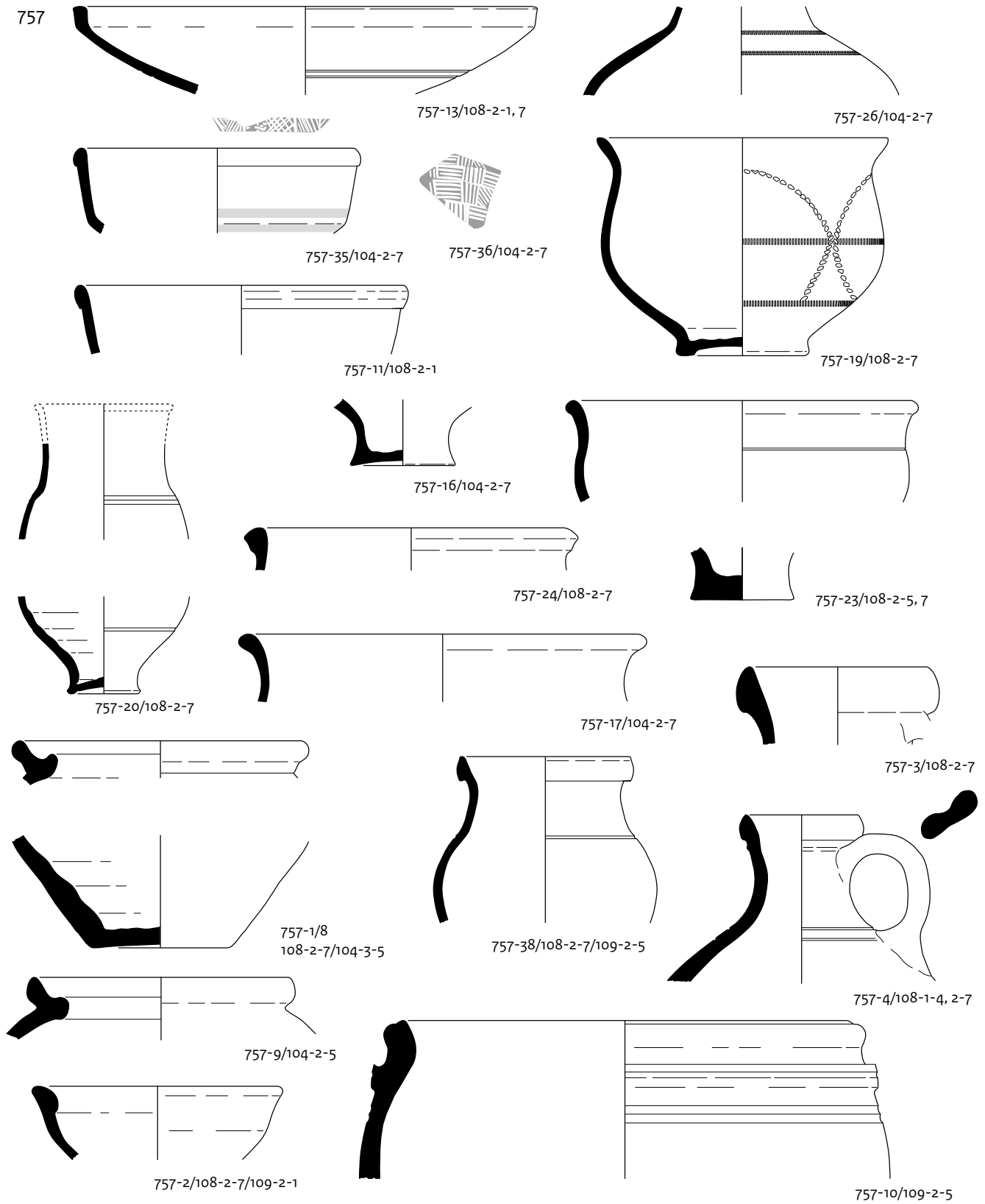


Fig. 44.13 Voerendaal-Ten Hove. Late Roman pottery, with some possible Early Medieval terra nigra from feature 757. Scale 1:3.



**Table 44.4. Voerendaal-Ten Hove. Summary of the finds from feature 757.**

Category	N	Wt (g)	Category	N	Wt (g)
Prehistoric pottery	85	1454	Lead	1	19
Middle Roman pottery	105	3215	Brick and tile	28	ca. 7550
Late Roman pottery	139	4205	Tephrite	22	2511
Early med.(?) pottery	7	152	Stone	7	900
Middle Roman glass	1	3	Flint	3	100
Late Roman glass	2	39	Burnt loam	6	-
Bronze	7	-	Slag	3	87
Iron	18	-	Animal bone	7	81

All the datable pottery and other finds were collected from the secondary, dark infill.

This assemblage is a chronologically mixed one, albeit with a large portion of Late Roman ceramics. Some of the handmade pottery could be Late Roman (757-2? Fig. 44.12), but most would originally have been part of the infill of ditch 308 (like – probably – 757-37; Fig. 44.12). A considerable number of sherds are Middle Roman, like those from the vessels in the centre of figure 44.12: terra sigillata from Eastern Gaul, the terra nigra/smoked beaker 757-22 and coarse-walled ware like the bowl Niederbieber 104 (757-18; Fig. 44.12). Some bronze objects are also Middle Roman or even older (Fig. 44.11, bottom left). A number of vessels are in a Urmitz-Weißenthurm fabric, like the jar with ear Niederbieber 94/Gellep 101 and jars Niederbieber 89/Alzey 27 (Fig. 44.11, bottom left). This pottery could either be part of a quite late Middle Roman production, or made in the fourth century AD.

The ‘real’ Late Roman finds consist of some glass, like the foot of a fourth-century jug or flagon and the rim of a beaker 1106ff. probably from the late fourth or early fifth century (757-33 and 34; Fig. 44.11). Among the pottery there is Argonne terra sigillata, with roller stamp decorations dating c. AD 375-425 (757-35) and AD 400-450 (757-36), a colour-coated beaker from Trier (757-20) and coarse ware from Mayen, jars Alzey 27 (757-1/8, 9), bowls Alzey 28 (757-2), jugs Alzey 30 (757-3, 4, 38) and more rare types (757-10; Fig. 44.13).

Among the terra nigra (Fig. 44.13, upper right), there are the more common (foot-)bowls, but also a kind of bottle and an ‘archaeologically complete’ bowl (757-26, 19; Fig. 44.13). These are decorated with small rectangular and rounded-triangular impressions, rather reminiscent of Early Medieval than (Late) Roman decorations. A few fragments come from vessels probably dating from the mid-fifth century or beyond (757-21; 40; Fig. 44.12, lower right; cf. Section 26.6). To complete the listing of finds, a fourth-century *nummus* from level 1 above the feature has to mentioned (108-1-3). A coin listed in the original database from the infill of 757 is missing.



# 45 Hearths, kilns and furnaces

Henk Hiddink

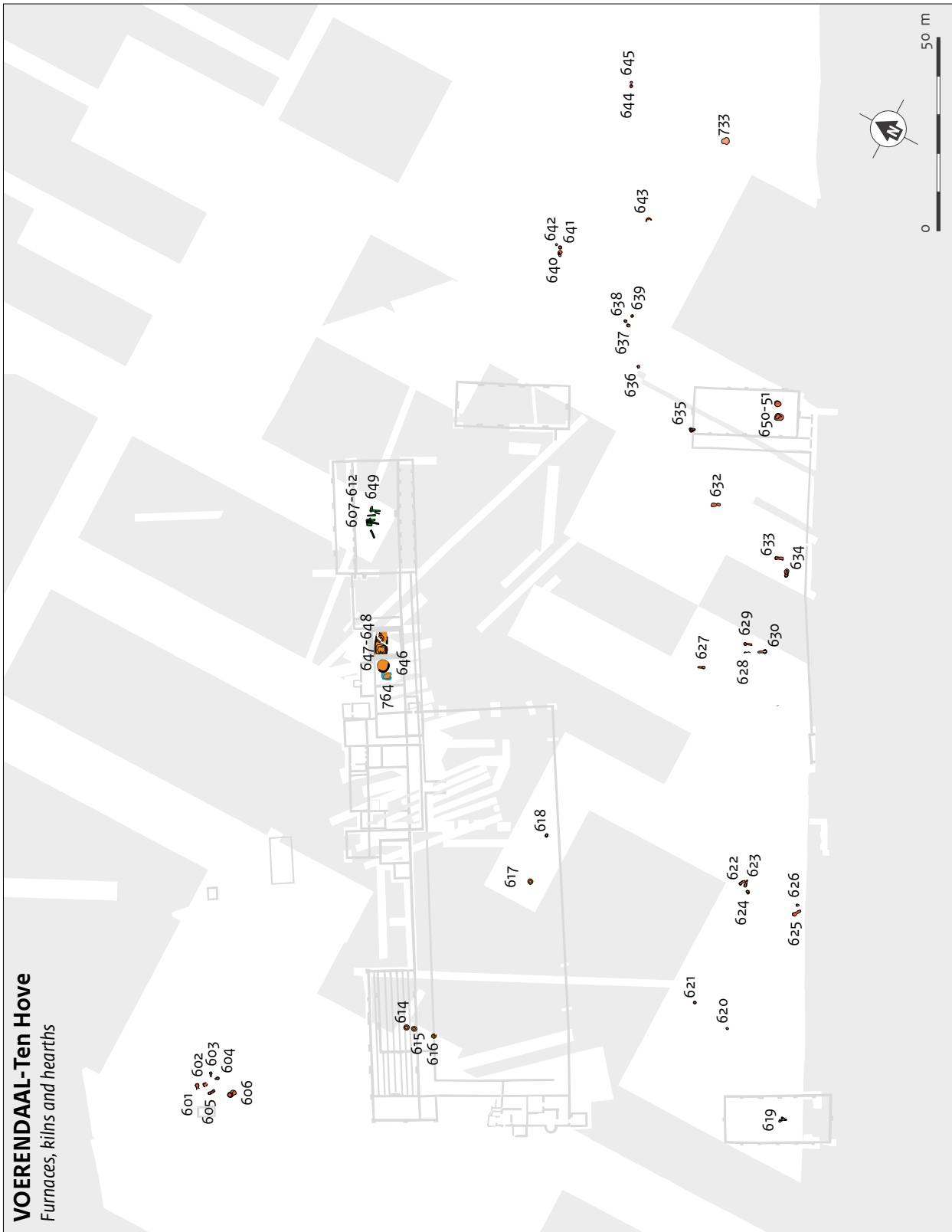


Fig. 45.1 Voerendaal-Ten Hove. Location of the furnaces, kilns and hearths.

This category comprises all features that have something to do with fire, in the form of orange-red discoloured soil and/or charcoal. A number of features have a specific 'keyhole-shaped' form, three the shape of a circular ditch.

In almost all cases, the plans were only drawn in 1:50; the sections were drawn in 1:20. Botanical samples were taken from all hearths. The location of the features is shown in figure 45.1.

HEARTH 601 / feature 74.020 (Fig. 45.2)

*description*

Keyhole-shaped, 1 x 1.45 m, depth 16 cm. Infill of burnt loam and black soil with charcoal.

Like 602-605, hearth 601 lies on the edge of a kind of depression with dirty soil (brown-grey-black), partly with brick fragments. The centre of the depression is c. 30 cm deep, but is possibly a natural phenomenon.

*finds/dating evidence*

The only finds are 3 pieces of burnt loam.

HEARTH 602 / feature 74.023 (Fig. 45.2)

*description*

Keyhole-shaped, 95 x 110 cm, depth 17 cm. Thin layer of burnt loam, infill mainly of black soil with charcoal.

*finds/dating evidence*

In this feature 3 pieces (3.5 kg) of square *bessales* and 7 pieces (3 kg) of limestone were found.

HEARTH 603 / feature 74.025 (Fig. 45.2)

*description*

Section not drawn. Tongue-shaped patch of burnt loam, max. 50 x 105 cm, depth 4 cm.

Surrounded by grey-yellow spotted soil.

*finds/dating evidence*

Besides a small piece of tile (<100 g), one sherd (3 g) of coarse-walled pottery was collected.

HEARTH 604 / feature 74.027 (Fig. 45.2)

*description*

Keyhole-shaped, 75 x 110 cm, depth 8 cm. Burnt loam with lots of charcoal, covered by dark layer with dispersed charcoal and burnt loam.

*finds/dating evidence*

This feature yielded 2 pieces (100 g) of brick were found, together with one sherd (31 g) of a mortarium in *Argonne sigillata* (Chenet 328-330).

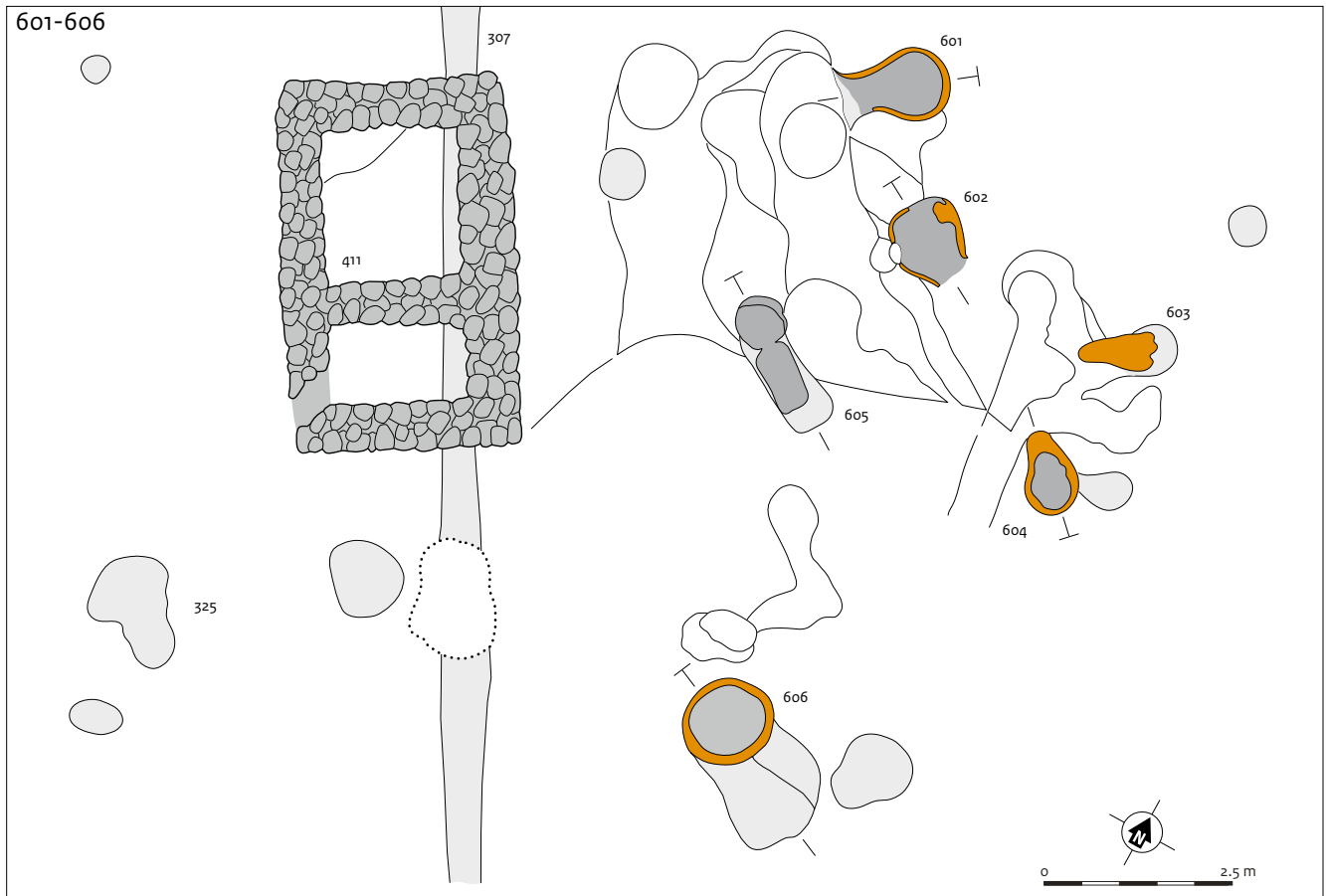
HEARTH 605 / feature 74.022 (Fig. 45.2)

*description*

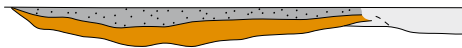
Keyhole-shaped, round part diam. 65 cm, rectangular part 90 x 45 cm. Depth in section (level 2) 7 cm and infill of black-grey-brown soil with charcoal. Observed some 10 cm higher at level 1 as a rectangular pit with brown-black spotted soil with dispersed burnt loam and tile fragments.

*finds/dating evidence*

The only finds are 10 small pieces (500 g) of limestone.



601



605



602



606



604



Fig. 45.2 Voerendaal-Ten Hove. Plan of the area of hearth 601-606 and sections of five of them. Sections scale 1:30.

#### HEARTH 606 / feature 74.029 (Fig. 45.2)

##### *description*

Round, diam. 115-130 cm, depth 16 cm (level 2). Band of burnt loam around a pit with black-grey soil and much charcoal and brown-grey soil with lesser charcoal. At level 1, c. 10 cm higher, seen as a round pit with black-grey soil with charcoal and tile fragments. Not certain if the 4-9 cm deep grey feature belongs to the hearth, or is part of the dirty soil of level 1.

##### *finds/dating evidence*

Eight pieces (1.5 kg) of roof tiles and 2 sherds (10 g) of coarse-walled pottery.

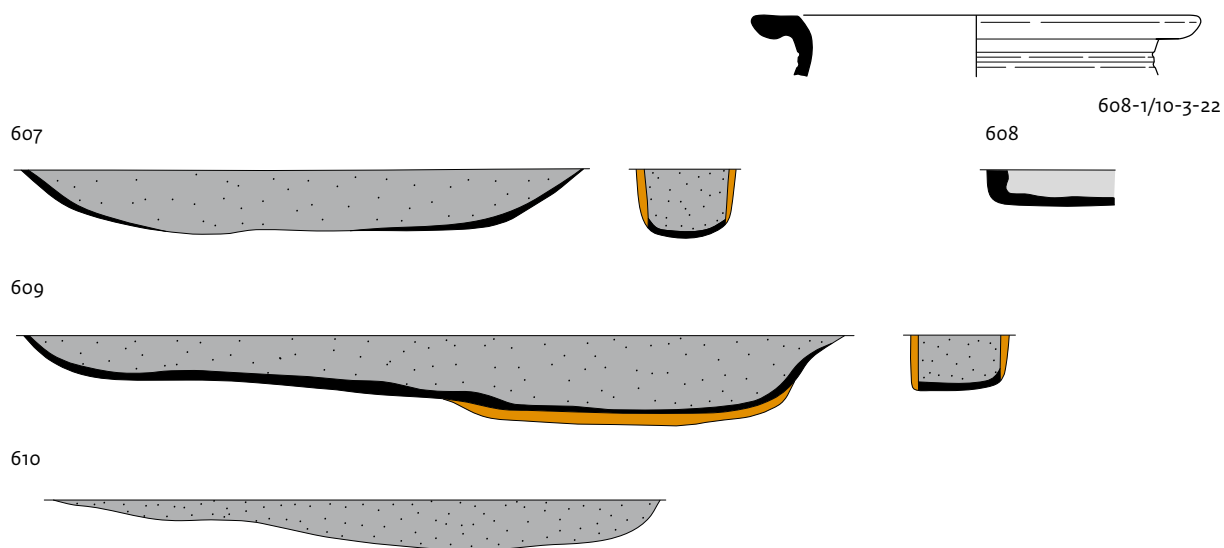
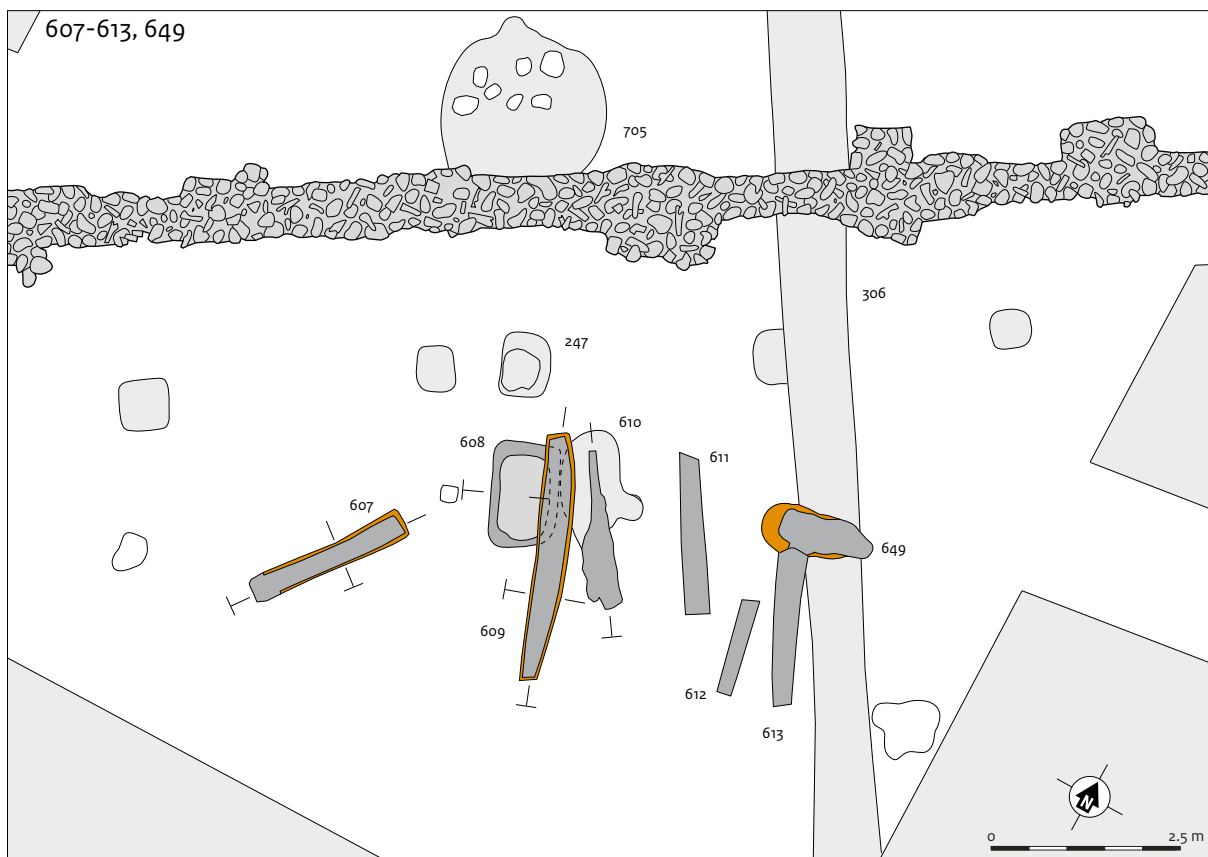


Fig. 45.3 Voerendaal-Ten Hove. Plan of the area of hearth 607-613 and 649, as well as sections of four of them and pottery of 608. Sections scale 1:30, pottery 1:3.

#### HEARTH 607 / feature 10.028 (Fig. 45.3)

##### *description*

Oblong, 220 x 30-40 cm; 25 cm deep. Burnt soil along the walls, layer of charcoal at the bottom, rest of the fill black-grey soil with charcoal.

##### *finds/dating evidence*

No finds were recovered from hearth 607.

## HEARTH 608 / feature 10.092 (Fig. 45.3)

*description*

Rectangular, 140 x c. 85 cm; 15 cm deep. Band of charcoal along the walls and on the bottom, grey infill. Older than 609.

*finds/dating evidence*

The finds from hearth 608 are 24 Middle Roman pottery sherds (269 g). They are in the following fabrics: cork-urn (1), colour-coated (2), smooth-walled (2), rough-walled (12), and rough-walled/colour coated (7). A bowl Stuart 210/Noor1-BO1a (608-1; Fig. 45.3) dates c. AD 70-200, a colour-coated beaker Stuart 2/Heerl-BE18 c. AD 100-230.

## HEARTH 609 / feature 10.022 (Fig. 45.3)

*description*

Oblong, 325 x 30-40 cm; depth 36 cm. Infill like 608.

*finds/dating evidence*

Besides an iron fragment and a piece of *tegula* (300 g), 41 sherds (640 g) of Middle Roman pottery were collected. Relevant for dating are fragments of a dolium, coarse-walled lid and 'circle pot' Brunsting 4, all made from AD 70 onwards. A terra sigillata vessel (bowl Drag 37?) was made in East Gaul after AD 100, a smooth-walled honey pot Heerl-HP3 from AD 130 and a coarse-walled dish Stuart 218/Noor1-PL3b after AD 150.

## HEARTH 610 / feature 10.023, 38 (Fig. 45.3)

*description*

Keyhole-shaped, 235 x 40-c. 80 cm; 20 cm deep. Oblong pit with a grey-black spotted fill with charcoal ending in a round pit with grey soil.

*finds/dating evidence*

<sup>14</sup>C-date (charred seeds): 1870 ± 50 BP (UtC-1570); 80-180, 186-214 cal AD (1 sigma); 25-252, 305-311 cal AD (2 sigma).

No less than 63 sherds (475 g) of Middle Roman pottery were collected from this feature. A sherd of a cork urn, 2 in terra nigra and 7 in smooth walled wares are not very helpful for dating. The presence of sherds of a Niederbieber 87 and Stuart 202 or 210 among the 48 in coarse-walled fabrics, suggest a date after c. AD 70. Six sherds in colour-coated ware are in 'technique b', therefore dating AD 100 or beyond; one is probably of a beaker Niederbieber 32/Heerl-BE7, made between c. AD 150-230. The radiocarbon date allows for the hearth belonging to period 2 or 3. However, if the dated grain is residual and the finds as well, a Late Roman date is also possible.

## HEARTH 611 / feature 10.027 (Fig. 45.3)

*description*

Oblong, 210 x 30 cm; depth 4 cm. Infill of black soil with charcoal.

*finds/dating evidence*

No finds.

## HEARTH 612 / feature 10.026 (Fig. 45.3)

*description*

Oblong, 130 x 20 cm; depth negligible (mainly bioturbation); black soil with charcoal.

*finds/dating evidence*

No finds.

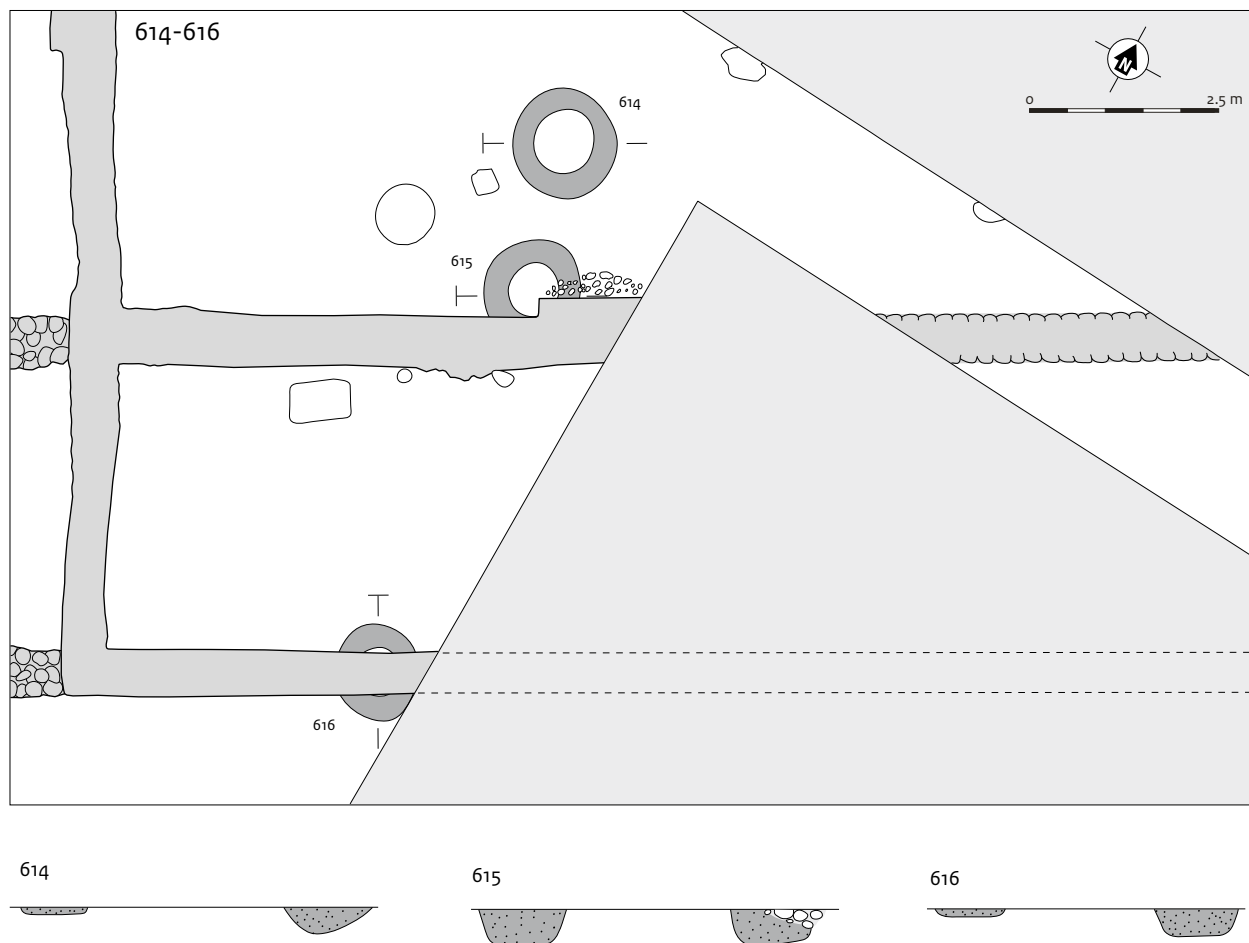


Fig. 45.4 Voerendaal-Ten Hove. Plan of the area of furnace 614-616 and the sections through the features. Sections scale 1:30.

**HEARTH 613 / feature 10.025 (Fig. 45.3)**

*description*

Oblong, 210 x 30 cm; depth negligible (mainly bioturbation); black soil with charcoal.

*finds/dating evidence*

No finds.

**FURNACE 614 / feature 103.026 (Fig. 45.4)**

*description*

Circular ditch, diameter 1.4 m (outside), width 30-35 cm, depth 3-10 cm. Infill black with charcoal.

*finds/dating evidence*

No finds but with no doubt belonging to the same period as 615-616.

**FURNACE 615 / feature 103.025 (Fig. 45.4)**

*description*

Circular ditch, diameter 1.35 m (outside), width 30-35 cm, depth 15 cm. Infill black with charcoal.

*finds/dating evidence*

This feature is intersected by the foundations of building 408/415. Seven fragments (354 g) of slag are related to the function of this furnace in the iron production (cf. Chapter 34). A sherd (6 g) of a colour-coated beaker Stuart 1 provides a date of c. AD 40-110 or, if it was an Heerlen product, of c. AD 70-120.





Fig. 45.5 Voerendaal-Ten Hove. Plan of the area of furnace 617 and hearth 618 and their sections. Sections scale 1:30.

#### FURNACE 616 / feature 103.024 (Fig. 45.4)

##### *description*

Circular ditch, diameter 1.2 m (outside), width 30-35 cm, depth 3-10 cm. Infill black with charcoal.

##### *finds/dating evidence*

This feature is intersected by the foundations of building 408/415. In this furnace 5 pieces (1,495 g) of iron slag were found.

#### FURNACE 617 / feature 89.019 (Fig. 45.5)

##### *description*

Circular ditch, diameter 1.4 m (outside), width 25-35 cm; depth 6 cm. Infill black with charcoal.

##### *finds/dating evidence*

The only finds from this feature are 12 pieces of roof tile (c. 3 kg). The shape, similar to that of 614-616, suggest a similar date.

#### HEARTH 618 / feature 110.009 (Fig. 45.5)

##### *description*

Oval, 95 x 70 cm, depth 8 cm. Infill of dark grey-black soil with charcoal, with a band of burnt soil.

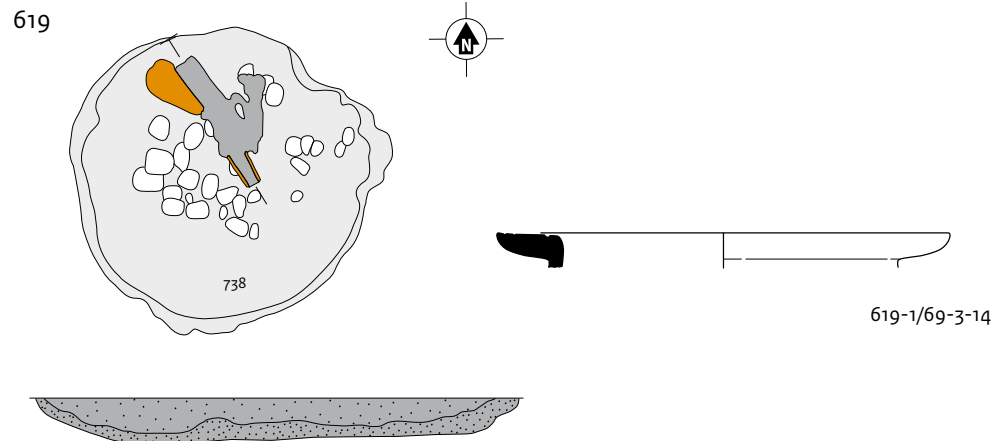


Fig. 45.6 Voerendaal-Ten Hove. Plan of hearth 619 (above/intersecting pit 738), with section and pottery. Plan scale 1:100, sections 1:30, pottery 1:3.

*finds/dating evidence*

This feature intersects post hole 110.008, which is not a part of a structure. The finds are a piece of brick and one of burnt loam (c. 200 g).

HEARTH 619 / feature 69.013 (Fig. 45.6)

*description*

Oblong, 190 x 30 cm, depth 19 cm. Black layer with much charcoal covered by dark grey-black soil with dispersed charcoal. Surrounded by patches of charcoal and burnt loam.

*finds/dating evidence*

Some 15 cm below hearth 619, pit 738 was found (on the date of the latter, cf. Chapter 46).

The finds collected are a fragment of a *tegula* and a round *bessalis* (700 g), as well as one sherd (15 g) of a jar or bowl Stuart 202/210 (Noor1-JA2/BO1a), dating from c. AD 70-200 (619-1; Fig. 45.6).

HEARTH 620 / feature 95.035

*description*

Round, diameter 50-60 cm. Black soil with charcoal surrounded by ring of burnt loam at level 2 (c. 89.03 m NAP) and patch of burnt loam inside charcoal layer at level 3 (c. 88.85 m NAP).

No section was made.

*finds/dating evidence*

No finds.

HEARTH 621 / feature 95.034 (Fig. 45.7)

*description*

Round, diameter 70-75 cm, depth 16 cm. Band of burnt loam covered by black soil with charcoal.

*finds/dating evidence*

No finds.

HEARTH 622 / feature 104.008 (Fig. 45.7)

*description*

Oblong-key hole-shaped, 180 x 45-70 cm; 25 cm deep. Band of burnt loam around the broadest-deepest part of the feature; rest filled with black, charcoal rich soil.

*finds/dating evidence*

Besides a sherd of handmade pottery (missing), one of terra nigra (6 g) and one of coarse-walled ware (12 g) was collected.

