

# THE LIMES ARABICUS PROJECT THE 1987 CAMPAIGN

by  
S. Thomas Parker

## Introduction

The Limes Arabicus Project is examining the Roman frontier east of the Dead Sea between A.D. 300 and 550. The principal purpose of the military frontier was to control the movements of nomadic Arab tribes. This period began with a dramatic military buildup in this region, including construction of fortifications, systematic repair of the regional road network, and arrival of military reinforcements (Fig. 1). The frontier remained well fortified for about two centuries, but there appears to have been a widespread abandonment of the military frontier by the early 6th century.<sup>1</sup> What can account for the massive military buildup in this sector ca. 300? Why were most of these same fortifications abandoned two centuries later?

A four part program is being employed in order to answer these questions: 1) excavation of the legionary fortress of el-Lejjūn (the largest military site in this sector), 2) soundings of several smaller fortifications, 3) intensive archaeological survey of the frontier zone, 4) survey of the desert fringe east of the frontier to learn about the nomadic tribes. Four of five planned campaigns have been conducted thus far, in 1980,<sup>2</sup> 1982,<sup>3</sup> 1985<sup>4</sup> and 1987.<sup>5</sup> The final campaign is scheduled for 1989.

The 1987 campaign was conducted

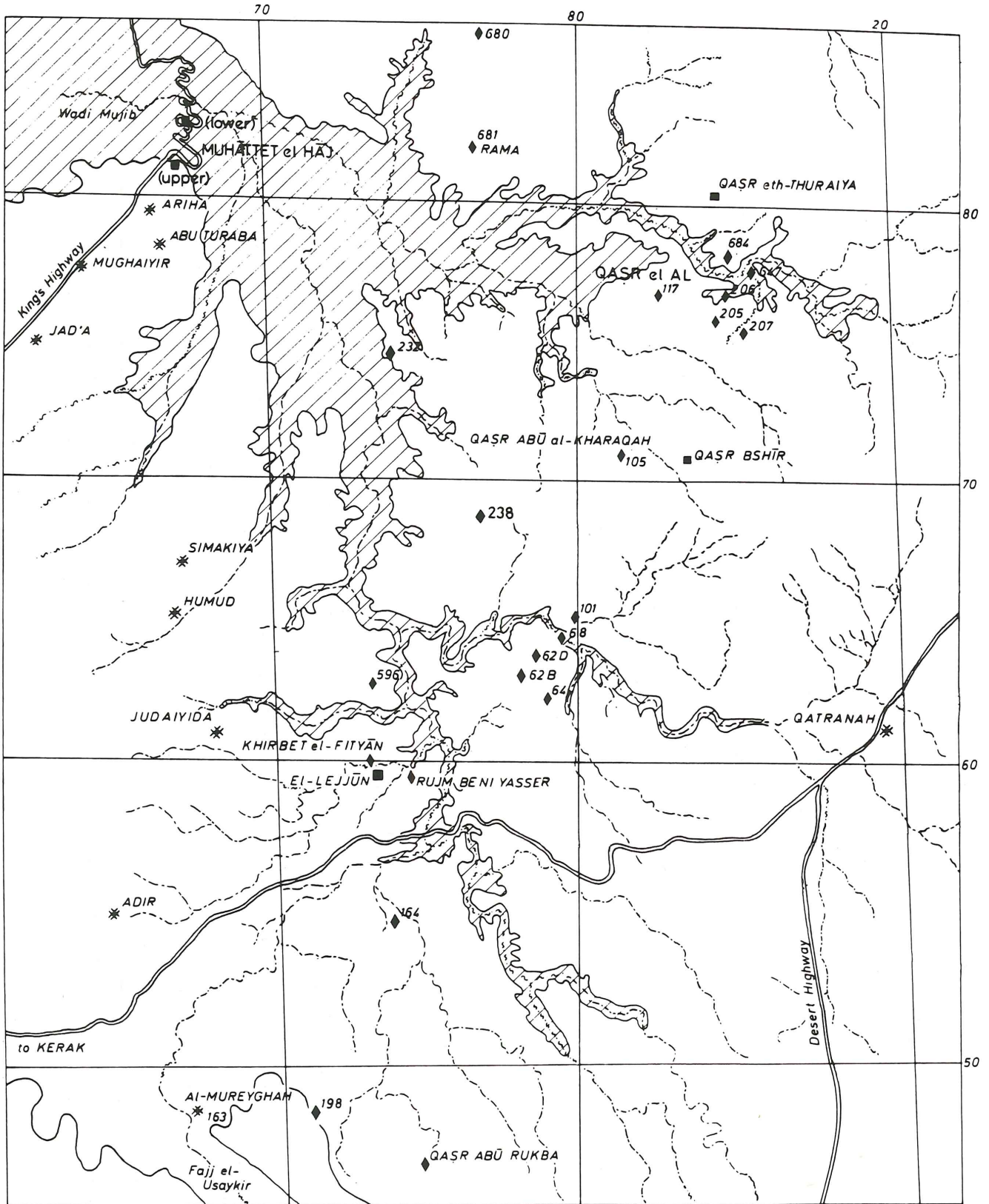
between June 8 and July 28, under a permit granted by the Department of Antiquities of Jordan. The project is sponsored by North Carolina State University and is affiliated with the American Center of Oriental Research (ACOR) in Amman. Principal funding for the 1987 season again was provided by the National Endowment for the Humanities. Additional funding was provided by the Dumbarton Oaks Center for Byzantine Studies, the National Geographic Society, the Samuel H. Kress Foundation, student contributions, and private donors. The Department of Antiquities also offered crucial logistical assistance. The author wishes to thank all these for their support. A special debt is owed to Dr. 'Adnan Hadidi former Director General of the Department of Antiquities, and to Dr. David W. McCreery, former Director of ACOR.

Senior staff in the field in 1987 included Patricia Crawford as paleobotanist, Bert De Vries as architect/surveyor, Laura Foos as photographer, Victoria Godwin as pottery registrar, Jennifer C. Groot as objects specialist, Nelson Harris as camp manager, Denise Hoffman as draftsman, Frank L. Koucky as geologist and director of the survey, S. Thomas Parker as director, stratigrapher, and ceramicist, and Michael Toplyn as faunal analyst. Area supervisors were Andrea Lain (Area A — the Lejjūn

1. S. Thomas Parker, *Romans and Saracens: A History of the Arabian Frontier*, ASOR Dissertation Series No. 6, Winona Lake, Indiana, 1986, p. 135-152.
2. Parker, 'Preliminary Report on the 1980 Season of the Central Limes Arabicus Project,' *BASOR* 247 (1982) p. 1-26; 'The Central Limes Arabicus Project: The 1980 Campaign,' *ADAJ* 25 (1981) p. 171-178.
3. 'Preliminary Report on the 1982 Season of the Central Limes Arabicus Project,' *BASOR Supplement* No. 23 (1985) p. 1-34; 'The Central Limes Arabicus Project: The 1982 Campaign,'

*ADAJ* 27 (1983) p. 213-230; 'Exploring the Roman Frontier,' *Archaeology* 37.5 (1984) p. 33-39.

4. 'Preliminary Report on the 1985 Season of the Limes Arabicus Project,' *BASOR Supplement* No. 25 (1987) p. 131-174; 'The Limes Arabicus Project: The 1985 Campaign,' *ADAJ* 30 (1986) p. 233-252.
5. Parker, *The Roman Frontier in Central Jordan: Interim Report on the Limes Arabicus Project, 1980-1985*. BAR International Series 340. Oxford; British Archaeological Reports, 1987. Hereafter as *Interim Report*.



FORT: ■  
 WATCH TOWER: ◆  
 TOWN: \*

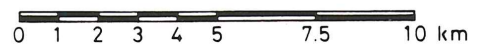


Fig. 1. Map of Roman frontier in central Jordan.

*principia*), Victoria Godwin (Area C – the Lejjūn fortifications), Jennifer Groot (Areas K and L – the Lejjūn barracks), Patricia Crawford (Area M – structure against the west enclosure wall at Lejjūn), and Robert Schick (Area N – rooms along the *via principalis* and Area O – the reservoir at Lejjūn). Nelson Harris supervised soundings of the watermills in the Wadi Lejjūn. Nabil Beqa'in again served as department representative.

Square supervisors included Steven Burnett, Paul Cobb, Christi Dennis, Tim Dolan, Allison Donnan, Timothy Ferrell, Mark Fletcher, Gillian Flynn, Peter Guest, Benjamin Hartsell, Jennifer Jones, Karen Kumiega, Marya Mogk, Beth Pruiksmā, Jeffrey Regester, Karan Thies, Christopher Wolterstorff, and Louise Zimmer. Hurley Humphries and Daniel Ritsema were assistant architect/surveyors. Christine Kayden worked on the survey. Christi Dennis served as assistant pottery registrar. The staff worked with a force of up to sixty local labourers.

The following is a summary of the 1987 season. It describes the excavation of the Lejjūn legionary fortress, soundings of the watermills in the Wadi Lejjūn, and survey of the *limes* zone. Some preliminary historical conclusions then are drawn from these and prior results.

