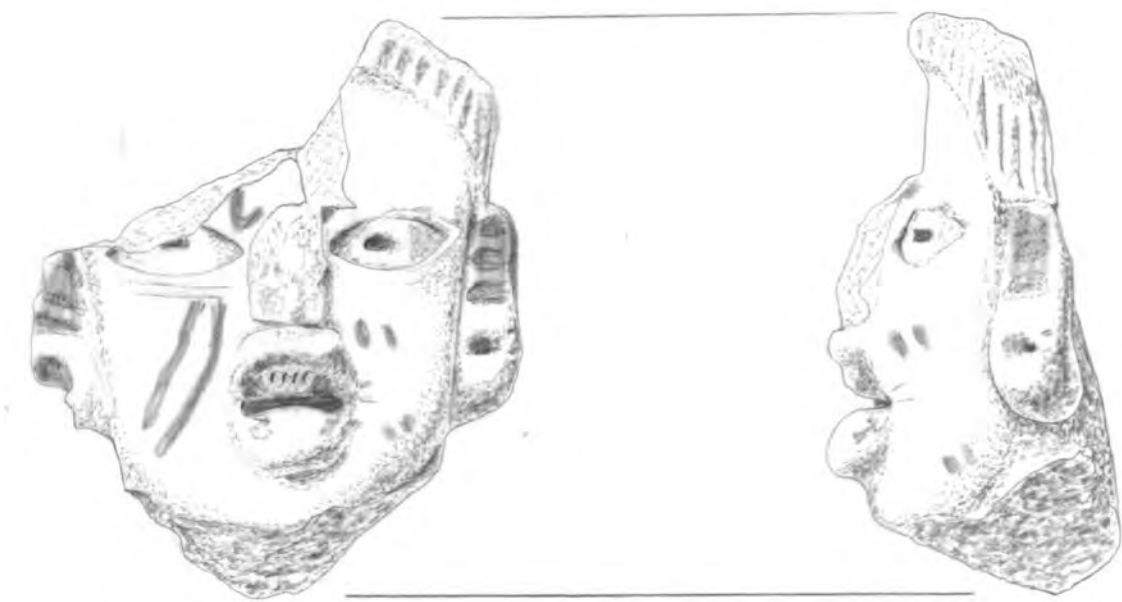


# ***The Belize Valley Archaeological Reconnaissance Project***

## ***A Report of the 2012 Field Season***

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**Volume 18**

**2013**

Institute of Archaeology  
Belmopan, Belize, C.A.

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*The Belize Valley Archaeological  
Reconnaissance Project*

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**A Report of the 2012 Field Season**

**Volume 18**

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## **SUMMARY FIELD REPORT: EXCAVATIONS AT CAHAL PECH, JANUARY 2012**

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University of Montana

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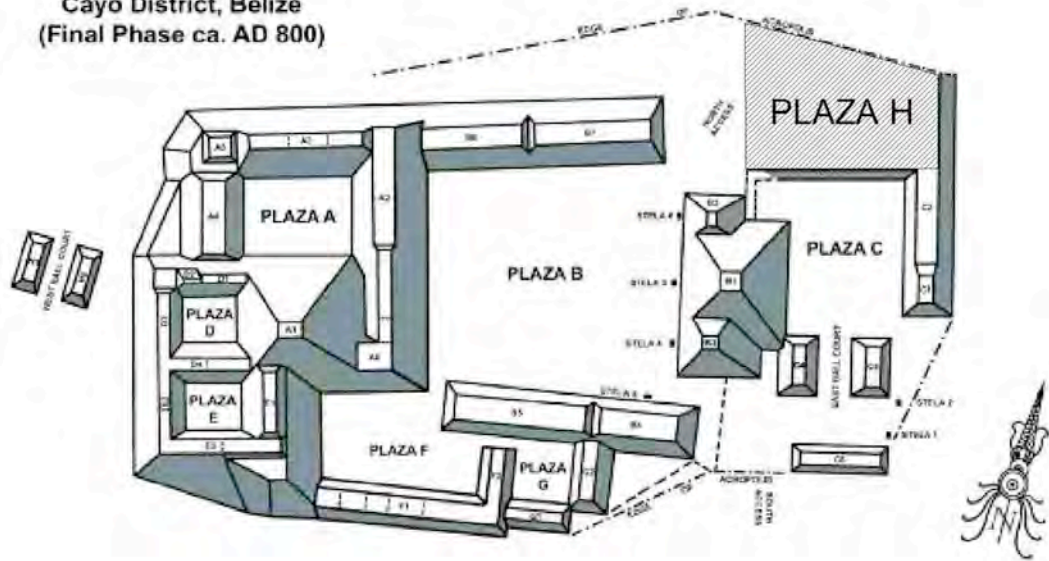
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### **INTRODUCTION**

This report summarizes the second season of excavations in Plaza H at Cahal Pech, Cayo District, Belize. The 2012 season's work was conducted between January 6 and 19 by students supervised by John E. Douglas, Ph.D. and Linda J. Brown, M.A. from the University of Montana (UM), Missoula, Montana, USA. Overseeing the project and instrumental in planning the research was Director of Archaeology and the head of the Belize Valley Archaeological Reconnaissance (BVAR), Jaime Awe, Ph.D. Rafael Guerra, an archaeologist with the Department of Archaeology and BVAR, as well as a graduate student at the University of New Mexico, helped supervise in the field (through January 12) and was responsible for surveying and tying the excavation locations to the grid system at Cahal Pech.

The UM student crew consisted of eleven undergraduate students: Kaleigh Best, Kristen Brown, Matthew Burgess, Alicia Dickerson, Kelsea Edwards, Joseph Flick, Alice Green, Phillip Hamilton, Robyn Jurinski, Michelle LaCrosse, and Samantha Mitchell. Gonzalo Pleitez, a Belizean tourist guide with field experience in archaeology, participated for five days to gain experience in archaeological techniques. In addition, Antonio Itza, an experienced local excavator, was employed on the project. Alex Alvarez, a worker for Dr. Awe, assisted for a few days. In all, nine field days were spent excavating and processing artifacts, including one day when Guerra and part of the crew located the excavation units onto the site grid utilizing a total station (electronic theodolite with integrated electronic distance measurement). The purpose and the procedures of the excavation followed were similar to the activities in 2011, and the discussion below is modified from the earlier report (Douglas and Brown 2011). Full summaries of the 2011 work are not repeated here, however.

The Ancient Maya Ruins of  
**CAHAL PECH**  
 Cayo District, Belize  
 (Final Phase ca. AD 800)



**Figure 1:** Plaza H (upper right) at Cahal Pech. Map modified from “Cahal Pech Stela 9: A Preclassic Monument from the Belize Valley,” by Awe, Grube, and Cheetham, in *Research Reports in Belizean Archaeology*, 2009.

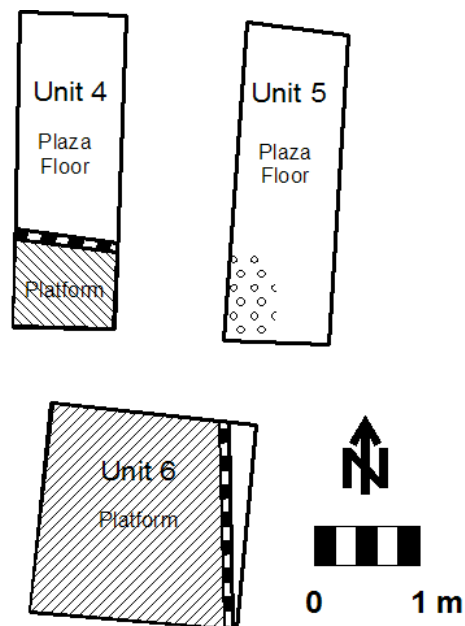
## PURPOSE OF EXCAVATIONS

Plaza H is an unassuming area of the Cahal Pech acropolis, unmarked on older maps. It lies at the northeastern corner of the acropolis, to the immediate north of Plaza C and east of the north access to Plaza B (Figure 1). Although the modest plaza is easy to overlook, the area has recently drawn attention. In 2009, a Terminal Classic, high-status burial with 13 ceramic vessels and other exotic items was excavated within Plaza H (Jaime Awe, personal communication). Further, recent work by BVAR in the site’s southeastern corner, which adjoins Plaza C, found modifications and remodeling of structures attributable to the Terminal Classic (Jaime Awe, personal communication). As proposed before the 2011 excavations, our test excavations are intended to answer two questions about Plaza H: What is the construction history and arrangement of platforms and rooms? What types of activities were occurring in the Terminal Classic?

These questions were refined and modified during the 2011 season. During that season, we located and described the north (H-3) and south (C-3) structures of Plaza H. On and next to Structure H-3, work in Unit 3 recovered a large quantity of bifacial

**Table 1.** Artifact inventory from the 2012 project by material type and number of proveniences.

Material type	# of prov.
Chert (chipped stone)	28
Ceramic sherds	27
Freshwater shell	18
Obsidian	10
Marine shell	8
Faunal Remains	7
Charcoal	2
Cobble	2
Metal (recent disturb.)	2
Quartzite	2
Ground stone	1
Slate	1
<b>Special finds:</b>	
<i>Ocarina</i>	1
<i>Ceramic Pendant</i>	1
<i>Human tooth</i>	1



**Figure 2:** From the 2011 excavations features in Units 4, 5, and 6, which are on and near Structure C-3. Heavy dashed line indicates a wall. Open circles indicate the rock feature. Features are at different depths.

thinning flakes and other chert debris from what appears to be an intensive bifacial flint knapping industry, likely dating to the Terminal Classic. Units 4 and 5 were placed to crosscut Structures C-3 and Plaza H. The excavators uncovered a series of four well-plastered plaza floors in these units. Less satisfactorily, the northern edge of the rock wall of Structure C-3 proved harder to interpret. Only in Unit 4 was an east-west platform wall found. We expected to see a similar rock wall and plaza floors in Unit 5, which was located a meter farther east from Unit 4. We did not find a rock wall, but we instead found four well-preserved plaza floors extending across the entire unit, up until the last day. On that day, in the southwestern corner a pile of rocks was found, interrupting the fourth plaster floor. It was unclear to the excavators what happened to the wall—and the shape of the platform—in the intervening meter. These two “mysteries”—where did the wall go and what was this pile of rocks—were addressed in the 2012 field season. Unit 6 was placed just south of Units 4 and 5. Excavations revealed a north-south wall on the eastern side of the unit, which was interpreted as a wall in the house foundation. Figure 2 illustrates the aforementioned features.

With information gathered from the 2011 season, we wanted to extend our knowledge about Plaza H in 2012. We placed our excavation units in areas that we thought would provide more details about the construction of Structure C-3, including examining the intersection of Structure C-3 and the eastern Structure H-1, where the Terminal Classic tomb is located. We also positioned a unit on Structure H-1 west of the tomb. In all, five excavation units were excavated in Plaza H, ranging in size from 2 x 3 m to 0.5 x 3 m.

## **METHODS**

Units were placed in locations designed to expose various features and deposits based on expectations from surface indications and previous excavation. The units were aligned to magnetic north. Excavation units on our project were given a sequential number within the plaza (Figure 3).

In 2012, two new excavations, Units 7 and 8, were on or intersected Structure H-1. A western extension to Unit 7, Unit 7A, was required to intersect the platform wall of H-1. The 0.5 x 1 m unit was labeled Unit 7A. Another unit, a 1 x 1.5 m was placed on Structure C-3 between Units 4 and 5 and was labeled Unit 5A, in recognition of its continuity with Unit 5. Unit 5A was excavated to clarify the 2011 observations in Units 4 and 5. Unit 5 was the only unit re-opened in 2012, but only the southern portion was excavated, next to where the enigmatic rock feature was discovered in 2011. This area is referred to as Subunit 5C.

The 2012 excavations intruded into deposits, which consisted mainly of well-compacted fill, ballast stones, hard plastered floors, platform walls, floors, structure walls, a possible hearth, and fill. We excavated these deposits with hand picks and buckets, with trowels for finer work, such as identifying floors. Students worked closely with the experienced members of the crew in evaluating and identifying fill and features.

All deposits, minus rocks and ballast stones, were screened through ¼"-screen. All cultural materials were collected, with the exception of undecorated ceramic body sherds smaller than 2.5 cm. Ecofacts were also collected, consisting of animal bones, freshwater mollusks, marine mollusks (the former frequent and the latter rare; land mollusks were not kept), and a few pieces of charcoal (small flecks were not kept). A single adult human tooth was the only human remains found. The retained materials were bagged by unit, level, and material type, washed, dried, and then repackaged for later study. A count of the presence of different materials by provenience (Table 1) provides an idea of the relative ubiquity of types of finds; determining artifact counts awaits later analysis.

Vertical and horizontal control during the excavation emphasized natural stratigraphy and context. At the start of each level, a level form was begun, including measuring the depth of the unit's corners with a line level from an arbitrary elevation point. These points were tied to the site datum by Guerra's total station survey (Appendix 2). Note that the vertical datum point for Units 5 and 5A was the same as the 2011 season.

Levels were halted when there was a significant change in the deposits, generally signifying architectural features: fill, walls, or floors and the level closed. The exception to natural levels was near the surface, where the change from the A horizon to lower levels tended to be gradual; first levels were ended around 10 cm. Once a level ended, closing elevations were noted for the elevation on level forms, artifact bags for the level closed up, final photographs of the level taken, and summary notes for the level were made on the level form. In the cases where horizontal differences were identified—for example, the intruding wall in Unit 8—units were subdivided using letter designations, with subsequent levels kept separately.

While excavating and identifying level changes, students were encouraged to tag floors and distinctive sediments in sidewalls to improve the accuracy of the final profile for the units. Profiles were drawn of at least one wall for each unit on the last day. None of the excavation units reached bedrock or sterile soil. Therefore, when time ran out, the bottom of each excavation was lined with medium-weight clear polyethylene sheeting before backfilling.

Keeping accurate and usable records of the excavation was a priority for the project; students were given written instructions on note keeping (Douglas and Brown 2012) and regular feedback on their field notebooks. Douglas and the eleven students all kept notebooks with field observations. These notebooks, along with the level forms and profiles, were retained by BVAR as part of the primary record of the excavation; pdf copies have been kept by UM. Extensive digital photography, taken with Canon EOS Digital Rebel XTi 10 megapixel camera, was also used to document the excavations. The mug board and north arrow placed in the photographs of the units provided information on the unit, level, date, scale, and cardinal direction. Multiple photographs were taken that bracketed the suggested exposure to insure proper exposure for all parts of the unit. The names of the photo jpg files were recorded in student notebooks and level forms to provide the full context of each photograph.



**Figure 3:** UM excavation units in Plaza H. Map is based on the total station surveys by Guerra on January 13, 2011 and January 10, 2012, where he measured the unit and walls from a Cahal Pech subdatum in Plaza C. The UTM coordinates of points taken during the 2012 season are listed in Appendix 2. Excavations closed in 2011 are shown in gray.

A brief summary of the five excavation units for the 2012 season can be found in Appendix 1; the summary includes the excavator’s names (if one wants more information view the excavator’s field notebook). The remainder of this report looks at the discoveries of the excavations in three groups: (a) the Unit 5 complex; (b) Units 7 complex; and (c) Unit 8.

## EXCAVATION RESULTS

### The Southern Structure (C3)—Unit 5 Complex

Structure C-3 is a relatively conspicuous feature sandwiched between the excavated Plaza C to the south and the unexcavated Plaza H to the north. Its greater visual bulk than the other structures defining Plaza H comes in part from the excavation and reconstruction of Plaza C, making the platform more obvious. Still, the height and width of this platform suggests possibly more accumulation and a longer and more complex history than the other structures within Plaza H, an observation that would be consistent with an unproven assumption that Plaza C, which features the Classic-period ballcourt, was constructed before Plaza H.

The 2012 project returned to one of our previous excavation units in the southern platform because of unfinished business. In the 2011 season, two 1 x 3 m excavations, Units 4 and 5, were oriented and placed to catch both the plaza floor and the platform wall. This is precisely what Unit 4 succeeded in doing. But, in contrast, Unit 5, one meter east, showed only a series of plastered plaza floors for most of the season. Excavators asked: where did the well-defined stacked stone platform wall in Unit 4 go? If it had extended straight across the northern face of Structure C-3, it would have been exposed in the southern end of Unit 5. On the last full day of excavation of Unit 5 in 2011, a pile of rocks, including some that appeared shaped, was found on the southern end of Unit 5, roughly in line with the plaza wall evident in Unit 4; the rocks appeared to extend below the floor level, but were not moved. The 2011 report suggested, erroneously, that the stones might cover a pit, perhaps holding a cache or burial. No explanation was forthcoming from the 2011 excavations on why the platform wall was not present in Unit 5 when the unit was in line with Unit 4.

In 2012, to reexamine these features, the crew first cleared out the backfill in Unit 5 down to the tarp left to denote the bottom of the excavation. Once that was completed, a new excavation area, Unit 5A was defined (Figure 3). The unit was 1.5 m north-south, half the size of adjoining units 4 and 5; the smaller size was because of an interfering tree stump on the northern end of Unit 5A and because a unit matching the previous two units would have exposed the series of plaza floors on its northern end, likely repetitive with the record found in the adjoining units.

At the bottom of Level 3 in Unit 5A, about 25 cm below ground surface, a corner of a platform wall was exposed in the SW corner of the unit. The reason that this platform wall did not extend across Unit 5 was clear; the platform wall turned southward at a corner just beyond the western sidewall of Unit 4. To better view the platform wall, the fill from the southern end of Unit 4 was partially removed to expose the upper platform wall. The located corner potentially defines either a recess in the face of the platform wall, or the end of Structure C-3, creating a passageway to Plaza C. Support for the idea that the structure ends at the exposed corner is that the north-south wall found in Unit 6, originally believed to be a structure foundation, is well positioned to be the eastern upper platform wall of Structure C-3 (see Figure 2). Further, the present elevation of the ground falls east of the exposed corner, as might be expected at the edge of a structure; for example, the 2011 excavation recorded the original SW corner of Unit 5, next to this corner, as 25 cm higher than the SE corner, a meter farther east and away from the platform corner. The top of the platform exposed in Units 5A and 4 was not subject to further excavation.





**Figure 4:** Shows the relationship between the two platform corners of Structure C-3. The upper corner of the platform is exposed in Units 4 and 5A (background) and the lower in Unit 5 (foreground). From field photo IMG\_2611.JPG.

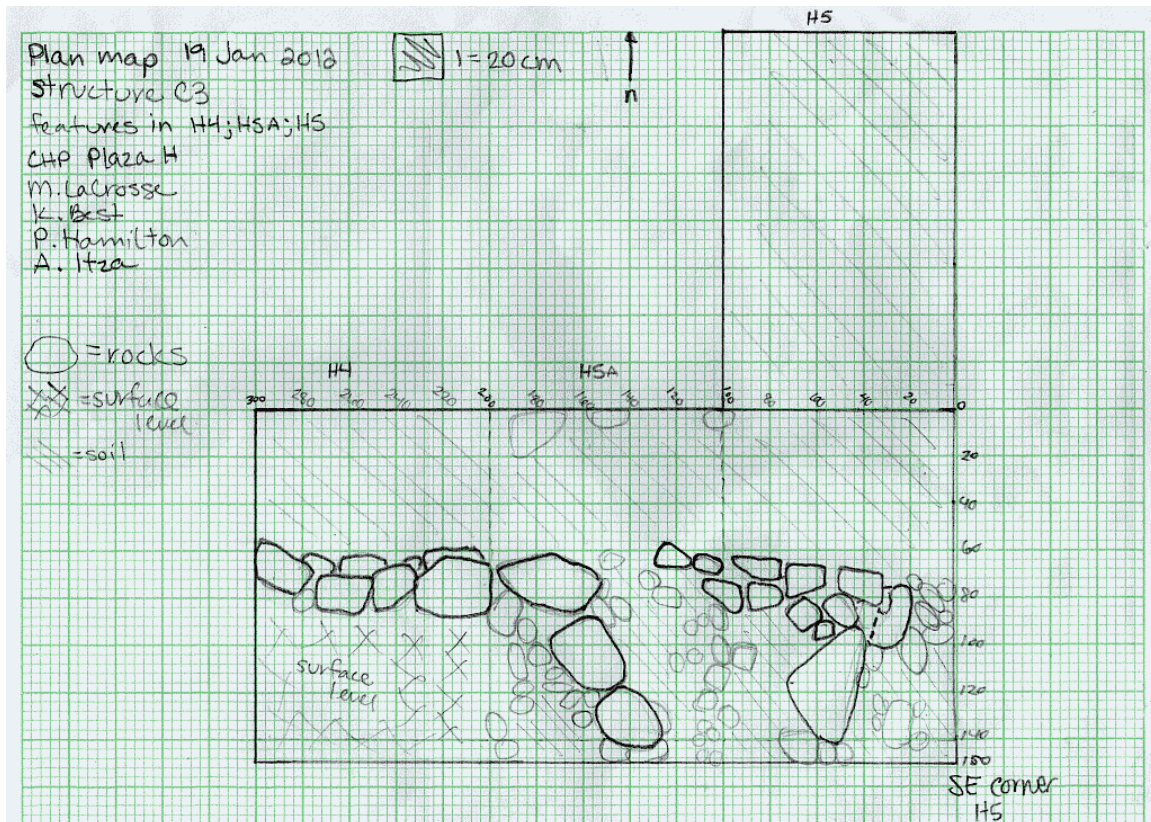
Further clearing of the rock feature identified in 2011 on the bottom of Unit 5 demonstrated that it was also a corner, squared off on its north and east sides, for a larger, but decidedly lower, platform wall for Structure C-3. Figure 4 shows the relationship between the two corners. The lower corner made use of cut stone masonry, albeit simple in form, while the upper one uses unshaped stones. The older corner in Unit 5 lies about 140 cm farther east than the corner in Unit 5A and is about 35 cm lower. Because the lower corner was found underneath three or four episodes of plastering within the plaza, it is the upper corner that would have been visible and defined Plaza H for all but the lowest plastered floor identified.