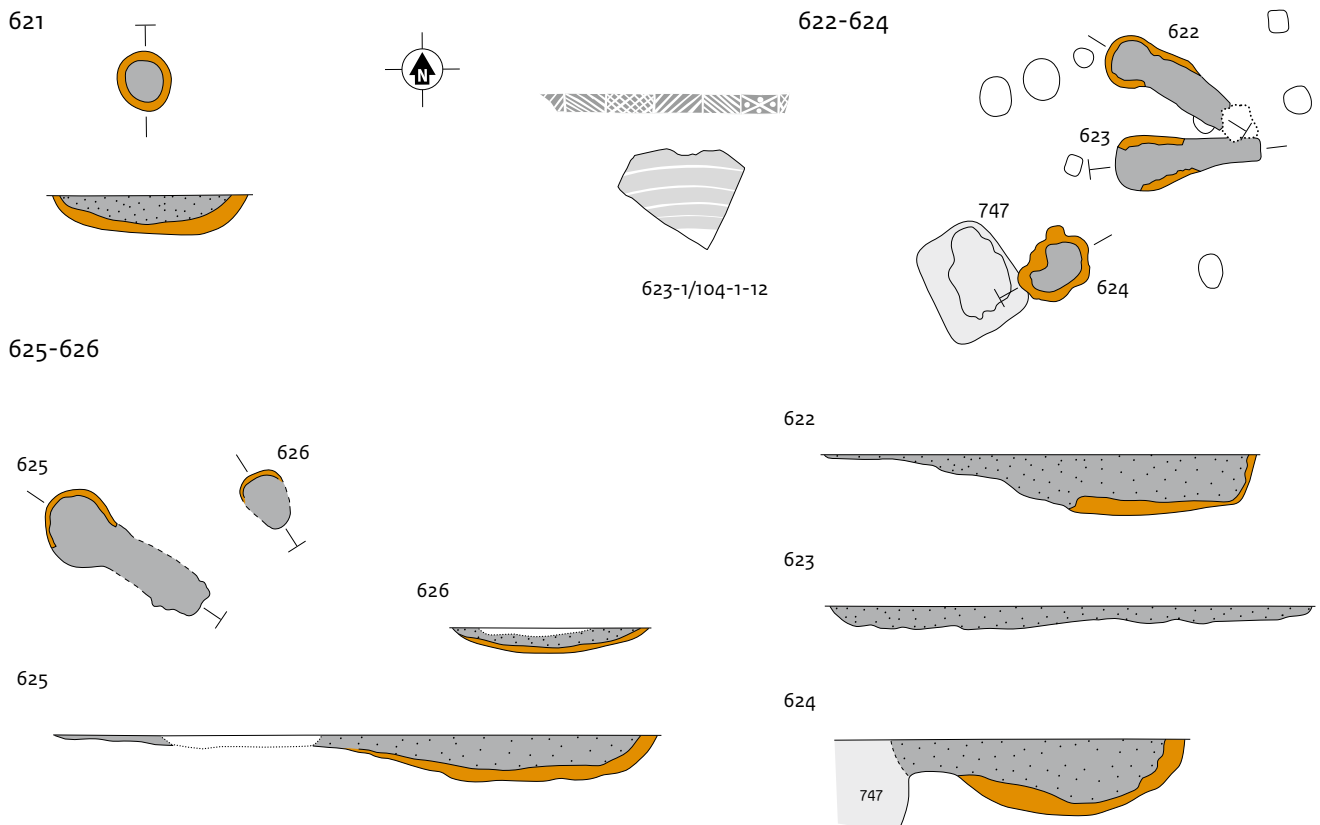


Fig. 45.7 Voerendaal-Ten Hove. Plan of (the area of) hearth 621, 622-624 and 625-626 with sections and pottery of 623. Plan scale 1:100, sections 1:30, pottery 1:3, roller-stamp 1:2.

#### HEARTH 623 / feature 104.007 (Fig. 45.7)

##### *description*

Oblong-key hole-shaped, 195 x 30-70 cm; 9 cm deep. Band of burnt loam along part of the sides, infill of dark brown-black soil with charcoal.

##### *finds/dating evidence*

The only find is a sherd (7 g) of an Argonne bowl Chenet 320, with a roller-stamp dating to the period c. AD 375-425 (623-1; Fig. 45.7).

#### HEARTH 624 / feature 104.006 (Fig. 45.7)

##### *description*

Irregular-oval, 100 x 80 cm; depth 30 cm. Burnt loam on the outside, infill of dark brown-black soil with dispersed charcoal.

##### *finds/dating evidence*

No finds.

#### HEARTH 625 / feature 104.031 (Fig. 45.7)

##### *description*

Oblong-key hole-shaped, 240 x 55-95 cm; depth 18 cm. Band of burnt loam with an infill of dark grey soil with charcoal.

##### *finds/dating evidence*

Two sherds were found in this feature, a handmade one (6 g) and one of coarse-walled pottery (missing).

## HEARTH 626 / feature 104.046 (Fig. 45.7)

*description*

Tongue-shaped, 80 x 50 cm; depth 20 cm; band of burnt loam with black-grey soil with charcoal on top.

*finds/dating evidence*

No finds.

## HEARTH 627 / feature 23.009 (Fig. 45.8)

*description*

Longitudinal/keyhole shaped, 190 x 70-40 cm, 7 cm deep. Half of the feature consisted of a layer of burnt loam, the other half was dark grey soil with charcoal.

*finds/dating evidence*

<sup>14</sup>C-date (charred seeds): 1460 ± 80 BP (UtC-1579); 474-485, 535-659 cal AD (1 sigma); 409-688 cal AD (2 sigma).

## HEARTH 628 / feature 23.050 (Fig. 45.8)

*description*

Keyhole shaped, 1.6 m long and halved by a recent disturbance; max. 11 cm deep. Diameter of the round part 70 cm; infill of dark soil with charcoal. Rest of the pit filled with grey soil with some charcoal.

*finds/dating evidence*

No finds.

## HEARTH 629 / feature 23.022 (Fig. 45.8)

*description*

Longitudinal/keyhole shaped, 210 x 75-40 cm, 20 cm deep. Walls and bottom consisting of a band of burnt loam, infill of grey soil with some charcoal.

*finds/dating evidence*

The finds from this context are diverse: an iron fragment, a slag (1 g), one piece of limestone (900 g), one of brick (100 g), a fragment (1 g) of a glass vessel and one (3 g) of a bowl in Argonne sigillata.

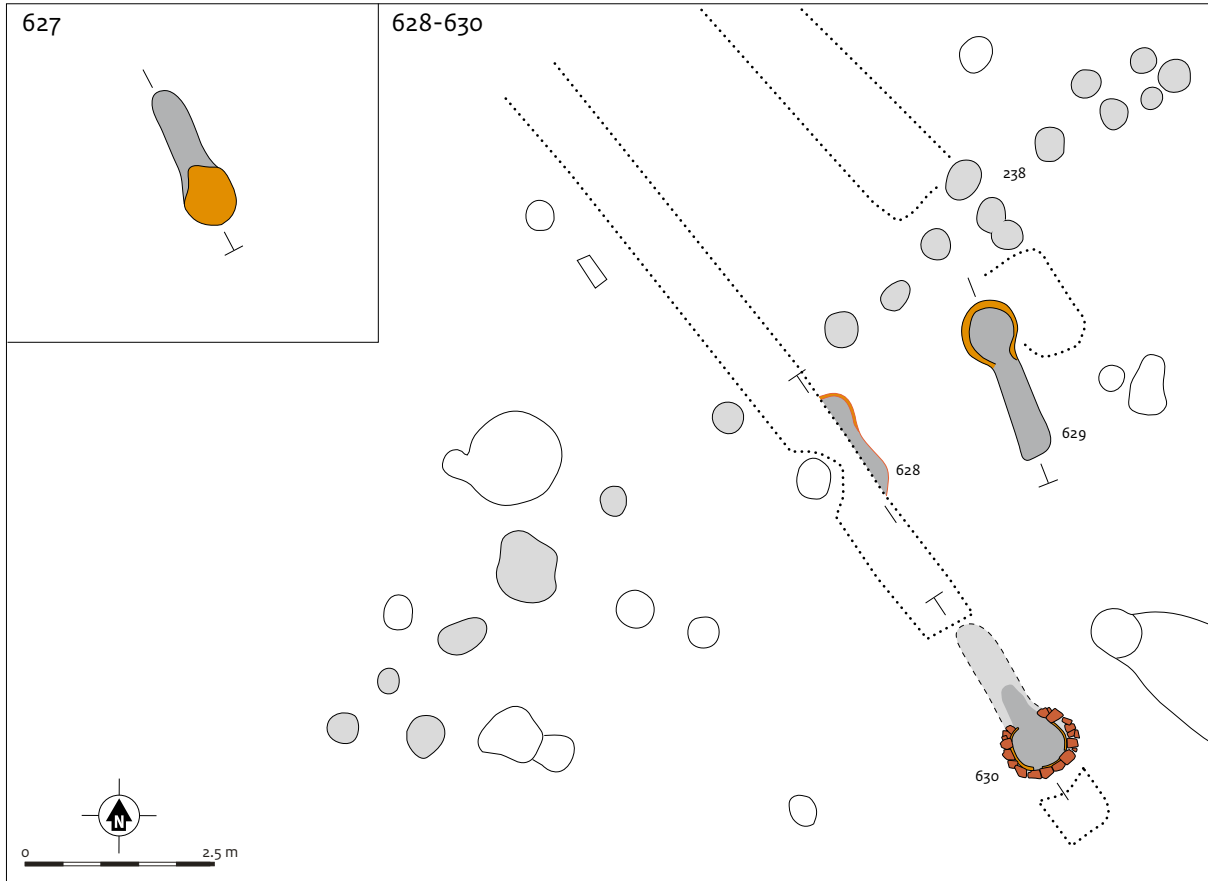
## HEARTH 630 / feature 23.078 (Fig. 45.8)

*description*

This hearth is the only example constructed of tile fragments. The ring of tile had an exterior diameter 80-100 cm. A layer of burnt loam covered the inside of the tiles and the bottom of the pit (depth 16 cm). The rest of the infill consisted of dark grey soil with charcoal, with had no clear border outside the hearth proper.

*finds/dating evidence*

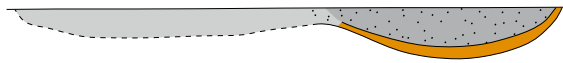
Forty-two fragments (c. 21 kg) of brick and tile collected, were probably all part of the construction. Besides, 2 slags (118 g) and 3 sherds (29 g) of pottery were found. The largest sherd (20 g) was of a flagon or jug in Argonne sigillata.



627



629



628



630

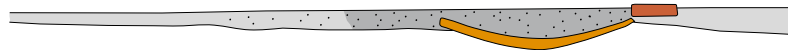
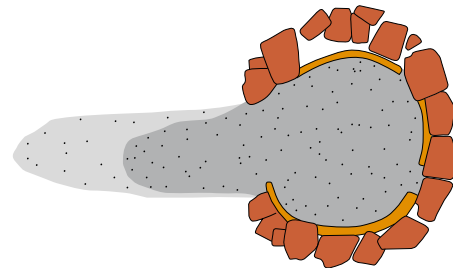


Fig. 45.8 Voerendaal-Ten Hove. Plan of (the area of) hearth 627-630 in trench 23 and their sections. Sections scale 1:30.

#### HEARTH 631 / feature 24.036 (Fig. 45.9)

##### *description*

Round, diameter c. 40 cm; depth 8 cm. Band of burnt loam surrounding infill of black-brown soil with charcoal and lenses of burnt soil.

##### *finds/dating evidence*

<sup>14</sup>C-date (charred seeds): 1292 ± 21 BP (GrM-23722); 675-702, 741-771 cal AD (1 sigma); 666-774 cal AD (2 sigma).

No finds were present.

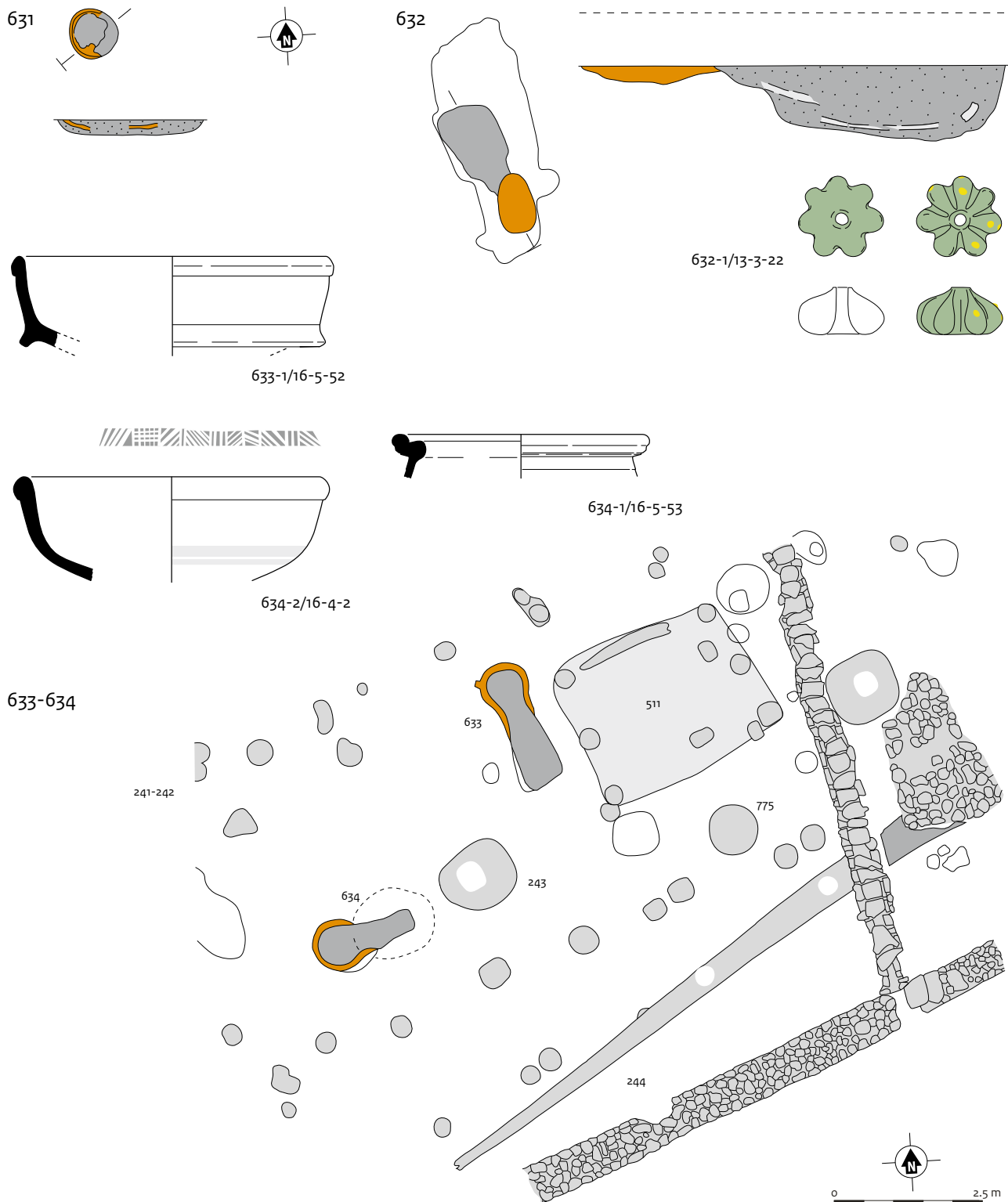


Fig. 45.9 Voerendaal-Ten Hove. Plan and section of hearth 631-632, area around hearth 633-634, as well as glass from 632 and pottery from 633-634. Plans scale 1:100, sections 1:30, glass and roller stamp 1:2, pottery 1:3.

#### HEARTH 632 / feature 13.063, 121 (Fig. 45.9)

##### *description*

At level 2 (c. 88.47 m NAP) a pit with dark grey-black soil was found, measuring c. 3.85 x 1.5 m. Some 27 cm lower (88.20) it was smaller and consisted of two parts. The first was an oval of 100 x 60 cm, 10 cm deep with dark soil and lumps of burnt loam. The second part of the feature

was a pit of 150 x 85 cm. Its depth was 38 cm and the infill was dark grey with lots of charcoal and some yellow layers.

*finds/dating evidence*

<sup>14</sup>C-date (charred seeds): 1822 ± 21 BP (GrM-23723); 209-247 cal AD (1 sigma); 132-142, 157-192, 199-254, 288-322 cal AD (2 sigma).

Most finds recovered from this feature were (probable) Middle Roman in date, like 18 iron fragments, a piece of limestone (900 g), 6 pieces (c. 2 kg) of roof tiles and 23 sherds (231 g) of pottery. A rim of a jar Niederbieber 89/Heerl-JA2a dates c. AD 130-230. However, an Aes4 found was struck between AD 383-403 and a large glass bead most likely dates around the middle of the fifth century (632-1; Fig. 45.9). From these finds, it becomes clear that the radiocarbon date is obtained from residual material.

HEARTH 633 / feature 16.087 (Fig. 45.9)

*description*

This feature was found at level 5 and no section was made. The hearth is keyhole-shaped, its length was 215 cm and its width 60-85 cm.

*finds/dating evidence*

This feature yielded a fragment (4 g) of animal bone, 2 iron fragments, a fragment (12 g) of tephrite and 7 sherds (14 g) of Middle Roman pottery. Two sherds (41 g) of Argonne sigillata were found, one of which a larger sherd of a bowl Chenet 324 (733-1; Fig. 45.9).

HEARTH 634 / feature 16.046, 47 (Fig. 45.9)

*description*

This hearth appeared at level 4 as a round pit with a band of burnt soil, attached to an oval pit with a black infill. At level 5 (depth under 4 unknown) a keyhole-shaped feature remained, consisting of a band of burnt loam with very dark soil inside and measuring 175 x 40-85 cm. Because no section was made (or drawn), the depth is unknown.

*finds/dating evidence*

The finds of this feature consist of 12 fragments of burnt loam, one of iron, the rim (17 g) of a jar Niederbieber 89 (634-1; Fig. 45.9) and a fragment (58 g) of a Argonne bowl Chenet 320 with a roller-stamp decoration dating c. AD 375-425 (634-2; Fig. 45.9).

HEARTH 635 / feature 27.093 (Fig. 45.10)

*description*

Oval, 150 x 85 cm at level 3 (88.63); 110 x 80 cm at level 4 (88.45) and still 10 cm deep (total c. 28 cm). Burnt soil with patches of charcoal on top. The construction of this hearth damaged part of the wall of building 401.

*finds/dating evidence*

<sup>14</sup>C-date (charred seeds): 1532 ± 21 BP (GrM-23724); 540-580 cal AD (1 sigma); 437-463, 476-499, 531-600 cal AD (2 sigma).

The feature was built into the foundations of building 401 and yielded no artefacts apart from a single iron fragment.

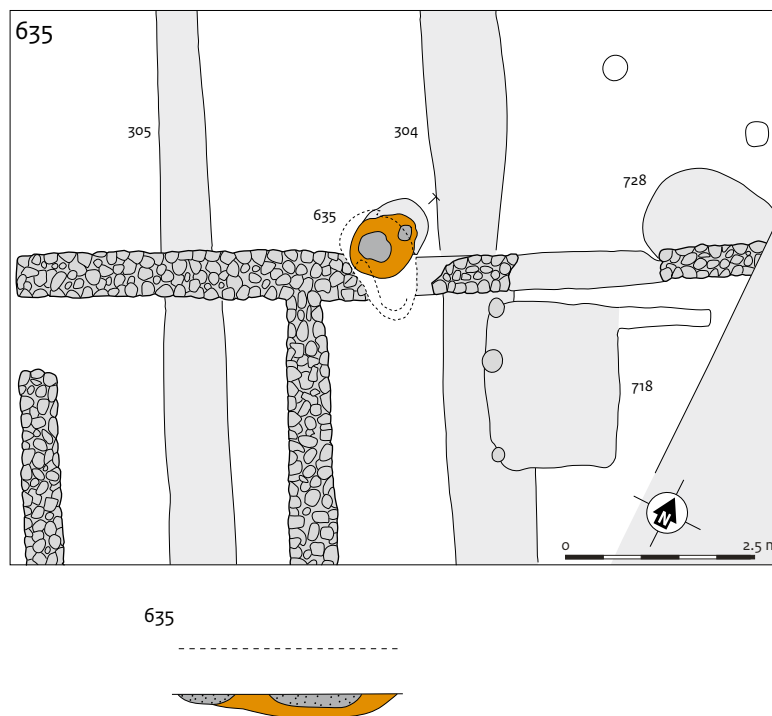


Fig. 45.10 Voerendaal-Ten Hove. Plan of the area around hearth 635 and the section through it. Section scale 1:30.

#### 636-639

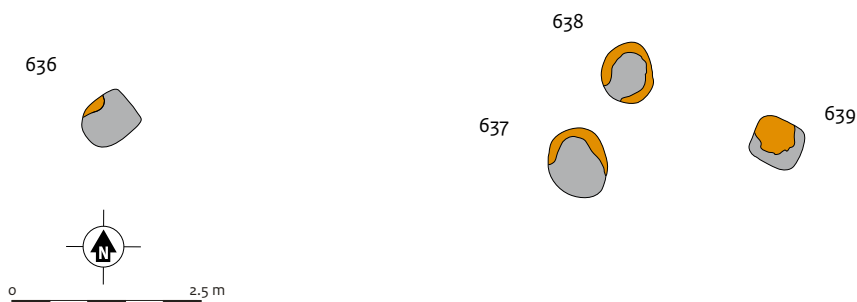


Fig. 45.11 Voerendaal-Ten Hove. Plan of the area with hearth 636-639 (no sections available).

#### HEARTH 636 / feature 19.001 (Fig. 45.11)

##### *investigation*

This hearth, like 637-639, was only drawn 1:50; no sections were made. At level 2 all four hearths were gone, but because no levels were taken (or noted), this gives no information about the depth of the features.

##### *description*

Hearth 636 is curved-square and measured 70 x 60 cm. Small patch of burnt soil, dark grey-black infill.

##### *finds/dating evidence*

No finds.

#### HEARTH 637 / feature 19.026 (Fig. 45.11)

##### *description*

Round, diameter 80-90 cm. Band of burnt soil around dark grey-black infill.

##### *finds/dating evidence*

No finds.



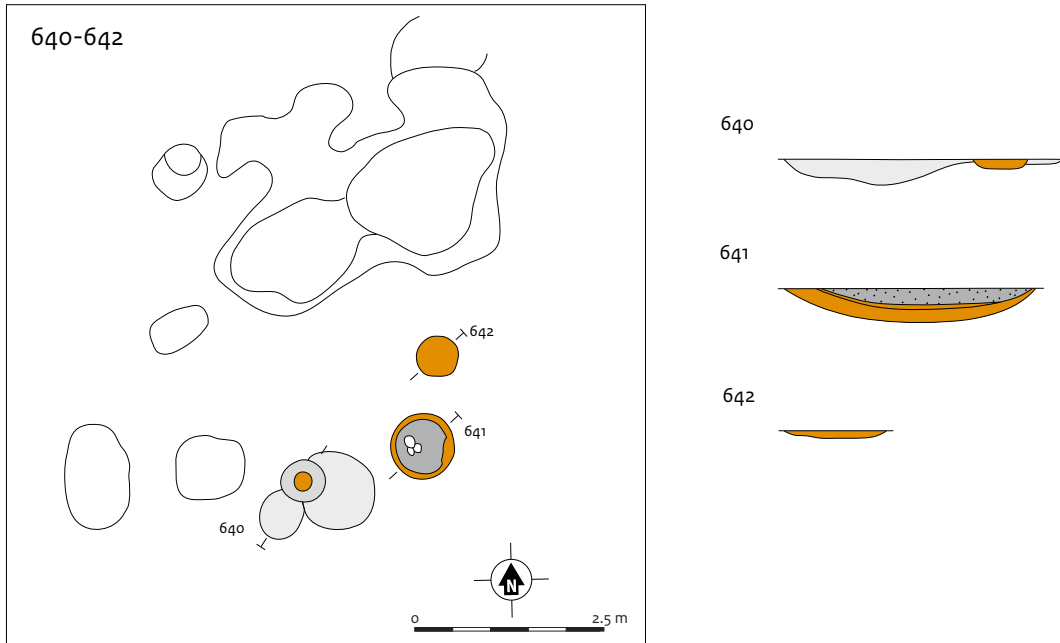


Fig. 45.12 Voerendaal-Ten Hove. Plan of the area around hearth 640-642 and sections made. Sections scale 1:30.

HEARTH 638 / feature 19.027 (Fig. 45.11)

*description*

Round, diameter 70-80 cm. Band of burnt soil around dark grey-black infill.

*finds/dating evidence*

No finds.

HEARTH 639 / feature 19.028 (Fig. 45.11)

*description*

Square with rounded corners. Burnt loam and dark grey-black material.

*finds/dating evidence*

No finds.

HEARTH 640 / feature 14.024 (Fig. 45.12)

*description*

Round pit, diameter 55-60 cm, on the 1:50 drawing grey spotted soil with a patch of burnt loam inside. In the section drawing 1:20 infill completely consisting of burnt loam. Intersects a round 'pit' with a diameter of 1 m and only 2 cm deep (vague, light grey-yellow). Connected with a pit of c. 65 x 55 cm, 10 cm deep, infill light grey-white.

*finds/dating evidence*

No finds.

HEARTH 641 / feature 14.025 (Fig. 45.12)

*description*

Round, diameter 90 cm, depth 14 cm. Red burnt loam with thin layer of orange burnt loam on top, covered by brown-black soil with charcoal.

*finds/dating evidence*

A piece of limestone (4 kg) is the only find recovered.

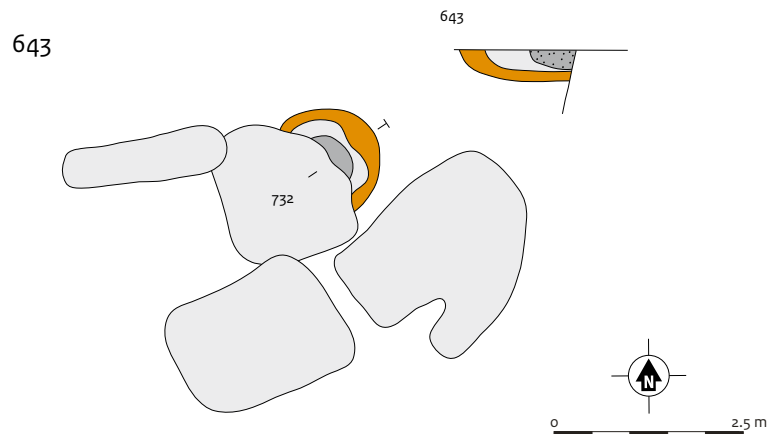


Fig. 45.13 Voerendaal-Ten Hove. Plan and section of hearth 643. Section scale 1:30.

HEARTH 642 / feature 14.027 (Fig. 45.12)

*description*

Round, diameter 45 cm, depth 3 cm. Red burnt loam with some charcoal.

*finds/dating evidence*

No finds.

HEARTH 643 / feature 29.010 (Fig. 45.13)

*description*

Round, diameter 1.5 m, depth 13 cm. Infill of burnt loam with charcoal, light yellow sand and black soil with much charcoal.

*finds/dating evidence*

The hearth is intersected by pit 732; the feature yielded no finds.

HEARTH 644 / feature 46.012 (Fig. 45.14)

*description*

Round, diameter 75-80 cm, depth 12 cm. Band of burnt loam covered with dark grey soil with charcoal.

*finds/dating evidence*

No finds.

HEARTH 645 / feature 46.025 (Fig. 45.14)

*description*

Round, diameter 55-60 cm, depth 4 cm; patch of burnt loam.

*finds/dating evidence*

No finds.

KILN 646-648 / feature 115.034, 28, 30 (Fig. 45.15)

*investigation*

Habets interpreted feature 646 as a lime-kiln ('*kalkovens*' on RAL 455, I; III, no. 3; '*Put waarin kalk gebrand was*',<sup>3339</sup> Braat accepted this interpretation and did not investigate it himself, marking it as a disturbance on his plans.<sup>3340</sup> In 1987 it was interpreted as a pottery kiln.<sup>3341</sup> Close reading of the preliminary report suggests that pit 764 (see Chapter 46) southwest of 646 was an argument for the interpretation as pottery kiln. In the provisional report, the round feature 846 was seen as its kiln chamber – confusingly called '*stookruimte*' that has associations with '*stokehole*' – and 647 and 648 as its flue and stokehole/working pit. If the rear wall was indeed preserved, as the field drawing suggests, there are no indications for a 'tongue shaped' support (but this could have been free-standing). Because they were still intact, feature 647 and 648 were not excavated.

<sup>3339</sup> Braat 1953, Fig. 9, e.

<sup>3340</sup> Braat 1953, 56, n. 11.

<sup>3341</sup> Willems & Kooistra 1988, 141 and field drawings.

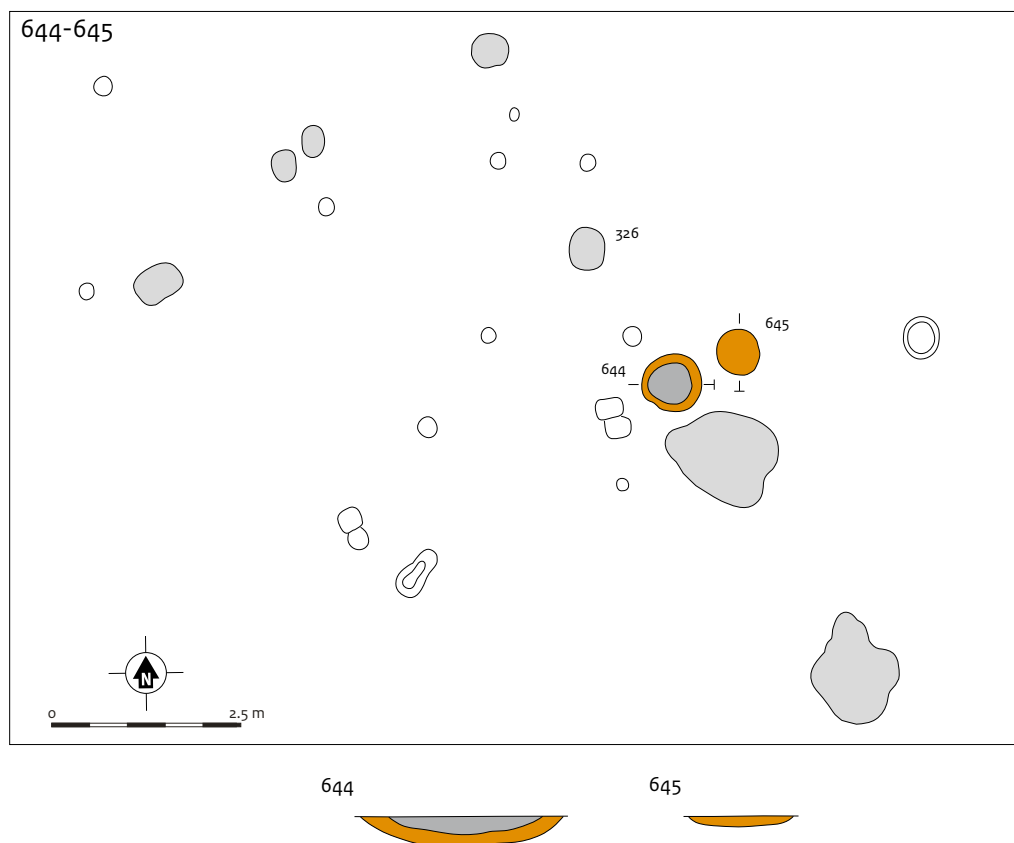


Fig. 45.14 Voerendaal-Ten Hove. Plan of the area around hearth 644-645 and the section through them. Plan scale 1:100, sections 1:30.

Bad weather conditions, with snowfall and frost, prevented making drawings of the relation between 407, 646 and 647. The photos (87-52) are of little use, because is partly covered in a cast shadow (taken in November!), partly in bright sunlight. However, it is clear that the orange band of 646 continues under the foundations.

#### *description*

Feature 646 is the remaining part of a circular pit with a diameter of c. 3 (exterior)-2.5 m (interior); depth not recorded. The walls of the pit consisted of layers of burnt loam, hard and orange-red. Features 647-648 were parts of a rectangular pit of 5.5 x 3.2. Two circular bands/layers of burnt loam suggest the presence of two separate features within the larger pit. The rest of the infill consisted of layers of black soil with lots of charcoal and dark grey soil with scattered pieces of charcoal.

#### *finds/dating evidence*

Feature 646 seems to intersect the foundations of tower 407, but this could well be the result of the activities of Habets, by which some of the foundations were removed or caved in. The photos suggest that it predates the foundations. Feature 646 has yielded no finds, and 648 just four, here included with those of 647. The material was collected at level 2 and in the c. 20 cm of soil below, removed to create level 3. At this level, more finds were collected, but it is unknown if they were only the ones visible or if a spit was made. Anyway, because the finds are from the infill of the 'working pits' they do not have to date from the time the hearth(s) was/were operated. The material collected is made up of 11 fragments (772 g) of animal bone, 2 iron fragments, 2 pieces (1,300 g) of *tegulae*. Some of the 37 sherds (1,175 g) of Roman pottery are, or could be, relatively early, like 4 sherds from beakers like Holwerda BW15 (Heerlen) and a cup Dragendorff 27 from South Gaul. Other forms were made from AD 70 (e.g. the mica dusted bowl 647-2; Fig. 45.15) or AD 90 onwards (flagon Stuart 109; 647-1; Fig. 45.15). There are no types with a later terminus post quem; therefore the features were perhaps in use simultaneously with the first villa or the early stages of the second. The few pieces of roof tile are fit in with this (some pieces of limestone were also present, according to the field drawings).

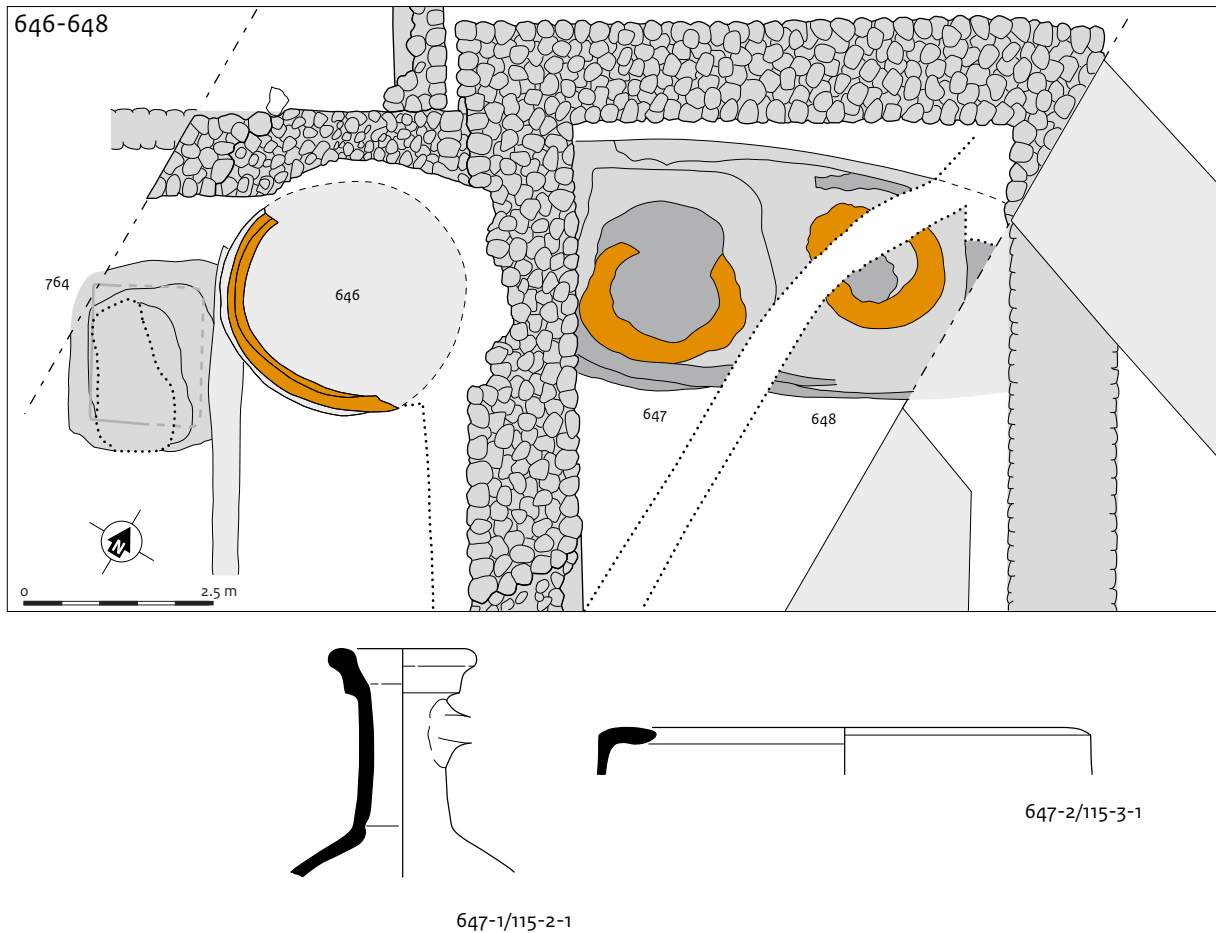


Fig. 45.15 Voerendaal-Ten Hove. Plan of kiln 646-648 and the surrounding area, as well as pottery from 647. Pottery scale 1:3.

**HEARTH 649 / feature 10.024 (Fig. 45.3)**

*description*

Tongue-shaped, 150 x 55 cm; depth max. 6 cm. Black soil with charcoal on a thin layer of burnt soil.

*finds/dating evidence*

No finds.

**HEARTH 650 / feature 20.024 (Fig. 45.16)**

*description*

At level 1, an oval pit was found with an infill of 'daub'. At level 2, according to an old database 16 cm lower, 230 x 175 cm remained. No section was made and therefore its total depth is unknown. On the field drawing the feature is coloured (dark) grey, with 'red burnt, some black' material in the centre.

*finds/dating evidence*

<sup>14</sup>C-date (charred seeds): 1823 ± 22 BP (GrM-23784); 208-248, 300-302 cal AD (1 sigma); 131-144, 155-254, 288-322 cal AD (2 sigma).

Also because no finds were collected from this feature, it is impossible to say if the radiocarbon date is 'correct'. The hearth could have been used to process crops in building 401 during period 3, but the dated grains could be residual just as well.



Fig. 45.16 Voerendaal-Ten Hove. Plan of hearth 650-651 and the surrounding area.

#### HEARTH 651 / feature 20.023 (Fig. 45.16)

##### *description*

This feature was – not well – recorded in the same way as 650, without a section(drawing). On the drawing of level 1, the infill is described as ‘red loam with tile fragments’. At level 2 (Fig. 45.16) the feature measured 170 x 155 cm, with an infill mainly of ‘red stains from hearth? with some black’. On one side there was a band of black-grey material. At level 3, some 33 cm below 1, the infill was ‘very black with burnt loam’.