### Excavation of the Lejjūn Legionary Fortress

#### A) Plan of the Fortress and Stratigraphic Summary<sup>6</sup>

The Lejjūn fortress has long been identified as Betthorus, base of *legio IV Martia*, in the *Notitia Dignitatum*.<sup>7</sup> This identification is still unproven but remains probable. The fortress (Fig. 2) (242 x 190 m., 4.6 ha.) is surrounded by an enclosure wall 2.40 m. thick and studded with projecting towers. Each wall is pierced in the middle by a gate. Two major streets intersect at the *groma* or middle of the

fortress: the *via praetoria* extends from the east gate to the *groma*, the *via principalis* runs from the north gate to the south gate. The *principia* or headquarters building is near the intersection of the two main streets.

Lejjūn, as the largest military site in this sector of the frontier, is being excavated in order to learn about its garrison and its role in the military frontier, recover its complete stratigraphic history, and shed light on the Roman legion and *limitanei* (frontier forces) of the late Empire. The strategy has been to sample through excavation each principal component of the fortress. Thus far this has included the headquarters building, several blocks of barracks, the fortifications, and a church. A *mansio* or caravanserai in the *vicus* or adjacent civil settlement has also been excavated.<sup>8</sup>

In 1987 excavation continued in three areas worked previously – the *principia*, barracks, and fortifications. But several new areas were opened: the north gateway, a range of rooms along the *via principalis*, a building against the west enclosure wall, and a reservoir.

#### B) Stratigraphic Summary

The first season in 1980 established a basic stratigraphic sequence based on associated numismatic and ceramic evidence. Results from subsequent seasons permitted a slightly more refined stratigraphic picture. The impact of three identifiable earthquakes, in 363, 502, and 551, provide important breaks in the stratigraphic sequence.

Stratum	Period	Approximate Dates
VI	Late Roman IV	284-324
VB	Early Byzantine I	324-363
VA	Early Byzantine II	363-400
IV	Early Byzantine III-IV	400-502
III	Late Byzantine I-II	502-551
Post Stratum III	Gap	551-1900
II	Late Ottoman	1900-1918
I	Modern	1918-

6. Parker, 'Introduction to the Legionary Fortress', *Interim Report* p. 183-198.

7. *N.D.* 37.22.

8. For detailed results of these excavations during the first three seasons, cf. Parker, *Interim Report* p. 203-398.

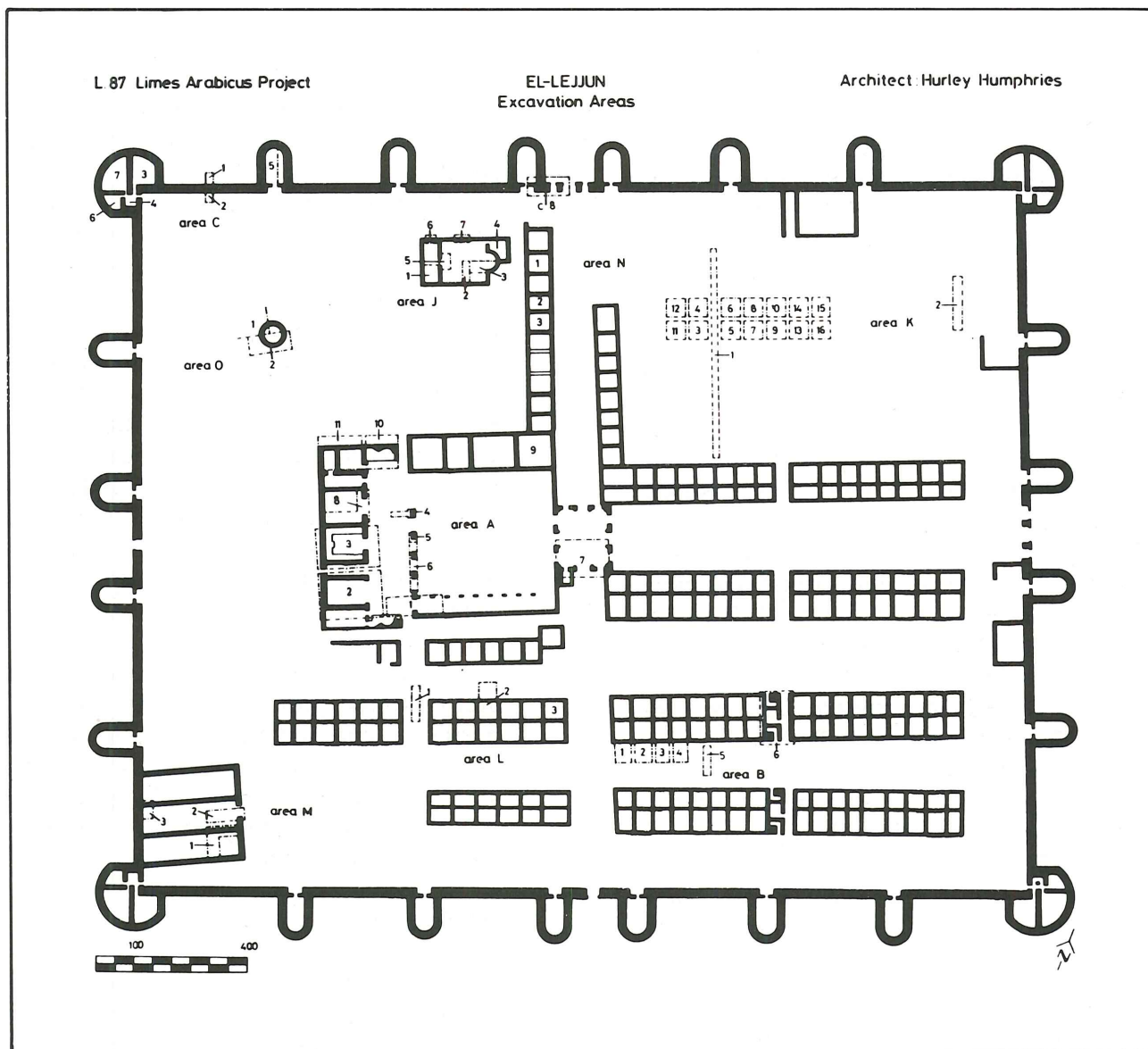


Fig. 2. Plan of el-Lejjūn legionary fortress showing excavation areas, 1980-1987.

C) *The Principia (Area A)*

The headquarters building (63 x 52.50 m.), in its traditional location at the intersection of the *via praetoria* and *via principalis* (Fig. 3), contains the essential elements of the classic *principia*: 1) the princial entrance at the *groma* leading into an outer or public courtyard, 2) an inner, sacred courtyard or transverse basilical hall, and 3) a block of official rooms serving as administrative offices and containing the legionary shrine, or *aedes*.<sup>9</sup> Work in 1987 concentrated in three sec-

tors: the *groma* fronting the *principia* (A.7), the northern end of the official block (A.8, 10, 11), and a room along the northern wall adjacent to the outer courtyard (A.9).

The trench within the *groma* was extended to encompass the southern half of this monumental gatehall. The entrances were separated by piers decorated with engaged quarter or half columns (Fig. 4). The columns once carried Nabataean-style capitals, several of which were found in the tumbled debris. Variations in the style and size of the capitals suggested that

9. For results from the first three seasons, cf. Anne E. Haeckl, 'The *Principia* of el-Lejjūn', p.

203-260 in Parker, *Interim Report*.

