

Excavations at Khirbat en-Nahas 2006

Area T

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Introduction

The following report details the excavations at Area T conducted at the site of Khirbat en-Nahas during the 2006 Edom Lowlands Project (ELP). The goals of the 2006 excavations at Khirbat en-Nahas were aimed at elucidating industrial metal production activities and its role in the evolution of social complexity and the chronological sequence during the Iron Age in the Edomite Lowlands. The field project was directed by Professor T.E. Levy (University of California, San Diego) and Dr. Mohammad Najjar (Department of Antiquities, Jordan). A team of archaeological students and volunteers in conjunction with local Bedouin laborers were responsible for the completion of the excavations. The team members were Misty Bravence, Hahn Doan, Marcus Dywer, Gregory Greenberg, Haley Holt, Jennifer Roland, Brooke Shelman, and Robby Sinick and Sonia Zawadski. The excavations at Area T were supervised by Adolfo Muniz (UCSD) with the guidance of Professor T.E. Levy and Dr. Mohammad Najjar.

Over a five week period, the members of the excavations at Area T removed thousands of large stones from wall collapse of wind-blown sands and miscellaneous fills accumulated over several millennia. A large Iron Age building constructed with large exterior walls encompassing four rooms, one tower, and an interior courtyard were unearthed. The structure was designed and occupied with two occupation floors. Although minute traces of metal production were found within the structure, the artifacts, numerous samples of carbonized wood and seeds recovered from the various strata will contribute in fleshing out the function of the structure including the periods of occupation. Similarly, evidence in the exterior of the structure will contribute to answering the larger questions surrounding the site of Khirbat en-Nahas and its role

during this phase of state formation in this region. Thus, the following sections present the new evidence extracted in light of the new excavations at Site T.

The layout of the report is divided into four sections. Section I explains the archaeological methods utilized throughout the excavation. Archaeological excavation methods and the digital recording system are presented. Section II gives a description of the Area T structure. Presented is a description of the area, the rooms and their associated dimensions. Section III presents the occupation phases identified during the excavation. Section IV covers the main rooms and presents the various stratigraphic layers identified and the related features and artifacts. Finally, Section V presents the conclusions and observations on the excavation..

Section I: Archaeological Methods

The methodology applied at Site T followed the standard archaeological methods employed for wide scale excavations and recording followed the procedures as set forth by the Edom Lowlands Project digital recording system. As previously mentioned, excavations were carried out by students, volunteers, and local Bedouin. Rocks from wall collapse were move by individuals and by wheelbarrow. Excavation tools included trowels, terrias (large hoes), picks, and handpicks, brushes, goofas (large rubber buckets), dustpans, and ¼ inch sieves. 1/8 inch sieve inserts were also utilized on fills recovered from above the floors or the interior of installations. The removal of wall collapse and fill were conducted by stratigraphic layers within defined structures or rooms. Rooms and the courtyard were excavated to floor level. Where no floor was present, excavations were excavated to floor level in the adjacent structures. Probes were conducted in the courtyard and each room to identify the strata below.

The control units were the locus, basket, and EDM number as previously set forth by the Jabal Hamrat Archaeological Project. All numbers were sequentially recorded by a Total Station (theodolite leveled on tripod, target (prism), and a Recon data collector operating Solofield software) as either point or polygon data. Each stratigraphic layer in every unit excavated on a given day was assigned a locus, basket, and EDM at the beginning of each day. The locus number defined the stratigraphy, the basket number was designated for the recovery of pottery shards, bone, lithics, copper ore and metal, slag samples, tuyere pipe and furnace fragments. Artifacts and ecofacts (including soil samples) were collected and transported to the lab for processing. “Special Finds” such as reconstructable pottery and special ceramics (other than the standard Iron Age body or rim shard), hammerstones, mining hammers, grinding stones, installations, semi-complete tuyere and bellow pipes and furnace fragments were assigned individual EDM numbers to record their provenience. The collected data points were digitally converted into two-dimensional scaled top plans on a daily basis.

Section II: Area T

Area T is centrally located in the northeastern part of the site of Khirbat en-Nahas (Figure 1). The eastern boundary of the site is adjacent to a *wadi* drainage. In fact, the southeastern corner of the site has collapsed into the *wadi* bed below. The site is situated approximately 35 meters east from Area R, 20 meter northeast of the 2002 Area S excavation, and about 17 meters north of a probe previous conducted by a German team. Area T Amidst the numerous mounds of slag and remnants of ancient structures, the stone debris from the area was hypothesized to be the remains of a tower. A probe was initiated to test this hypothesis. Furthermore, the probe was

initiated to date the structure in relations to the fortress wall and the gate (Area A) excavated in 2002.

Immediately, the removal of stones from the wall collapse revealed wall and room features. The probe became a full-scale excavation. Rock removal of wall collapse and fill from the exterior and interior of the structure revealed a well-designed building with four rooms, a tower, and an interior courtyard-Structure T (Figure 2a and 2b).

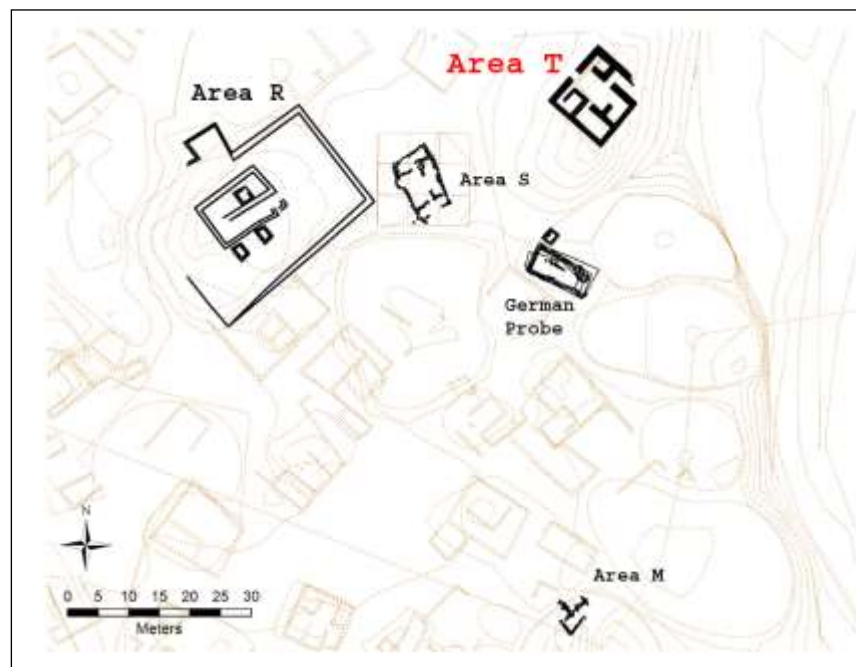


Figure 1. Map of excavations adjacent to Area T.

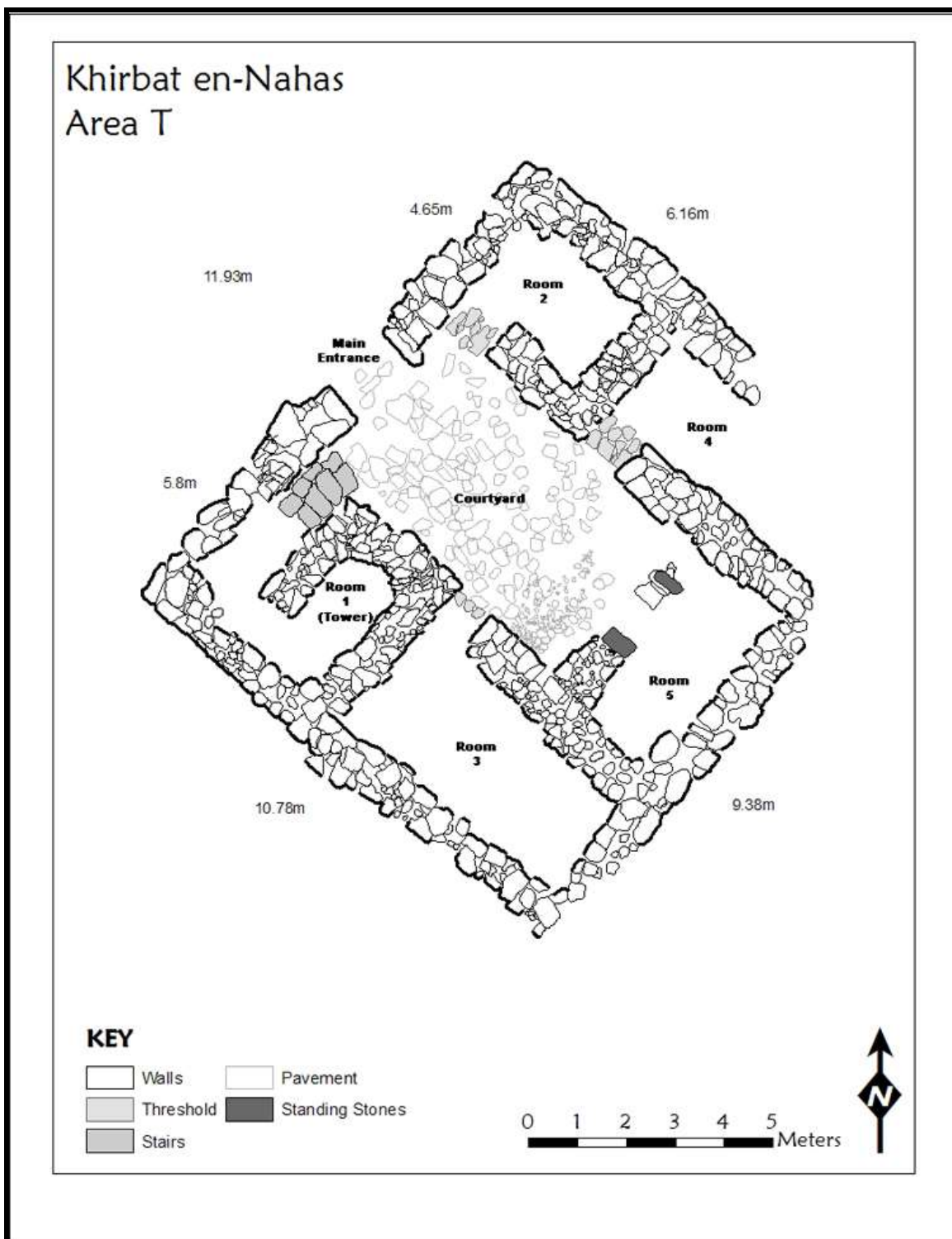


Figure 2a. Map of the Area T Structure and the associated rooms.