##### *finds/dating evidence*

No finds.

#### HEARTH 652 / feature 78.027 (Fig. 45.17)

##### *description*

This pit was found and sectioned at level 4; the section was drawn. The feature measured 150 x 125 cm and was 18 cm deep. At a lower level, the fill consisted of red burnt soil, with a thin but very hard layer on top (probably burnt loam). The rest of the feature had a fill of dark grey/black soil with lots of charcoal.

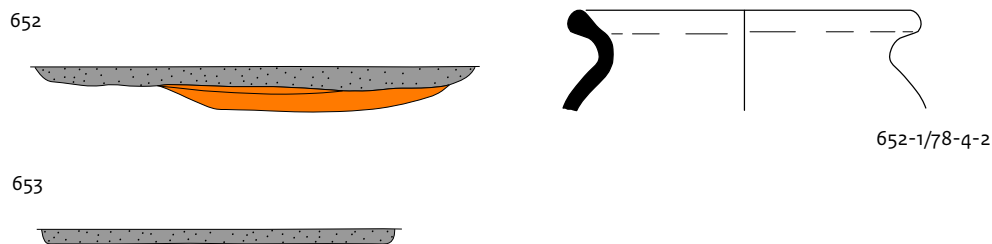
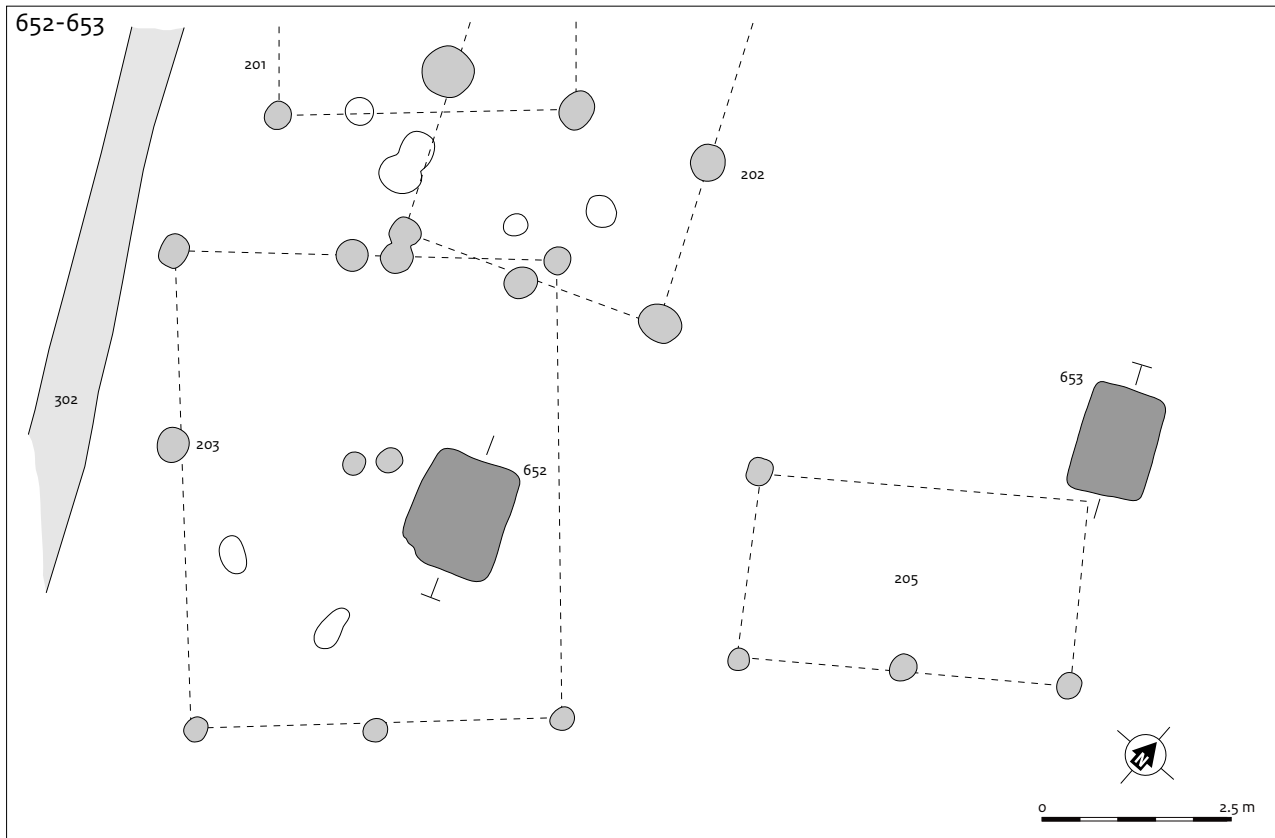


Fig. 45.17 Voerendaal-Ten Hove. Plan and sections of hearth 652-653; pottery from 652. Sections scale 1:30, pottery 1:3.

*finds/dating evidence*

Apart from a fragment of iron, all finds are ceramic: 2 sherds (14 g) of Middle Roman pottery, 2 (10 g) of Late Roman or Early Medieval pottery (coarse-walled, reduced) and 4 fragments (17 g) of coarse-walled Carolingian pottery (652-1; Fig. 45.17). This is a globular pot with a rim of type 9e (78-4-2/7852) with a dense, well-sorted sand tempered, coarse and yellow fabric.

HEARTH 653 / feature 78.031 (Fig. 45.17)

*description*

Like 652, this hearth was found at level 4. The section was not drawn, but is reconstructed here. The pit measured 145 x 100 cm and had a depth of 6 cm. The fill consisted of a layer of dark grey/black soil with charcoal, with some brown-grey soil in the centre.

*finds/dating evidence*

No finds.

# 46 Pits

Henk Hiddink

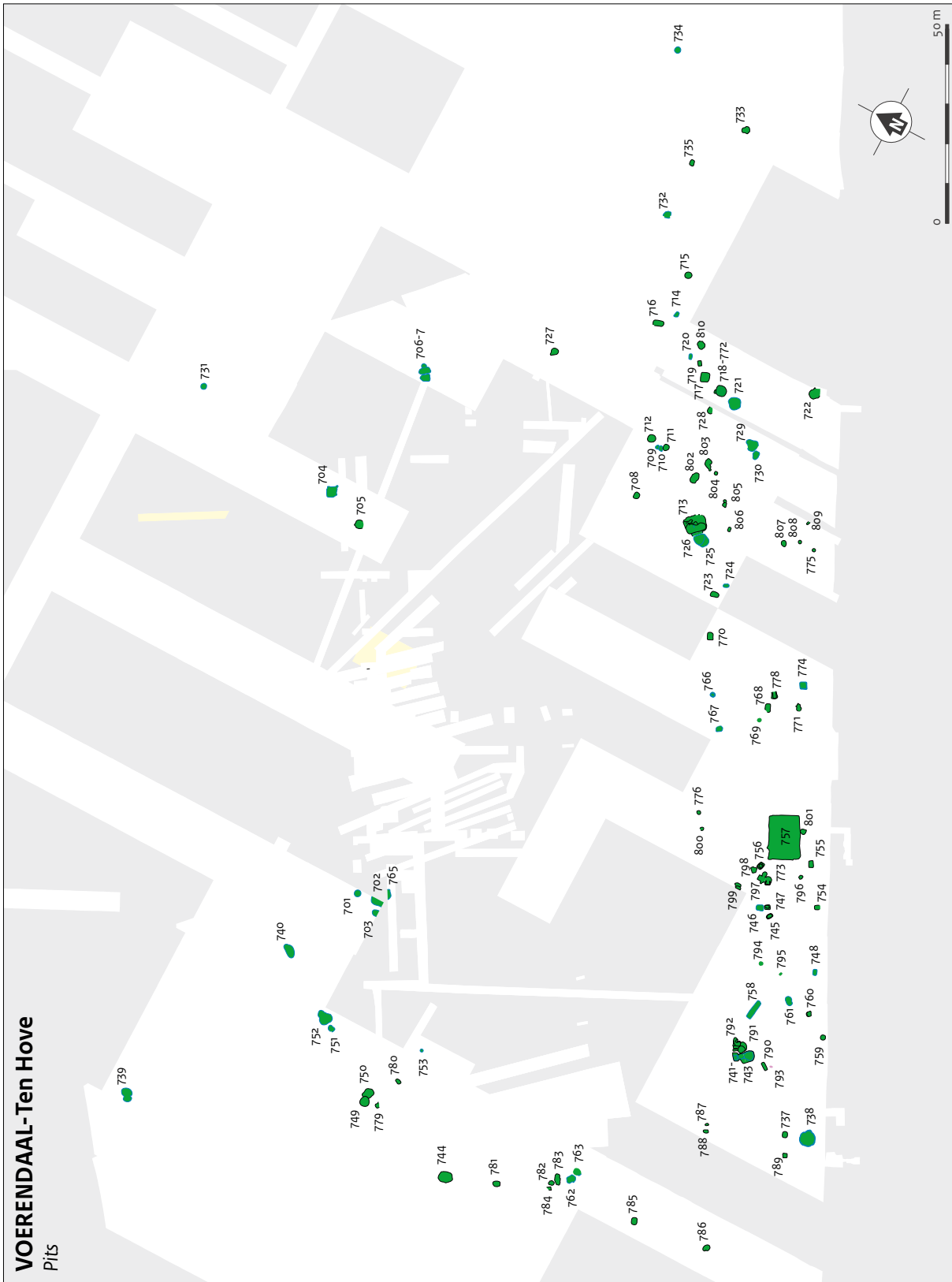


Fig. 46.1 Voerendaal-Ten Hove. The pits with their numbers; for the location of 762, see fig. 16.14.

### 46.1 Introduction

The excavations at Ten Hove yielded a large number of pits. Smaller examples can be considered postholes, even though many cannot be assigned to specific buildings. Some 235 features were provisionally labelled as larger pit – in practice with sides >80/100 cm – in the database, after pits that were probably of natural origin (light grey, irregular outline in section) and certain late and post-Medieval examples were already taken apart. In this chapter, 112 pits are described, together with the finds in them. A first series of c. 70 examples was selected because they were mentioned in previous reports on the excavations, for instance 765 being ‘waste pit e’ mentioned by Braat. The size or shape of others suggested specific functions, albeit it was clear from the onset that these would be difficult to determine. Finally, a number of pits contained many finds and were of interest because of that.

After analysing this ‘representative sample’ of pits, some forty more were included in the catalogue because it became apparent that they contained interesting finds. However, for many of the pits it is questionable if the finds are related to their original function and, more often, if the finds are a reliable indication for the date. These problems are discussed in section 5.2.4, 9.7.2 and 12.5.

The next section is mainly devoted to the finds and dating evidence of the features, sometimes with added remarks on the investigation or interpretation. If the section of a feature is not included in figure 46.2-46.33, it was not documented by the excavators or it is completely uninformative or irrelevant. The more basic data on the size of the pits and the layers observed/documentated, can be found in a table in section 46.3. The location of the pits is shown in figure 46.1.

### 46.2 Remarks on the pits, the finds and dating

GRAVE? 315 / feature 23.018

See section 42.3.

PIT 701 / feature 7.010 (Fig. 46.2)

*finds/dating evidence*

This pit was probably filled up after AD 200. Among 42 fragments (1,960 g) of pottery, a Niederbieber 8g (Heerl-JA2b; Fig. 46.2) could also date in the second century, but there are also fragments of a colour coated baker Niederbieber 32(?), a coarse beaker Vanvinckenroye 104b produced in Heerlen or the Eifel region and a Gauloise amphora that is probably third century in date. Moreover, the presence of many fragments of roof tiles (indicated on the section drawing, only some collected), suggests that the pit was filled after the villa fell in ruins.

PIT 702 / feature 7.016 (Fig. 46.2-46.3)

*finds/dating evidence*

Quite a lot of pottery was found in this pit: 250 sherds (5 kg). Some of the material is quite early, like South-Gaulish sigillata (702-11, 19; Fig. 46.2) and a pot in coarse ware Hofheim 87b (702-1; Fig. 46.2), but a number of pots and bowls in coarse ware date after AD 125/150 (Fig. 46.3). A Gauloise amphora was produced after 175 (702-9; Fig. 46.3) and both a mortarium Brunsting 37/Vanvinckenroye 337 and a smooth-walled/smoked beaker after AD 200. A lot of tile fragments (on drawing, not collected) and a fragment of a sandstone column (702-17; Fig. 46.3) also point to a date in the third century or beyond.



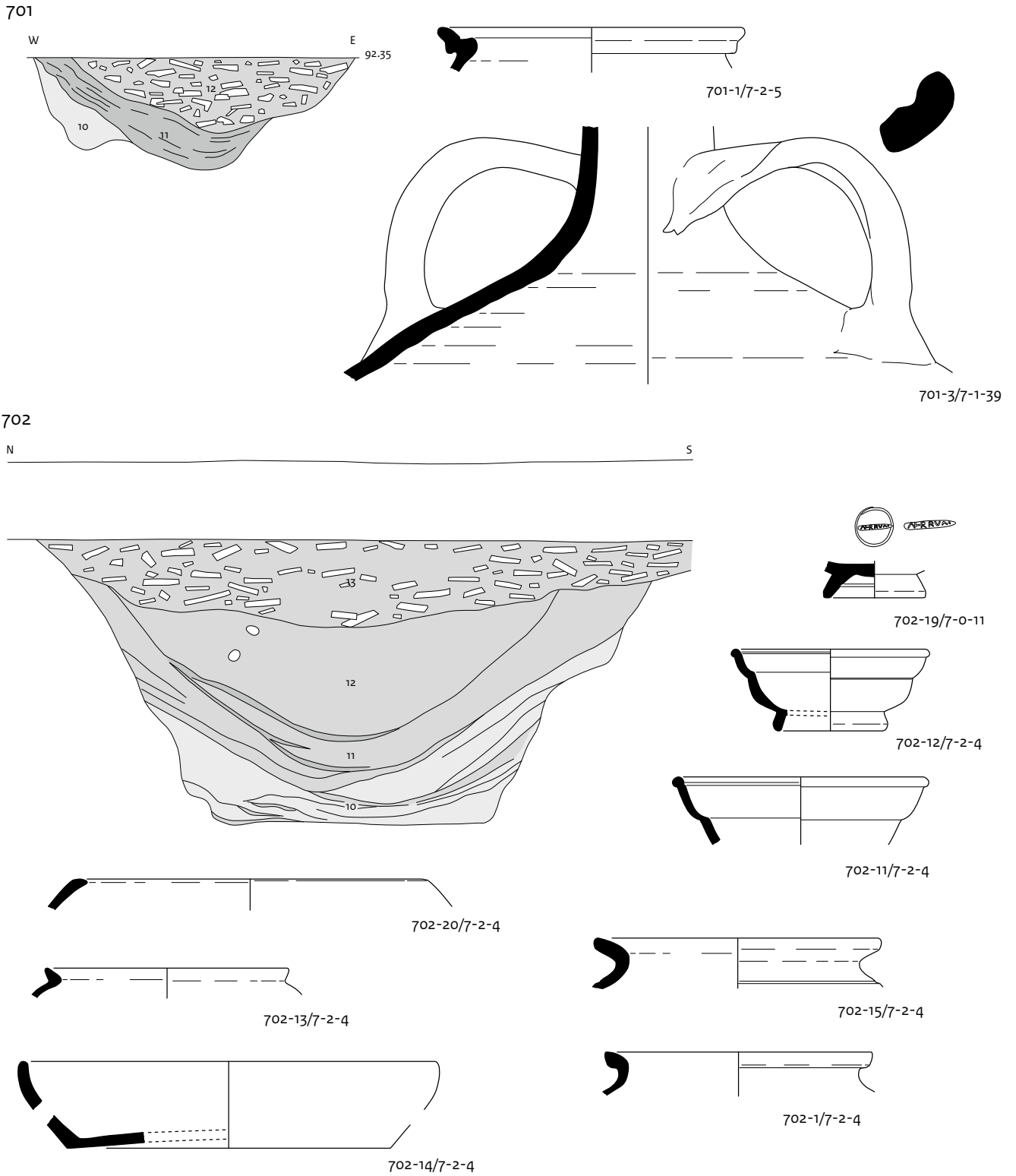


Fig. 46.2 Voerendaal-Ten Hove. Section and pottery of pit 701 and 702. Sections scale 1:30, pottery 1:3, stamp 1:2.

PIT 703 / feature 7.017 (Fig. 46.3)

*finds/dating evidence*

The pottery recovered from this feature provides no date, but the presence of tile fragments (not collected) and the proximity to 701 and 702 suggest that it belongs to the same period.

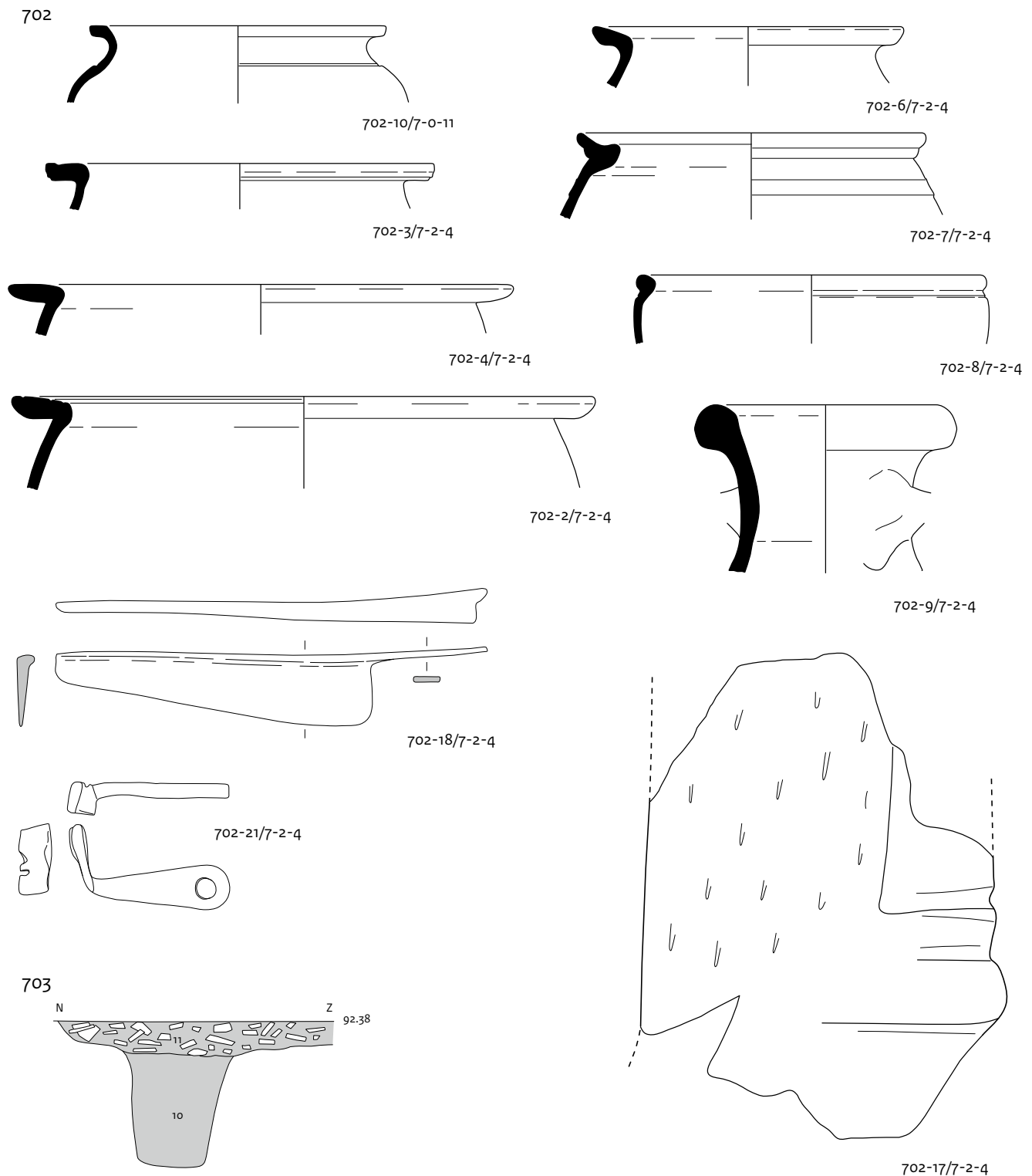


Fig. 46.3 Voerendaal-Ten Hove. Section through pit 703 and pottery, iron and stone of pit 702 cont. Section scale 1:30, finds scale 1:3.

PIT 704 / feature 10.003 (Fig. 46.4)

*finds/dating evidence*

A nice find from this pit is a bronze terret/yoke ring (702-2; Fig. 46.4); however, like most of the 48 sherds (1,152 g) it has no relevance for dating purposes. Fragments from a black-slipped beaker Niederbieber 33 and a lot of roof tile fragments (c. 50 kg) provide a date after AD 200.

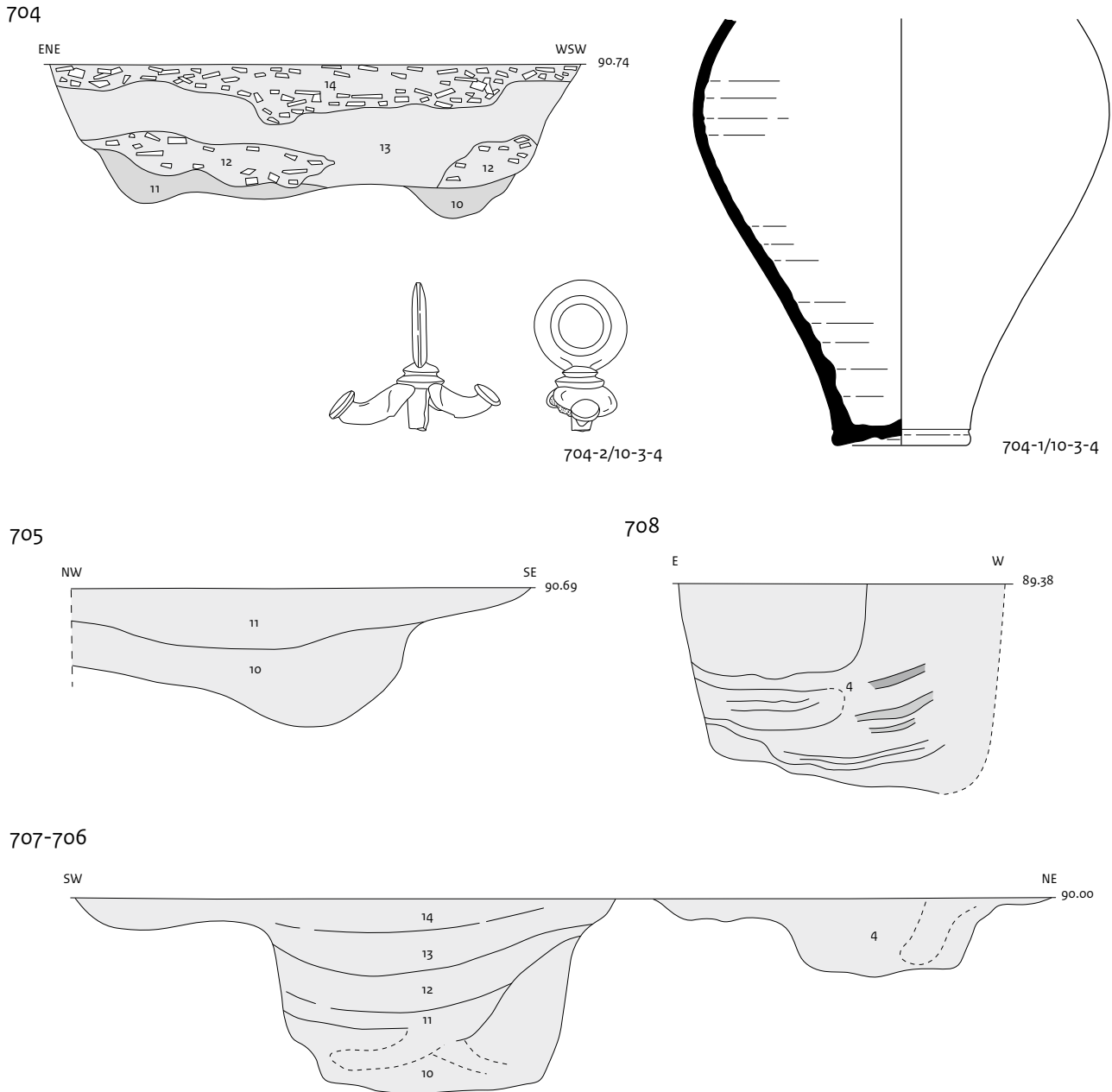


Fig. 46.4 Voerendaal-Ten Hove. Section through pit 704-708, with bronze and pottery from 704. Sections scale 1:30, finds 1:3.

PIT 705 / feature 10.103 (Fig. 46.4)

*finds/dating evidence*

The presence of a 2 dolium sherds (136 g) and a fragment of a *tegula*, show that this pit is Roman or later.

PIT 706 / feature 11.039 (Fig. 46.4)

*finds/dating evidence*

This pit yielded no finds; this fact and the light colour of the fill, suggest that it could be prehistoric (possibly even not man-made; see below, 707).

PIT 707 / feature 11.040 (Fig. 46.4)

*remarks*

On the plan this pit, at level 2 of the trench, seems to be a pair with 706, in the shape of a treefall. In section, both differ, but a treefall can be asymmetric. If not a Roman pit but a treefall, 707 is certainly post-Roman.

*finds/dating evidence*

This pit contained 4 sherds (47 g) of Roman pottery, among which the rim of a coarse-walled pot Niederbieber 87/NOOR-JA1, dating between c. AD 70-120. A (much) later date cannot be excluded however, because also 6 fragments of roof tile (c. 2 kg) and 2 of lime and sandstone were present (4 kg; along with one piece of animal bone; 26 g).

PIT 708 / feature 13.034-24.035 (Fig. 46.4)

*finds/dating evidence*

On the basis of the 'clean' fill and the presence of 4 fragments of handmade pottery and pieces of baked loam, this pit could be pre-Roman.

PIT 709 / feature 13.041 (Fig. 46.5)

*finds/dating evidence*

The non-ceramic finds from this pit consist of at least two pieces of limestone (less than 1 kg) and an iron fragment. At least 2 fragments of tile (200 g) and a tiny sherd (1 g) of colour-coated pottery are Middle Roman. Two sherds (3 g) of coarse-walled pottery could belong to this period as well as to the Late Roman period. Another coarse-walled, reduced sherd (22 g) perhaps is Early Medieval, although it may belong to the preceding period as well.

PIT 710 / feature 13.123 (Fig. 46.5)

*finds/dating evidence*

The 3 sherds (7 g) from this pit are Roman. Other finds are 3 pieces of iron, and one (?) fragment(s) of tile (c. 100 g), limestone (400 g) and stone unspecified (100 g). Therefore the pit could have been dug after the villa was in ruins.

PIT 711 / feature 13.124 / Fig. 46.5

*finds/dating evidence*

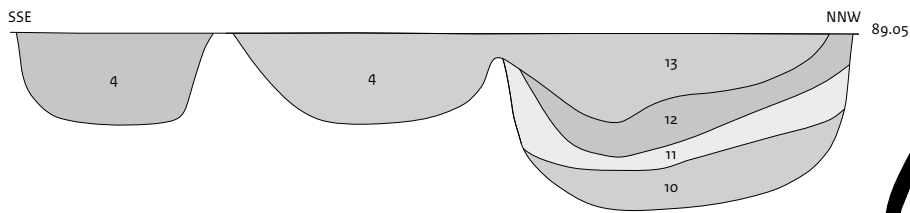
The non-ceramic finds from pit 711 consist, to begin with, of a fragment (4 g) of animal bone, at least one fragment (less than 200 g) of stone, an unknown number of tile fragments (c. 1,200 g), an iron fragment and a bronze horse-gear pendant (second/third century; 711-2; Fig. 46.5). A small fragment (1 g) of a beaker Isings 96 dates to the period c. AD 320-450. Except for a single sherd (3 g) of smooth-walled ware, the pottery is at least Late Roman. There are 4 sherds (123 g) of coarse-walled ware and a complete small pot (711-1; Fig. 46.5). The latter is a late variant of the Alzey 27, with a rim Brulet L. It dates after AD 375 anyhow and probably to the second half of the fifth or beginning of the sixth century AD.

PIT 712 / 13.042, 27.022 / Fig. 46.5

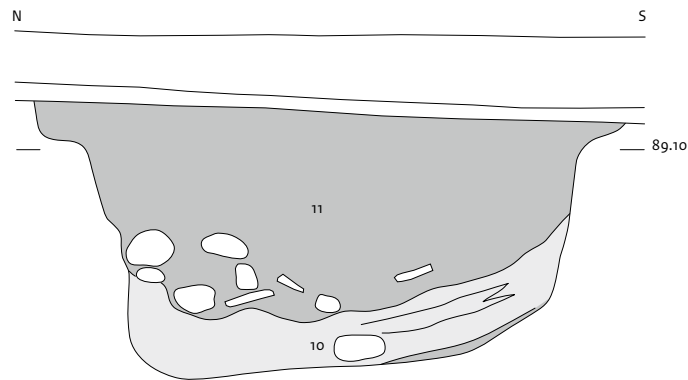
*finds/dating evidence*

The finds collected are firstly 8 iron fragments, 10 pieces (25 kg) of limestone and 4 of brick and tile (c. 2.5 kg). Glass is represented by fragments of a bottle Isings 50 (7 g) and a beaker Isings 96

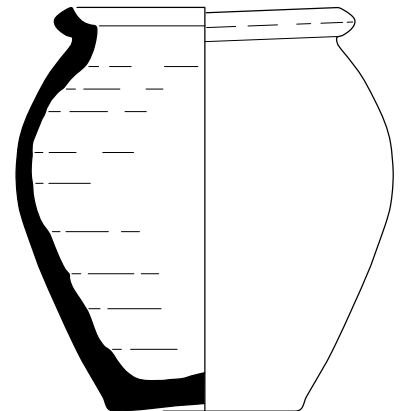
709-711



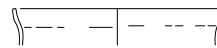
712



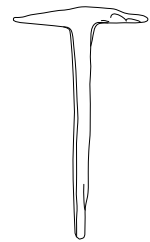
711-2/13-1-27



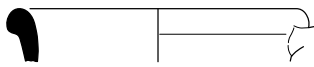
711-1/13-1-27



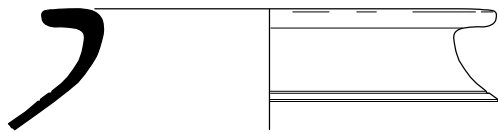
712-4/13-1-26



712-3/13-1-26



712-2/27-2-40



712-1/27-2-40

Fig. 46.5 Voerendaal-Ten Hove. Section through pit 709-712, with pottery and metal of 711-712. Sections scale 1:30, finds 1:3.

(1 g; Fig. 46.5). The latter dates c. AD 320-450. Three sherds (102 g) are Middle Roman, 2 colour-coated and a third of a coarse-walled jar (712-1; Fig. 46.5). A coarse, reduced sherd (34 g) is either Late Roman or Early Medieval, the rim of a jug in the same fabric dates to the fifth of early sixth century AD.

PIT 713 / feature 13.003 a.o.-24.049 (Fig. 46.6)

#### investigation

A northwest-southeast section is indicated on the 1:50 plan of trench 13, but no drawing is present. The colours and descriptions of the layers recorded in the west wall of trench 13 and those in the section in trench 24 do not match.

#### remarks

In spite of the differences in the section drawings, it is clear that the lower part of the infill consists of lighter coloured, 'cleaner' loess (layer 10-18 and 22-27) and the upper part of soil with more or less charcoal, and small or even very large tile fragments (layer 19-21 and 28-32).

#### finds/dating evidence

The section-drawing made in trench 13 suggests that 713 is intersected by 726, but this is not very clear and in reality it was probably the other way round. This is because 726 was older than drain 317, while the upper layers of 713 contain some Late Roman or Early Medieval sherds. Perhaps a larger portion of the upper fill is subsided into an older pit, contemporary with 726. Some of the pottery found in pit 713 (69 sherds, 1,889 g) are or can be relatively early, like for instance those of a colour-coated beaker Stuart 4 (713-3; Fig. 46.7) or a cooking pot Niederbieber 89/Heerl-JA2a

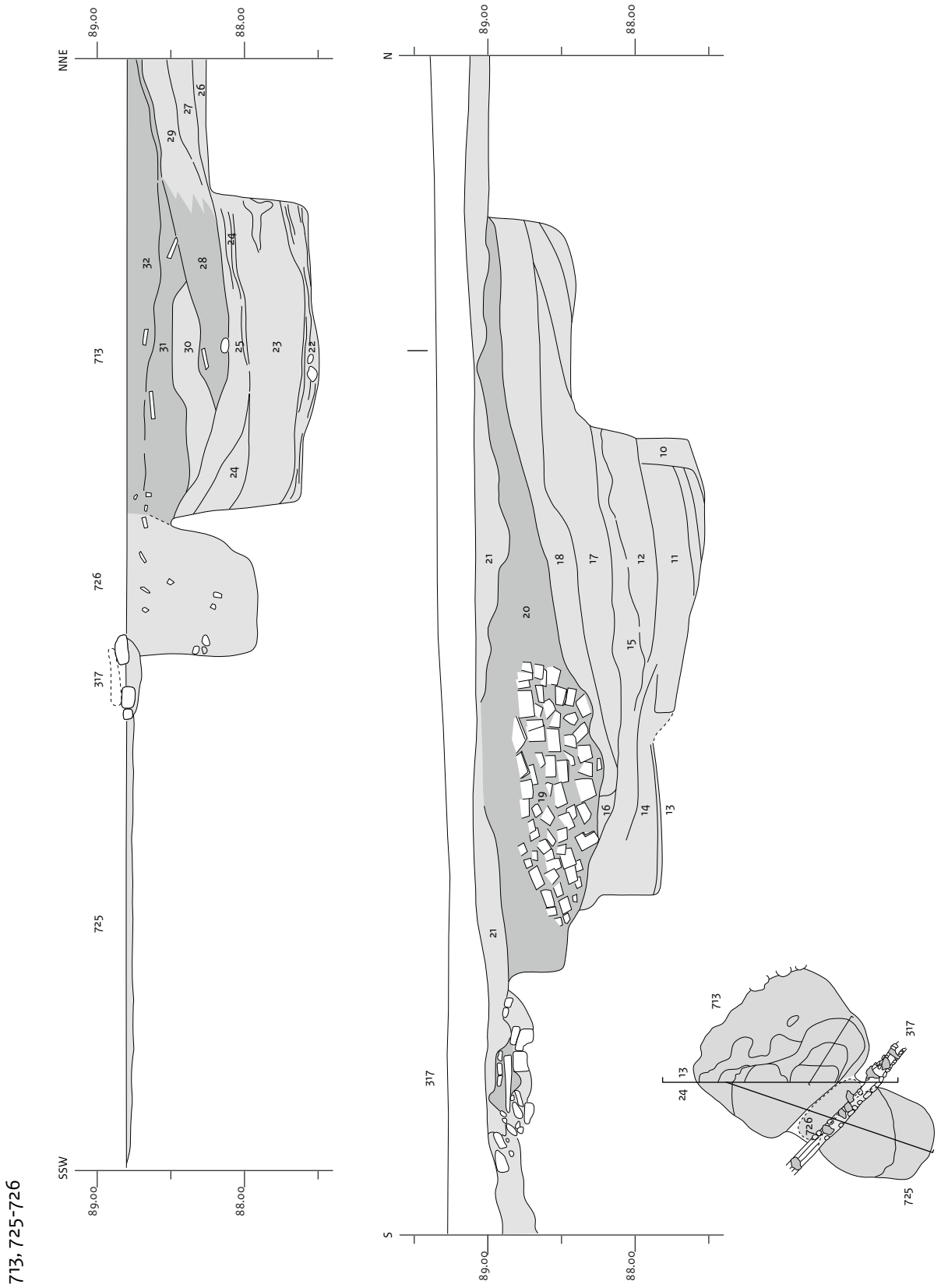


Fig. 46.6 Voerendaal-Ten Hove. Sections through pit 713, 725 and 726, with their location. Plan scale 1:200.

