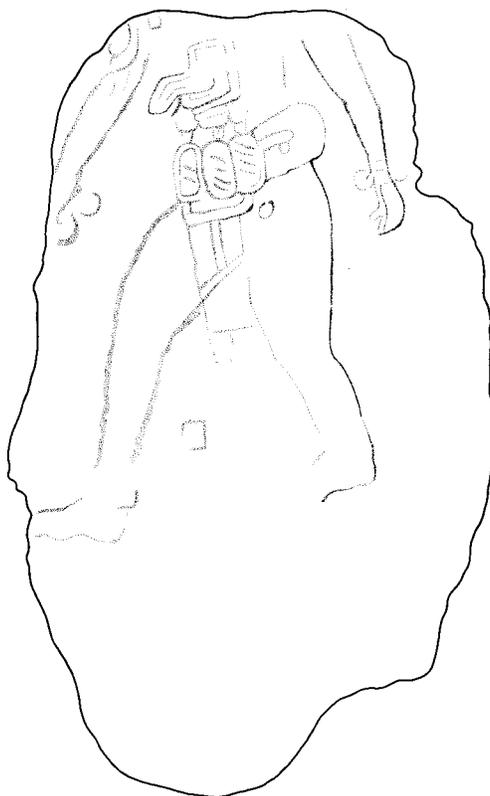


# ARCHAEOLOGICAL INVESTIGATIONS AT HOLMUL, PETEN, GUATEMALA.

## PRELIMINARY RESULTS OF THE THIRD SEASON, 2002

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## **Introduction**

The present report summarizes the results of the 2002 field season of the Holmul Archaeological Project at Holmul, Petén and at the sites of Cival, Hahakab and La Sufricaya in its vicinity. This field season was made possible thanks to funding from the National Geographic Society, Vanderbilt University, the Ahau Foundation, FAMSI, Interco, as well as permits extended by IDAEH of Guatemala. The HAP'02 team included 20 participants from US and Guatemalan academic institutions, 40 workmen and three cooks, and the help of several individuals outside the field camp. The field work was carried out between May 10<sup>th</sup> and June 30<sup>th</sup> 2002, and was followed by an extended period of data processing during the fall of 2002.

The aim of the Holmul Archaeological Project is to develop and test new interpretive models on the nature and dynamic development of ancient Maya political, economic and ideological institutions by analyzing the material correlates of such institutions in the context of a medium-sized Maya city during the crucial transition from the Late Preclassic to the Classic Periods.

The city of Holmul is in a key location between Tikal, Naranjo, Xultun and other major Maya cities. The site was first investigated in 1911 by Raymond E. Merwin of the Peabody Museum of Harvard University and it has an uninterrupted sequence of development from Preclassic to Terminal Classic times, with substantial ceremonial, residential, burial and epigraphic remains (Merwin and Vaillant 1932). We believe that new survey and excavation in this area will elucidate early developments of Maya kingship, administrative networks and economic specialization. Specific research goals focus on identifying architectural, burial and residential correlates of crucial historical, social and economic processes that led to the formation of dynastic lines from ritual leadership in the southern Maya Lowlands during the transition from the Late Preclassic to the Early Classic period (ca. A.D. 100-400). We are also interested in how the long-term trajectory of architectural growth and decline of this Maya city and its dependencies reflect historical and socio-economic processes on the regional scale. At the same time, we seek to demonstrate how local land use and trade routes may have changed over time with changes in geopolitical alliances in the greater Petén region.

Moreover, Holmul is a long-lived medium-sized city and it can help us understand the changes in Maya society during the Terminal Classic period in the Southern Lowlands. These research topics are addressed through several stages of multi-disciplinary and long-term research including several sub-projects involving specialists, graduate and undergraduate students from Guatemala and the U.S.

Finally, aside from archaeological research, it is the mission of this project to work towards the conservation of Holmul's unique architecture, sculpture and painted art and the development of the site as a cultural resource for the local community.

## **Methodology**

The goal of the 2001 field season was to continue the program of systematic mapping and excavation initiated in 2000 in Holmul's site center and peripheral areas (Estrada-Belli 2000, 2001, 2002) focusing on the following points:

- 1) Mapping of the Holmul ceremonial center (with total station) and
- 2) of the residential areas by survey transects (by tape and compass);
- 3) Locating and mapping peripheral centers guided by GPS and geo-referenced aerial photos and satellite imagery;
- 4) Investigating site chronology and architectural form and function through recording of existing looters' trenches profiles and new excavations at Holmul and minor centers;
- 5) stabilizing looted or damaged structures, prioritizing those bearing painted or carved iconography;
- 6) analysis of artifact chronology, manufacture technology, and exchange using ceramic and lithic data;
- 7) analysis of iconographic and epigraphic data.

## **Synopsis of the 2002 season results**

During the 2002 season, settlement pattern explorations were directed towards locating and mapping sites in the northwestern and northeastern quadrants of Holmul.

The new site of Haha Kab was located and mapped 2.8 km NW of Holmul by directing teams to a location based on a prediction generated by a GIS model. The site displayed substantial Late Classic Period ceremonial and elite architecture.

An additional ceremonial center (Hamontun) was located 4 km NE of Holmul following local informants' directions. Both sites appear to be part of a ring of ceremonial centers with substantial ritual and elite palatial groups within an hour's walk from the Holmul main plaza.

At Holmul, total-station mapping was continued in the site center, adding detail to the area between Group I and Group II. The 250 m-wide western transect (WT) was mapped by Kristen Gardella and Collin Watters from the 1 km marker westwards to the 3.5 km marker. An area of high-density settlement between the 1 and 2 km markers was noted in connection with an upland area (near La Sufricaya). Further mapping was also carried out by Marc Wolf at the minor center of Cival south of the main plaza, where new ceremonial and elite/residential acropolis platforms and a hastily built low wall were noted.

Excavations were placed on ceremonial and residential architecture at Holmul, La Sufricaya and Cival. At Holmul, work focused on the Late Classic palace structures in Group 3 (Courts A and B) and on residential occupation in Group 13 (facing Group II, Figure 2). In court A, an earlier phase of the throne room structure was found under the Str. 43 stairway and in Court B an eastern ceremonial stairway was found under later elite residential architecture. In Group 13, several burials and remains of perishable architecture pertaining to the Terminal Classic occupation were found. At about 1km outside the main center, structures and chultuns were excavated in South Group 1 and West Groups 2 and 12, which provided examples of Late and Terminal Classic residential architecture.

At La Sufricaya, excavations were placed in connection with stone monuments bearing Early Classic inscribed dates (Stelae 1,5,6) to document their relationship with plaza floors (Figure 3). Within Str.1 two excavation units explored the eastern and southern exterior of the painted room (a sub-str. found in 2001) by uncovering walls exposed in looters' trenches. On the exterior face of the southern wall a new mural painting was found to have been buried by the third and last stage of construction of the edifice.

At Cival, the southwestern structure atop the Triadic Group (Group 1) was explored by clearing the contents of a looters trench and exploring its eastern façade (Figure 4). Portions of two beautifully stucco-faced substructures were uncovered under the rubble of the last construction, all dating within the Late Preclassic Period and earlier than the last stage's date of A.D. 100.

Also at Cival, a test pit explored the sequence of the 124 m-long E-Group range structure (Str.7) in connection with a Late Classic partial monument. The building's three construction stages spanned the Late Preclassic Period while the monument's carving style placed it within the Late Classic period. Finally, on the centerline of Str. 7, the Stela 2 monument originally reported by Merwin was re-discovered and stylistically identified by Nikolai Grube as an early Late Preclassic ruler's portrait, possibly the earliest such monument yet to be found in the Maya Lowlands.

## **Discovery of Hahakab**

The discovery of Hahakab (Yucatec Maya for "looking at the earth"), a minor center in the vicinity of Holmul, was made possible by GIS analysis of digitized maps, terrain modeling, viewshed and optimal path models developed at Vanderbilt University with the assistance of anthropology major Christine Fitzgerald (class of 2001). The steps used for building the site's prediction model can be summarized as follows:

1) A terrain surface model was created from the Guatemala IGM 1:50000 maps covering an area within a 15 km radius from Holmul (Figure 5). The maps' elevation intervals of 20 m permitted the modeling of the complex landscape of rolling hills, escarpments and swampy flats around Holmul.

2) An attrition map (cost surface) was developed by combining changes in elevation, slope, and slope direction as factors to facilitate or impede movement through the landscape. A separate attrition surface was created by adding a map of the viewshed area from the vintage point of Holmul's tallest pyramid to the topographic factors. According to this model, areas within view of Holmul Group I pyramid were considered easier to traverse than areas outside its view. The rationale for using viewshed as a factor for access routes was that traveling within view of the destination would have provided ritual significance to the path and as well as defensive properties for the travelers and Holmul residents.

3) Points were selected at the extremes of the area of interest in connection with the four cardinal directions. From these locations, movement was to be modeled into Holmul by following the paths of least-cost through the attrition surfaces. The northern point was chosen to simulate the hypothetical path someone traveling from the city of Xmacabatun (30 km N) would have taken to approach Holmul. The western point

simulated travel from the general direction of Tikal and Uaxactun through the Bajo de Azucar. The eastern point represented hypothetical routes originating at an hypothetical location below the escarpment, north and east of El Pilar (Lamanai?). The southern point represented the approximate location of Naranjo and thus simulated travel from there to Holmul.

4) The GIS path algorithm produced two sets of paths leading to Holmul from each of the outer point locations. One set included four optimal paths through the topography only while the second set represented four paths through the topography with the addition of the viewshed variable.

5) The results were compared to the topographic map and location of existing minor centers situated within a 3-4 km distance of Holmul (Figure 5). In both sets, paths from the west were found to be approaching Holmul from the vicinity of the minor center of T'ot. Both paths from the south approached Holmul passing directly through the location of the minor center of Riverona. One eastern path passed very close to the K'o center, while a second was later found to pass through the newly discovered site of Hamontun (see "Other explorations" below). One should note that each of the southern peripheral centers were also located at the edge of the Holmul upland area facing the swampy flats. The northern route however passed through an area which had never been explored. It was noted that the two northern paths (viewshed and non) crossed the northern swamp along separate routes but joined on a common course once they approached the upland plateau (closer to Holmul) and came within the viewshed of Holmul, as well. This location at the edge of the Holmul viewshed and along the two joining paths was selected as a possible location for a northwestern center that would have completed the circle of centers around Holmul at a distance of 3-4 km.

6) Landsat imagery and a Star3i high-resolution radar image (provided to Dr. Magaly Koch, courtesy of NASA) were analyzed visually in search of possible indications of major architecture buried under the thick forest cover. The target location suggested by the GIS model was confirmed by concentration of tree species consistent with upland terrain and tall rocky outcrops visible on the imagery but deemed undistinguishable from possible Maya buildings.

7) The coordinates obtained from the GIS maps were entered into a hand-held GPS receiver which guided the survey team composed of Justin Ebersole, Britta Watters, and Soshuanna Parks to the target/test location under a thick canopy vegetation. The ceremonial center of Hahakab was located within 100 m of the predicted location.

The main ceremonial area of Hahakab was mapped by Justin Ebersole using tape and Suunto compass (Figure 6). The site is composed of about 20 major structures one of which, the tallest, measures 18 m in height. The main group of the site is formed by a triadic pattern of small pyramids on an elevated platform. This group also includes other buildings on the front of the stairway and at the NW and NE corner of the platform (see Uaxactun Group H pattern, Valdes 1989). To the south of this platform is a plaza and E-Group complex. To the east of the E-Group and triadic group is an elevated platform supporting structures of possible elite residential function. To the north this platform and the Triadic Group face an open plaza enclosed on the east by a tall pyramid (Str. 1). Axial looters trenches in this structure bisected several earlier stages of construction. Within the plaza of the Hahakab complex three plain monuments were found resting on the humus surface.

## **Other Explorations in the Holmul area**

A short reconnaissance was conducted 5 km northeast of Holmul to explore the location where one of the eastern 'predicted' paths led to Holmul and upon an informant's suggestion that a large site may be located there. The survey team returned with information of a large ceremonial center located exactly along the predicted path (Figure 5). The architecture appeared to be of Late Classic date with several distinctive features. At the center of the site is a large raised rectangular acropolis platform supporting a number of partially collapsed buildings. Remains of red paint decorating several walls were noted inside one of the collapsed vaulted rooms. The architectural style of the masonry suggests a Late to Terminal date for some of the buildings. A plain stela was also found set on the side of one of the buildings on the acropolis platform. Other smaller buildings surround this platform including a small temple pyramid. The site is located near a perennial water source and creek which flows into the Holmul river a short distance from the source. The site's name was known to the local informants as Peru and was changed to Hamontun (Water-Macaw-Stone). Detailed mapping of this site is planned for 2003.

Reconnaissance teams surveyed several hills approximately 6 km directly to the east of Holmul, and 2 km to the east-northeast of K'o. The reconnaissance was motivated by GIS models and Landsat imagery suggesting the possibility of locating formal architecture. Justin Ebersole reported that two such test sites (Test 03, and 05) contained substantial architecture. Test 03 contained six structures two of which arranged in a E-Group layout (Figure 7). At the Test 05 site, Ebersole recorded a 6 m high structure within a small E-Group which also contained a plain stela (Figure 8).

## **Mapping at Holmul**

The western transect was mapped by Kristen Gardella and Collin Watters from the 1 km to the 3.5 km marker from the Holmul datum (main plaza). The baseline of the transect was first laid out with a total station placing stakes every 25 meters. From the baseline tracts of 125 m in length were surveyed in each direction. The total width of the mapped area for the transect was 250 m. Within the new mapped area 85 new structures and 14 groups were found. The highest concentration of residential groups occurs between the 1 and 2 km markers in connection with a broad upland ridge running SE-NW. This area appears to connect with the nearby dense residential zone and ritual area known as La Sufricaya only 500 m southeast of the transect, thus forming a continuous residential sprawl along this ridge. Several well preserved chultuns, quarries and five terraces are distributed between some of the major residential groups in this area, as a testimony of the high extracting and building activity (Figure 9).

## **Excavations within HOLMUL site center**

### ***Group 13***

This is a large residential group located a few meters south of the large Group II ritual complex (Figure 2). In 2001 a trench in the northern structure uncovered poorly preserved remains of a Late Classic residence containing a central bench. The courtyard side of the building presented several stepped walls as consecutive re-makes of a collapsing façade or stairway. In front of this building and abutting it a large concentration of Terminal Classic material mixed with ash and organic materials was identified as a late-occupation midden.

In order to uncover further remains of such late occupations in this area a new excavation (T25) was placed by Mario Penados in the northeastern corner of the group. One edge of the excavation included the southern cut-stone wall of a structure enclosing the eastern side of the courtyard. The southern edge of the excavation captured the cut of a looters trench into such structure to provide further stratigraphic control.

Below the first layer of humus, Mario uncovered the remains of a foundation brace made with small pebbles and marl which probably supported a perishable building. The eastern edge of the foundation directly abutted the earlier masonry wall clearly denoting an episode of re-use of the building after its vault had collapse by placing a new perishable structure against it (Figure 10).

In the northeastern corner of the foundation brace a concentration of ceramics and bone material was noted. Indicating the presence of a midden or offering abutting the walls of both earlier and later buildings. The material excavated included animal bone large conjoinable fragments of Tinaja Red tripod plates and other Terminal Classic course ware types.

A second excavation was placed at the southern edge of the courtyard by Edy Barrios. Here a rise was noted, indicating the possible presence of a low structure foundation or even a wall enclosing the courtyard. Within the 3x3 unit two main walls built with pebbles and large roughly cut stones were uncovered. A small space of about 2 m was contained within the two walls (Figure 11). A poorly preserved burial was found accompanied by a coarse, straight walled bowl of probably Terminal Classic date. Due to the preliminary data available, the excavator left open the possibility that this feature may have been a very small structure or two separate consecutive walls built within a short time span to enclose the courtyard. And new excavation planned for 2003 will help clarify the function of this feature.

### ***Group III , Court A***

**Structure 2.** A looters' tunnel in the northern side of the Str. 2 pyramid was investigated by David Bell. In this tunnel, the rear corner of the second-to-last construction phase of the building was visible, consisting of an elaborate apron molding, a talud and remains of red stucco finish. In order to explore this elaborate building's façade a side-tunnel was opened, following the façade along the northern side of the building in an easterly direction. This portion of the façade appeared to be composed of a sequence of a 1m high bench, surmounted by a talud and apron molding, with partially

preserved red paint (Figures 12, 13). At a distance of 5 m from the rear corner the bench-and-talud façade abutted a perpendicular wall running N-S. This second wall ( 3 m in length) was faced with large rectangular blocks, forming an apron molding but at a different height from the previous wall, and bore no stucco lining. This wall appeared to have been part of an early structure which at a later time was expanded toward the back (west) with a well-made stucco façade. Both constructions were later covered by a single fill of the last construction stage of the building containing Late Classic period ceramics (Tepeu 2).