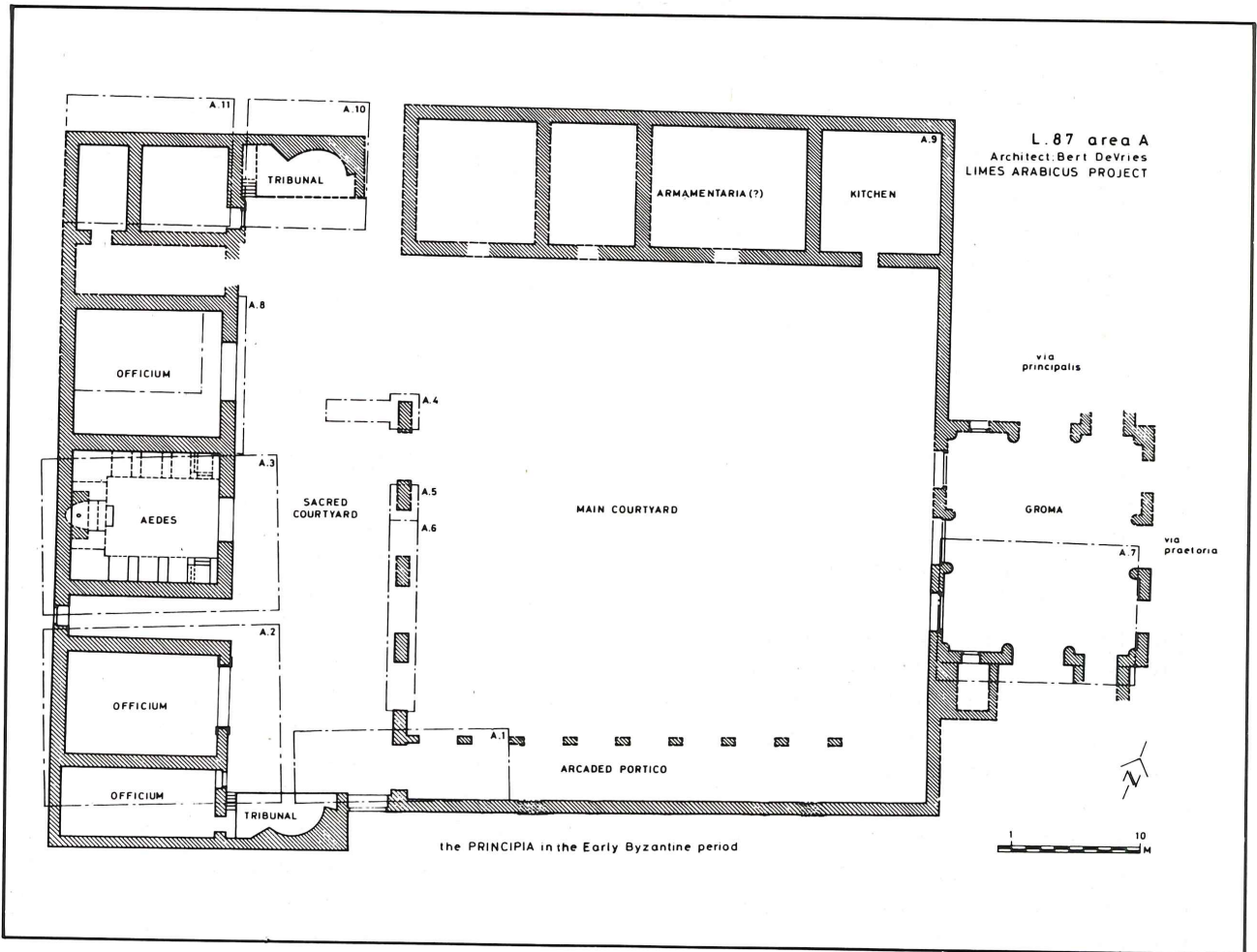


Fig. 3. Plan of the *principia* as rebuilt in the Early Byzantine period.

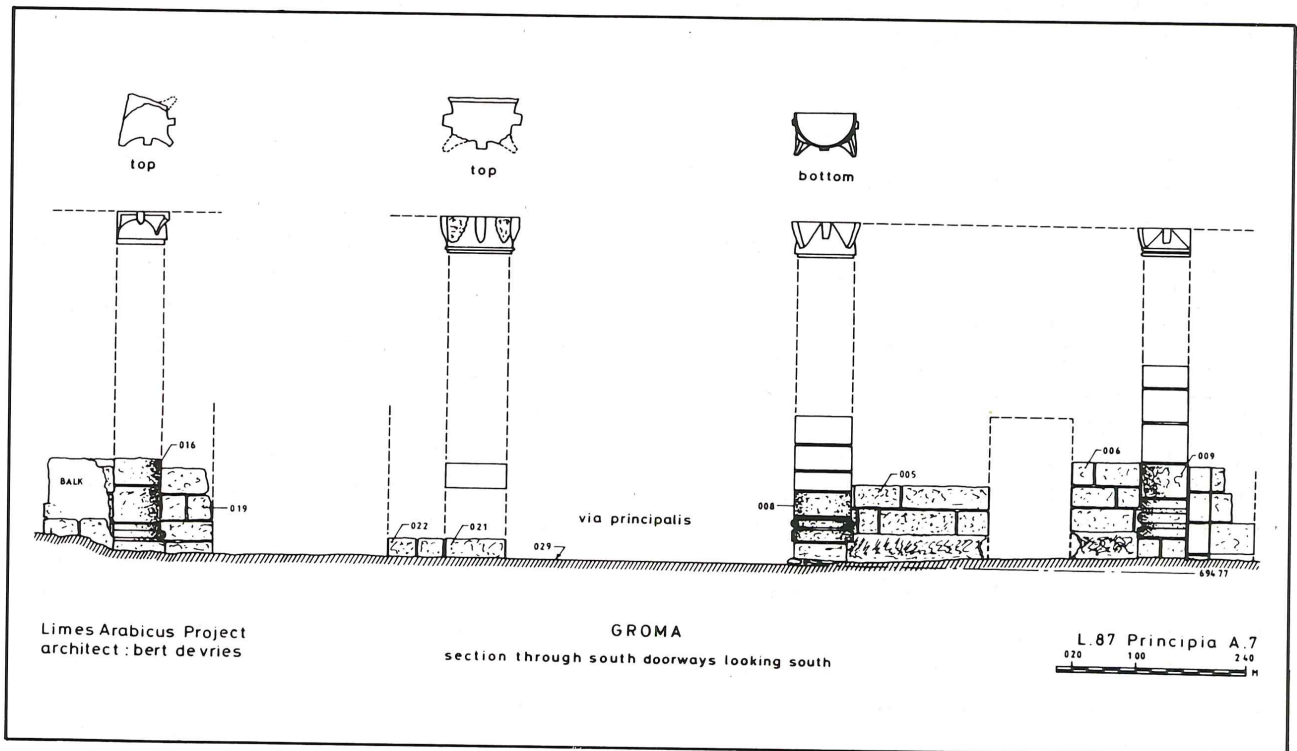


Fig. 4: Section through the *groma* in center of fortress, looking south through the south portals.

they were reused elements brought from elsewhere, presumably robbed from an earlier Nabataean structure. The evidence from this season calls for one correction in the previously published plan.<sup>10</sup> There was no trace of the four independent columns in the middle of the *groma*, which must have in fact been open (Fig. 3). Stratified ceramic evidence suggested that the *groma* was built during the primary period of fortress construction ca. 300.

North of the large public courtyard is a range of four rooms. Based on parallels elsewhere in the Empire, it was thought that these might have served as *armamentaria*. Excavation of the most easterly room (A.9) instead revealed a kitchen. It contained a hearth, several storage installations, and large quantities of artifactual material, including animal bones (some charred), botanical remains, pottery, and 31 coins. This kitchen was presumably used to prepare meals for the headquarters staff.

Excavation in 1980-85 at the southern end of the inner courtyard had revealed a *tribunal* or elevated platform for officers to address small contingents of troops assembled in the courtyard. This season's excavation revealed a corresponding *tribunal* at the northern end of the sacred courtyard (A.10). Both *tribunalia* were reached by staircases from the courtyard. This plan of matching elevated *tribunalia* is paralleled by the early third century *principia* at Dura Europus in Syria.

West of the sacred courtyard and north of the *aedes* excavation was conducted in a large room identified as an *officium* (A.8). This room and those in the official range of rooms farther north were built in roughly-hewn chert, very much unlike the fine ashlar limestone of the official rooms to the south. This suggested that the northern rooms could have been rebuilt in a later period. Excavation in A.8 confirmed this supposition. The chert walls visible on the surface proved to be resting on lower courses of ashlar limestone. The

rebuild in chert presumably followed the earthquake of 363. A monumental entrance to this room was also uncovered. The wide doorway was paved with large limestone flagstones and flanked by molded doorposts.

Clearing of surface debris to the north of the *officium* delineated the plan of the northwest corner of the *principia*. These corner rooms (A.11) were also originally built in ashlar limestone masonry but had been rebuilt in chert.

#### D) The Barracks (Areas K and L)

The objectives in excavation of the barracks within the fortress are to elucidate their plan (and thus reconstruct the internal organization and overall strength of the garrison), reconstruct their complete stratigraphic profile, and recover cultural material relating to the legionary garrison, including evidence on the supposed transformation of the late Roman *limitanei* from full-time soldiers to a peasant militia.

Between 1980 and 1985 several rooms and associated courtyards (Area B) within one of the four blocks visible on the surface were completely excavated (Fig. 2).<sup>11</sup> These blocks, built largely of chert, were erected after the 363 earthquake. They replaced and were built over the primary Late Roman (Stratum VI) barracks erected ca. 300. A partial plan of these primary barracks was recovered in Area B and from two long trenches (Area K) in the northeastern quadrant. This latter sector is mostly devoid of surface ruins. But the long trenches dug in 1985 uncovered the foundations of four barracks blocks, each separated from the others by intervening alleys. The walls were associated with Late Roman pottery and three 4th century coins. This suggested that there were originally eight barracks blocks in the eastern half of the fortress. But following the 363 earthquake and the demolition of the eight old barracks to their foundations, only four new blocks were reconstructed in the late

10. Parker, *Interim Report* p. 204, Fig. 44.

11. Jennifer C. Groot, 'The Barracks of el-Lejjün', p. 261-310 in Parker, *Interim Report*.

4th century, implying a 50% reduction in the size of the legion.