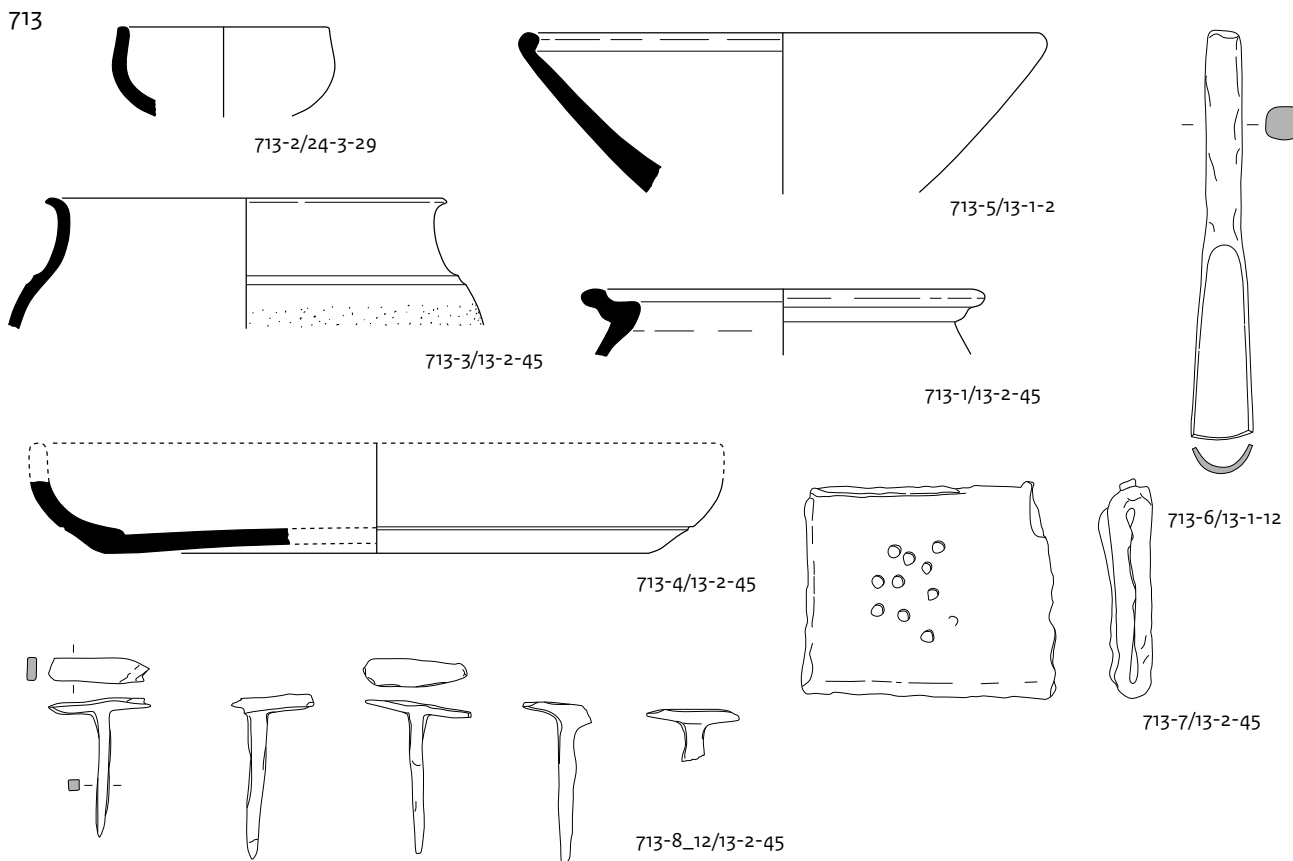


Fig. 46.7 Voerendaal-Ten Hove. Pottery, iron and lead from pit 713. Scale 1:3.

(713-1; Fig. 46.7). Other finds date for certain to the late second or third century, like black-slipped beakers Niederbieber 33 or the smooth-walled/smoked dish Vanvinckenroye 90 (713-4; Fig. 46.7). However, there is still later material present, like the cup Dragendorff 40/Chenet 302 in Argonne sigillata (713-1) and the coarse-walled bowl Redknap A7 (713-5; Fig. 46.7). These sherds were recovered from the upper levels of the pit (c. 88.80 m NAP). Other finds that must be mentioned are 9 pieces (485 g) of animal bone, a large number of tile fragments (114, over 200 kg), stone (18, c. 15 kg) an iron spoon bit auger (713-6) a number of T-shaped clamps (713-8 up to 12) and a folded slab of lead (713-7; Fig. 46.7).

PIT 714 / feature 14.001, 19.014 (Fig. 46.8)

*finds/dating evidence*

No pottery was found in this pit; only a piece of limestone and 21 pieces (c. 5 kg) of roof tiles was recorded (not collected).

PIT 715 / feature 14.008 (Fig. 46.8)

*finds/dating evidence*

Besides a dozen pieces (c. 2.5 kg) of roof tile fragments, 26 fragments (203 g) of pottery were found. Most pottery provides no precise date. A small rim of a black-slipped beaker Niederbieber 33 dates after AD 200. The rim 715-1 is made of coarse-walled reduced pottery and dates after AD 350, possibly later in the fifth or beginning of the sixth century.

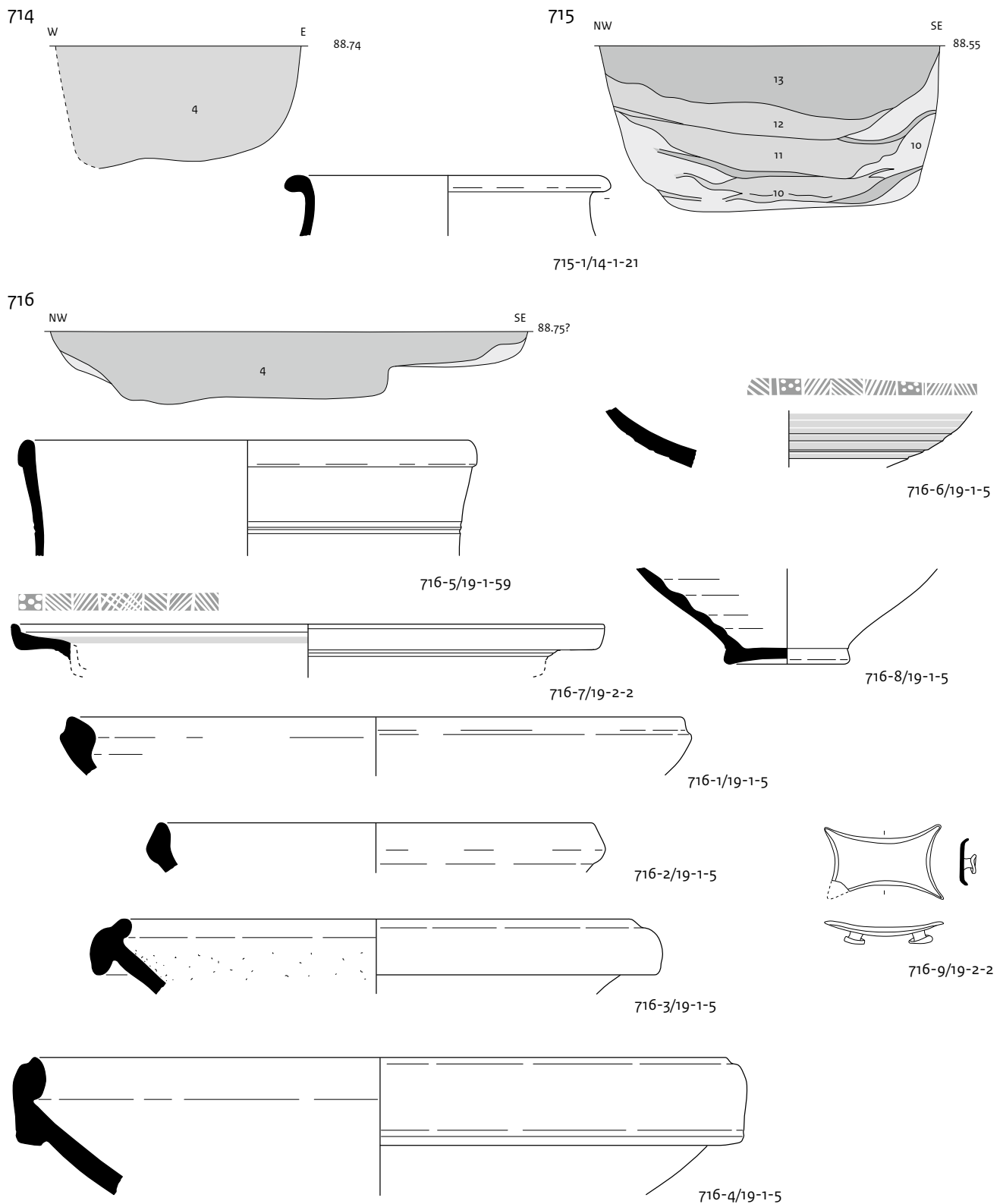


Fig. 46.8 Voerendaal-Ten Hove. Sections through pit 714-716, with pottery from 715-716 and metal from 716. Sections scale 1:30, finds 1:3.

PIT 716 / feature 19.015 (Fig. 46.8)

*finds/dating evidence*

The non-ceramic finds recovered from this pit consist of 40 fragments (579 g) of animal bone, 14 iron fragments and a bronze, trapezoid-shaped piece of decorative horse gear (716-9; Fig. 46.8). Some 42 pieces (5.8 kg) of roof tile were recorded and 97 fragments (2,873 g) of pottery, both



Middle and Late Roman in date. Most of the 22 sherds (1,061 g) of the latter category are in Argonne sigillata or coarse-walled Mayen ware. Two roller-stamp decorations, on a dish Chenet 313 and a bowl 320 date to the period AD 375-425; not excluding a later use or deposition (716-6 and 7; Fig. 46.8).

PIT 717 / feature 20.003 (Fig. 46.9)

*finds/dating evidence*

In this pit, a handful fragments of animal bone and 13 fragments of iron were found. Another metal find is a Aes 4 of Theodosius' dynasty from AD 383-403. Of the 19 fragments (465 g) of pottery, only a small fragment (4 g) of a sigillata bowl Chenet 320 is Late Roman. The other material is, or could be older.

PIT 718 / feature 20.005

See chapter 41, ditch 333.

PIT 719 / 20.090 (Fig. 46.9)

*finds/dating evidence*

Of 25 fragments (905 g) of pottery found in this pit, the coarse pot Niederbieber 89/Heerl-JA2a (719-1; Fig. 46.9) is not indicative for the date and the same holds true for fragments of a beaker Niederbieber 30/Heerl-BE10, a terra sigillata mortarium Dragendorff 45 or even a black-slipped beaker Niederbieber 33. A single sherd (6 g) of a bowl in Argonne sigillata points to a Late Roman date.

PIT 720 / 20.108 (Fig. 46.9)

*finds/dating evidence*

Besides 2 fragments (98 g) of animal bone, 3 of iron and 4 pieces (1.6 kg) of limestone, only 9 sherds (46 g) of pottery were found in this pit, among which a small fragment of a smooth-walled/smoked beaker with a graffito (720-1; Fig. 46.9).

PIT 721 / feature 20.120

*investigation*

This large pit was found at level 2, but only sectioned at level 3, were only 5 cm remained, considered not enough to draw the section.

*finds/dating evidence*

Three pieces of limestone (2.4 kg) suggest a date in the Middle Roman period or beyond; the only fragment (16 g) of pottery is handmade. At level 1, five Late Roman coins were found at a location just next to where the pit later appeared (20-1-76).

PIT 722 / feature 20.033, 46, 169 (Fig. 46.9).

*investigation*

Pit 722 was already present at level 1, but only sectioned at level 4, so the drawing is for a large part a reconstruction.

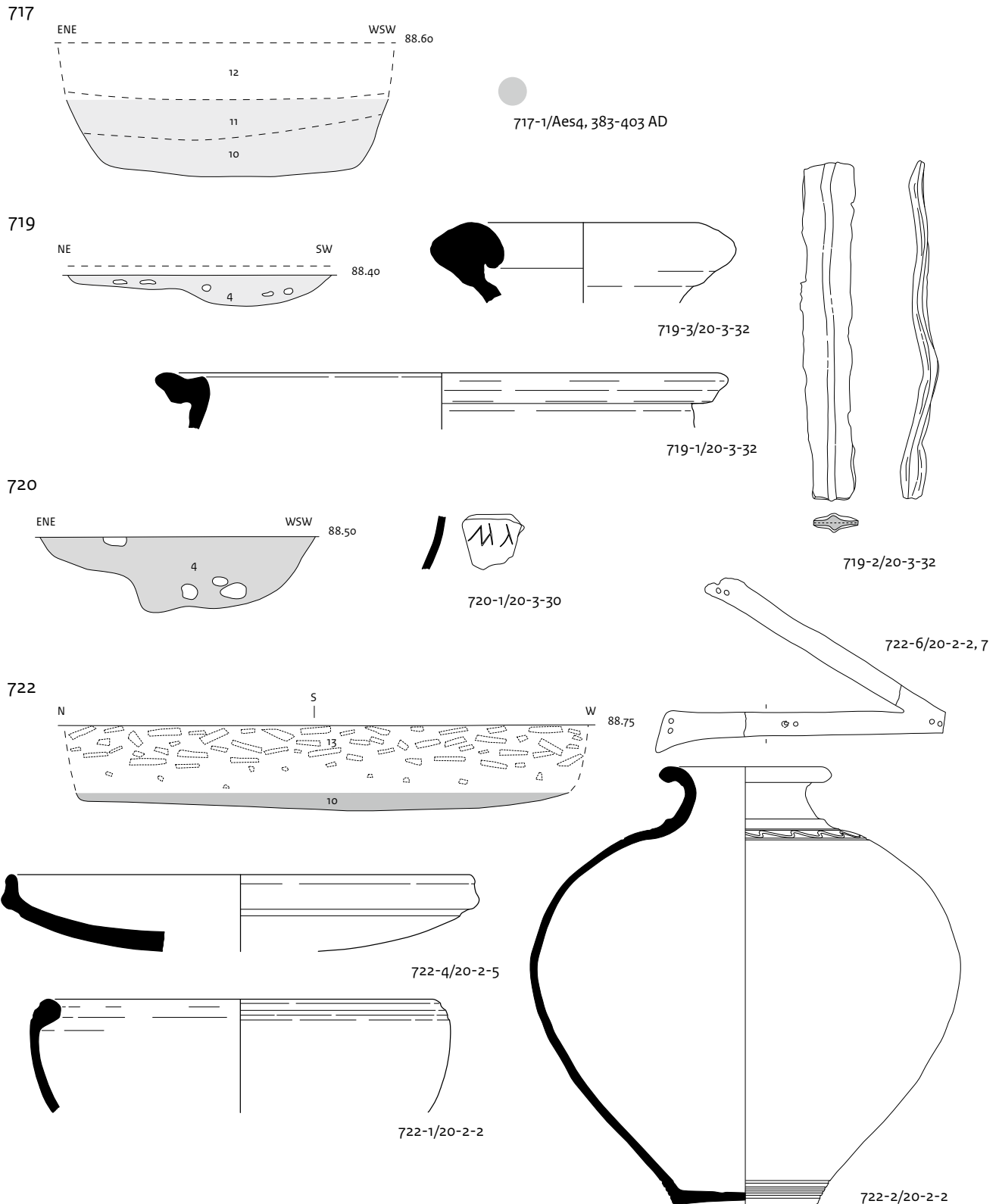


Fig. 46.9 Voerendaal-Ten Hove. Sections through pit 717, 719-720 and 722, with pottery and metal from 719-720 and 722. Sections scale 1:30, finds 1:3; 722-2 scale 1:8 (cf. fig. 23.41).

*finds/dating evidence*

At or just below level 2, 18 bones (90 g) of a fox were collected (with some of other animals). Probably originally an entire skeleton (only the skull missing) was present. The other non-ceramic finds are a piece of window-glass, 31 fragments/objects of iron and 2 of bronze, belonging to a V-shaped piece of sheet-metal (722-6; Fig. 46.9). At least 20 fragments of roof tiles were originally

collected, with a weight of c. 33 kg. Most of the 68 pottery fragments (12.4 kg) belong to a large dolium with a narrow neck Lenz 50G (722-2; Fig. 46.9; cf. 53420 for a 1:3 illustration). Also some fragments of a colour-coated beaker Niederbieber 32 and a coarse bowl Niederbieber 104 are present (722-1; Fig. 46.9). A fragment of a terra sigillata dish Chenet 309 (722-4; Fig. 46.9) suggests a Late Roman date for this feature.

PIT 723 / feature 24.003

*investigation*

This pit, observed at level 2 as a large round feature and at level 3 as a rectangular pit, was not sectioned; therefore the depth given in section 46.3 is a reconstruction.

*finds/dating evidence*

Part of the many finds from this pit are Middle Roman or older: 8 fragments (3 g), 26 six iron fragments, a piece of lead (6 g), 36 pieces (c. 3.5 kg) of stone - mainly sand- and limestone -, 3 pieces of flint (150 g), 6 of brick and tile (less than 1 kg), 3 fragments of glass of windows and a bottle (723-12; Fig. 46.10) and 49 sherds (261 g) of pottery. Late Roman pottery is represented by 73 sherds (1590). Two handmade jars belong to this period (723-8 and 9; Fig. 46.10) and probably also the terra nigra bowl 723-7, although this type can be Middle Roman just as well (Fig. 46.10). The bowls 723-5 and 6 are made of a less fine terra nigra; they are similar to the Chenet 320 and Alzey 24/25 (Fig. 46.10). Other Late Roman pottery is either Argonne sigillata (723-3 and 4) or coarse-walled ware, which was probably produced after AD 360 (723-1 and 2; Fig. 46.10). Two bronze coins, a nummus and Aes3, were struck between AD 337-340 and AD 364-392 respectively.

PIT 724 / feature 24.045 (Fig. 46.10)

*finds/dating evidence*

No sherds were found in this pit, only 2 fragments of iron, 2 pieces limestone (c. 200 g) and 7 roof tile fragments (1.5 kg).

PIT 725 / feature 24.046 (Fig. 46.6)

*investigation*

See pit 713.

*finds/dating evidence*

For the relation to drain 317, see pit 726. The only finds are two fragments of animal bone and a tile fragment (c. 100 g).

PIT 726 / feature 24.048 (Fig. 46.6)

*investigation*

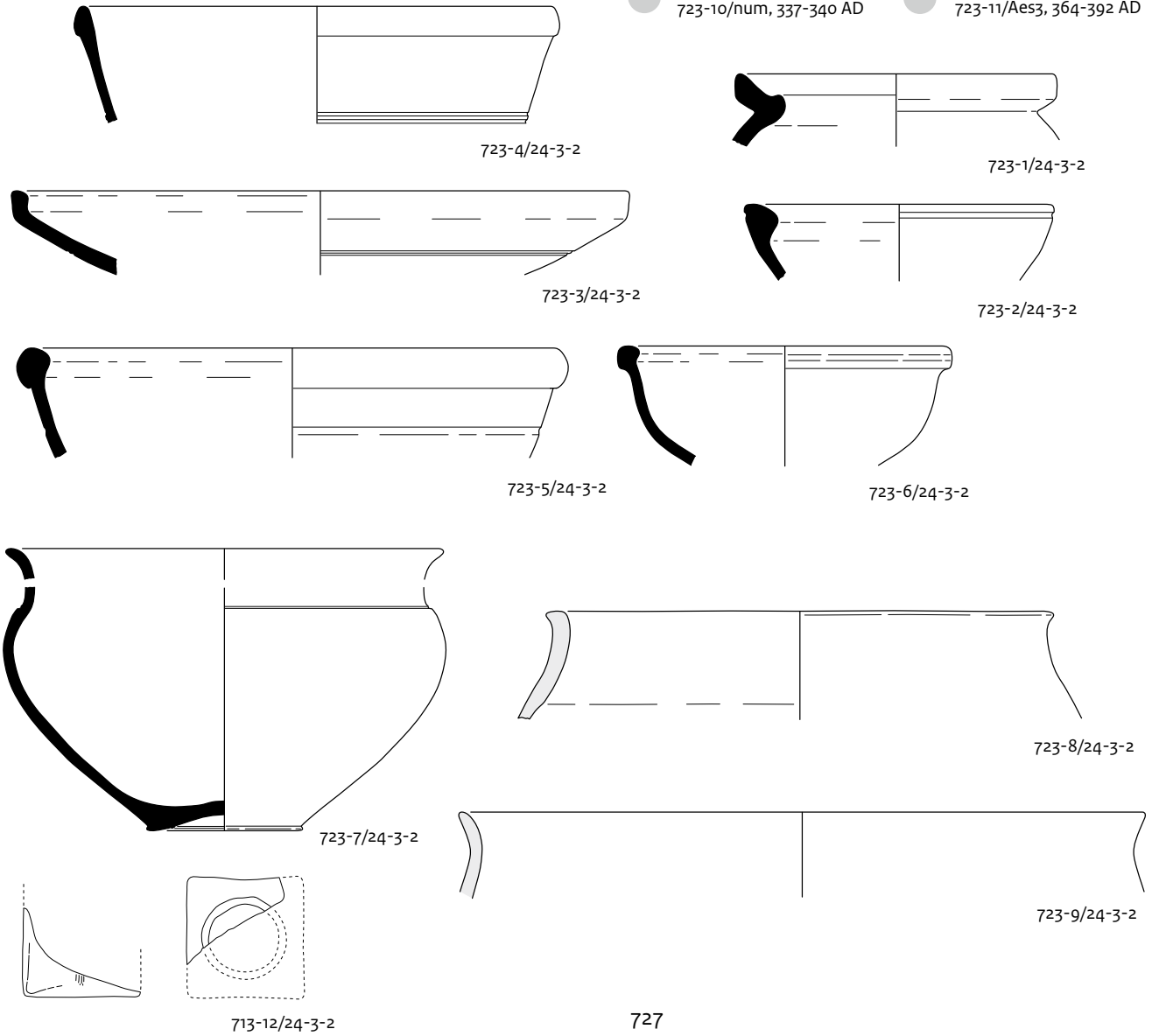
This feature was only recorded in a section, its plan is a reconstruction.

*finds/dating evidence*

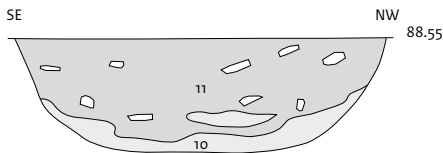
The plan of the trench suggests that both pit 725 and 726 were older than drain 317. Pit 725 is in section very shallow however, so that it is not possible to determine the relation. Pit 726 seems to be cut by the drain (cf. pit 713), or to be more precise: its second stone phase, for the older ditch is not visible in the section. The section drawing indicates a larger number of tile (only 1 fragment/100 g collected!) limestone and mortar fragments and one gets the impression that the pit is quite late (Late Roman). However only one piece (less than 100 g) of tile was collected and the only pottery sherd (18 g) was the rim of a colour-coated dish Stuart 10/Heerl-D2. This type was made from c. AD 100 onwards, although it became more popular in the second half of the second century.

723

● 723-10/num, 337-340 AD ● 723-11/Aes3, 364-392 AD



724



727

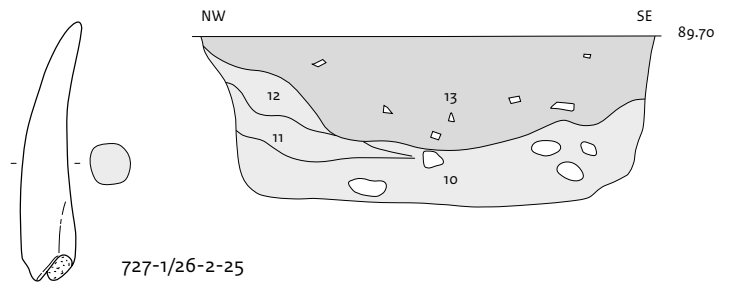


Fig. 46.10 Voerendaal-Ten Hove. Sections through pit 724 and 727, pottery and glass from pit 723, and worked bone from 727. Sections scale 1:30, finds 1:3.

PIT 727 / feature 26.015

*finds/dating evidence*

The few finds from this feature provide no date. It concerns 2 tile fragments (c. 500 g), 6 pieces of iron and two fragments of animal bone. One of these is a worked piece of antler (727-1; Fig. 46.10).

PIT 728 / feature 27.016 (Fig. 46.11)

*finds/dating evidence*

The plan suggests that this pit was intersected by the foundation of building 401, but it is certainly younger.

The find material recovered from this pit is quite diverse. In the first place, there are 3 fragments of animal bone, one iron slag (116 g), a whetstone (728-4; Fig. 46.11), 4 fragments of a tephrite quern (514 g) and some blocks of limestone (cf. section drawing). The metal consists of a small piece of lead, 17 fragments of iron (objects), among which a bell and a ladle (728-5, 6; Fig. 46.11). Three bronze coins provide a Late Roman date, the youngest dating from the end of the fourth century (aes 4 Theodosius I, AD 388-395). Also Late Roman are a sherd of a glass vessel (Isings 96?), and some of the 11 fragments (605 g) of pottery. Of two sigillata bowls Chenet 320, 728-1 is dated in the late fourth or early fifth century by its decoration (Fig. 46.11). Also a rim fragment of a plate Chenet 304 was found.

PIT 729 / feature 27.100 (Fig. 46.11)

*finds/dating evidence*

The plans suggest that the most western wall of building 401 was built over pit 729. Although the drawing of the outer facing of the wall (Fig. 46.11) shows that it was severely damaged precisely at this location, most finds from the pit also suggest it preceded building 401. The activities that damaged the walls, could have been the explanation for some later pieces of pottery.

Alternative explanations are that this wall was a later addition to the building or that the pit was late after all. A first indication that pit 729 could be earlier than building is that only 4 pieces of roof tile were listed in the database. Besides 6 iron fragments and 11 of animal bone (868 g), no less than 302 pottery sherds (11.5 kg) were found (Fig. 46.11-46.12). It is remarkable that virtually no Late Roman pottery is present. Only one small (3 g) sherd was originally identified as Late Roman handmade ware. It is very thin-walled however, more resembling terra nigra apart from the fine white quartz added. One would expect around 10 Late Roman sherds if the pit dated to this period. There is some early material present, like sherds of South-Gaulish sigillata, the Gallo-Belgic beaker 729-10 and terra nigra bottle 729-11 (Fig. 46.11). Out of 66 datable sherds, 44 (67%) have a terminus post quem between AD 70-120 AD and 13 one of 125/130 AD (20%).

The remaining 9 fragments (14%) post-date AD 150, the youngest belonging to a collared bowl like Vanvinckenroye 520 (729-13; 2 sherds; Fig. 46.12) and two mortaria Brunsting 37/ Vanvinckenroye 337 (3 sherds; form like 729-4 in Fig. 46.12). The ceramics specialist ascribes them to Soller, with a third-century date, but similar forms were already made around the middle of the second century. All in all, only a minority of the pottery could be late in date.

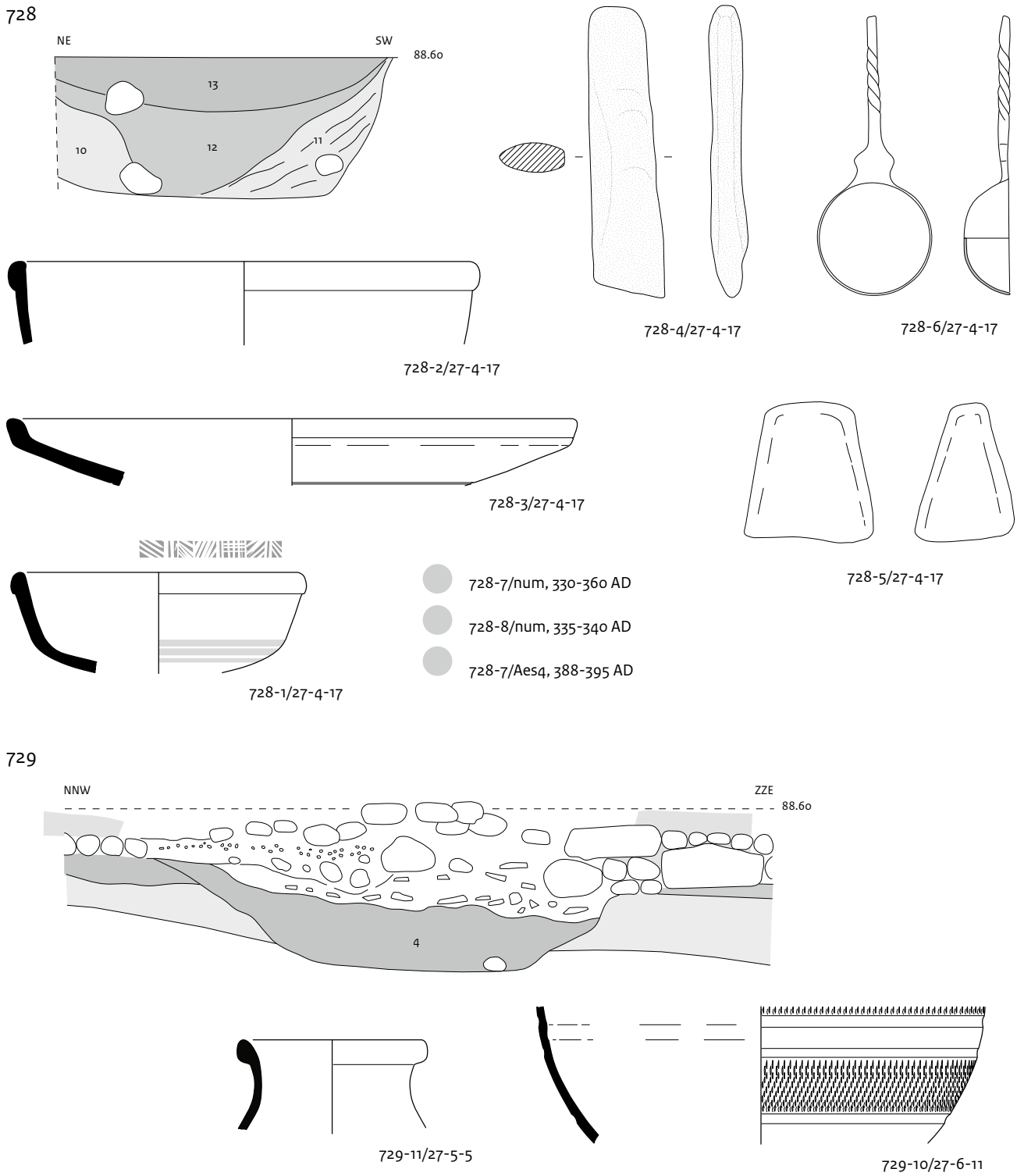


Fig. 46.11 Voerendaal-Ten Hove. Sections through and finds from pit 728 and 729. Sections scale 1:30, finds 1:3, roller-stamp 1:2.

PIT 730 / feature 27.102 (Fig. 46.13)  
*finds/dating evidence*

Besides two fragments of animal bone (95 g) and one of a roof tile (600 g), 21 pottery sherds (542 g) were found. Two of these belong to terra sigillata dishes Dragendorff 18/31 (Fig. 46.13), one made by Taurianus (1a) at Lezoux, c. AD 140-170.

729

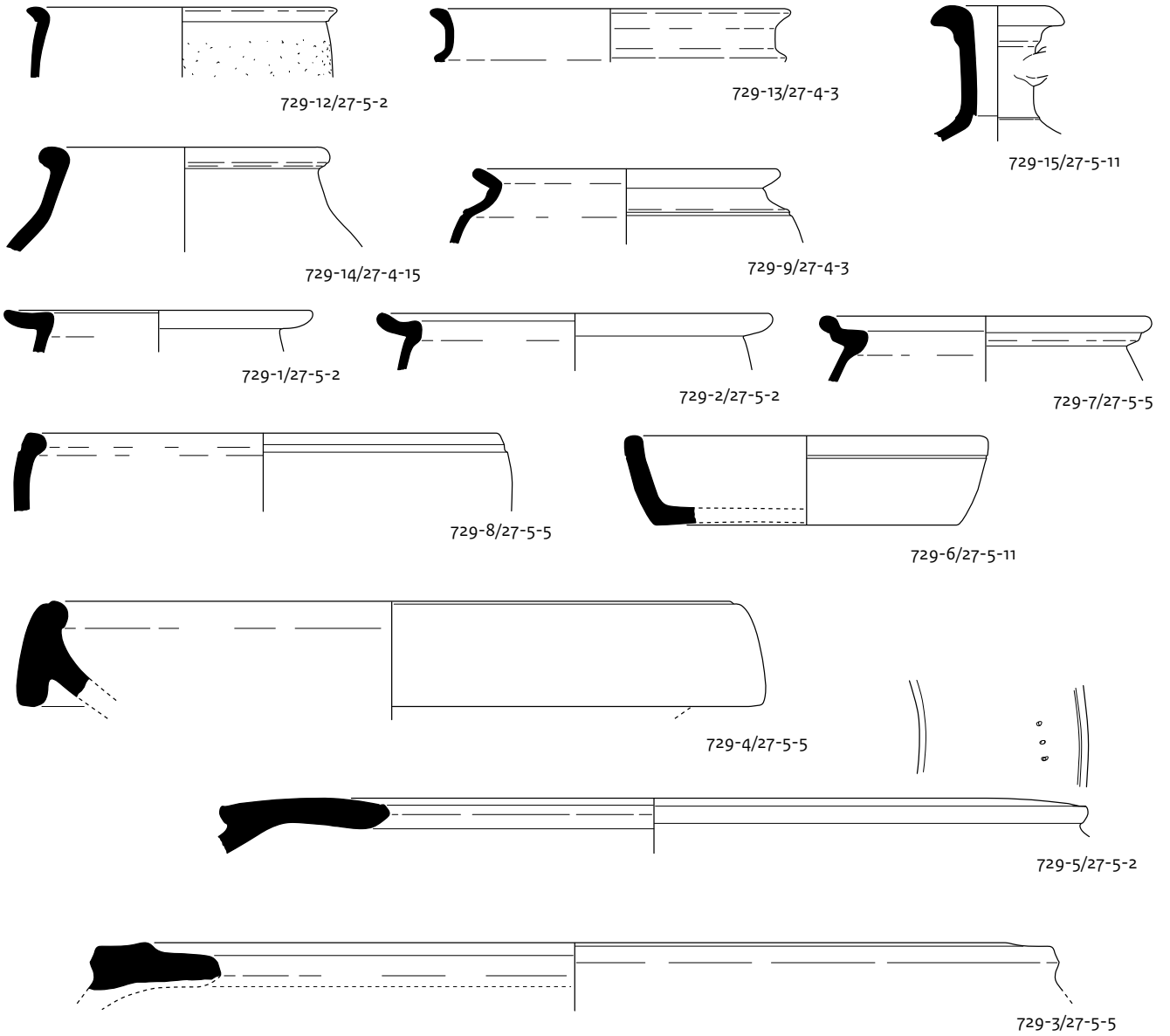


Fig. 46.12 Voerendaal-Ten Hove. Pottery from pit 729, continued. Scale 1:3; 729-5 scale 1:4.

PIT 731 / feature 28.024 (Fig. 46.13)

*finds/dating evidence*

The finds consist of 6 pieces of brick and tile (c. 2 kg).

PIT 732 / feature 29.019 (Fig. 46.13)

*finds/dating evidence*

The only finds from this large pit are 4 sherds (40 g) of handmade pottery and 2 pieces (58 g) of flint. Although this suggests a prehistoric date, the pit intersects oven 643 which points to Late or post-Roman date.

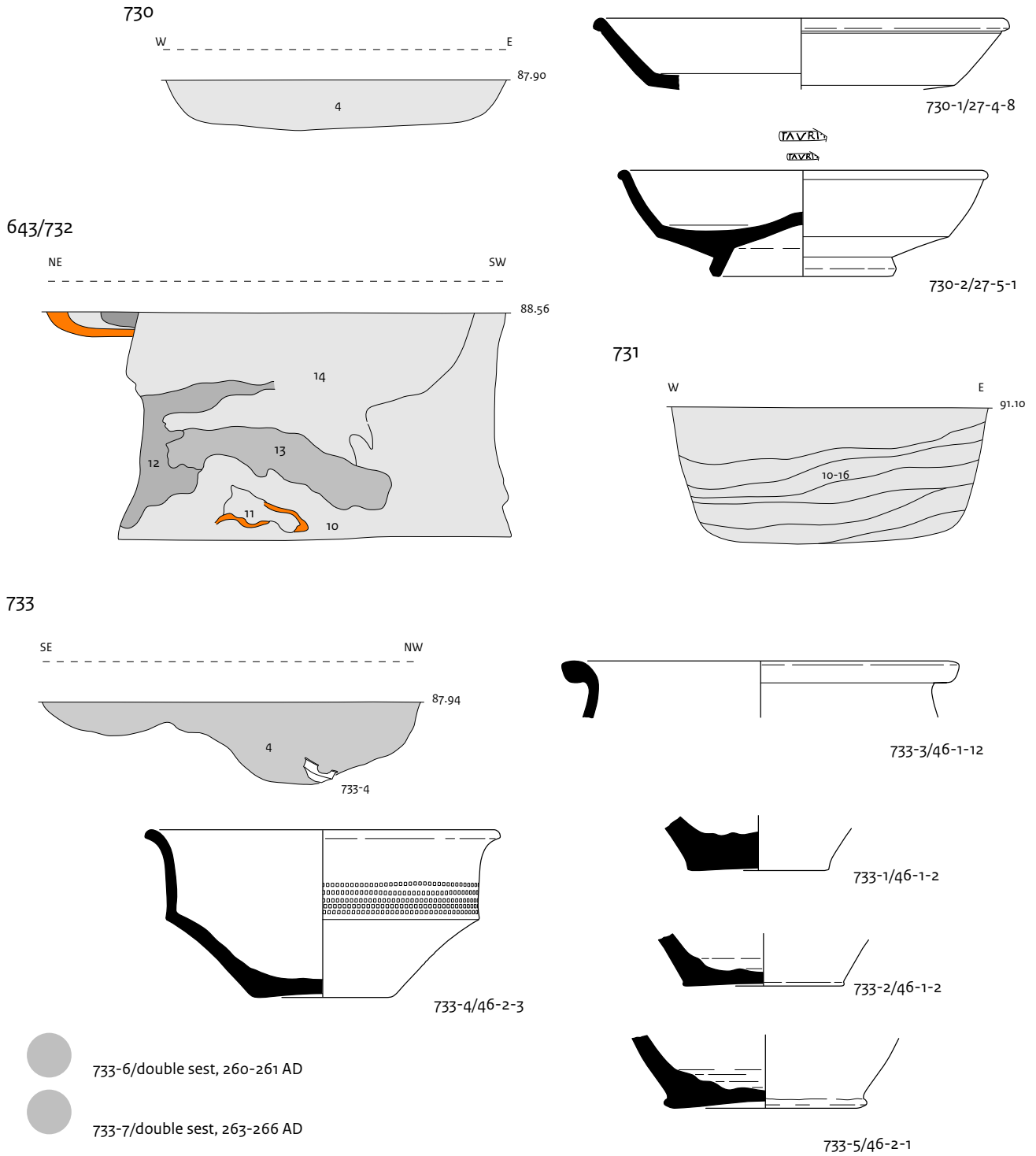


Fig. 46.13 Voerendaal-Ten Hove. Sections of pit 730-733 and pottery of 730 and 733. Sections scale 1:30, pottery 1:3, stamp 1:2.