**Figure 5:** Subunit 5C, Level 5 (final), southern end of Unit 5. Field photo IMG\_2731.jpg.

To understand the relationship between the earlier, lower corner in Unit 5 and the plaza, Guerra undertook excavation of the southern half of Unit 5 in the area around the corner. Labeling the platform (SW corner of the unit) as Unit 5B, he excavated the “L” shaped area around the corner, labeled Subunit 5C (Figure 5). Subunit 5C was 1 m (east-west) by 1.5 m (north-south), minus the area occupied by the platform in the SW corner, which is approximately 0.6 m (east-west) by 0.8 m (north-south). After cleaning up approximately six buckets of matrix around the platform wall feature in Unit 5 that was above the floor level—contextually, part of Unit 5, Level 3 from 2011—two additional levels were excavated, each ending in a tamped earth floor. The stratigraphically superior of these floors is about 21.5 cm below the earliest plaster floor; the lower floor was 27.5 cm lower than that first-encountered tamped earth floor (Figure 5). Large Early Classic ceramic sherds were found in the fill of this excavation. In addition, a 2-cm long fragment of a sherd pendant, with a biconically drilled hole and a scratched hatched design over one surface, was located in the final level. This was the deepest excavations





**Figure 6:** Map of platform corners; eastern corner is about 30 cm lower than western corner.

conducted in Plaza H over the two seasons, and it was ended at the tamped earth floor at the bottom of Level 5.

In sum, the 2012 excavations in Units 5 and 5A uncovered five plastered floors, two earlier tamped earth floors, and two separate corners of Structure C-3, one apparently earlier, defining an horizontally larger structure, than the other. As illustrated in the sketch map (Figure 6), the lower corner was carefully faced, while the upper corner is constructed from rough stones, perhaps indicating a Terminal Classic construction. The significance of these findings is discussed in the conclusions.

### The Eastern Structure (H-1) Unit 7 Complex

Unit 7, a 2 m (north-south) by 3 m (east-west) unit was located near the southeastern corner of Plaza H. It was aligned with the eastern wall in Plaza C, where the intersection of the eastern and southern walls of Plaza H might reasonably be expected to be found. Once excavation started it was clear that Unit 7 was entirely in Plaza H, immediately west of Structure H-1. Unit 7A, a 0.5-m wide excavation, was added to the

2-m long eastern side of Unit 7 to tie the excavation to the wall of Structure H-1. Although the excavators were hopeful of finding another wall, presumably connected with structure C-3, no such feature was found.

One of the difficulties with interpreting this unit was finding so many disturbances. In removing the first level, about 8–10 cm, it quickly became clear that the excavation intruded into backfill of a previous excavation, covering an area of 1.0 m by 1.1 m in the northwest corner. Once that was recognized, excavations were halted in this corner. Dr. Awe, who had been out of town when units were placed, confirmed that a group from Galen University under his supervision had conducted the excavation. Further, a platform wall on Structure H-1 had also been traced by a narrow trench by Galen University students; this trench would have intruded on Unit 7A. Natural disturbances included an active iguana underground nest in the center of the unit, producing several sizable holes. A massive root near the center of the unit added to the difficulty in tracing activities in that area. Finally, although not strictly a disturbance, Unit 7 was the one unit whose slope caused considerable accumulation of water during a storm towards the end of the project, slowing excavations and making the matrix more difficult to interpret.

The Unit 7 complex had a number of different horizontal and vertical divisions. Excavations in Unit 7 were conducted in four levels. The exception was the disturbed area identified as a previous excavation in the northwest corner, which was identified early in Level 1 and further excavation was halted. When time did not permit further excavation of all Unit 7, we decided to excavate a subarea. The subunit was designated as 7B, covered 1 m by 1.5 m in the southwest corner of Unit 7 and was excavated in one level (labeled Level 5, because it underlies Unit 7, Level 4). Unit 7A, the eastern extension to expose the platform wall, was excavated in a single level to the same depth as Level 4 in Unit 7.

The largest effort, along with the most information, comes from the four levels dug in Unit 7. The first level consists of much of the organic or A horizon. Levels 2 and 3 encountered the first plaster floor. In retrospect, the two levels appear to define a single construction event. The floor was difficult to follow, and ballast cobbles were more prominent than plaster in some areas, but it now appears that the excavators encountered a relatively flat (but sloping westward) prepared floor at 10-20 cm below ground surface. Further excavation encountered another floor 15-18 cm lower, at the bottom of Level 4. These floor levels approximate the higher floor levels, somewhat better defined, in Units 4 and 5, which are 8 m and 6 m farther west (Figure 3), respectively, and presumably represents continuously plastered plaza floors. The excavation of Unit 7B, the subunit excavated below the second floor, did not encounter any features in about 15 to 20 cm of matrix, but saw a gradual change to lighter, sandier sediments.

The Unit 7 complex encountered two notable objects. A Terminal Classic censer foot was found in deposits just above the upper floor, reinforcing the idea that this floor was associated with the final occupation of the site. An adult premolar was found just below Level 4 in Unit 7B (that is, the top of Level 5) excavation.



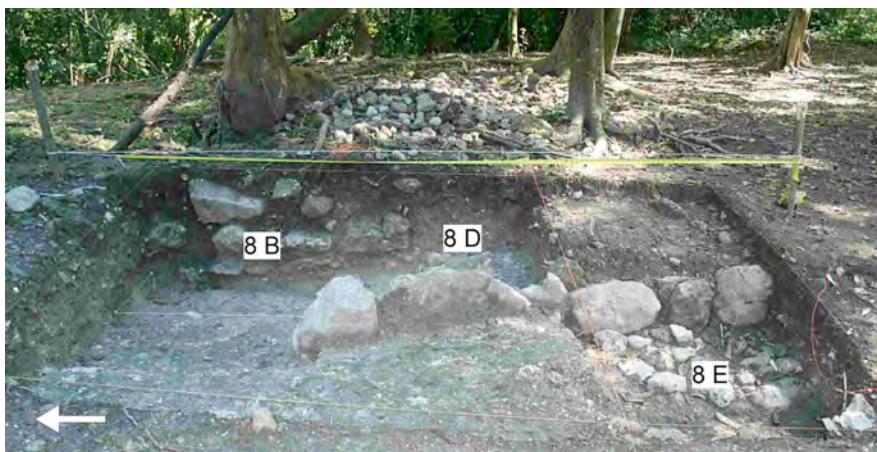
**Figure 7:** Unit 8, Level 2 with floor in foreground and platform wall in background. Field photo IMG\_2590.jpg.

### **The Eastern Structure (H-1) Unit 8**

The 2 m (east-west) by 3 m (north-south) Unit 8 was placed to crosscut Structure H-1, the eastern platform defining Plaza H, and part of the plaza. A Terminal Classic elite tomb was found in 2009 a few meters east and slightly north of this unit, which makes the unit particularly interesting for examining the Terminal Classic use of the Plaza. While removing the roughly first 10 cm in Level 1, consisting entirely of the organic or “A” horizon, the top of a north-south rock wall was noticed, dividing the unit into roughly equal western and eastern halves. Level 2 was then excavated in the western half, exposing a poorly preserved plaster floor 5-20 cm below the contemporary ground surface (Figure 7). The rock wall does not extend into the northern one meter of the unit; there, a break in the floor and change in the matrix suggested that the wall had originally extended across the unit, but the upright stones on the northern end have been removed. Those stones could have been robbed in the construction of the nearby tomb, although there is no direct evidence for that inference. Interestingly, the excavators suggested that these first two levels of Unit 8 were unusually rich in artifacts, and included large, red slipped pottery sherds, obsidian blades, a piece of marine shell, and a fragment of a ceramic ocarina, the last object was found on the western floor. Of course, these field observations ultimately need to be verified by artifact analyses sensitive to the density of artifacts per unit of matrix removed.

At this point, it was clear that Unit 8 was far too large and varied to be excavated further as a single unit, and Unit 8 was subdivided by a grid into 6 areas, each about 1 m by 1m, lettered A through E. Not all subunits were excavated further; the areas subject to further excavation are labeled in Figure 8. Excavated areas included 8B, a roughly one meter square unit in the northeast corner, encompassed all of the area east of the floor (including the missing stones in the wall alignment). The interest in excavating in this area was to understand the platform construction, hoping that might shed light on the





**Figure 8:** Excavated subunits within Unit 8. Final day photograph; arrow points north. Field photo IMG\_2830.jpg.

nature of the platform and any relationship with the tomb to the east—including testing for any other feature connected with that tomb. Later, as a second and older platform wall was located farther east, Subunit 8D, which is the one-meter square immediately south of Subunit 8B, was opened to investigate this older platform wall. Within the Plaza portion of the unit, Subunit 8E, roughly one square meter in the southwest corner of Unit 8, was excavated to establish what was under the plaza plastered floor sequence outside of the later platform wall that split the original unit.

On the plaza side, excavation of 8E was conducted in a single level (Level 3) about 20 cm deep. The excavation extended to the base of the western rock wall, and seemed to consist of subfloor: light colored sandy/pebbly matrix with a large amount of ballast stone and relatively infrequent artifacts. This shallow excavation did not go deep enough to determine if additional floor levels, as found in Units 3, 4, 5, and 7, were present, although every indication of the Plaza construction suggests that additional plaza floor levels would be found underlying this final floor/platform wall/subfloor.

Excavations in Subunits 8B and 8D were more complicated. These were excavated in two levels. A numbering error in 8D caused these to be numbered Level 2 and Level 4, with no Level 3—Levels 2 and 4 follow one after the other, thus Level 4, 8D is equivalent to Level 3, 8B. While digging subunits 8B and 8D the excavators removed a large amount of rock fill, which seemed to form two distinct levels, reflected by the level breaks. Once the rock and matrix was removed, a plaster floor level, at about the same level as outside the “dividing wall” in the unit, was located on the bottom of the units. Further, a stacked platform wall, made of smaller, faced stones, quite distinct from the large, upright stone later extension, was located along the eastern edge of the units (Figure 9). Traces of floor plaster were detected on this stacked and faced wall. A final feature found was a possible fire pit in the floor—an apparently circular “break” in the floor, about 20 cm from the platform wall and perhaps 25 cm in diameter, extending into



**Figure 9:** Western and eastern platform walls, as exposed in Units 8 B and D. Field photo IMG\_2828.jpg.

the north sidewall. The feature was associated with a moderate amount of charcoal in the surrounding matrix (larger pieces were collected).

With three courses of stone exposed on the older platform wall extending to the level of the plaster floor, the question became whether there were more courses below this level. To answer that question, a 40 cm wide by 1.6 m long subunit along the eastern platform wall, labeled subunit 8BD, was excavated in a single 10 cm deep level. The result was similar to the Unit 8E subfloor (Level 3) excavation: low artifacts count, light colored soil, some rock (although not as much as the subfloor in Subunit 8E), and, most significantly, no evidence of another course of stone supporting the earlier platform wall.

Although the excavations were not particularly deep, and therefore not informative of the longer history of the area, the work completed in Unit 8 suggests an architectural sequence in the last stages of Structure H-1. The eastern wall is clearly the earlier and more carefully constructed platform wall. At a later time, the platform was then extended about a meter west, covering some of the earlier plaza floor, including a possible fire pit feature. The upright, large, and unshaped stone west wall was not as carefully constructed as the original platform wall. The gap created between these walls was then filled, with an emphasis on ballast stones rather than earth—the Unit 8

excavation removed more rock than any other excavation unit in January 2012 per volume of matrix. A final, minor, architectural modification was the removal of some of the western wall stones on the north end of the unit, possible for the tomb construction to the east.

## **SUMMARY AND CONCLUSIONS**

Interest in Plaza H comes in part from its ambiguous place in the architectural history of the site: it is linked intimately with the grand architecture of the major public and elite structures to the south and west through its close proximity and its sharing of the limited space available on the acropolis, but it also lies outside the major access points to these sacred and elite structures and is built on a much smaller scale. Today, it is easy to overlook during a walking tour of the acropolis, and it is obvious that it never competed with the grandeur of the major plazas, temples, and palaces on the acropolis. And yet, it also seems likely that its function and role were somehow different from communities and plaza groups that surrounded Cahal Pech's conspicuous location. The presence of Terminal Classic occupation is of particular interest. Perhaps the very ambiguity of the location was of value at that time: by lying outside of the central buildings subject to "desecratory termination rituals" (Statton et al. 2008) as the Late Classic period came to an end it was safe to occupy, while still claiming some of the "power of place" that surely Cahal Pech possessed.

The three excavation areas active in 2012 provide new insight into Plaza H. This section briefly summarizes the findings of the excavation in light of the two topics that instigated the research: (1) Identify the construction history and arrangement of platforms and rooms; and (2) Identify Terminal Classic activities.

The previous excavations in 2011 had demonstrated that the area was indeed a defined and maintained plaza. At least one well-defined plastered plaza floor was found in every unit excavated in 2011 and 2012 (Units 3-5, 7-8) that tested the plaza area. The most complete sequence was that found in Unit 5A and Subunit 5C: Unit 5A found an additional plaster floor higher than those discovered in Units 4 and 5 in 2011, suggesting there were five major plastering events known in the plaza. Subunit 5C, positioned in the southern part of Unit 5 where excavations had stopped the previous year, found two tamped earth floors below the sequence of plaster floors. At present, though, there is no indication in Subunit 5C or any other unit what the ultimate depth of cultural materials in this part of the site is.

Probably the greatest contribution of the 2012 excavations is the knowledge gained about the location and the remodeling of the H-1 and C-3 platforms. A sketch map in the 2011 field report (Douglas and Brown 2011:Figure 2) indicates—purely hypothetically—that C-3 might block Plaza C and Plaza H in Plaza H's southeast corner. However, Unit 7 failed to find any such connection, and the corner in C-3 found in units 5 and 5A suggest that Structure C-3 could end roughly 10 meters west of the H-1 wall. More excavations in this area are called for, but the possibility that the platform mounds defining Plaza H may have left the southwestern corner open must be considered.



The remodeling evidence for Structures H-1 and C-3 is another important result of the fieldwork. The documented changes in H-1 and C-3 are a study in contrast. The purpose of the rebuilt corner on C-3 was to increase the height of the structure some 30 centimeters. If we presume the corner is indeed the end of the structure, in the process, the structure was reduced in size 1.4 m in the east-west dimension from its original size. The purpose of the remodeling of H-1 was to increase the east-west dimension of the platform about a meter, leaving the height the same. How far north-south this extension was built is unknown, but Unit 7 suggests that it was not along the entire length of H-1. The H-1 platform wall in Unit 7A would appear to be continuous with the older wall found along the east sidewall of Unit 8, based on the construction style and the close visual alignment of the two wall segments. If the more recent western extension had been constructed as far south as Unit 7, the excavation should have been exposed it—but nothing was found.

The timing of these remodels can be considered in at least relative terms. The relative crudeness of both alterations made the field crew suspicious that they both might be Terminal Classic. In the case of the alteration of H-1, that seems to be highly likely. The construction clearly dates to the time of the last plaster floor in the Plaza, and the late timing and rapid construction techniques fit well with a Terminal Classic construction. The expansion of the platform overlays a portion of the plaza floor with a fire pit containing collected charcoal, so there is a possibility of establishing a *terminus post quem* radiocarbon date for the construction of this extension.

While a single test unit is too limited to provide decisive evidence, the proximity to the elite tomb is suggestive that the expansion might be related to an elite household establishing itself on H3 during the Terminal Classic. The relative richness of artifacts noted by the field crew in the upper levels seems to support this reconstruction. These are precisely the levels likely to be related with Terminal Classic activities. As noted before, their observations await lab analysis, but the ceramic ocarina and marine shell found in the top levels in this unit are indeed rare items in Plaza H, supporting their more general observation.

Because of the multiple plaza floors—three or four—that overlaid the original corner of C-3, a considerable length of time must separate that corner with the one found near the ground surface. The excavation of Subunit 5C at levels lower than the earlier corner found large, unworn early classic ceramic sherds, again suggests a relatively early construction of this wall, possibly early within the Late Classic. Obviously, then, the upper platform corner comes later, but a Terminal Classic construction of the taller platform seems unlikely, both because of the scale of building seems rather massive compared with other efforts known at the site and because the phase is too short to account for multiple plaza floors; this suggests the rebuilding of C-3 dates to the Late Classic. Of course, it is also possible that the Terminal Classic residents could have reworked the platform, accounting for the crudeness of the platform walls. These questions of construction timing are important for making sense of the evidence of a structure found on top of Structure C-3 in Unit 6.

Finally, it is worth considering that Units 4, 5, and 5A indicate changes in the function of the Plaza H area through time. Even though the early corner of the structure is more carefully faced, it is noteworthy that adjacent excavations lower than that corner (Subunit 5C, Levels 4-5), extending roughly 50 cm beneath the last plastered floor, located only tamped earth, not plastered, floors. This could indicate changing use and perhaps greater formality of the plaza area later in time. Larger deep excavations are clearly required to evaluate this proposition, but it may be that at the time of construction of C-3, the Plaza H area may not have been defined in the same way it was later.

The 2012 winter field season for the UM/BVAR project proved successful in identifying some of the dynamics of change in Plaza H, moving us closer to integrating the activities that occurred in this area with the rest of the ceremonial center. However, as this report makes clear more work is needed to fully answer the questions that initially prompted this excavation project.

## Appendix 1: Summary of excavations

Unit	Location	Size	Horizontal Divisions	Average depth below surface	Levels	Comments	Excavators that kept notebooks
5C	South side of Plaza H; subunit of H5, the unit begun in 2011 and reopened in 2012.	1 m by 1.5 m	Platform corner not excavated; as dug, H5C is "L" shaped around the platform corner	96 cm	Level 3 (completed from 2011); levels 4-5	Level 3 removed all matrix above plastered floor around the platform corner; levels 4 and 5 each ended in a tamped earth floor	Douglas (excavated by Guerra)
5A	South side of Plaza H; SW extension of Unit 5 to connect with Unit 4	1 m by 1.5 m	In the southwest, encountered the top corner of a platform wall at the bottom of Level 3. The exposed platform surface was not excavated.	82 cm	Levels 1-8. Levels 1-3 extend across the entire unit; only the northern and eastern part, off the platform, was excavated to full depth.	Excavated to about the same depth as Units 4 and 5 during in the 2011 season. Located five plastered floors including the one at the bottom of the Unit. The highest floor was not noted by earlier excavators, but the others correlate to those noted in 2011.	Best, Hamilton, LeCrosse
7	East side of Plaza H near SE corner	2 m by 3 m	Old excavation unit, not recognized on the surface, intersected in NW corner (not re-excavated). Subunit (7B), 1 m by 1.5 m, excavated in the SW corner.	28 cm to level 4; Level 5 in 7B averaged an additional 15 cm	Located two plaster floors in 4 levels. Subunit 7B excavated as level 5 without encountering a feature.	Extensive bioturbation from large roots and iguana nest.	Brown, Edwards, Flick, Jurinski
7A	East side of Plaza H near SE corner; eastern extension of H7 to uncover platform wall	0.5 m by 2 m	Platform wall runs northeast across the unit; platform surface was not excavated.	47 cm	Excavated in a single level. Probably some of the matrix was disturbed by earlier efforts to follow the platform wall	Platform wall was profiled.	Brown, Edwards, Flick, Jurinski
8	Center of eastern platform, west of Terminal Classic tomb	2 m by 3 m--divided into 1 m areas A-F	Central e-w wall was split the unit into two contexts: the construction of a western extension of the platform and the Plaza floor. Each is about 1m by 3 m, with the wall north-south	Varies by subarea--see level forms. Maximum depth 64 cm in the NE corner	Areas excavated in 1-4 levels. 8BD = 4 levels; 8B, D & E = 3 levels; 8A and C = 2 levels; 8F = 1 level. Only one plastered floor and subfloor detected.	No profile	Burgess, Green, Dickerson, Mitchell

## Appendix 2: 2012 Unit/Feature UTM coordinates

Ref No	Point No	Northing	Easting	Elevation	Plaza C Feat/Unit
1	CHPC1	1896912.727	279493.953	164.415	(CHPC1) Site Datum
2	CHPC0	1896907.727	279493.953	164.423	(CHPC0) Site Datum
3	1	1896929.472	279487.900	165.599	SW 5A
4	2	1896931.001	279488.002	165.534	NW 5A
5	3	1896929.918	279495.987	165.780	SW 7
6	4	1896931.919	279496.074	165.746	NW 7
7	5	1896931.774	279499.241	166.057	NE 7
8	6	1896929.759	279499.149	166.023	SE 7
9	7	1896929.759	279499.679	166.100	SE 7A
10	8	1896931.747	279499.765	166.098	NE 7A
11	9	1896931.721	279499.089	165.942	NE 7A (Platform wall)
12	10	1896930.654	279499.328	165.908	CENTER 7A (Platform wall)
13	11	1896929.826	279499.520	166.052	SE 7A (Platform wall)
15	12	1896943.837	279494.884	165.675	NE 8
16	13	1896940.861	279495.115	165.589	SE 8
17	14	1896940.713	279493.010	165.286	SW 8
18	15	1896943.728	279492.795	165.539	NW 8
19	16	1896942.707	279493.748	165.494	8 (north structure wall)
20	17	1896941.714	279494.051	165.370	8 (center structure wall)
21	18	1896940.837	279494.226	165.444	8 (south structure wall)
22	19	1896943.632	279493.134	165.320	8 (north floor)
23	20	1896942.200	279493.453	165.316	8 (center floor)
24	21	1896940.920	279493.636	165.309	8 (south floor)
25	22	1896943.373	279495.538	166.062	Plaza H Elv. $\Delta$ Dat. 004: 166.062
26	23	1896931.658	279494.773	166.064	Plaza H Elv. $\Delta$ Dat. 003: 166.064