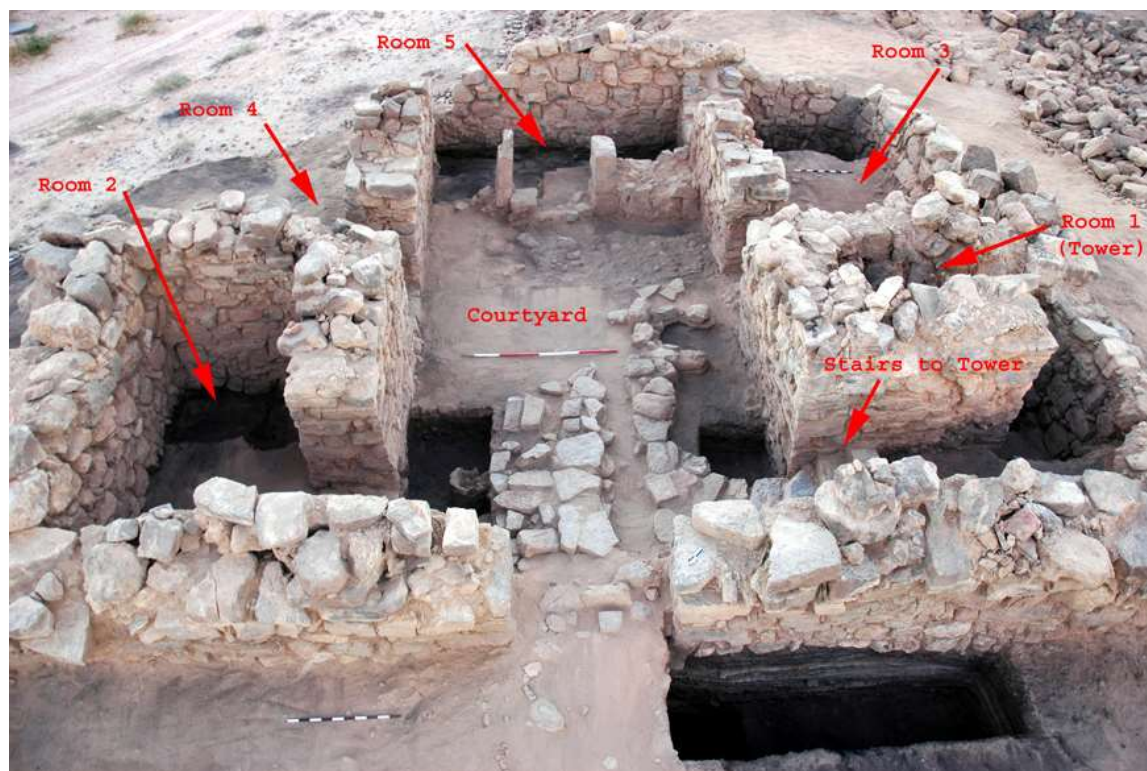


Figure 2b. Photo view of the Area T structure and the associated rooms.

The dimensions of the walls and rooms of the main structure are listed in Figure 2a and Table 1. The walls of the main structure have been constructed in two courses of large stones and are filled with medium to small stone debris. The height of the exterior walls varies across the site but is the lowest in the southwest corner of the structure. The walls in the interior rooms share similar construction attributes, although the height preservation of the walls vary across the structure, they are best in the central and northern areas. With the exception of Room 4, all rooms in the structure are well defined and have entrances with thresholds or stairs- suggesting the final excavated building may represent the original building design. A discussion of each room and the associated features is presented in Section IV following a brief discussion on the occupational phases at the structure.

Table 1: Area T room measurements.

| | | | | | |
|-------------------------------|---|---|--|--|--|
| Room 1 | Dimensions Length: 1.08 Width: 2.55 | North: wall 1543 Length: 1.5 Width: 0.8 Height: 2.36 Courses: 2 x 12 | East: wall 1544 Length: 1.15 Width: 0.97 Height: 2.57 Courses: 2 x 10 | South: wall 1545 Length: 2.6 Width: 0.96 Height: 1.86 Courses: 2 x 10 | West: wall 1540 Length: 2.9 Width: 0.97 Height: 1.91 Courses: 2 x |
| Room 2 | Dimensions Length: 1.94 Width: 1.90 | North: wall 1505 Length: 3.92 Width: 0.86 Height: 1.71 Courses: 2 x 8 | East: wall 1534 Length: 2.75 Width: 1.02 Height: 2.47 Courses: 2 x 9 | South: wall 1535 Length: 1.87 Width: 0.83 Height: 2.38 Courses: 2 x 11 | West: wall 1536 Length: 1.75 Width: 0.9 Height: 2.23 Courses: 2 x 11 |
| Room 3 | Dimensions Length: 5.64 Width: 2.60 | North: wall 1545 Length: 3.37 Width: 0.96 Height: 1.86 Courses: 2 x 8 | East: wall 1546 Length: 4.45 Width: 0.81 Height: 2.00 Courses: 2 x 8 | South: wall 1506 Length: 2.2 Width: 0.81 Height: 1.47 Courses: 2 x 5 | West: wall 1540 Length: 5.69 Width: 0.85 Height: 1.28 Courses: 2 x 4 |
| Room 4 | Dimensions Length: 5.45 Width: 6.1 | North: wall 1535 Length: 2.72 Width: 0.83 Height: 2.38 Courses: 2 x 10 | East: wall 1534 Length: 2.65 Width: 0.86 Height: 1.62 Courses: 2 x 6 | South: wall N/A Length: Width: Height: Courses: | West: wall 1538 Length: 5.1 Width: 0.9 Height: 2.02 Courses: 2 x 8 |
| Room 5 | Dimensions Length: 1.82 Width: 4.02 | North: wall 1537 Length: 1.6 Width: 0.6 Height: 0.76 Courses: 3 x 5 | East: wall 1538 Length: 2.09 Width: 0.9 Height: 2.00 Courses: 2 x 8 | South: wall 1506 Length: 4.2 Width: 0.92 Height: 2.02 Courses: 2 x 7 | West: wall 1546 Length: 1.72 Width: 0.81 Height: 2.00 Courses: 3 x 7 |
| Court- yard | Dimensions Length: 6.6 Width: 4.1 | North: wall N/A Length: Width: Height: Courses: | N-East: wall 1536 Length: 2.28 Width: 0.9 Height: 2.23 Courses: 2 x 9 S-East: wall 1538 Length: 2.17 Width: 0.9 Height: 2.02 Courses: 2 x 8 | South: wall 1537 Length: 1.6 Width: 0.6 Height: 0.76 Courses: 3 x 2 | S-West: wall 1546 Length: 1.6 Width: 0.81 Height: 1.96 Courses: 2 x 10 N-West: wall 1544 Length: 2.8 Width: 0.97 Height: 2.57 Courses: 2 x 10 |
| Exterior/ Entrance | | North-W: wall 1505 Length: 4.95 Width: 0.86 Height: 1.71 Courses: 2 x 8 North-E: wall 1539 Length: 5.78 Width: 0.9 Height: 1.70 Courses: 2 x 7 | East: wall 1534 Length: 7.23 Width: 1.02 Height: 2.47 Courses: 2 x 8 | South: wall 1506 Length: 8.32 Width: 0.92 Height: 2.02 Courses: 2 x 6 | West: wall 1540 Length: 11.35 Width: 0.97 Height: 1.91 Courses: 2 x 6 |

Section III: Occupation Phases and Associated Loci

Assigning of strata to the levels excavated was conducted in consultation with Director's T.E. Levy and M. Najjar. Excavations at Area T identified two surfaces of occupation respectively identified as Phase 2- the final surface of occupation, and Phase 1-the

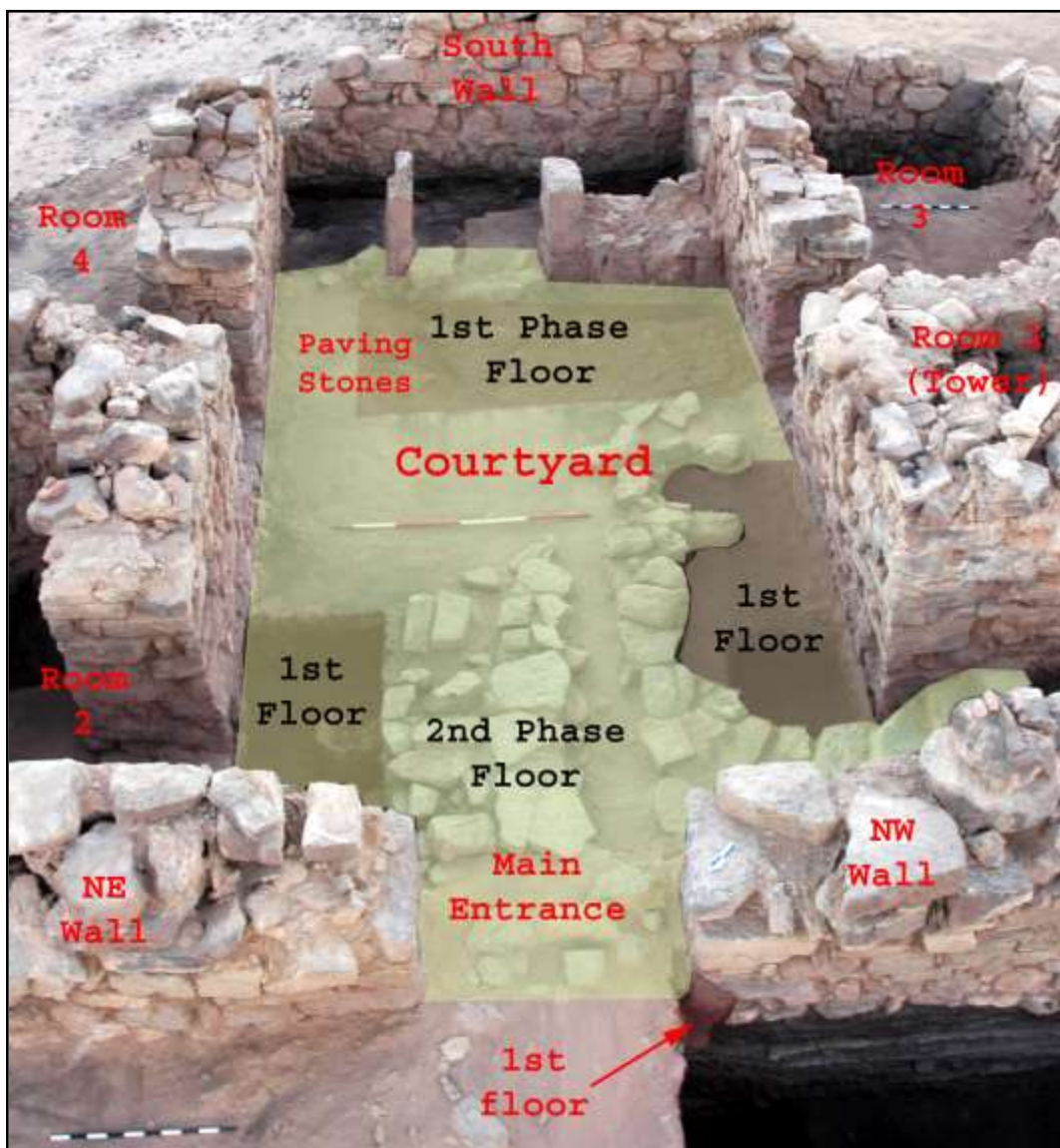


Figure 3. Photo depicting two phase of occupation within the main structure.

original surface. Figure 3 depicts the surfaces excavated in the interior of the courtyard. With the exception of Room 5, no surfaces were found within any of the other rooms in the structure. Traces of surfaces were, however, located in forms of small patches of compact mud associated with the final occupation phase. Similarly, evidence for activity areas in the exterior of the main structure were lacking. Given the slope of the foundation mound and the adjacent drainage, natural processes would have eroded and destroyed such features.