PIT 733 / feature 46.002 (Fig. 46.13)

*finds/dating evidence*

The finds from this pit are quite diverse, with 4 fragments of iron, 6 of roof tile (c. 500 g) and one of sandstone (4.8 kg) and limestone. One sherd of handmade (7 g) and 7 (35 g) of Roman wheel-turned pottery are not relevant for dating. The same holds true for two silver denarii of Postumus, albeit remarkable finds, being the only of this type and emperor on the site. These coins are at least 300 years older than some of the 10 sherds (856 g) Early Medieval pottery. Most of these have a coarse, reduced fabric and are a kind of *Wölbwandtöpfe*, dating



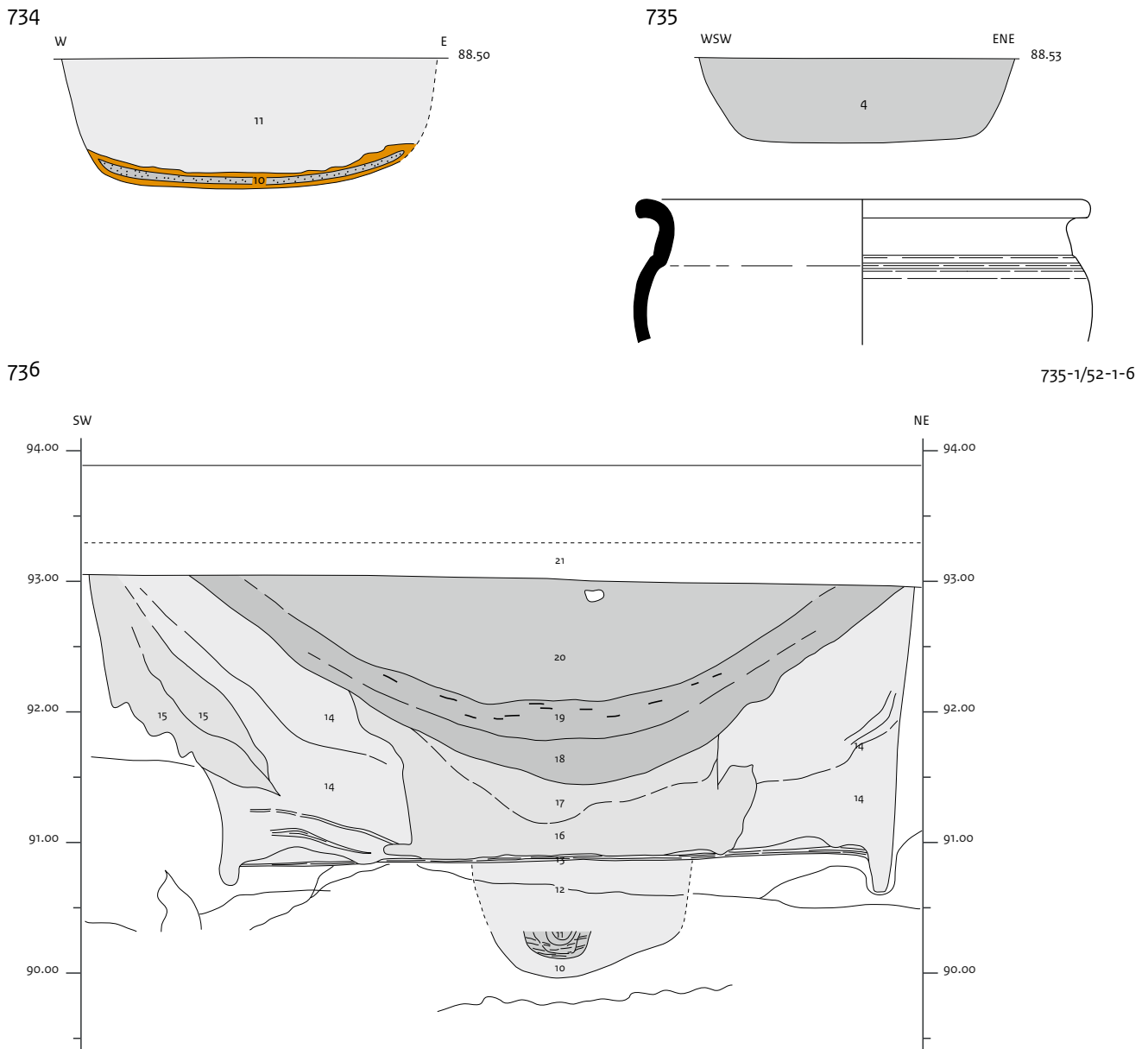


Fig. 46.14 Voerendaal-Ten Hove. Sections of pit 734-736 and pottery of 735. Sections 1:30, pit 736 scale 1:50, pottery 1:3.

between c. AD 400/450-700/725 (733-1, 2, 3 and 5; Fig. 46.13). The bowl 733-4 is also coarse-walled and reduced, but can be dated from c. AD 565-710 on basis of the type (Fig. 46.13).

PIT 734 / feature 46.004 (Fig. 46.14)

*finds/dating evidence*

The presence of burnt soil along the bottom of this pits is reminiscent of a prehistoric silo/storage pit. The only find, a piece of flint (1 g) makes this interpretation/date possible, although 8 m to the north two hearths were found (feature 644-645).

PIT 735 / feature 52.002 (Fig. 46.14)

*finds/dating evidence*

Most finds from pit 735 are (probably) Middle Roman: 3 pieces (150 g) of limestone and sandstone, one iron fragment, 7 of roof tile (c. 800 g) and 3 sherds of pottery (56 g). Five sherds

(122 g) of coarse-walled ware are younger, the rim of a bowl in a oxidised fabric probably dating between the mid-fifth and early sixth century AD (735-1; Fig. 46.14).

PIT 736 / feature 62.001 (Fig. 46.14)

*investigation*

The section line (from level 2) through most of this pit was situated too much to the north and was later relocated somewhat to the south to the centre of layer 10 and 11. 'Layer' 12 between 11 and 13 was not drawn. A great number of samples was taken from the various layers.

*remarks*

The black lines in layer 19 were interpreted as burnt planks. The large pit has a kind of narrow ditch around the circumference. Layer 11 was humic and possibly consisted of sods. Below 91.50 m NAP the subsoil was at first described as 'sandy', but according to soil scientists the material was very calcareous loess.

*finds/dating evidence*

A sample of charcoal of burnt planks (*Ulmus* sp.) from layer 19 was <sup>14</sup>C-dated:<sup>3342</sup> 1125 ± 45 BP (GrN-14107); 880-986 cal AD (1 sigma); 775-995 cal AD (2 sigma). Most find material was recovered from the upper layers of the pit. There is only one sherd (10 g) pottery: Roman coarse ware. The other finds are 2 fragments of iron, 6 of iron slag (829 g), 8 of flint (2.1 kg), 23 limestone (c. 13 kg) and 66 (c. 15.5 kg) of brick and tile (*tegula*, *imbrex*, *tubulus*).

PIT 737 / feature 68.101 (Fig. 46.15)

*finds/dating evidence*

<sup>14</sup>C-date (charred grain): 1570 ± 50 (UtC-1582); 427-539 cal AD (1 sigma); 395-595 cal AD (2 sigma). The non-ceramic finds from this pit consist of 63 fragments (1,260 g) of animal bone, 13 of bronze, 15 of iron, 27 pieces (1,008 g) of slag, one (5 g) of window glass and 9 (c. 35 kg) of sand and limestone. The amount of stone, including some column fragments (Fig. 33.4), shows that the pit probably post-dates the villa, which is strengthened by the 33 pieces (12 kg) of brick and tile. The pottery consists of one sherd (28 g) of handmade ware, 27 sherds (293 g) of Middle Roman ceramics (some examples in Fig. 46.15) and only one (32 g) of a bowl Chenet 319 or 320 (737-8; Fig. 46.15). Also 4 fragments (10 g) of Late Roman glass were found, probably all of cups Isings 96, dating c. AD 320-450 (737-8, 9, 10; Fig. 46.15). The radiocarbon dating places the pit in the fifth or sixth century AD.

PIT 738 / feature 69.051 (Fig. 46.15)

*investigation*

This pit was found at level 4, but only sectioned from level 5, where just a few centimetres remained; the section presented here is reconstructed.

*finds/dating evidence*

<sup>14</sup>C-date (charred grain): 1570 ± 50 BP (UtC-1582); 427-539 cal AD (1 sigma); 395-595 cal AD (2 sigma). There is a slight possibility that the sampled material was associated with hearth 619, intersecting the pit (above the documented level). The finds from pit 738 consist of 8 pieces of iron slag (84 g), some blocks of limestone (one collected, 3.7 kg), 3 fragments (800 g) of roof tile, an iron fragment and 5 sherds (61 g) of pottery, four of which belonging to types dating from AD 130-200. One is a smooth-walled honey pot Stuart 146/Heerl-HP3 and the other a coarse-walled pot Brunsting 4/Heerl-P1.

<sup>3342</sup> Willems & Kooistra 1987, 36.

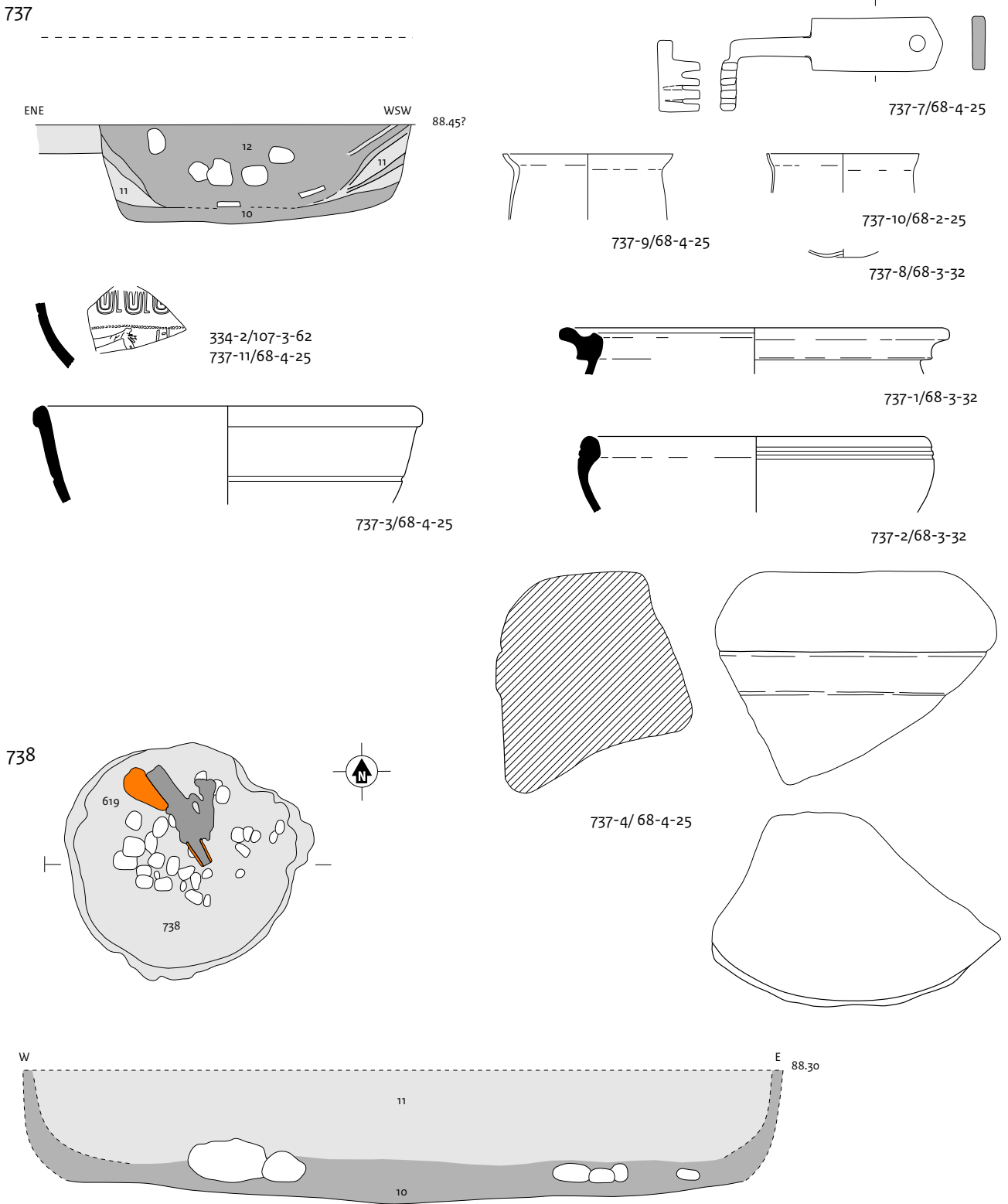


Fig. 46.15 Voerendaal-Ten Hove. Section through pit 737 and 738, with pottery, glass, iron and stone of 737. Section scale 1:30, finds 1:3, stone 1:4.

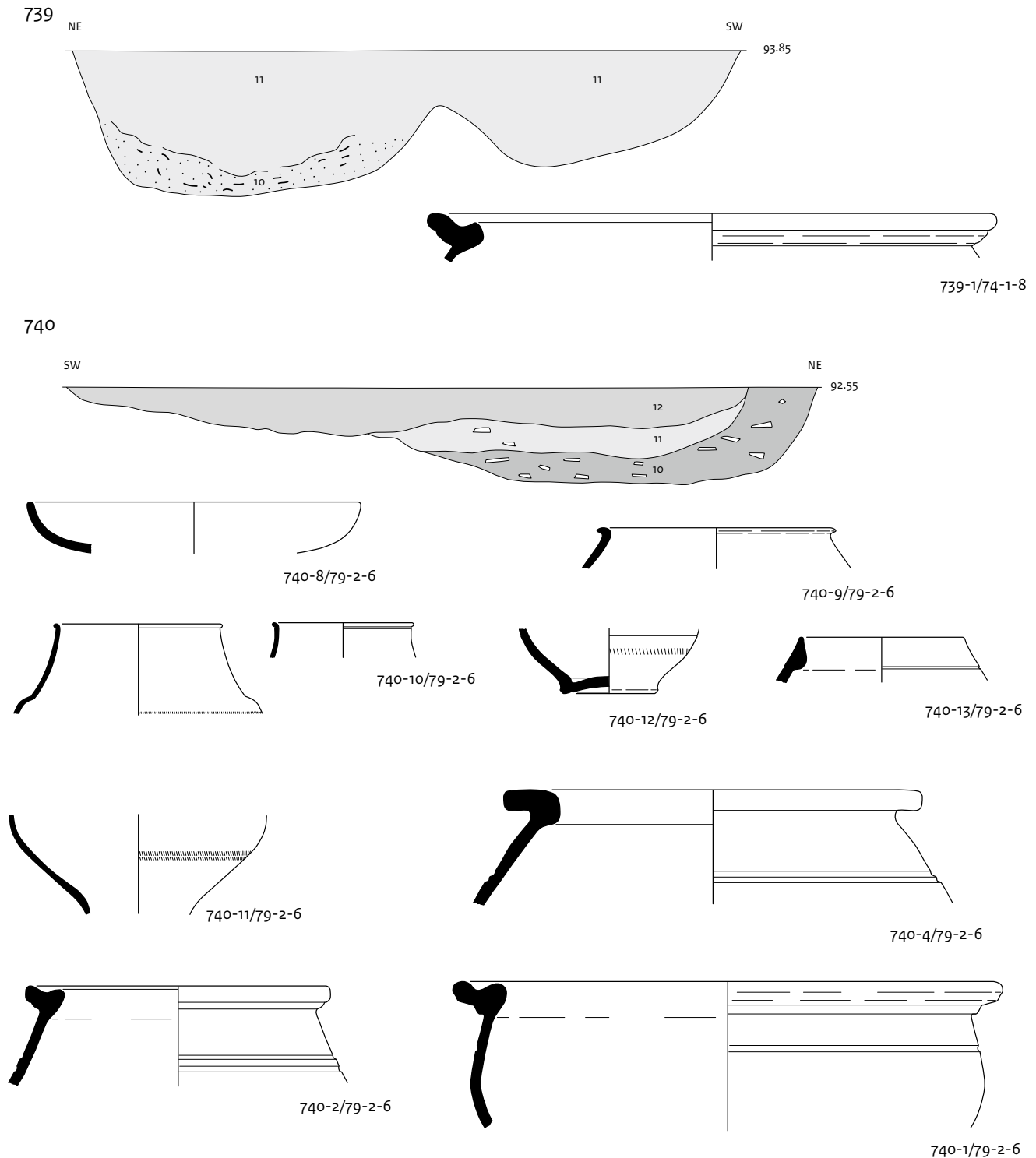


Fig. 46.16 Voerendaal-Ten Hove. Sections and pottery of pit 739-740. Sections scale 1:30, pottery 1:3.

PIT 739 / feature 74.002 (Fig. 46.16)

*finds/dating evidence*

Pit 739 can be dug and filled when the villa was already in ruins, because there are 6 pieces (c. 1 kg) of roof tile and a fragment (7 g) of window-glass. A possible late date is not confirmed by the small amount of pottery, 11 sherds (206 g). Dated are 3 fragments of colour-coated beakers in technique b (second/third century) and 2 rims of two pots Niederbieber 89/ Heerl-JA2a (c. AD 125-230).

PIT 740 / feature 79.006 (Fig. 46.16)

*investigation*

The section drawing shows many tile fragments in the bottom layer 10, but the contents of each layer was not collected under a separate find number.

*finds/dating evidence*

Besides 25 fragments of iron, a piece of sandstone and 4 sherds (28 g) of window-glass, 19 pieces (37.5 kg) of roof tiles were collected. A large quantity of pottery was present: 565 sherds (c. 12 kg). Coarse-walled wares are well represented (Fig. 46.16-46.17), but most relevant for dating are 2 terra sigillata dishes from Eastern Gaul (AD 160-270; one is 740-8 in Fig. 46.16), a beaker Vanvinckenroye 104b/527 from the Meuse region (740-13; Fig. 46.16) and fragments from at least two black-slipped beakers Niederbieber 33 from the Trier region and the Argonnes (740-10, 11; Fig. 46.16).

PIT 741 / feature 95.077 (Fig. 46.17)

*investigation*

Pit 741-743 were already visible at level 2, but only sectioned at level 5 (55 cm lower!) were 741 nearly nothing was left of 741.

*finds/dating evidence*

The find material consists, to begin with, of a fragment (8 g) of animal bone, 9 of iron, 3 iron slags (116 g) and a small piece of roof tile. Besides a small sherd (1 g) of a glass vessel, 12 sherds (170 g) of pottery were found. There is a fragment of a smooth-walled/smoked beaker Vanvinckenroye 87/484-487 (from AD 175) and an Argonne black-slipped beaker Niederbieber 33 (from AD 200).

PIT 742 / feature 95.277 (Fig. 46.17)

*investigation*

See 741.

*finds/dating evidence*

In pit 742, 3 iron slags (207 g) were found, as well as 9 iron fragments and 2 sherds (7 g) of window-glass. This material is insignificant compared to the pottery, with 46 sherds (818 g). Among the pottery are a base of an East-Gaulish Dragendorff 31/Ludovici Sb with a graffito (AD 140-270; 742-3) and a Dragendorff 45 (AD 170-270; 742-2; Fig. 46.17). The pit is dated by 2 fragments of (a) black-slipped beaker(s) Niederbieber 33, made in the third century AD.

PIT 743 / feature 95.276 (Fig. 46.17)

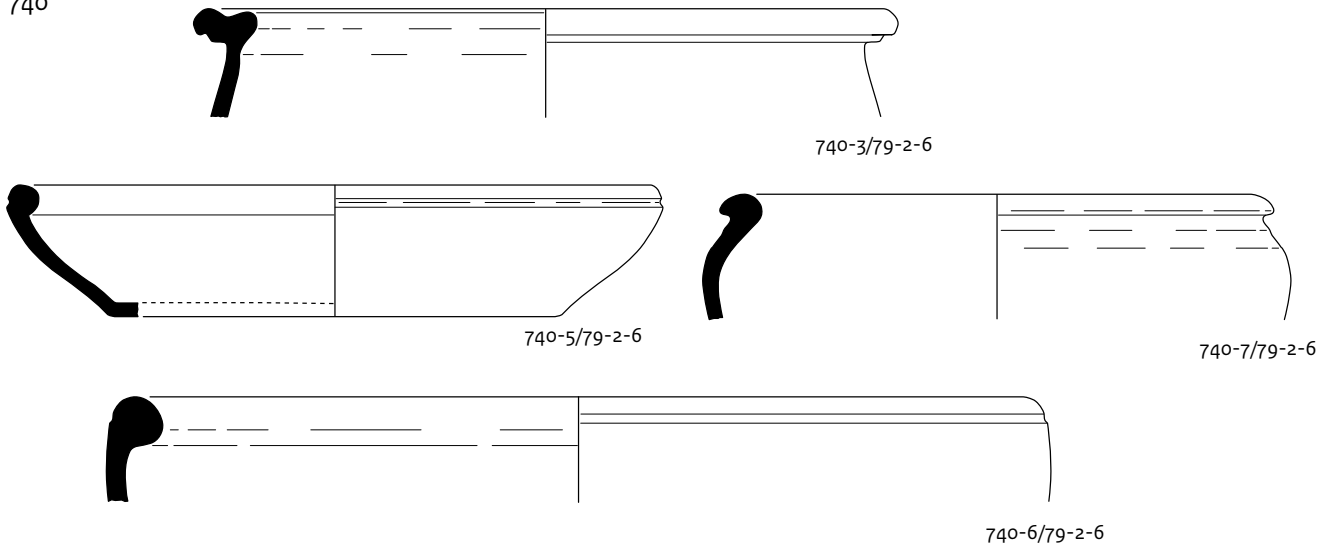
*investigation*

See 741.

*finds/dating evidence*

To start with, the find material from this pit include 2 fragments of animal bone, a tephrite quern fragment (60 g), two pieces of sandstone (205 g), 2 tiny sherds (2 g) of window-glass, a fragment of a bronze needle (?) and 14 fragments of iron. The pottery consists of 38 sherds (880 g) of different sorts, mostly second century, but with one sherd of an Argonne black-slipped beaker Niederbieber 33.

740



741-743

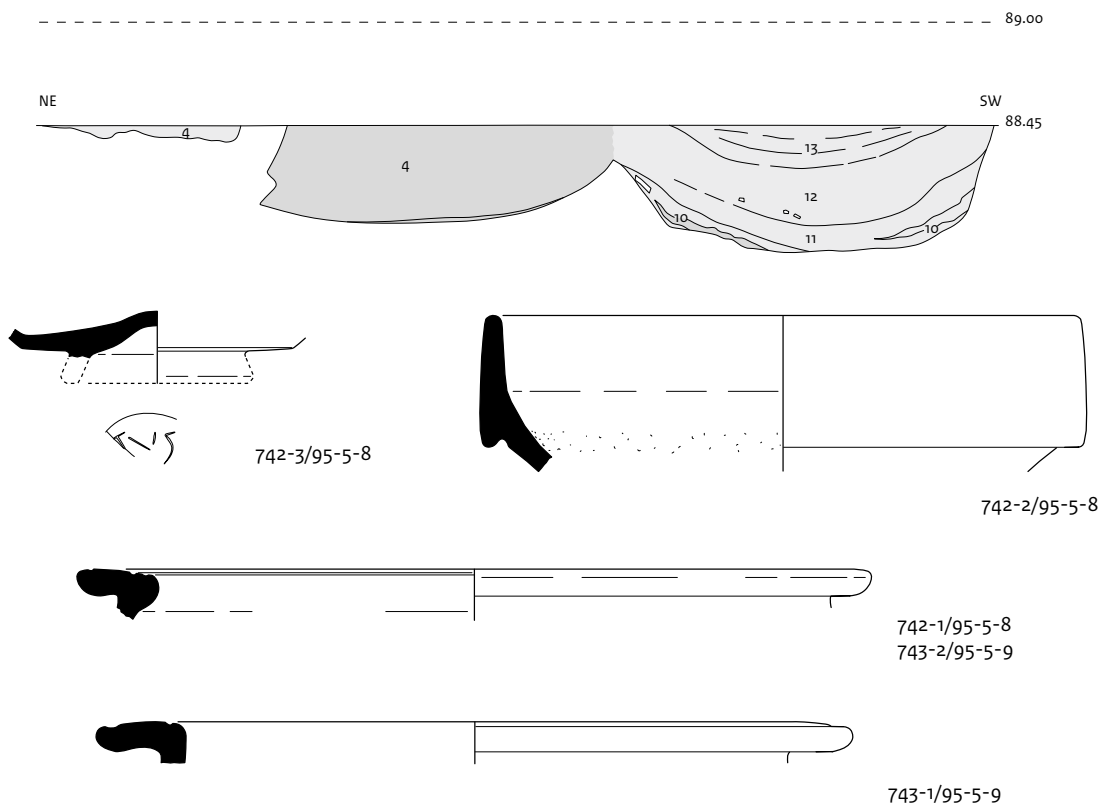


Fig. 46.17 Voerendaal-Ten Hove. Section through pit 741-743, pottery of 740 (cont.) and 742-743. Section scale 1:40, pottery 1:3.

#### PIT 744 / feature 100.002 (Fig. 46.18)

##### *finds/dating evidence*

The finds from this pit are quite diverse. There are 5 fragments (264 g) of animal bone, 12 of iron slag (2,462 g) and 8 pieces (c. 7.5 kg) of brick. Among the latter are pieces of *tubuli* (744-4; Fig. 46.18), not remarkable, because the bath was only 15 m away. One of the 49 iron fragments is a collar for connection wooden water-pipes, probably those between the bath and the end-basin of the aqueduct (744-5; Fig. 46.18). A bronze as of Augustus has no relevance for dating (744-8), contrary to two fragments of glass, one of a bowl with cracked off rim Isings 96 (744-7; Fig. 46.18)

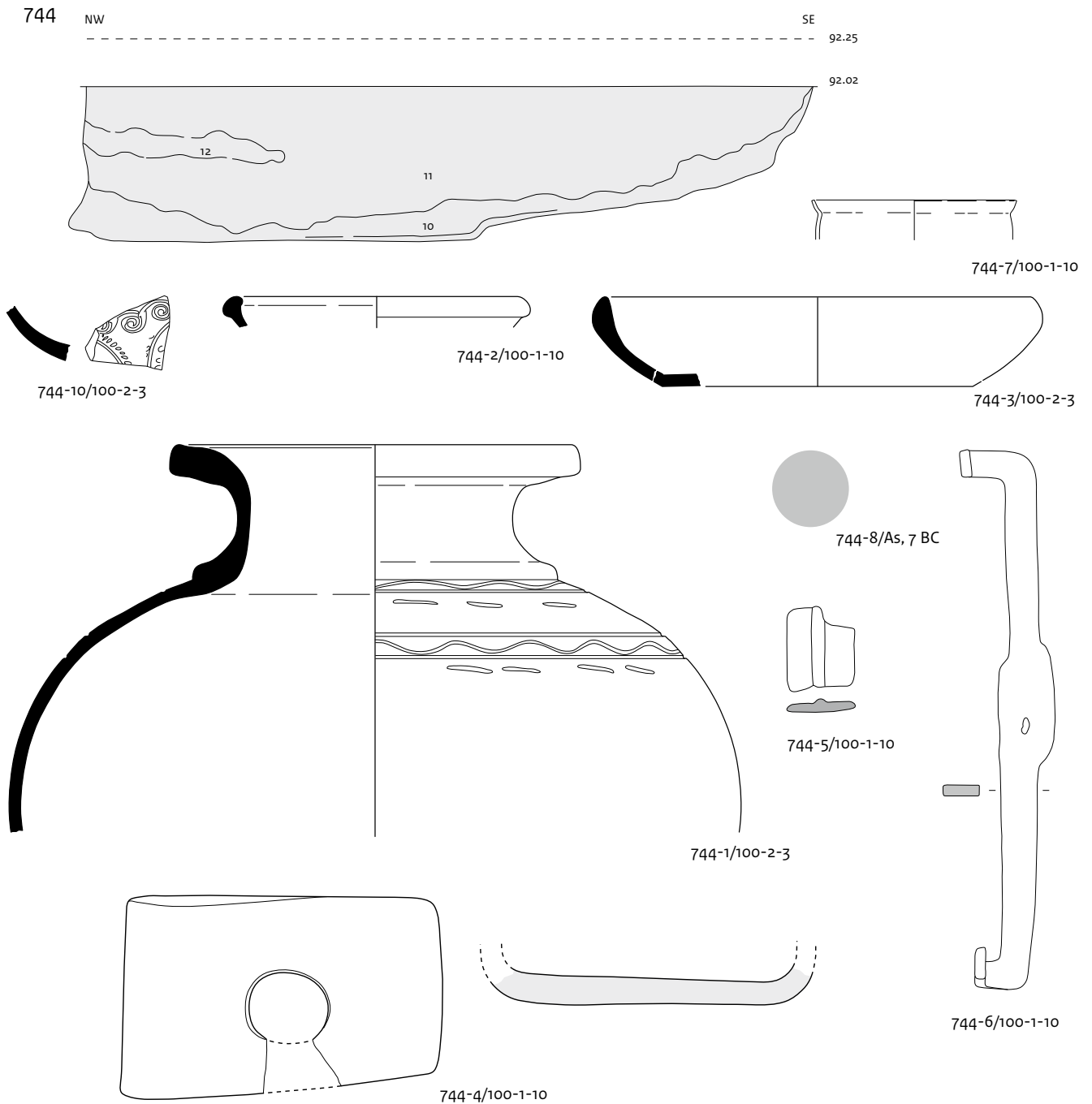


Fig. 46.18 Voerendaal-Ten Hove. Section through pit 744, with glass, pottery, iron and a tubulus-fragment. Section scale 1:30, finds 1:3.

which still could have been made in the second half of the third century, but also in the fourth century. The pottery, with 56 fragments (1,610 g) is not Late Roman in any case. Two pieces of decorated sigillata from the Argonne date c. AD 120-220 (744-9 and 10; Fig. 46.18). The younger material dates in the late second or third century AD, like dishes in terra nigra and Meuse-region ware Vanvinckenroye 90/565 (and variants; 744-2, 3; Fig. 46.18), a storage bottle Lenz50G (744-1; Fig. 46.18) and a Soller mortarium Brunsting 37/Vanvinckenroye 337.

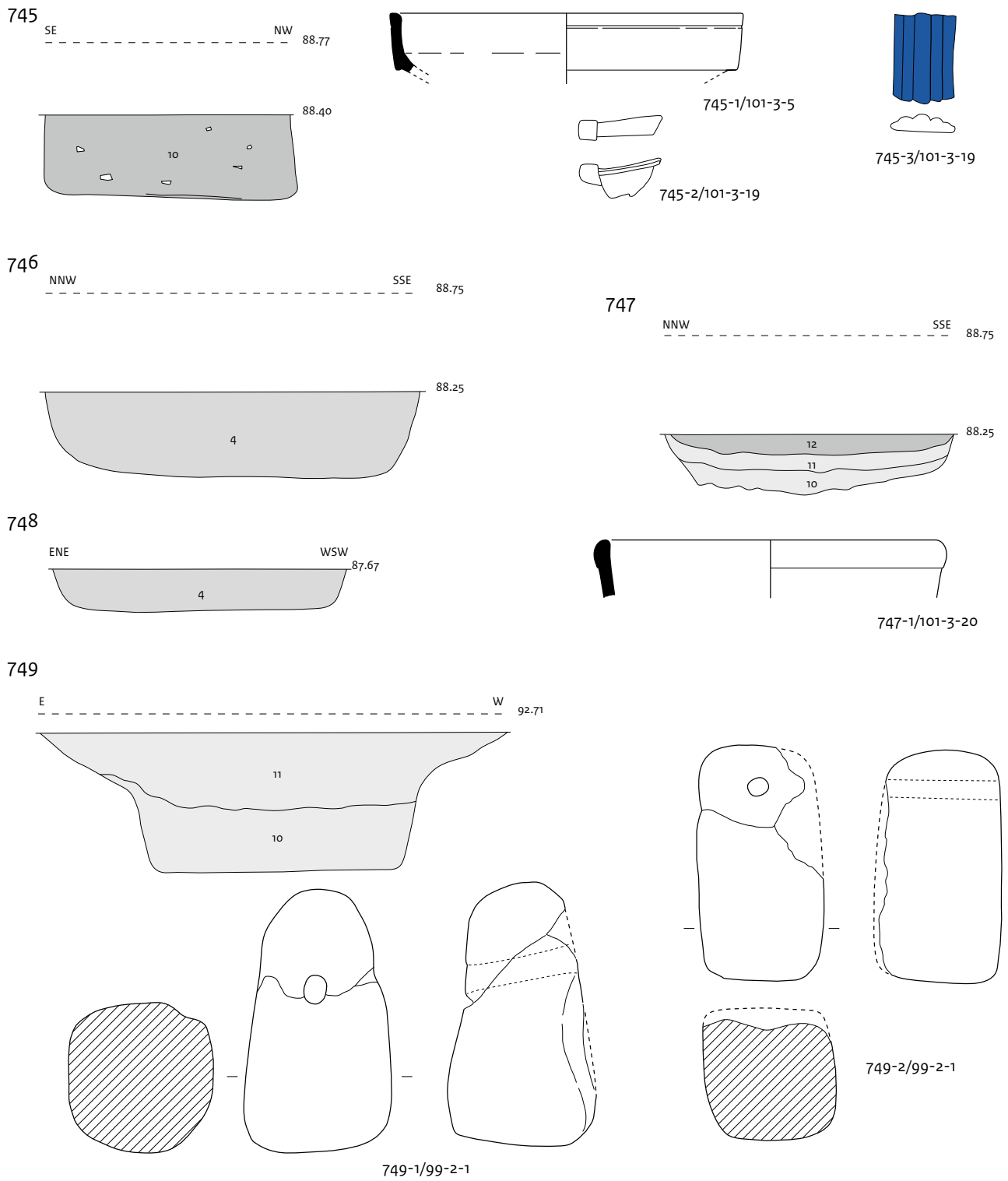


Fig. 46.19 Voerendaal-Ten Hove. Sections through pit 745-749, with pottery from 745 and 747, La Tène glass and bronze from 745 and loom-weights from 749. Sections scale 1:30, finds 1:3 except for glass and bronze at 2:3.



PIT 745 / feature 101.012 (Fig. 46.19)

*investigation*

This pit was already observed at level 1, but only sectioned at level 3; therefore c. 35 cm of the section was not drawn.

*finds/dating evidence*

Five sherds (38 g) of handmade prehistoric pottery and a fragment (2 g) of a La Tène glass bracelet (745-3; Fig. 46.19) are older than this pit and are residual, related to the Iron Age habitation. Most other finds are (probably) Middle Roman, like 16 pieces (11 g) of burnt animal bone, one of window glass (2 g), 10 pieces (c. 3.5 kg) of brick and tile, one of limestone (1.9 kg), 2 fragments of bronze, one from a brooch (745-2; Fig. 46.19), 4 of iron and one (8 g) of lead and 3 sherds (8 g) of pottery. Four coarse-walled sherds (59 g), one of which from Mayen, are Late Roman and the same holds true for 2 rims (33 g) of a mortarium Chenet 328 in Argonne sigillata. The Mayen sherd can probably be dated c. AD 350-450.

PIT 746 / feature 101.064 (Fig. 46.19)

*investigation*

This pit was already observed at level 1, but only sectioned at level 4; therefore c. 50 cm of the section was not drawn.

*finds/dating evidence*

Besides 4 sherds (22 g) of handmade pottery, fragments (207 g) of a mortarium Heerl-M7 (AD 70-170) were found in this pit.

PIT 747 / feature 101.162 (Fig. 46.19)

*investigation*

This pit was already observed at level 1, but only sectioned at level 4; therefore c. 55 cm of the section was not drawn.