In 1987 excavation continued in the northeast quadrant (Area K, Fig. 2) in an effort to elucidate the plan of an entire block of the primary Late Roman barracks (Fig. 5). Considerable portions of the foundations of this block were recovered, although these were partially obscured by the later reuse of the sector for animals. This was suggested by the erection of corral walls, a watering tank, a long manger, a small-scale foundry, and large quantities of animal bones (some with butchering marks). Apparently, after the demolition of the primary barracks, this sector had been given over to the feeding, watering, slaughtering, and butchering of various domestic animals, including sheep, goats, cattle, camels, and pigs.

Another group of apparent barracks investigated was south of the *principia* (Area L, Fig. 2). These blocks are comparable to those visible east of the *via principalis*: they are of similar size and building materials (Fig. 6). Yet they consist of only six rooms on either side of a central spine wall, rather than the eight or nine rooms in the eastern blocks. Were these rooms in fact barracks or did they serve some other purpose? If barracks, did they house troops other than rank and file *milites*, such as cavalry men, officers, or *immunes* (specialists relieved of normal fatigues)?

The block also appears to be of secondary date, erected after 363. A room near the center of the block (L.2) was completely excavated, revealing that the individual rooms are virtually identical to those in Area B in terms of size (ca. 5 m. square) and roofing (a series of three parallel limestone arches carrying oblong basalt roofing beams). A flagstone floor was found in the southwest corner of the room, a refinement absent from *milites'* rooms but present in the centurion's quarters in Area B. This might suggest that the troops quartered in Area L were of higher

status, although there was nothing in the relatively limited artifactual corpus to support this suggestion.

### E) The Fortifications

The project is sampling each component of the fortifications of the fortress: enclosure wall, U-shaped interval towers, semi-circular angle towers, and gateways. A section through the northern enclosure wall was completed in 1980. An interval tower was excavated in 1982, when work also commenced in the northwest angle tower. Excavation of the angle tower continued in 1985 and was completed this season. The northern gateway (*porta principalis sinistra*) was also excavated this season.<sup>12</sup>

The northwest angle tower measures ca. 20 m. in diameter. It was originally of at least two and probably three stories. Its interior plan on the ground floor is divided into four rooms. The small southeast room contains the entrance into the tower from the fortress, a corridor providing access to the three other ground floor rooms, and a staircase reaching to the upper stories.

This season excavation of the other three rooms of the ground floor was completed. Large flat-lying foundation stones were laid atop a thick fill in the Late Roman period of construction. Each room was roofed by a series of parallel limestone arches resting on springers placed against the walls. The arches carried oblong roofing slabs. In the northwest room (C.7), traces of a fine plaster floor laid above the foundation stones survived, although most traces of earlier occupation were apparently removed during a thorough cleanout of the tower in the Late Byzantine (Stratum III) period. Small holes, presumably for tethering animals, were drilled in the springers of several arches in the larger northwest and northeast rooms (C.3, C.7), suggesting their use as stables.

Most of the roofs of both larger rooms apparently collapsed in the 551 earth-

12. For work in this area between 1980 and 1985, cf. Bert De Vries, 'The Fortifications of el-Lejjün',

p. 311-352 in Parker, *Interim Report*.

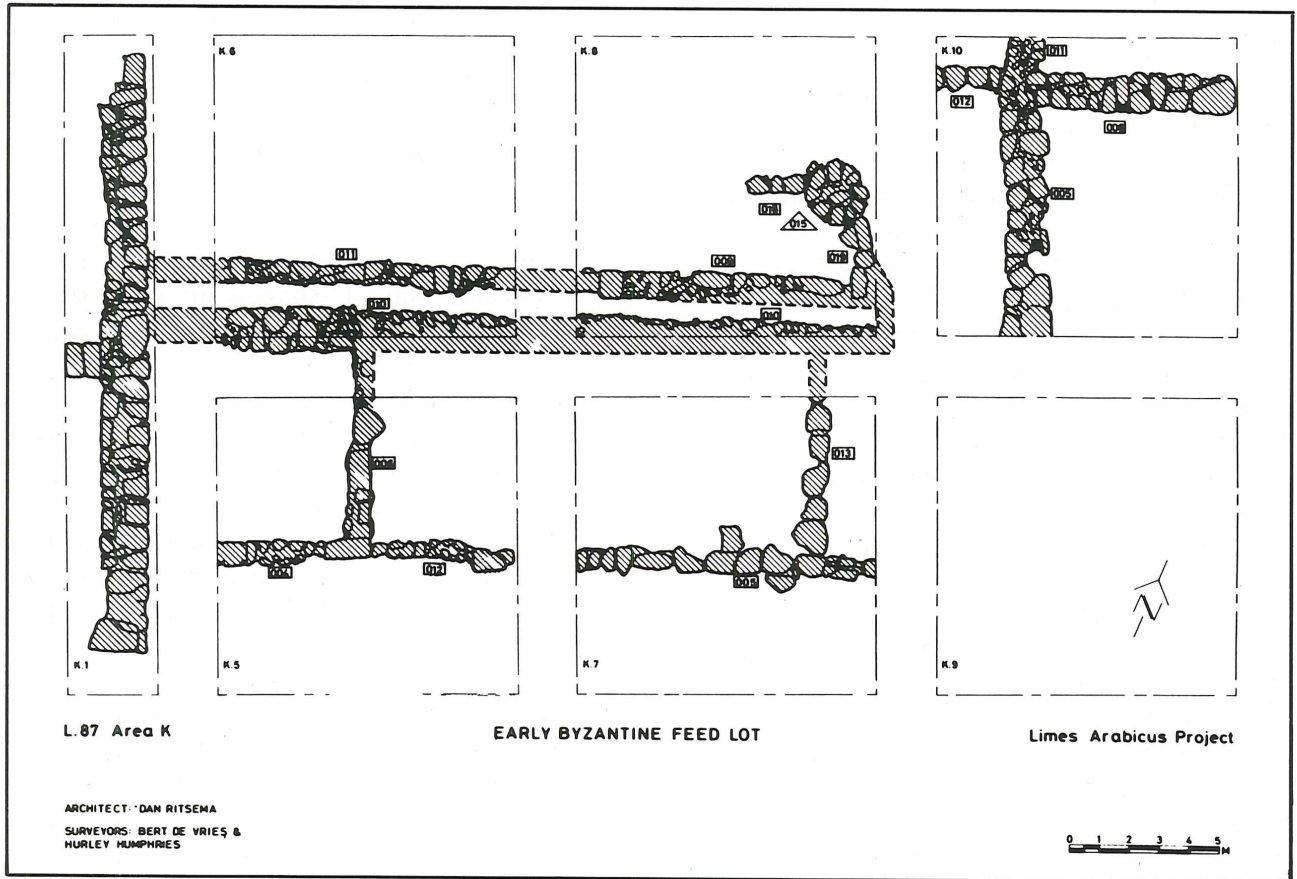


Fig. 5. Plan of Area K, where original Late Roman barracks block was reused in the Early Byzantine period for corralling animals.”