Excavations were resumed in the area in front (east of) Structure 2, a tall pyramid on the west side of the rectangular courtyard. A previous excavation in the center of the court, in front of Str. 2 uncovered several Late Classic plaster floors above a massive fill build-up of large roughly shaped limestone blocks. James Doyle re-opened the excavation and followed the last floor in the sequence towards a structure on the east edge of the courtyard. The floor appeared to be perfectly preserved and rising to a low 2 inch step toward the structure (Figure 14).

Abutting the front (western side) of the structure below the humus were large quantities of Terminal Classic artifacts, including figurines, ocarinas, and fragments of local imitations of Pabellon Orange carved barrel-shaped pottery (Bernard Hermes, pers. comm.). Several large blocks were also removed from the layer indicating that the structure possessed a masonry vault and that it had fallen into the courtyard (Figure 15). The above evidence also indicated that the area between the structure and the pyramid (Str. 2) was used as a midden after the structure's collapse.

Below the collapsed vault, the northern doorjamb of the structure and the northern half of the single interior room was cleared of debris. The building outer wall was made of large cut-stone blocks and it rested on a 40 cm-tall plinth. The interior floor was lined with finely smoothed plaster and a C-shaped bench occupied most of the space.

The back wall of the structure had collapsed and fallen out on the sloping side of the courtyard platform. A looters trench had also penetrated below the interior bench from the rear (eastern) of the building. A small cavity was observed below the bench with remains of a burial and fragmentary bones. A test excavation within the looters trench below the bench led to an earlier stuccoed surface made of three well preserved steps. An additional test excavation was placed in the interior of the room, which led to uncovering the upper steps of the same stairway (Figure 16).

According to this evidence, it was possible to conclude that in the early part of the Late Classic period (Tepeu 1?) the courtyard was focused on the western pyramid (Str. 2) and open on the eastern side with a monumental stairway leading to the top from the East Plaza. The Court A complex at that time may have had a primarily ritual function.

Subsequently, in Tepeu 2/3 times, the court's eastern stairway was covered by an elite residential/civic structure with a single doorway facing the courtyard and the pyramid across from it. The northern and southern sides of the courtyard may have been enclosed by residential/civic structures as well at this time (see Str. 44 excavation). Finally, the main access to the courtyard was moved to the northeastern corner of the platform with a steep angle-ramp or narrow stairway rising from the plaza (yet to be excavated).

The excavation of the southernmost structure of Court A, Structure 44, was resumed by Katie South. In 2001 the central room was excavated revealing a long and narrow ambient with two benches. The benches were raised down to a few inches from the floor and rubble and marl was used to seal the doorways leading to side-rooms at either end of the building (east and west), in what appears to be a “termination” ritual.

The artifacts found within the structure suggested that the building was abandoned during the Terminal Classic period.

In 2002, Katie South investigated the eastern end-room of the building. The excavation revealed that the side-room had been in-filled with grey marl and the walls torn down to the first course. The front wall was still preserved and appeared to be of a better quality than the lateral walls (Figure 17).

In sum, the excavations in 2001 and 2002 in Structure 44, revealed the existence of a Terminal Classic residence which had undergone at least one episode of remodeling in which the end rooms were blocked and the back wall re-built. Subsequently, the structure was ritually terminated by razing the benches and exterior walls, and the interior filled with fine marl.

### ***Group III, Court B***

Court B is a palatial complex on a platform rising 6 m from the main plaza and surrounded by steep ravines on all other sides. A rectangular structure (Str. 43) is located roughly in the center of the complex and at one end of a small court surrounded by vaulted structures on all sides. Excavations within Structure 43 in 2001 uncovered a series of benches of which 5 were formally built masonry thrones, with stucco and painted surface finish in well-preserved conditions (Figure 18). A burial of a child was also found in one of the room. The evidence suggested that this structure’s functioned as a ‘throne room’ during the 7<sup>th</sup> and 8<sup>th</sup> centuries A.D., that it had been built and re-used by a series of Holmul rulers (at least 3) sometime prior to its retirement as an official building towards the end of the Late Classic period, and finally used as a midden.

In 2002, in order to further clarify the architecture of the building and its relationship with the rest of the courtyard, two trenches (TP 21,22) were opened by Chris Hewitson in the front (east) of Structure 43, on the slope connecting the doorway to the courtyard floor.

The excavators removed the superficial backfill of Merwin’s initial clearing of the structure in 1911, -during which he uncovered the benches in the eastern room- and reached the threshold of the doorway and a well preserved stairway leading to the courtyard. This formal stairway was composed of 6 steps made of stucco-lined rectangular limestone blocks. The lowest two steps appeared to have been re-built with cobbles in lieu of the original blocks at a later stage (Figure 19).

Within the fill, a number of carved stones were recovered. Among them, was a tenoned depiction of a mat motif surmounted by a tied bundle of feathers or hair, and fragments with sets of parallel grooves possibly indicating the feathers of a headdress. All the fragments recovered in this excavation (as well as similar elements recovered in 2001 on the north side) likely pertain to a veneer low-relief sculpture decorating the upper half of the building (Figure 20).

The second trench clarified that the stairway occupied only the central portion of the front of the building and that a previous stage of the building lay underneath. Finally, the iconography (mat motif) of this frieze supports the hypothesis that the function of this building was that of Holmul's royal "throne room" in the early part of the Late Classic period.

Further excavations below the stairway's first step and the courtyard floor detected a 50 cm-thick construction fill made of well laid-out cut-stone foundation braces. Below this fill was a well-preserved plaster floor which appears to have been covered by the fill under the latest floor of the courtyard and by the steps leading to the Str. 43 "throne room". It was therefore concluded that this floor may correspond to an earlier phase of the courtyard and it is hypothesized that it may also connect with an earlier phase of Str. 43 (Figure 21).

A new trench was opened (TP23, by Joseph Mella) from the courtyard floor extending towards the southern building (Str. 60). This excavation uncovered a broad stairway that ran the whole length of the building and rested on the same patio floor as Str. 43's stairway. Thus, it appeared to be coeval with the last phase of construction of Structure 43 and its stairway. The function of this stairway may have been that of a monumental access to a yet to be excavated important building to the south of the "throne room" and/or perhaps as reviewing stands (Figure 22).

The investigation of the corner between Structure 43 and Structure 60 indicated that the stairway was a later addition and that it covered a well-built cut-stone block wall and plinth on which Structure 60 originally rested. Also, it appeared that in the corner between the two structures the stairway of Str. 60 did not directly abut Str. 43 but in fact left access open to a vaulted corridor built below the southern room of Str. 43 and connecting the eastern and western courts of the complex (Figure 22).

The space in this corner was later filled with dark clay and abundant ceramic and lithic materials suggesting that in the last phase of occupation of the complex both Structures 60 and 43 and the tunnel between them were in disuse, at least from a formal point of view, and that the corner between them was used as a midden. The artifacts date this last episode to the Terminal Classic period.

## ***South Group 1***

Two excavations were placed in South Group 1, a major residential group located on a hill-top exactly 1 km south of the Holmul main plaza. Justin Ebersole excavated T28 and T29 in the northernmost structure of the group. The stripping of rubble revealed a multi-room vaulted building of probable residential function. From a plaza floor a low step led to a room with a bench (Figure 23, 24). The rear wall was made of medium sized blocks set directly on bedrock. Inside the main room was a long bench (2.68 x 2 m wide). A shallow human burial was cut 0.5 m deep in the plaza floor in front of the room's threshold. The bone preservation was minimal and only a few fragments were recovered from this context. This structure's occupation is preliminarily dated to the Late/Terminal Classic period.

Jason Pales explored two chultunes within this group. The first chultun was a simple bottle shaped cavity carved into the limestone bedrock. Only a few scattered

ceramics were recovered from this chamber. The second chultun was located in front of the easternmost structure of the group, which had been looted, and was filled with backdirt and ceramics from the looters trench. Upon cleaning of its interior it was revealed to be a double-chambered chultun with a main access shaft between the chambers. At the base of the access shaft a small, window-sized opening led to each of the side chambers. The access was thus raised from the bottom of the shaft to prevent rain water from entering the side-chambers (Figure 25). A few small indentations carved vertically along the wall of the shaft may have been used as ladder.

Kristen Klein excavated a 3x4 m trench in the centerline of the southernmost structure of South Group 1. Removal of the humus and rubble revealed the threshold, plaster floor and eastern doorjamb of a vaulted room. Against the back of the small room was a large 70 cm-high masonry bench (Figure 26). The material associated with the collapse dates the structure's use to the Late/Terminal Classic period.

The general high-quality of the architecture in this group suggests that it was occupied by an elite population.

## **Salvage excavations at K'o.**

The site of K'o is one of several ceremonial centers ringing Holmul, located about 4.5 km to the southeast on a ridge overlooking the access across the Yaloch lake and bajo area (Bajo Jobal; see GIS-paths model above Figure 5). The ceremonial core is composed of a large, formally laid out plaza with palace-like buildings, and a main temple. It was first reported by this project in 2000 (Estrada-Belli 2000, 2002). The actual mapping of the site is planned for 2003. One of the secondary pyramid structures was noted in 2002 because of a fresh looter's trench into its back (the looting must have been pre-2000). Justin Ebersole's investigation of this looters trench revealed the remains of three well-preserved phases of construction and the presence of a looted vaulted tomb (Figure 27). This chamber measured 2.33 meters long by 0.73 meter wide by 1.37 meters high and had been completely emptied by looters or possibly in ancient times. The floor of the tomb was of fine plaster with remains of burning and red paint on the walls. This burial was dated stratigraphically to Phase II of the building. The looters intruded on an earlier phase of the building, which was not possible to explore due to risk of collapse. Outside of the looted tomb, in the eastern profile of the trench, a cache was found in the narrow space between the Phase II and III façade of the building which was decorated by apron moldings and steps. The Phase II building appeared to have a stairway onto which the offering was buried. Later a vertical wall was built over the stairway enclosing the cache. Three Balanza Black vessels were deposited in this cache (Figure 28). It is then apparent that this was a dedicatory offering for the new construction (Phase III). One of the vessels was a basal flange bowl with incised geometric decoration. The second was a plain black bowl with round appliqué and the third, buried under the basal flange bowl was a frying pan bowl with a saucer spout. These vessels date the cache clearly to the Early Classic period and thus the stratigraphically earlier looted tomb must date to a phase immediately preceding, perhaps also within the Early Classic period, judging from the architectural style of the vault.

## **Investigations at La Sufricaya**

At La Sufricaya, aside from documenting the murals 1-3 found in Str.1 during the 2001 season (see Estrada-Belli 2001, 2002), excavations focused on several areas of interest. 1) The exterior of Structure 1. 2) The context of Stelae 4, 5, 6, 8 and 9 which were found scattered around the site 3) A residential group (S. Group 6) in the southwest area of the site with masonry buildings and chultuns and a residential group in the northeastern area (Group WT4).

### ***Summary of excavations in Str. 1.***

The exploration of the architecture of Str. 1 focused on a clearing of a looters' trench (SLT05) and two extension units to the north and south of the trench itself (ST07 ST09) on the eastern side of the mound. A southern looter's trench (SLT06) was also cleared of debris, an excavation placed near it (ST16), and a test excavation was placed in the northern side of the building (ST08) (Figure 29).

In excavation SLT05 John Tomasic explored the eastern side of Room 1 in Structure 1 (the mural room) and uncovered remains of the outer edge of the platform onto which Room 1, rested and walls and floors of a later stage of the building. The earlier stage of construction exposed in this excavation (phase II or Str. 1) was a plaster floor beginning at the base of the eastern wall of Room 1 and running east up the edge of the mound. It was thus evident that Room 1 was originally a simple building resting on a 30 cm high plinth on the northwestern corner of the raised court and did not rest on a pyramidal stepped platform itself.

In a later stage of construction (phase III of Str. 1) the mural room's roof was razed, the room filled in and a new floor platform built over it (Figure 30, but see also Estrada-Belli 2001, Figure 32). The eastern edge of the new edifice was moved 4 m outwards to fully enclose the earlier building and the exterior floor covered by a new thin lens of plaster. The northern side of the mound was also modified at this time to accommodate an exterior 30 cm high two-course stone bench running E-W along the entire edge of the mound. Both episodes of construction (Phase II and III of Str. 1) were associated with Early Classic ceramics, which were contained in the fill. Especially interesting were the relative amount of Tzakol 3 types such as small vase lids and a fragment of a green Pachuca obsidian blade (see appendix). Finally, the latest evidence of occupation on this side of the building prior to the partial collapse of its wall-façade was a thick layer of grey ashes containing large quantities of Late Classic period material (Figure 30).

On the southern side of Room 1, a looter's trench (SLT06) bisected a Phase III wall running E-W. This wall (SL06-10) was preserved up to a height above the floor of 2.3 meters. In the trench's profile, another wall (SL06-11) was visible behind the first one (stratigraphically earlier). The two parallel walls were separated by a 70 cm wide space filled with rocks. The first wall (SL06-11) rested on a lower plaster floor perhaps contemporary with Phase II of Str.1 and therefore directly related to walls bearing the mural in Room 1.

Subsequently, the space between Room 1 and wall SL06-11 was filled with large stones. Because this space remained unexcavated it was not possible to determine if it had been

roofed at this time. In any case, the southern wall (SL06-11) appeared to represent the rear wall of a long and narrow room open to the south, later buried by fill and a subsequent new wall (SL06-10) during Phase III of the building.

Clearing of the fill between walls SL06-10 and SL06-11 led to the discovery of painted stucco on the outer (southern) surface of wall SL06-11 for its entire length of 12 m. The western tunnel (SL06-03) excavated to follow this wall led to a corner with a perpendicular wall and the discovery of more paint on the floor between these walls, clearly indicating that this space was the interior of a long and narrow room (Room 2). A separate excavation (ST10) on the centerline of the building later determined that Room 2 had in fact a very short 1 m long wall enclosing its front. It was then hypothesized that the plan of the room was a wide C-shape open to the south (as Room 1), and that it may have had stone pillars or timber posts in the central area. As indicated above, wall SL06-10 later closed up the back of the room while leaving part of the front of the building still in use (Phase IIb). It is possible that this wall was built as a measure to prevent the collapse of the vault. At the final stage of construction (Phase III) in this portion of the building a stairway was built on the now in filled mound leading to a floor which may have supported a perishable building. The ceramics associated with the fills of Phases II and III consisted of large quantities of Tzakol 3-like types suggesting that the entire life of the building spanned the Early Classic period.

The mural associated with the Phase II southern wall (SL06-11) covered an area of 12 m in length by 2 m in height. Its western half was poorly preserved (Figure 33). In the western margin a large red vertical band enclosed the painted composition. Next to this margin are remains of black scrolled lines, perhaps representing smoke rising from a censer. No other feature were identifiable from this portion of the painting.

The eastern half of the mural presented a much more complex iconography (Figure 34). The composition is centered on a seated individual, whose body is painted in yellow. His arms are tied by large bows to vertical posts of what appears to be a scaffold placed on a bench. He wears a simple loincloth and a belt with a serpent or turtle head at the right end. A white cape seems to be draped over his shoulders. In front of this figure is what appears to be a lip-to-lip pottery cache or a bundle. To the right is a kneeling, also painted in yellow, with hands stretched out towards the central figure. The hands seem to support an offering of sort (in black, possibly a headdress). Further to the right is a standing frontal figure wearing a red and black beaded pectoral with long black fringes draped on his chest. On the opposite side, to the left of the central figure is another kneeling figure, poorly preserved and possibly a mirror image of the first one, also bearing an offer to the main character. Further outward, to the left, is a standing figure in profile. The face of this personage is painted in red- and black and a shell disk or mirror is visible in the chest area.

Much of the rest of the composition is eroded away or buried under calcium concretions rendering further identifications difficult. However, it is likely that the multispectral imaging and conservation treatment of the painted stucco planned for 2003 will help reveal further detail of this unique mural.

### ***Imaging of the La Sufricaya Murals 1-3***

This is a brief overview of documentation of murals 1-3 with multispectral digital camera by Dr. Gene Ware of Brigham Young University. The recording of the mural was done using high-resolution digital photography encompassing the visible range of the electromagnetic spectrum as well as several infra-red bands (Figure 35-37). Prior work on the Bonampak and Naj Tunich murals demonstrated the benefits of a combination of visible color and infra-red bands to highlight red and green mineral based pigments as well as black charcoal-based underdrawing not visible with the naked eye.