*finds/dating evidence*

The few finds from pit 747 consist of 2 fragments of burnt loam, one piece (100 g) of sandstone, a wall sherd (29 g) of a mortarium, as well as 2 sherds (29 g) of Argonne sigillata. They belong to bowls Chenet 320 (747-1; Fig. 46.19) and 324.

PIT 748 / feature 101.152 (Fig. 46.19)

*finds/dating evidence*

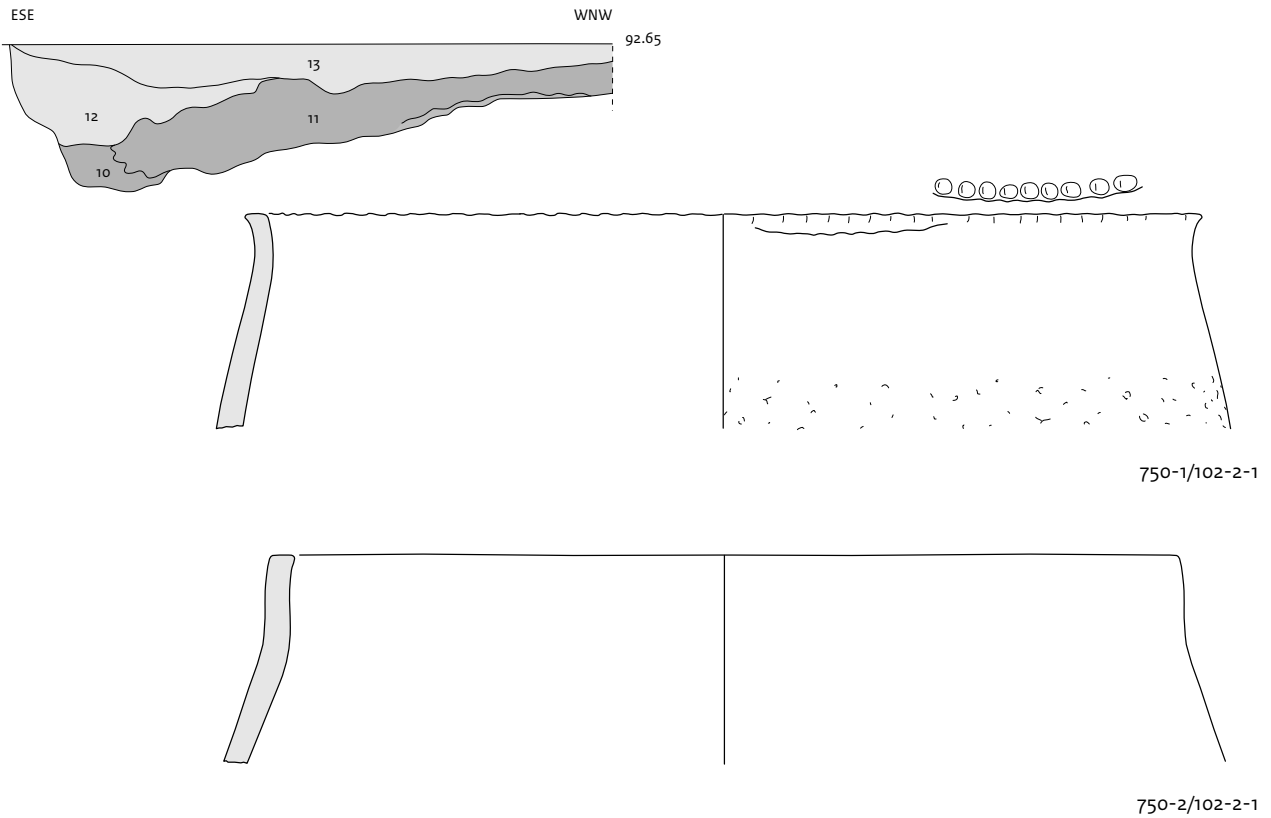
Apart from an iron fragment, the finds are ceramic in nature. There are a fragment of a *tegula*, one of a *tubulus*, a sherd of handmade pottery, terra nigra and coarse-walled ware (40 g combined).

PIT 749 / feature 99.009 (Fig. 46.19)

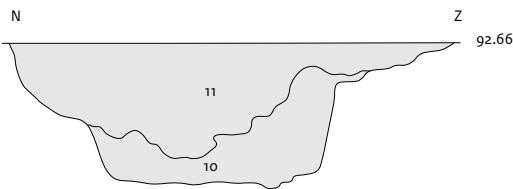
*finds/dating evidence*

Besides a fragment of burnt loam and 6 of tephrite (310 g), a wall fragment of a dolium (64 g) and a rim (227 g) of a mortarium Heerl-M7 are present. These sherds from level 1 seem to be 'intrusions' however, because 43 sherds (829 g) of handmade pottery were found, with two (nearly) complete loom-weights (952 g; 749-1/2; Fig. 46.19). The pottery dates the pit in the the Early Iron Age—first half of the Middle Iron Age (Section 21.2).

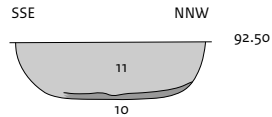
750



751



753



754

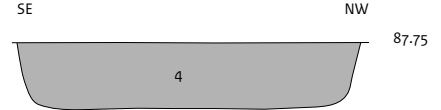


Fig. 46.20 Voerendaal-Ten Hove. Sections through pit 750-751 and 753-754, with pottery of 750. Sections scale 1:30, pottery 1:3.

PIT 750 / feature 102.088 (Fig. 46.20)

*finds/dating evidence*

The only non-ceramic finds are a piece of sandstone (675 g) and 25 fragments of burnt loam. All the pottery is handmade: 47 sherds (1,455 g). Two large rim/upper wall fragments of large storage-pots are shown in figure 46.20 (750-1 and 2). The second was probably roughened (*besmeten*), like the first and a not illustrated third example; 34 wall sherds (937 g) are also roughened. A not illustrated bowl had a combed decoration. The pottery dates to the Early Iron Age (Section 21.2).

PIT 751 / feature 102.008 (Fig. 46.20)

*finds/dating evidence*

Five wall sherds (81 g) are handmade, so this pit could be prehistoric, also on basis of its light coloured fill.; it does not need to,

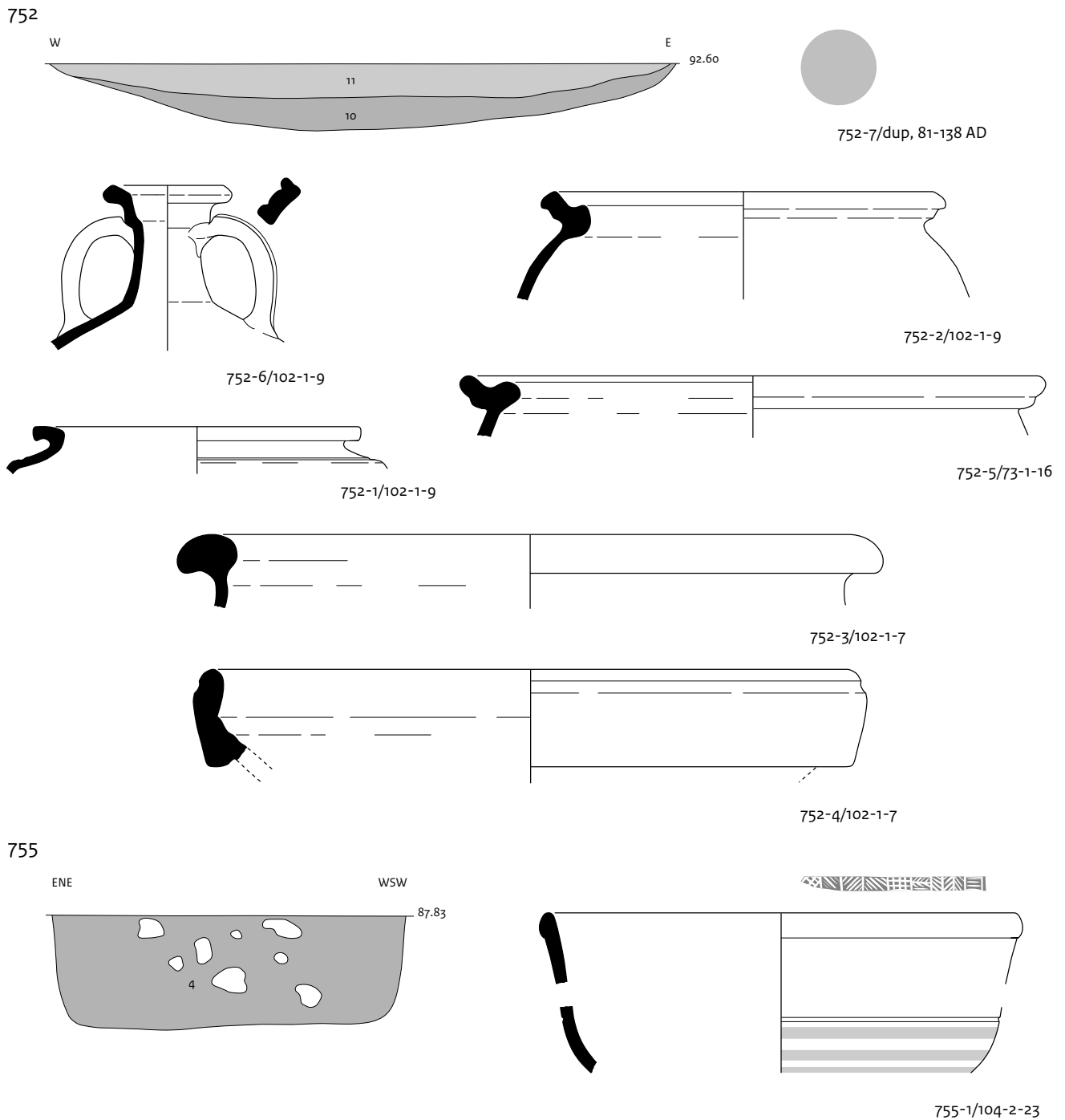


Fig. 46.21 Voerendaal-Ten Hove. Sections and pottery of pit 752 and 755. Sections scale 1:30, pottery 1:3.

PIT 752 / feature 73.004, 102.006 (Fig. 46.21)

*finds/dating evidence*

Firstly 13 fragments (c. 6.5 kg) of roof tile were found in pit 752, 14 pieces of iron and one of bronze. A dupondius of Trajan or Hadrian does not date the pit. Among the 121 sherds (3,597 g) of pottery, there are examples from a Dragendorff 45 from Eastern Gaul (AD 170-270), a flagon Stuart 129/Heerl-TWFL<sub>3</sub> (AD 175-230) and a mortarium Brunsting 37/Vanvinckenroye from Soller (third century; 752-4; Fig. 46.21).

756

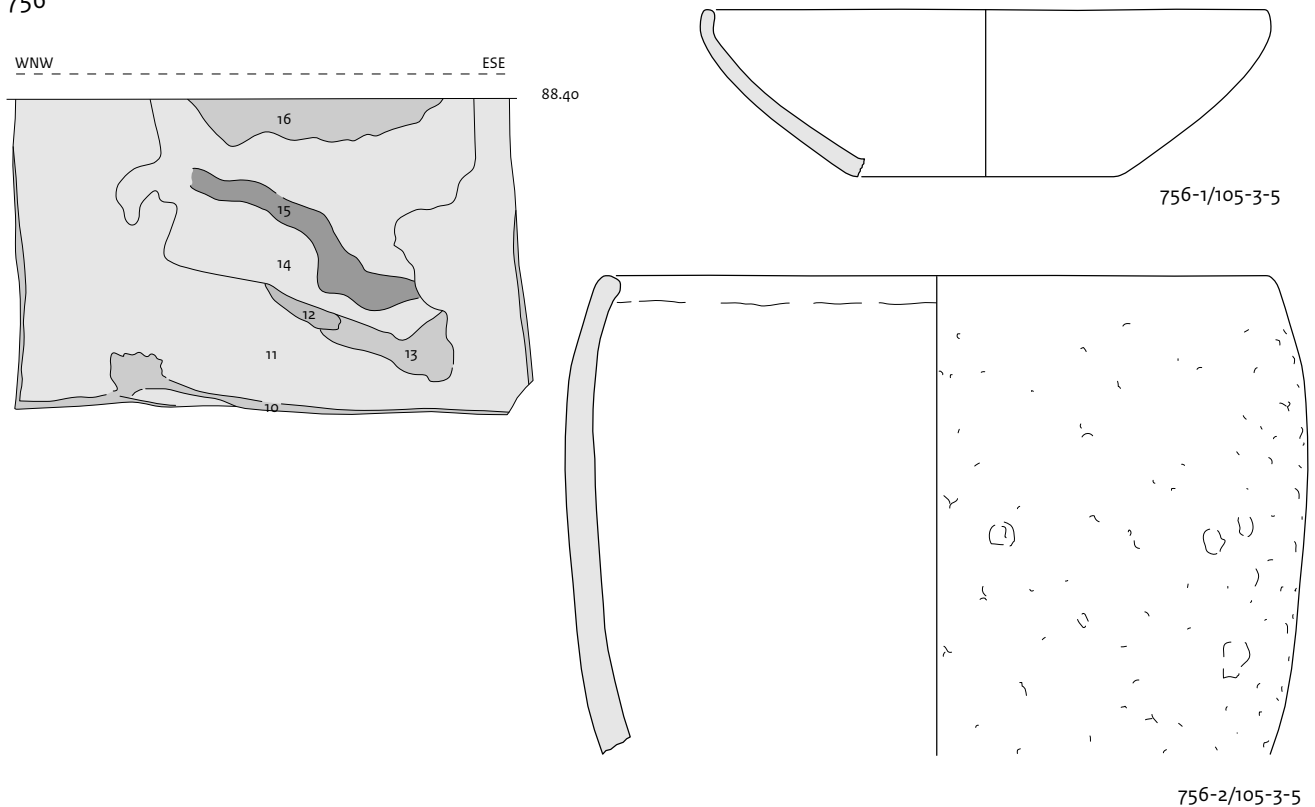


Fig. 46.22 Voerendaal-Ten Hove. Section and pottery of pit 756. Section scale 1:30, pottery 1:3.

PIT 753 / feature 103.027 (Fig. 46.20)

*finds/dating evidence*

Three iron slags (35 g) are the only finds, suggesting a (post-)Roman date.

PIT 754 / feature 104.030 (Fig. 46.20)

*finds/dating evidence*

The only finds from this pits are a piece of sandstone and one rim fragment of a coarse-walled pot Niedebieber 89/Heerl-JAza, made from c. 125/130 onwards.

PIT 755 / feature 104.045 (Fig. 46.21)

*finds/dating evidence*

Besides 4 fragments (9,263 g) of Kunrade limestone and Nivelstein sandstone, the only finds are 2 sherds (26 g) of a Argonne bowl Chenet 320 (755-1; Fig. 46.21). On the basis of the roller-stamp decoration, the bowl was made between c. AD 375-425.

PIT 756 / feature 104.108, 105.079 (Fig. 46.22)

*finds/dating evidence*

The only non-ceramic find is a small piece of tephrite (62 g). A fragment of a tobacco pipe (4 g) seems to be an intrusion; all other 39 sherds (1,902 g) are handmade. Most belong to a bowl with a short vertical neck/rim and a barrel-shaped pot with roughened (*besmeten*) wall (756-1 and 2; Fig. 46.22). The latter could indicate a Middle Iron Age date (cf. Section 21.2).

PIT 757

See chapter 44 (sunken-floored huts).

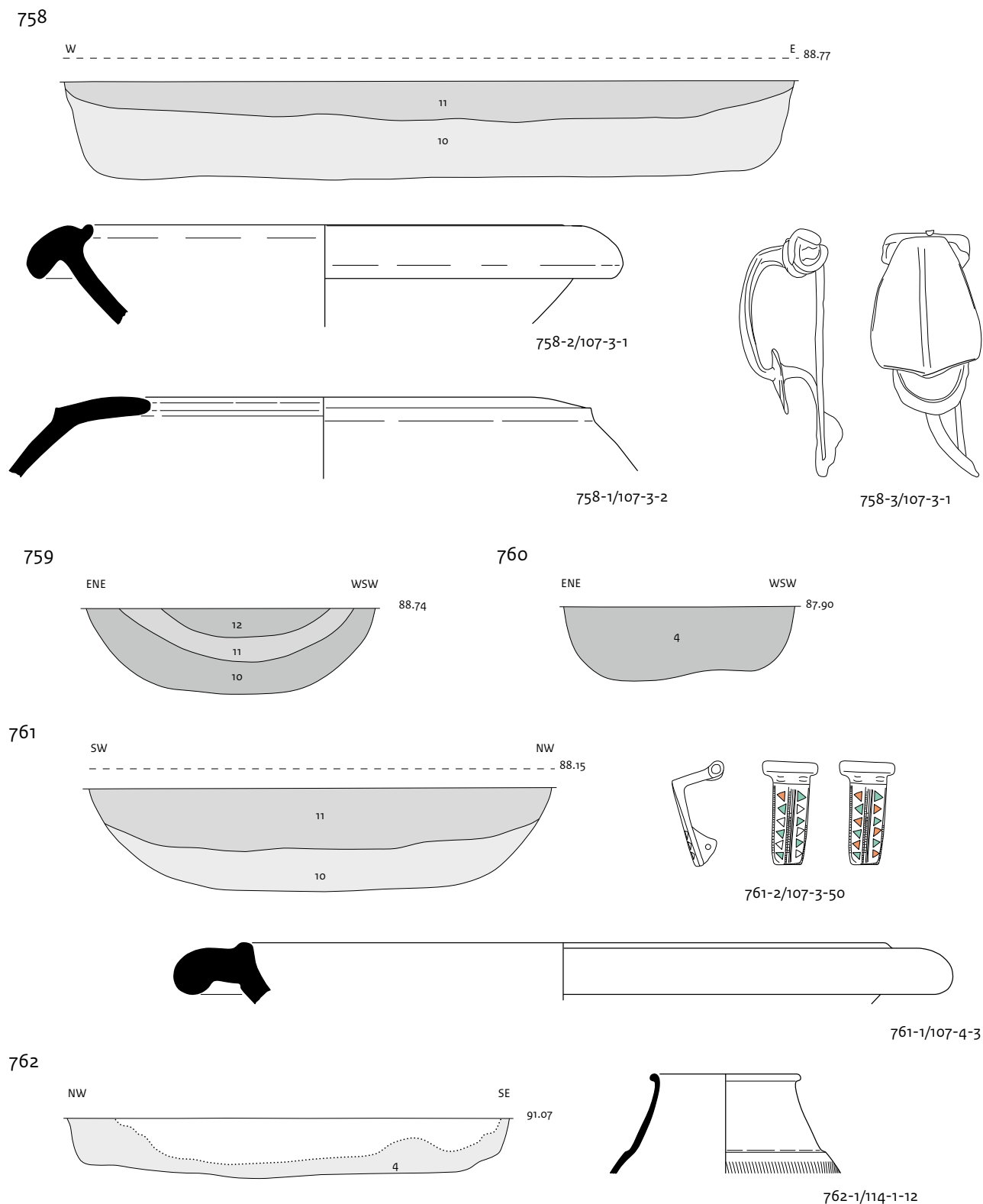


Fig. 46.23 Voerendaal-Ten Hove. Section through pit 758-762, with pottery of 758, 761-762 and brooches from 758 and 761. Sections scale 1:30, section 758 scale 1:40, brooches 2:3, pottery 1:3, 761-1 scale 1:4.

#### PIT 758 / feature 107.129 (Fig. 46.23)

##### *finds/dating evidence*

In this pit 2 pieces (647 g) of flint were found, together with 11 pieces (898 g) of iron-slag, 2 small pieces (50 g) of tephrite and a fragment of iron. A remarkable find is a collar-brooch (758-3; Fig. 46.23), dated around the beginning of the first millennium and therefore much older than

most other finds. These are all ceramic, with 4 sherds (50 g) that can belong to the same period as the brooch. The 18 sherds (746 g) of wheel-turned pottery date at the end of the first and in the second century AD, with a terra sigillata cup Dragendorff 27 from Southern Gaul (until AD 120), coarse-walled/colour-coated ware, a mortarium Stuart 149/Vanvinckenroye 437 from Soller (after c. AD 70; 758-2; Fig. 46.23) and a dolium Heerl-DOL1 (c. AD 130-170; 758-1; Fig. 46.23).

PIT 759 / feature 107.140 (Fig. 46.23)

*finds/dating evidence*

This has yielded few finds: 2 fragments (122 g) of animal bone, one sherd (32 g) of an amphora and one (15 g) of Late Roman coarse-walled pottery (c. AD 270-450).

PIT 760 / feature 107.139 (Fig. 46.23)

*finds/dating evidence*

The ten finds from this feature are quite diverse, with one fragment of bronze and one of iron, 3 sherds (78 g) of prehistoric handmade pottery, one Roman sherd (13 g), a piece of window glass (4 g), a fragment of a ribbed glass bowl Isings 3 (5 g) and 2 sherds (25 g) of late coarse walled pottery. This sherd probably dates between c. AD 350 and 525.

PIT 761 / feature 107.137 (Fig. 46.23)

*finds/dating evidence*

The find material from pit 761 is not very numerous and quite diverse. To begin with, 2 pieces (57 g) of flint were found, one iron-slag (22 g), 7 fragments (1,045 g) of tephrite and 4 iron-fragments. A nice enamelled brooch has a date of c. AD 70-150 (761-2; Fig. 46.23). Apart from 14 handmade sherds (129 g), all pottery (20 sherds, 563 g) could also date in late first and second century AD, with a fragment of terra nigra, a colour-coated beaker in technique b, a coarse-walled pot Stuart 201 and a Soller-mortarium Vanvinckenroye 349 (c. AD 70-200; 761-1; Fig. 46.23). However, fragments of a *tegula* and a round *bessalis* suggest that the pit could have been filled after the villa fell in ruins.

PIT 762 / feature 114.007 (Fig. 46.23)

*finds/dating evidence*

The last remark on the finds from 761 also applies to 762. There are 2 fragments (191 g) of painted wall plaster, probably from the baths, 2 iron fragments and a beaker Niederbieber 33/Heerl-BE8, which dates after AD 200 (762-1; Fig. 46.23).

PIT 763 / feature 114.012 (Fig. 46.24)

*investigation*

This pit was for the most part destroyed (and not documented) during Braat's excavations. A portion of the finds in the disturbed fill were possibly not from the original fill, but from the surrounding soil.

*finds/dating evidence*

Apart from a piece of animal bone (4 g) and a mortarium Brunsting 37/Heerl-M1 (after AD 130; 763-12; Fig. 46.24), all finds are building materials from the bath. It concerns 35 fragments of

763(/303)

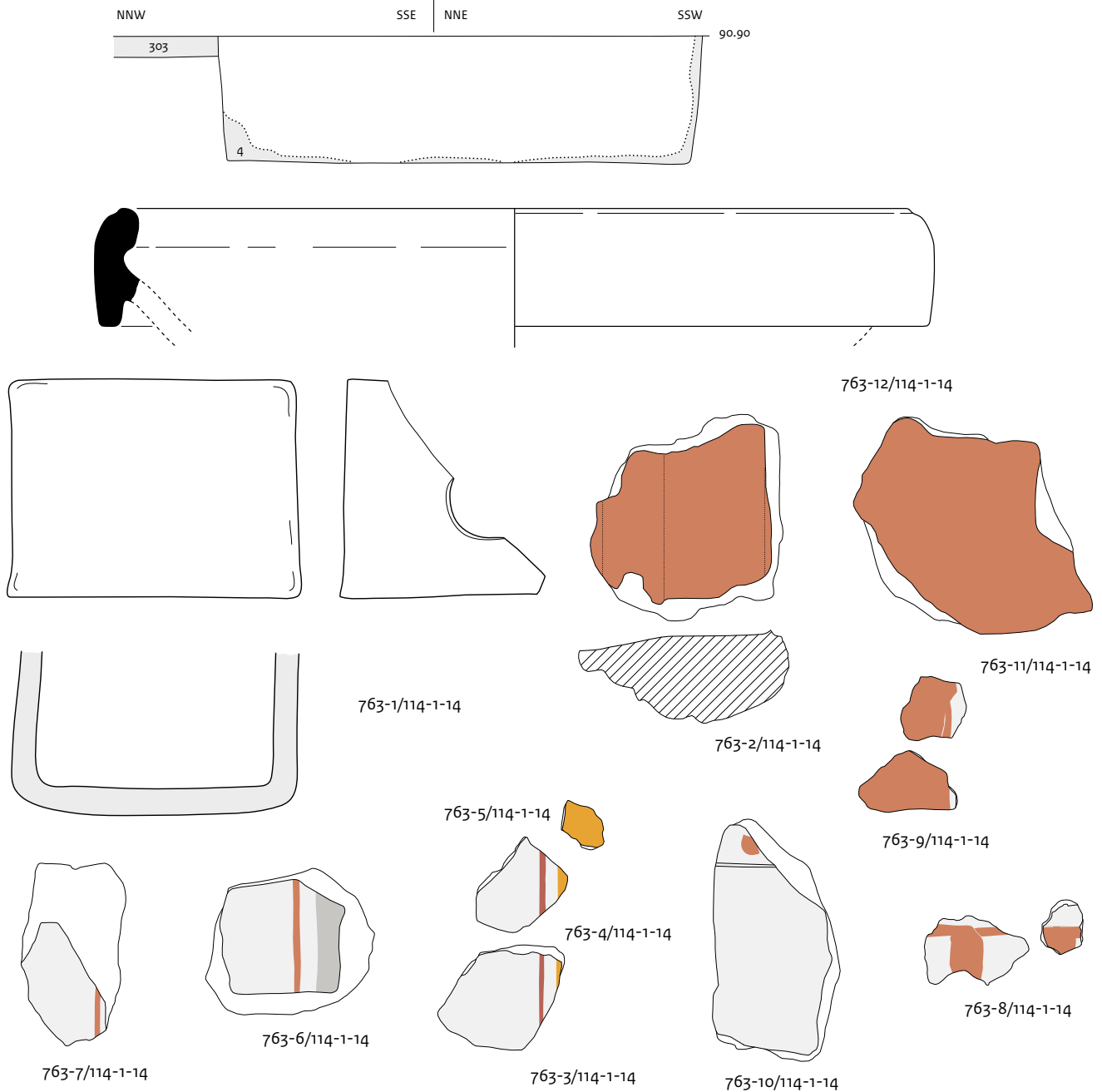


Fig. 46.24 Voerendaal-Ten Hove. Section, pottery, brick and painted wall plaster from pit 763. Section scale 1:30, finds 1:3.

brick (c. 7.5 kg), mostly *tubuli* like 763-1 (Fig. 46.24), a piece of *opus signinum* and 65 fragments (5,396 g) of painted wall plaster (763-2ff.; Fig. 46.24).

#### PIT 764 / feature 115.031 (Fig. 46.25)

##### investigation

Part of the fill was disturbed during Braat's excavations. By the excavators it was described as '...a 1.3 m deep, rectangular pit that originally had a wooden lining. This kind of pit was often found elsewhere in connection with pottery production and other industrial activities.'<sup>3343</sup> Apparently, the pit was interpreted as a kind of clay-preparation or rotting pit.

<sup>3343</sup> Willems & Kooistra 1988, 141.

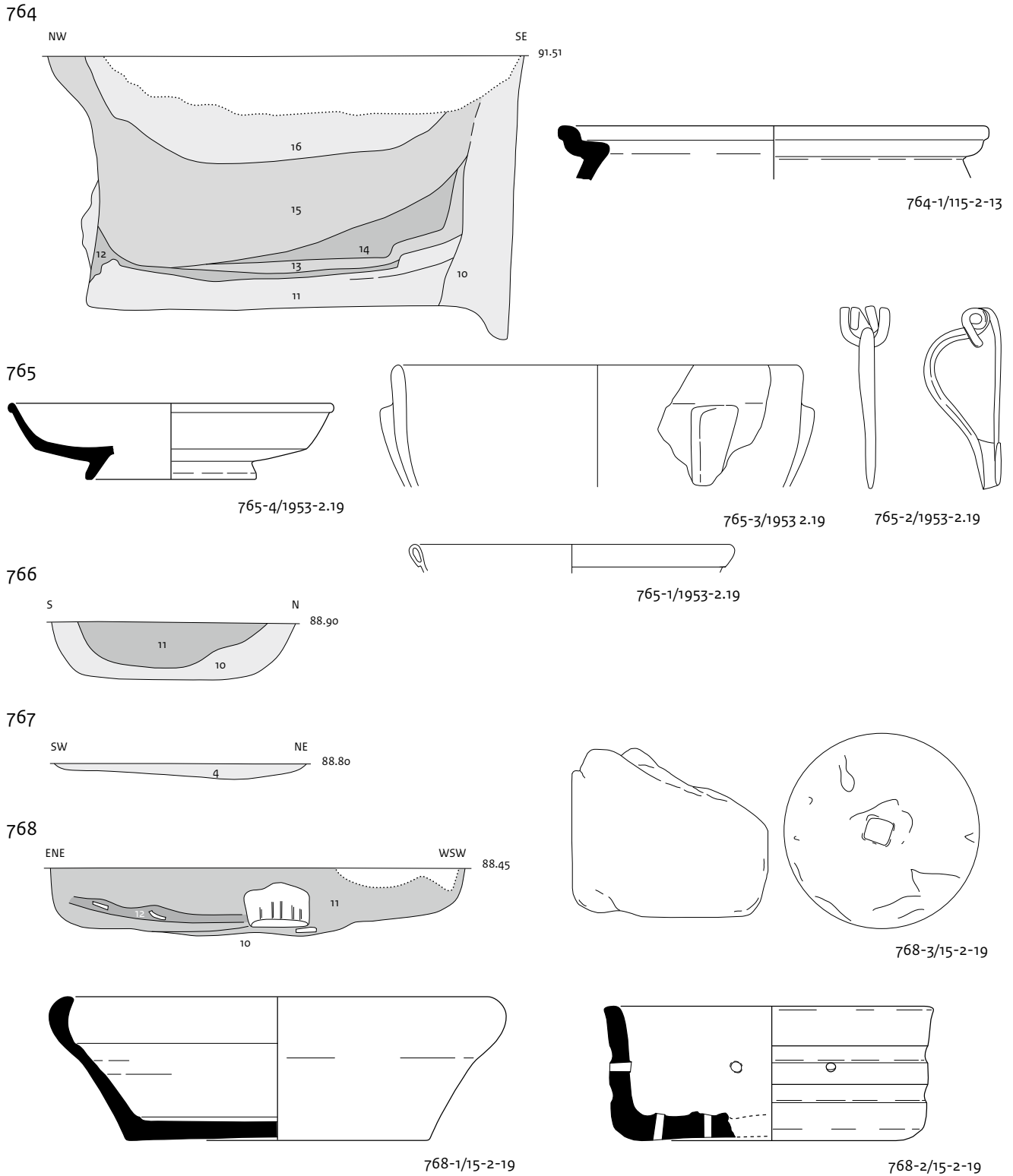


Fig. 46.25 Voerendaal-Ten Hove. Section of pit 764-768, pottery of 764-765 and 768, glass and brooch of 765, stone from 768. Sections scale 1:30, finds 1:3, brooch 2:3, column fragment 1:10.

*finds/dating evidence*

Especially in layer 15, halfway the fill of this pit, a lot of animal bone was found: 80 fragments with a weight of 2,879 g. Most fragments (62, 1,458 g) are of three pigs, one 12-14 months old and quite complete, two others only represented by the skull (but including mandibular). Fourteen fragments (1,098 g) are of a foal, c. a half year old, with cut marks on one metatarsus



(proximal side), which suggest skinning. The other finds are 3 fragments of roof tile (c. 1 kg), 3 fragments (639 g) of limestone, fragments of iron and only 6 sherds (324 g) of pottery. These belong to a colour-coated beaker in technique b, at least two amphorae and a pot Niederbieber 89/Heerl-JA2b (c. AD 130-200; 764-1; Fig. 46.25).

#### PIT 765 / feature 147.005

##### *investigation*

This pit is 'waste-hole e' ('*afvalgat e*'), not described by Braat. He dated the finds around AD 100 and suggested that they perhaps were related to the demolition of the first small villa.<sup>3344</sup>

##### *finds/dating evidence*

The finds from this pit could date from around 100, but need not to if (some of) the finds are residual. It is important that 765 lies in the vicinity of 701-703, and those pits are much younger. We studied some of the finds kept the RMO (Fig. 46.25), like the brooch 765-2 (c. AD 30/70-150/180), a glass bowl Isings 3 (765-3) and jar Isings 67 (765-2) and a terra sigillata dish Dragendorff 18 (765-4; c. AD 70-100). Braat also mentions other pottery: a colour coated beaker (type and technique?), a flagon (Stuart 109-110),<sup>3345</sup> fragments of 3 coarse pots with flat rim (Niederbieber 87/probably CW OX-Heerl-JA1) and a similar colour-coated one (CW CC-Heerl-JA1), a mortarium Stuart 149 and a dolium.

#### PIT 766 / feature 15.016 (Fig. 46.25)

##### *finds/dating evidence*

Only a few finds were found in this pit: a piece of burnt loam, a piece of brick, one of quartzite and only 3 sherds (14 g) of pottery, coarse-walled ware.

#### PIT 767 / feature 15.007 (Fig. 46.25)

##### *finds/dating evidence*

The material from this feature is as varied as that from 766: 2 iron slags (16 g), 3 fragments of burnt loam, 6 of limestone, 3 of *tegulae* and 1 of a *tubulus*. The latter suggests a rather late date. The only sherd of coarse-walled pottery is quite small (4 g).

#### PIT 768 / feature 15.045 (Fig. 46.25)

##### *finds/dating evidence*

Some of the finds from pit 768 could belong to almost any period, like 4 fragments (28 g) of both burnt and unburnt animal bone, 2 fragments (19 g) of flint and one slag (11 g). One sherd (4 g) could be Middle Roman, but the pit was filled in later. This is already indicated by a piece (1 g) of window glass, 8 *tegula* fragments (c. 7.5 kg) and especially by a sandstone column fragment of c. 30 kg (768-3; Fig. 46.25). Among 3 fragments (3 g) of Late Roman glass, one is of a beaker Isings 106 (or later variants), probably dating in the fifth century AD. The 6 sherds (662 g) of Late Roman pottery are all coarse-walled, with as recognizable type a dish Alzey 29 and a cheese strainer (768-1 and 2; Fig. 46.25). The pottery can be dated between c. AD 350 and 450.

<sup>3344</sup> Braat 1953, 73-74.

<sup>3345</sup> Braat 1953, fig. 13, no. 65.

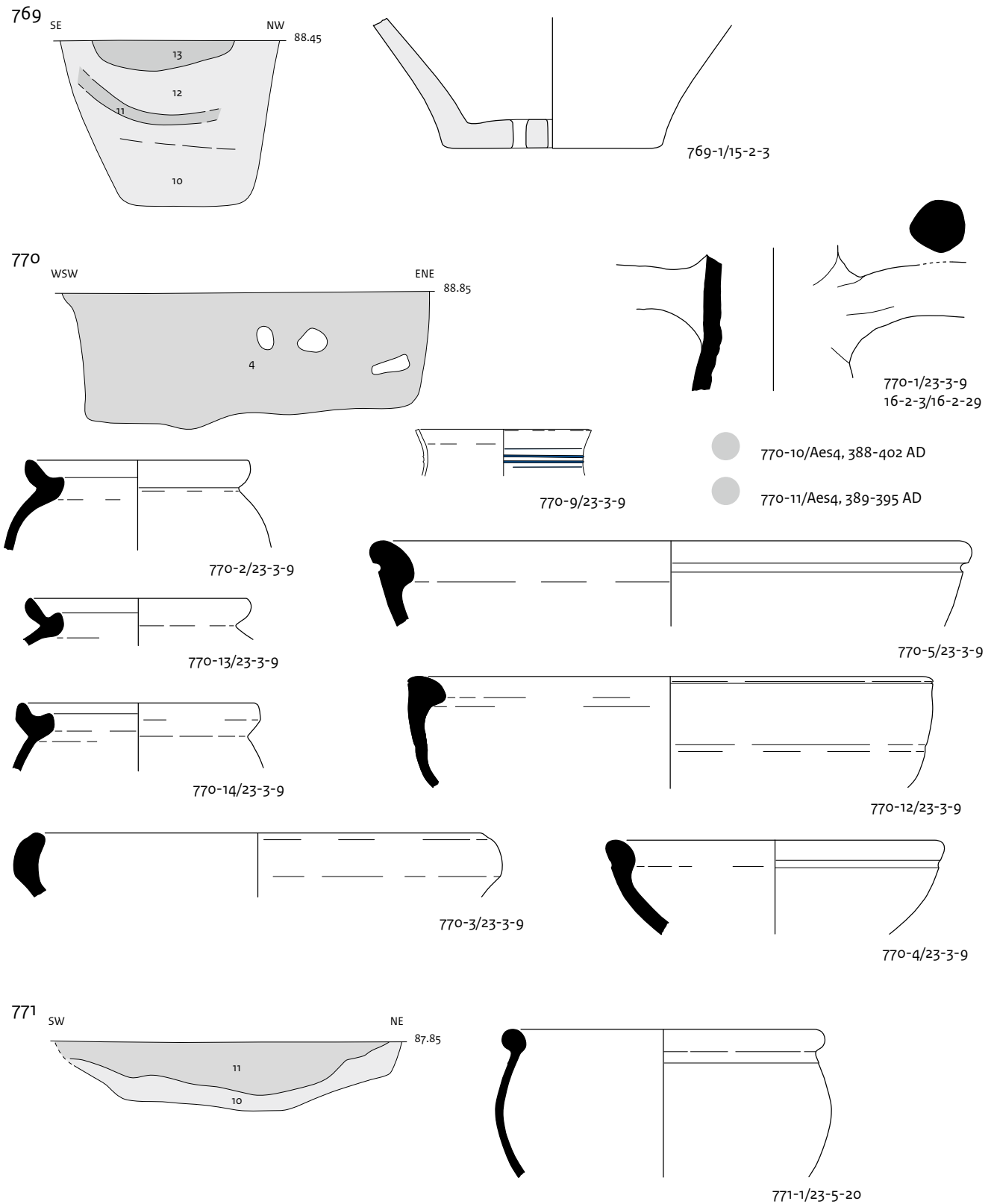


Fig. 46.26 Voerendaal-Ten Hove. Section and pottery of pit 769-771. Sections scale 1:30, pottery 1:3.