Overall, 106 loci (Appendix 1) were assigned to six strata- T1a, T1b, T2a, T2ab, T2b, and T3 (Figure 5). The Harris Matrix for Area T depicting the four strata and their assigned loci is listed in Figure 6. Loci in Stratum T1a represent the mound of wall collapse. The loci assigned to Stratum T1b consist of the fill and wall collapse. This stratum includes sediments removed from the interior and exterior of the main structure to floor level. Loci associated the final occupation phase has been assigned to Stratum 2a. This includes any ash layers associated with activity areas. Stratum T2ab is associated with both occupation phases. These include the thresholds to all the rooms and the stairs leading to the tower. Finally, loci associated with sediments excavated beneath the crushed slag layer- the foundation of the main structure- have been assigned to Stratum T3. Figure 6 presents a visual summary of the strata and the some of the key features which they represent. The individual strata are further discussed below and are then associated as they were excavated in each room (Section IV).

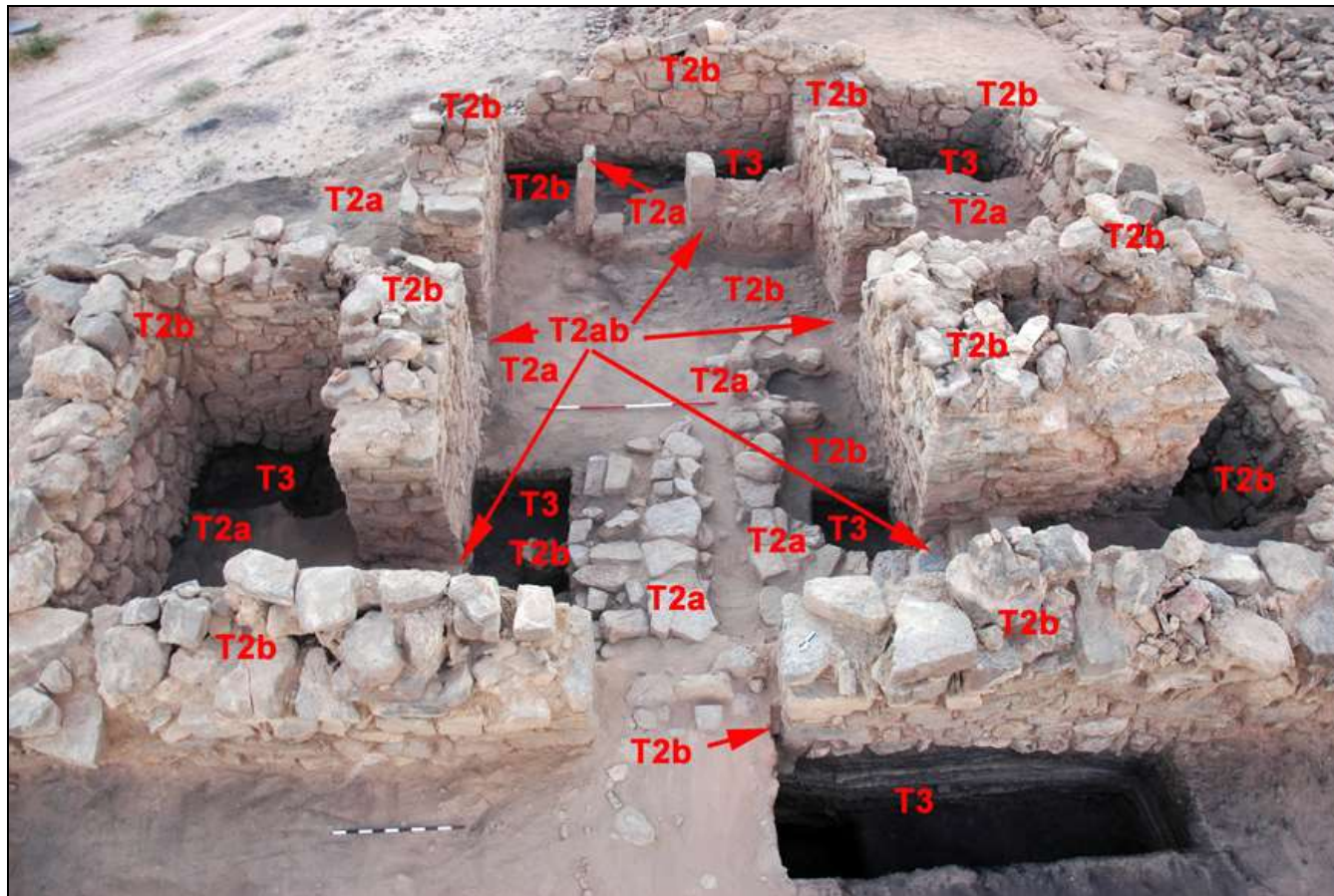


Figure 5. Area T main structure depicting features and their associated strata.

Area T Harris Matrix - Khirbat en-Nahas 2006

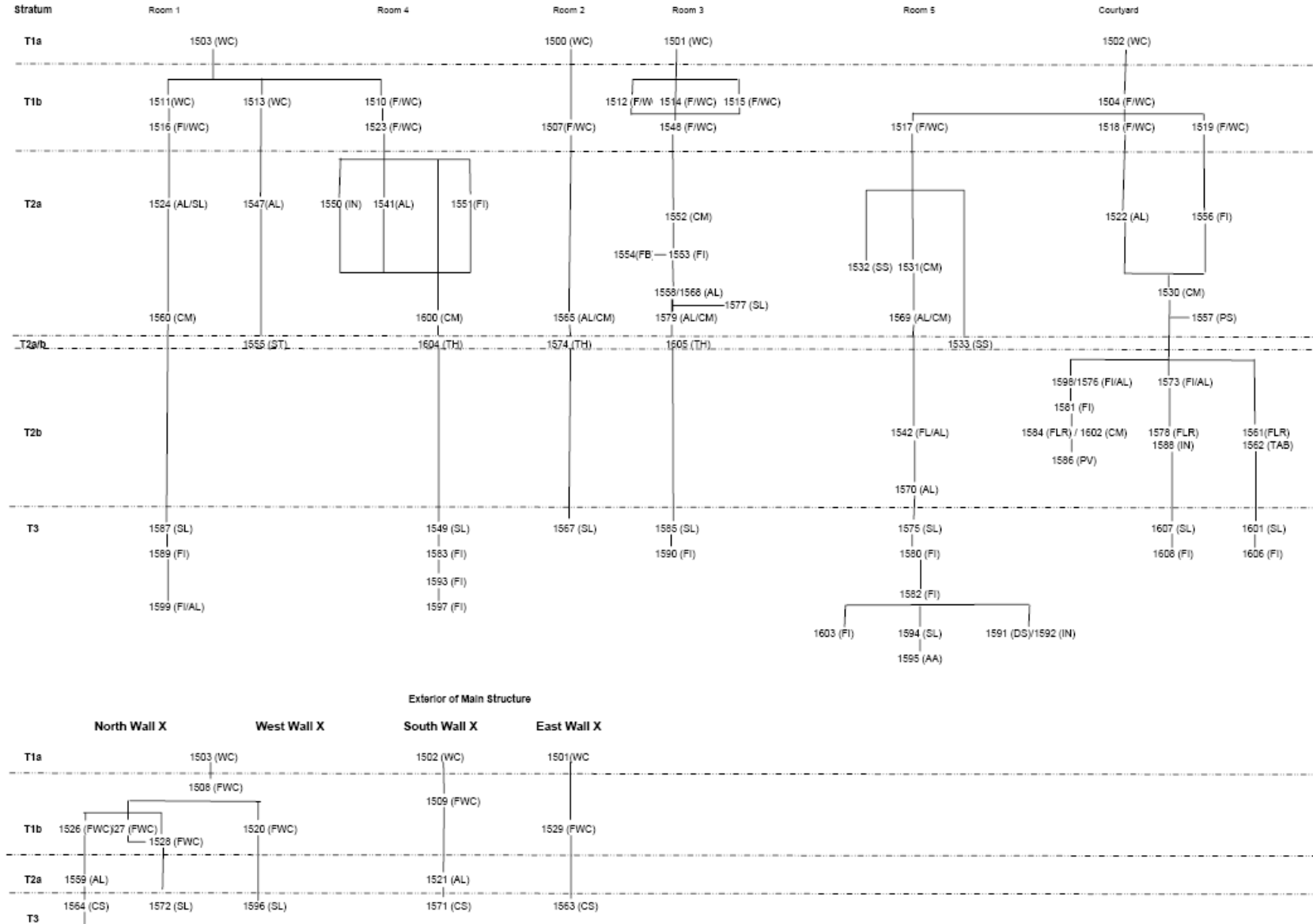


Figure 6. Area T Harris Matrix.

Stratum T1a

Loci identified as part of Stratum T1a were assigned to the collapse of rocks from the structure. The collapse consisted of a large mound of stones surrounding an area of fill and wall collapse (Figure 7). The wind-blown sands had accumulated over time and formed a semi-compact layer of sediment underneath the stones. The layer of wall collapse extended from the mound that made up the main structure and east along the drainage wall. The wall collapse consisted of medium, large to very large rocks-many of them contained traces of chipping from shaping the wall stones.



Figure 7. Stratum T1a wall collapse from the main structure-view from west (L) and from the east (R)

Stratum T1b

Fill and wall collapse removal associated with the interior and exterior of the main structure have been assigned to Stratum T1b. Once the upper layer stones from the wall collapse were removed, loose accumulated wind-blown sands mixed with stone debitage and structural collapse from the main structure was found underneath (Figure 6).



Figure 8. Stratum T1b- fill beneath wall collapse.

Stratum T2a

Stratum T2a represents the final occupation level of the structure of Area T. There are several areas associated with this phase of occupation (Figure 3 and Figure 5). Stratum T2a sediments and surfaces include the ash layers mixed with patches of compact mud located inside Rooms 1, 2, 3, 4, and 5. However, the main surface from this stratum comes from the courtyard. A layer of paving stones (Figure 9) beginning at the entrance (L. 1557) to the structure extends to the stairs (L. 1555) to Room 1 (Tower) and the central courtyard (Room 5) and were embedded in a layer of compact mud. Similarly, the compact mud mixed with ash was found throughout the various rooms. Thus, any possible activity areas located inside and outside the structure have been assigned to this stratum.

Room 5, situated in the southern section of the structure, was the only room where the true Stratum T2a surface was located. The surface in this room was a reddish colored compact

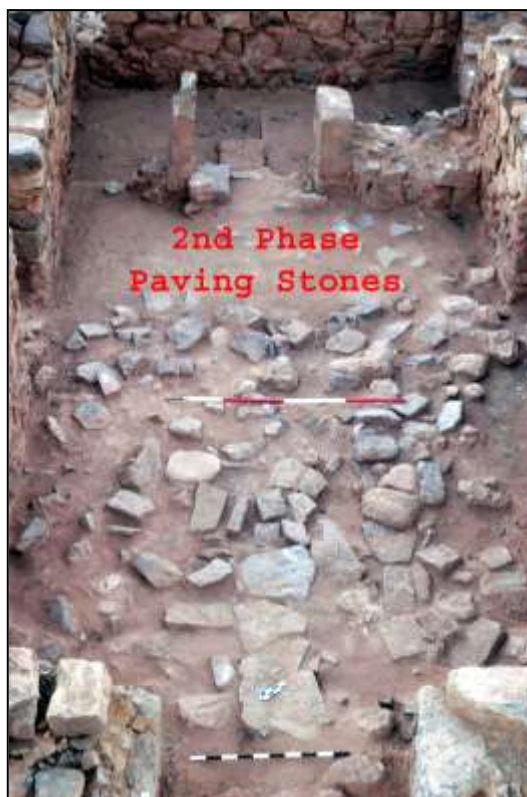


Figure 9. Stratum T2a paving stones in the courtyard and in the area behind the standing stones located in Room 5. L. 1533 is the stone on the left.

mud plaster mixed with patches of dark-grey fill. The surface was particularly prevalent in the vicinity of the standing stones (L. 1532 and L. 1533) and the adjacent small paving stones. Only the eastern paving stone (L. 1533) appears to have been added during this phase of occupation. The stone sits on a flat rock that doubles as a platform and part of the surface. Beneath the platform is a layer of fill that reaches the first occupation phase.