The recording of the La Sufricaya mural 1-3 was approached in frames of approximately 20x20 cm in size for which 7-9 overlapping takes were recorded for each band of the electromagnetic spectrum. After all images were taken a mosaic had to be created of all frames within the wall. Once the composition was thus re-composed overlapping multi-spectral images were cross-analyzed, enhanced, and new features identified. A total of 40 Gygabites of image data were collected within the two-week period of field work. At the time of writing, and while the analysis is still in progress, preliminary results demonstrate successful enhancements for red pigments in the infrared range, as well as a distinctive black outline under the colored figures. A sample of a mosaic-image of the eastern wall and three infrared enhancements is included in this report (Figures 35-37). In addition to the imaging of the mural a scale color drawing was made of all painted areas in Room 1 by artist Jena Dejuilio. As it was expected, the process of drawing (and imaging) allowed a more complete understanding of the composition as some minute details became visible upon closer examination and heavy light. In addition to the Teotihuacan figures described in the 2001 report (Estrada-Belli 2001), a new area was noted in the top center of the main wall (wall 1-2) (Figure 52). In this area a large portion of the original paint had faded away, but some red lines were still visible, perhaps outlining a human figure. Above this faded figure, one can still see large feather plumes descending from what appears to be a headdress. This would suggest the presence of a central, standing figure with a large headdress, painted twice larger than any of the other figure. If this reconstructive image is correct the scene may depict a ceremony in which a ruler or lord is acclaimed or is addressing a gathering of Teotihuacan warriors and a minority of Maya individuals. The possibility that this individual may be a foreigner is intriguing. Alternatively, the scene may depict a local lord in front of a number of emissaries. Such scenario would be consistent with accession ceremonies to which foreign dignitaries were often present.

### ***Conservation of Murals***

Conservator Enrique Monterroso helped stabilize the architecture and secured the space in which the La Sufricaya murals are located from vandalism or collapse. A wooden scaffolding structure was constructed inside Room 1 to prevent the collapse of its ceiling. At the top of such structure, wooden planks were placed to sustain the weight of several boulders that had been unstabilized by the looters' carving underneath them. A wooden door was also built and placed at the entrance of the room to prevent light or unauthorized entry to the room.

The stabilization of the narrow space within the tunnel in which the mural 4-5 wall is located was accomplished by constructing a wooden frame to support the ceiling

of the tunnel itself. The entrance of these tunnels was sealed completely with a limestone block wall to prevent light and unauthorized entry.

### ***Summary of excavations in Stelae 4, 5, 6, 8.***

Kristen Klein excavated under the Stela 8 fragment and under Stela 4 to locate their original contexts. Fragment 8 is located on the far east of the La Sufricaya area, in front of the east face of Group 1. It is the middle fragment of a complete stela (Stela 1) with fragments St.1, and St.3 (Figure 38). The complete monument was illustrated and described by Nikolai Grube (Figures 39) as being a portrait of a ruler similar in style to early central Petén monuments such as Yaxhá Stelae 2 and 4, La Milpa Stela 15, La Toronja Stela 1, El Encanto Stela 1, Uolantun Stela 1, Xultun Stelae 12 and 20, El Zapote Stelae 1, 2, 3, 4 and 7, the Hauberg Stela and other pre-Baktun 9 monuments (Grube 2003).

Fragment 8 depicts the midsection of a carved human portrait with waist area, thighs, arms and part of the ornaments well preserved. A 2x4m unit was excavated on and around it. The underside was found to have no carving. The fragment rested directly on the humus. Below the surface only lumps of plaster and cobbles were excavated before hitting bedrock. This suggested that the stone fragment 8 was laid out on the surface recently and also that there may have been only one floor, now eroded, above bedrock in this area below the surface (Figure 40). The artifact recovered from the unit suggest a Terminal Classic date for the last occupation in this location.

The excavation of Stela 6 was resumed by Andrea Gehlhausen. Several new fragments were found scattered around the main fragment bearing inscription (seven columns, see Grube 2003). Especially noteworthy was the finding of a fragment of low relief with two carved glyphs with a uinal sign with coefficient 9, and a kin sign with coefficient 9. These were re-fitted to the sculpture and appeared to complete the Long count date of 8.17.?9.9 (Figure 41). Below the stela fragment remains of an eroded floor were found above bedrock. The eroded inscription may also bear the name glyph of Sijaj K'ak and mention of a local lord according to Nikolai Grube epigraphic analysis (Figure 42; Grube 2003), Terminal Classic ceramics were recovered and no original stela setting was identified in this location, which suggested post-abandonment re-setting of the stela.

The excavation of Stela 4 was placed immediately to the south of the monument due to the presence of a tree enveloping the stone. An eroded plaster floor was found about 50 cm below the surface with associated Tepeu 2 ceramics. Below this and a 20 cm thick construction fill was an earlier plaster floor at 71 cm depth, with no associated diagnostics. Bedrock was found immediately underneath. In conclusion, this excavation demonstrated that a new floor was laid out on top of this ritual platform in connection with the placement of two carved monuments (Stela 4 and Altar 1, Late Classic). An earlier floor was immediately above bedrock and may date to the Early Classic period.

The excavation in connection with La Sufricaya monument 9, took place in residential Group WT4, located 600 m north of the La Sufricaya Group 1 ritual area. The unit was placed around the stone, in front (west face) of the eastern structure in the rectangular patio group. Upon removal of humus it became clear that two separate stone

monuments were buried in this locale. Monument 9, is a 1 m-high sculpture in the round of a bound captive in a seated position with hands wrapped around the retracted legs and holding an axe or knife. The head of the figure is missing. Monument 10 on the other hand is a flat stela-like slab without carving about 1.2 m in length.

Both monuments appear to have been laid onto the last floor of the patio (Figure 43, 44). No definite identification of a stela butt was made for either monument, however. A cache of human cranial bone and pottery was found in the narrow space between the stone monuments. All material associated with the cache and fill above and below it date to the Terminal Classic period.

### ***Residential buildings at La Sufricaya***

One hundred meters to the north of Group WT4, a test excavation was placed by Jason Paling in Group WT5 in connection with a large stone slab located in the middle of a residential group. The stone slab was identified as an altar set onto an eroded plaster plaza floor immediately above bedrock. Within the thin layer of fill below the plaza floor and above bedrock a few Terminal Classic sherds were found.

Excavation of Structure 110 in La Sufricaya Group 6 investigated the remains of what appeared to be a vaulted residential building within a well-defined courtyard group. Structure 110 was chosen for excavation because on the surface it showed collapsed architecture undisturbed by major looters' trenches or trees.

This group was chosen for excavation also because significant amounts of glyph-decorated ceramics were found in looters' backdirt.

Britta Watters' excavation (ST11) in Structure 110 explored the exterior of a N-S wall built in dressed rectangular blocks (60 cm in length) and set upon a 1-course block foundation. About 3 m in length of the wall were uncovered and a corner was found in the northern end of the excavation (Figure 45). An exterior plaster floor abutted the front of the wall. Within this floor an oval-shaped burial cut was made to accommodate a flexed individual. Remains of an earlier floor were found within this grave cut, indicating a possible earlier construction phase of the structure. The artifacts associated with the interment dated to the Terminal Classic period.

The interior of the structure was only partially investigated. Behind the N-S wall another perpendicular wall (E-W) was found under the superficial humus and rubble. This was made of roughly shaped cobbles. Behind this wall was a fill of loosely packed marl and small cobbles. Within this fill, Terminal Classic pottery and a metate fragment were found in addition to a partial human bone. On the opposite side of this wall (south) a loose fill was found comprising large and wedge-shaped blocks and slabs. This area was interpreted as the interior of a room into which the masonry vault had collapsed. The fill on the opposite side of the E-W wall was interpreted as construction fill mixed with refuse to fill-in and close-off part of the existing room space. The E-W wall feature was interpreted as a partition wall of a room perhaps built at a late stage of occupation for the purpose of supporting a falling vault.

The lack of cultural material within the rubble of the collapsed vault in the room's interior suggested that the final collapse of the vault occurred subsequently to the

abandonment of the structure and perhaps of the residential group as a whole. This would explain why the rubble heap of the disused structure was not used again as a trash dump, as structures usually had been in other residential groups in which occupation continued after the collapse one of them.

A *chultun* located about 100 meters north of Group 6 was excavated by Jason Paling. A single infilling episode was documented in this *chultun*. Below the rubble fill, five jar fragments were found set into the bottom of the cavity. These were water jar types of Terminal Classic date. No waterproofing partition was found in this *chultun* indicating that it was perhaps used for rain water storage or for organic waste disposal.

## Investigations at Cival

The site was first reported, named and mapped by Ian Graham in 1984 and since 2001 it undergoes investigation by the HAP (Estrada-Belli 2002). Its ceremonial core sits on the left bank of the Holmul river, on a high ridge-top area of 1000 x 500m overlooking a small pond to the south and the Holmul river to the east. It is located at the edge of NE-SW trending upland plateau in an apparent strategic location for access to the river route from the north. The core area mapped by Marc Wolf and Kristen Gardella contains several monumental buildings arranged along an E-W axis in a sequence of plazas, courts on elevated platforms and 6 associated carved monuments (Figure 4).

The tallest platform at the site, Group 1, located at the eastern extremity of the ridge, is a 27 m-high multi-temple platform measuring 70x40 m supporting 5 small temple-pyramids. These five buildings form a triadic layout which recalls a well-known pattern at a few Petén Preclassic sites such as El Mirador, Nakbe and others, but most closely that of Uaxactun's Group H-5 (Valdez 1989): two smaller pyramids flank the tallest, eastern, temple and to the west is an inset stairway topped by two smaller stepped buildings (Strs. 4 and 5). A looters' trench in the southeastern building (Str. 5) revealed a three-structure building sequence, the earliest of which is covered by well-preserved red-painted stucco.

The first building phase in the Str. 5 sequence was a 4m-high three-terrace pyramid with an inset eastern stairway, flanked by sloping terrace walls decorated with apron moldings and inset corners (Figure 46). The second and third phase white-stuccoed buildings are decorated in a similar style and reach a height of 5 m (Figure 47). Associated ceramics date these construction phases to the Late Preclassic (400 B.C.-A.D. 200). The latest construction on Structure 5 and the façade of Group 1 employ a peculiar upright limestone block technique similar to Structure 5D-54-4 in Tikal's Mundo Perdido, which dates to the 1st century A.D. (Laporte 1999: 18-19).

Group 1 faces a 130m-long range structure (Str.7) which, paired with a 20 m-high pyramid to the west, forms a layout similar to "E-Groups" at Preclassic sites such as Uaxactun, Tikal, Nakbé and several others found in east-central Petén. A test pit was placed on the southeastern end of this structure in connection with carved stone fragments (Stela 1). The excavation encountered two construction phases above bedrock and indicated a total height for the structure of 2.4 m. Both construction phases produced pure Late Preclassic ceramic materials (400 B.C.- 200 A.D.). Stela 1 is broken into

several eroded fragments, which are lying scattered on top of Structure 7. A chert chisel was found just below the humus next to the main carved fragment (Figures 499, 50). Of the little carving that is preserved, only a hand that holds a K'awiil sceptre can be recognized, a feature which leaves no doubt that Stela 1 is a Late Classic monument.

On the axis of Structure 7, at the east end of what might have been an “E-Group”, Cival Stela 2 was located (Figure 51). This irregularly shaped limestone monument, had been photographed in 1911 by Raymond Merwin of Harvard University and only now relocated. It is carved only on the front. It measures 177 cm in height and 107 cm in width with a maximal thickness of 21 cm. The top of the figure is missing.

The incised design shows a personage in stride in the fluid and dynamic style known only from the earliest sculptures of the Maya lowlands (Figure 52). Its features, feet pointing in the same direction and legs not overlapping at the knees, distinguish pre-Bak'tun 9 monuments from those of later periods after A.D. 435 (Proskouriakoff 1950: 19-21). The feet lack sandals, and the arms are adorned only with a slip-knot around the wrist, indicating that the sculpture antedates Early Classic and late Late Preclassic monuments, such as Nakbé Stela 1 (Hansen 1992). Sandals are similarly absent on Middle Preclassic and early Late Preclassic sculptures such as Kaminaljuyú Stelae 9 and 11, Abaj Takalik Stela 3, the Loltún relief and Uaxactun Stela 10. The figure wears a simple loincloth tied to a belt. The only adornment is a mask with three celts attached to it, covering the area of the chest and belly. The anthropomorphic mask has a square forehead and an elongated snout, resembling Olmec and Izapan deity masks (Norman 1976 Figs. 6.28-6.31) more so than images known from Maya iconography (see also Estrada-Belli et al. 2003).

The carving style and absence of hieroglyphs strongly suggest that this sculpture is very early, antedating other Preclassic Maya carvings, such as the Dumbarton Oaks pectoral, the San Diego cliff carving and the problematic looted Hauberg Stela, but also monuments from Nakbé, which display a much more static style anticipating developments in Early Classic sculpture. The archaic features, including the use of incision, the olmecoid mask and the absence of text are secure indicators that Cival Stela 2 dates amongst the oldest known Maya lowland sculptures.

Another noteworthy feature encountered by our explorations at Cival include a two-course stone wall running along the southern edge of the ridge-top for 300 m and continuing along the eastern edge of the site core (Figure 4). Along its path, this wall cuts across platforms and the back side of buildings in a manner consistent with rapidly-built defensive walls.

Our current finds raise several intriguing questions regarding the nature of this site's Preclassic occupation, as probably the largest settlement in the Holmul region. The nature of the Late Classic period occupation of the site is unclear. Finally, it will be important to establish the date and function of the wall enclosure. Our preliminary findings suggest that Cival was probably the largest site in the Holmul region during the Late Preclassic. We hypothesize that abrupt changes occurred at the end of the Preclassic period, and power and ceremonial focus shifted to the south, in the Holmul site center, where Early Classic and Late Classic dynastic activity has been already documented (Merwin and Vaillant 1932, Estrada-Belli 2002, Grube 2003, Tomasic and Estrada-Belli

2003). Judging from Stela 1's carving style and apparent lack of major Late Classic architectural features at the site, Stela 1 may be the result of the action of dispersal of Late Classic monuments from Holmul out to peripheral centers at or after the time of their carving.

## Conclusions and future research directions

The 2002 field season has produced an unprecedented amount of information on several fronts of investigation.

1) Outside Holmul we have tested the validity of our path-based predictive model by discovering a new site and we have made a further step towards understanding the relationship of minor centers with the Holmul center, with great implications on the role of *Ahau* and *Sahal* nobility within Maya polities. This line of inquiry will be pursued further in 2003 with mapping at the sites of K'o and Hamontun and the explorations of areas north and east of Holmul with GPS and GIS predictions.

2) within the Holmul center we have made further steps in uncovering the Group III palace double court compound and evidenced the combined sacred/secular function of its buildings. We also have gathered more information of the rather ephemeral occupation of the last century at Holmul during the Terminal Classic, with some indications of a siege. Both points will be further explored with new excavations in Group III and in the walled features surrounding it.

3) At Cival we have uncovered massive and early ceremonial architecture of the Late Preclassic period. There are some indications that Cival may have been the earlier seat of power in the region before Holmul. This hypothesis will be explored with excavations in Group 1, in connection with its main temple masks, in the location of its carved stelae (Stela 2, and 6 especially), as well as with further mapping of the ceremonial core (mostly to the east).

4) At La Sufricaya, the reading by Nikolai Grube of Smoking Frog's name on Stela 6, the finding of Teotihuacan figures painted on mural 1-3 and other artifact evidence suggest a real occupation of foreigners at the site during the fifth century. The second mural (mural 4-5), shows an accession ceremony, perhaps an event that occurred within Str. 1 itself. Excavation along the perimeter of Str.1 will attempt to identify the form and function of the building and its construction sequence. Further excavations in the surrounding residential groups will explore the nature of Early Classic and Late Classic occupations at La Sufricaya and the relationship between its occupants and the Holmul site core.

The multiple lines of investigation of our next Holmul season will likely contribute to assembling a more complete and detailed picture of the development of central institutions in this area of Petén, from the Preclassic to the end of the Classic Period. Research at Cival and La Sufricaya will lead to a more detailed understanding of the crucial events that took place at the end of the Preclassic period and of what, if any, role the Teotihuacan "entrada" may have had in the local political affairs. Finally, the Holmul

site center may well present important evidence on long-lasting occupation of a central Petén site and a possible Terminal Classic siege, followed by a slow abandonment.