PIT 769 / feature 15.046 (Fig. 46.26)

*finds/dating evidence*

The presence of 71 sherds (1,574 g) of handmade pottery suggest a prehistoric date for this pit: later in the Middle or early in the Late Iron Age (cf. Section 21.3). A piece of burnt loam and two fragments of sandstone (166 g; 'cooking stones') do not contradict such a date. A iron slag (15 g) and a small fragment (7 g) of a *tegula* can be intrusions.

PIT 770 / feature 23.025 (Fig. 46.26)

*finds/dating evidence*

Like many other pits, this feature contains a lot of older material. Among the finds collected, there were 8 sherds (69 g) of handmade pottery, one piece of flint (23 g), 8 fragments (14 g) of animal bone, 28 iron fragments, a fragment (1 g) of a glass vessel and 29 sherds (309 g) of Roman pottery. A piece (1 g) of window glass, some 44 pieces (18.5 kg) of brick and tile as well as 22 (8 kg) of stone, with some sandstone column fragments, indicate that the pit was filled in after the villa had fallen in ruins. A Late Roman date is provided by a sherd (1 g) of a beaker like Isings 109 (770-9; Fig. 46.26), and 47 sherds (1,149 g) of pottery. This pottery consists of a sigillata bowl Chenet 320 and a flagon, as well as coarse-walled types like Alzey 27, 28 and 29 (Fig. 46.26). The general date of this material is c. AD 350-450/525. A remarkable find is an East Roman amphora from Cilicia or Cyprus, dating c. AD 375-425 (770-1; Fig. 46.26). Finally, two Aes4 coins provide a terminus post quem of AD 388.

PIT 771 / feature 23.098 (Fig. 46.26)

*finds/dating evidence*

Finds less relevant for dating are 10 (352 g) fragments of animal bone, a piece (7 g) of slag and 5 pieces (2.5 kg) of brick and tile. One sherd (5 g) of coarse Mayen ware and 8 (163 g) of a jar with rounded rim, somewhat similar to that of Alzey 33 (771-1; Fig. 46.26), date between c. AD 350-450.

PIT 772 / feature 20.079 (Fig. 46.27)

*finds/dating evidence*

Pit 772 is intersected by 718 and this is the probable cause for the presence of some Roman finds in its fill. These are 2 fragments (20 g) of roof tiles, an iron slag (11 g) and possibly 12 fragments of iron. Nine fragments of burnt loam and one of flint (33 g) could be prehistoric, and this date is certain for the pottery (261 sherds, 6.7 kg). Illustrated are two bowls and the upper part of two-partite/biconical jars or large bowls. All but one have nail/fingertip impressions on top of the rim and once on the shoulder-belly transition (722-1, 2, 3; Fig. 46.27). The wall of the largest bowl is slightly roughened and the same applies to some of the wall sherds of the material not illustrated. Also fragments of a briquetage bowl were found. Probably, the pottery dates from the first part of the Middle Iron Age (cf. Section 21.2).

PIT 773 / feature 104.032 (Fig. 46.28)

*finds/dating evidence*

Like 772, this pit is also prehistoric. Two fragments of baked loam belong to a loom-weight (773-3; Fig. 46.28). Handmade pottery is represented by 25 sherds, with a weight of 1,531 g. Two pots are barrel/bucket-shaped with a roughened wall, one has fingertip impressions on the rim (773-1, 2; Fig. 46.28). These date the pit in the Middle Iron Age (cf. Section 21.2).

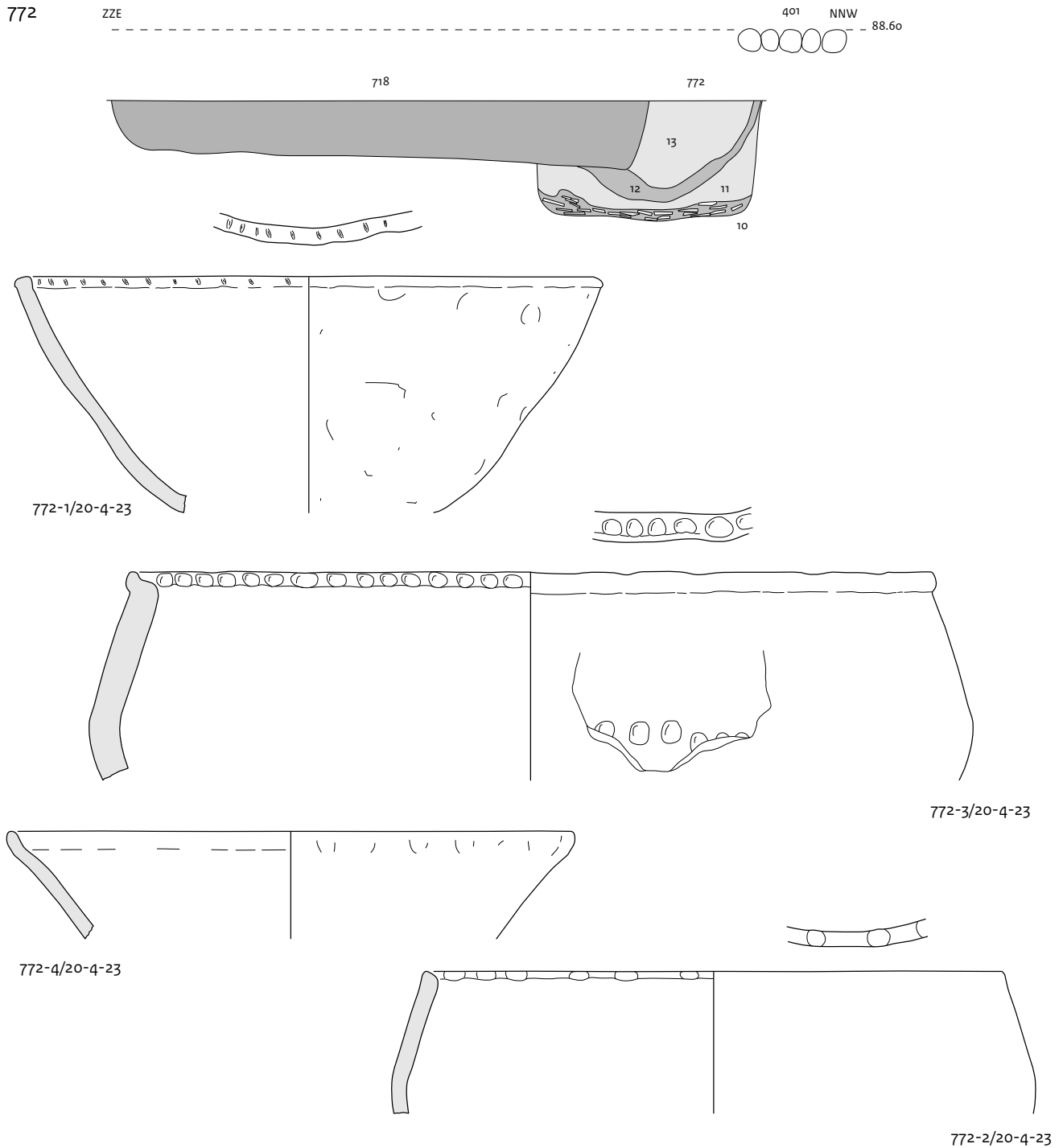


Fig. 46.27 Voerendaal-Ten Hove. Section and pottery of pit 772. Section scale 1:30, pottery 1:3.

PIT 774 / feature 23.072

*investigation*

The section through this pit was not drawn.

*finds/dating evidence*

The few finds from this pit are 2 iron fragments, one sherd (41 g) of handmade pottery and 2 fragments (4 g) of a beaker Isings 106 (or variant), dating in or around the fifth century AD (774-1; Fig. 46.29)

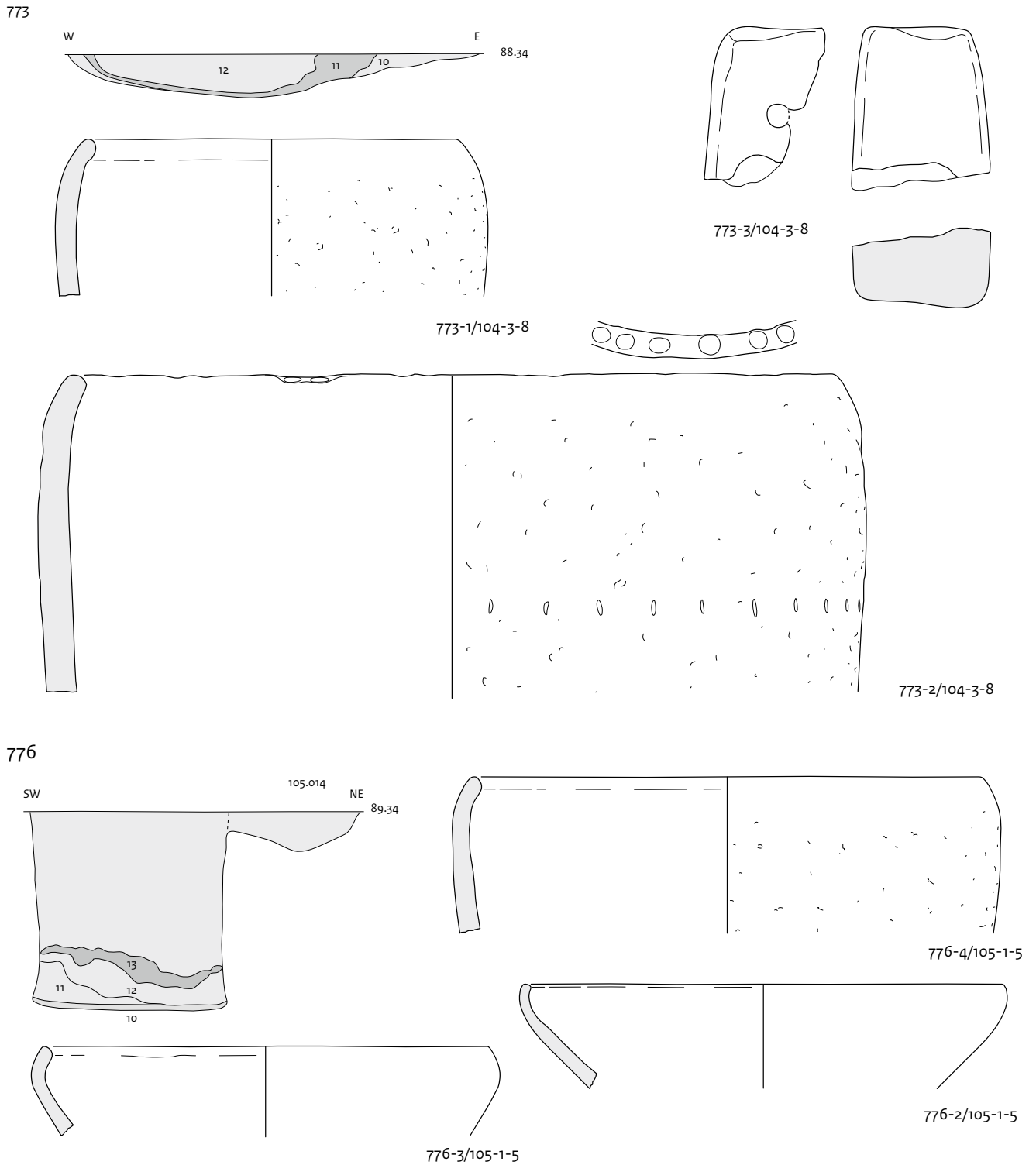


Fig. 46.28 Voerendaal-Ten Hove. Section and pottery of pit 773 and 776. Sections scale 1:30, pottery 1:3.

PIT 775 / feature 16.093, 215  
 investigation

No section of this pit was drawn; it is even possible that no section was made at all due to the presence of much stone. That a radiocarbon sample from this pit was taken, is inferred from the remark 'pit with millstone' by Kooistra.<sup>3346</sup>

finds/dating evidence

<sup>14</sup>C-dating (charred seeds): 1740 ± 50 BP (UtC-1574); 241-354, 366-380 cal AD (1 sigma); 141-197, 209-402 cal AD (2 sigma). Besides a piece of limestone (weight?), the stone finds consist of

<sup>3346</sup> Kooistra 1996, 137, table 20, no. 7.

24 fragments (24 kg) of tephrite, belonging to two millstones (775-2/3; Fig. 46.29, see also Fig. 33.16). Next, 3 fragments of iron were found and 24 sherds (1,246 g) of wheel-turned pottery. Three rim-fragments belong to coarse-ware pots Niederbieber 8g/Heerl-JA2a/b, but most belong to a storage 'bottle' Lenz 50G (775-1; Fig. 46.29).

PIT 776 / feature 105.005 (Fig. 46.28)

*investigation*

This pit lies close to building 214, which dates to the Early Roman period.

*finds/dating evidence*

To begin with, the finds from pit 776 consist of 15 pieces of burnt loam and 6 pieces of iron slag (158 g). There are 36 sherds (1,018 g) of handmade pottery. The forms present are two bowls with a vertical or slightly turned inwards rim (776-2, 3; Fig. 46.28). Only one of two barrel-shaped pots is illustrated; its wall is slightly roughened (776-4; Fig. 46.28). The pottery makes an impression to be of Middle Iron Age date (Section 21.2), so the pottery is either residual or is in fact Early Roman.

PIT 777 / feature 115.025

*investigation*

The section through this pit was not drawn.

*finds/dating evidence*

The diverse finds from this pit do not provide a precise date other than 'Roman period'. There are a piece of sandstone, 2 of iron, 4 of animal bone and 4 sherds (100 g) of pottery.

PIT 778 / feature 23.013

*investigation*

The section through this pit was not drawn.

*finds/dating evidence*

The only pottery sherd (15 g) is handmade, but the pit is Roman (or later) because of the presence of 25 pieces of roof tiles and a *tubulus* (c. 6.5 kg).

PIT 779 / feature 99.006

*investigation*

The section of this pit was not drawn.

*finds/dating evidence*

A small sherd (1 g) of a Roman glass bottle is possible an intrusion, because all other finds are prehistoric. There is a loom-weight of burnt loam (779-1; Fig. 46.30) and 3 sherds (32 g) of handmade pottery. One sherd bears a resemblance to Late Iron Age ware, with a carinated profile and combed-decoration. However, it is possible that it is older, suggested by the loom-weight of the oblong-carinated type (cf. Section 21.2).

PIT 780 / feature 102.130

*investigation*

The section of pit 780 was not drawn; the feature was not deep and had an irregular bottom, suggesting that it could be natural. However, the pit could also be a prehistoric feature.

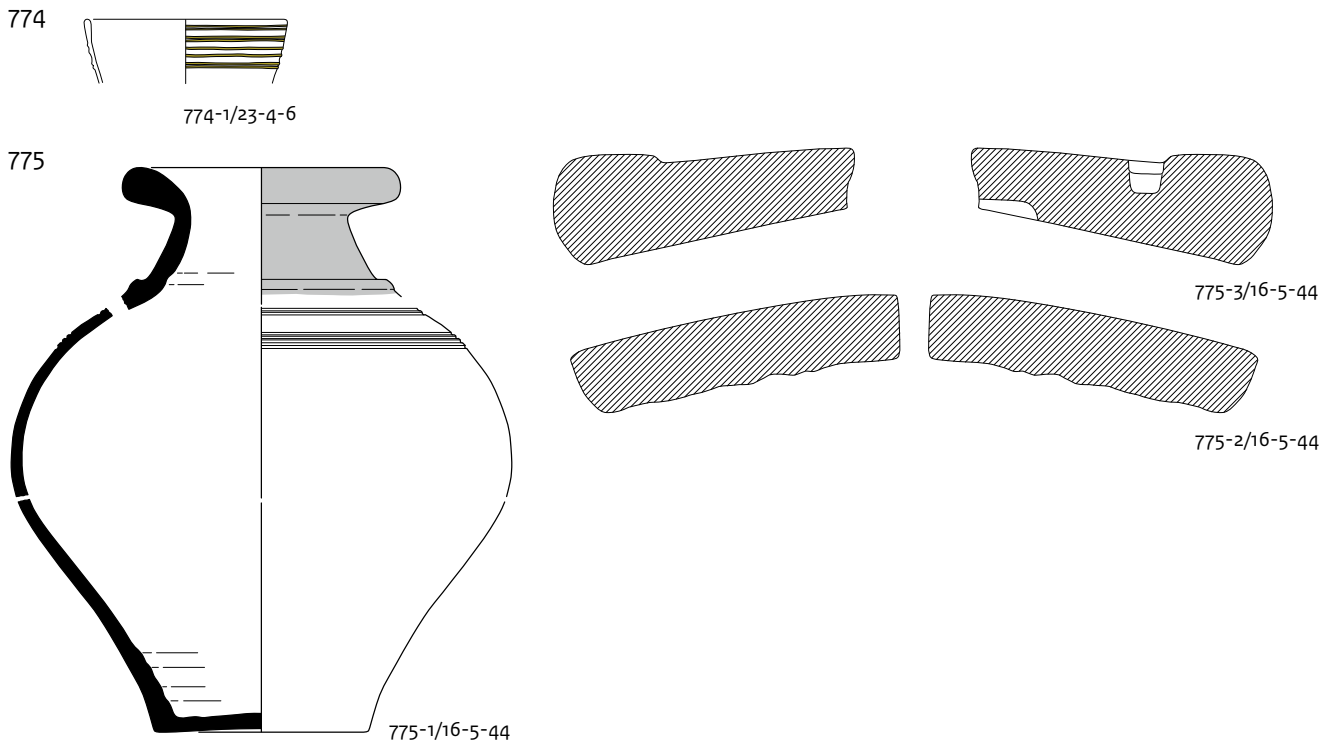


Fig. 46.29 Voerendaal-Ten Hove. Finds of pit 774 and 775. Glass scale 1:3, pottery 1:5, stone 1:6.

*finds/dating evidence*

The finds are a piece of sandstone (210 g) and 19 sherds (438 g) of handmade pottery, including two fragments of a tripartite, carinated pot and two rims of a jar Van den Broeke 23. The pit was probably dug in the Early Iron Age.

PIT 781 / feature 100.003

*investigation*

The section of this pit was not drawn; the irregular bottom suggests that the feature could be natural in origin, although the quantity of the finds indicates otherwise.

*finds/dating evidence*

Five pieces (173 g) of animal bone in this pit are from a dog, of German shepherd size. Roman brick and tile was represented by 28 fragments (c. 15 kg), pottery by 27 sherds (1,811 g). The lid and pot Niederbieber 89/Heerl-JA2c are in Eifel (/Heerlen?) ware and could be relatively late (781-1, 2; Fig. 46.30). Four sherds of a Dressel 20 amphora seem to be third century in date.

PIT 782 / feature 114.004 (Fig. 46.30)

*investigation*

Pit 782 was found at level 1, but sectioned at level 2; therefore 25 cm of the section was not drawn.

*finds/dating evidence*

The finds from this pit consist of a piece of animal bone (17 g), pieces of flint (18 g) and sandstone (c. 300 g) and 12 fragments (c. 3.5 kg) of *tubuli*, *bessales* and roof tiles. This material suggest a date for the pit after the bath fell into ruins. Two wall sherds of pottery (318 g) do not provide a more precise date.

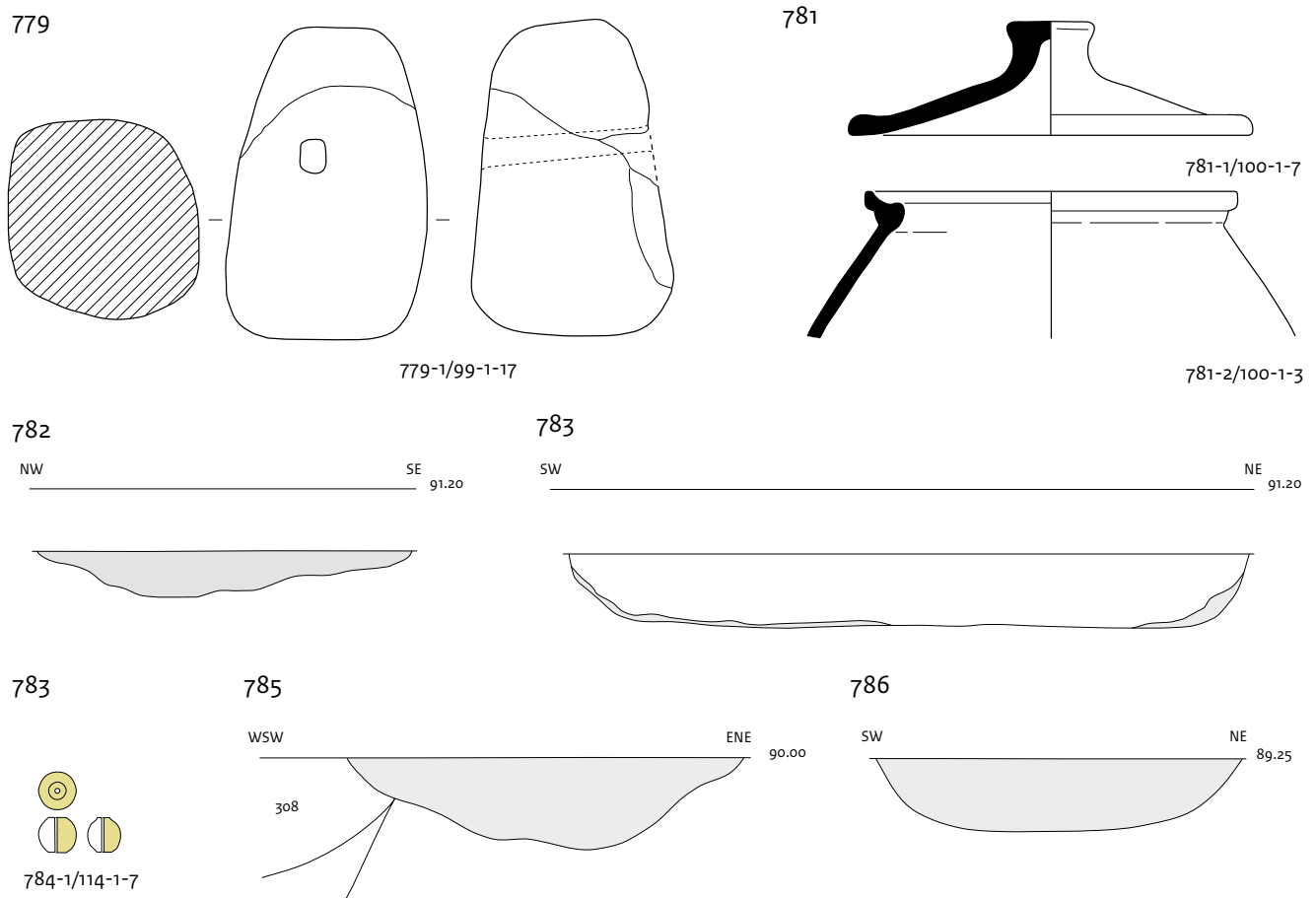


Fig. 46.30 Voerendaal-Ten Hove. Sections through pit 782-786, loom-weight of 779, pottery of 781 and glass of 784. Sections scale 1:30, ceramics 1:3, glass 2:3.

PIT 783 / feature 114.005 (Fig. 46.30)

*investigation*

Pit 782 was found at level 1, but sectioned at level 2; therefore 25 cm of the section was not drawn. It was almost completely destroyed during Braat's excavations.

*finds/dating evidence*

This pit has the same kind of find-material as 782 and probably the same date. The finds are 2 pieces (60 g) of animal bone, 3 iron slags (345 g), 4 fragments (189 g) of painted wall plaster, 7 pieces of *tubuli* (5 kg) and a rim fragment of a coarse pot Stuart 201/Heerl-JA4b (AD 70-120).

PIT 784 / feature 114.006

*investigation*

The section of this nice rectangular pit was not drawn but it was noted that the bottom was flat.

*finds/dating evidence*

There are only five finds from this pit: 2 wall fragments of coarse ware (19 g), a rim of a Niederbieber 32/Heerl-BE7 (after AD 150) and two glass beads with apparently gold foil (784-1/2; Fig. 46.30).

PIT 785 / feature 106.099 (Fig. 46.30)

*finds/dating evidence*

The only finds are a fragment of a *tegula* (c. 700 g) and a piece of an iron water-pipe collar.

PIT 786 / feature 106.085 (Fig. 46.30)

*finds/dating evidence*

In this pit a piece of tephrite (68 g), 2 of iron and 4 sherds (40 g) of Roman pottery were found.



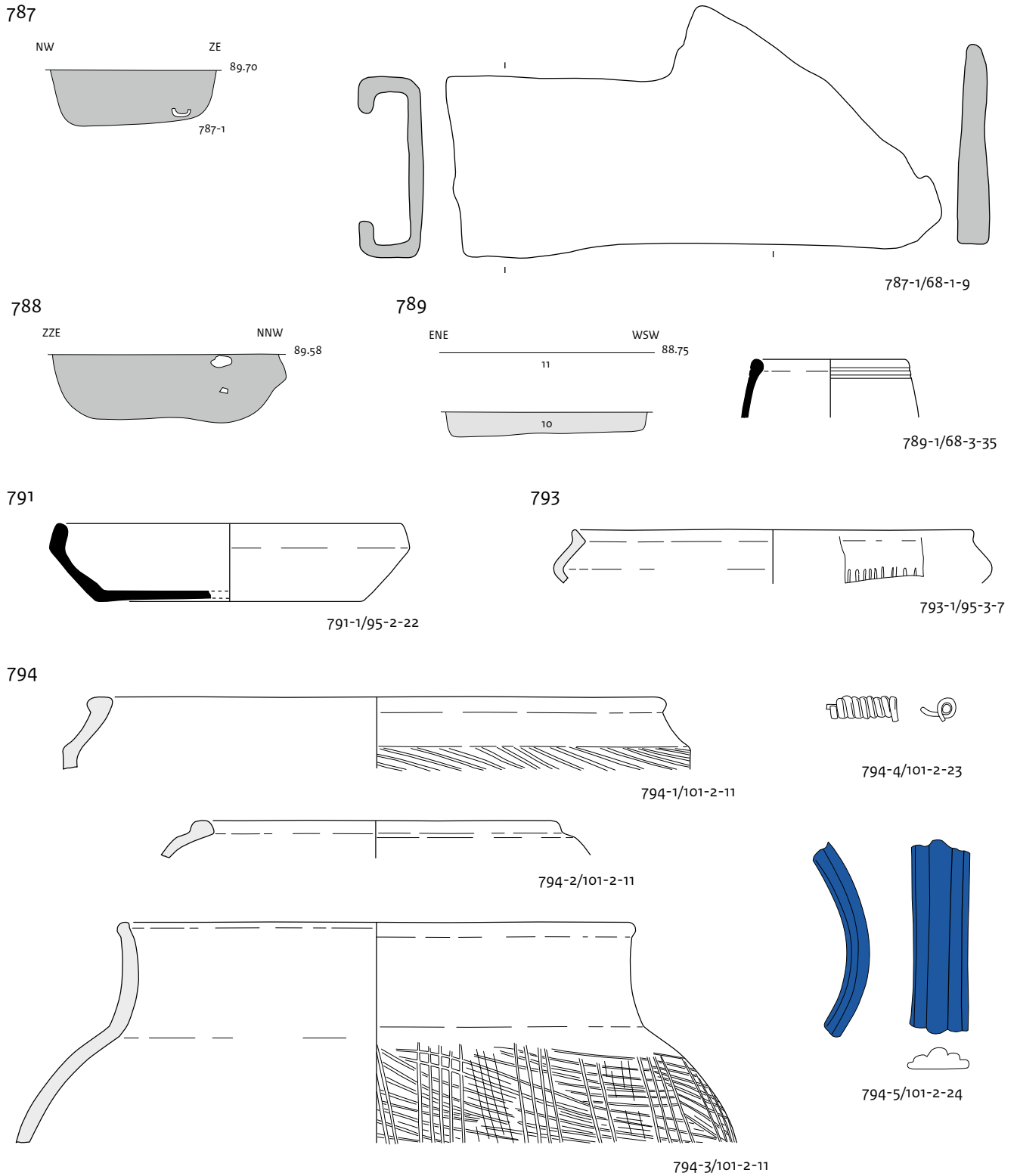


Fig. 46.31 Voerendaal-Ten Hove. Sections through pit 787-789, pottery of 789, 791, 793 and 794, iron of 787 and glass and bronze of 794. Sections scale 1:30, pottery 1:3, bronze and glass 2:3.

PIT 787 / feature 68.007 (Fig. 46.31)

*finds/dating evidence*

The finds from this pit are 8 iron slags (305 g), a piece of roof tile (c. 200 g) and a large iron plough-coulter (787-1; Fig. 46.31). It is not certain that the latter is Roman; the metal appears to be less old.

PIT 788 / feature 68.053 (Fig. 46.31)

*finds/dating evidence*

From this pit were recovered: 6 iron fragments, 3 pieces of brick and tile (c. 1 kg), 2 blocks of limestone (3 kg) and 11 sherds (62 g) of Roman pottery. In the OD a sherd of coarse Mayen ware was recorded, but this was not found or recognized in 2019.

PIT 789 / feature 68.119, 69.041 (Fig. 46.31)

*investigation*

The first 30 cm of the pit were not sectioned/drawn.

*finds/dating evidence*

A single sherd (27 g) is of handmade prehistoric pottery, but most finds are probably Roman: one fragment (30 g) of animal bone, 5 iron fragments, 2 pieces (25 g) of tephrite, 8 pieces (3.5 kg) of brick and tile and 7 sherds (29 g) of Middle Roman pottery (among which 789-1; Fig. 46.31). The brick, including fragments of a *bessalis* and *tubulus*, already points to a post-villa infill of the pit. Two sherds (39 g) of Argonne sigillata, possibly of a dish Chenet 304, are the only finds substantiating a Late Roman date.

PIT 790 / feature 95.075

*investigation*

The sections of pit 790-796 were not drawn.

*finds/dating evidence*

The few finds from pit 790 consist one fragment (5 g) of animal bone, one iron fragment, 8 sherds (149 g) of Roman pottery and a small sherd (3 g) of a Argonne bowl Chenet 320.

PIT 791 / feature 95.074, 78

*finds/dating evidence*

Three sherds (50 g) of Late Iron Age pottery are related to habitation from that period in this area. Not datable, but probably Middle or Late Roman are a fragment (8 g) of animal bone, 17 iron fragments and 2 pieces (72 g) of slag. Dating to the former period are 18 sherds (258 g) of pottery, a piece (1 g) of a window pane, a piece (279 g) of Nivelstein sandstone and one *tegula* fragment (c. 1.5 kg). Only one sherd (118 g) of Late Roman pottery was found, the rim of a dish Alzey 34, dating from c. AD 350-450.

PIT 792 / feature 95.079, 165-166

*finds/dating evidence*

From this pit, 7 iron fragments, 6 pieces (155 g) of slag and one of a *tegula* (546 g) were collected, along with 8 sherds (103 g) of Middle Roman pottery. Like the pit 791, this feature only one Late Roman sherd, a piece of quite thick-walled black slipped ware with an orange fabric (cf. 757-20; Fig. 26.1 and 44.13).

PIT 793 / feature 95.164

*finds/dating evidence*

Apart from a piece of baked loam, all finds are sherds of handmade pottery (9 sherds, 112 g). There are fragments of Late Iron Age-bowls, like 793-1 with combed decoration and/or spatula impressions on the transition from belly to shoulder (Fig. 46.31; cf. Section 21.3.3).

## PIT 794 / feature 101.080

*investigation*

During the excavation, this pit was interpreted as a grave, because of the presence of charcoal and burnt bone. The latter later proved not to be human and also quern-fragments are not to be expected in a grave.

*finds/dating evidence*

<sup>14</sup>C-date (cremated bone; 101-2-23): 2075 ± 40 BP (GrM-22626); 153-42, 8-4 cal BC (1 sigma); 197 cal BC-23 cal AD (2 sigma).

Some of the 193 fragments (32 g) of burnt bone were identified as sheep/goat. Also 4 fragments (60 g) of tephrite were found, together with a piece of iron. A spring of a Middle La Tène brooch provides a date of c. 250-100 BC and a five-ribbed La Tène bracelet has a broadly similar date (794-4, 5; Fig. 46.31). The pottery (62 sherds, 959 g) also clearly belongs to the Late Iron Age, on the basis of combed decoration, pots and bowls with a sharp belly-shoulder transition and a pot with a beaded inverted rim (e.g. 794-1, 2, 3; Fig. 46.31). Nine fragments (124 g) are from salt-containers (cf. Section 21.3.3). On the basis of the radiocarbon date, the pit dates from 200 BC, while the brooch and bracelet point to a date before c. 100/75 BC.

## PIT 795 / feature 101.089

*finds/dating evidence*

The only finds are 3 sherds (25 g) of one handmade bowl or pot, decorated with grooves/furrows. It belongs probably to the Late Iron Age, like 793 and 794 (cf. Section 21.3.3).

## PIT 796 / feature 104.047

*finds/dating evidence*

In this pit, 2 fragments (17 g) of a loom-weight were found, together with 3 sherds (31 g) of handmade pottery. Therefore the feature dates to the Iron Age.

## PIT 797 / feature 104.035 (Fig. 46.32)

*finds/dating evidence*

In this pit 12 sherds (583 g) of handmade pottery were found. The roughening of some walls sherds suggest a date rather in the Early or Middle than in the Late Iron Age.

## PIT 798 / feature 105.080

*investigation*

No section of this pit was drawn.

*finds/dating evidence*

Only 5 sherds (121 g) of handmade pottery ware found.

## PIT 799 / feature 105.074 (Fig. 46.32)

*finds/dating evidence*

Besides a piece of flint (16 g), 6 sherds (63 g) of handmade pottery were recovered from this pit.

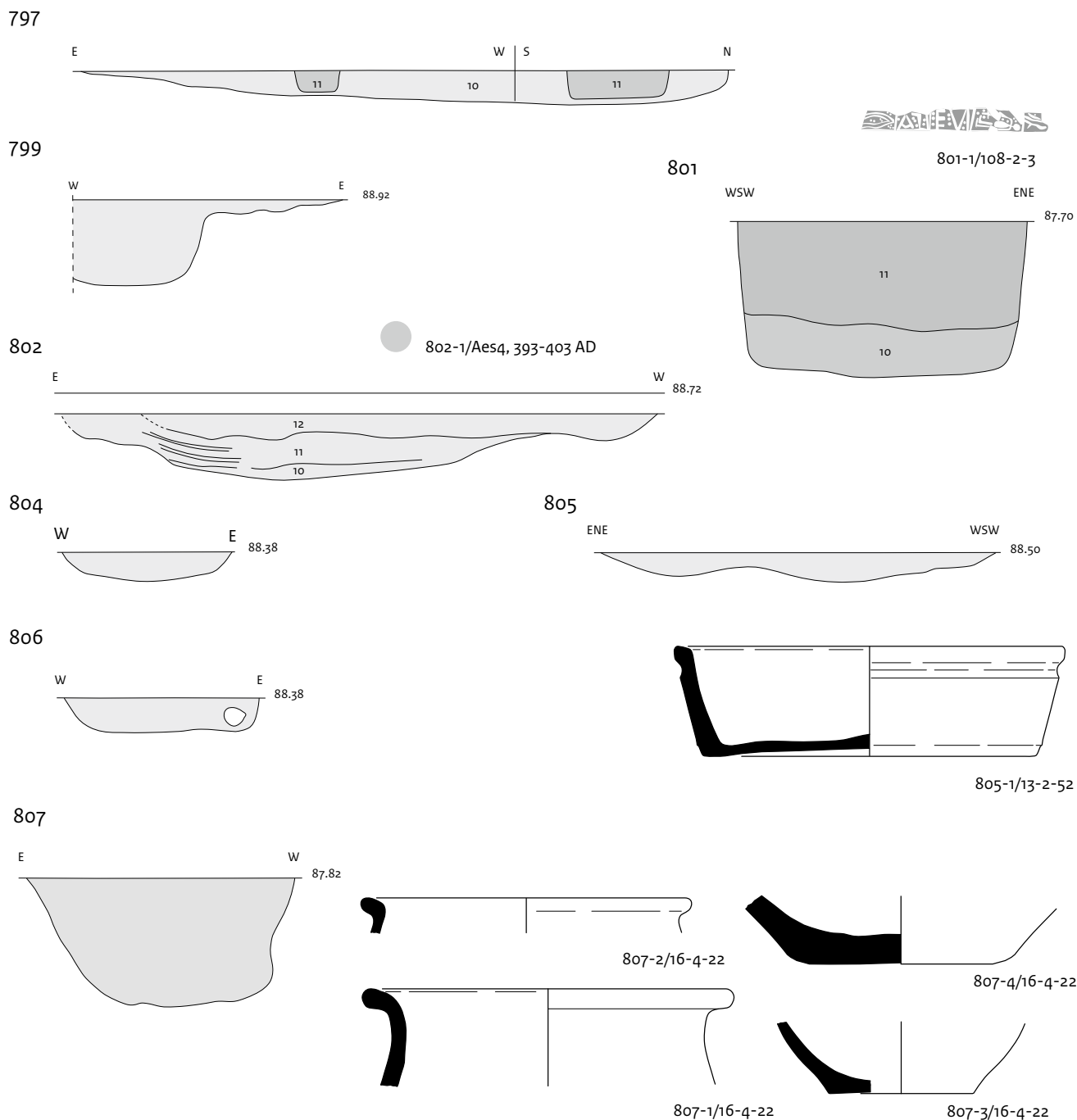


Fig. 46.32 Voerendaal-Ten Hove. Sections through pit 797, 799, 801-802, 804-807 and pottery of 801, 805 and 807. Sections scale 1:30, pottery 1:3, roller stamp 1:2.