Stratum T2b

The evidence for Stratum T2b, the original occupation phase of the structure comes from two main sources-the courtyard, the walls of the structure and Room 5. The areas are depicted in Figures 3 and 5. In the courtyard, a layer of paving stones underneath a compact mud layer mixed with ash was unearthed (Figure 10). This layer was found beneath the first layer of

paving stones discussed above in Stratum T2a. Similarly, at the entrance to the structure, a layer of paving stones was found underneath a layer of compact fill beneath the final occupation entrance. Two probes initiated at opposite ends of the courtyard revealed similar results. Both probes revealed a compact mud surface containing artifacts *in situ*. These are further discussed in the following section.

Associated with Stratum T2b are the walls of the rooms and the main structure. The evidence is derived from the foundation of the structure; the layer of crushed slag found beneath all the walls. Other than the standing stone (L. 1533) no other additions are evident.



Figure 10. Stratum T2b surface uncovered in the southern section of the courtyard.

In Room 5, a hard compact mud surface covered in a dark grey ash layer was found beneath the first surface. A fire installation was found in the western section of the room at surface level. Underneath the floor, many fragments of a metallurgical nature were recovered. It does not appear these fragments are related to a production activity, but were used as part of a mixed sediment to raise the floor in this sloping section of the structure.

Stratum T2ab

Stratum T2ab encompasses several features and installations that appear to have been used throughout both occupation periods. These include standing stone (L. 1532) and the three

thresholds associated with the three rooms, and the stairs leading to Room 1 (the Tower). These areas are associated with both surfaces as indicated by the foundations of the wall in Stratum T2b and the paving stones located in Stratum 2a.

Stratum T3

The crushed slag layer found beneath the first occupation surface defines the boundary of Stratum 3. The associated stratigraphy below the slag layer was excavated without reaching bedrock. A dark-brown sediment with layers of a light color wind-blown sand were encountered. With the exception of the eastern probe, excavations below Stratum 3 failed to reach sterile deposits.

Section IV: The Rooms of Structure T



Figure 11. Room 1 (Tower) and affiliated entrance and stairs.

Room 1: The Tower

Room 1 (Figure 11), known as the Tower is the room situated in the northwest corner of the Structure T. The main north wall (Wall 1539) defines the entrance to the room and the northern interior wall of the room (Wall 1543). Four stairs (Figure 4), each constructed with flat stones, pave the way into a small alley that leads to the entrance of the main room. Although no more stairs were unearthed, in situ, similar flat stones were recovered from the collapse in this area.

Three walls define room 1. The north wall (L.) which doubles as the south wall for the alley, an east wall (L.), and a south wall. The dimensions of the small room are listed in Table

1. The entrance to Room 1 is situated between Wall (1543) and the western wall of Structure T (Wall 1541).. The room was probed to a depth just below four meters. The bases and the foundations of all three walls were revealed. The north wall is the shallowest of the three and was constructed on a layer of fill. This type of foundation varies from the east and south wall as their foundation consists of a layer of densely packed crushed slag.

Room 1 Stratigraphy

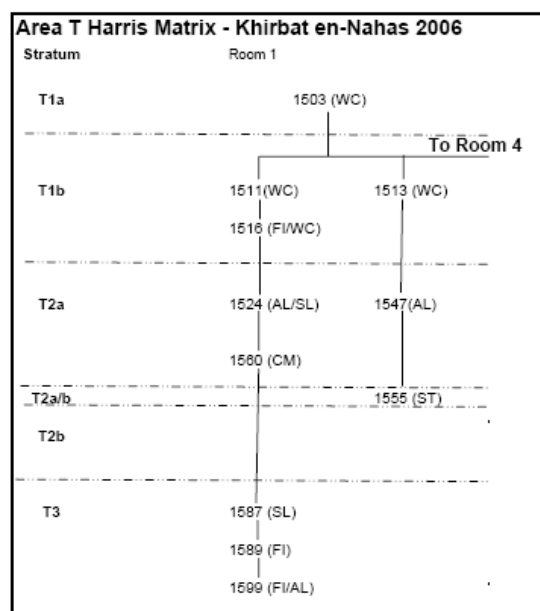


Figure 12. Strata affiliated with Room 1 (Tower)

The Harris Matrix for the stratigraphy identified in Room 1 is listed in Figure 3b. The associated loci with Room 1 are divided into two excavation areas-the main room and its' associated entrance. The loci for Room 1 are L. 1503, L. 1511, L. 1516, L. 1524, L. 1560, L. 1587, L. 1589, and L. 1599. The loci are distributed within four different strata. Stratum T1a is identified by the numerous amounts of wall collapse found on the surface of the area. The stones varied in size and in many cases, several individuals were required to move them. Beneath the wall collapse, a sediment layer consisting of wind-blown sands had accumulated in the wall

collapse. The stratum at this level is identified as T2b. Stratum T2b encompasses the final occupation phase at Structure T and includes all the walls and the associated collapse. The removal of the wall collapse and fill in the interior of Room 1 revealed a sediment layer of ash mixed with large amounts of slag and other artifacts. Approximately 2046 kilograms of slag were recovered from L. 1524. Also recorded were 47 partially complete tuyere pipes, two large furnace fragments, 28 samples of carbon, 7 samples of slag containing carbon, worked stones, grinding stones, hammerstones, and one fragment of Cypro-Phoenician pottery. The locus continued for approximately 2 to 2.5 meters. L. 1580, the fill beneath the ash layer consisted of a thick layer of compact mud fill. The layer ends at the crushed slag foundation that defines the boundary of Stratum III.

The second area excavated in Room 1 was the area to the north. The removal of the fill and wall collapse, L. 1503 and L. 1513 revealed a fill composed of sand sediments mixed with ash. Excavation of the ash layer ceased when the top stair (L. 1555) was uncovered. However, excavation in the adjacent area of the courtyard (see below) revealed a total of our stairs.

The fill removed from within Room 1 provides evidence as to the function of this room. The interior of the room was filled in antiquity with debris typically found in a midden. Similarly, the compact mud layer below the ash layer L. 1524 was deposited for a specific purpose. Both fills found within the small structure were most likely used to stabilize and support stairs leading to a tower facing the interior of the site.

Room 2

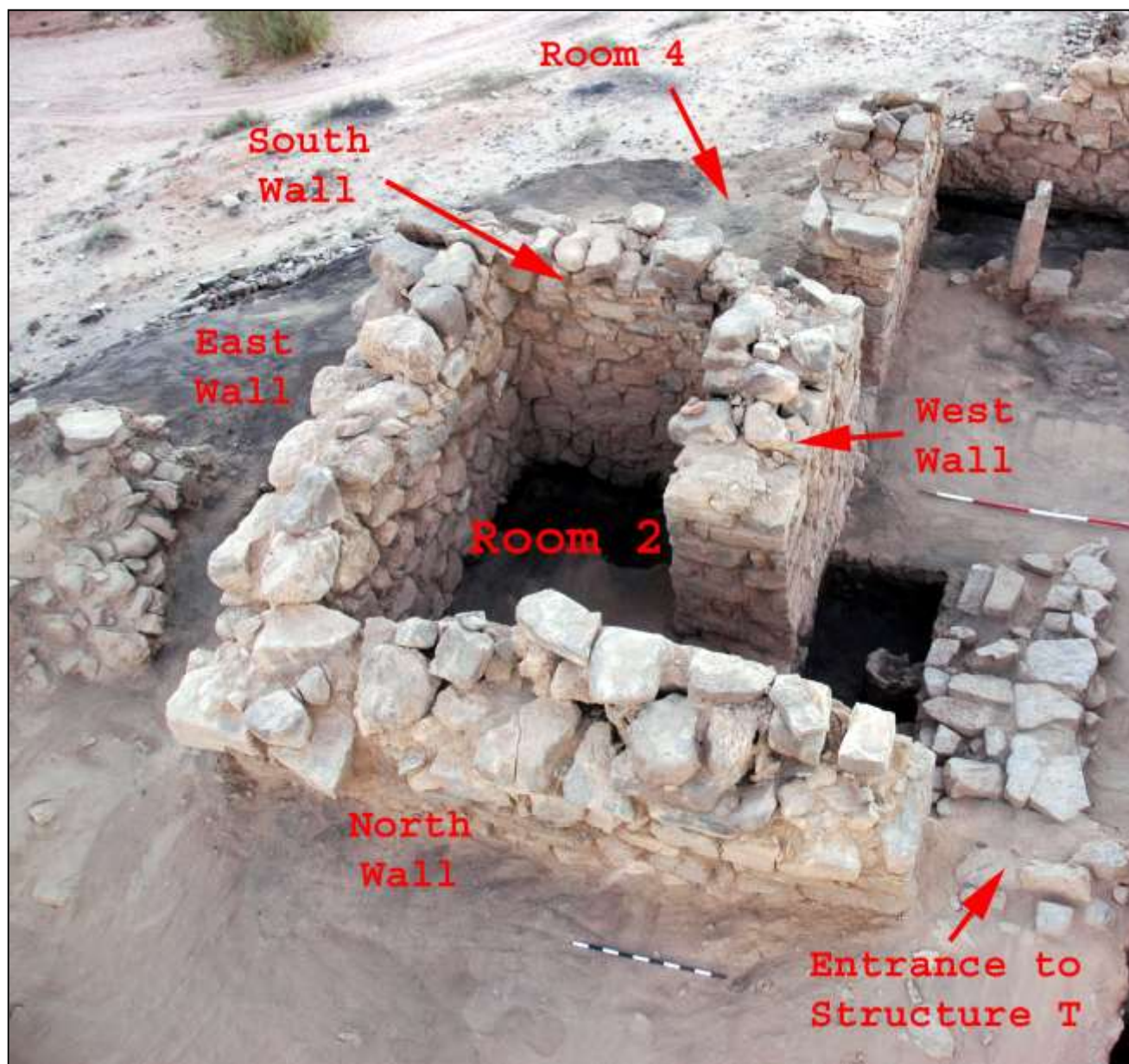


Figure 13. Room 2 and affiliated features.

Room 2 (Figure 13) is situated in the northeast corner of Structure T and is defined by four walls. The dimensions of the room are listed in Table 1. The room is defined in the north and east by the interior of the north (L. 1505) and east (L. 1534) walls of the main structure.

Wall (L. 1535) defines the south wall, and Wall (L. 1536) defines the west wall. A threshold comprised of 2 courses wide x 1 course high was uncovered at the entrance between this room and the interior courtyard.