## Acknowledgements

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## Illustrations

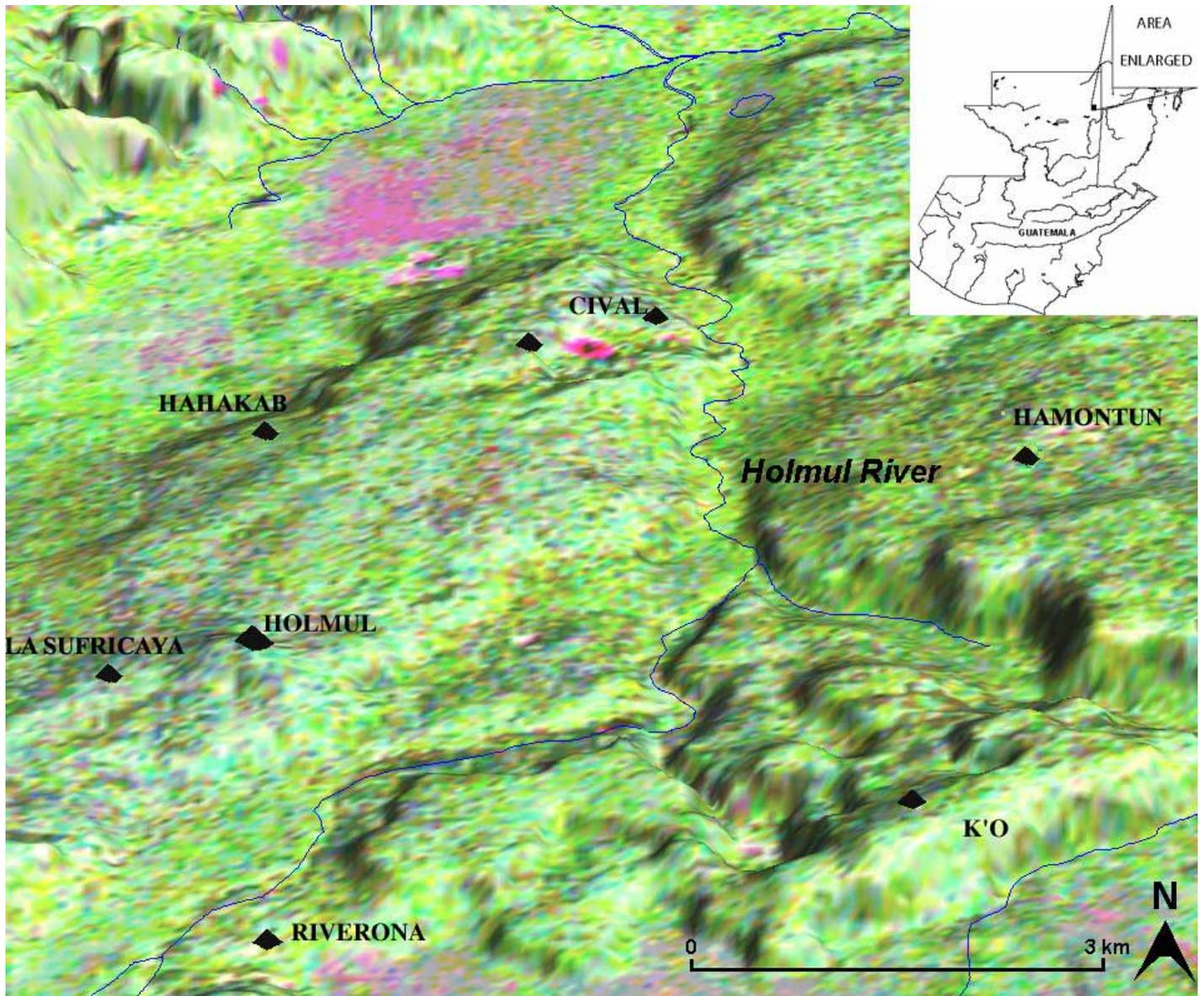


Figure 1. 3-D view of the Holmul environmental setting. Landsat image draped on surface model obtained from 1:50000 topographic maps. Sites investigated in 2002 are noted.

HOLMUL, GUATEMALA  
2000-2001

0 100 m



Figure 2. Area of the Holmul site center mapped as of 2002. Survey transects to the east, north and south are not included.

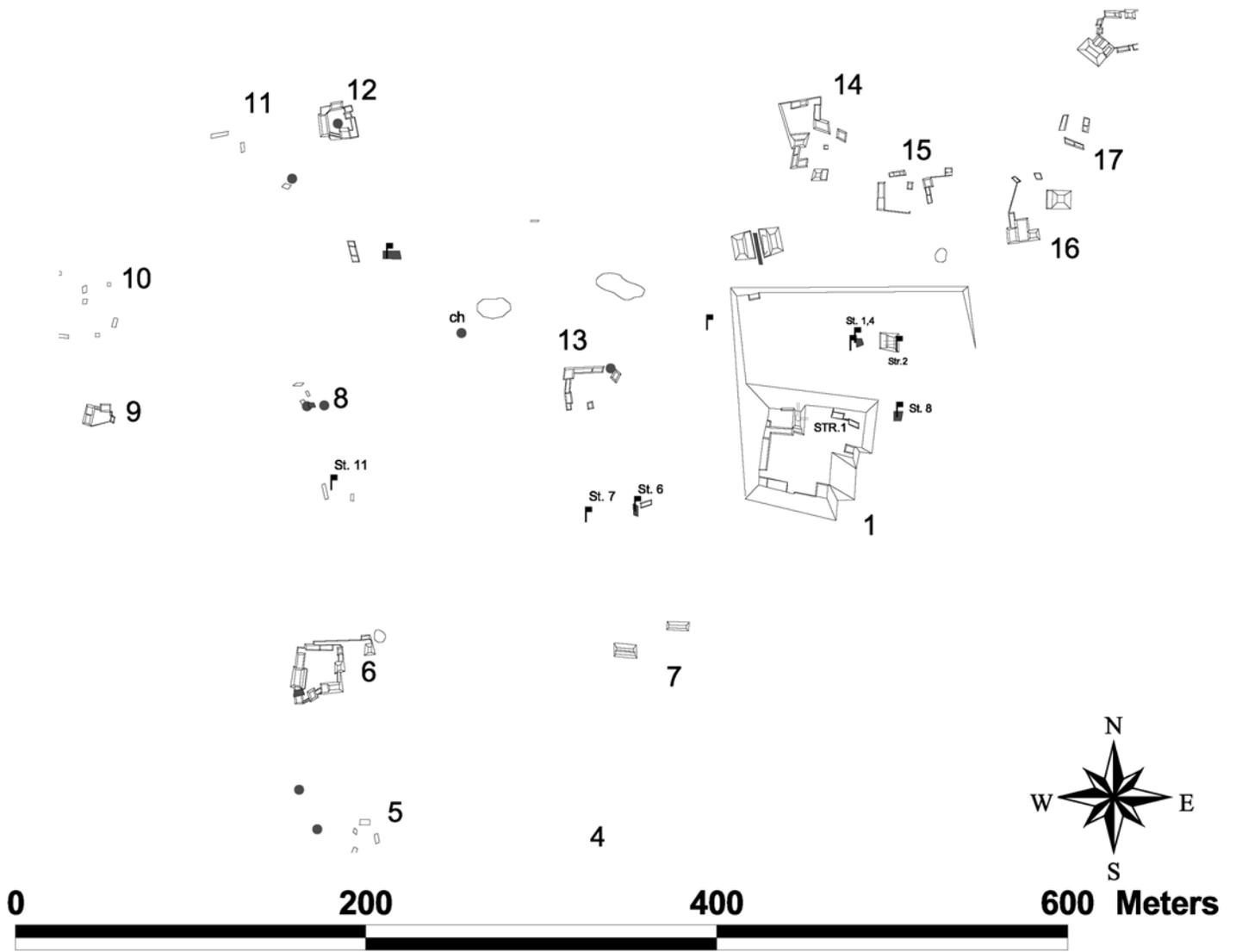


Figure 3. Map of the La Sufricaya area as surveyed in 2001 by Marc Wolf showing stelae and excavations.

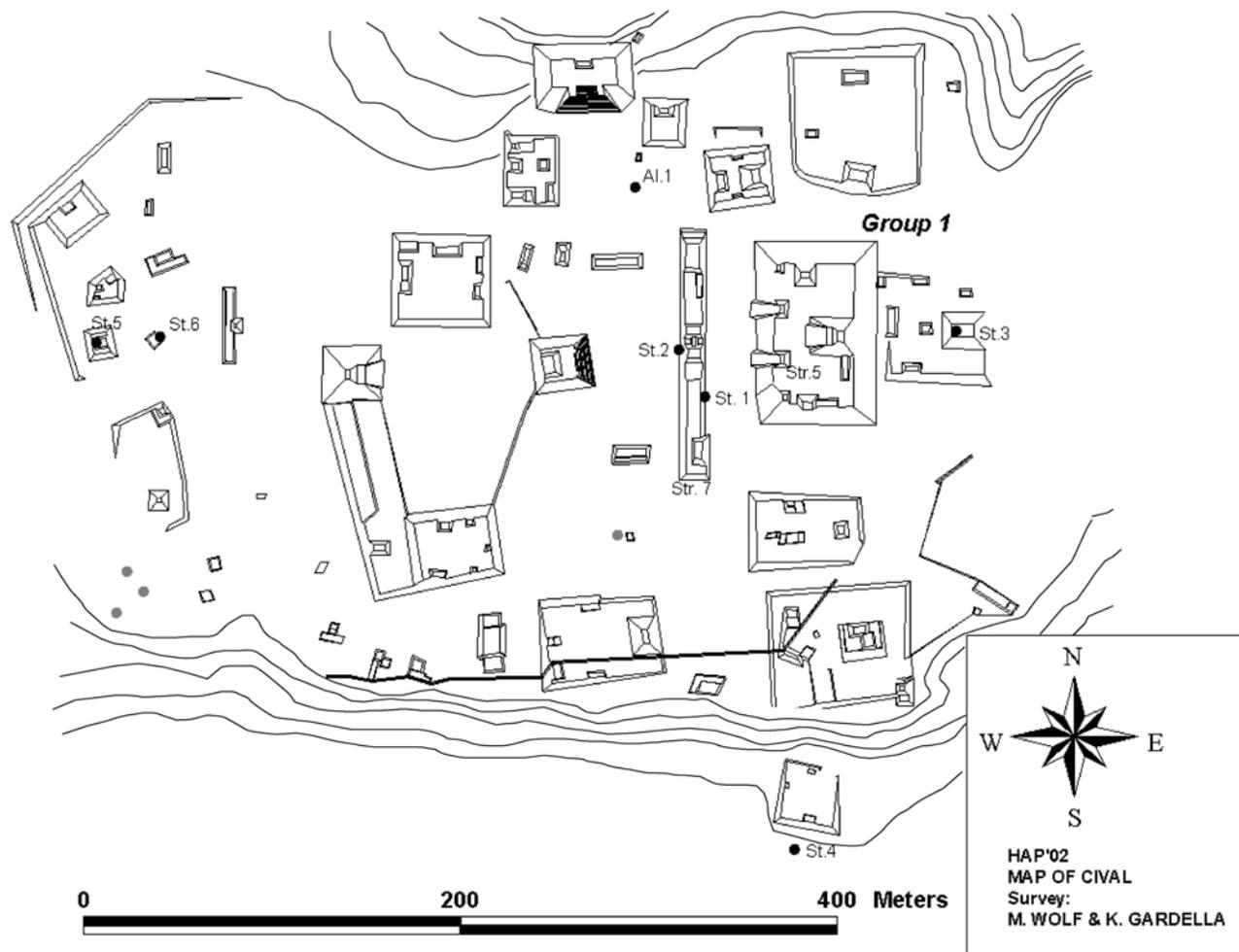


Figure 4. Map of Cival as mapped in 2002 by Wolf and Gardella with adaptations from Ian Graham's unpublished map.

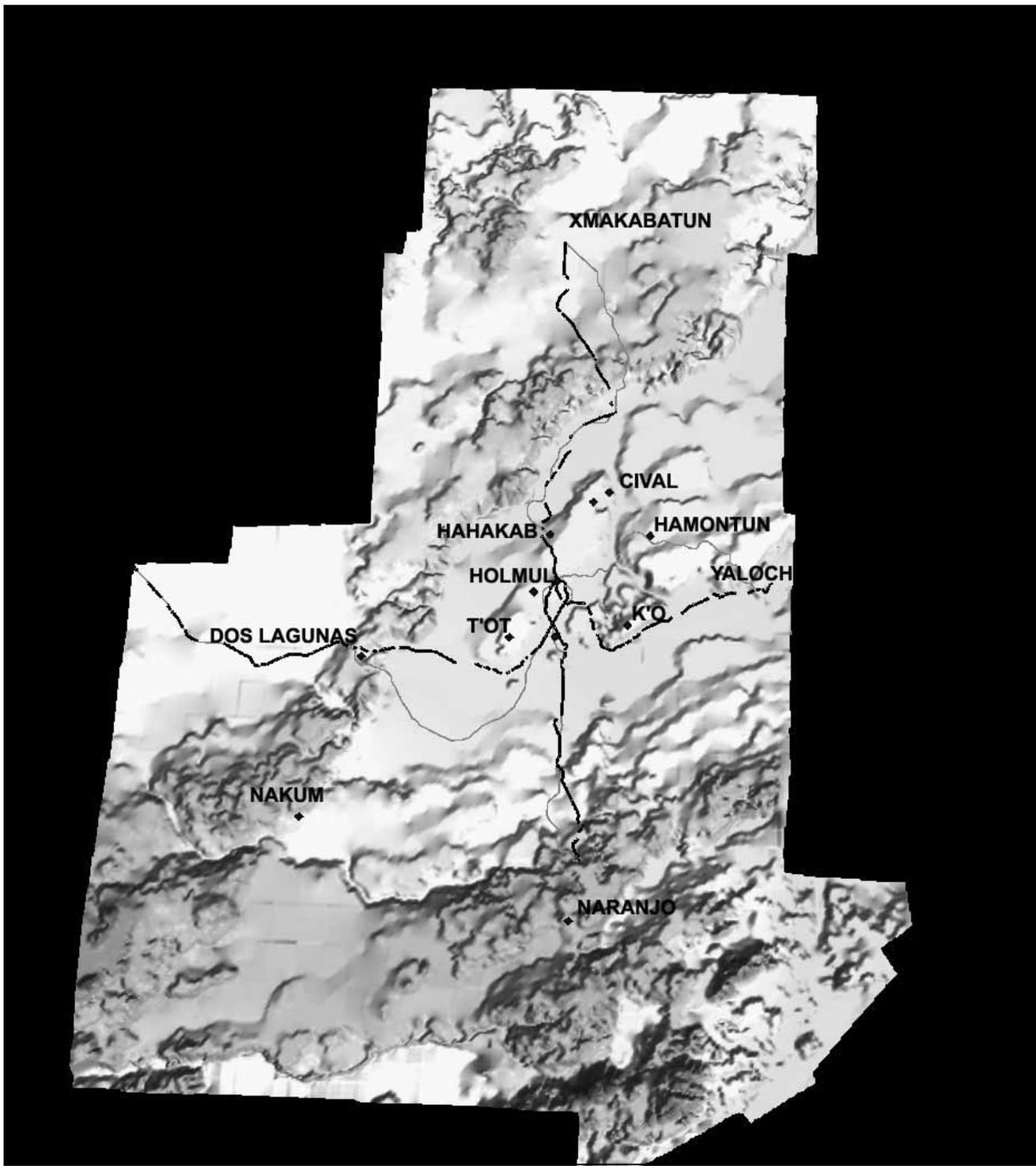


Figure 5. 3d view of the region surrounding Holmul showing nearby major and minor sites and GIS-predicted optimal paths.