PIT 800 / feature 105.003

*investigation*

The section through this pit was not drawn.

*finds/dating evidence*

In this pit 20 sherds (293 g) of handmade pottery were found, possibly dating in the Middle Iron Age (cf. Section 21.2).

PIT 801 / feature 108.024 (Fig. 46.32)

*finds/dating evidence*

From pit 801 were collected 7 sherds (77 g) of handmade pottery, a piece (4 g) of flint, one slag (89 g), a piece of tephrite (81 g) and 4 sherds (103 g) of Middle Roman pottery. For fragments

Late Roman pottery (73 g) were found: two in a coarse-walled fabric, one of an Argonne bowl Chenet 320 or 321 and one of the former type, decorated with a roller-stamp with Christian symbols (801-1; Fig. 46.32). This decoration dates to the first half of the fifth century AD.

PIT 802 / feature 13.097 (Fig. 46.32)

*finds/dating evidence*

This pit yielded a fragment (4 g) of animal bone, one of iron, 2 sherds of colour-coated pottery (missing), one of coarse-walled ware (23 g) and 11 pieces of brick and tile (c. 2.5 kg). A terminus post quem is provided by a bronze Aes4, struck between AD 393-403.

PIT 803 / feature 13.096, 27.071

*investigation*

The section of this pit was drawn in trench 13, but this concerns only the margin of the feature; the larger part in trench 27 was not documented at all.

*finds/dating evidence*

Besides a piece of iron, 4 of roof tile (c. 900 g), a sherd (10 g) of handmade pottery, the finds are sherds of Roman pottery: 27 sherds with a weight of 817 g. A pot Niederbieber 89/Heerl-JA2a and several mortaria Brunsting 37/Heerl-MOR1 date from c. 125/130 onwards. A similar mortarium Vanvinckenroye 337 from Soller possibly dates in the third century.

PIT 804 / feature 13.100 (Fig. 46.32)

*finds/dating evidence*

Two pieces of limestone (c. 200 g), a fragment of window glass (5 g) and of roof tile (100 g) suggest a rather late date, neither confirmed nor disproved by the 13 sherds (230 g) of Roman pottery found.

PIT 805 / feature 13.064 (Fig. 46.32)

*finds/dating evidence*

Besides an unknown number of tile fragments (c. 500 g), 8 sherds (347 g) of a coarse-walled dish Stuart 216/Noor1-PL3b were found (c. 150-300 AD; 805-1; Fig. 46.32).

PIT 806 / feature 13.058 (Fig. 46.32)

*finds/dating evidence*

The finds from this pit are an unknown number of iron fragments, a piece of lead (3 g), one (?) piece of *tegula* (c. 100 g) and 7 sherds (230 g) of Roman pottery. The only datable sherd is a rim of a coarse-walled pot Niederbieber 89/Heerl-JA2a or bowl Niederbieber 103/Heerl-BO2a (from c. AD 125).

PIT 807 / feature 16.056 (Fig. 46.32)

*finds/dating evidence*

As usual, a number of finds predate the period in which the pit was dug: A piece (47 g) of animal bone, 4 of iron, 4 of slag (38 g), 2 fragments of window pane (2 g), 3 of roof tiles (c. 700 g), and 2 Middle Roman pottery sherds (56 g). Fifteen pottery sherds (390 g) are Early Medieval. Item 807-3 is a base in Merovingian smooth-walled reduced pottery (807-3), the others are coarse-

walled reduced, with a characteristic thick base (807-4), a smaller rim (807-2) and a FAG2.22 type jar (807-1; Fig. 46.32). The latter dates to the late seventh or first half of the eighth century AD.

PIT 808 / feature 16.104, 239

*investigation*

No section of this feature was drawn.

*finds/dating evidence*

From this pit only a handful of finds were collected. There is a piece of flint (155 g), one of iron, 2 Middle Roman sherds (31 g) and one base fragment (70 g) of an Argonne mortarium Chenet 328-330.

PIT 809 / feature 16.238

*investigation*

No section of this feature was drawn.

*finds/dating evidence*

The only find is a fragment of an iron collar for connecting wooden water-pipes.

PIT 810 / feature 20.109, 111

*remarks*

This pit was already interpreted as a three throw during the excavations. It is mentioned here because it only contains pre-Roman pottery, and gives some information on the vegetation during phases of the Iron Age.

*finds/dating evidence*

Among the 22 sherds (461 g) of handmade pottery, there are fragments of barrel-shaped roughened pots, suggesting a Middle Iron Age date.

PIT 811 / feature 15.066

*remarks*

This feature was small and not deep, at first sight an ordinary posthole. A feature number was given because of the bone finds. On the identification-form the specialist noted 'again carelessly collected': the skeleton was not drawn.

*finds/dating evidence*

The 29 bones (50 g) in this pit belong to a single small dog; there were no other finds.

PIT 812 / feature 27.070

*remarks*

This small pit 'in' the portico of building 401, was only documented at level 3, but not sectioned. It was only given a structure number when we realized that two graffiti on pottery were found here.

*finds/dating evidence*

Considering the size of this pit, it contained quite a lot of find material. To begin with, there are 4 fragments (91 g) of animal bone and 3 iron fragments. Roman pottery is represented by 231 sherds (15,864 g), of which 150 sherds (13 kg) are of one or more amphorae Dressel 20. Among the 13 datable vessels, 11 date after AD 70(-100); 6 of these were made before AD 120. Only two vessels seem younger, a mortarium Heerl-M8/Stuart 149 and a bowl Noorl-BO3a/

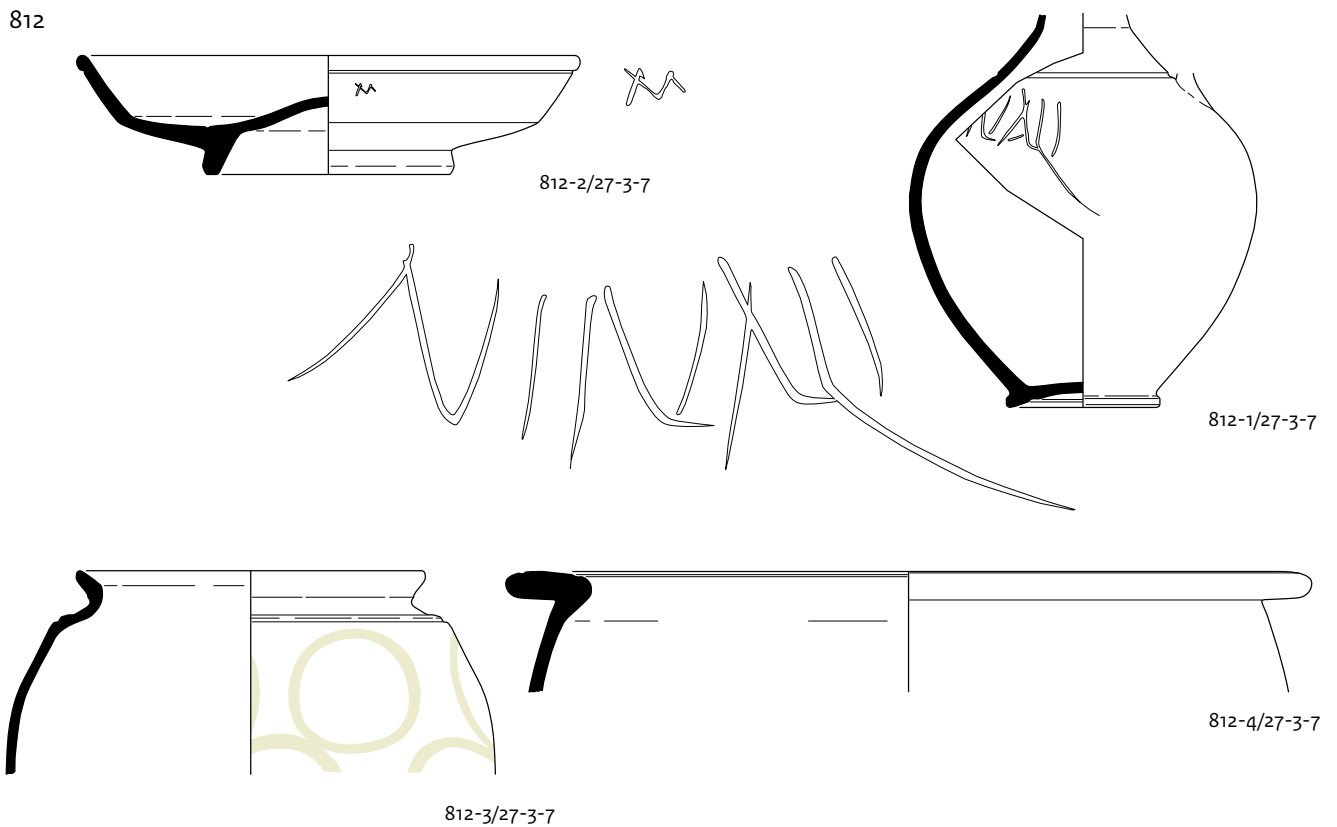


Fig. 46.33 Voerendaal-Ten Hove. Pottery from pit 812. Scale 1:3, graffiti 1:1.

Stuart 211, dating from AD 130 and 150. Therefore the pit could be filled in before c. AD 125 (predating building 401) although this is not more than a hypothesis, demanding that the younger material is explained. This could be contamination, related to the layer of rubble above the pit (level 2). This cannot be proven. Seven pieces of roof tile (c. 5.5 kg) could be part of this rubble, together with a piece of limestone (300 g); however, it is well possible that they rather belong to the phase during which building 401 was constructed. It is remarkable that almost all coarse-walled pottery is Noor1 ware (e.g. 812-3 and 4 in Fig. 46.33). Special finds are graffiti on the rim of a South Gaulish dish Dragendorff 18/31 and the body of a nearly complete flagon (812-1 and 2; Fig. 46.33).

#### PIT 813 / feature 95.231

##### remarks

This pit got numbered only because it is the context of an archaeobotanical sample, discussed in chapter 17. Its vertical position (level 4), rectangular shape and orientation suggest that it can belong to the same period as building 418 (period 2).

##### finds/dating evidence

<sup>14</sup>C-date (95-4-26; charred grain); 1923 ± 22 BP (GrM-28442); 65-130, 144-155 cal AD (1 sigma); 30-42, 59-205 cal AD (2 sigma).

### 46.3 Descriptive data

In table 46.1, the following data are provided:

Pit	structure number
Tr.ft.	trench and feature number(s)
L W D	length, width and depth of the feature in centimetres
Lyrs	layers present/documented, with 10 being the lowest and 4 meaning only one layer present
Colour	colour and homogeneity of the layer, abbreviated as: bk black; bn brown; gn green; gy grey; or orange; rd red; ye yellow
Inclusions	inclusions of a layer, abbreviated as: cc charcoal; frgm fragment(s); limest limestone (small pieces)
Fig.	figure containing the section drawing (figure numbers with finds are given in section 46.2)

**Table 46.1. Voerendaal-Ten Hove. Basic characteristics of the pits.**

Pit no.	Tr.ft	L	W	D	Lyrs	Colour	Inclusions	Fig.
701	7.010	320	320	59	12	dbn-bk	many tile frgm	46.2
					11	dgy-bk, thin layers	cc	
					10	lgy		
702	7.016	>325	>150	150	13	bn-gy	many tile frgm, sherds	46.2
					12	bn-gy	tile, sherds, limest, cc	
					11	gy-bn layered	dispersed cc	
					10	lgy-lbn-bn layered		
703	7.017	>145	115	75	11	dbn(-gy)	many tile frgm	46.3
					10	dgy-bn spotted		
704	10.003	260	250	72	14	bn-gy	many tile frgm	46.4
					13	gy spotted, 'greasy'	cc	
					12	gy	tile frgm	
					11	bn-gy		
					10	bn-gy		
705	10.103	200	200	64	11	l-gy-bn-ye	cc, limest	46.4
					10	l-gy-bn-ye, loamy		
706	11.039	250	165	37	4	lgy-bn spotted		46.4
707	11.040	295	160	90	14	lgy-bn spotted		46.4
					13	bn-by spotted		
					12	lgy-bn spotted		
					11	lgy		
					10	lbn, animal burrows		
708	13.034	175	150	95	4	lgy-lbn layered		46.4
	24.035							
709	13.041	160	155	36	4	bk-dgy	cc	46.5
710	13.123	145	110	36	4	bk-gy		46.5



Pit no.	Tr.ft	L	W	D	Lyrs	Colour	Inclusions	Fig.
711	13.124	105	80	70	13	bk-gy		46.5
					12	bk spotted	lots of cc	
					11	bn-by loamy		
					10	bk-gy		
712	13.042	210	190	110	11	dgy	limest, some tile, cc	46.5
	27.022				10	gy-ye	some limest	
713	13.003-4	540	420	145	32	bngy	small tile frgm	46.6
	13.069-73				31	bkggy	lots of cc, some tile	
	13.110-				30	yebn spotted	little cc	
	114				29	bngy spotted		
	24.049				28	bk	lots of cc, some rubble	
					27	bngy		
					26	bn		
					25	gy		
					24	bn		
					23	gy	some dispersed cc	
					22	bn layered		
					21	bn		
					20	bk		
					19	bk	lots of tile, lumps of cc	
					18	ye/lbggy	some tile	
					17	ye/blgy	pieces of tile	
					16	lbggy	some mortar	
	15	lbggy						
	14	blgy						
	13	(d)blgy						
	12	dirty bn						
	11	blgy						
	10	br/ye						
714	14.001	145	100	63	4	dgy spotted		46.8
	19.014							
715	14.008	165	160	86	13	dgy spotted		46.8
					12	bn-gy spotted		
					11	gy spotted		
					10	bn-ye/gy layered	layers of cc	
716	19.015	275	140	48	4	dgy-bk	cc	46.8
717	20.003	235	225	70	12	dgy-bk		46.9
					11	gy	lumps of limest	
					10	gy		
718	20.005	290	265	60	4	bk-by, lumps	cc, limest, mortar, tile	41.9
719	20.090	130	90	11	4	gy	pieces of limest	46.9
720	20.108	140	85	40	4	gy	some limest blocks	46.9
721	20.140	300	300	20	4	gy	lumps of limest	
722	20.033	350	250	45	13	dgy	many pieces of tile	46.9
	20.046				12	bk		
	20.169				11	deep bk		
					10	dbn-gy	pieces of tile, limest	

Pit no.	Tr.ft	L	W	D	Lyrs	Colour	Inclusions	Fig.
723	24.003	215	130	>45	4	dgy	much cc	
724	24.045	150	85	45	11	gy	pieces of tile	46.10
					10	lgy		
725	24.046	330	320	5	4	bn gy spotted	limest rubble	46.6
726	24.048	260	80	88	4	gybn spotted	dispersed cc, rubble	46.6
727	26.015	225	170	68	13	dgy	tile frgm	46.10
					12	gy-ye		
					11	bn-ye		
					10	gy spotted	tile frgm	
728	27.016	180	125	72	13	bk spotted	cc	46.11
					12	dgy-bk spotted		
					11	lgy-dgy layered		
					10	lgy speckled		
729	27.100	310	310	42	4	bk spotted		46.11
730	27.102	210	155	25	4	gy		46.13
731	28.024	165	150	70	10-6	lgy / lbngy layers		46.13
732	29.019	190	175	115	14	ye/lbn-wt spotted		46.13
					13	dgy-lgy spotted		
					12	bk	cc	
					11	lgy-wt	burnt soil	
					10	lbn		
733	46.002	200	180	40	4	dgy	some cc	46.13
734	46.004	160	160	62	11	gy-ye		46.14
					10	burnt loam/cc		
735	52.002	150	105	40	4	dgy		46.14
736	62.001	800	770	335	21		lots of tile, limest	46.14
					20	dbn-gy	dispersed cc, less finds	
					19	dbn-dgy	burnt wood, cc	
					18	dbn-dgy	much cc	
					17	lgybn	some cc	
					16	lbngy	with lgr lumps	
					15	lgy clay		
					14	rdbn(gy)	spotted, some gy bands	
					13	lgy-ye laminae		
					12		not documented	
					11	dbn humic		
					10	dye 'sand'		
737	68.101	155	125	95?	12	bk	much cc, limest, tile	46.15
					11	lgy-dgy layered		
					10	bk-gy		
738	69.051	390	390	68	11	lbn-gy		46.15
					10	bk-dgy	limest rubble and blocks	
739	74.002	340	260	74	11	gy spotted		46.16
					10	gy	large lumps of cc	
740	79.006	380	200	50	12	dbn-gy	dispersed tile, sherds	46.16
					11	lbn-ye-gy spotted		
					10	bk-bn spotted	much cc, tile and sherds	

Pit no.	Tr.ft	L	W	D	Lyrs	Colour	Inclusions	Fig.
741	95.077	210	130	60	4	gy spotted		46.17
742	95.277	140	130	105	4	dgy-bk		46.17
743	95.276	240	220	120	13	gy/ye layered		46.17
					12	gy		
					11	lgy		
					10	dgy-bn-gy layered		
744	100.002	350	275	100	12	lbn-ye		46.18
					11	dbn-dby spotted	many tile frgm	
					10	lbn		
745	101.012	170	105	80	10	bk spotted	tile frgm	46.19
746	101.064	190	140	95	4	dgy		46.19
747	101.162	140	120	80	12	bk spotted	cc	46.19
					11	lgy-ye		
					10	gy		
748	101.152	150	100	22	4	dgy		46.19
749	99.009	255	230	80	11	lbn-gy		46.19
					10	gy-bn lumps	cc	
750	102.088	250	215	58	13	lgy-ye		46.20
					12	lbn		
					11	bk spotted	cc, burnt loam, sherds	
					10	bn-bk spotted		
751	102.008	175	130	58	11	lgy-bn		46.20
					10	lgy-wt spotted		
752	102.006	375	335	33	11	bn-gy spotted	tile frgm	46.21
	73.004				10	dbn-gy	cc	
753	103.027	80	80	23	11	gy	dispersed cc	46.20
					10	bk	pure cc	
754	104.030	140	110	26	4	bk		46.20
755	104.045	165	115	56	4	bk	limest rubble	46.21
756	104.108	200	140?	125	16	dgy spotted		46.22
	105.079				15	gy-bn	much cc	
					14	lgy(-bn)		
					13	dgy-bn		
					12	rd	loam	
					11	lbn-ye		
					10	gy-bn		
757	104.033	1250	1000	110				44.11
758	107.129	510	135	84	11	dgy		46.23
					10	lbn / gy layered		
759	107.140	125	125	44	12	bk		46.23
					11	dgy-bn		
					10	bk	much cc	
760	107.139	120	115	38	4	bk		46.23
761	107.137	240	145	64	11	dgy		46.23
					10	lgy-lbn layered		
762	114.007	240	160	32	4	gy		46.23
763	114.012	195	180	60	4	gy		46.24

Pit no.	Tr.ft	L	W	D	Lyrs	Colour	Inclusions	Fig.
764	115.031	250	200	132	16	lye-bn		46.25
					15	gy		
					14	dbn-bk	limest, burnt loam	
					13	gy-bn		
					12	bk-bn		
					11	lgn-gy	phosphate?	
					10	lbn-gy		
765	147.005	250	>90		4	not documented		
766	15.016	130	120	30	11	bk-dgy	tile frgm	46.25
					10	gy		
767	15.007	165	130	8	4	lgy	cc	46.25
768	15.045	215	130	35	12	bk	cc band	46.25
					11	dgy	cc	
					10	gy		
769	15.046	115	105	88	13	dgy		46.26
					12	lgy		
					11	or-bk	burnt loam, cc	
					10	very lgy		
770	23.025	190	140	72	4	gy	dispersed cc, tile frgm	46.26
771	23.098	200	75-120	38	11	dgy	tile frgm, burnt loam	46.26
					10	lgy spotted		
772	20.079	105	95	60	13	lgy		46.27
					12	bn	some burnt loam	
					11	lgy spotted	cc	
					10	dgy	lots of cc, sherds	
773	104.032	210	160	22	12	gy		46.28
					11	dbn-gy		
					10	gy		
774	23.072	175	175	15-20?	4	-		
775	16.093/215	85	85	-	4	bk	querns!	
776	105.005	100	100	102	14	gy		46.28
					13	dgy	cc, burnt loam	
					12	ye-bn		
					11	lgy		
					10	gy		
777	115.025	360-485	100-240	13	4	gy		
778	23.013	>180	120-150	20-25?	4	-		
779	99.006	>115	>90	20	4	gy	uneven bottom	
780	102.130	145	80	15	4	gy	uneven bottom, natural?	
781	100.003	175	140	15	4	bk spotted	uneven bottom	
782	114.004	60	30	45	4	gy bn		46.30

Pit no.	Tr.ft	L	W	D	Lyrs	Colour	Inclusions	Fig.
783	114.005	280	145	55	4	gy	destroyed by Braat	46.30
784	114.006	>45	32	12	4	lgy	rectangular, flat bottom	
785	106.099	180	140	37	4	lgy-bn spotted	>308	46.30
786	106.085	190	150	30	4	gy		46.30
787	68.007	95	55	30	4	bk	tile fragments	46.31
788	68.053	125	65	35	4	bk	pieces of limest	46.31
789	68.119	105	105	44	11	bn-by	pieces of limest	
	69.041				10	dbngy/dye spotted		
790	95.075	215	135	8	4	bk		
791	95.074/78	290	220	40	4	bkggy	tile fragments	
792	95.079	190	150	40	4	bk-dgy		
	165-166							
793	95.164	90	60	10	4	dgy		
794	101.080	115	115	10	4	bk	burnt animal bone	
795	101.089	80	70	21	4	zw-dgy		
796	104.047	105	90	30	4	dgy	irregular, natural?	
797	104.035	210	150	16	11	dgy	rectangular+ oval part	46.32
					10	gy		
798	105.080	195	170	44	4	gy	irregular	
799	105.074	>145	130	42	4	gy		46.32
800	105.003	90	90	22	11	dgy-bk		
					10	gy(bn)		
801	108.024	140	140	76	11	bk-dbn	cc	46.32
					10	dgy-gy spotted		
802	13.097	235	190	38	12	gy	cc, natural?	46.32
					11	lbn		
					10	gy		
803	13.096	200	150	15?	4	gy	limest blocks	
	27.071							
804	13.100	100	80	14	4	gy		46.32
805	13.064	195	75-95	14	4	gy		46.32
806	13.058	125	80	17	4	gy		46.32
807	16.056	155	125	60	4	gy	some cc	46.32
808	16.104	85	85	?	4	(d)gy		
	16.239							
809	16.238	>100	45	?	4	dgy	cc	
810	20.109	200	175	65	11	gy	cc, burnt loam	
	20.111				10	lgy	lowest part is tree-fall	
811	15.066	40	40	10	4	gy	dog bones	
812	27.070	90	90	20?	4	dgy spotted	rubble	
813	95.231	100	55	6	4	bk	cc, burnt loam	



## General

EMA	Early Middle ages
ERA	Dutch Eastern River Area, more or less synonymous with the Batavian territory
EVE	estimated vessel equivalent(s), percentage of rims per diameter
FAG	Franken A(rbeits) G(emeinschaft) typology
Id	id-number database
LROM	Late Roman period
MNI	minimum number of individuals (vessels)
N	Number (of fragments)
NAP	Normaal Amsterdams Peil, Dutch Ordnance Datum
ND	new database
OD	old or original database
PDB	Provinciaal Depot Bodemvondsten or Provincial Depot of Archaeological finds
<i>p.m.</i>	<i>pes monetalis</i> (29.6 cm)
RD	Rijks Driehoeksmeting, triangulation on which the Dutch grid system is based
RMO	Rijksmuseum van Oudheden or National Museum of Antiquities, Leiden
ROB	Rijksdienst voor het Oudheidkundig Bodemonderzoek or State Service of Archaeological Investigations, Amersfoort (incorporated into the RCE, Cultural Heritage Agency of the Netherlands)
ROM	Roman period
Wt	weight

**Geography**

B	België/Belgium
	AN Antwerpen
	HT Hainaut
	LG Liège
	LI Limburg
	LX Luxembourg
	NA Namur
	OV Oost-Vlaanderen
	VB Vlaams Brabant
	WB Brabant Wallon
CH	Switzerland
D	Duitsland/Germany
	BAY Bayern/Bavaria
	BW Baden-Württemberg
	HS Hessen
	NRW Nordrhein-Westfalen (all German places by default; including the lignite mining areas FR(immersdorf), HA(mbach), W(eis)W(eiler))
	RP Rheinland-Pfalz
	SL Saarland
F	France
	Ard. Ardennes
	Cal. Calvados
	Hér. Hérault
	IeL Indre-et-Loire
	Mos. Moselle
	Nd Nord
	Niè. Nièvre
	SeL Saône-et-Loire
	Yon. Yonne
L	Luxemburg
MDS	Meuse-Demer-Scheldt area, the coversand plateau of the southern part of the Netherlands and the northern part of Belgium
N	Nederland/the Netherlands
	G Gelderland
	L Limburg
	NB Noord-Brabant



## Bibliographical abbreviations

AAS	Amsterdam Archaeological Studies
AB	Archaeologia Belgica
AiL	<i>Archeologie in Limburg</i>
AiV	<i>Archeologie in Vlaanderen</i>
AK	Archäologisches Korrespondenzblatt
AMN	<i>Archäologische Mitteilungen aus Nordwestdeutschland</i>
APL	<i>Analecta Praehistorica Leidensia</i>
BAR (Brit.Ser./Int.Ser.)	British Archaeological Reports (British/International Series)
BJ	<i>Bonner Jahrbücher</i>
BRGK	<i>Bericht der Römisch-Germanischen Kommission</i>
BROB	<i>Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek</i>
CIL	<i>Corpus Inscriptionum Latinarum</i>
FiA	Forschungen in Augst
GDV	Germanische Denkmäler der Völkerwanderungszeit, Serie B. Die fränkischen Altertümer des Rheinlandes
JALC	<i>Journal of Archaeology in the Low Countries</i>
JROB	<i>Jaarverslag ROB</i>
LCL	Loeb Classical Library
NAR	Nederlandse Archeologische Rapporten
OMROL	<i>Oudheidkundige Mededelingen uit het Rijksmuseum van Oudheden, Leiden</i>
PPGRMT	Publicaties van het Provinciaal Gallo-Romeins Museum Tongeren
PSHAL	<i>Publications de la Société Historique et Archéologique dans le Limbourg</i>
PUCL	Publications d'histoire de l'art et d'archéologie de l'université catholique de Louvain
RA	Rheinische Ausgrabungen
RAM	Rapportage Archeologische Monumentenzorg
TZ	<i>Trierer Zeitschrift</i>
XB	Xantener Berichte
ZAR	Zuidnederlandse Archeologische Rapporten

### Classical sources

Amm.	Ammianus Marcellinus
Aur.Vict.	Aurelius Victor
Ausp., <i>ep.Austr.</i>	Auspicius, <i>epistulae Austrasicae</i>
BG	Caius Iulius Caesar, <i>de bello Gallico</i>
Cato, <i>agr.</i>	Marcus Porcius Cato, <i>de agricultura</i>
Cic., <i>Qfr.</i>	Marcus Tullius Cicero, <i>epistulae ad Quintum fratrem</i>
Colum., <i>rust.</i>	Lucius Junius Moderatus Columella, <i>de re rustica</i>
Dio	Cassius Dio Cocceianus, <i>historiae</i>
<i>Edict.Diocl.</i>	<i>Edictum diocletiani/Edictum de pretiis rerum venalium</i>
Eutr.	Eutropius
Greg.Tur.	Gregorius Turonensis
<i>hist.</i>	<i>historia Francorum</i>
<i>vit.</i>	<i>vitae patrum</i>
Hier., <i>chron.</i>	Hieronymus, <i>chronicon</i> ; see Byvanck 1941, 441ff.
<i>Itin.Anton.</i>	<i>Itinerarium Antonini</i> ; see Byvanck 1931, 534ff.
Iul., <i>ep.Ath.</i>	Iulianus, <i>epistula ad Athenienses</i>
Jord., <i>Get.</i>	Jordanes, <i>Getica</i>
Lib., <i>or.</i>	Libanios, <i>oratio</i>
M. Aur. <i>Med.</i>	Marcus Aurelius, <i>Meditations</i>
<i>Not.dign., occ.</i>	<i>Notitia dignitatum, occidentis</i>
Oros.	Orosius ( <i>historiae</i> )
Pall., <i>agr.</i>	Rutilius Taurus Aemilianus Palladius, <i>opus agricultura</i>
<i>Pan.Lat.</i>	<i>Panegyrici Latini</i>
Petron., <i>Sat.</i>	Petronius, <i>Satyricon</i>
Plin., <i>nat.hist.</i>	Plinius maior, <i>naturalis historia</i>
Plin., <i>ep.</i>	Plinius minor, <i>epistulae</i>
Salvinianus	
<i>de gub. Dei</i>	<i>de gubernatione Dei</i>
<i>ep.</i>	<i>epistolae</i>
SHA	<i>Scriptores Historiae Augustae</i>
<i>Alb.</i>	<i>Albinus</i>
<i>Did.Iul.</i>	<i>Didius Iulianus</i>
<i>Marc.Ant.</i>	<i>Marcus Antoninus</i>
<i>Prob.</i>	<i>Probus</i>
Sidon.	Sidonius Apollinaris, <i>epistulae</i>
Suet.	Suetonius
<i>Aug.</i>	<i>Augustus</i>
<i>Tib.</i>	<i>Tiberius</i>
<i>Tab.Peut.</i>	<i>Tabula Peutingeriana</i> ; see Stuart 1993
Tac.	Cornelius Tacitus
<i>ann.</i>	<i>annales</i>
<i>Germ.</i>	<i>Germania</i>
<i>hist.</i>	<i>historiae</i>
Varro, <i>rust.</i>	Marcus Terentius Varro, <i>de re rustica</i>
Vell.	Velleius Paterculus
Vitr. <i>arch.</i>	Vitruvius <i>de architectura</i>
Zos.	Zosimos, <i>historia nova</i>

## Maps

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TMK: *Topografische en Militaire Kaart van het Koninkrijk der Nederlanden*, in: *Grote historische provincie atlas 1:25000. Limburg 1837-1844*, ed. 1992, Groningen.

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Hoogtekaart 62Bn: *Hoogtekaart van Nederland 1:50.000. Blad 62B Noord, Heerlen*, ed. 1976, Delft.

Hoogtekaart 62Bz: *Hoogtekaart van Nederland 1:50.000. Blad 62B Zuid, Simpelveld*, ed. 1976, Delft.

Klimmen A1: *Commune de Climmen. Section A dite de Retersbeeck, en 2 feuilles, 2<sup>e</sup> feuille. Lèvéé par P.W.F. Diederén, géomètre de 2<sup>e</sup> classe, Echelle de 1 à 2500. (ca. 1821).* (all land registry maps at: <https://beeldbank.cultureelerfgoed.nl/> > kadastrale kaarten)

Klimmen Az: *Commune de Climmen. Section A dite de Retersbeeck, en 2 feuilles, 1<sup>re</sup> feuille. Lèvéé par P.W.F. Diederén, géomètre de 2<sup>e</sup> classe, Echelle de 1 à 2500. (ca. 1821)*

Klimmen B: *Commune de Climmen. Section B en 1 feuille, dite de Ransdaal. Lèvéé par P.W.F. Diederén, géomètre de 2<sup>e</sup> classe, Echelle de 1 à 2500. (ca. 1821)*

Klimmen C1: *Commune de Climmen. Section C dite de Climmen, en 2 feuilles, 1<sup>re</sup> feuille. Lèvéé par P.W.F. Diederén, géomètre de 2<sup>e</sup> classe, Echelle de 1 à 2500. (ca. 1821)*

Klimmen C2: *Commune de Climmen. Section C dite de Climmen, en 2 feuilles, 2<sup>e</sup> feuille. Lèvéé par P.W.F. Diederén, géomètre de 2<sup>e</sup> classe, Echelle de 1 à 2500. (ca. 1821)*

Tranchotkaart 74 Ost/75, 1967: *Kartenaufnahme der Rheinlande durch Tranchot und Von Müffling 1803-1820. Blatt 74 Ost Valkenburg/75 Heerlen, 1:25 000, s.l. (gereduceerde facsimile van de oorspronkelijke kaart 1:20.000).* (<https://vu.contentdm.oclc.org/digital/collection/krt/id/5625> accessed 22-9-2021)

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Voerendaal A1: *Commune de Voerendaal. Section A dite de Village, en quatre feuilles, 1<sup>ere</sup> feuille. Lèvéé par Mr Jean Lecluyse, géomètre secondaire, Echelle de 1 pour 2500 Metres. (ca. 1822)*

Voerendaal Az: *Commune de Voerendaal. Section A dite de Village, en quatre feuilles, 2<sup>e</sup>me feuille. Lèvéé par Mr Jean Lecluyse, géomètre secondaire, Echelle de 1 pour 2500 Metres. (ca. 1822)*

Voerendaal A3: *Commune de Voerendaal. Section A dite de Village, en quatre feuilles, 3<sup>me</sup>me feuille. Lèvéé par Mr Jean Lecluyse, géomètre secondaire, Echelle de 1 pour 2500 Metres. (ca. 1822)*

Voerendaal A4: *Commune de Voerendaal. Section A dite de Village, en quatre feuilles, 4<sup>me</sup>me feuille. Lèvéé par R van de Velde géomètre de secondaire, Echelle de 1 pour 2500 Metres. (ca. 1822)*

Voerendaal B4: *Commune de Voerendaal. Section B dite Kunraad, 4<sup>me</sup>me feuille. Lèvéé par Mr Jean Lecluyse, géomètre de 1<sup>ere</sup>re classe, Echelle de 1 pour 2500 Metres. (ca. 1822)*

Voerendaal E1: *Commune de Voerendaal. Section E dite de Winthagen, en trois feuilles, 1<sup>re</sup>re feuille. Lèvéé par R. van de Velde, géomètre de 1<sup>ere</sup>re classe, Echelle de 1 à 2500. (ca. 1822)*

Voerendaal E2: *Commune de Voerendaal. Section E dite de Winthagen, en trois feuilles, 2<sup>e</sup>me feuille. Lèvéé par R. van de Velde, géomètre de 1<sup>ere</sup>re classe, Echelle de 1 à 2500. (ca. 1822)*

Voerendaal E3: *Commune de Voerendaal. Section E dite de Winthagen, en trois feuilles, 3<sup>e</sup>me feuille. Lèvéé par R. van de Velde, géomètre de 1<sup>ere</sup>re classe, Echelle de 1 à 2500. (ca. 1822)*

Wijnandsrade B1: *Wijnandsrade. Section B dite de Knevel, en deux feuilles, 1<sup>re</sup>re feuille. Lèvéé par Mr J.L. Schyns, géomètre de 2<sup>e</sup>e classe, Echelle d'un à 2500. (ca. 1823)*

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This report presents the results of the excavations at Voerendaal-Ten Hove, especially those conducted three decades ago by the State Service for Archaeological Investigations (ROB). A full publication of the Roman villa was long overdue because it represents only one of three Dutch examples investigated in its entirety. Moreover, the site is relevant for its Late Iron Age enclosure, post-built structures preceding the large villa and settlement remains and burials of the Late Roman and Merovingian period.

The fourth part of the publication comprises a catalogue in which the different types of structures and features are discussed: buildings in wood and stone, ditches and water-related features, burials, sunken-floored huts, hearths and pits.

This scientific report is intended for archaeologists, as well as for other professionals and amateur enthusiasts involved in archaeology.

The Cultural Heritage Agency of the Netherlands provides knowledge and advice to give the future a past.