Room 2 Stratigraphy

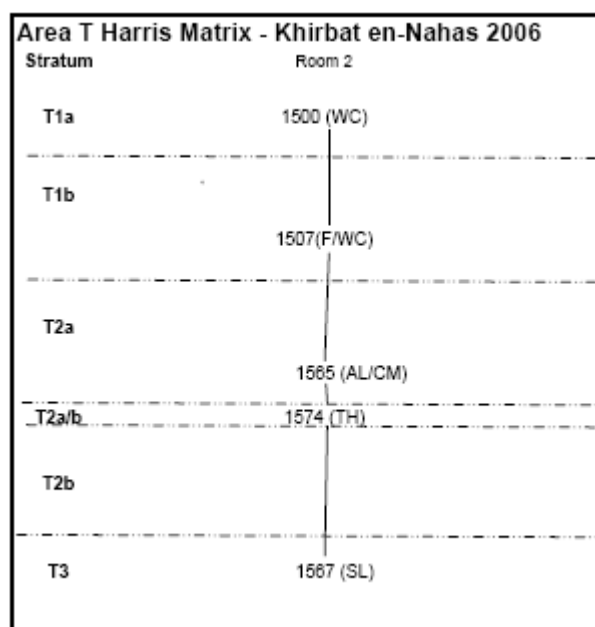


Figure 14. Room 2 affiliated loci.

The room itself was excavated to an ash layer containing small patches of compact mud just below the threshold level. However, no significant surfaces were located within these excavations. Similarly, a probe in the southern part of the room was excavated well below the base of the east, south and west walls. While the probe failed to identify any surfaces, it did reveal a large layer of crushed slag immediately beneath all three walls.

The function of Room 2 is not entirely known. However, the artifacts recovered from this room include several large grinding slabs. Following the types of artifacts recovered, the

most logical conclusion is that the function of this room was domestic in nature or served as a storage area.

Room 3

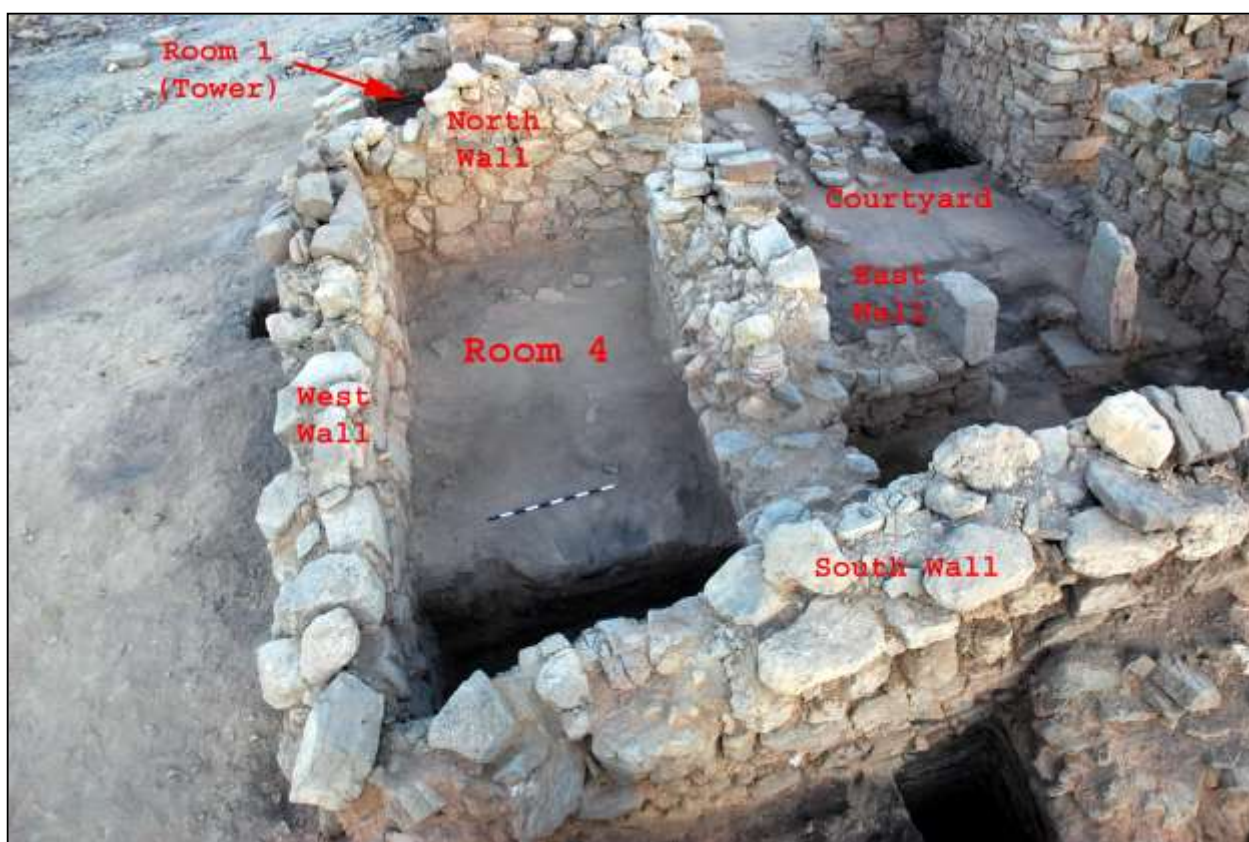


Figure 15. Room 4 and affiliated features.

Room 3 (Figure 15) is situated in the southwest section of Structure T and is the largest of the five rooms found within the main building. The room measurements are presented in Table 1 . The north wall (W. 1545) is the dividing wall between this room and Room 1. The west (L. 1540) and south (1506) walls of the main structure define the southwest corner. This

corner is also the lowest point of the mound on which the structure was constructed. The walls at this corner are also the lowest in height. The east wall (L. 1546) separates this room from the courtyard. A small threshold (L. 1605) composed of a single row of stones separates the entrance from Room 3 into the courtyard.

Room 3 Stratigraphy

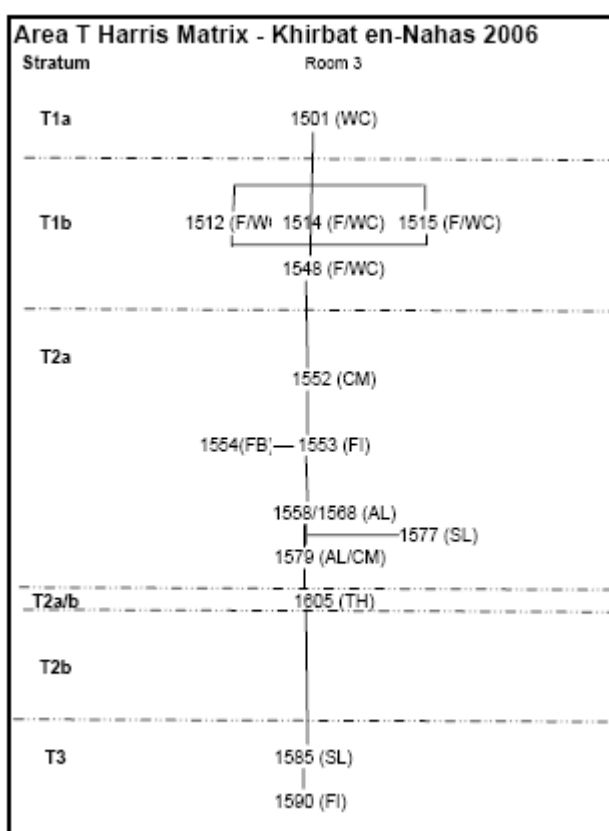


Figure 16. Room 3 affiliated strata.

Similar to Room 2, there were no surfaces found in this room. A probe initiated in the southern section of the room yielded similar results. Excavations reached the base of the west,

south, and east walls and went beyond the crushed slag layer that serves as the foundation for the main structure.

The function of the room is also questionable and given it is the largest room in Structure T, it could have served as an administrative room or living quarters. Other than the pieces of slag, animal bone, pottery shards, and one small installation (L. 1553-Figure 17) of an unspecified nature, no other significant artifacts were recovered. Samples of the installation were collected for analysis for the Project's archaeometallurgist and are currently pending.



Figure 17. Unidentified artifact found in Room 3.

Room 4



Figure 18. Room and affiliated features.

Room 4 (Figure 18) is located in the southeast section of Structure T. The room is incomplete and is missing the south wall. The room is defined by Wall 1535 in the north, a small section of Wall 1534 in the east, and Wall 1538 in the west. The majority of the east wall, including the southeast corner is absent and its remnants were evident in the drainage cliff below. Given the missing section of the room opened towards the drainage, the fill and wall collapse deposited in this area created a terrace in the southern opening.

Room 4 Stratigraphy

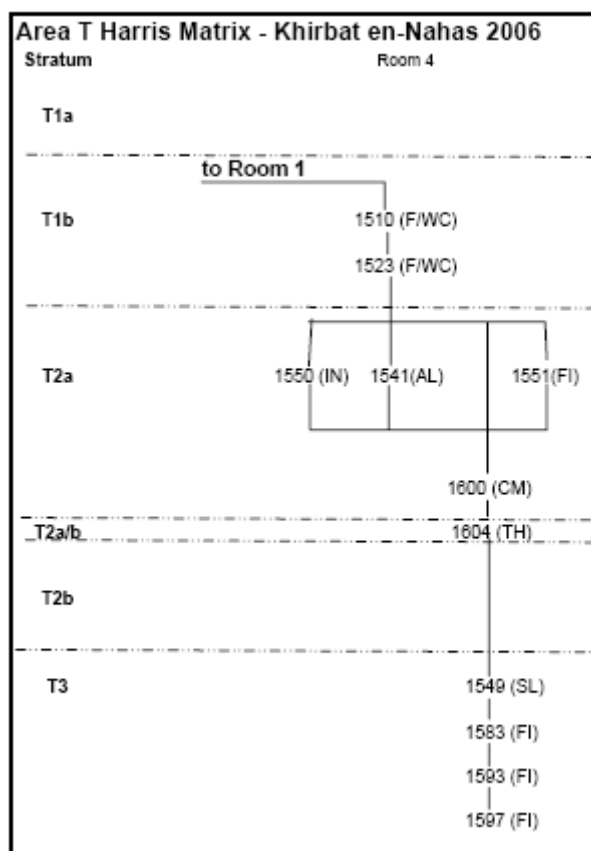


Figure 19. Strata affiliated with Room 4.

Fill and wall collapse removal in this room revealed a possible installation along the north wall (Figure 18-Left). The installation was comprised of several stones and contained pottery shards and a large piece of tap slag. Along the western wall in an ash layer above a layer of crushed slag (foundation), several shards of Cypro-Phoenician pottery (Figure 20), dating to the mid-9th Century was recovered.

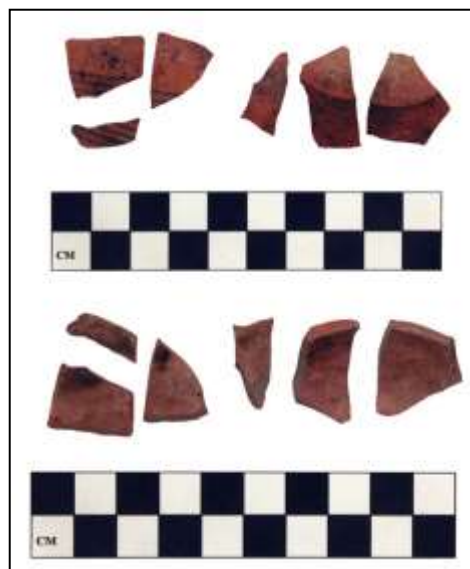


Figure 20. Cypro-Phoenician ceramics recovered from Room 4. Other similar pieces were recovered in Rooms 1 and 5.