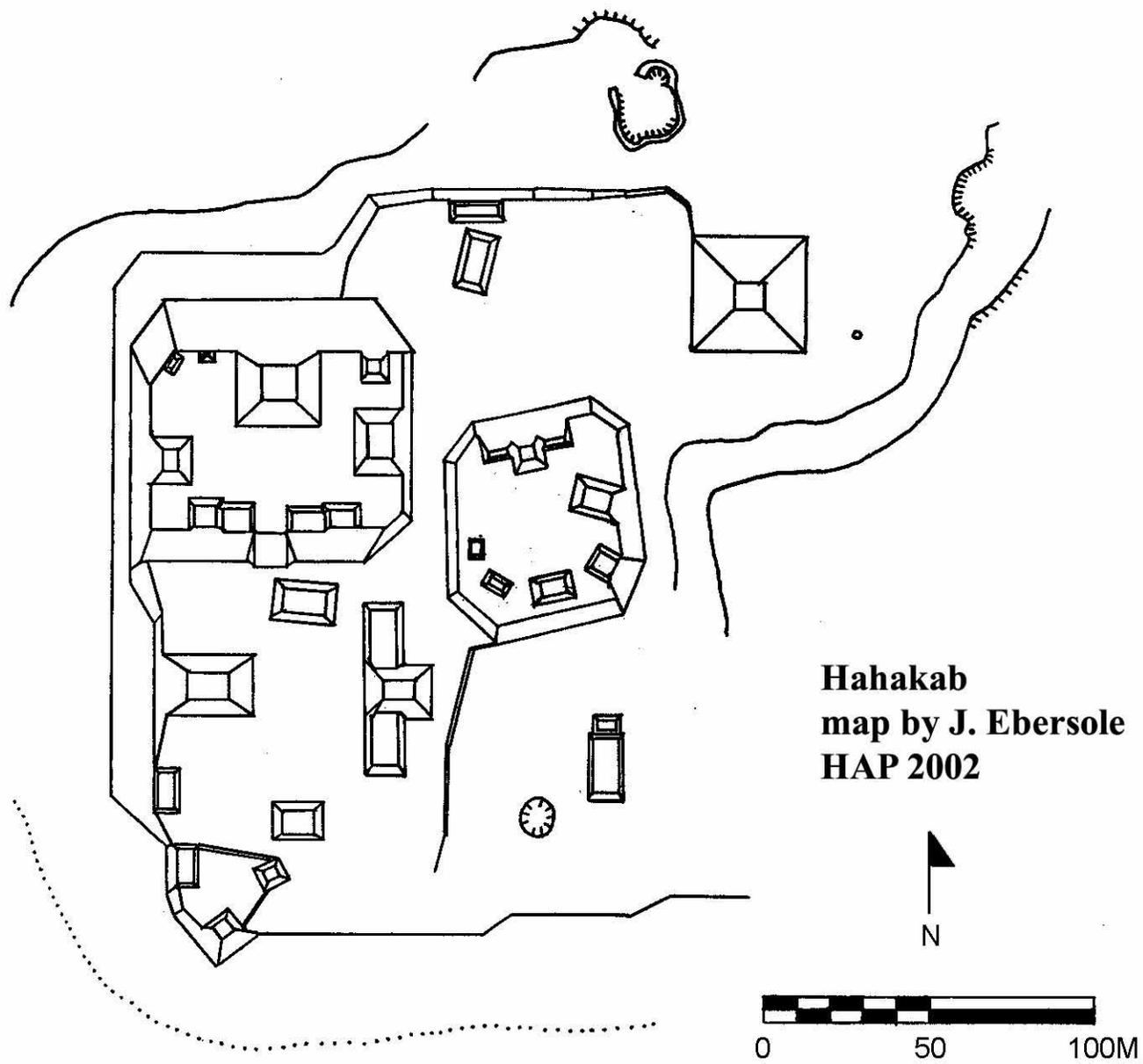


Figure 6. Map of Hahakab

SITE 3  
TEST 3  
JP EBERSOLE  
PACE & COMPASS SKETCH MAP  
JUNE 13, 2002

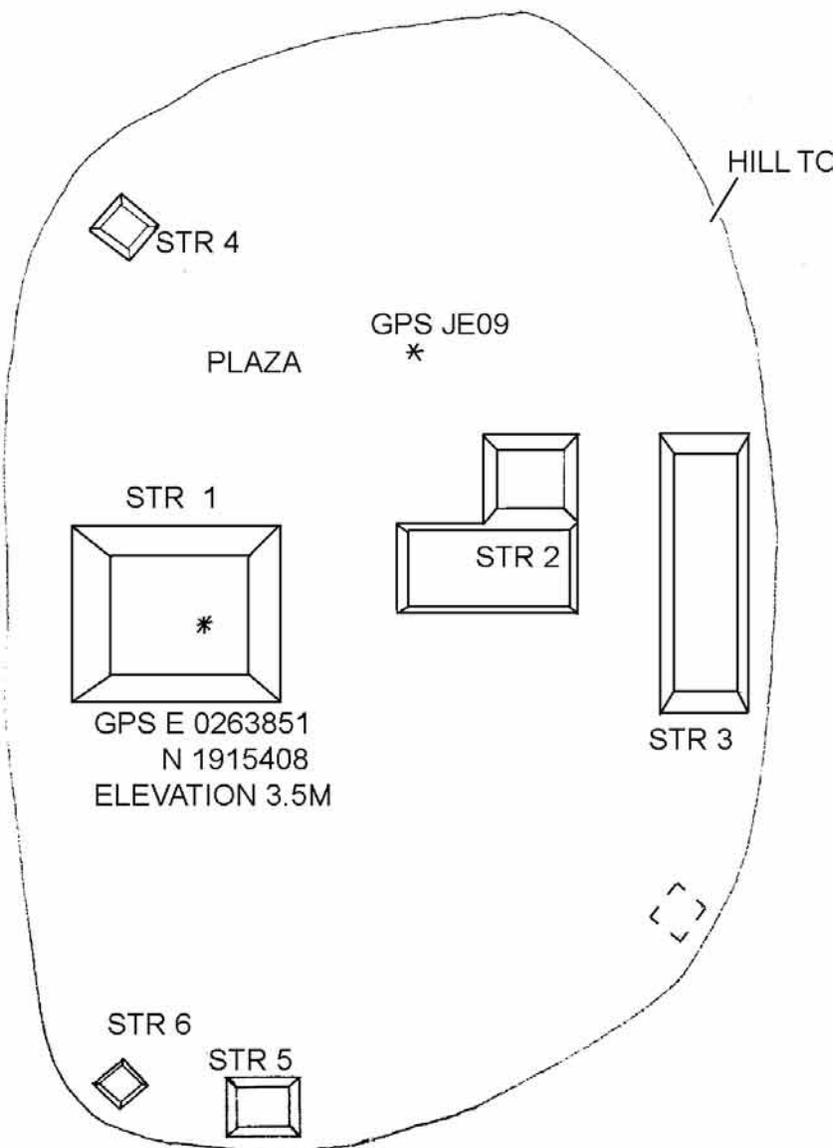
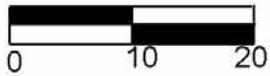


Figure 7 Plan of Site 3, located and mapped by Justin Ebersole based on a GIS/Remote sensing prediction to the east of Holmul.

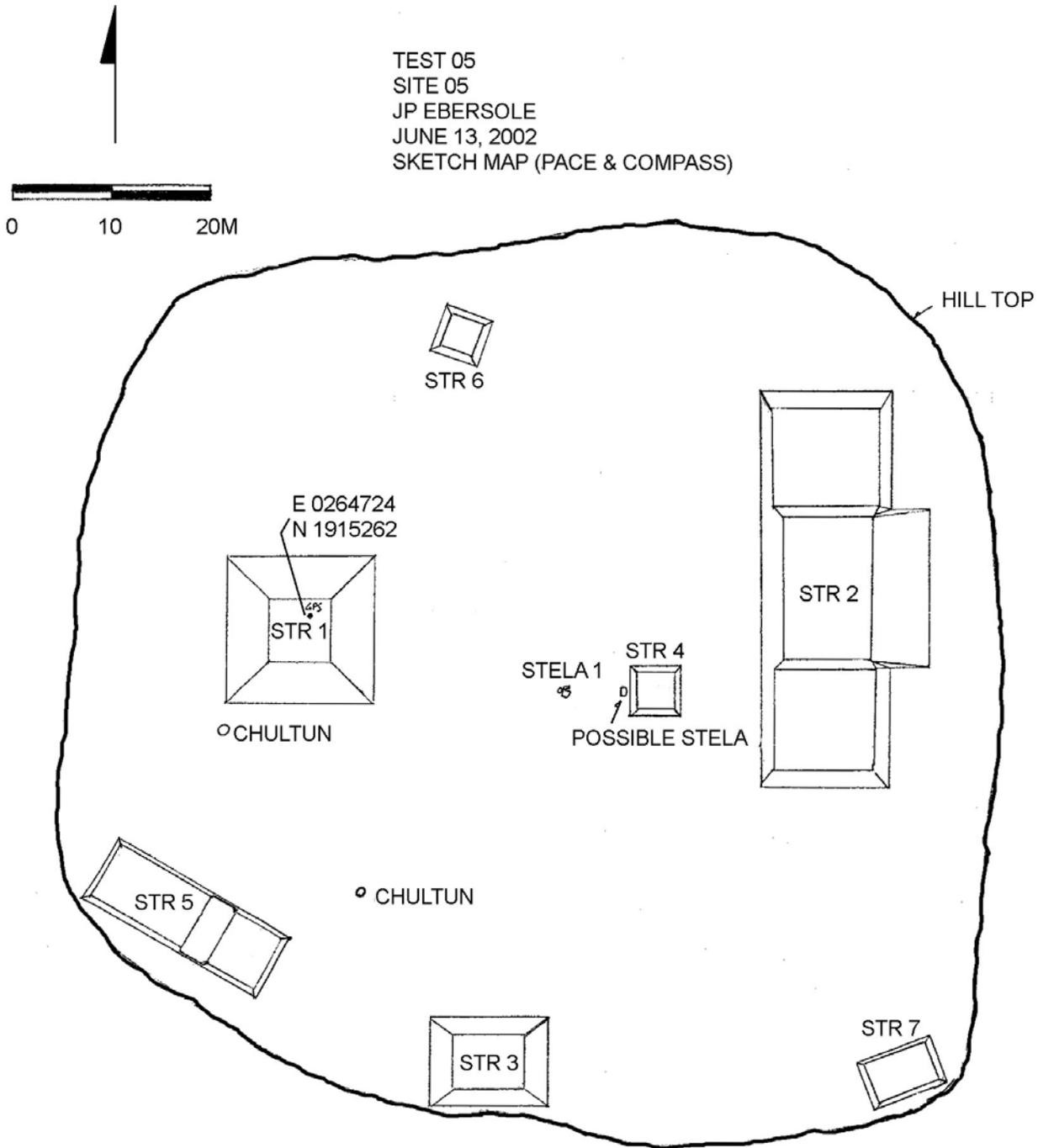


Figure 8. Plan of Site 5, located and mapped by Justin Ebersole based on a GIS/Remote sensing prediction to the east of Holmul.

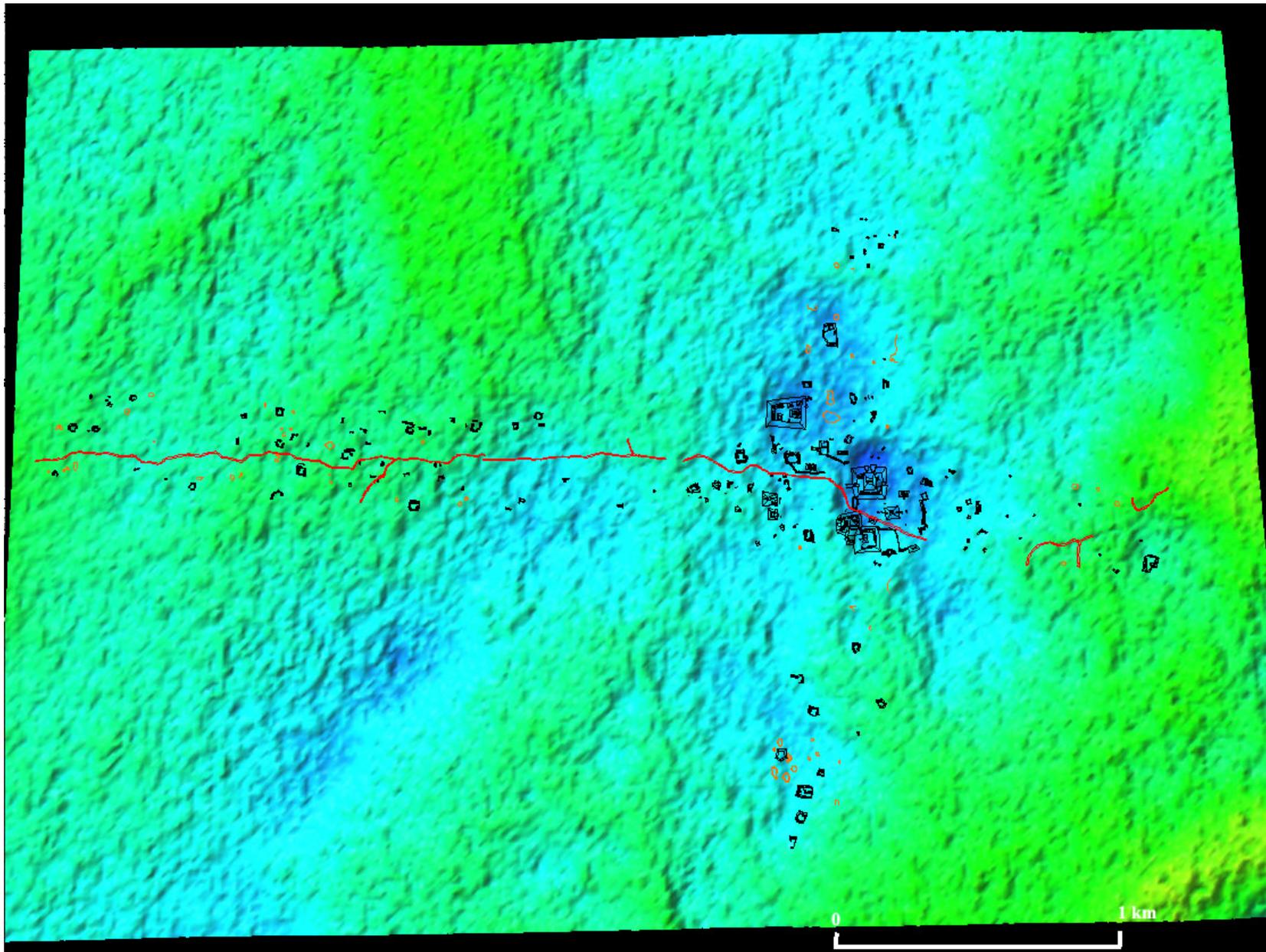


Figure 9. View of topography of Holmul and cultural features mapped as of 2002, including western transect (up to 3.5 km), north, east and south transects ( up to 1km). Logging trails, structures, chultuns, quarries and terraces are shown as overlays of a DEM generated with Star3i interferometry radar data at 10 m IFOV resolution (courtesy of NASA).



Figure 10. Excavation TP25 in eastern structure of Group 13, showing foundation of Terminal Classic perishable building and midden in the left corner.

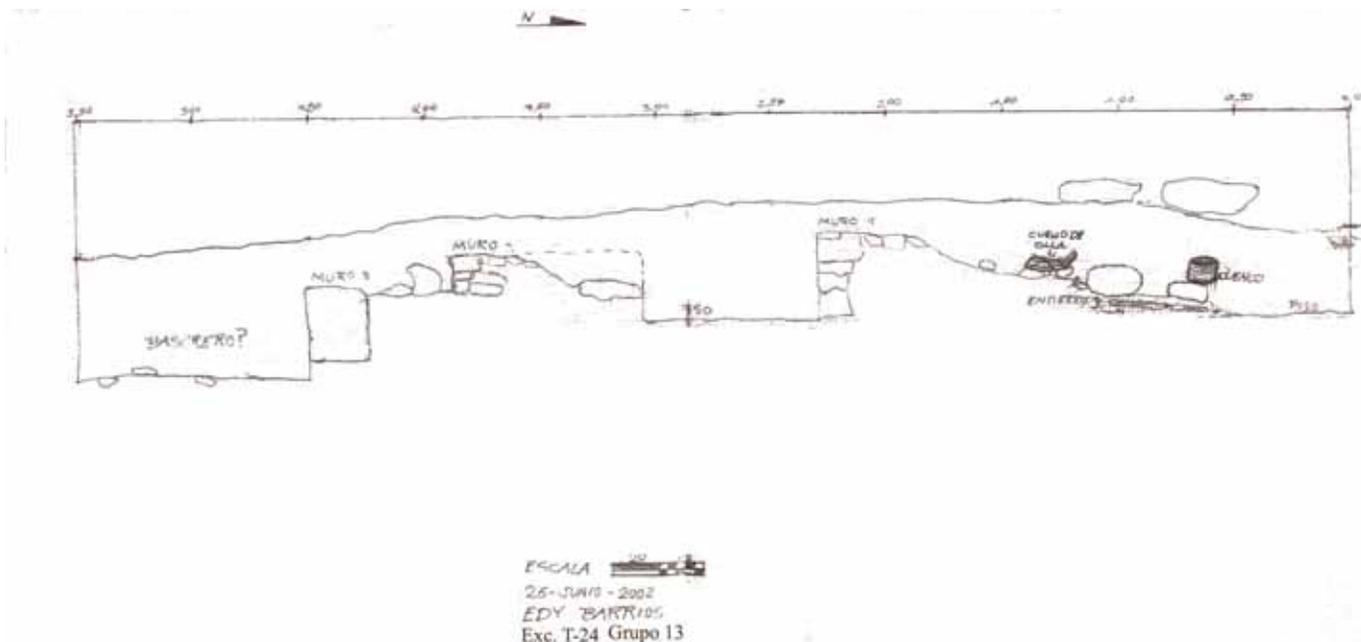


Figure 11. Profile of T-24 excavation in southern wall feature of Group 13, Holmul.