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# **EXCAVATIONS OF THE STAIRCASE BETWEEN PLAZAS C, H AND B AT CAHAL PECH**

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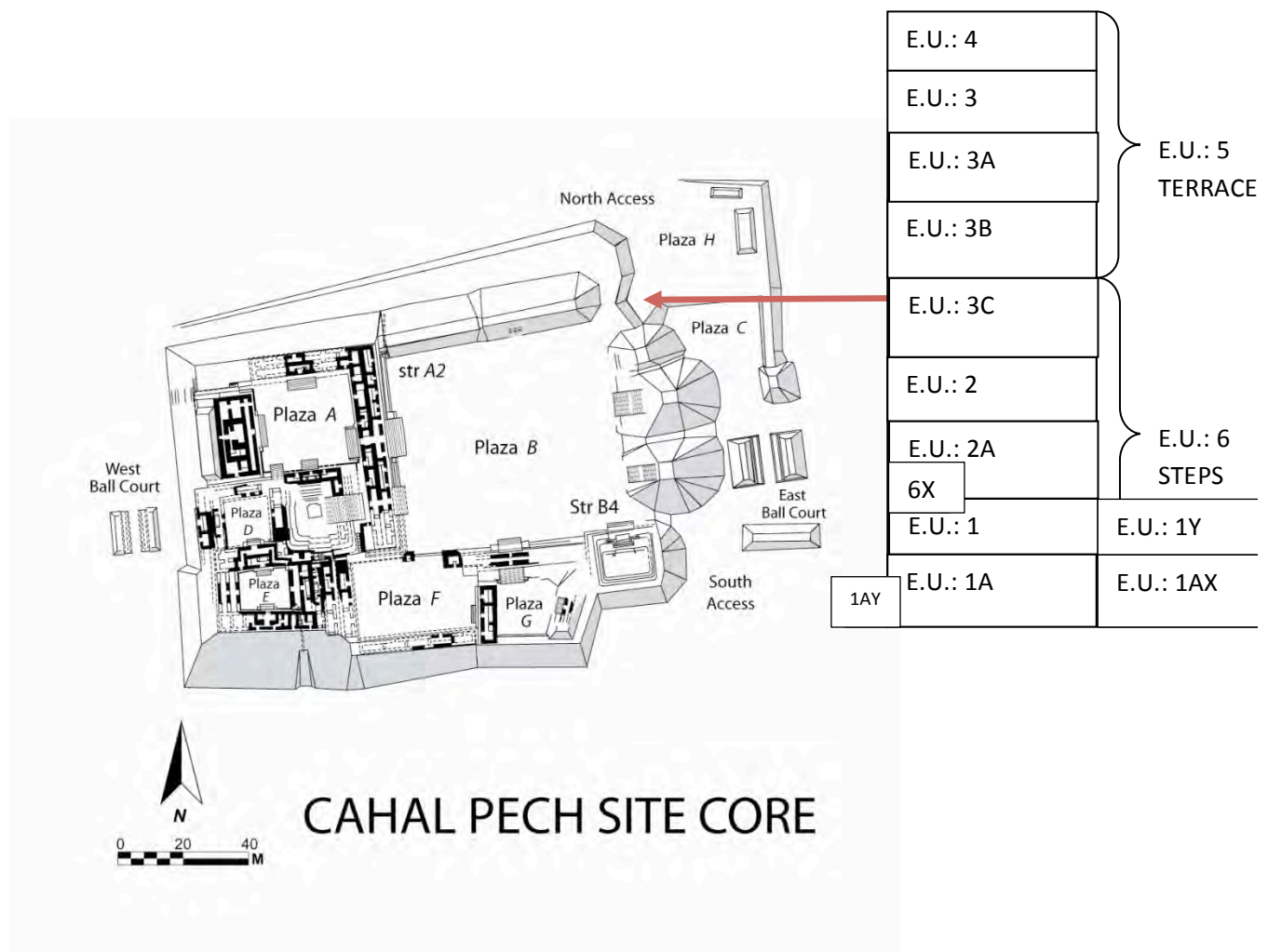
## **INTRODUCTION**

In the summer of 2012, the Belize Valley Archaeological Reconnaissance project continued the investigations at Cahal Pech. In June 2012, the slope leading downward from Plaza B (between Plazas B, H, and C) was excavated as part of the effort to understand the both basal architecture of the triadic structures (B1, B2 and B3) as well as the relationship between the plazas. Excavations in 2010 had revealed steps in the northwest corner of Plaza C, which sparked the interest to investigate if the steps continued to Plaza B.

Excavations revealed the steps leading from Plaza H to Plaza B, as well as two adjoining platforms/ on the northern side of the steps. No connection was made between the steps in the northwest corner of Plaza C and the steps leading from Plaza H to Plaza B.

## **BACKGROUND**

On a hilltop, 166 meter above sea level, is Cahal Pech, an ancient Maya city located (Ball and Taschek 2001). With the modern day city, San Ignacio, in the Upper Belize Valley located on one side and the Macal River and the foothills on the other side, Cahal Pech proved to be brilliantly located, both in ancient times (as a fortress), as well as in modern times (for tourism). Extensive investigations were initiated in 1988, by Dr. Jaime Awe, as a collaboration with Belize Tourism Industry Association (B.T.I.A.) and UNESCO to turn Cahal Pech into a national park, to preserve both history and fauna (Awe 1992). These investigations have revealed the sites activity throughout more than 2000 years (from c. 1200BC till Terminal Classic period) (Awe and Schwanke 2006).



**Figure 1:** Cahal Pech site core (Map used by courtesy of Dr. Awe)

investigations conducted by Dr. Awe. He has established that Cahal Pech has been populated as far back as 1200 BC and new evidence supports that the site was extensively used up through the Terminal Classic period (Awe 1992).

## METHODOLOGY

The excavation area was established based on the slope leading from Plaza B to Plaza H, as the terminal architecture was partly visible through the soil. Large units were set up, which were 2 m or 3 m by 5 m. A total of nine units were set up, aligned south-north, covering an area of 22.5 m by 5 m (Figure 1). All soil removed from the units was screened through ¼-inch screens, and all artifacts uncovered were collected to be analyzed. We were interested in exposing the terminal architecture of the stairway, however, being so close to the surface, the area was disturbed as it is located where visitors enter and exit Cahal Pech. Moreover it is very likely that the inhabitants of the site reused the cut stones from the staircase elsewhere during Terminal Classic period. Furthermore several trees are located on the slope, and roots have disturbed the architecture.



**Figure 2:** Surface: E.U.: stairs-3C

The nine units were placed to cover the area from the northern base of Structure B2 and as far north as the expected location of the stairway. After the terminal architecture had been exposed, there was a clear distinction between the southern end which was abutting Structure B2, the center, and the northern end of the stairway. The units were thereafter united into two single units, a north and a south unit. The southern portion clearly consisted of steps whereas the northern portion consisted of terraces; Jorge Can (Institute of Archaeology) noted that this is very common design. Can helped to identify the architecture of the staircase, and eventually reconstructed and restored the staircase. Where the architecture was not extant, the restoration is shown with boulders instead of cut stones, to distinguish between what is original and what is unknown.

## EXCAVATION RESULTS

The purpose of the excavation was to preserve, conserve and restore the stairway and possible terraces along the slope. Initially, three units were defined along the slope: Excavation Unit stairs-1, EU stairs-2 and EU stairs-3. When these units had been excavated down to the first level, new units were placed in between the units, to cover the rest of the area: EU stairs-2A, EU stairs-3A, EU stairs-3B and EU stairs-3C (Figure 2). Later an extension was made both southward and northward: EU stairs-1A and EU stairs-4. Two units were also defined directly east of EU stairs-1 and EU stairs-1A: EU stairs-1AX and stairs-1Y, in order to connect the newly defined staircase with the steps found in the northwestern corner of Plaza C (EU: CHP-C3-10-6/6B/6C from 2010). However, the last two defined units eventually showed that there was not any evidence of a relationship between the two staircases as well as any evidence of architecture. A trench (EU stairs-6X) was placed in EU stairs-2A as hardly any architecture had been exposed there. We wanted to see if penultimate architecture was better preserved, and therefore



chose this unit for investigation as here was the probability of least damage, when going through the terminal architecture.

**EU Stairs-1** (Lot stairs-B-H-C-12-1 lvl 1). This is a 2 m by 5 m unit and is the first of three units placed on the slope leading from Plaza B down to Plaza H to define the area of the staircase. This lot included ceramic, chert, a small obsidian eccentric.

**EU Stairs-2** (Lot stairs-B-H-C-12-2 lvl 1) This is a 2 m by 5 m unit and is the second of the first three units set up, to define the area of the staircase. This lot included ceramic and chert.

**EU Stairs-3** (Lot stairs-B-H-C-12-3 lvl 1) this is a 2m by 5m unit and is the third of the first three units set up, to define the area of the staircase. This lot included ceramic, chert, quartzite and obsidian.

**EU Stairs-2A** (Lot stairs-B-H-C-12-4 lvl 1) this unit is 3m by 5m and is covering the gap between unit stairs-1 and stairs-2. This lot included ceramic, chert, jute, marine shell and faunal remains.

**EU Stairs-3A** (Lot stairs-B-H-C-12-5 lvl 1) this is a 2.5m by 5m and is one of three units placed to cover the gap between unit stairs-2 and stairs-3. This lot included ceramic, chert, quartzite and charcoal.

**EU Stairs-3B** (Lot stairs-B-H-C-12-6 lvl 1) this is a 3m by 5m and is one of three units placed to cover the gap between unit stairs-2 and stairs-3. This lot included ceramic, chert, quartzite and obsidian.

**EU Stairs-3C** (Lot stairs-B-H-C-12-7 lvl 1) this is a 3m by 5m and is one of three units placed to cover the gap between unit stairs-2 and stairs-3. This lot included ceramic, chert and obsidian.

**EU Stairs-1A** (Lot stairs-B-H-C-12-8 lvl 1). This is a 3m by 5m unit which is partly on Structure B2. This unit determines the border and architecture differences between the staircase and Structure B2, which is necessary before the restoration starts. This lot included ceramic, chert, jute and obsidian.

**EU Stairs-1X** (Lot stairs-B-H-C-12-9 lvl 2) this a 50cm by 90cm 30cm deep trench at the base of the staircase, located within unit stair-1. A plastered floor was found and it is assumed to be a floor of a platform located between the two staircases. This lot included ceramic, chert, jute and quartzite.

**EU Stairs-4** (Lot stairs-B-H-C-12-10 lvl 1) this is a 2m by 5m unit located at the northern end of the slope. Since unit stair-3 did not reveal the possible corner of the terraces, we extended another 2 meters north. The unit was also intended to expose the floor of Plaza H. This lot included ceramic, chert, jute and obsidian.



**Figure 3:** Stone figure found on the surface



**Figure 4:** Terminal architecture: steps before restoration, facing north



**Figure 5:** Terminal architecture: platforms before restoration, facing west

**EU Stairs-5** (Lot stairs-B-H-C-12-13 lvl 1) The units: stair-1, stair-1A, stair-2, stair-2A and Stair-3C were united, as the architecture uncovered indicated that these units were exposing northern terrace, containing the retaining wall/façade of terraces. Measurements of the terraces are 60cm high and 110cm deep. This lot included ceramic, chert and jute.

**EU Stairs-1AX** (Lot stairs-B-H-C-12-11 lvl 1) This is a 3m by 5m unit extending from the southern end of unit Stairs-1A located at the base of the stairways and eastward down the slope, connecting with unit CHP-C3-10-6/6B/6C (from 2010). This unit was started, to explore any possible architecture which could connect the two stairways , however no evidence of connecting architecture was exposed. This lot included ceramic, chert, jute, quartzite, daub, granite, obsidian, slate, limestone and charcoal of which few samples were collected.

**EU Stairs-1AY** (Lot stairs-B-H-C-12-12 lvl 1) This is a 1.9m by 2m extension westward from unit stairs-1A, to define the relation between the staircase and the base of Structure B2. This lot included ceramic, chert, jute and a small stone figurine (8cm by 4cm) found on the surface, however, whether the figurine is part of the staircase or more likely, to have belonged to either B2 or been dropped there at some point is speculative.

**EU Stairs-6** (Lot stairs-B-H-C-12-14 lvl 1) The units: stair-3, stair-3A, stair-3B and stair-4 have been united, as the architecture uncovered indicated that the units were exposing the steps of the staircase. Each step measured 30 cm high (riser) and 80 cm deep (tread) . This lot included ceramic, chert and jute.

**EU Stairs-7** (Lot stairs-B-H-C-12-15 lvl 1) This unit was initially a 1m by 4m unit in the center on the eastern side of Structure B2, as the terminal architecture of the structure needed to be defined, to compare with the terminal architecture defined on the staircase





**Figure 6:** Conserved staircase and platforms, facing south with Structure B2 in the background

bordering Structure B2. Later the unit was expanded to butt unit stairs-1A, which is a unit partly on the structure and partly on the staircase, it is therefore now 7m by 3m. This lot included ceramic, chert, jute, obsidian, slate and faunal remains.

**EU Stairs-1Y** (Lot stairs-B-H-C-12-16 lvl 1) this is a 2m by 5m unit extending from the southern end of unit stairs-1 on the staircase and eastward down the slope, butting to the north of unit stairs-1AX. This unit has been opened to see if there is any connecting architecture between the two staircases (Plaza C and Plaza B). As no architecture was uncovered the unit was leveled with unit stair-1AX, as it is considered to have been a platform between the two staircases. This lot included ceramic, chert, jute, quartzite and obsidian.

**EU Stairs-6X** (Lot stairs-B-H-C-12-17 lvl 3) This is a 2.6m by 1.5m trench placed in the staircase. This trench was opened to expose earlier levels of the staircase, as the terminal architecture in several places was not detectable. This lot included ceramic, chert and jute.

## DISCUSSION

The excavation and restoration of the steps and terraces is part the conservation the site of Cahal Pech that is currently underway. The extensive work done at Cahal Pech the last few years has sought to make Cahal Pech a more attractive site for tourists. By restoring the stairway by the entrance, the site already looks a lot more attractive, as well as making ongoing archaeology visible for tourists, who are interested in excavations and the progress of the site.

The excavation of the stairway has revealed interesting information about the terminal architecture. There was no evidence of any connection between the lower steps leading into Plaza C, and the higher steps leading toward Plaza B. Presumably there should have been a landing between the two staircases, but likely the landing may have only consisted of a plaster floor, which has decayed through the years and was no longer detectable.

The majority of the ceramics uncovered dated to the Late Classic and Terminal Classic periods. No whole vessels or other intact artifacts were uncovered as the materials found mainly had been within fill. As mentioned, the area had been very damaged by the wear of time and exposure to humans and vegetation.

## ACKNOWLEDGEMENTS

This large project was made possible through collaboration between several projects and people: The BVAR project (Belize Valley Archaeological Reconnaissance project) which is directed by the Director of Archaeology in Belize, Dr. Jaime Awe, and the sub-project AFAR (American Foreign Academic Research) directed by Mat Saunders. As well as the financial supporters Doug Tilden and Teresa Keller, who are all interested to see the ancient site of Cahal Pech excavated and restored, which helps us to gain more knowledge about the past Maya civilization. All photographs are by author.

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## **EXCAVATION SUMMARY OF PLAZA C UNITS ALONG STRUCTURES B1 AND B2 AT CAHAL PECH**

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### **INTRODUCTION**

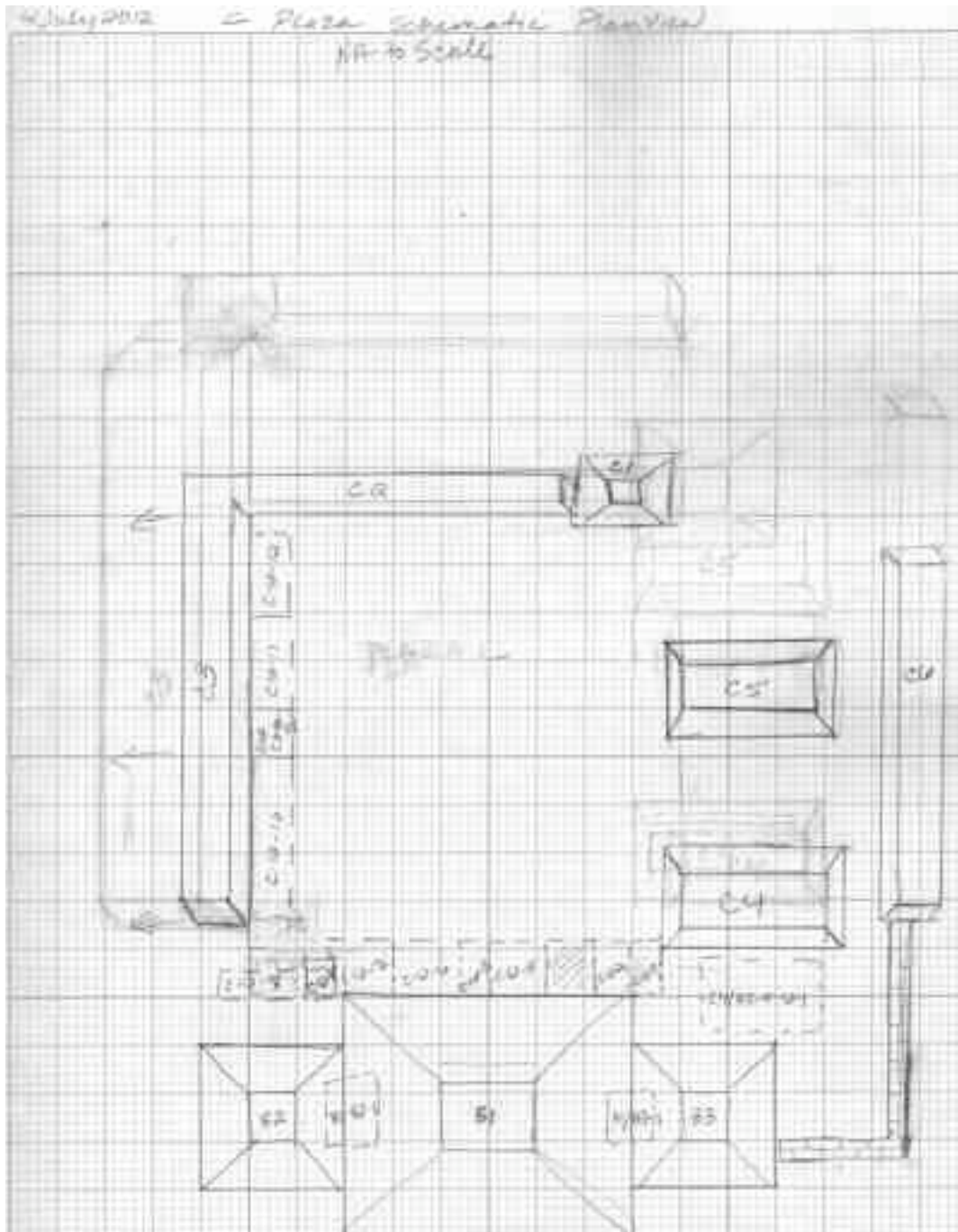
In the summer of 2012 several operations were excavated at the site of Cahal Pech, located in the Belize River in western Belize. Cahal Pech is one of the largest sites in the valley, along with Xunantunich, Baking Pot and Buenavista del Cayo, which are all located approximately 10 kilometers apart. The ancient Maya site of Cahal Pech, like the aforementioned Belize Valley sites, is arranged with a monumental epicenter, with hundreds of surrounding house mounds.

In June and July of 2012, a total of four operations were excavated at the site of Cahal Pech, as part of the American Foreign Academic Research (AFAR) 2012 Field School, an affiliate with the Belize Valley Archaeological Reconnaissance (BVAR) project. This chapter summarizes the excavations and findings of units placed along the plaza floor, abutting the east façade of Structures B1 and B2, and the transition from Plaza C to Plaza B. Units C-12-1, C-12-3, C-12-5, C-12-6, and C-12-7 were excavated with the hope of identifying intact basal molding, wall, and any distinct architectural transitional features linking the two structures at the intersection of structure base and plaza floor. The placement of Unit C-12-8, abutting a 2010 excavation (Unit CHP-10-6), was determined in order to further explore the transition from Plaza C to Plaza B. Summaries of these units follow herein.