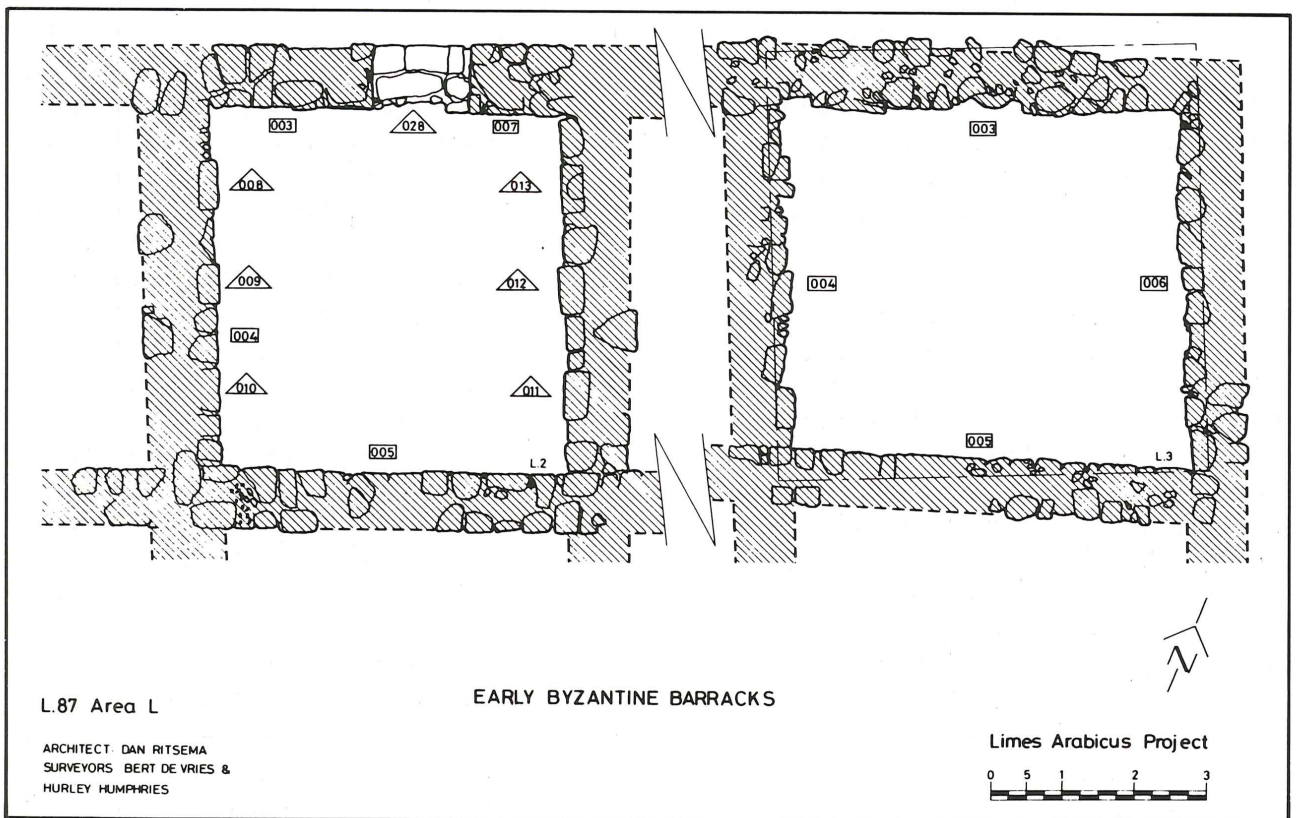


Fig. 6. Plan of two barrack rooms within the block south of the *principia* (Area L).



quake. Graphic evidence of this event was the skeleton of a human infant found in the tumble of the northwest room (C.7). The infant had apparently fallen from an upper story to its death during the earthquake.

Some limited evidence of Umayyad domestic occupation (late 7th or early 8th century) was recovered under one arch still standing closest to the intact doorway in the northeast room. The much smaller southwest room (C.6), however, remained with its roof intact and was in use intermittently in the Islamic period, as suggested by several domestic installations discovered in 1985.

Excavation was also initiated in the north gateway, or *porta principalis sinistra* (Fig. 7). The gateway is triple-entry, with a large central opening flanked by two smaller portals. Only the central and northern portals were excavated this season (C.8). Opening off the northern portal was a staircase recessed into the enclosure wall which gave access to the rampart and the second story of the adjacent interval tower. Several Arabic graffiti, still awaiting decipherment, were inscribed on the exterior walls of both towers flanking the gateway. A series of Late Islamic roadway surfaces was encountered in the gateway, which apparently remained in use even after the collapse of the monolithic limestone lintel of the central portal. A hoard of 68 silver Mamlūk coins was found in a trench cut against the fallen lintel, indicating that it had fallen prior to the date the hoard was deposited (ca. A.D. 1300). Pre-medieval strata were not reached in the gateway before the end of the season.

#### F) The Structure Against the West Enclosure Wall

A new area opened this season is the massive structure in the southwest corner of the fortress built against the west enclosure wall (Area M, Fig. 2). Planning demonstrated that it is not aligned perpendicularly with the enclosure wall (Fig. 8). The structure measures ca. 28 m. E-W along its southern wall x 25 m. N-S along

its eastern wall. The internal plan visible on the surface consists of four parallel E-W walls creating three long rooms. The walls are quite strong, just over one meter in thickness. The central room, almost 8 m. wide, is larger than the two flanking rooms, each ca. 6.5 m. wide. Brünnow and von Domaszewski speculated that this structure was a *horreum*.<sup>13</sup>

Three soundings were laid out to examine this structure. The goals were to determine the relationship between the structure and the enclosure wall, recover its stratigraphic history and more details of its internal plan, and test the suggested function of the building as a *horreum*.

A sounding at the join between the enclosure wall and an internal partition wall (M.3) revealed that the structure abutted and was not bonded into the enclosure wall. This implies that the building was erected sometime after the enclosure wall was constructed. Yet the quality of the fine ashlar masonry, quite similar in style to the enclosure wall, and recovery of Late Roman pottery from the foundations of the structure in the southern room (M.1) suggested that the building was erected only a short time after the fortress was built. Excavation also revealed that the building was roofed by a series of parallel limestone arches resting on springers built against the interior walls. The arches once carried stone roofing beams. The main entrance, which gave access into the central room, was found in the middle of the eastern wall. The original doorway, 3.70 m. wide, had later been reduced to just 2 m. Remains of a stone threshold and a projecting stone platform just outside the doorway were also exposed. An interior doorway was found connecting the central and southern rooms. The southern room was originally paved with a cobble floor which yielded Late Roman sherds.

Artifactual evidence from this building was extraordinarily sparse, partly due to a cleanout of the building for reuse as a stable in the Late Byzantine era. This was

13. R. Brünnow and A. von Domaszewski, *Die Provincia Arabia* (Strasburg: Trübner, 1904-09),

vol. 2, p. 35.

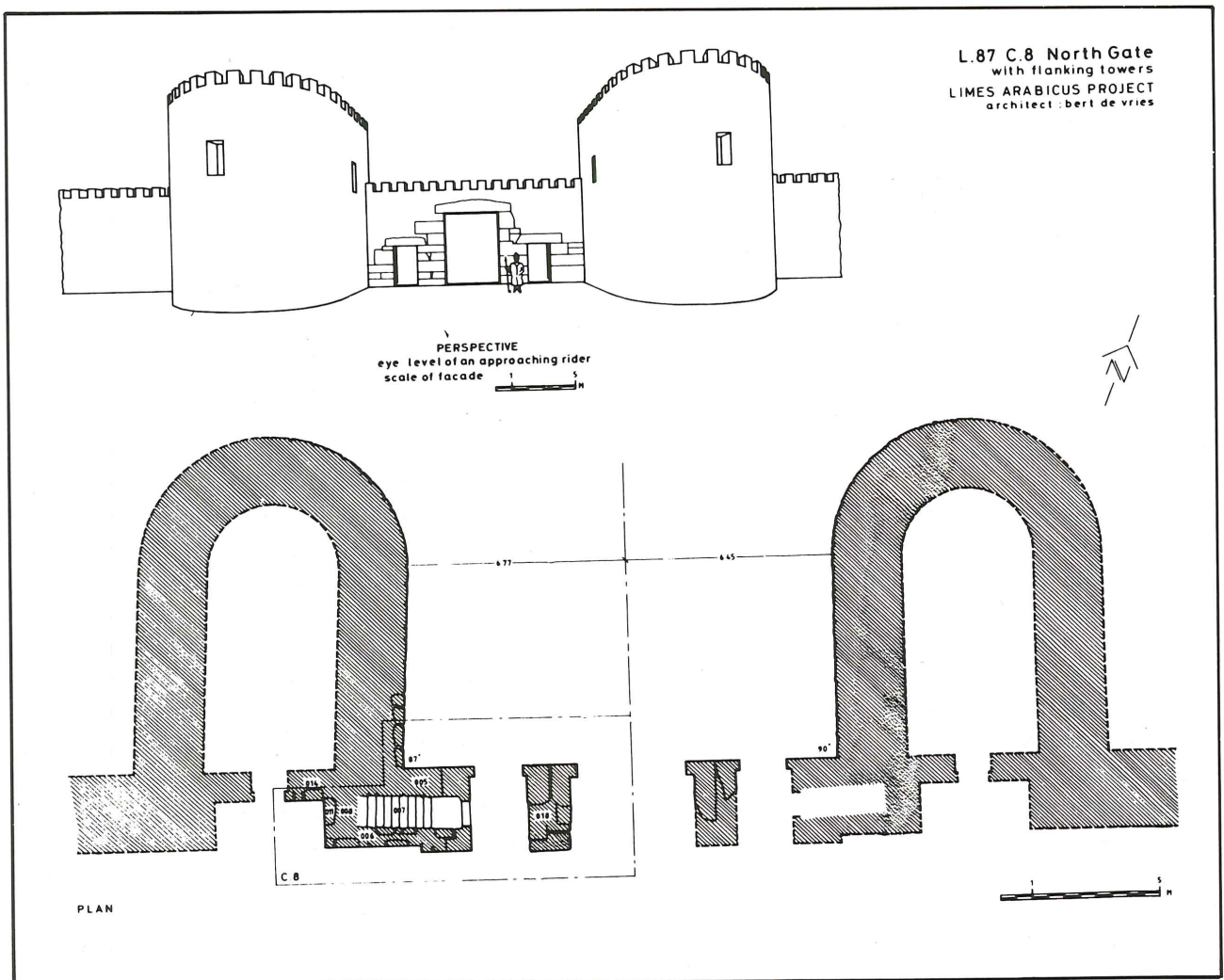


Fig. 7. The North Gate (*porta principalis sinistra*) with flanking interval towers.

suggested by thick layers of dung and holes drilled into several arch springers, paralleling evidence obtained from the northwest corner tower in this period. The question of the building's original intended function remains open. *Horrea* in the European provinces were usually located near the *principia* in the central range of buildings within Roman forts. They were built atop wooden or stone pillings supporting raised floors to permit ventilation. They also were often built with external buttresses to brace the (usually) wooden walls against the pressure of the grain stored within the rooms.<sup>14</sup> The building at Lejjūn, if in fact a *horreum*, is not conventionally located in the central range. No trace of either pillings

or buttresses was found. Yet the radically different climate of Arabia probably required no such ventilation to combat humidity. The platform in front of the entrance may be the remnant of the loading dock attested in European *horrea*. And the thick walls of the structure seem well suited to withstand the pressure of grain or other foodstuffs stored within the rooms. The issue of function requires further analysis.