The best preserved threshold (Figure 21) in Structure T was unearthed in this room. The threshold consists of a four courses wide and one course high installation that leads into the eastern sector of the courtyard into the first occupation phase.



Figure 21. Threshold at the base of entrance to Room 4.

Excavations in Room 4 were conducted without reaching any surfaces. In the interior of Room 4, the threshold contained the best evidence of a possible surface. Traces of compact mud-plaster were unearthed on small stones adjacent to the threshold (L. 1600). A probe was initiated in the north section of the room to find further evidence of any possible surfaces. The probe contributed no additional information in regards to any possible surfaces; however, it did reveal the base of the three walls and their associated foundation-the layer of crushed slag.

The function of Room 4 is difficult to discern due to the loss of the wall and the erosion processes that occurred within the structure. However, given the size and layout present, it follows the function of this room is similar to Room 3 and may have served as an administrative area or living quarters during both occupation phases.

Room 5



Figure 22. Room 5 and affiliated features.

Room 5 (Figure 22) is situated in the southern section of Structure T. Originally believed to be part of the courtyard, the room is defined in the north by two standing stones, L. 1533 (1), and L. 1532 (2) part of a small wall/platform (L. 1537). Wall 1546 in the west, the main south

wall (Wall 1506) in the south, and Wall 1538 in the east complete the room. The northern boundary of the room based on standing stone 1 (L. 1533) is at best, questionable. The standing stone is resting on a flat stone that is level with a compact mud floor in the interior of the room. Therefore, it follows that this stone once did at one time delineate the boundary of this room. Standing stone 2 is situated on a large square stone that is part of the western wall or platform that is shared with both Room 5 and the courtyard.

Room 5 Stratigraphy

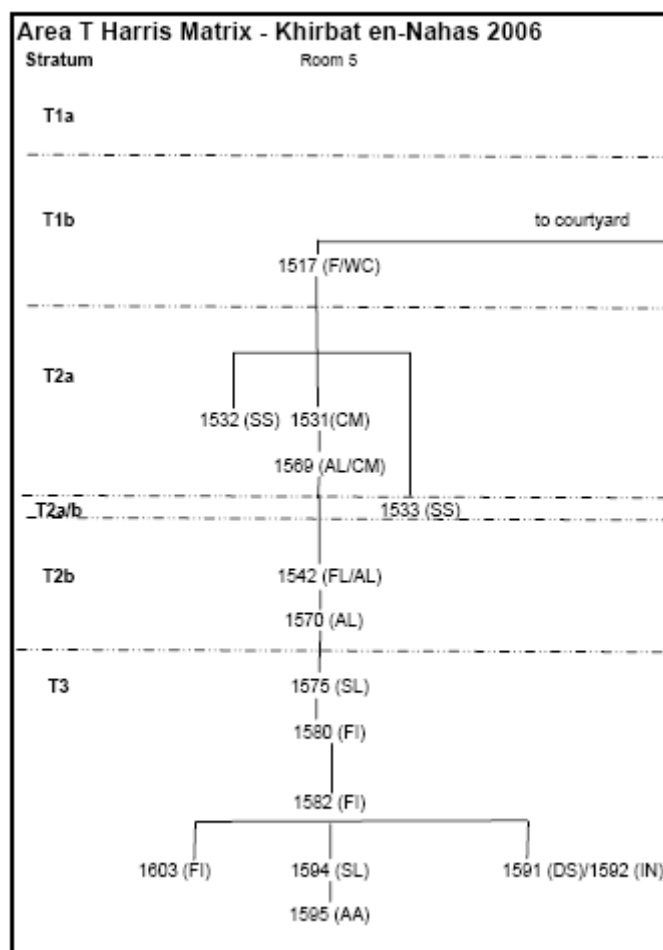


Figure 23. Strata affiliated with Room 5.

Excavations in the interior of Room 5 revealed two occupation surfaces (discussed below). The final occupation surface was composed of an dark ash layer with patches of compact mud and scattered paving stones. Underneath the first surface a second surface containing a fire installation (L. 1542-Figure 24) was unearthed. Adjacent and beneath the surface numerous amounts of furnace, tuyere pipe, and bellow pipe fragments were recovered. Whether these artifacts were part of the installation or part of the fill used to level the surface is



Figure 24. Fire installation located in the first occupation floor..

open for debate. However, if metal production did occur inside this structure, Room 5 contains the most evidence.

A trench was initiated at the southwest corner of the room. Below the base of the walls and well into the slag layer that served as the foundation of the structure, a door socket adjacent to a fire installation was uncovered (Figure 25). In the west area adjacent to the slag layer that contained the artifacts, the contour of the landscape turned downward and had been leveled to the slag layer.



Figure 25. Artifacts found below the first occupation surface.

Courtyard

The Courtyard (Figure 26) begins north of Room 5 to the north main wall beyond the entrance to Structure T. Two surfaces were uncovered in this area. The first surface (L. 1557-2nd occupation phase) was identified at the base of the stairs and encompasses the series of paving stones throughout the courtyard (Figure 14b). In the southern section of the Courtyard, along Wall 1537 and the two standing stones, a second surface (L. 1602-1st occupation phase) was identified. The areas where the surface were highlighted in Figure 3 and in Figure 26. The stratigraphy excavated is presented in Figure 27.



Figure 26. Courtyard and affiliated features.

Courtyard Stratigraphy

As previously stated, the thresholds from Rooms 2, 3, and 4 were used throughout the occupation of the structure, as they are clearly part of both surfaces. A probe (Figure 28) initiated adjacent to the stairs indicates both surfaces are clearly present. The 2nd occupation surface is defined by the bottom of the large paving stones that begin at the entrance. As they progress south towards the center of the courtyard, they are elevated from the first surface by additional paving stones indicating the stairs and the tower were used throughout

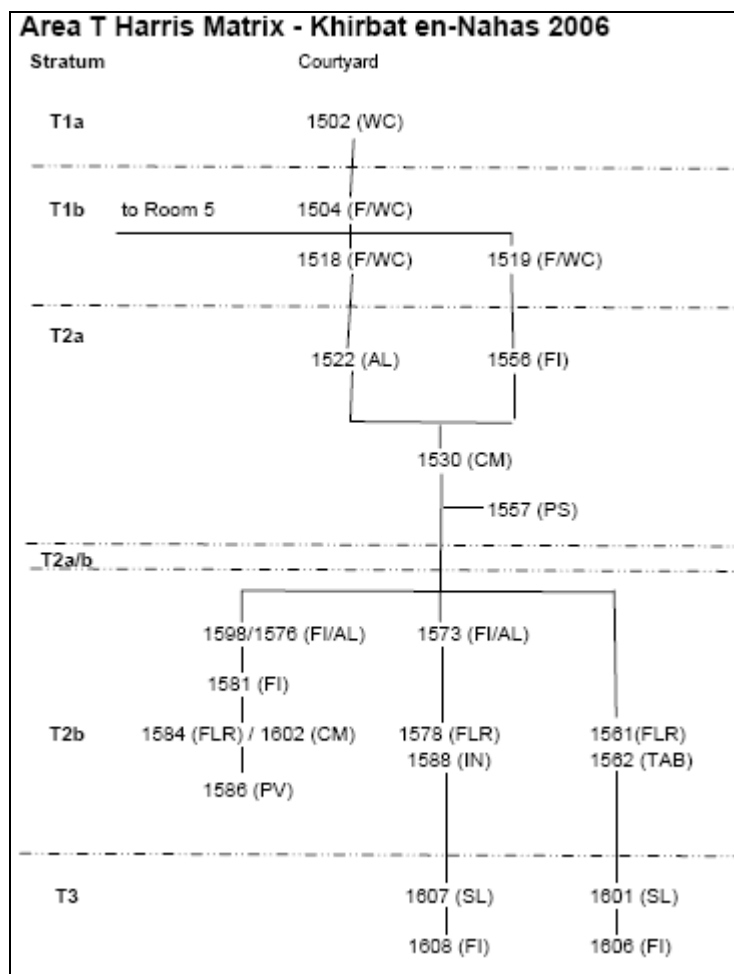


Figure 27. Strata affiliated with Courtyard.

both occupation phases. In the original surface (1st occupation phase) a tabun (Figure 29) was recovered *in situ* against Wall 1544. Following this discovery, a probe (Figure 30) was launched in the eastern section of the Courtyard to investigate the surfaces and the function of the courtyard. On the 1st occupation surface, the probe revealed a conical shaped installation *in situ* (Figure 31) containing a hammerstone and a pestle. The artifact was originally believed to be a mortar with two pestles. However, following the removal and analysis of the contents, the installation was not a mortar but a feature that may have been used as a base for storage jars or similar.

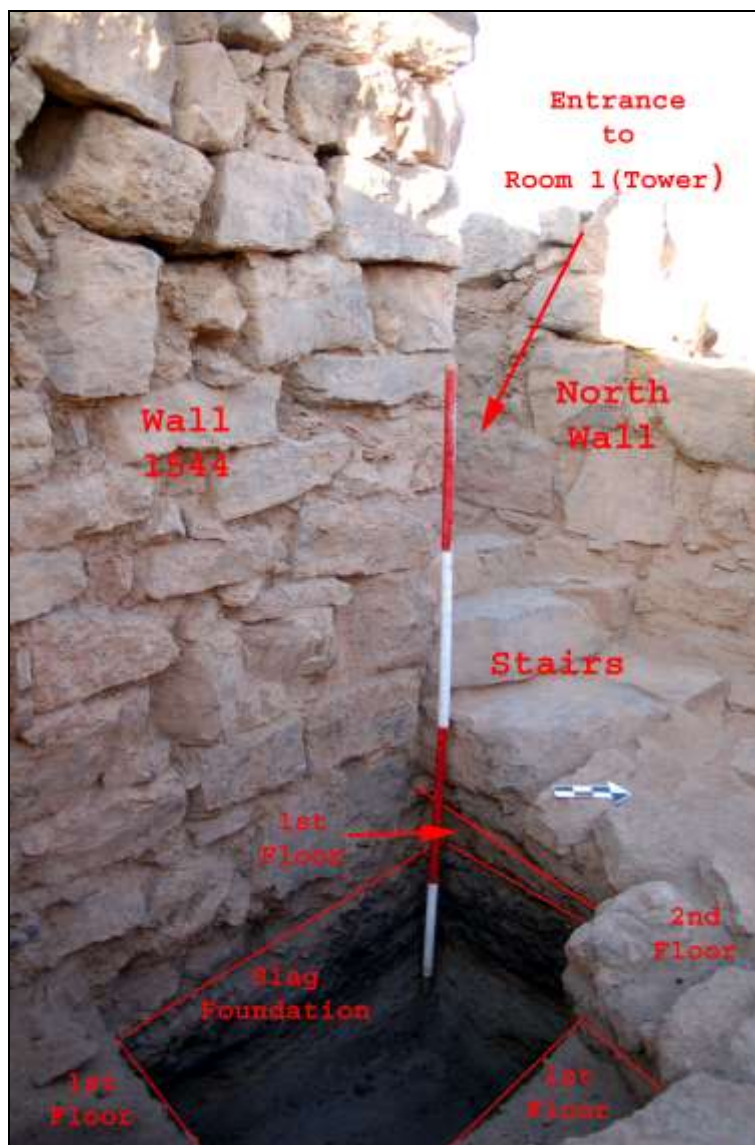


Figure 28. Probe adjacent to stairs highlighting the two occupation phases.