### **EXCAVATION OF C-12-1, C-12-2, C-12-3, C-12-5, C-12-6, C-12-7**

#### **Methodology**

Prior to the excavation of any units associated with Structures B1 and B2 and Plaza C, the general approach to unit placement and excavation was coordinated with Dr. Jaime Awe of the Institute of Archaeology. Units C-12-1, C-12-3, C-12-5, C-12-6, and C-12-7 were placed along the base of the east façade of Structures B1 and B2 (Figures 1 and 2). In total, these units measured 23 meters in length and approximately 6 meters



**Figure 1.** Overview photograph of Plaza C and Units C-12-1, C-12-2, C-12-3, C-12-5, C-12-6, and C-12-7.

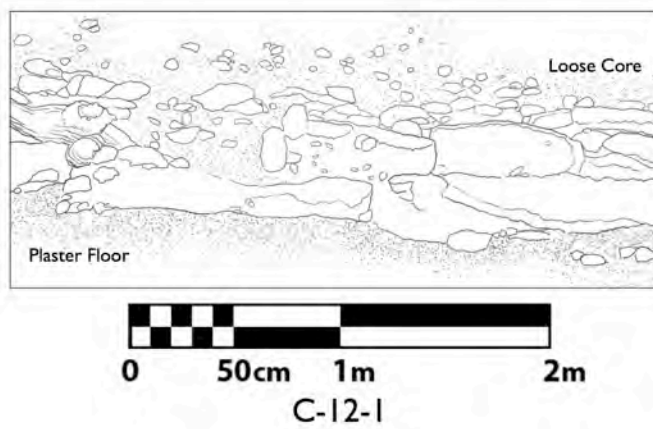




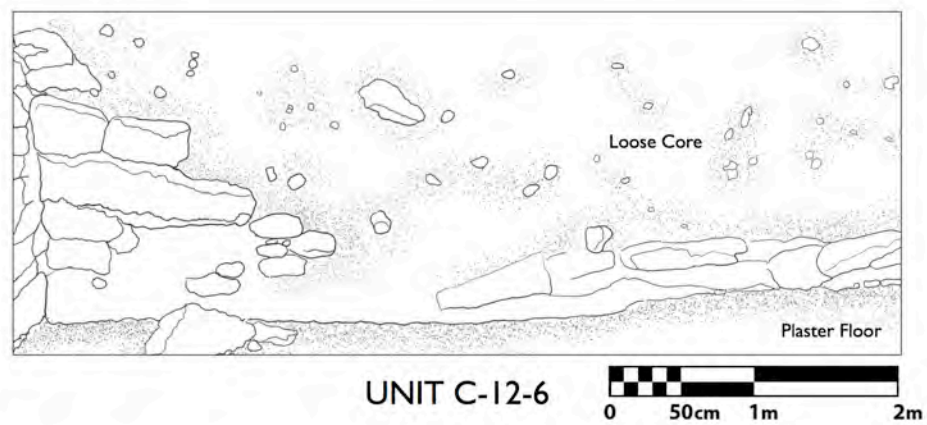
**Figure 2.** Schematic plan view of Plaza C unit placement along B1 and B2.

**Figure 3.** Schematic plan view of AFAR operations unit placement for 2012.

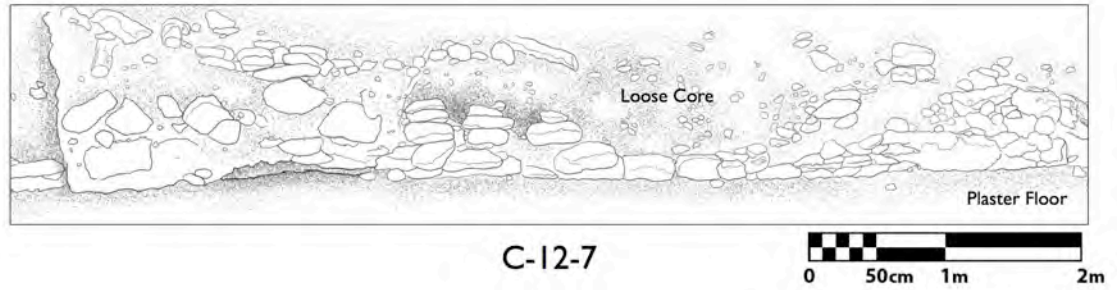




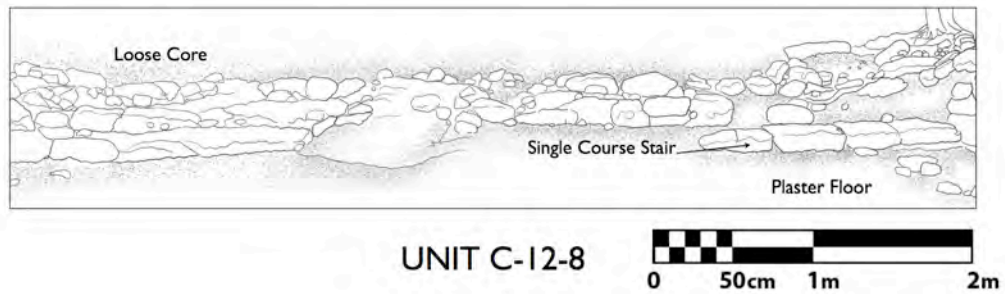
**Figure 4.** Profile of Unit C-12-1, base of excavation.



**Figure 5.** Profile of Unit C-12-6, base of excavation.



**Figure 6.** Profile of Unit C-12-7, base of excavation.



**Figure 7.** Profile of Unit C-12-8, base of excavation.

wide from the plaza floor up the façade of Structure B1, and approximately three to four meters up the façade of Structure B2. The sole purpose in excavating these units was to expose the basal molding of Structures B1 and B2, any structural elements defining the northeastern transition of the two structures at the intersection with the plaza floor, and to simply expose the terminal phase of architecture for Structures B1 and B2. While the units appear in the profile and plan drawings as one long contiguous trench-like excavation area, and will be reported as such, the excavations were recorded as seven discrete units in order to maintain better control of any data extrapolated from the base of the structure. Laying the grid work for discrete units also allowed for special finds and features to be documented within a smaller context of a unit, rather than a trench or block.

These six units were excavated in cultural levels, first removing the overburden and then defining the plaza floor and basal molding. All matrix from all units and levels were sifted through ¼-inch screens. All cultural materials were collected and bagged within each context in order to be analyzed at a later date. Approximately 28 students participated in the practical work of these units, as well as note-taking every day in order to gain knowledge of the process and to complete their field school requirements. The author supervised, recorded field notes and recorded pictures of the progress, as well as participation in the physical part of excavation.

### **Excavation Results**

With the exception of Unit C-12-8, all Plaza C units were set up in order to penetrate the base of structures. Units C-12-1, C-12-2, and C-12-3 were exploratory units excavated by Institute of Archaeology staff during the week prior to arrival of AFAR students. These exploratory excavations, Unit C-12-3 in particular, exposed an unexpected central staircase on the “back side,” or eastern façade, of Structure B1. As a result of this find, all remaining units were placed to continue defining the north-south extents of the central staircase. The northern and southern corners of the staircase were located, and the central staircase was excavated up the façade to approximately 6 meters. The basal wall and molding were also exposed north of the staircase, along Structures B1 and B2. A structural outset was uncovered at the northern transition from the staircase to the basal wall. The southern transition from the staircase to the wall was impacted by a large tree intrusion, and as a result, architectural definition was poorly represented. Field school excavations did not extend into the immediate area of the impasse.



**Figure 8.** Exposed staircase on the eastern façade of Structure B1 prior to AFAR arrival.



**Figure 9.** Exposed staircase on the eastern façade of Structure B1, AFAR excavations.



**Figure 10.** Exposed basal molding along the eastern façade of Structures B1 and B2.





**Figure 11.** Exposed outset at the northern transition from staircase to basal wall.

Excavation of these units initiated with the removal of a humic layer which contained both understory plants and trees, and substantial overburden from structural erosion. On the staircase, the surface matrix tends to be dark brown soil overlaying a thin stratum of lighter yellowish brown soil containing rocks and small lime deposits, indicative of structural erosion from higher elevations on Structure B1. Excavations north of the staircase contained a similar stratigraphy with substantially thicker structural fill deposits. Larger limestone rocks recovered from the fill deposits were set aside to use in the consolidation process scheduled to follow the excavations.

Due to the high volume of overburden and fill debris, students were instructed to screen approximately 50 percent of the overburden and 25 percent of the fill deposit. Materials removed and saved for later analysis included ceramics, chert, and marine shell. Figure 8 shows a representative sample of ceramics recovered from the plaza excavation units.



**Figure 12.** Representative sample of ceramics recovered from plaza units associated with Structures B1 and B2.

## **EXCAVATION OF Unit C-12-8**

### **Methodology**

The general approach to unit placement and excavation was coordinated with Dr. Jaime Awe. Unit C-12-8 was placed to explore the transition from Plaza C to Plaza B and to define the terminal phase construction for this plaza area. The unit measured 6 x 3 meters (north-south).

As with all other Plaza C units, Unit C-12-8 was excavated in cultural levels, all levels were sifted through ¼-inch screens, and cultural materials collected and bagged by context. A group of 6-8 students participated in the practical work as well as note-taking every day.

### **Excavation Results**

Unit C-12-8 was placed to expose a small set of steps defining the transition from Plaza C to Plaza B (Figures 13 and 14). Abutting a 2010 excavation (Unit CHP-10-6),



**Figure 13.** Opening photo of Unit C-12-8.



**Figure 14.** Opening photo of Unit C-12-8.

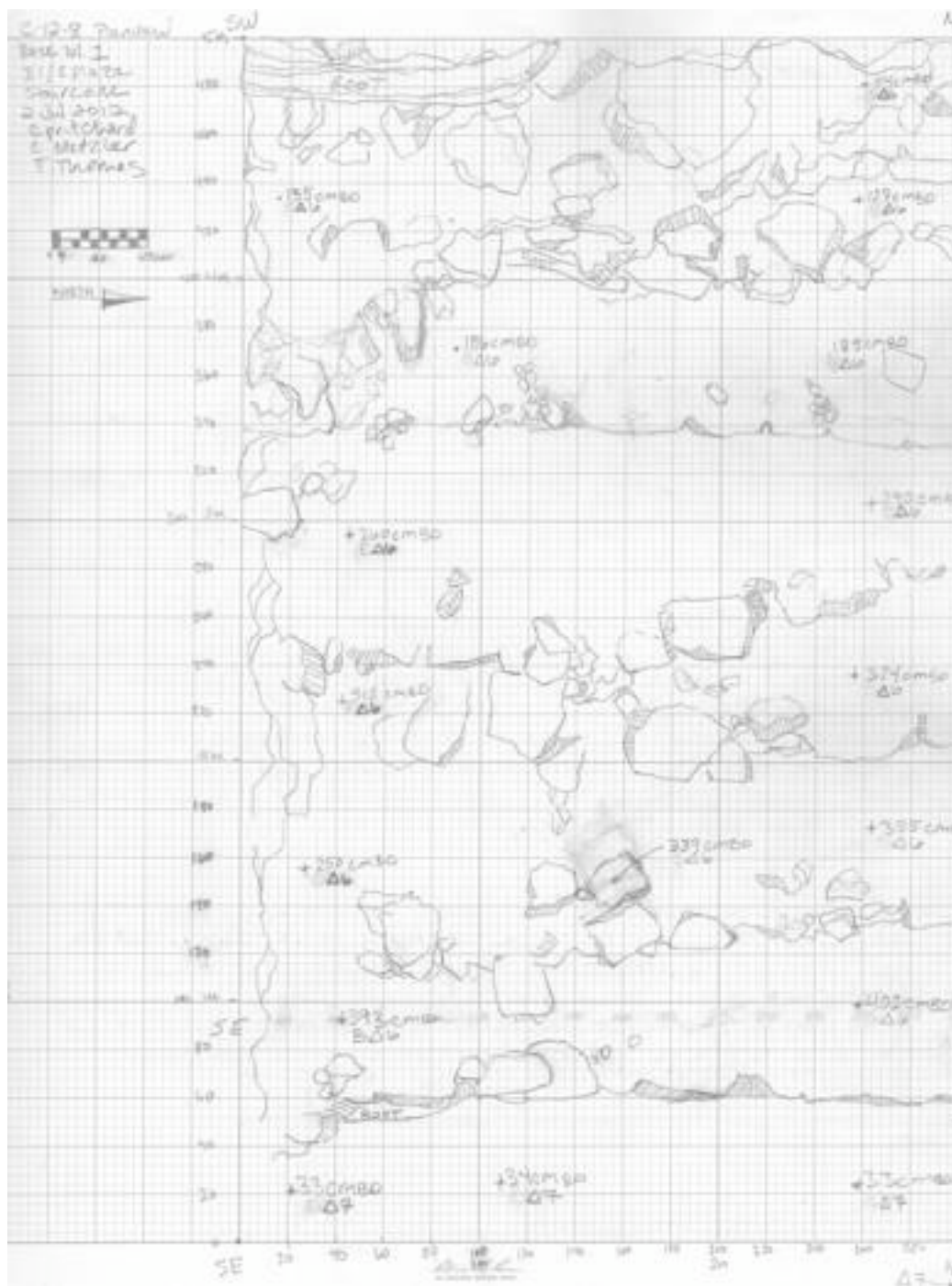




**Figure 15.** Exposed steps leading from C Plaza to B Plaza, base level 1.

placement of this unit was determined in order further explore the transition from Plaza C to Plaza B. Like all other Plaza C units, students excavated structural collapse from erosion, to expose the underlying construction episode defining the terminal phase plaza and transitional stairs. Larger limestone rocks recovered from the fill deposits were set aside to use in the consolidation process schedule to follow the excavations. The excavations met the goal of defining steps and associated plaza floor (Figures 15, 16, and 17). These elements were exposed and prepared for consolidation immediately following the field school session.

Contemporaneous with all other unit excavations in and around Structures B1 and B2, the matrix was dark brown soil, overlaying a lighter, yellowish brown soil containing rocks and lime deposits, indicative of structural fill deposit. This fill deposit was fairly thin across Unit C-12-8 and the structural elements were defined below 10-20 cm of overlying matrix. Cultural materials removed and saved for later analysis included ceramics (Figure 18), chert, and marine shell.



**Figure 16.** Plan view drawing of exposed steps in C-12-8, base level 1.



**Figure 17.** Exposed steps in C-12-8, base of excavation.



**Figure 18.** Representative sample of ceramics recovered from Unit C-12-8 excavations.

## **ACKNOWLEDGMENTS**

The American Foreign Academic Research (AFAR) field school excavations are made possible due to the support of the Belize Institute of Archaeology and, in particular, Dr. Jaime Awe. The AFAR extends many thanks to Dr. Awe's continual support and the use of the BVAR program as a conduit to carry out field school excavations for continued research and tourism support at the Cahel Pech site.

Thanks also go to C. Mathew Saunders, Davidson Day School, Mike and Tiffany Thomas, Caitlin Stewart, Reiko Ishihara-Brito, and Jorge Can for on-site assistance, oversight, and program support. Finally, thanks go to the Brockington Institute for additional support of my involvement in the summer 2012 season.

## **EXCAVATIONS OF STRUCTURE C-3, SOUTH, CAHAL PECH**

**James C. Pritchard, RPA**

**American Foreign Academic Research and the Brockington Institute**

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### **INTRODUCTION**

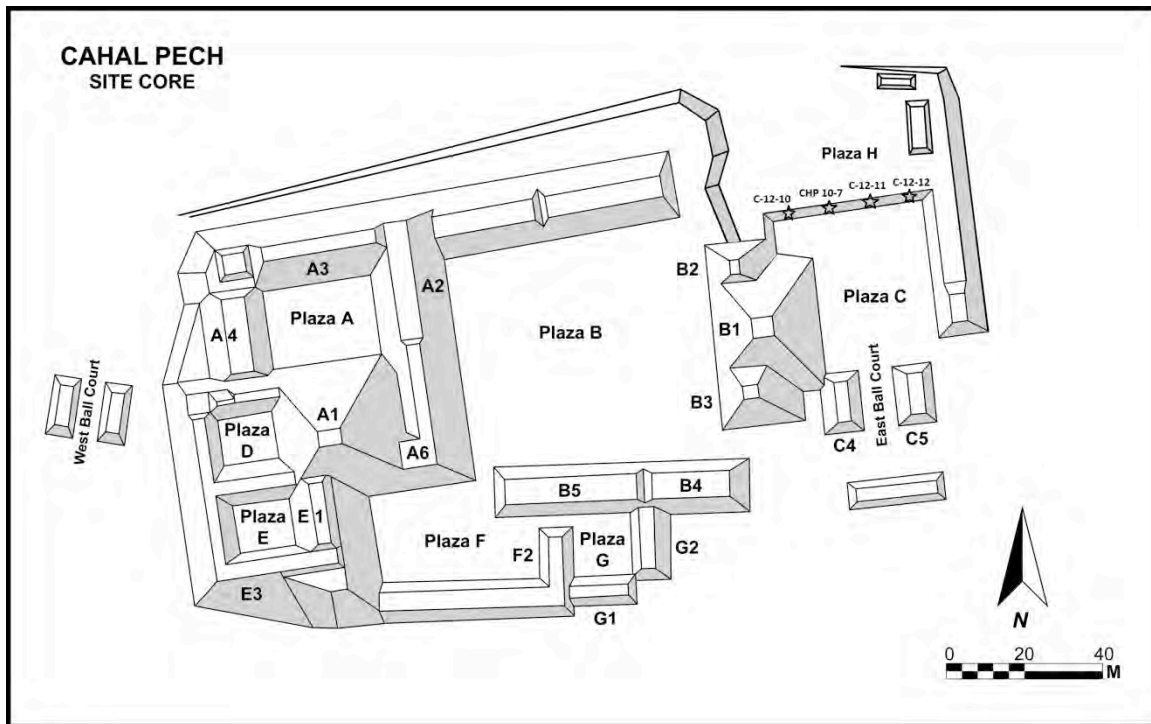
In the summer of 2012, several operations were excavated at the site of Cahal Pech, located along the Belize River in western Belize. Cahal Pech is one of the largest sites in the valley, along with Xunantunich, Baking Pot and Buenavista del Cayo, which are all located approximately 10 km apart. The ancient Maya site of Cahal Pech, like the aforementioned Belize Valley sites, is arranged with a monumental epicenter, with hundreds of surrounding house mounds.

A total of four operations were undertaken at Structure C-3 as part of the American Foreign Academic Research (AFAR) 2012 Field School, an affiliate with the Belize Valley Archaeological Reconnaissance (BVAR) project. Participants of AFAR excavated the southern façade of Structure C-3, uncovering structural and adjacent plaza floor contexts. Our excavation units this season consisted of a segmented block of excavations that in total measured roughly 26.19m west-to-east by 3.2m north-to-south and included newly excavated Units C-12-10, C-12-11, and C-12-12 (Figures 1 - 6). In addition, we fully reopened and re-excavated Unit CHP 10-7, which fell along the south façade of the structure between C-12-10 and C-12-11. Unit CHP 10-7 was originally excavated in 2010 by students from the University of Rhode Island (URI) under the direction of AFAR and BVAR staff (Pritchard et al. 2011). The objective of the excavations was to expose the platform, the entirety of the southern wall, and any steps—if present—leading down from the platform to the plaza. A breakdown of the units is provided in Table 1.

### **METHODOLOGY**

The general approach to unit placement and excavation was coordinated with Dr. Jaime Awe, the director of BVAR. Christy W. Pritchard and James C. Pritchard co-supervised, participated in the excavations, and took field notes and photographs of the excavation progress. Students participated in the practical work as well as in note-taking every day in



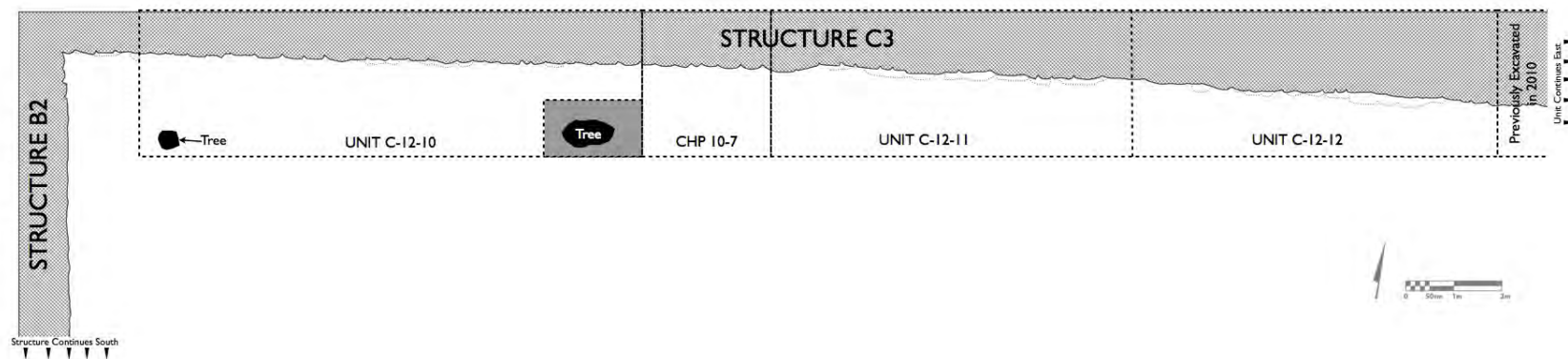


**Figure 1:** Location of 2012 excavations along the south façade of Str. C-3

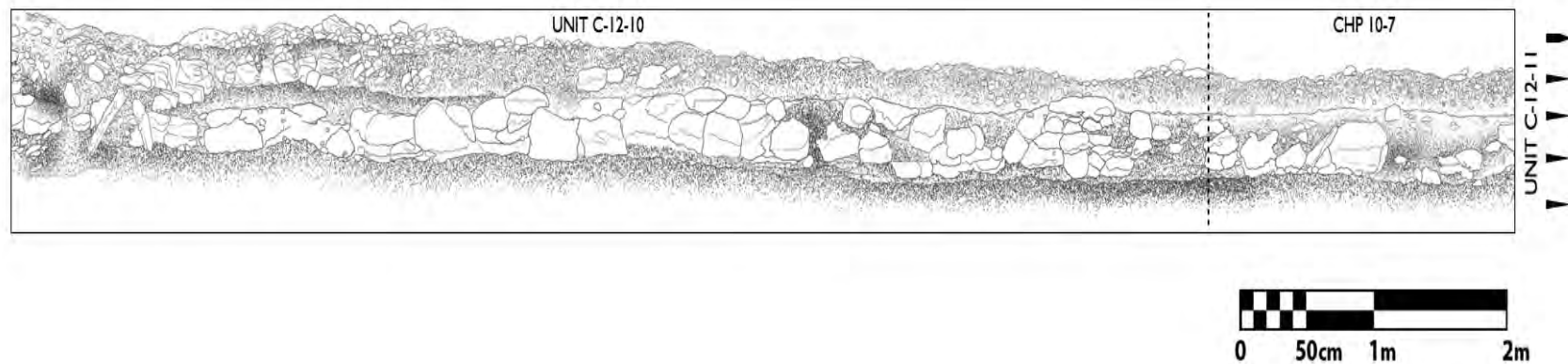
<b>Table 1. 2012 Excavations at Str. C-3</b>			
Unit No.	C-12-10	C-12-11	C-12-12
Dimensions	3.16 x 10.69*	3.2 x 7.8	3.15 x 7.7
Orientation	N-S/E-W	N-S/E-W	N-S/E-W
Levels Dug	1	1	1
Center Opening Depths	139cmbd (Datum 8)	117cmbd (Datum 9)	113cmbd (Datum 9)
Max Depth Achieved	156cmbd	168cmbd	168cmbd
* includes previously excavated CHP 10-7 (Pritchard et al. 2011)			