#### G) Rooms Along the Via Principalis

Another new area (Area N) begun this season investigated the row of ten rooms north of the *principia* along the west

14. Anne Johnson, *Roman Forts of the 1st and 2nd centuries A.D. in Britain and the German*

*Provinces*, New York: St. Martin's 1983, p. 142-157.

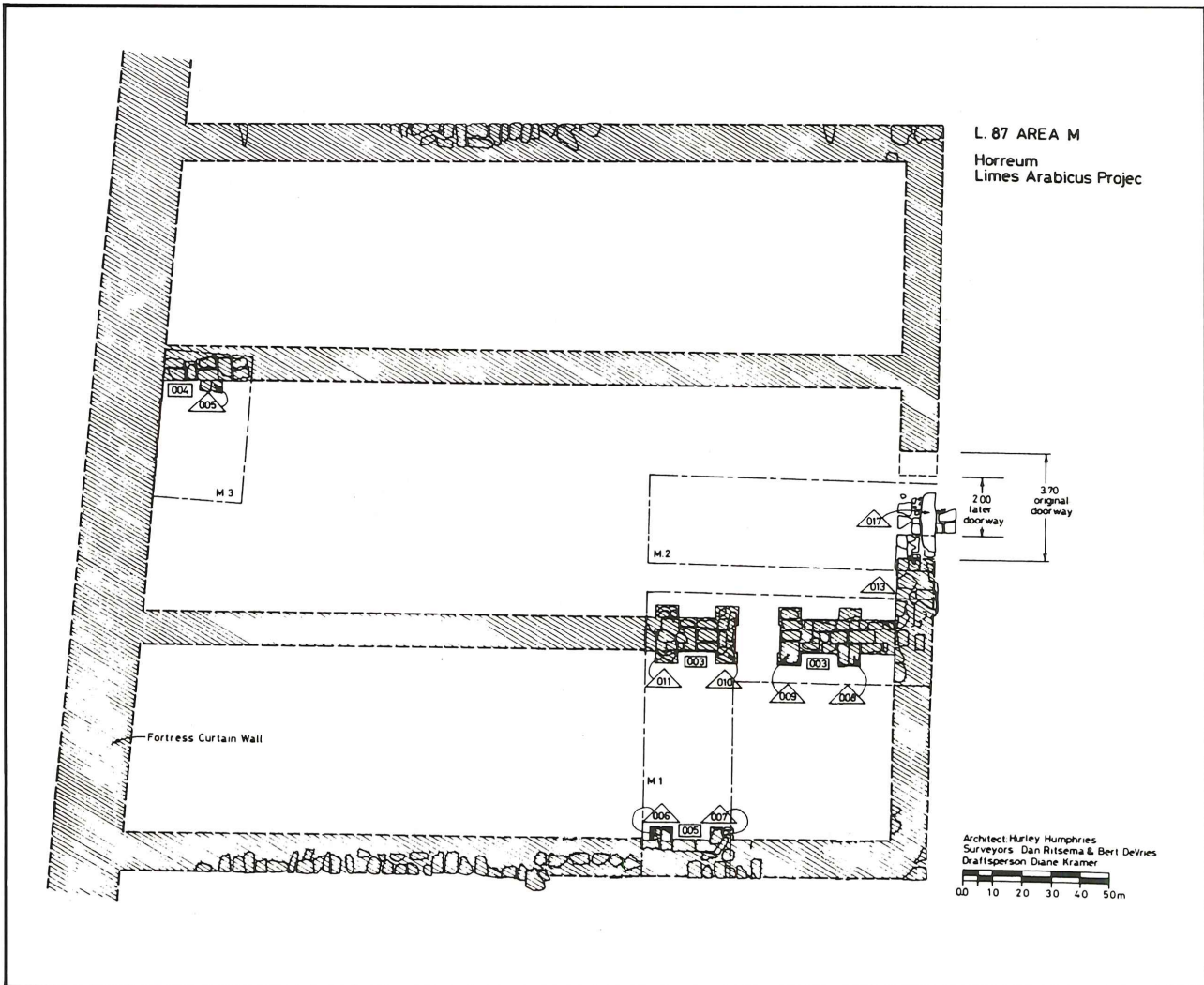


Fig. 8. Plan of the structure (possible *horreum*?) built against the west enclosure wall of the legionary fortress.

side of the *via principalis* (Fig. 2). Three rooms (N.1-3) were excavated (Fig. 9). Similar rooms in other Roman forts have been identified as storerooms, stables, workshops, or barracks. The primary goals were to recover their occupational history and determine their function.

All three rooms were constructed after the 363 earthquake atop the foundations of earlier Late Roman walls. Therefore this range of rooms, like so much of the fortress now visible, dates to the Early Byzantine Period. All the rooms contained identical architectural features. Each was roughly 5 m. square and entered from the *via principalis* via a doorway in the eastern wall. All three rooms were roofed in typical fashion by three parallel limestone arches springing from the north and south

walls and carrying oblong roofing beams. One room, N.2, was somewhat anomalous, as the arches on its southern wall rested on springers built against the wall rather than arches built directly into the walls.

The rooms seem to have suffered some damage in the 502 earthquake. The west and central arches in room N.1 collapsed and were not rebuilt. Thus Stratum III (Late Byzantine) occupation was confined to the eastern sector of the room near the doorway, where an oven (*tabūn*) suggested domestic use. The entire roof of room N.3 appears to have collapsed in 502. The debris was simply covered over and levelled by a thick fill so the room could be reused in Stratum III. It was given a new roof of the traditional arch and slab type.

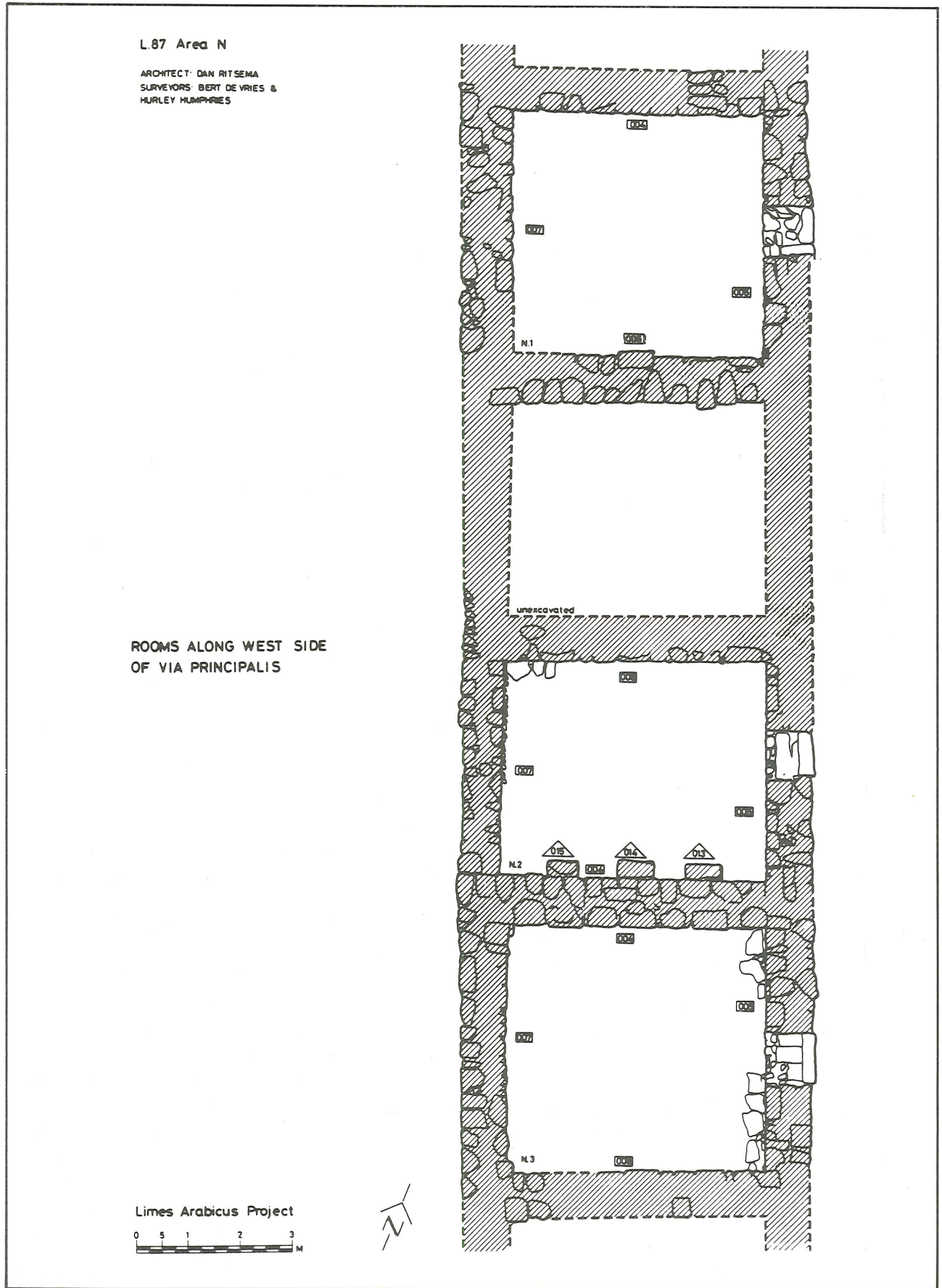


Fig. 9. Plan of rooms along the west side of the *via principalis*, north of the *principia*.