David Bell  
Holmul Structure II  
LT11 North and East Faces  
Profile #3

Figure 4

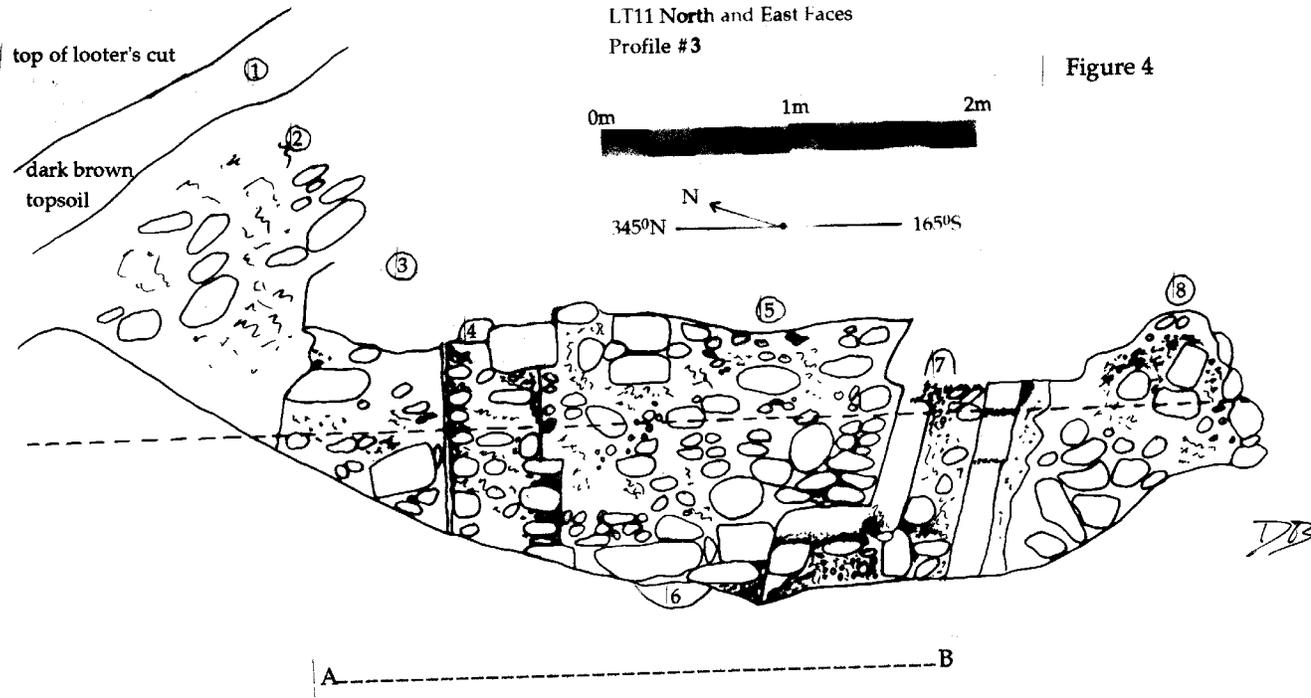


Figure 12 . South profile of looters' tunnel in Str. 2, Group III A, showing two construction phases, the earlier of which was followed by a side tunnel



Figure 13 . View of the tunnel in Str. 2, Group III A, exposing earlier stucco apron molding and bench façade.

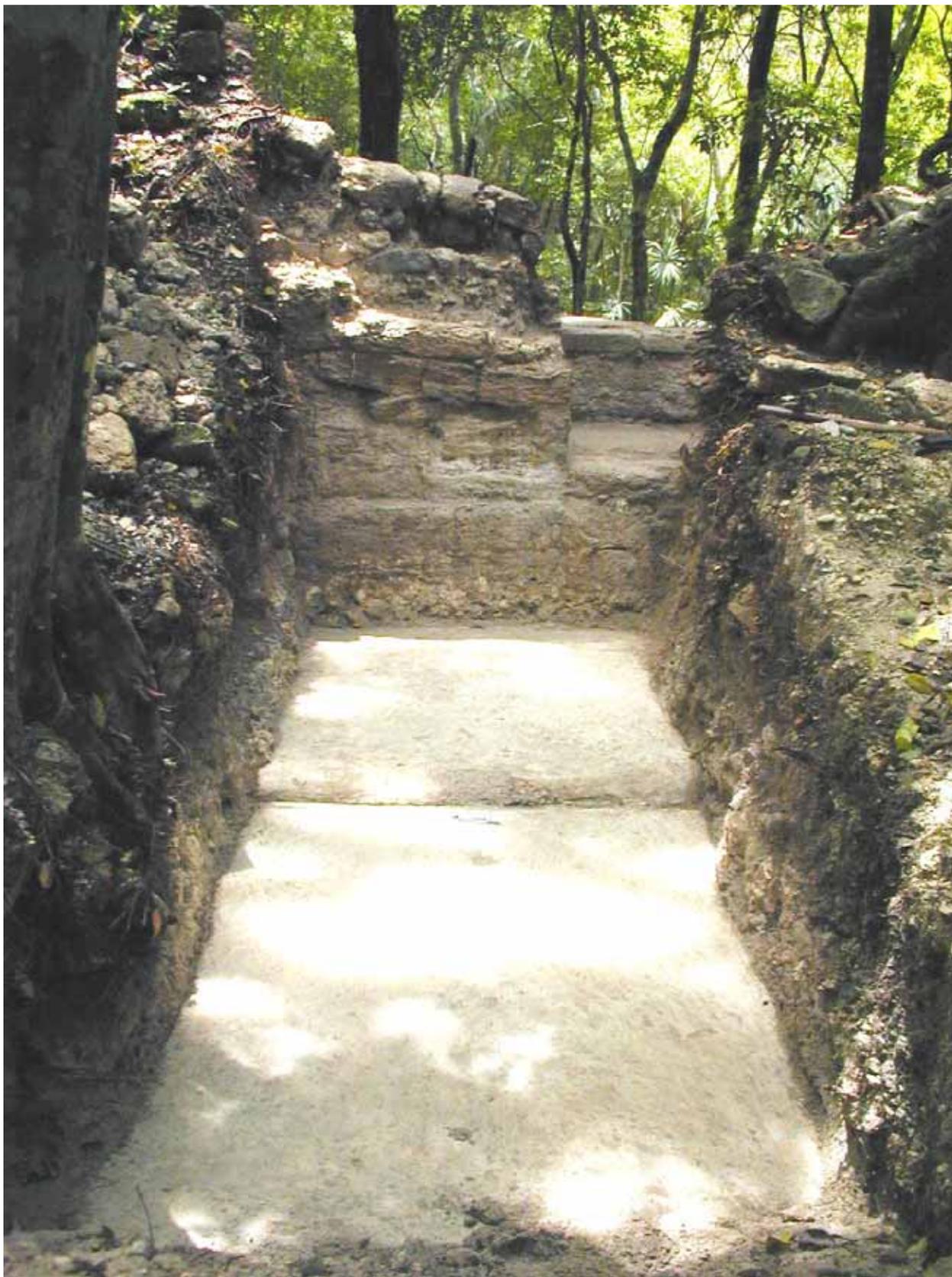


Figure 14. View of excavation into Str. 50, Group III A, showing the exterior plaster floor, masonry wall, doorway and interior bench on the centerline in the background.



Figure 15. View of doorjamb, interior floor and bench of Str. 50. In the far right is a looters' cut.

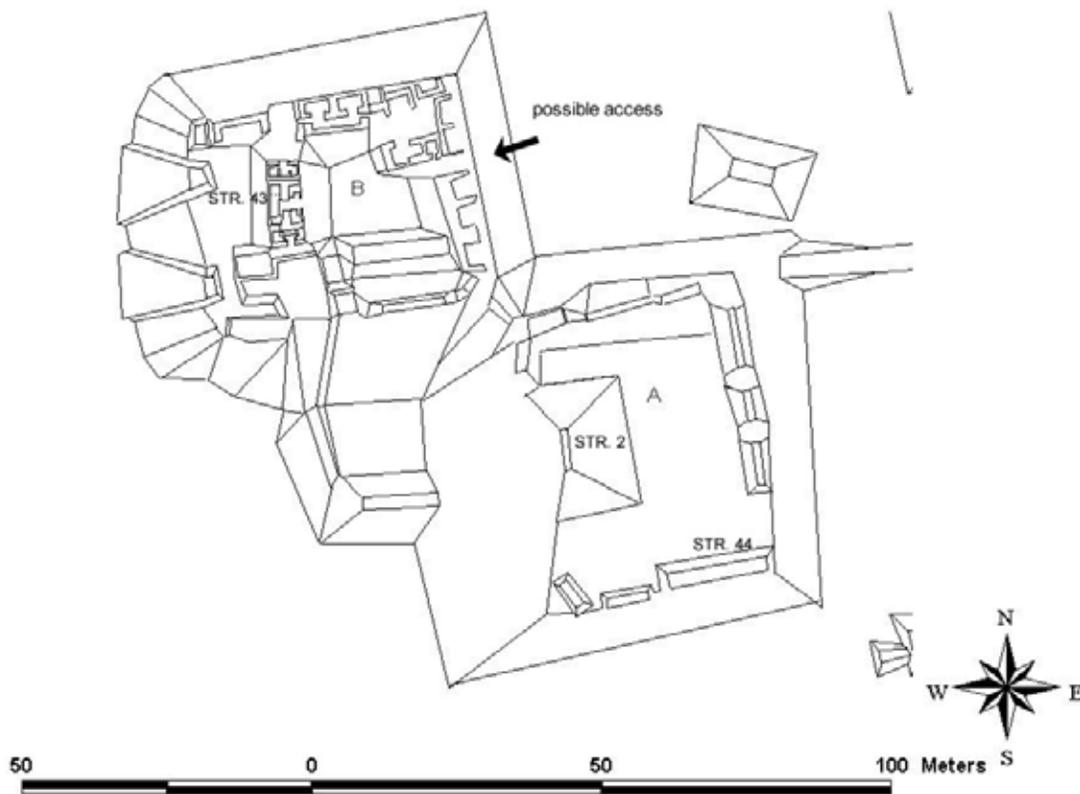


Figure 16. View of stairway deeply buried under Str. 50's interior floor..

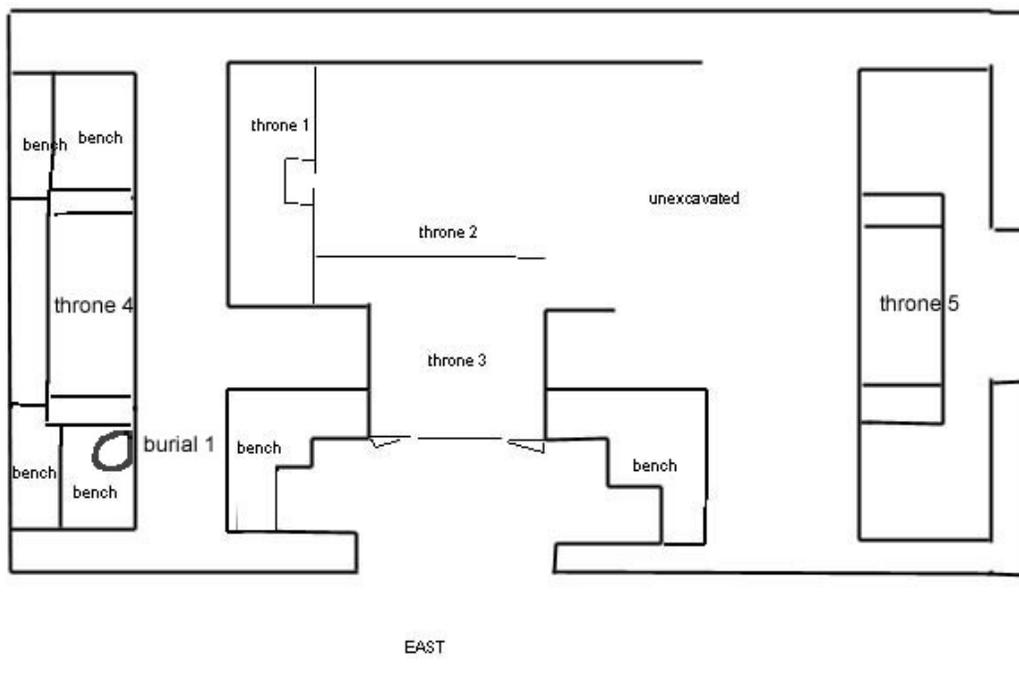


Figure 17. Excavation of Str. 44's southeastern corner (Group III A) showing intentional termination of walls and in filling with fine marl.

## Group III, Courts A and B



A



B

Figure 18. A) Plan view of Group III Courts A and B, showing access and location of Structures 43, 44 and 2. B) Sketch plan of Str. 43 after 2001 excavation (drawing by R. Mongelluzzo).



Figure 19. View of Court B in Group III, with excavation T21 on eastern stairway of Str. 43 prior to uncovering the lowest step. One of the carved stones decorating the building is set on the top step.



Figure 20. Sculpture with pod motif carving found on rubble over stairway in Str. 43, probably part of a veneer stone frieze decorating the building. The pop sign identifies it as a "seat of power"



Figure 21. View of excavation T-21 under latest floor and stairway of Str. 43, showing construction fill (on sides) and an earlier floor underneath.



Figure 22. View of excavation TP23 exposing the stairway of Str. 60, the southern structure of the palace courtyard (Group III, Court B). A Terminal Classic midden is located in the far corner below a vaulted tunnel, and between the two buildings (Str. 43 and 60).



Figure 23. View of excavation TP28 in South Group 1, 1 km from Holmul plaza, showing platform, floor, doorjamb, and interior bench of a vaulted residential building. See also Appendix.

HOLMUL 2002  
South Group 1  
Trenches 28 & 29  
West Wall Profile  
JP Ebersole  
06/25/02

0 20 40 60 80 100 cm

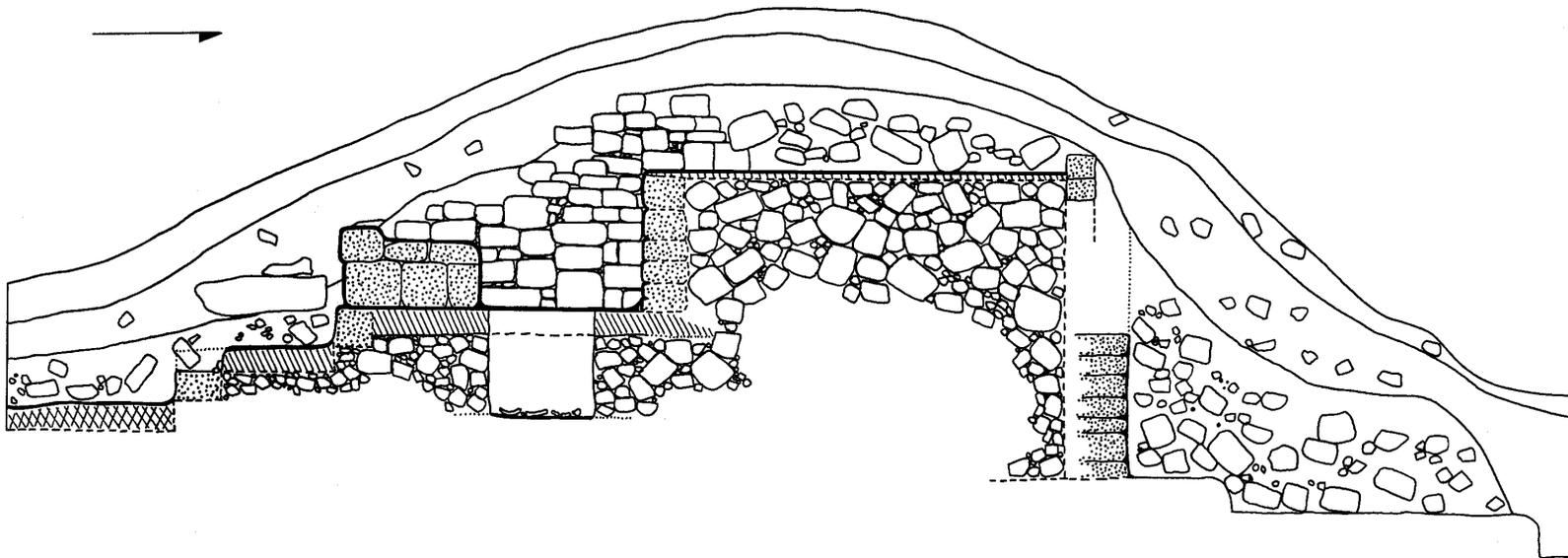


Figure 24 Western Profile of excavations TP28, 29 Str. SG1.1 showing masonry walls, floors and a burial under the rubble. .



Figure 25. Plan view of multi-chambered chultún in center of South Group 1. Drawing Jason Pales.



Figure 26. View of excavation TP26 in Str. SG2 showing floor, doorjamb, and interior bench.