**Figure 2:** Photograph showing excavations at Structure C-3 South, looking east

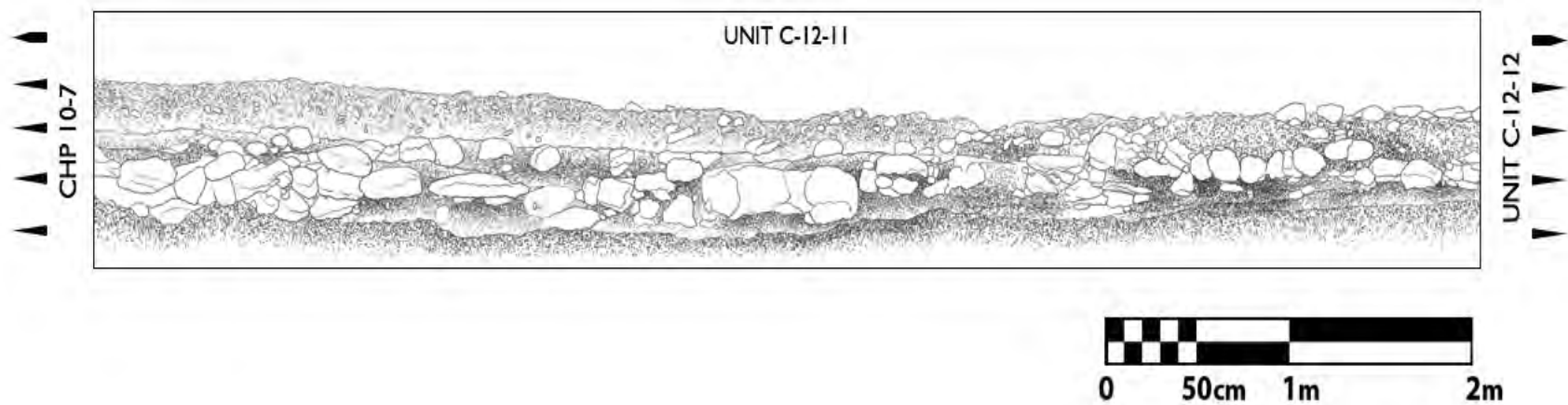


**Figure 3:** Plan view of Structure C-3 south façade excavations showing the locations of individual excavation units.

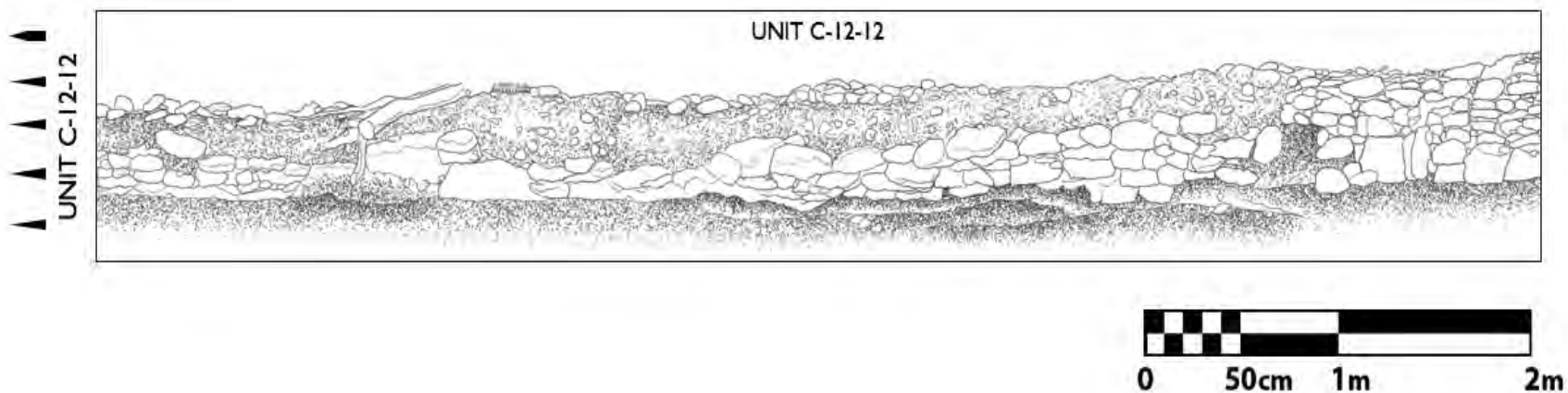


**Figure 4:** Profile view of Structure C-3 south façade excavations, showing Units C-12-10 and CHP 10-7.





**Figure 5:** Profile view of Structure C-3 south façade excavations, showing Unit C-12-11.



**Figure 6:** Profile view of Structure C-3 south façade excavations, showing Unit C-12-12.

order to gain knowledge of the field research process and to complete their field school requirements. First, Unit C-12-10 was placed at the southwestern corner of Structure C-3 adjacent to units CHP-10-06, 6B, and 6C excavated in 2010 by Catharina Santasilia of the University of Copenhagen (Pritchard et al. 2011). When completed, Unit C-12-10 measured 8.69m west-to-east. At the eastern terminus of Unit C-12-10 fell the 2010 URI excavation CHP 10-7 (Pritchard et al. 2011). Unit CHP 10-7 measured 2m west-to-east. Next, Unit C-12-11 was established on the east side of the reopened and re-excavated URI unit. Unit C-12-11 measured 7.8m west-to-east. Finally, Unit C-12-12 was excavated eastward from C-12-11 to the point where the structure meets NNW/SSE-oriented Structure C-2 along the eastern terminus of the C Group and the acropolis. Temporary datums were placed along the southern portion of the platform, and all elevations are subtracted from the datums. All units were excavated using cultural levels, that is, from construction episode to underlying construction episode until final elevation for each lot was reached. All matrix was sifted through ¼-inch screens and all cultural material was collected and bagged according to its context, in order to be analyzed later by the lab and field director.

## **EXCAVATIONS**

### *Level 1*

Considering the amount of bioturbation, it is important to keep in mind that the first level is heavily disturbed by tree roots and burrowing animal activities. Each unit, thus, initiated with a humic layer which contained both understory plants and trees and included many roots. The humus tended to be dark brown matrix, continuing to a depth of approximately 40 cm, at which point it becomes a lighter yellowish brown. In each unit, a single, humic level (Level 1) was excavated to remove all overburden and to expose the platform, the south wall, and the plaza floor. Level 1 overlays terminal-phase construction including west-facing terracing and the base of the superstructure, which would have been perishable. Soils within the level are comprised of loose, heterogeneous humus that represents a bioturbated cultural horizon. The level was terminated upon reaching penultimate architecture atop the platform, or in the case of those portions of excavations that fell on the plaza, an intact plaza floor. This level measured between 113 and 168 cm in total depth below Temporary Datum 9, which was placed at the base of a tree located to the north of CH-12-12 along the top of Str. C-3. The brief two-week field season concluded after achieving the base of Level 1 in each unit. Findings included ceramic sherds, chert, and freshwater shells. A special find consisting of a stone bark beater fragment was also recovered from Unit CH-12-11.

## **DISCUSSION AND CONCLUSION**

Important findings resulting from the exposure of the southern façade of Structure C-3 come from analysis of the structural remains and the artifacts recovered during excavation. Excavation of Units C-12-10, C-12-11, C-12-12, and reopening and re-

excavation of the formerly excavated operation CHP 10-7, suggest that no central staircase is extant. Rather, the terminal construction phase of Structure C-3 appears to orient the building to the north, placing it as part of the H plaza and associated H Group. Further excavations along the northern façade of Structure C-3 would facilitate a better understanding of how this structure fits into the occupational history of this northeastern corner of the acropolis.

Ceramics recovered from Units C-12-10, C-12-11, and C-12-12 primarily represent Late/Terminal Classic styles and forms including Belize Red and Cayo Unslipped body sherds and jar rims, among other styles and forms. These Late/Terminal Classic styles and forms are coeval with ceramics recovered during excavations along the northwestern façade of Structure C-6 at the southern end of the C plaza (Pritchard et al. 2011). Further analysis of ceramics recovered from these C Group structures, as well as other structures excavated within the C Group, may help to further clarify the relationship between Structure C-3 and the H and C plazas. Further research into the results of previous excavations at C-3, as well as additional penetrating excavations, may help to determine the changing functions of the structure over time.

## **ACKNOWLEDGMENTS**

Thanks go to C. Mathew Saunders, Davidson Day School, Mike and Tiffany Thomas, Caitlin Stewart, Reiko Ishihara-Brito, Julie Hoggarth, and Jorge Can for on-site assistance, oversight, and program support. Special thanks go to Dr. Jaime Awe. Lacking his consent, these excavations would not have been undertaken. Finally, thanks go to the Brockington Institute for additional support of my involvement in the Summer 2012 season.

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# EXCAVATIONS IN THE EASTERN BALLCOURT, CAHAL PECH

**Catharina E. Santasilia**  
**University of Copenhagen**

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## INTRODUCTION

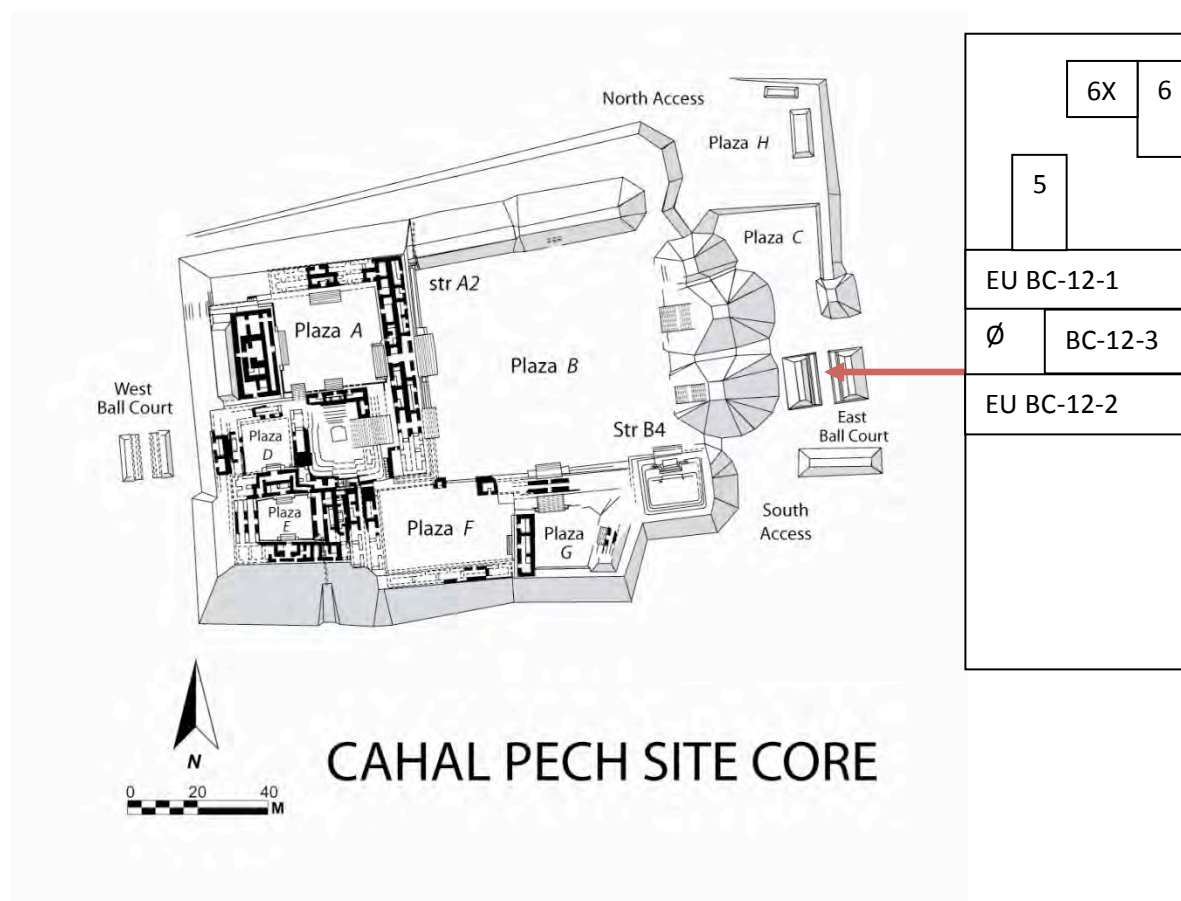
In 1995, as part of the excavations carried out by the Belize Valley Preclassic Maya Project (BVPMP) at Cahal Pech, directed by James F. Garber of Texas State University, Josalyn Ferguson, Tina Christensen and Sonja Schwake investigated the eastern ballcourt, which is the larger of the two ballcourts at Cahal Pech.

In 1995, a 1 by 1.5-meter unit (CA-2) was set up in the center of the ballcourt alley. A dedicatory cache (Feature EBC-F/2) was discovered in Level 3 as some of the stones had been removed at the base of a wall (EBC-Substructure 1, which is considered to be a ceremonial platform). The cache contained several layers containing marine shells, chert flakes, five obsidian eccentrics and the skeletal remains of two children. The analysis of the subadult remains suggests that they were placed there as offerings rather than burials, as they were not articulated and were intermixed with some of the artifacts. All of the skeletal remains were poorly preserved. The first individual was between 6-8 years of age, and the second individual was approximately 9-12 months old. Below the cache and just above bedrock was a scattering of shell beads dating to the Middle Preclassic period. Dating was based on the ceramics uncovered at the same level. Analysis concluded that the ballcourt had been built in a single construction phase in the Late Classic period (AD 700–900).

The reason for starting the excavation in 2012 was to investigate the ballcourt alley further, as the 1995 1m by 1.5m unit had revealed important information about ritual activity during the Middle Preclassic period. Through the extension of these earlier excavations we would be able to get a broader idea of the earlier levels and investigate the possibility of further ritual offerings.

## BACKGROUND

Cahal Pech is located on the southern outskirts of modern day city, San Ignacio. Cahal Pech is one of the smaller centers and is located on a hilltop 166 meter above sea level (Ball and Taschek 2001), on the west bank of the Macal River with the foothills to the south. The Cahal Pech site core consists of a western side with elite residence structures, and an eastern side with elite ritual structures. Furthermore are there two



**Figure 1:** Cahal Pech site core (map used by courtesy of Dr. Awe). Figure attached to the map is not to scale but an overview of where the units are located (Ø was not excavated)

Ballcourts (Eastern and Western). Excavations have been conducted at Cahal Pech throughout the 20<sup>th</sup> century, but not until 1988 when a project directed by Dr. Jaime Awe, initiated extensive investigations of the site (Awe 1992). This was a collaboration between Belize Tourism Industry Association (B.T.I.A.) and UNESCO to turn Cahal Pech into a national park, in order to preserve both the history of the Maya as well as the striving faunal inhabitants. Excavations at Cahal Pech have revealed that the site was extensively in use as far back as 1200BC till Terminal Classic period (Awe and Schwanke 2006).

## METHODOLOGY

Based on the excavations in 1995, several units were placed in the center of the ballcourt, to define a larger portion of the Middle Preclassic architecture (Ferguson et al. 1995). (See figure 1, for map, designation and orientation of the units). The ballcourt is 4 meter wide, and the units were placed to cover the width, which is oriented east-west, with the south-north side of the unit measuring 1 meter across. Excavated artifacts were kept separate according to the distinct units and levels, until further excavations revealed the stratigraphy and substructure. Units 1, 2, and 3 were eventually combined to become Unit 4, which was subdivided into Unit 4-East and 4 West, as the circular structure which was uncovered was located to the east in





**Figure 2:** ceramic deposit, EU BC-12-6, arrow towards north

excavations. All excavated soil was screened in a ¼-inch screen and the same datum, which was placed on the north-eastern architecture of the ballcourt, 30cm above the main lane and has been used to measure all elevation of the different levels. All uncovered artifacts have yet to be analyzed. Excavations were terminated due to rain water entering the units. Bedrock was only reached inside the circular structure that had been exposed.

## EXCAVATION RESULTS

Based on earlier investigations that had defined the dimensions of the terminal ballcourt architecture (Ferguson *et al.* 1995), the alley measures 16.1 m long and 4 m wide. After locating the center, two trenches were placed along the alley 0.5 m north and 0.5 m south of the center point. The objective was to expose earlier levels, and to investigate if there were any additional burials or ritual offerings. The center of the ballcourt was also excavated, to uniting the two trenches and extending them northwards to investigate a circular structure that had been uncovered in 1995. There are approximately 8 round structures at Cahal Pech (Awe, personal communication 2012), dating from 500-1 BC. Whether these structures were used for rituals and dancing, as dwellings still needs to be investigated.

The first level excavated in the ballcourt in 2012 included the consolidated alley floor, which had been restored some time after the excavations in 1995, and contained no artifacts. In the second level, several colonial artifacts were uncovered, including the stem of a pipe. After the circular architecture had been exposed the units were redefined encompass the area inside the structure and unit for the outside, as well as the other extensions made further to the north in the alley. A deposit was found with several Preclassic ceramic sherds and human skeletal remains (one longbone) in one of the extension (EU BC-12-6) (see Figure 2). The individual lot descriptions are included below to detail the changes in cultural deposits:

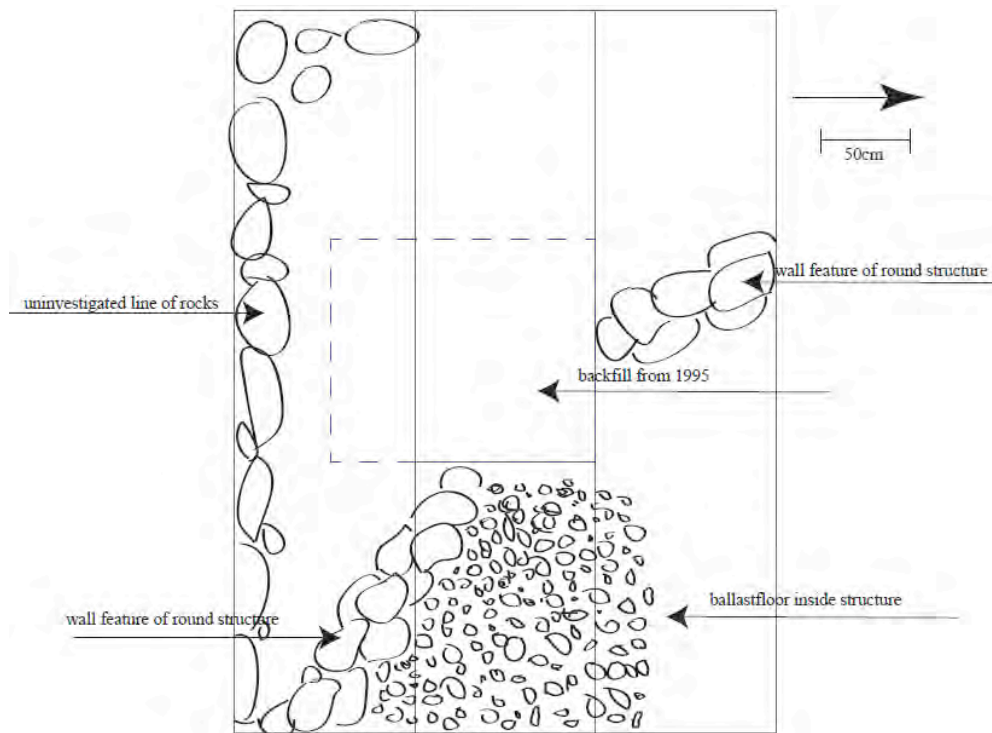


**Figure 3:** Unit BC-12-1, ballcourt alley facing southwest

**EU BC-12-1** (Lot BC-12-1 lvl 1). This is a 1 by 4 m unit, which is located 0.5 m north of the center point (Figure 2). At a depth of 10 cm, the restored ballcourt floor was reached. This lot did not include any artifacts.

**EU BC-12-1** (Lot BC-12-2 lvl 2) A wall aligned north-south was reached at a depth of approximately 35 cm, curving slightly eastward. It was the same wall as that uncovered in 1995 which had been designated as EBC-Substructure 1. Further excavations showed that it was a circular structure. We decided to excavate the exterior side of the structure before continuing with the fill of the structure. Consequently, the western side of this unit is approximately 30 cm lower than the eastern end (at approximately at 60 cm below surface). The wall was missing in the southern portion of the unit, but the lack of a wall is due to the 1995 excavation, when the wall was removed in order to reach bedrock. This lot included a large quantity of ceramic, chert, jute, obsidian and charcoal of which samples were taken.