During Stratum III a human burial was placed against the back or western wall of room N.2. The fully articulated skeleton of an adolescent male was missing one arm and the head, perhaps carried off by scavengers. The presence of the burial and other evidence suggests that both rooms N.1 and N.2 were abandoned before the 551 earthquake, which apparently destroyed all three excavated rooms. Although their complete stratigraphic profile was recovered, the function of the rooms remains problematical.

#### H) The Reservoir

A circular depression in the northwest quadrant of the fortress (Fig. 2) had been tentatively identified as a reservoir or cistern based on surface observations. This was confirmed by excavation this season (Area O, Fig. 10).

Before the reservoir was built there were a number of Late Roman (Stratum VI) structures in this area. The portion of this complex of walls, floors, and installations exposed within Area O was largely obliterated by the reservoir construction. The limited area excavated along the outer edges of the reservoir was insufficient to determine its original purpose. But it may have originally served as barracks or perhaps as an industrial area.

The reservoir was dug sometime in the Early Byzantine period (Strata V-IV), as it cut through the earlier Late Roman structures. The roughly circular (ca. 5 m. in diameter) reservoir wall was constructed of well dressed limestone blocks laid in courses; the wall was sealed with plaster. Ringing the interior of the wall were the remains of stairs descending into the reservoir. The reservoir was excavated to a depth of 4.14 m., but its bottom was not reached. No inlet or channel has yet been found. Thus it cannot yet be connected to either of the channels discovered outside

the fortress that once carried water from the spring northwest of the fortress.

The lack of silt and a few air pockets within the reservoir suggest it was intentionally backfilled in a single operation, probably in the Late Byzantine period (early sixth century). The fill also contained a high concentration of ceramic slag, suggesting a kiln operation somewhere in the vicinity.

#### Soundings of the Watermills in the Wadi Lejjün

A major unresolved problem was the date of the series of five watermills in the lower Wadi Lejjün. These mills, of simple undershot type, were fed by a water channel and reached by a well constructed roadway along the north bank of the wadi (Fig. 11).<sup>15</sup> There seemed to be two possibilities for the use of these mills. They could have been built by the Roman garrison in the fourth-sixth centuries or by the Turkish military garrison at the turn of the twentieth century. Excavation of one mill (F.16) in 1982 failed to produce convincing dating evidence. Therefore, three other mills were excavated this season (F.17-19) to obtain dating evidence.

The results suggest that all the mills were in fact built in the Late Ottoman period. This was later confirmed by oral testimony from two elderly locals, who claimed that the mills were actually erected by Armenian settlers who lived with the Turkish garrison at Lejjün during the First World War. This explains the rather garbled story heard by Aurel Stein, who visited Lejjün in 1939. Stein reported that the "Armenian" settlement at Lejjün (i.e. the rows of Turkish military barracks lining the ridge southwest of the fortress) was given up "about ten years earlier" (i.e., ca. 1929) due to "malaria".<sup>16</sup> In fact, the Armenians left with the Turks near the end of the war in 1917-18.

15. For a full description, cf. Bert De Vries, 'The el-Lejjün Water System', p. 399-428 in Parker, *Interim Report*.

16. Gregory and Kennedy, *Aurel Stein's Limes Report*. BAR International Series 272. Oxford: British Archaeological Reports, 1985, p. 348.

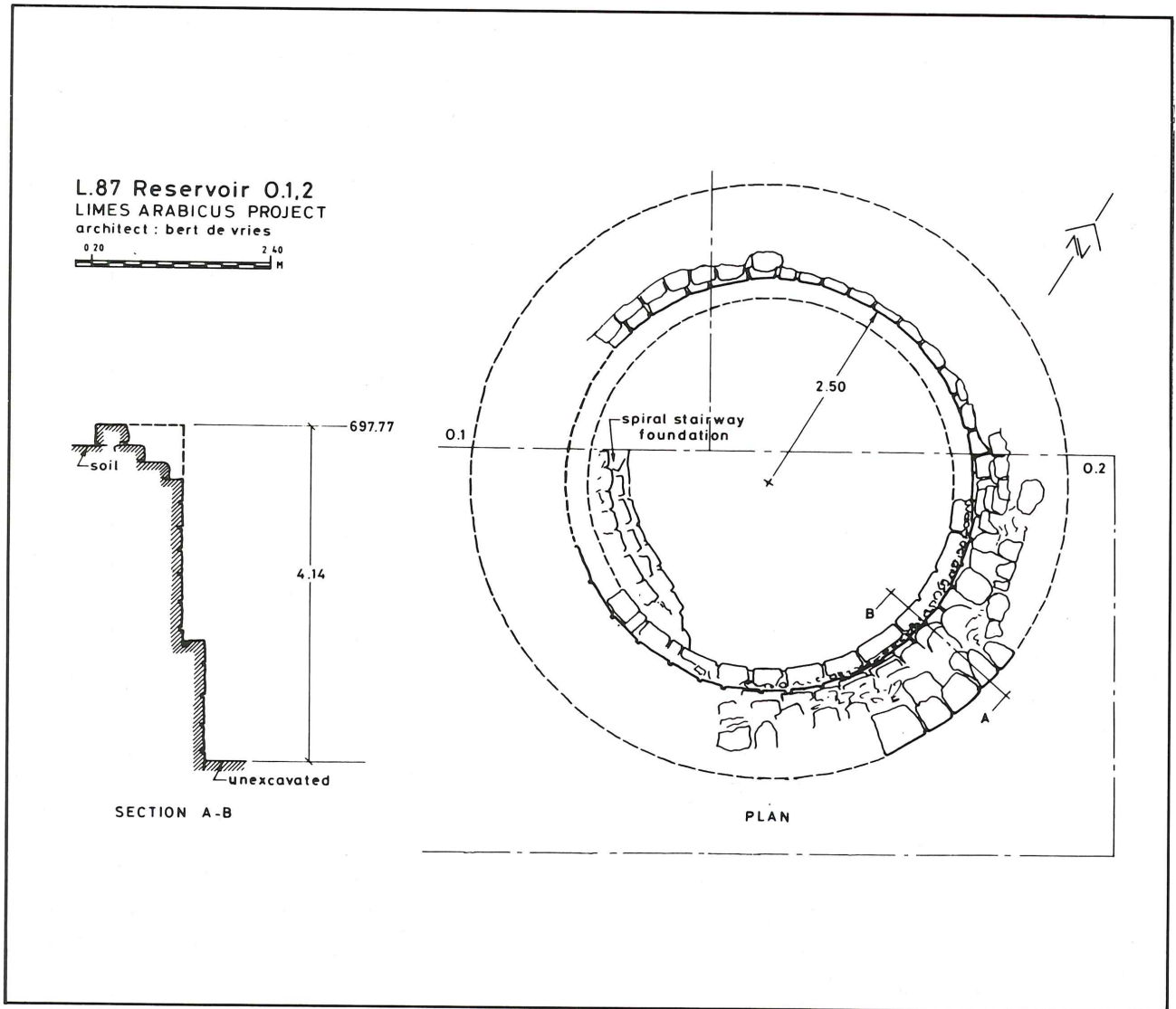


Fig. 10. Plan and section of the reservoir within the legionary fortress.

### Survey of the *Limes* Zone

Survey of the desert fringe east of the frontier was completed in 1985, with 109 sites recorded.<sup>17</sup> Substantial portions of the fortified frontier zone were surveyed in 1982 and 1985.<sup>18</sup> A few remaining gaps were covered this season, which marked completion of this component of the project. A total of 392 sites was recorded by the survey of the *limes* zone. Altogether, therefore, both surveys recorded a grand total of 501 sites, nearly all new additions to the archaeological map of Jordan.