In the southern section of the Courtyard, the 1st occupation surface was found intact. The surface is composed of a layer of compact mud-plaster and contains large traces of ash. Beneath this layer, paving stones in situ were exposed (Figure 32). The paving can be found throughout the southern section and into the center of the courtyard up to the large flat stones found in the north.



Figure 29. Tabun resting on original occupation surface.

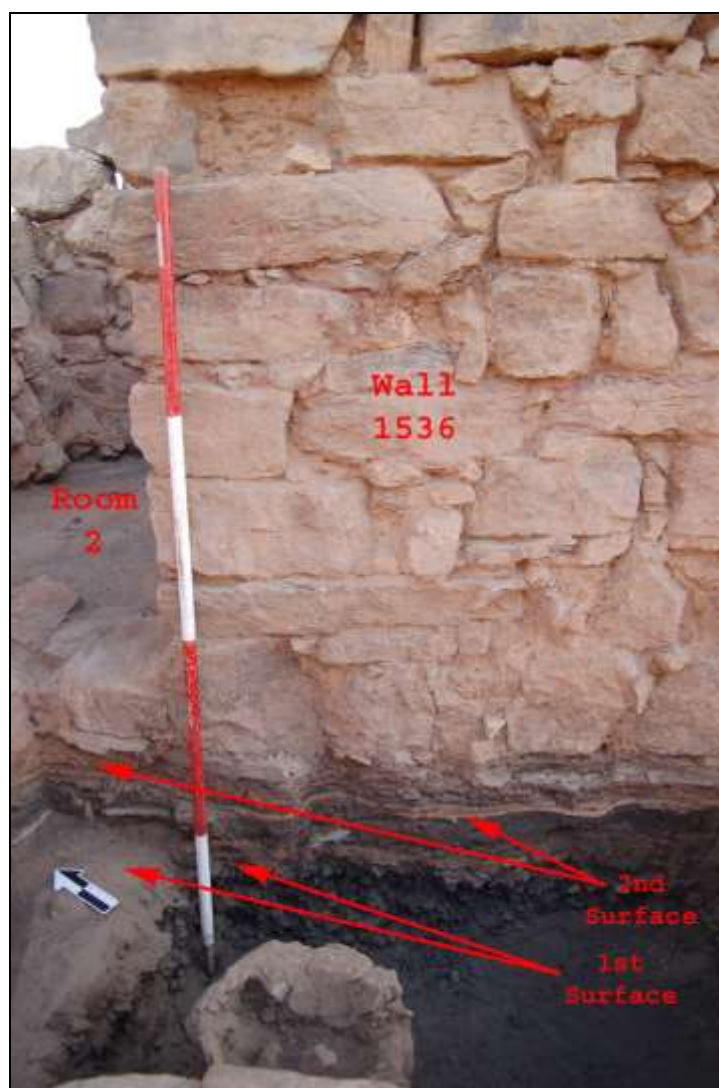


Figure 30. Eastern probe adjacent to Room 2.



Figure 31. Installation with hammerstones and pestle found *in situ* on the main occupation surface.



Figure 32. Main occupation surface and paving foundation excavated in the southern section of the courtyard.

Section V:

The excavations at Area T proved to be a successful endeavor. In a period of less than six weeks, a main structure with 5 rooms and a large interior courtyard were exposed. Probes were conducted within each of these features. A significant amount of artifacts and radiocarbon samples were recovered and will no doubt contribute to understanding the role of the structure and the chronology of the site. The excavations and the probes uncovered two occupation phases. The first phase indicates the structure was designed and constructed on a layer of crushed slag over an area that had previously been used in earlier periods. The surface was found immediately above the layer of crushed slag throughout the courtyard. Above the first surface, a second occupation phase was uncovered. The paving stones were filled and covered with compact mud and had been laid throughout the courtyard to raise the floor towards the main entrance. A section profile at the main entrance provides the evidence for both occupation layers. Other than a small additions, such as paving stones and a standing stone, no main construction phase are evident during the final occupation phase. It follows that the structure was planned and constructed for a particular function. Room 1, the tower overlooks the interior of the site of Khirbat en-Nahas and may have served as a lookout. Room 2, with its small area appears to have been a storage area, Rooms 3 and 4 are much larger in size and might have been living or administrative quarters. The mystery in the construction of the structure lies in Room 5. The function of this area with the layers of dark grey ash and the fire installation presents the closes evidence for an activity area. Whether it was industrial or domestic in function will require further analysis of the soil samples collected. All of the rooms were constructed with entries leading to the main courtyard. Given the different probes, the courtyard was most likely the

center of activity in the structure. Further analysis of the ceramics, animal bones, and any organic remains will prove useful in determining the various activities.

The length of occupation of the structure should be known when the radiocarbon samples are processed. Particularly the periods between the main and final occupation phase. The evidence-or lack of artifact evidence- indicates the structure was abandoned before its destruction. The evidence in the walls, stairs and the main corners indicate the structure was destroyed by seismic activity. The majority of collapse from the walls appear to have fallen in an east to west direction. However, the features affiliated with the western wall (particularly the southwestern corner) provide the most evidence for destruction. The corner in this section is very poorly preserved and the entire wall bulges out further than any of the other main features.

While these are only preliminary observations, further analysis of the structure and the contents recovered from within should shed further light. It will no doubt take time to complete the entire analysis of Area T. However, given the short of amount of time spent excavating the structure, the yields will no doubt contribute to understanding the site of Khirbat en-Nahas and it's role in the control and production of resources.

Appendix 1: Area T Master Locus List

| Khirbat en-Nahas | | | | | | | | | |
|------------------|------------|---------|----------------------------|---|---------|-----------|--------------------|------------|--|
| Year: 2006 | | | Locus List Sheet | | | | Area: <u> T </u> | | |
| Locus | 1st Basket | 1st EDM | Square | Description (including EDM descriptors) | Stratum | Vol. (m3) | Opened | Closed | |
| 1500 | 13000 | 40002 | B4, B3, C4, C3 | Wall Collapse | T1a | | 10/19/2006 | 10/22/2006 | |
| 1501 | 13001 | 40003 | B4, B3, C4, C3 | Fill and Wall Collapse | T1a | | 10/19/2006 | 10/22/2006 | |
| 1502 | 13003 | 40006 | B3, B2, B3, C2, C3 | Fill and Wall Collapse | T1a | | 10/20/2006 | 10/22/2006 | |
| 1503 | 13004 | 40007 | A3, A2, B3, B2 | Fill and Wall Collapse | T1a | | 10/20/2006 | 10/30/2006 | |
| 1504 | 13011 | 40020 | B3, B2, B3, C2, C3 | Fill and Wall Collapse | T1b | | 10/22/2006 | 11/4/2006 | |
| 1505 | 13013 | 40022 | B3, B4, C4, C3, B3 | Wall-North Wall Main Structure | T2b | | 10/22/2006 | 12/5/2006 | |
| 1506 | 13014 | 40023 | C3, C2 | Wall-South Wall Main Structure | T2b | | 10/22/2006 | 12/5/2006 | |
| 1507 | 13015 | 40025 | B4, B3, C4, C3 | Fill and Wall Collapse | T1b | | 10/22/2006 | 11/25/2006 | |
| 1508 | 13016 | 40027 | A3, A4, B4, B5, C5, C4, C3 | Fill and Wall Collapse | T1b | | 10/22/2006 | 11/7/2006 | |
| 1509 | 13042 | 40102 | C2, D2 | Fill and Wall Collapse | T1b | | 10/30/2006 | 12/2/2006 | |
| 1510 | 13045 | 40106 | C3 | Fill and Wall Collapse | T1b | | 10/30/2006 | 11/5/2006 | |
| 1511 | 13047 | 40108 | A2, B2 | Fill and Wall Collapse | T1b | | 10/30/2006 | 11/16/2006 | |
| 1512 | 13048 | 40109 | B2, B1 | Fill and Wall Collapse | T1b | | 10/30/2006 | 11/12/2006 | |
| 1513 | 13049 | 40110 | A2, A3 | Fill and Wall Collapse | T1b | | 10/30/2006 | 11/11/2006 | |
| 1514 | 13050 | 40112 | B2, C2 | Fill and Wall Collapse | T1b | | 10/30/2006 | 11/12/2006 | |
| 1515 | 13065 | 40154 | B1, B2, C1, C2 | Fill and Wall Collapse | T1b | | 10/30/2006 | 11/12/2006 | |
| 1516 | 13073 | 40163 | A2, A3, B2, B3 | Fill and Wall Collapse | T1b | | 11/4/2006 | 11/9/2006 | |
| 1517 | 13081 | 40175 | B2, B3 | Fill and Wall Collapse | T1b | | 11/4/2006 | 11/9/2006 | |
| 1518 | 13082 | 40176 | B2, C3 | Trench: Fill and Wall Collapse | T1b | | 11/4/2006 | 11/7/2006 | |
| 1519 | 13083 | 40177 | B2, B3, C3 | Fill and Wall Collapse | T1b | | 11/4/2006 | 11/20/2006 | |
| 1520 | 13084 | 40178 | A2, B1, B2 | Fill and Wall Collapse | T1b | | 11/4/2006 | 12/2/2006 | |
| 1521 | 13085 | 40179 | HHH42, HHH43 | Ash Layer | T2a | | 11/4/2006 | 11/26/2006 | |
| 1522 | 13107 | 40207 | C3 | Ash Layer | T2a | | 11/5/2006 | 12/2/2006 | |
| 1523 | 13108 | 40209 | C3 | Fill and Wall Collapse | T1b | | 11/5/2006 | 11/11/2006 | |
| 1524 | 13109 | 40274 | B2 | Ash Layer | T2a | | 11/5/2006 | 11/21/2006 | |
| 1525 | Void | Void | Void | Void | Void | | Void | Void | |
| 1526 | 13163 | 40270 | A2, B3 | Fill Beneath Wall Collapse | T1b | | 11/7/2006 | 11/19/2006 | |
| 1527 | 13164 | 40271 | B3, C3 | Fill Beneath Wall Collapse | T1b | | 11/7/2006 | 11/20/2006 | |
| 1528 | 13165 | 40272 | C4 | Fill Beneath Wall Collapse | T1b | | 11/7/2006 | 11/30/2006 | |
| 1529 | 13166 | 40273 | D4 | Fill Beneath Wall Collapse | T1b | | 11/7/2006 | 11/21/2006 | |
| 1530 | 13171 | 40280 | B2, C3 | Fill: Compact Mud | T2a | | 11/7/2006 | 12/2/2006 | |
| 1531 | 13201 | 40322 | B2, B3 | Fill: Compact Mud | T2a | | 11/9/2006 | 11/13/2006 | |
| 1532 | 13202 | 40323 | D2 | Standing Stone- West | T2a | | 11/9/2006 | 12/2/2006 | |
| 1533 | 13203 | 40324 | D2 | Standing Stone- East | T2ab | | 11/9/2006 | 12/2/2006 | |
| 1534 | 13253 | 40396 | B4, C3 | Wall-East Wall Main Structure | T2b | | 11/10/2006 | 12/5/2006 | |
| 1535 | 13256 | 40401 | C3 | Wall-Southern Wall Room 2 | T2b | | 11/10/2006 | 12/5/2006 | |
| 1536 | 13257 | 40404 | C2, C3 | Wall- Western Wall Room 2 | T2b | | 11/10/2006 | 12/5/2006 | |
| 1537 | 13267 | 40414 | C2 | Wall-West of Standing Stone (L. 1532) | T2ab | | 11/11/2006 | 12/5/2006 | |
| 1538 | 13268 | 40415 | C2, C3 | Wall-Western Wall Room 4 | T2b | | 11/11/2006 | 12/5/2006 | |
| 1539 | 13283 | 40453 | A2, A3 | Wall-North Wall Main Structure | T2b | | 11/11/2006 | 12/5/2006 | |
| 1540 | 13285 | 40456 | A2, B2 | Wall-West Wall Main Structure | T2b | | 11/11/2006 | 12/5/2006 | |
| 1541 | 13286 | 40461 | C3 | Ash Layer | T2a | | 11/11/2006 | 11/14/2006 | |
| 1542 | 13288 | 40463 | C3 | Ash Layer | T2b | | 11/11/2006 | 11/25/2006 | |
| 1543 | 13290 | 40465 | A2, A3, B2, B3 | Wall-Northern Wall Room 1 | T2b | | 11/11/2006 | 12/5/2006 | |
| 1544 | 13291 | 40466 | B3, B2 | Wall-Eastern Wall Room 1 | T2b | | 11/11/2006 | 12/5/2006 | |
| 1545 | 13294 | 40470 | B2 | Wall-Southern Wall Room 1 | T2b | | 11/11/2006 | 12/5/2006 | |
| 1546 | 13295 | 40472 | B2, C2 | Wall-Eastern Wall Room 3 | T2b | | 11/11/2006 | 12/5/2006 | |
| 1547 | 13297 | 40478 | A3, B3 | Ash Layer | T2a | | 11/11/2006 | 12/2/2006 | |
| 1548 | 13313 | 40501 | B2, C3 | Fill Beneath Wall Collapse | T1b | | 11/12/2006 | 11/13/2006 | |
| 1549 | 13330 | 40518 | C3 | Slag Layer | T3 | | 11/12/2006 | 11/27/2006 | |
| 1550 | 13332 | 40520 | C3 | Installation | T2a | | 11/12/2006 | 11/16/2006 | |
| 1551 | 13333 | 40521 | C3 | Fill | T2a | | 11/12/2006 | 11/16/2006 | |
| 1552 | 13355 | 40592 | B2, C1, C2 | Fill: Compact Mud | T2a | | 11/13/2006 | 11/16/2006 | |
| 1553 | 13400 | 40646 | B2, C1, C2 | Fill | T2a | | 11/16/2006 | 11/18/2006 | |
| 1554 | 13423 | 40676 | B2 | Furnace Base (?) | T2a | | 11/17/2006 | 11/18/2006 | |
| 1555 | 13445 | 40707 | A1 | Installation: Stairway | T2ab | | 11/18/2006 | 12/2/2006 | |
| 1556 | 13470 | 40733 | B3 | Trench: Fill and Wall Collapse | T2a | | 11/18/2006 | 11/24/2006 | |
| 1557 | 13471 | 40734 | B3 | Pavement: Entrance to the courtyard | T2a | | 11/18/2006 | 12/2/2006 | |
| 1558 | 13476 | 40740 | B2 | Ash Layer | T2a | | 11/18/2006 | 12/2/2006 | |