**EU BC-12-2** This is a 1 by 4 m unit, located north of unit BC-12-1, 50 cm south of the center. After just 10 cm the restored floor of the ballcourt was reached. This lot did not include any artifacts (Lot BC-12-3 lvl 1). Lot BC-12-4 lvl 2 consists of a stack of medium-sized rocks was found at the eastern end of unit BC-12-1; we wanted to investigate whether there would be similar piled rocks in this unit as well. That was not the case, but differently aligned rocks were exposed, which indicated to continue southwards. This lot included a large amount of ceramic, which could indicate it was a deposit at approximately 70 cm below datum. Recovered artifacts include chert, jute, obsidian, daub, carbon and a stem of a colonial pipe.



**Figure 4:** sketch of architecture in the units in the eastern ballcourt at Level 3 (By C. E. Santasilia)

**EU BC-12-1** (Lot BC-12-5 lvl 3) East of the wall, inside the structure a crude plastered floor was reached at approximately 50cm below surface. This lot included ceramic, chert, and jute.

**EU BC-12-1** (Lot BC-12-6 lvl 4) At the eastern end of this unit, piled rocks were exposed. The rocks were mapped, as it was presumed that a possible burial was to be expected underneath, but the rocks did not reveal anything. This lot included ceramic, chert and jute.

**EU BC-12-3** (Lot BC-12-7 lvl 1) This unit is placed between unit BC-12-1 and BC-12-2 and is a 1m by 1.5m, on the eastern side of the alley. This unit was defined to expose more of the piled rocks uncovered in unit BC-12-1. After just 10cm the restored ballcourt floor was reached and the level was changed. This lot did not include any artifacts.

**EU BC-12-3** (Lot BC-12-8 lvl 2) Part of a wall was uncovered at approximately 30cm depth, and part of the backfill excavated by Ferguson, was removed. According to Ferguson's reports, the wall had also been present in her unit, but it had been removed as their unit needed to reach bedrock. A ballast floor was reached in this unit as well as in unit BC-12-2 at approximately 35-40cm depth. This lot included ceramic, chert, jute, granite and obsidian.

**EU BC-12-3** (Lot BC-12-9 lvl 3) The ballast floor uncovered was drawn and then removed. So far architecture has only been exposed in the eastern end of the





**Figure 5:** overview of the excavation at level 3, with ballast floor, wall feature EBC-substructure-1, center where backfill from 1995 was removed and unexcavated baulk. Trowel points towards north



**Figure 6:** Unit BC-12-5 level 2, circular structure. Trowel points towards north

excavated units, therefore the excavation units have been united into unit BC-12-4 distinguishing between inside/east of the round structure and outside west of the round structure, as well as north-east and north-west. This lot included ceramic, chert, jute and obsidian. ( See figure 3 and 4 for identification of architecture).

**EU BC-12-4** (Lot BC-12-10 lvl 4) This is the northeastern part of unit BC-12-4, which is in the north-east corner, inside the structure, but the levels in this corner are different from the levels above and below the ballast floor. This lot included ceramic, chert and jute.

**EU BC-12-5** (Lot BC-12-11 lvl 1) A 1m by 2m extension was defined north of where the wall was exposed in unit BC-12-4, as we wanted to expose more of the circular wall. After just 10cm the restored ballcourt floor was reached. This lot did not include any artifacts.

**EU BC-12-4** (Lot BC-12-12 lvl 4) This is inside the structure, and approximately 80cm below surface. A line of rocks (direction east-west) was exposed, and seemed to continue below the wall, but no evidence was found of it outside the wall, neither are there any other rocks underneath the line, so it was drawn and excavations continued. This lot included ceramic, chert and jute.

**EU BC-12-4** (Lot BC-12-13 lvl 5) This level is right above bedrock, which was reached at approximately 130cm depth. This lot included a large amount of ceramic and jute. It is common for the Preclassic period to have deposits of jute.

**EU BC-12-4** (Lot BC-12-14 lvl 4) This is the north-western part of unit BC-12-4, it was leveled out and then focus was moved to the round structure. This lot included ceramic, chert and jute.

**EU BC-12-5** (Lot BC-12-15 lvl 2) This level has reached a second floor at approximately 65cm, which is of crude plaster, outside the wall structure (see figure 5). The second floor exposed outside the structure is much lower than the second floor exposed inside the structure. As the structure is turning even more eastwards, we placed a unit on the eastern edge of the ballcourt alley, to expose more of the structure. This lot included ceramic, chert, jute, marine shell, quartzite, obsidian, daub, green stone and a cobble which could have been used as a mano (grinding stone).

**EU BC-12-6** (Lot BC-12-16 lvl 1) This unit is a 1m by 2m unit, placed by the eastern edge of the ballcourt alley, based on estimation on the curve of the circular structure. After 10cm the restored ballcourt floor was reached. This lot did not include any artifacts.

**EU BC-12-6** (Lot BC-12-17 lvl 2) A second floor (plastered) was reached not far below the first floor. This lot included ceramic and chert.

**EU BC-12-5** (Lot BC-12-18 lvl 3) This is below the second floor exposed outside the circular structure. A third floor was reached, which seems to indicate the base of the wall structure. This lot included ceramic, faunal or human remains.





**Figure 7:** Units BC-12-6 and BC-12-6X, ceramic deposit and stone floor. Trowel pointing towards north

**EU BC-12-6** (Lot BC-12-19 lvl 3) This is below the second floor at approximately 20cm. A ceramic deposit was reached with ceramic which was broken and shattered. We mapped the ceramic, and then opened another unit westwards, to see if the deposit continued. When it was established that the deposit did not continue westward, the deposit of ceramic was removed. Below the ceramic deposit, a human tibia (long bone) was uncovered, but no other bones were exposed, and the bone showed no evidence of modification. This lot included ceramic, of which a large typical Early Classic olla sherd was uncovered, chert and human remains.

**EU BC-12-6X** (Lot BC-12-20 lvl 1) This is a 1m by 1m extension westward, opened to investigate whether the ceramic deposit from unit BC-12-6 continues or not. After 10cm the restored ballcourt floor was reached. This lot did not include any artefacts.

**EU BC-12-6X** (Lot BC-12-21 lvl 2) Contrary to the expected floor as in unit BC-12-6 was, a rock floor was reached and the ceramic deposit did not continue further westward (see figure 6). This lot included ceramic, chert and jute.

## SUMMARY

The excavations in the eastern ballcourt revealed some interesting finds about Cahal Pech during the Late Preclassic period. Recovered ceramics dated to the Middle and Late Preclassic periods. The circular structure, which has a radius of approximately 2.5m, is also associated with Preclassic period, and circular structures elsewhere at Cahal Pech have likewise been analyzed and date to the Preclassic period.

The excavations did not reveal any human offerings, except one long bone placed underneath a deposit of ceramics further north in the alley. It is likely the rest of the ballcourt could reveal some very interesting information about the Preclassic or Early Classic periods. Unfortunately excavations had to end as excessive rain impeded the excavations.

## ACKNOWLEDGEMENTS

The excavations at Cahal Pech in 2012 was made possible through collaboration between several people: the BVAR project (Belize Valley Archaeological Reconnaissance project) which is directed by Dr. Jaime Awe, and the affiliated AFAR (American Foreign Academic Research) program directed by Mat Saunders. Financial supporters Doug Tilden and Teresa Keller have contributed to the excavation and restoration of site of Cahal Pech, which helps us to gain more knowledge about the past Maya civilization. All photographs by author.

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# ARCHAEOLOGICAL INVESTIGATIONS OF STRUCTURE B-3, CAHAL PECH: A PRELIMINARY REPORT

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## INTRODUCTION

Prior to 2012, Structure B-3 had not undergone any significant archaeological investigations except for some minor operations in 2011 to determine the extent of its terminal architecture at its western base in Plaza B. Structure B-3 had not been the object of any significant examination owing to the extensive looting it had undergone prior to the beginning of the Cahal Pech Project in 1988 (Awe and Campbell 1988:12).\_\_

The extent of looters' vertical and horizontal trenches encountered in 1988 predisposed Structure B-3 to imminent collapse. Subsequent seasons of investigations at Cahal Pech included efforts to backfill looters' trenches in order to save Structure B-3 from total collapse. Although recording the extent of looting was one of the first exercises conducted at Cahal Pech in 1988 (Awe and Campbell 1988:12), these recordings were made with a mandate of safety first. In as much as Structure B-3 was liable to collapse in upon itself, the total extent of looting in Structure B-3 was not fully recorded. Therefore, part of the task at hand in the 2012 field season's investigations was to determine the precise extent of damage Structure B-3 incurred via looting activity.\_\_

Along with defining the extent of the looters' trenches, additional objectives of the 2012 season's investigations included locating any preserved architecture in order to determine the potential for future conservation and restoration. The excavation focus also included recovering any artifacts remaining in situ, as well as those disturbed by looting activity and developing a chronology for any preserved construction phases.

Unit 1 was placed centrally atop Structure B-3 in order to capture as much information as possible in our vertical excavations. A unit measuring 3 meters north-south by 5.20 meters east-west was established based upon surface conditions. Primarily, some large trees and tree stumps were responsible for dictating the unit size

and its alignment as near as possible to the estimated primary axis of Structure B-3. Furthermore, the eastern extent of the unit was placed according to several cut limestone blocks evident in the surface humus, that appeared to be in-situ architecture, and aligned exactly on magnetic north.

The majority of architecture in the Cahal Pech site core tends to be oriented eight to twelve degrees west of magnetic north (Awe et al. 1991, Figure 2:26), but as the cut stones were our only indication of any in-situ architecture on the surface of Structure B-3, the cut limestone blocks dictated Unit 1's orientation to magnetic north. The orientation of the unit to magnetic north was meant to accommodate the employment of a cultural stratigraphy excavation and recording strategy. Herein follows the significant results from the 2012 field season of investigations of Structure B-3, along with a summary and suggestion for future investigations.

## INVESTIGATION RESULTS

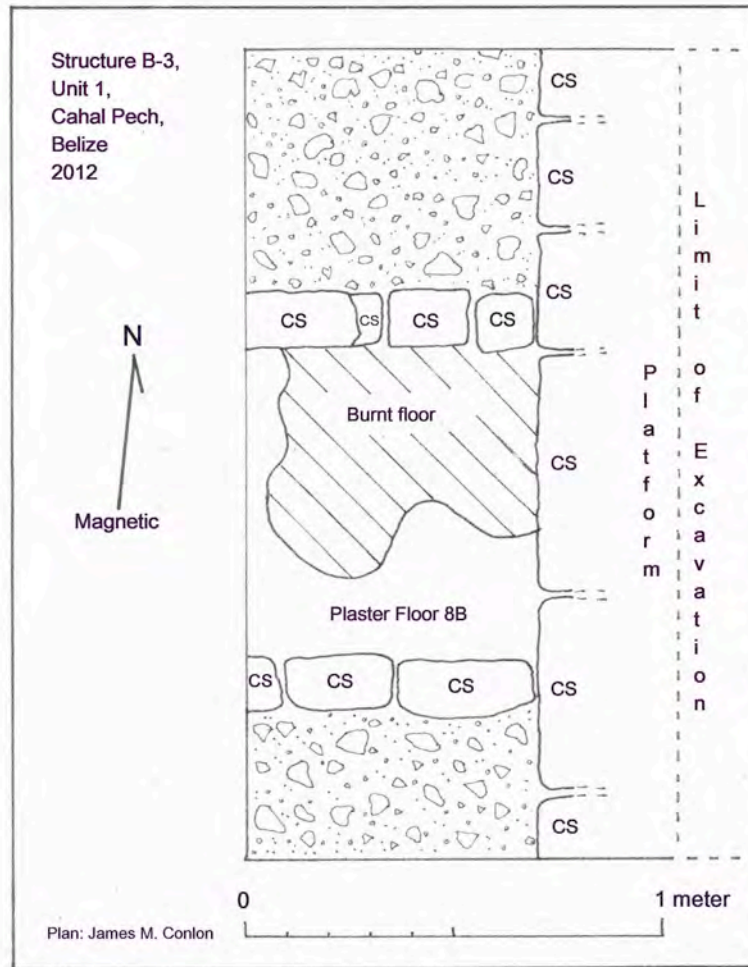
### *Architecture*

It was determined that less than half of the eastern portion of Unit 1, approximately 2.20m, was disturbed by looting activity. This disturbance ran vertically at least 2.90 meters below unit datum (bud). The looters' trench was excavated to this level with no significant finds.\_\_\_\_

While no significant finds were found within the looted area, looter's activity was absent in a small portion, roughly 0.90 meters by 0.90 meters, in the northeastern corner of Unit 1, where the terminal platform of Structure B-3 was uncovered. In this undisturbed section, it was determined the terminal platform of Structure B-3 is 0.85 meters bud and sat atop Floor 1 (1.40 meters bud). This preserved portion was excavated as Level 2 (B3-1-12-2). There was also found a small preserved section in the eastern-central portion of the baulk of Unit 1, where an in-situ cache was discovered (see Cache 1 below). Deeper excavations of the looters' trench beyond the 2.90m limit that were reached became tenuous owing to the looseness of the matrix, and vertical excavations in this portion of the unit were discontinued for safety precautions. At this point in the 2012 field season, it also made sense to focus the investigative strategy upon the preserved portion being revealed in the western, near two-thirds, of Unit 1 (Figure 1).

Excavations in the western portion of Unit 1 eventually revealed a layer of rough, flat-sided, limestone rocks that likely acted as underlayment, or "pavers", for a plaster floor that has disintegrated, either through proximity to the surface or bioturbation activity.\_\_\_\_

Two more similar "paver" underlayments were revealed (2.40 meters and 2.80 meters bud). The "pavers" of Floors 2 and 3 both displayed little evidence of plaster surface remaining. Plaster remnants were soft and grayish in color. However, excavations



**Figure 1:** Plan view of Structure B-3, Unit 1.

in the aforementioned preserved northeastern corner of Unit 1 did reveal the well-preserved white plaster floors that lined up perfectly with the three underlayments noted above. Therefore, the last three construction phases of Structure B-3 utilized pavers rather than ballast as underlayment for plaster floors.

Subsequent Floors 4, 5 and 6, were relatively well preserved, although their preservation was more reminiscent of grayish, hard tamped floors, than solid white plaster flooring. These plaster floors underlayment was a mix of pavers and ballast.

Floor 5 had two circular cuts in it. These cuts represent intrusive, non-dedicatory caches (Coe 1959: 78 and 118; see also Garber et al. 1992, Iannone 1992, and Lamoureux



St-Hilaire 2011), Cache 2 and Cache 3 (see below). In as much as Caches 2 and 3 are intrusive, and appear not to have been replastered over, they were likely placed contemporaneously with the construction of Floor 4 (Level 6). Ceramic sherds recovered from Level 6 will aid in determining the date associated with the deposition of Caches 2 and 3. Floor 6 was also found to have been cut through in order to place an individual in a stone-lined crypt (Burial 1).

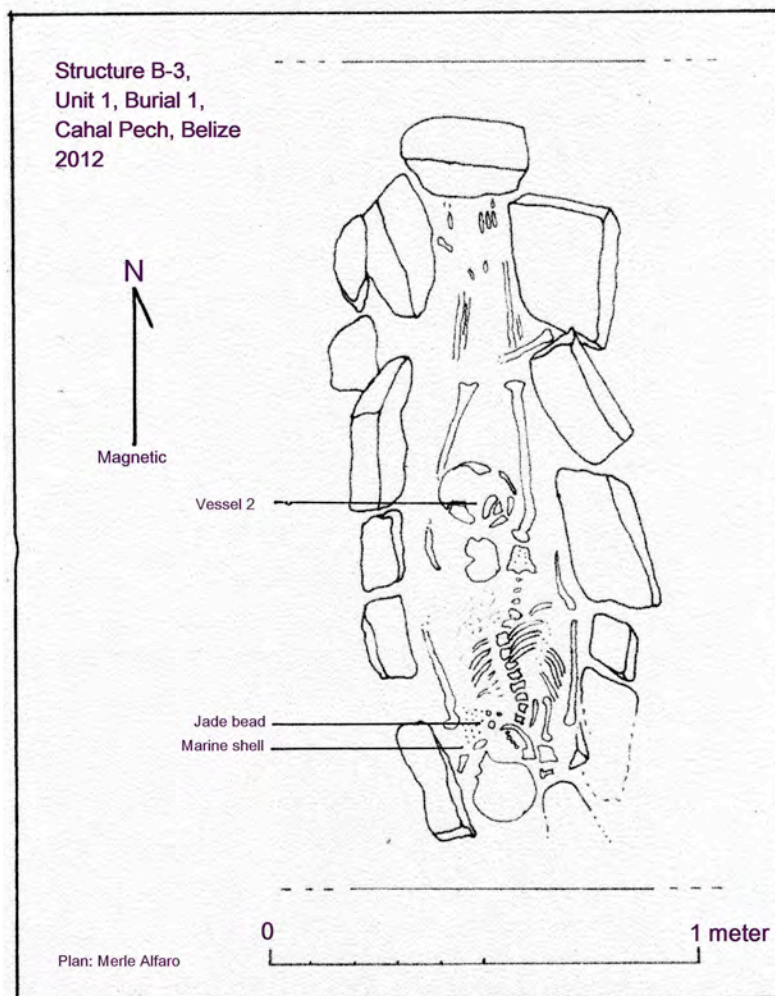
Floors 7, and 8A/B/C, were very hard and very well preserved. Floor 7 (4.94 meters bud) abuts an associated platform comprised of several cut limestone courses (Figure 2). This platform lay upon Floor 8C, while Floors 8A and 8B were replastered directly upon each other. Floor 7 was raised 17cm above Floor 8A. A niche-like area on the western side (“front”) of the platform was created by the placement of a pair of parallel walls two courses high. Excavation for the season was terminated at this point.

### *Burials*

Notable material remains from the looted area of Structure B-3 include a marine shell, a biconically drilled jade bead, with incisions forming a quadripartite segmenting of the bead, along with human teeth, and some fragments of human bone. All these materials were recovered in the south-central section of the looted portion of the eastern extent of Unit 1. These remains were scattered over a roughly one-meter diameter area, approximately 1.00 to 1.20 meters bud and likely represent the remains from a disturbed burial. Because the remains were from a disturbed context, and no identifiable primary context of interment for these remains could be ascertained, a formal burial designation was not assigned.

Burial 1 is a stone lined and capped crypt (after Welsh 1988:351) running north-south lengthwise (Figure 2). The head was placed to the south, facing west, and the remains were supine and extended. The individual interred in Burial 1 was an adult female (Ashley McKeown, personal communication).

Grave goods included Vessel 1, a fragmented plate (Mountain Pine red type), placed inverted over the cranium, and Vessel 2, a mainly whole bowl (Sotero Red-Brown type), placed in the pelvic area. A jade bead and fragments of marine shell (bivalve) were found near the neck and mandible. This could be a shell and bead necklace, or the bead could have been placed in the mouth with the shell; alternatively, the shell could have been placed over the mouth. The vessel types suggest a Tiger Run phase (see Gifford 1976:192) date for the interment of the individual in Burial 1. However, since Floor 6 was broken through to construct the crypt, Floor 6 (Level 10) could be dated earlier than Tiger Run, possibly the late Hermitage phase (ca. A.D. 500-600).



**Figure 2:** Burial B3-1 in Unit 1, Structure B-3.



**Figure 3:** Obsidian eccentrics from Cache 1.

### *Caches*

Cache 1 was located in the eastern extent of Unit 1, between the terminal platform and Floor 1, and, approximately 1.04m bud. It contained a number of materials that were “stacked” within a cobble-lined circular feature measuring approximately 22cm in total depth. In order, from top to bottom, materials recovered included a circular slate backing for a pyrite mirror, a ceramic sherd, a biconically drilled jade bead, another ceramic sherd, a marine shell (bivalve), and another circular slate backing (thinner than the first slate backing, and with a reddish hue on its surface). The ceramic sherds were not formally analyzed, but appeared to be Vinaceous Tawny ware, placing them in the Spanish Lookout phase of manufacture (A.D. 700-900). The stacking of the cultural materials likely represents a model of the Maya cosmos (Jaime Awe, personal communication; see also Garber et al. 2007:11).

Cache 1 was only partially exposed in the eastern baulk of Unit 1 and required a small, easterly extension (20 centimeters) beyond the original unit placement to expose it in its entirety. While exposing the eastern extent of Cache 1, external to the circular cobble feature, but adjacent to its southern limit, we uncovered 19 obsidian eccentrics (one fragmented). The obsidian eccentrics “trailed” off to the south of the cobbles of Cache 1 for approximately 40cm and comprised different shapes, predominantly in various zoomorphic representations, but also including some basic geometric forms (Figure 3).

Cache 2 was located in the western extent of Unit 1 at a depth of 3.16m bud (see Figure 1). This cache was placed intrusively through Floor 5 and was approximately 60cm in circumference and 38cm deep. It contained the faunal remains of a bird and several small chips, or flakes, of a greenstone material (less then 1cm in size). The faunal remains have not been positively identified, but could be either a bobwhite (Norbert Stanchly, personal communication), or a tinamou (Arianne Boileau, personal communication).

Cache 3 was designated such as it was a similar feature adjacent to Cache 2 (approximately 30cm west of Cache 2). Like Cache 2, Cache 3 was intrusive through Floor 5. Cache 3 was devoid of any cultural, organic or faunal remains.

### *Chronology*

None of the ceramic sherds recovered from excavations in 2012 have been formally analyzed. However, certain ceramic types were recognized, in the field as excavations proceeded, that could give a preliminary indication of the construction sequence, and thus, chronological development. While there are no precise temporal assignments for Structure B-3's construction sequence at this time, some preliminary notes on temporal assignments to the construction phases can be made.