The surveyed region within the *limes*

zone was bounded by the Desert Highway to the east, the Wadi es-Su'aydah to the north and the Wadi eḏ-Dab'ah to the west. The entire region is part of the upper Mūjib catchment and of course is a transitional zone between the desert and the sown. It served as the eastern desert frontier of three successive peoples: the Moabites, the Nabataeans, and the Romans. Each constructed a system of posts that controlled the nomadic tribes moving through the upper Wadi Mūjib and its tributaries. The deployment of these posts suggests that each group followed a somewhat different strategy. As long known,

17. Vincent A. Clark, 'The Desert Survey', p. 107-164 in Parker, *Interim Report*.

18. Frank L. Koucky, 'Survey of the *Limes* Zone', p. 41-106 in Parker, *Interim Report*.

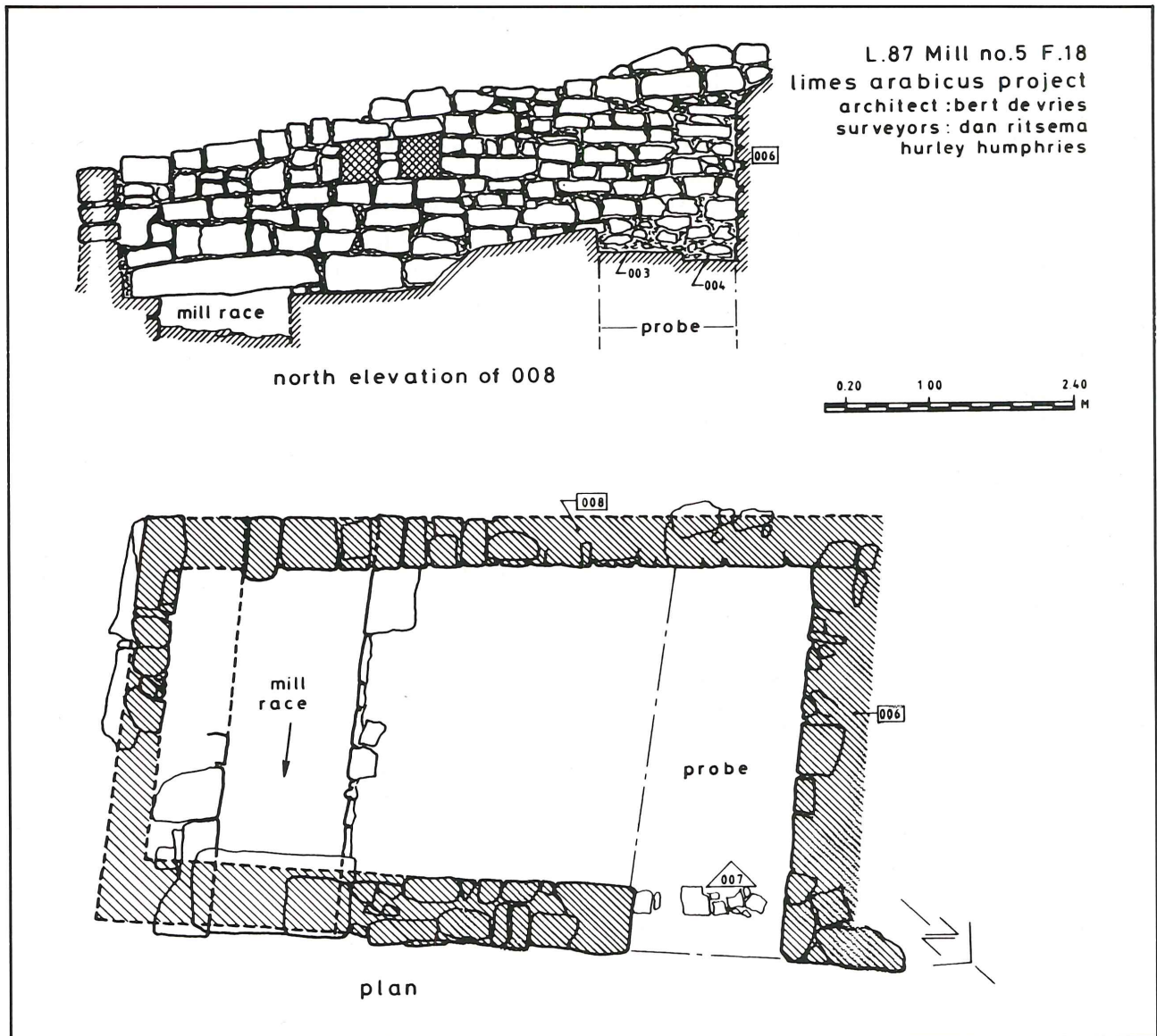


Fig. 11. Plan and elevation of Mill No. 5 in the Wadi Lejjun.

many of the ubiquitous watchtowers of this region were originally constructed by the Moabites or Nabataeans and reused by the Romans. Some towers appear to be of Roman origin. A number of nomadic campsites were also found within the *limes* zone.

The periods represented by the 47 new sites recorded in 1987 do not alter the overall picture of human occupation in the region. The well represented periods as evidenced by pottery and/or lithics are Paleolithic (to 35,000 B.C.), Chalcolithic/Early Bronze Age (4500-2200 B.C.), Iron Age (1200-539 B.C.), Early Roman (63 B.C.-A.D. 135), and Late Roman/Early

Byzantine periods (A.D. 284-500). The densest period of occupation appears to have been the Early Roman (Nabataean) era.

#### Historical Conclusions

The fourth season of the project focused on two principal areas: the Lejjūn legionary fortress and the completion of the survey of the *limes* zone. It is increasingly apparent that the extant legionary fortress, with a few notable exceptions, is largely the result of a major reconstruction after the earthquake of 363. The only portions of the Diocletianic for-

ness that survived largely intact were the fortifications, *principia*, the *groma*, and a few other structures, such as the problematic structure built against the west enclosure wall. Most other internal components were erected later, including the chert barracks in the eastern half of the fortress, the barracks south of the *principia*, the rooms along the *via principalis*, the animal enclosures in the northeast quadrant, and the reservoir, all of which appear to have been built soon after 363. The church, of course, was constructed even later, ca. 500. Even some structures that did survive the 363 earthquake, such as the *principia*, were thoroughly remodeled.

The first three seasons provided strong evidence of a shrunken, run-down garrison by the late fifth/early sixth century. This includes the abandonment of the *principia* and portions of the barracks by the early sixth century. Even the one new construction of this period, the church, is suggestive of local conditions. The church is small, and of rather poor and shoddy construction. Interestingly, most of the paving stones used as flooring in both the nave and sacristy appear to have been robbed out *before* the earthquake of 551, perhaps because the structure was no longer in use as a church by that date.<sup>19</sup>

The 1987 season provided further evidence supporting this general picture. This includes the backfilling of the reservoir and the abandonment of both the animal corraling area and several rooms directly adjacent to the *via principalis*. Intensive surface sherding of the buildings in the eastern *vicus* suggested that all dated to the Late Roman/Early Byzantine period and that none were occupied by the early sixth century. This corresponds to the evidence obtained from excavation of the *mansio* in the western *vicus*, which was destroyed by the earthquake of 363 and

never reoccupied.<sup>20</sup>

The interment of a human corpse in one of the rooms facing the *via principalis*, the major thoroughfare through the fortress, suggests that military discipline was especially lax by the early sixth century. The discovery of the infant casualty of the 551 earthquake in the angle tower suggests that families were living in the fortress, even in portions vital for security such as the fortifications. This evidence supports the interpretation advanced previously, that the garrison of Lejjūn may have been demobilized ca. 530 by Justinian.

The increasing evidence of a reduced and possibly even demobilized garrison at Lejjūn by the early sixth century is fully in accord with the results from the excavation of the three other fortifications excavated by the project and from the regional surveys. Both the *castella* of Qaṣr Bshīr and Khirbet el-Fityān and the fortlet of Rujm Beni Yasser were abandoned no later than ca. 500. The abandonment of Fityān is especially notable since it had formerly served as the hub of the regional observation and communication system.<sup>21</sup> The evidence from the surveys is equally dramatic. Virtually all the watchtowers, which functioned as the "eyes and ears" of the frontier defense, yielded no trace of Late Byzantine occupation. It seems certain that the Roman *limes* simply ceased to exist in this sector by the early sixth century.

Not surprisingly, the decrease in regional security is also reflected in a dramatic decline in regional population generally in this period. Many settlements in this transitional region between the desert and the sown were simply given up, although settlements located to the west on the Moabite plateau clearly survived. Justinian of course did not entirely abandon the provincial population to its fate. He cre-

19. Robert Schick, 'The Church at el-Lejjūn', p. 353-384 in Parker, *Interim Report*.

20. Patricia Crawford, 'A Building in the West Vicus of el-Lejjūn', p. 385-398 in Parker,

*Interim Report*.

21. Vincent A. Clark and S. Thomas Parker, 'The Late Roman Observation and Signaling System', p. 165-182 in Parker, *Interim Report*.



ated a Ghassānid “super-phylarchy” with responsibility for frontier security from the Euphrates to southern Transjordan that was intended to replace the now largely demobilized *limitanei*. But, at least as witnessed in the sector of the frontier east of the Dead Sea, the Ghassānids were

apparently incapable of providing the same level of security as the old *limes* of Diocletian.

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