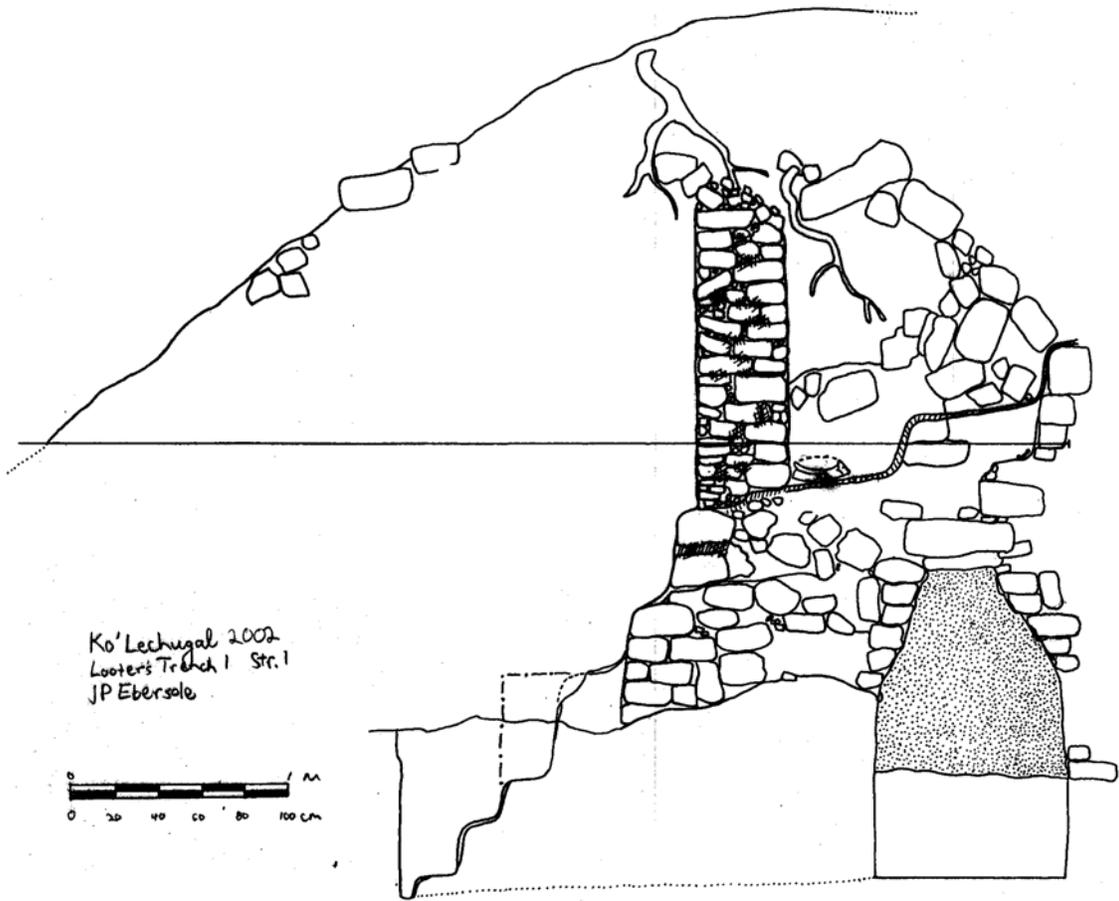


Figure 27. Eastern profile of looters' trench into Str. 1 at K'o showing tomb chamber, below Phase II stairway and Phase III masonry façade.



Figure 28. View of cache in Str. 1 at K'o after excavation in the western profile (see drawings in appendix).

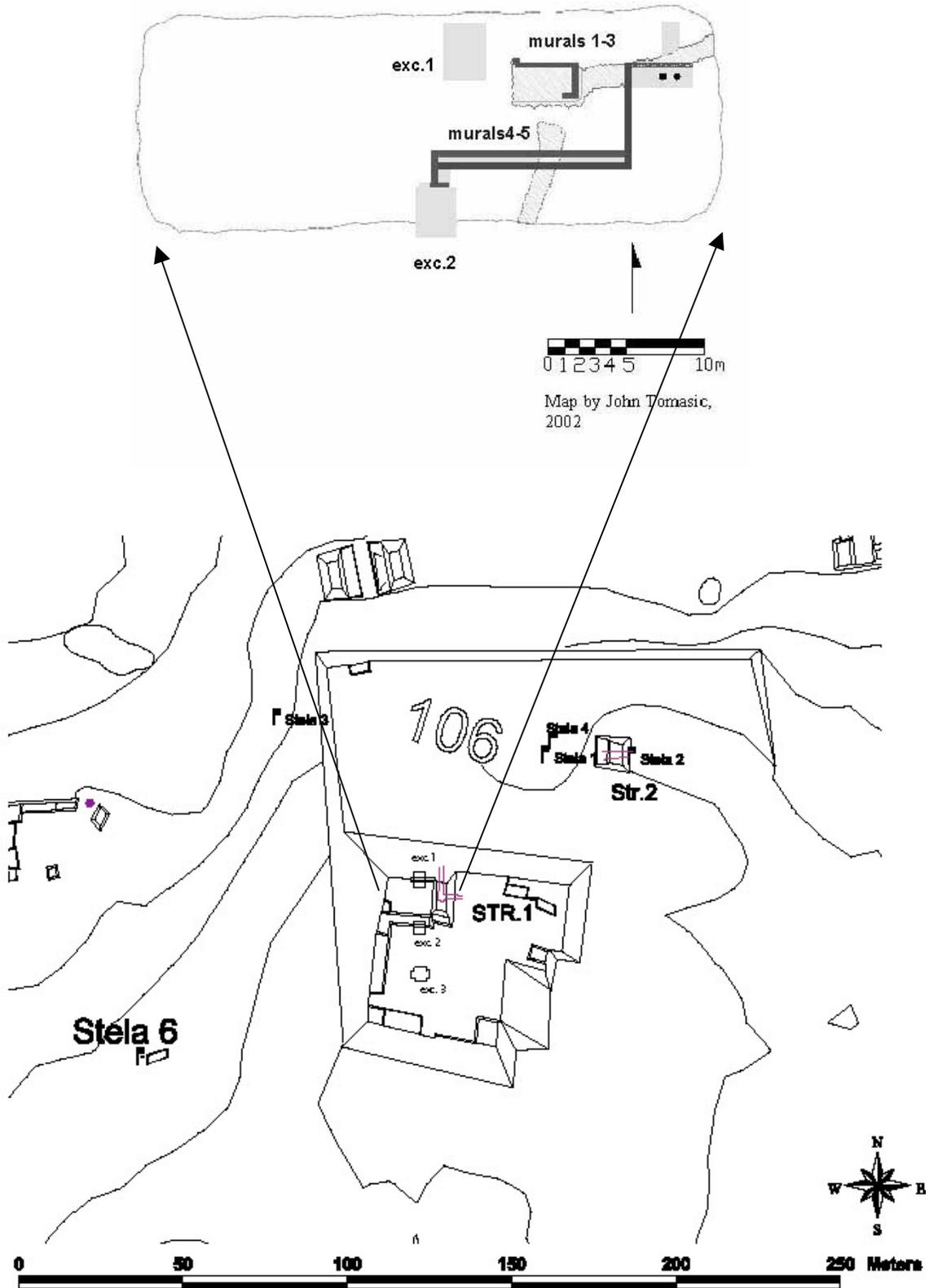


Figure 29. Map of Group 1 at La Sufricaya and sketch map of Str. 1 on Group showing looters' trenches, excavations and investigated mural-bearing walls.

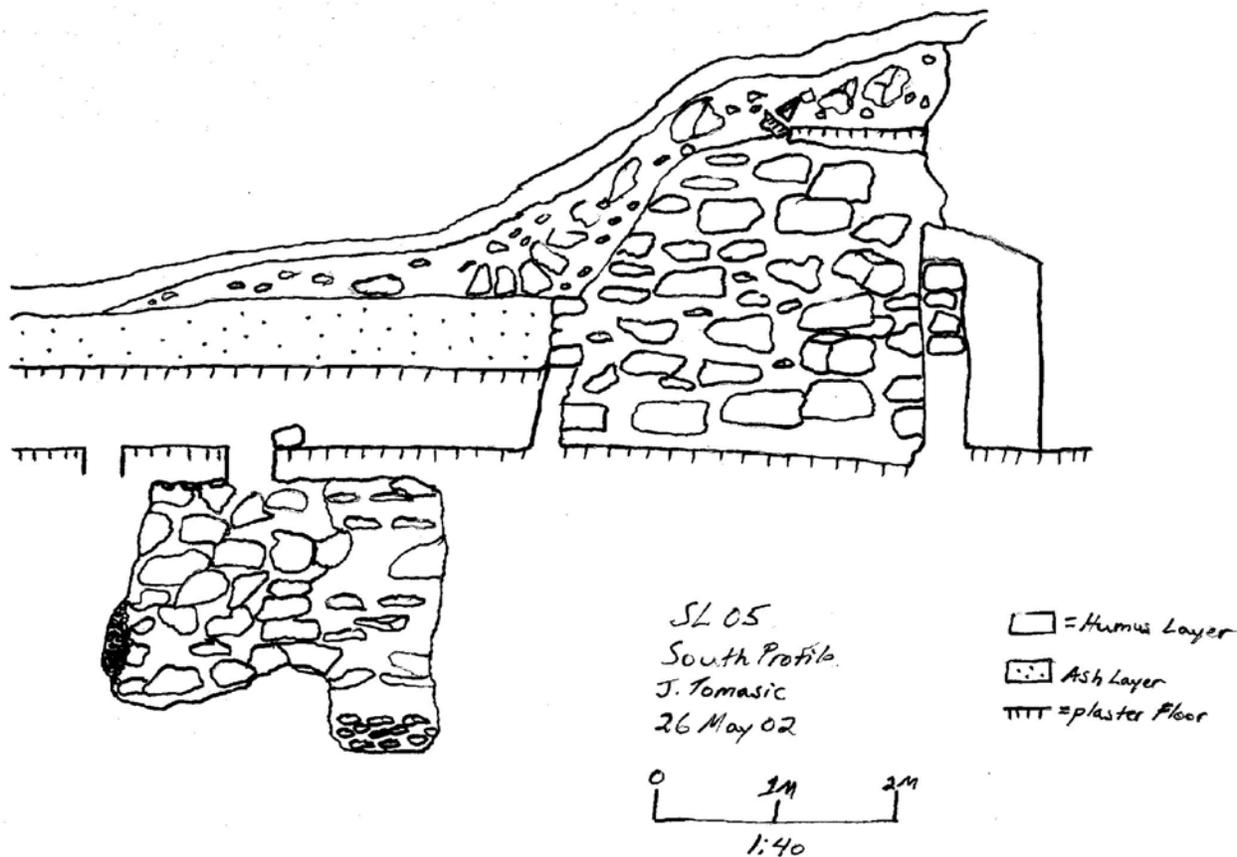


Figure 30. South Profile of excavation ST07 in Str.1, Group 1 at La Sufricaya showing walls of mural 1-3 room (far right) and later floor above it and a new exterior wall and floor (left)..

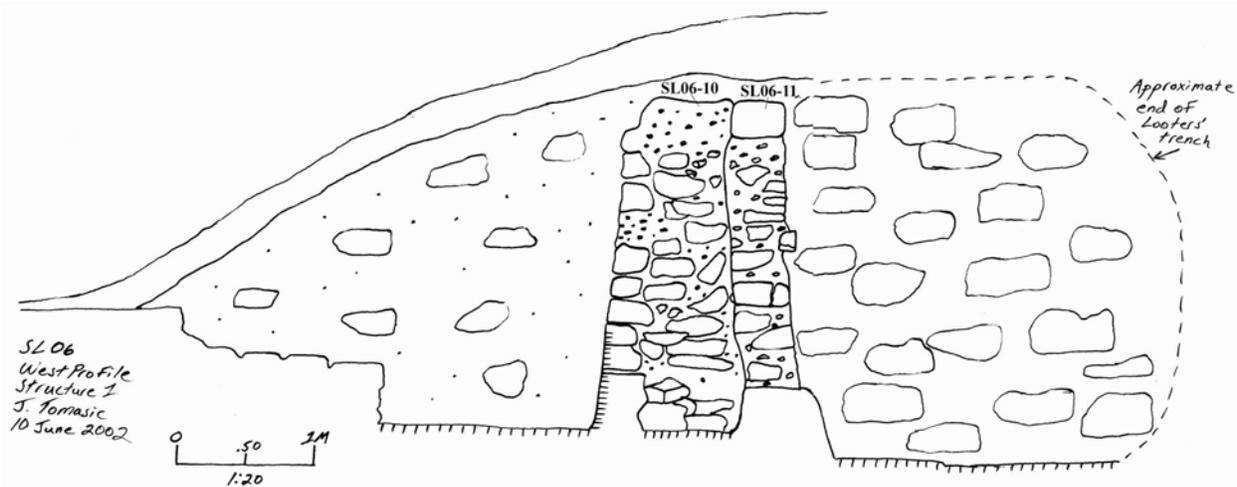


Figure 31. Western profile of southern tunnel in Str 1, Group 1, at La Sufricaya showing walls SL06-10 and SL06-11 separated by fill. Wall SL06-11 bears the mural.



Figure 32. Profile of looters' trench in Structure 1 at La Sufricaya.

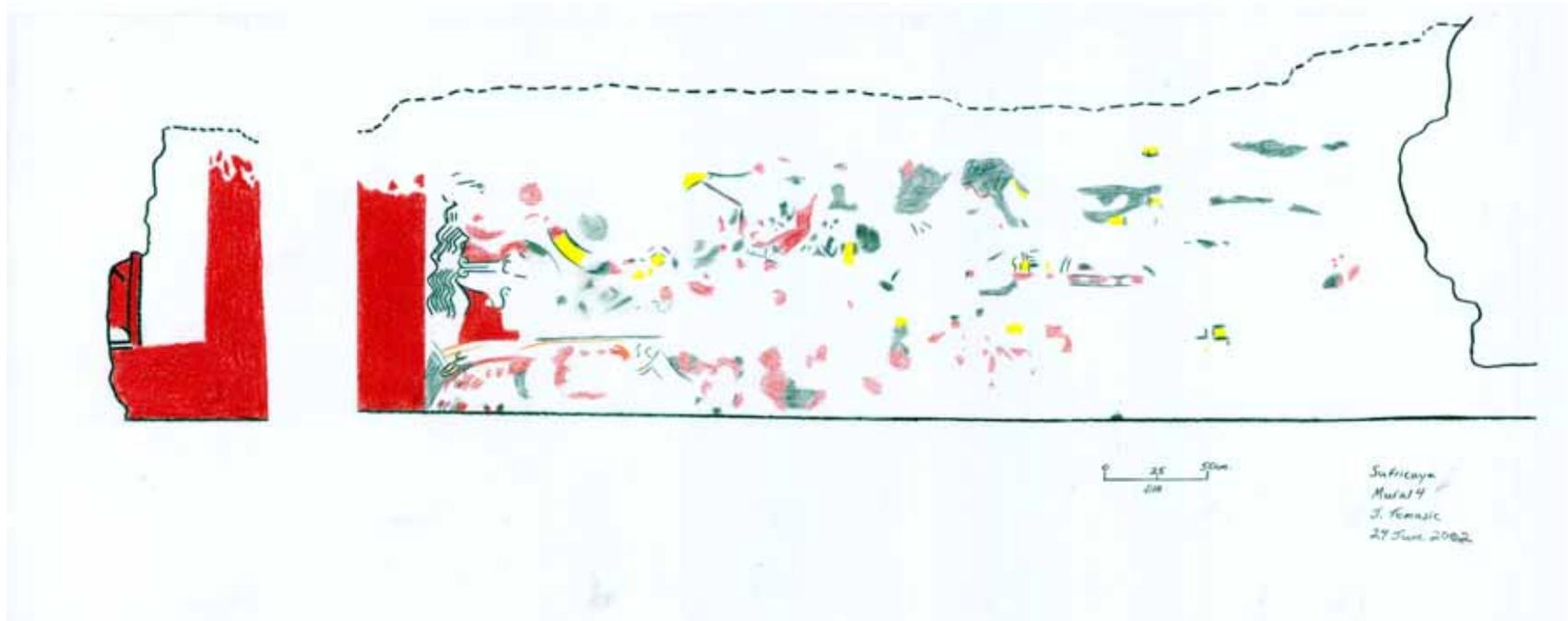


Figure 33. Western section of painting on wall SL06-11 in Str.1 at La Sufricaya. To the left is a corner also painted in red and to the right is the looters' trench cut.



Figure 34. Eastern section of painting on wall SL06-11 in Str.1 at La Sufricaya. To the left is the looters' trench cut and to the right is the corner of the building.



Figure 35. View of multispectral imaging equipment set in Room 1 La Sufricaya Str. 1 in front of mural 1 and 3 walls.



Figure 36. Mosaic composite of high-resolution sub-frames of mural 3 wall in Romm1, La Sufricaya Str.1, taken at the visible band-width.



Figure 37. Detail of high-resolution visible-bandwidth imaging of Maya figures painted on mural 3 wall in Room 1, Str.1.