Appendix 1: Continued

| Khirbat en-Nahas | | | | | | | | | |
|------------------|------------|---------|----------------|--|---------|-----------|------------|------------|--|
| Year: 2006 | | | | | | | | | |
| Locus List Sheet | | | | | | | | | |
| Area: —T— | | | | | | | | | |
| Locus | 1st Basket | 1st EDM | Square | Description (including EDM descriptors) | Stratum | Vol. (m3) | Opened | Closed | |
| 1559 | 13496 | 40766 | A2, A3 | Ash Layer | T2a | | 11/19/2004 | 11/30/2006 | |
| 1560 | 13541 | 40837 | B2 | Reddish Compact Mud | T2a | | 11/21/2006 | 11/24/2006 | |
| 1561 | 13542 | 40838 | B3 | Floor-Ash Layer- | T2b | | 11/21/2006 | 11/30/2006 | |
| 1562 | 13550 | 40852 | B3 | Ceramic Vessel encased in ash layer | T2b | | 11/21/2006 | 11/30/2006 | |
| 1563 | 13561 | 40866 | D4 | Ash Layer | T3 | | 11/23/2006 | 11/26/2006 | |
| 1564 | 13564 | 40870 | A3 | Crushed Slag Layer | T3 | | 11/23/2006 | 11/30/2006 | |
| 1565 | 13565 | 40871 | B4, B3, C4, C3 | Ash Layer | T2a | | 11/23/2006 | 12/2/2006 | |
| 1566 | 13580 | 40878 | FFP44 | Ash Layer | T3 | | 11/24/2006 | 12/2/2006 | |
| 1567 | 13588 | 40892 | HHH44, HHH45 | Crushed Slag Layer | T3 | | 11/24/2006 | 12/2/2006 | |
| | | | GGG42, HHH42, | | | | | | |
| 1568 | 13604 | 40912 | HHH43 | Fill Mixed with Ash Layer | T2a | | 11/25/2006 | 11/26/2006 | |
| 1569 | 13606 | 40915 | HHH43 | Compact Mud (Floor) | T2a | | 11/25/2006 | 11/25/2006 | |
| 1570 | 13618 | 40928 | HHH43 | Dark Red Brown Fill with Ash | T2b | | 11/25/2006 | 11/26/2006 | |
| 1571 | 13624 | 40939 | HHH42, HHH43 | Slag Layer | T3 | | 11/26/2006 | 12/2/2006 | |
| 1572 | 13625 | 40941 | HHH45 | Slag Layer | T3 | | 11/26/2006 | 12/2/2006 | |
| 1573 | 13626 | 40942 | GGG44 | Fill Mixed with Ash Layer: Trench | T2b | | 11/26/2006 | 11/26/2006 | |
| 1574 | 13632 | 40950 | GGG44, GGG45 | Threshold to Room 2 | T2ab | | 11/26/2006 | 12/2/2006 | |
| 1575 | 13634 | 40953 | HHH43 | Slag Layer: Trench in Room 5 | T3 | | 11/26/2006 | 11/27/2006 | |
| 1576 | 13640 | 40960 | GGG43, GGG44 | Fill: Wind-blown Sand and Ash- Trench in Courtyard | T2b | | 11/26/2006 | 11/27/2006 | |
| 1577 | 13641 | 40961 | GGG42 | Slag Lens | T2a | | 11/26/2006 | 11/26/2006 | |
| 1578 | 13643 | 40964 | GGG44 | Compact Mud (Floor) Mixed with Ash and Slag | T2b | | 11/26/2006 | 12/2/2006 | |
| | | | GGG42, HHH42, | | | | | | |
| 1579 | 13650 | 40974 | HHH43 | Ash Layer: Trench in Room 3 | T2a | | 11/26/2006 | 11/27/2006 | |
| 1580 | 13667 | 40992 | HHH43 | Fill: Dark Brown-reddish mixed with Ash-Room 5 | T3 | | 11/27/2006 | 11/30/2006 | |
| 1581 | 13668 | 40994 | GGG43, GGG44 | Floor-Compact mud mixed with ash and lime plaster | T2b | | 11/27/2006 | 12/2/2006 | |
| 1582 | 13677 | 41002 | HHH43 | Fill-Dark Brown Sediment mixed with Ash and Slag | T3 | | 11/27/2006 | 11/30/2006 | |
| 1583 | 13678 | 41004 | HHH44 | Fill-Dark Brown Sediment mixed with Ash and Slag | T3 | | 11/27/2006 | 12/2/2006 | |
| 1584 | 13679 | 41006 | GGG43, GGG44 | Fill: Wind-blown Sand and Ash- Trench in Courtyard | T2b | | 11/27/2006 | 11/27/2006 | |
| | | | GGG42, HHH42, | | | | | | |
| 1585 | 13684 | 41013 | HHH43 | Crushed Slag Layer | T3 | | 11/27/2006 | 11/28/2006 | |
| | | | GGG43, GGG44, | | | | | | |
| 1586 | 13702 | 41032 | HHH43, HHH44 | Pavement: Inner Courtyard | T2b | | 11/28/2006 | 12/2/2006 | |
| 1587 | 13703 | 41033 | FFP43, GGG43 | Slag Layer | T3 | | 11/28/2006 | 11/28/2006 | |
| 1588 | 13716 | 41047 | GGG44 | Installation (Conical Shape Hole) | T2b | | 11/28/2006 | 12/2/2006 | |
| 1589 | 13720 | 41052 | FFP43, GGG43 | Fill mixed with Ash | T3 | | 11/28/2006 | 12/2/2006 | |
| | | | GGG42, HHH42, | | | | | | |
| 1590 | 13721 | 41054 | HHH43 | Fill Beneath Slag Layer | T3 | | 11/28/2006 | 12/2/2006 | |
| 1591 | 13722 | 41055 | HHH43 | Installation: Door Jam | T3 | | 11/28/2006 | 12/2/2006 | |
| 1592 | 13723 | 41056 | HHH43 | Installation: Fire | T3 | | 11/28/2006 | 12/2/2006 | |
| 1593 | 13736 | 41070 | HHH44 | Fill | T3 | | 11/30/2006 | 11/30/2006 | |
| 1594 | 13739 | 41073 | HHH43 | Slag Layer | T3 | | 11/30/2006 | 12/2/2006 | |
| 1595 | 13740 | 41074 | HHH43 | Ash Layer | T3 | | 11/30/2006 | 12/2/2006 | |
| 1596 | 13747 | 41081 | FFP43 | Fill Beneath Wall Collapse | T3 | | 11/30/2006 | 12/2/2006 | |
| 1597 | 13748 | 41088 | HHH44 | Fill-Dark Brown Sediment with Slag | T3 | | 11/30/2006 | 11/30/2006 | |
| 1598 | 13749 | 41089 | | Fill | T2b | | 11/30/2006 | 12/2/2006 | |
| 1599 | 13751 | 41092 | | Fill | T3 | | 11/30/2006 | 11/30/2006 | |
| 1600 | 13755 | 41097 | HHH44 | Fill- Light Brown with compact mud | T2a | | 11/30/2006 | 12/2/2006 | |
| 1601 | 13757 | 41101 | GGG44 | Slag Layer | T3 | | 11/30/2006 | 12/1/2006 | |
| 1602 | 13758 | 41102 | HHH43, HHH44 | Floor- Compact Mud mixed with Ash | T2b | | 11/30/2006 | 12/2/2006 | |
| 1603 | 13761 | 41105 | HHH43 | Fill | T3 | | 11/30/2006 | 12/2/2006 | |
| 1604 | 13779 | 41135 | HHH44 | Threshold: Room 4 | T2ab | | 12/1/2006 | 12/2/2006 | |
| 1605 | 13781 | 41127 | GGG43 | Threshold: Room 3 | T2ab | | 12/1/2006 | 12/2/2006 | |
| 1606 | 13783 | 41130 | GGG44 | Fill-Dark Brown Sediment with Ash | T3 | | 12/1/2006 | 12/1/2006 | |