The sherd fragments from Cache 1 appear to be Late Classic in nature. Also, several sherds from a vase near the disturbed burial are vinaceous tawny ware type (see Gifford 1976:225). Since most of the top meter of Structure B-3 seems to have been disturbed in one form or another, these two instances suggest at least a Spanish Lookout phase for the latest dates of construction at Structure B-3. On another note, the larger, rough limestone rocks overlying the identifiable Floor 1 are suggestive of similar Terminal Classic type-construction material utilized at Cahal Pech (Jaime Awe, personal communication). However, none of these stones were found in any regular alignment. Consequently, Terminal Classic construction (ca. A.D. 900-1000) at Structure B-3 can not be confirmed since a formal ceramic analysis has not been performed. Thus, the present ceramic evidence suggests that the terminal phase of construction at Structure B-3 occurred ca. A.D. 850-900.

Without the benefit of a definitive type analysis of the sherds recovered from excavations in 2012, the next most securely dated feature is Burial 1. Both Vessels 1 and 2 place the interment securely in the Tiger Run phase (ca. A.D. 600-700). Since Burial 1 is intrusive into Floor 6, and was capped by Floor 5, we can date the construction of Floor 5 to ca. A.D. 600-700. As a result, Level 7 of Floor 5 predates all subsequent construction phases up to Floor 1.

In summary, there may be a Terminal Classic (ca. A.D. 900-1000) final construction phase atop Structure B-3. However, this cannot be confirmed at this time. What is known, is that the final three identifiable construction phases of Structure B-3

likely were built during the Late Classic period (ca. A.D. 700-900). Again, while no formal analysis of the ceramic sherds from these construction phase were performed, both the overall impression of ceramic sherds suggest, along with the similar construction technique, the last 3 identifiable floors likely date to the Late Classic period (A.D. 700-900). Ceramic evidence and construction techniques of Floor's 4 and 5 are indicative of a Tiger Run phase construction period (A.D. 600-700). Subsequent Floor's 6 through 8 are most likely also Tiger run phase construction episodes, however, there are indications these Floor's may have an earlier inception, possibly in the Hermitage phase (A.D. 300-600), albeit relatively late in the Hermitage phase.

## SUMMARY

The 2012 excavations indicate substantial destruction of the terminal and penultimate phases of architecture, owing both to bioturbation and looting activity. Deducing the precise limits of these phases of architecture at Structure B-3 are likely to remain elusive, even with wider horizontal excavations then were performed in 2012.

However, it can be surmised by the 2012 excavations, and also from the present-day surface morphology, that the uppermost platform of Structure B-3 was no larger than 4 by 4 meters square. Subsequent construction phases encountered in the excavations were platforms that spanned the entirety of the unit, and likewise, their absolute limits were not able to be determined.

While the precise chronological development of Structure B-3 remains elusive, substantial information could still be gathered from future vertical excavations, below the looters' tunnel, especially closer to bedrock. Indications are, deeper excavations in Unit 1, suggest better preserved construction could be found there that would help to more definitively elucidate the chronological developmental of Structure B-3.

The present survey of Structure B-3 gives a current height of approximately 7.50 meters above the modern surface of Plaza B. Our excavations did not reach the plaza-level looters' tunnel as we ended operations at 5.40 bud. The excavations at Structure B-3 ended 2.35m above Plaza B. Therefore, if the looters' tunnel from Plaza B into Structure B-3 averages 1.75m in height, there are still another 60cm of preserved architecture under Floor 8, from which to recover more chronological and structural data.

Excavations in Plaza B in previous years (Garber et al. 2005, Figure 5:30) indicate that sterile bedrock at the base of Structure B-3 should be less than 2.00m below the modern surface of Plaza B. Based on our 2012 investigations the western extent of Unit 1 could be reopened in future seasons to follow the extant architecture, and also continuing vertically downward to bedrock, in order to better examine the entirety of Structure B-3's chronological development.



## CONCLUSION

The 2012 season of excavations at Structure B-3 were focused upon delineating architecture with a goal of determining the extent of preservation, and thus, potential for conservation and restoration. While the 2012 excavations were able to reveal a rudimentary level of the architectural preservation, excavations were not able to provide a definitive record of either the terminal or penultimate architectural limits of the structure, mainly owing to the high degree of bioturbation and loitering activity the structure had endured. Still, the potential limits of architecture were able to be identified to fall within a certain range, a range that could guide future consolidation.     

From a cultural reconstruction perspective, in as much as the excavations at Structure B-3 are “incomplete”, excavation results suggest further exploration is needed for elucidating earlier phases of construction, as well as the rituals that accompanied the specific construction phases that are evidenced in the burial and caches reported above.

While there is little to be garnered on the totality of the Cahal Pech eastern triadic group from these preliminary investigations of Structure B-3, future investigations at this structure can be used to compare the developmental sequence of ritual caching and burials with Structures B-1 and B-2. More pertinent spatial and temporal elucidations can come from further excavation of Structure B3 that would allow for comparison with previous excavation results from Structures B1 and B2, and allow for greater insight into how the eastern triadic grouping of Plaza B functioned at Cahal Pech through time.

## ACKNOWLEDGEMENTS

I would like to thank Jaime Awe for welcoming me back to the BVAR Project, and especially for the opportunity to return to Cahal Pech, where I first cut my teeth in archaeological fieldwork in 1988. In as much as the BVAR Project has sailed along quite well without my presence for the last ten years, there was no necessity for Jaime to be so accommodating. I must also recognize the support of both Julie Hoggarth and Rafael Guerra, in being erstwhile supporters, and immediate conveyors of my return. In the field, Jorge Can was instrumental in steering me in the right direction whenever an architectural perplexity arose in the excavations. Reiko Ishihara-Brito was her usual graceful self and steadying hand, especially when I completely misdiagnosed the vessel types from Burial 1 upon my first observance of their appearance in the excavations. Ashley McKeown did the lion's share of the excavation, recording and analyzing Burial 1 reported upon herein. If not for Catharina Santasilă's help and guidance, I would not have been able to be so quickly up to date on our project's lab procedures that allowed me to focus upon the excavations more fully. I am indebted to, and this report has benefited from, Norbert Stanchly's and Arianne Boileau's comments on the faunal remains of Cache 2.      Ultimately, the success of this past season's investigations has benefited from the front-line field crew itself, and their day-to-day commitment to hard

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# **EXCAVATIONS AND CONSERVATION OF STRUCTURE B1-WEST FACE**

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## **INTRODUCTION**

Investigations of Structure B1 at Cahal Pech comprised one of the principal operations for the 2012 field season of the Belize Valley Archaeological Reconnaissance Project. One of the primary objectives of the investigations on the west face of Structure B1 was to expose and understand the terminal-phase architecture on the west side along with parts of the north and south sides in order to conserve it for tourism.

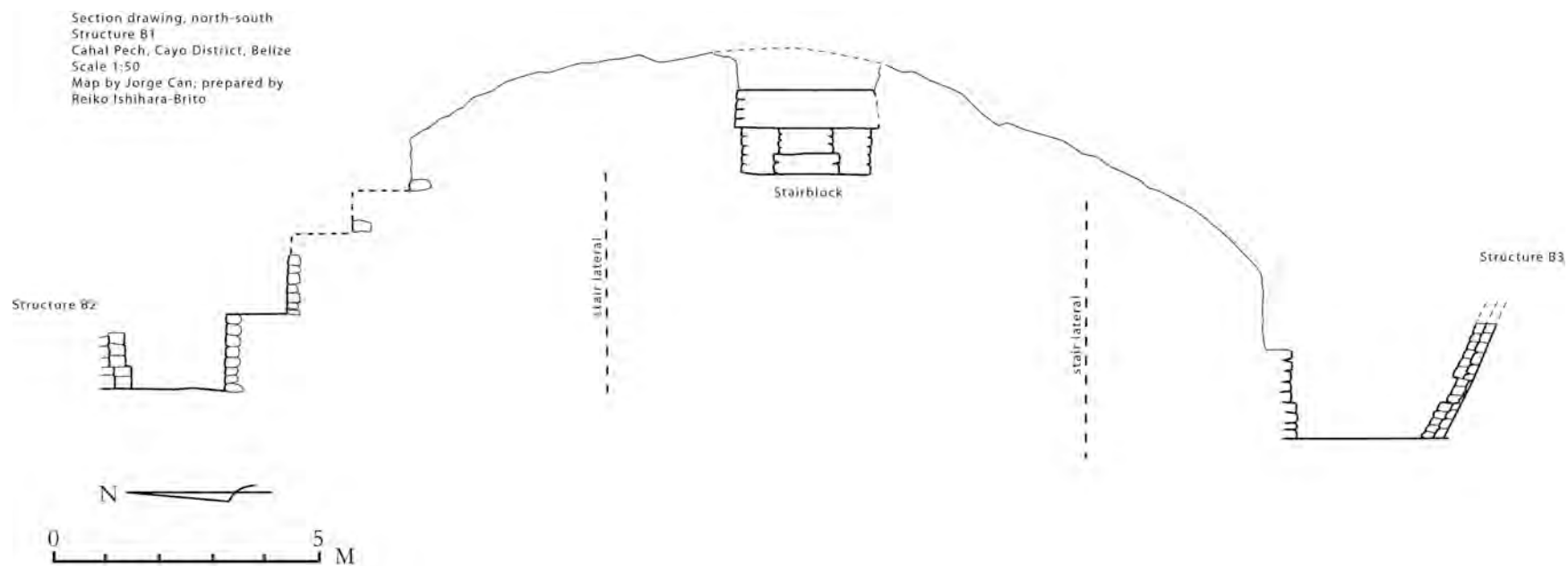
Structure B1 borders the eastern side of Plaza B and the western side of Plaza C. Because Plaza C is located at a lower elevation than Plaza B, Structure 1 appears taller on its eastern side, measuring 16 m high from the floor of Plaza C in the terminal phase (Figure 1). As such, it is the second tallest building at the site after Structure A1. On the building's western side, Structure B1 measures 13 m from the floor of Plaza B. The building's basal dimensions are 24 m north-south and 20 m east-west (Figure 2). The building is faced on the west side with a central staircase leading from Plaza B to the summit of the building and terraces flanking the stairs. The terraces curve around the northwestern and southwestern corners of the terminal-phase building. Both of these corners were not well defined, but this was not for a lack of preservation; rather the lack of clear corners was due to the fact that these two terraces abut the terrace base of Structures B2 and B3, respectively. The first terrace measures 7 m from the laterals of the central stairs and has a height of 2 m with a basal molding. The second terrace, however, lacked the basal molding but retains the same height. The second terrace was uncovered to be in a poor state of preservation, unlike the first terrace. Most of the masonry wall for the terminal phase was constructed with small and medium-sized rectangular, cut limestone. The central staircase measures 10 m wide, and each step is on average 40 cm high with a run of 36 cm. During the 2011 excavation, the lower seven steps were consolidated along with the lower two terraces that flank the stairs. The first terrace in the southern saddle, or alley, between Structures B1 and B3 was also consolidated

Structure B1, Cahal Pech  
 Section (east-west) drawing  
 Drafted by Jorge Can;  
 Prepared by Reiko Ishihara-Brito

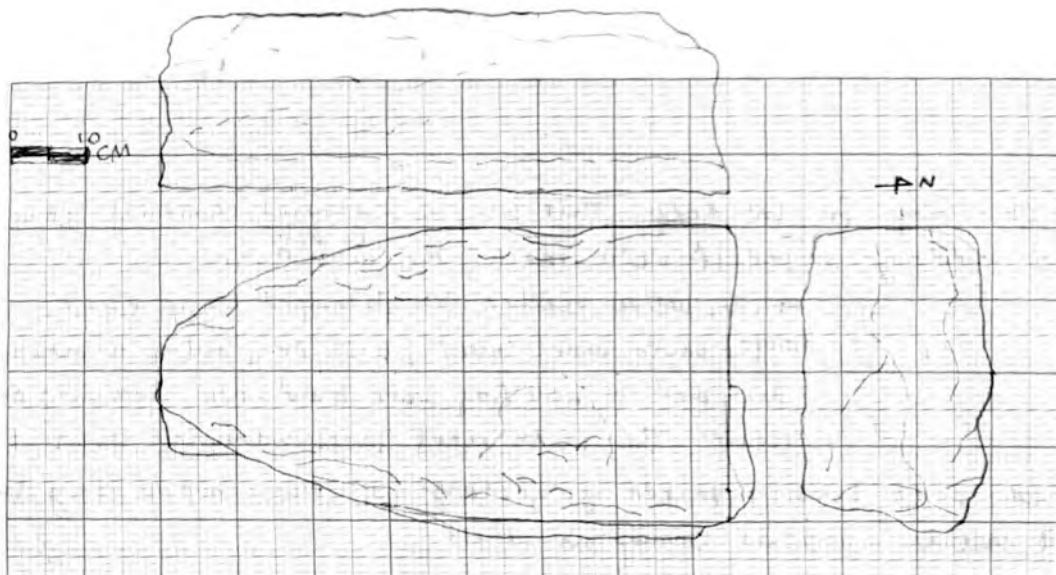


**Figure 1:** Section (east-west) drawing of Structure B1, showing excavation units, associated cultural features, and architectural phases.





**Figure 2:** Section (north-south) drawing of Structure B1.



**Figure 3:** Sketch of stone monument found on the third terrace in the northwestern corner on the west side of Structure B1.

### **Structure B1: Terminal-phase Construction**

Excavation continued from where it was left off last year; a single unit was opened measuring 3 m east-west across the central stairs in order to understand the construction of the terminal-phase steps. During the excavation, we noticed that the majority of the stones from the steps (those above the lower seven that were exposed last year) were missing. We were only able to define five additional steps, which were consolidated this season; a total of twelve steps (seven from last season) corresponding to the terminal phase of construction are now conserved. Another excavation unit was placed on the north and south sides of the central stairs, exposing remains of the third terrace (the lower two terraces had been consolidated in 2011). The masonry wall of the third terrace, north of the stairs, was poorly preserved; only a portion of the base remained. Excavation revealed that the third terrace in the northwestern corner of Structure B1 meets up with the first terrace (145 cm high) of the alley, or saddle, between Structures B1 and B2; the first terrace was well preserved. Similarly, the third terrace in the southwestern corner meets up with the first terrace of the alley between Structures B1 and B3. The first terrace in the southern alley, which was in a good state of preservation, was found to have a medial molding, and traces of a similar medial molding was observed on the third terrace, south of the central stairs. Interestingly, no molding was present on the terraces north of the central stairs or the terrace in the northern saddle.

An uncarved limestone monument fragment, likely a stela fragment, was uncovered on the third terrace, on the west side of the structure near the northwestern corner (see Discussion section for interpretation). The stela fragment measures 75 cm long, 40 cm wide (at its widest point), and 25 cm thick (Figure 3). Chipped marks from

shaping the stone are visible along the edges. It is likely that this stela represents the upper portion of what used to be a longer monument.

The find spot of the fragmentary monument—on a corner terrace of a building—may suggest that the stela had been moved from its original location and placed here in later times, perhaps during the Terminal Classic period when the larger buildings in the site core became places where offerings were made. Another example of appropriating monuments was found this season by the stairs that connect Plaza B and C, immediately north of Structure B2—in this case, a circular altar (see Santasilia, this volume). This practice of moving monuments is common throughout the Maya area (O’Neil 2012). Likely stuccoed and painted when it had been commemorated, it is unknown whether the monument found on Structure B1 would have retained the painted surface at the time it was relocated. It is possible the stela was already bare due to its fragmentary nature, but the people who were involved in relocating the monument may have engaged with the stela fragment as an embodiment of ancestral rulership and ritually charged powers.

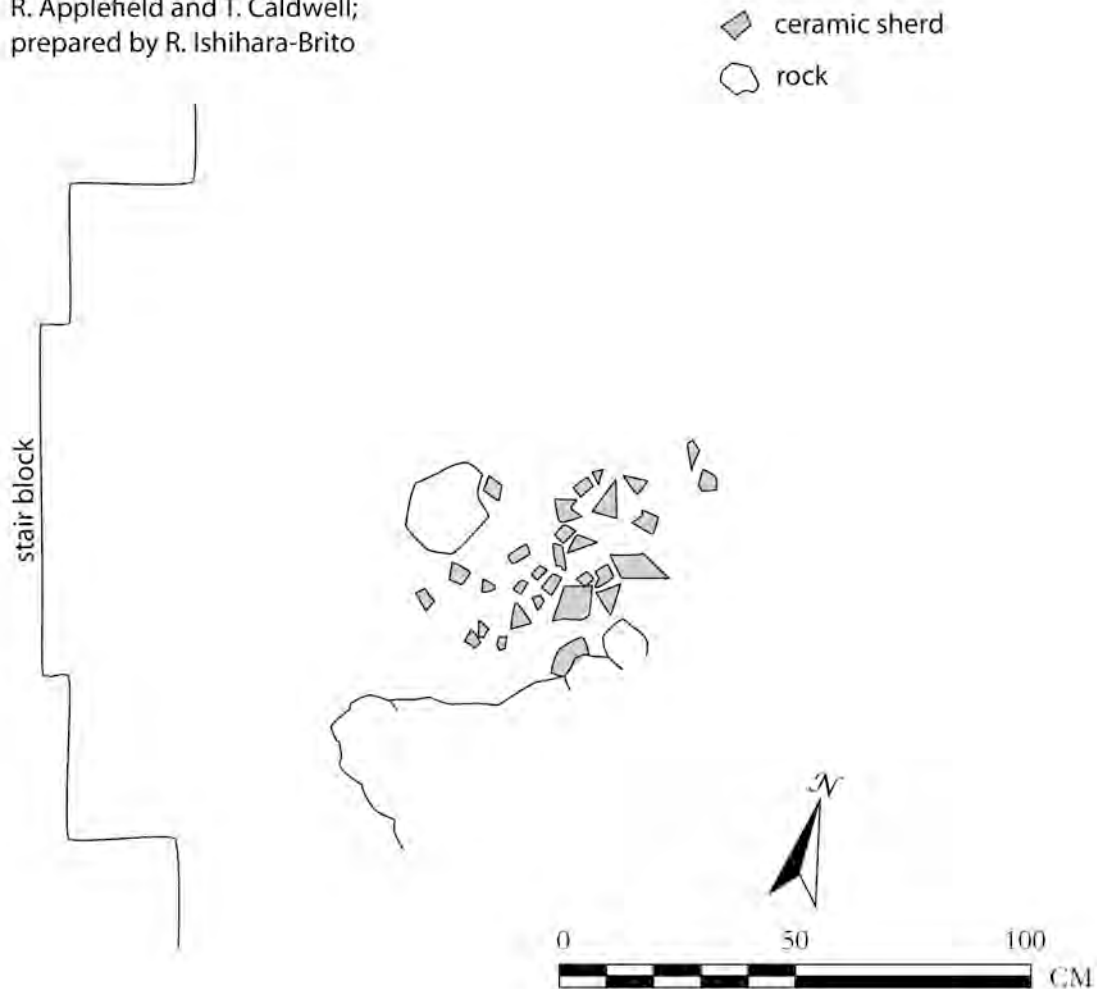
Although the terminal-phase construction in the upper portion of the west face of Structure B1 was poorly preserved, a central stair block was uncovered near the summit. Close inspection during excavation revealed that the superior part (frontal, western side) of the stair block had been cut in order to accommodate the central stairs of the terminal phase of construction. Specifically, the floor that covered the top of the stair block (and hence coeval with the stair block) had been cut in antiquity, and the cut line coincides with where the fourth step (from the summit) of the terminal phase would have been placed. Though none of the facing stones of the steps that comprised the central stairs had preserved in this area, four construction steps (ie. the foundation of the steps) remained intact. Thus, although part of the stair block was exposed and integrated into the terminal phase, the stair block was originally built as part of the penultimate phase of construction (see below for description). Excavations revealed a special deposit along the central axis of the building near the summit above the stair block—an intrusive feature near the summit, likely dating to the Terminal Classic period.

### **Special deposit above stair block (Burial 9, Lot B1-28)**

A special deposit was found at the summit of Structure B1, on the west face, a few centimeters below the modern surface (Burial 9, Lot B1-28). The deposit had initially been uncovered in the western baulk of the excavation unit from 2011, where the Late Classic tomb (Burial 7) was located. A rim sherd of a Mount Maloney bowl was exposed along with disarticulated human bone below it. In order to properly excavate the feature, a plastic sheet was placed vertically on the baulk to protect the cultural materials and the baulk was subsequently stabilized.

The feature encompasses an area of approximately 60 x 45 cm (longer on the north-south axis) and 26 cm thick. It is located along the central axis of the stair block and Structure B1. The matrix in and around the deposit was an ashy silt discolored to a dark grey (a small sample of which was collected), indicative of an associated burning episode.

Special deposit (bottommost layer)  
Burial 9, Lot B1-28  
Structure B1, above stair block  
Cahal Pech, Cayo District, Belize  
Drawing based on maps by  
R. Applefield and T. Caldwell;  
prepared by R. Ishihara-Brito



**Figure 4:** Plan of the bottom of the special deposit above stair block (Burial 9, Lot B1-28).

The bottom of the cache was demarcated by a layer of ceramic sherds placed flat (Figure 4). The pottery sherds are eroded—strikingly so when compared to the better preserved Mount Maloney bowl sherds that covered the deposit—perhaps suggesting that they originated from a context such as a midden or fill. Combined with the fact that none refit and represent distinct and numerous vessels, it can be safely deduced that these sherds do not represent vessels smashed for the occasion.