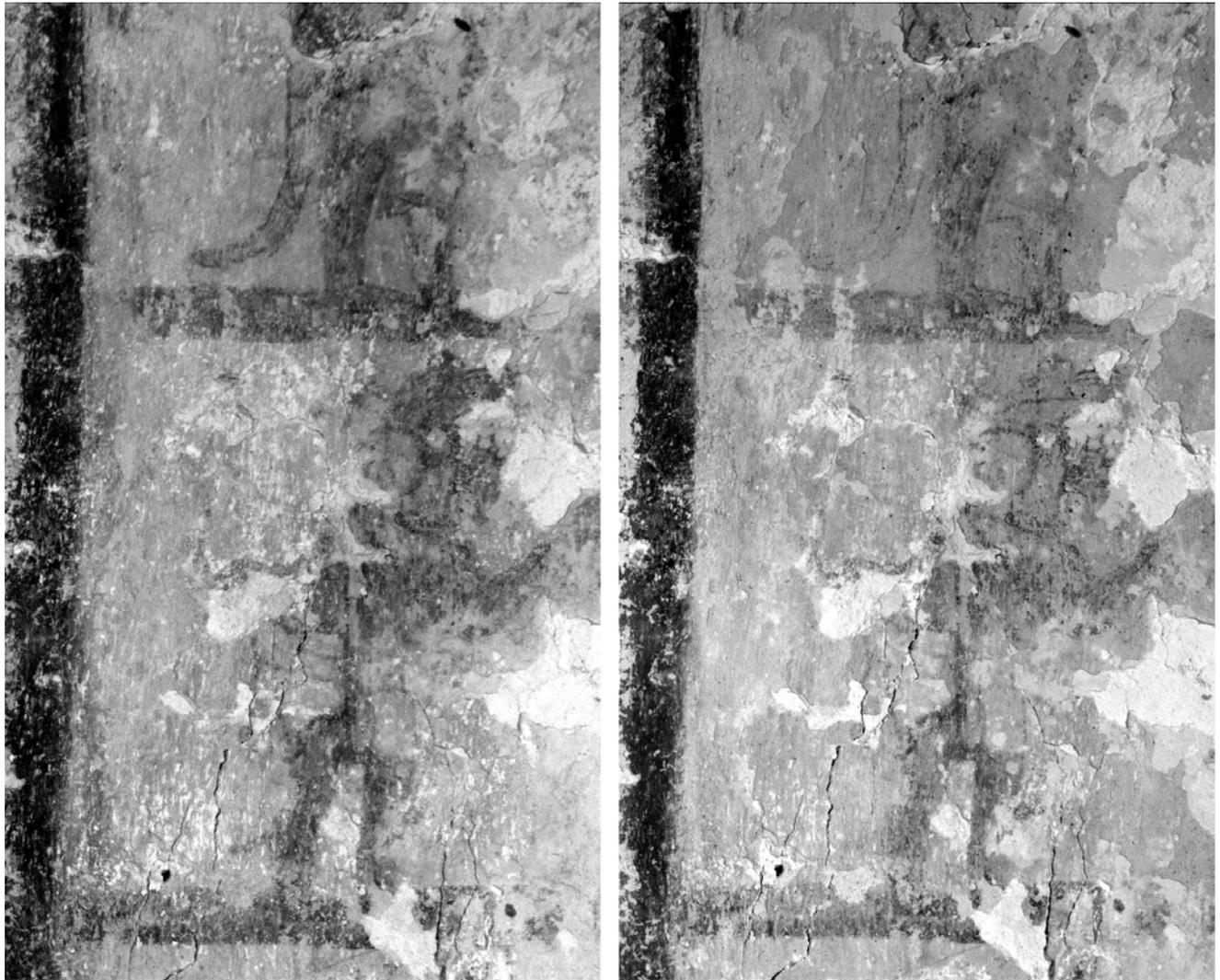


Figure 37. Detail of multispectral imaging of mural 3 in Str. 1 taken at two infrared band widths, 450 nm (left) and 900 nm (right) showing black drawing outline under color pigments (in Figure 36).



Figure 38. Two digital images of Fragments 1 (above) and 8 of Stela 1 from La Sufricaya artificially joined.

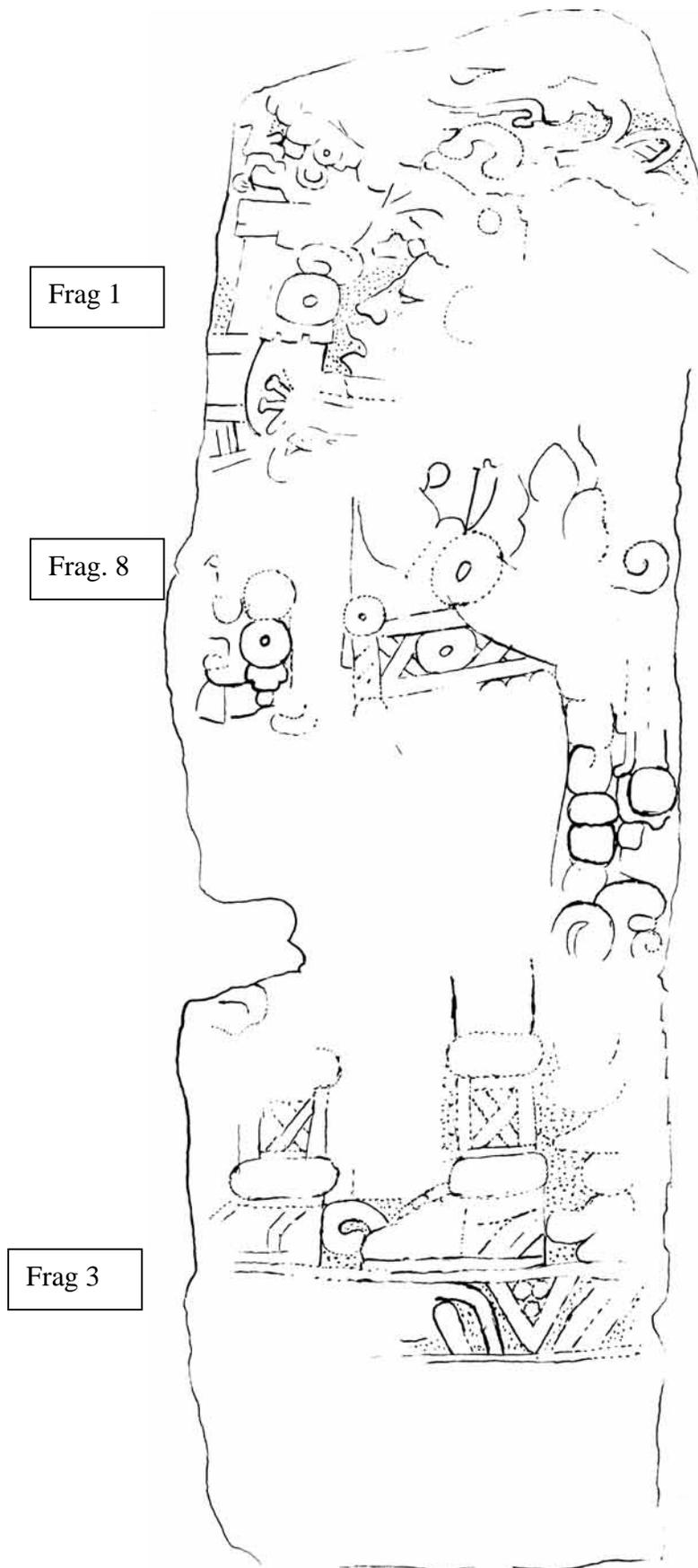


Figure 39. Drawing of fragments 1-3 completing Stela 1 from La Sufricaya. Drawn by Nikolai Grube.



Figure 40. View of excavation T12 showing stela fragment 8 resting on humus, an eroded floor and bedrock.



Figure 41. Photo of La Sufricaya Stela 6 showing the new day and month glyph found in 2002 (left).

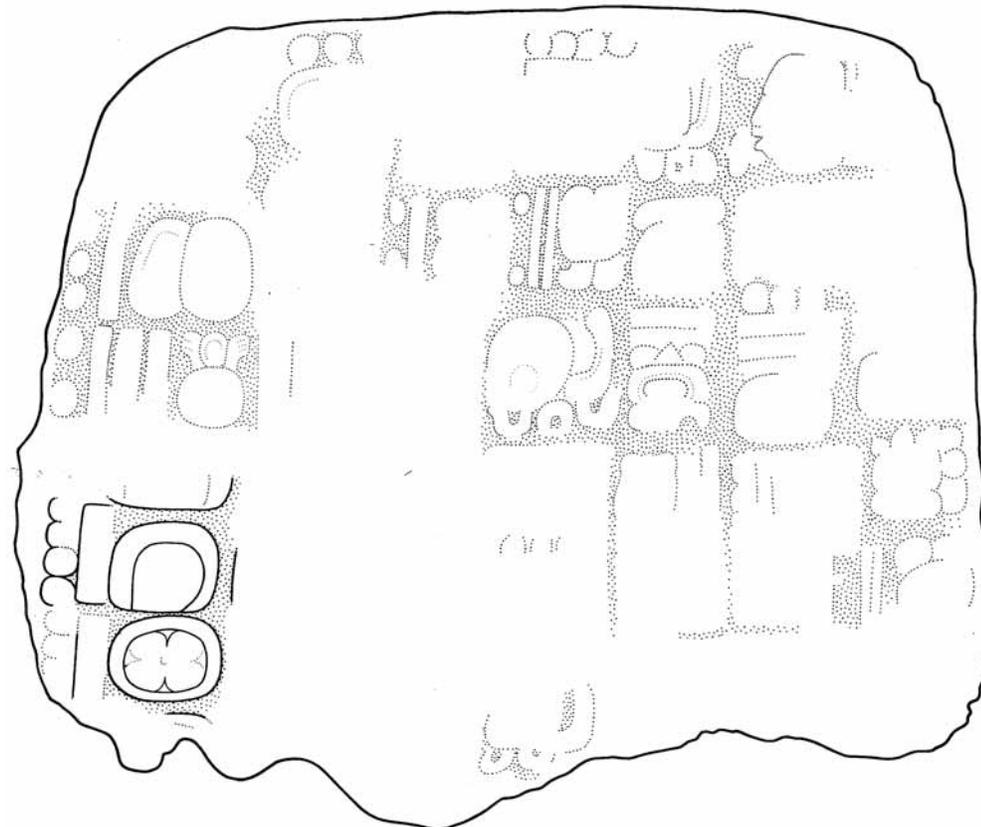


Figure 42. Drawing of Stela 6 with 8.17.29.9 Long Count date (left) and name glyph of Siaj K'ak (Smoking Frog, center) possibly repeated, and mention of a local lord. Drawing by Nikolai Grube



Figure 43. Excavation in residential Group WT4, showing Monument 9 (right) and Stela 10 (left). A cache of ceramics and human bone was found between the two monuments.

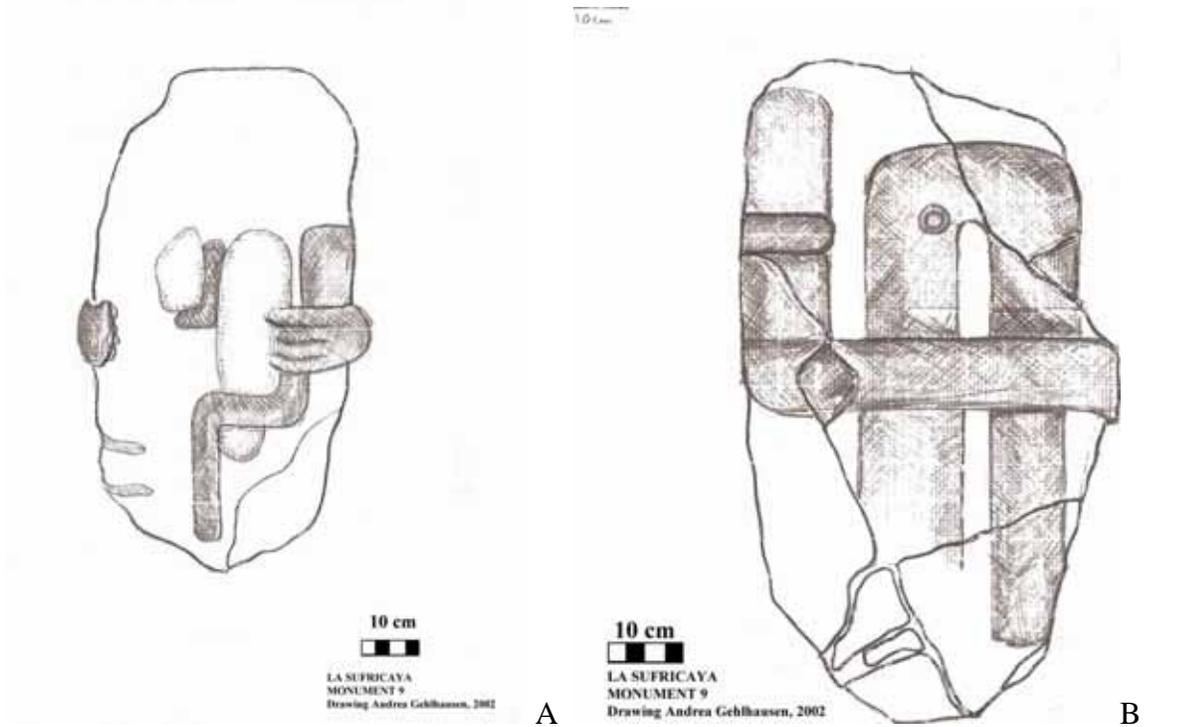


Figure 44. Monument 9 of La Sufricaya from Group WT4. Drawing by Andie Gehlhausen ( A front and B side).



Figure 45 . Excavation in Str. S110 with outside wall in the foreground, inner room with collapsed vault on the left and filled in space to the right.



Figure 46. Phase 1 of Structure 5. Buried red painted stairway and terrace mouldings.



Figure 47 Excavated remains of Phase 3 beveled stone architecture (foreground) overlaying Phase 2's white-plastered apron mouldings and inset corners.



Figure 48. View of excavation in Cival Str. 9, near Stela 1.



Figure 49. Reconstructable chert chisel recovered next to Stela 1 main fragment.



Figure 50.. Detail of two conjoinable fragments of Stela 1 with carving of a right arm holding a manikin scepter.



Figure 51. Photo of Cival Stela 2 carving taken in 2002 (photo Marco Gross).



Figure 52. Cival Stela 2. Drawing by Nikolai Grube. Maximum height 177cm high; width 107cm.

## Appendix A

Ceramics (Open file /ceramics/page\_01.htm in CD-ROM)

Holmul 2002, Peten, Guatemala



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[DSCN0002.JPG](#)



[DSCN0003.JPG](#)



[DSCN0004.JPG](#)



[DSCN0005.JPG](#)



[DSCN0006.JPG](#)



[DSCN0006\\_2.JPG](#)



[DSCN0008.JPG](#)



[DSCN0009.JPG](#)



[DSCN0010.JPG](#)



[DSCN0011.JPG](#)



[DSCN0011\\_2.JPG](#)

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Holmul 2002, Peten, Guatemala



[DSCN0013.JPG](#)



[DSCN0013\\_2.JPG](#)



[DSCN0015.JPG](#)



[DSCN0016.JPG](#)



[DSCN0019.JPG](#)



[DSCN0020.JPG](#)



[DSCN0022.JPG](#)



[DSCN0024.JPG](#)



[DSCN0025.JPG](#)



[DSCN0028.JPG](#)



[DSCN0028\\_2.JPG](#)



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Holmul 2002, Peten, Guatemala



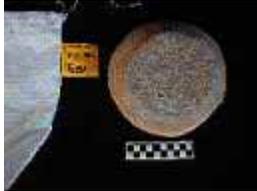
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Holmul 2002, Peten, Guatemala



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## Appendix B

Drawings

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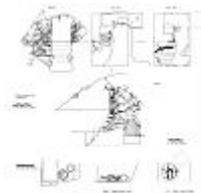
Holmul 2002, Peten, Guatemala



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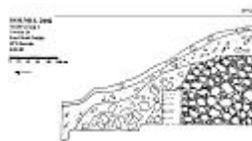
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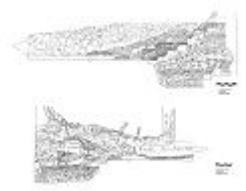


[chris\\_south\\_profile.JPG](#)

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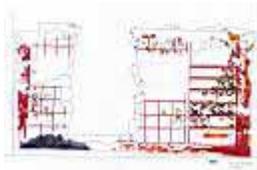
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[cival5\\_north.gif](#)



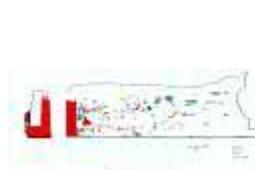
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[mural4.jpg](#)



[mural5.jpg](#)



[test3.jpg](#)



[test5.jpg](#)

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## Appendix C

Epigraphy. Drawings by Nikolai Grube  
(Open file /epigraphy/page\_01.htm in CD-ROM)

Holmul 2002, Peten, Guatemala



[cival\\_stela2\\_nikolai.JPG](#)



[HolmulBC1.jpg](#)



[sufri\\_stela5.JPG](#)



[Sufri2.jpg](#)



[Sufri5a.jpg](#)



[Sufri5b.jpg](#)



[Sufri6.jpg](#)



[sufri1.jpg](#)