Special deposit (middle layer, about 10 cm above bottom of deposit)

Burial 9, Lot B1-28

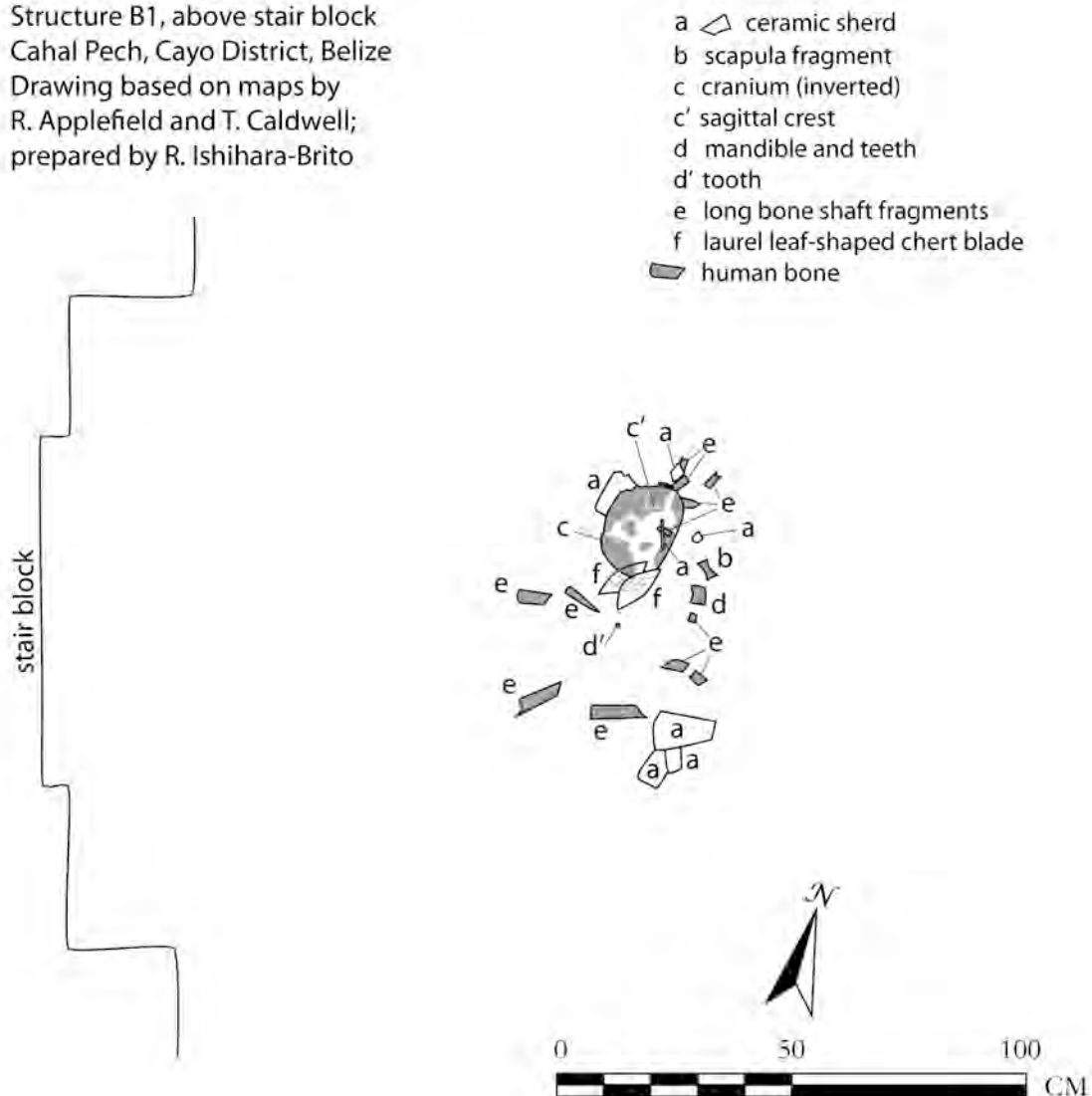
Structure B1, above stair block

Cahal Pech, Cayo District, Belize

Drawing based on maps by

R. Applefield and T. Caldwell;

prepared by R. Ishihara-Brito



**Figure 5.** Plan of middle layer of the special deposit above stair block (Burial 9, Lot B1-28).

The bulk of the deposit clusters in the middle layer (Figure 5). Atop the bottommost layer of sherds, two laurel leaf-shaped blades—made of a fine-quality, translucent light-brown chert—were placed overlapping each other in a “v” shape. Immediately atop these blades, a skull had been placed upside down. The cranial vault was cradled in fist-sized rocks and sherds (including a body sherd of a red-slipped bowl, possibly a Garbutt Creek Red type). Several long bone shafts were found scattered around the cranium, some of which appear to have been intentionally cut. The inverted



Special deposit (top layer, about 10-15 cm above middle layer)

Burial 9, Lot B1-28

Structure B1, above stair block

Cahal Pech, Cayo District, Belize

Drawing based on maps by

R. Applefield and T. Caldwell;

prepared by R. Ishihara-Brito

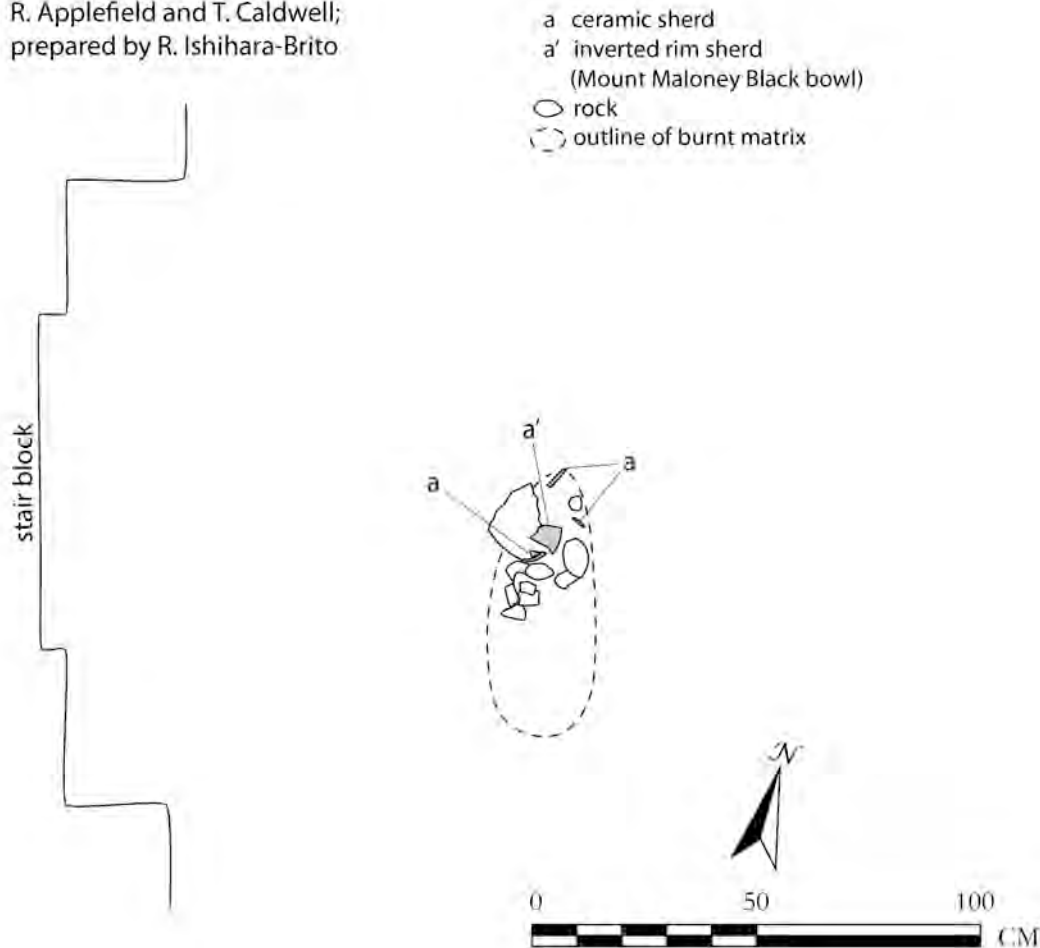
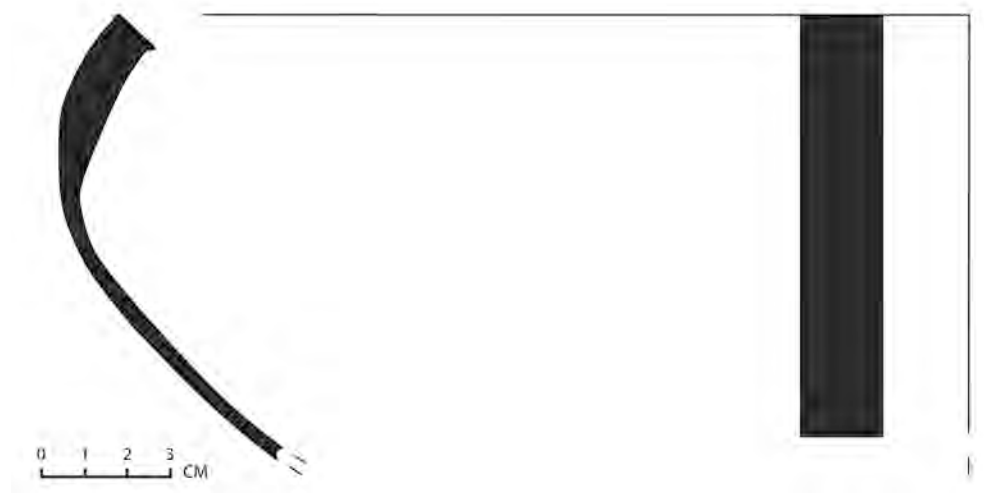


Figure 6. Plan of top layer of the special deposit above stair block (Burial 9, Lot B1-28).

cranium was oriented in such a way that the sagittal crest ran east-west and the superior aspect of the right eye orbit was observed along the southwestern edge of the cranial vault. Other bones that were recovered in the deposit include a mandibular fragment (consisting of the mental protuberance) with some dentition, scapula fragment, a cervical vertebra (C2), phalanges, and a lunate. Very little wear on the teeth tentatively identify the individual as a young adult (sex undetermined in the field) (Rosanne Bongiovanni, personal communication, 2012).

Topping the cranial vault were more sherds, including an inverted rim sherd of a Mount Maloney Black bowl (Figure 6). The recovered sherds from this deposit refitted to



**Figure 7:** Rim profile of Mount Maloney Black bowl fragments found covering the special deposit (Burial 9, Lot B1-28) above the stair block.

form two large rim sherds of this same black-slipped vessel, its rim diameter measuring approximately 40 cm. The lip form of the Mount Maloney Black bowl (see LeCount 1996) suggests a Terminal Classic date for the cache (Figure 7). This special deposit cuts into the terminal-phase construction, what would have been the topmost step of the central staircase. This step was hardly preserved, but the matrix surrounding the deposit was construction fill, indicating that the last phase of architecture was cut into by the deposit.

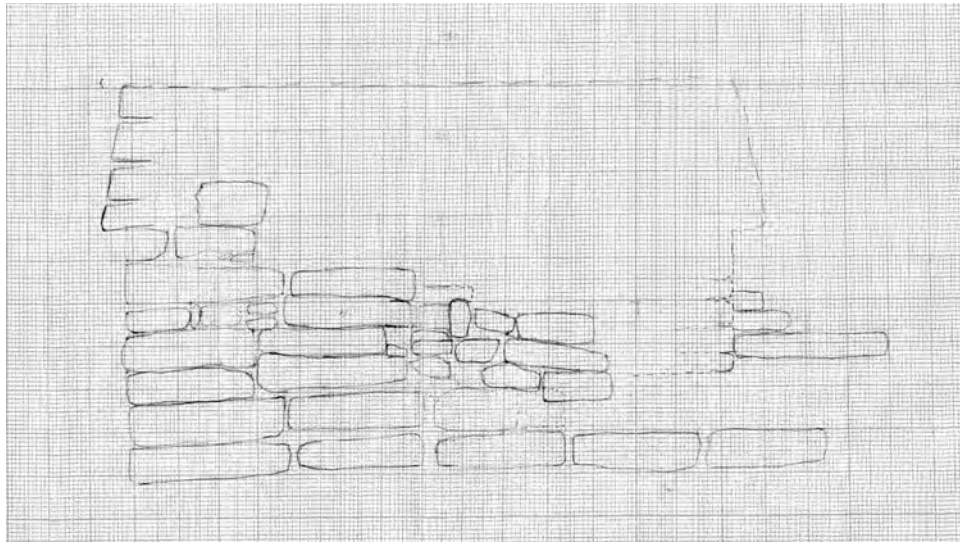
### **Structure B1: Penultimate-phase Construction**

The masonry building would have risen about 11 m high (the building would have been higher with a perishable structure atop the summit platform) from the floor of Plaza B during this phase, which likely dates to the Early Classic period (see Figure 1). The western face of the building had a central stairway that led to a centrally located stair block near the summit. Inset stairs flanked the stair block and terraces graced the rounded corners of the building.

The central stairs of the penultimate-phase construction of Structure B1 were encountered only 50 to 75 cm below the terminal-phase stairs, making it difficult to distinguish at times whether the stairs pertained to the terminal or penultimate phase. The penultimate stairs inclined at a steeper angle than the terminal phase. In contrast to the smaller stones used in the terminal construction, those used in the penultimate construction were rectangular in shape, and the limestone was larger and harder. The central stairs had a width of 930 m (north-south dimension) with each step measuring, on average, 40 cm in height with a run of 36 cm. The steps that led directly up to the stair block were well preserved.



**Figure 8:** Photograph of conserved central stair block on Structure B1.



**Figure 9:** Elevation drawing of stair block, Structure B1, Cahal Pech. Drawing by Rachel Applefield. Scale 1:20.

The centrally located stair block near the summit of the building measures 310 cm wide, 180 cm high and 146 cm deep, and was decorated with a superior molding (Figure 8). This molding was only extant on the lateral sides, and comprised of four courses of stone with a slight angle or apron. The frontal, western side of the stair block had been faced with a stucco mask, though only a mask armature was intact and no stucco fragments were recovered—neither on the armature nor in the fill covering the mask. The mask armature revealed features such as a one-course-high plinth, basal molding and niches (Figure 9). As mentioned above, a plaster floor covered the stair block, which correlates with a previously excavated floor and its associated platform on the summit of Structure B1 (Floor 3 in Figure 1). Inside the stair block, a tomb was found (see below for details).

The stair block was flanked on its northern side by six inset stairs, which led to the summit of the penultimate building. These steps had an average height of 40 cm with a run of 60 cm. The inset stairs were bordered on the north by a balustrade, which met up with the terraces that grace the corners of the building near the summit. On one of the lower penultimate terraces, north of the central stairs, painted stucco with red and green pigment was uncovered. Due to lack of time and inclement weather, excavation could not proceed to uncover the stucco in its entirety and associated architectural context. Further excavation is needed to better understand the penultimate-phase construction.

In the lower portion of the building, just north of the central staircase, an architectural mask with intact stucco painted red and green was uncovered; this mask graces the penultimate-phase building. Due to lack of time, we did not pursue excavation of the mask this season.

### **Tomb within Stair Block (Burial 11)**

Upon removing the sealed plaster floor that capped the stair block, about 10 cm below, a layer of large stones (50 x 30 x 15 cm) was uncovered (Figure 10). This layer turned out to be the first in a series of several (at least three) layers of capstones that topped the tomb underneath. Some loose matrix had fallen in to cover the human remains and associated materials in the chamber. The chamber, which runs roughly north-south, measures 2.4 m long and 0.75 m wide, and the walls are lined with large, vertically placed cut limestone slabs measuring between approximately 0.5 and 0.8 m high. Unlike the other walls, which consist of regularly cut, rectilinear slabs, the western wall is lined with boulders that are of varied shapes and sizes. Some of the vertical slabs along the eastern wall had been placed atop a plaster floor of an earlier architectural phase that had been cut through during the construction of the tomb. This earlier floor was preserved only in this area—along the eastern wall in the central part of the tomb. The interred individual and associated offerings were not placed on any identifiable floor construction or prepared surface. In addition, the skeleton was not found lying on a flat plane; rather, the pelvic bones along with the left forearm were found at or slightly above the level of the aforementioned cut floor while the head and legs were about 30 cm below this floor, forming an upside-down “v” shape in profile.

Plan of tomb inside stairblock (Burial 11)

Structure B1, west face

Cahal Pech, Cayo District, Belize

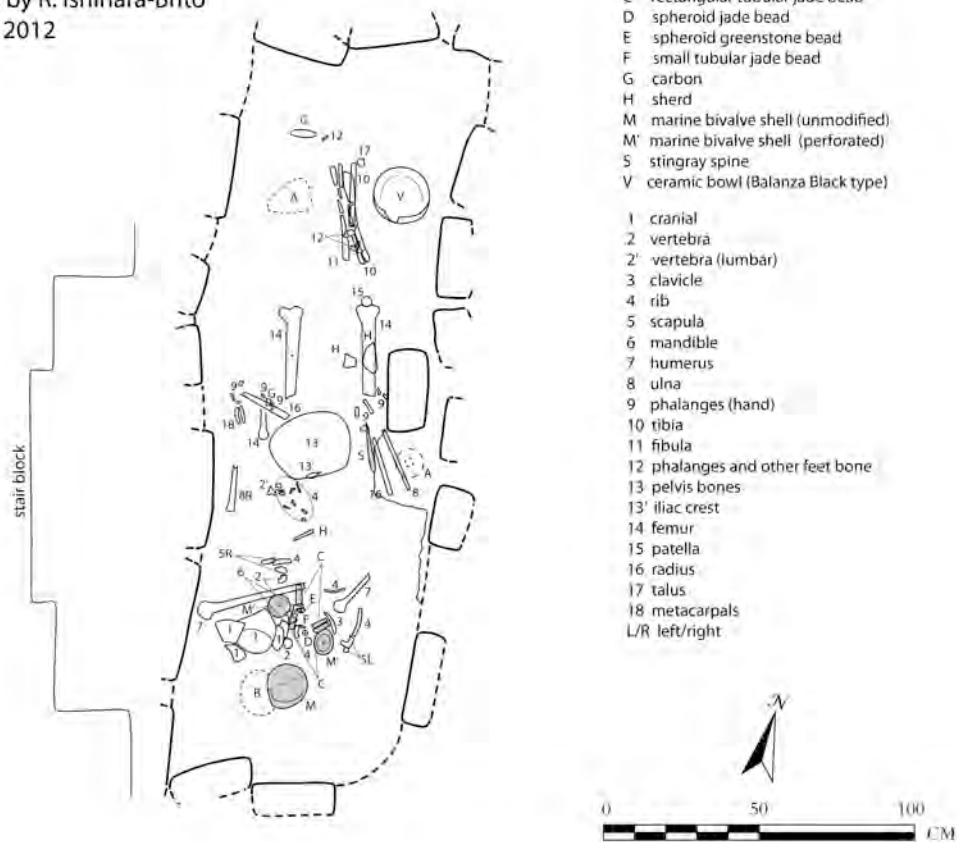
Drawing based on maps by

R. Bongiovanni, C. Santasilia,

and R. Ishihara-Brito;

prepared by R. Ishihara-Brito

2 August 2012



**Figure 11:** Plan of tomb contents inside stair block, Structure B1 (west).

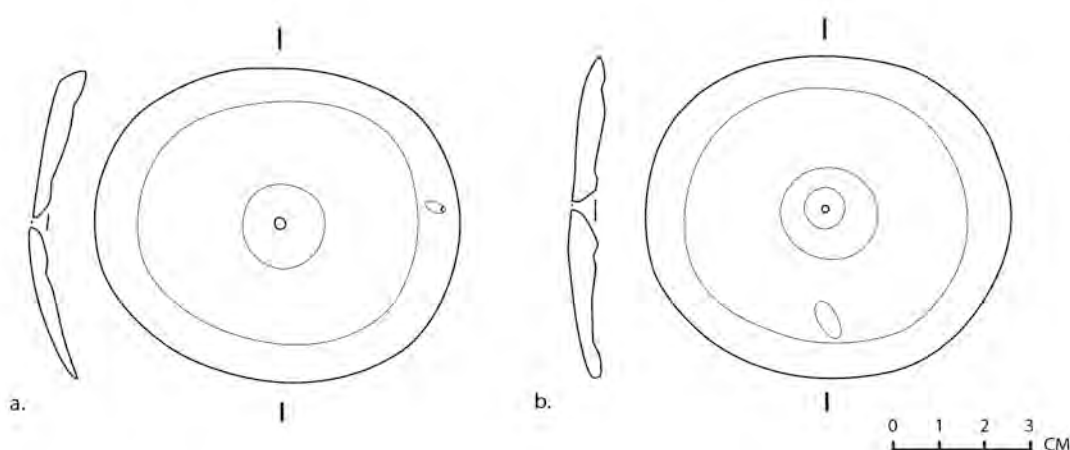




**Figure 12:** Photograph of unmodified marine bivalve from Burial 11, Structure B1.

The human bone was in a poor state of preservation, often crumbling upon excavation and collection. Intact bones (though fragmentary) that were recovered include the cranium, mandible, clavicle, vertebrae, scapulas, ribs, humeri, radii, ulnas, carpals, metacarpals, phalanges (hand and foot), ilium (iliac crest), femurs, patella, tibiae, fibula, and tarsals (Figure 11). Much of the pelvis had been smashed due to a fallen capstone. The individual was partially articulated, but the disarticulation may be due to post-depositional taphonomic causes rather than human activities. The skeleton was in a prone, extended position with the head oriented to the south. The head was found “upright”—the eye orbits toward the southeast; again, this position may be due to post-depositional movement. The lower legs (tibia and fibula) appear to have been touching each other, or were possibly crossed. The individual was determined to be a male of advanced age, due to the presence of an edentulous (toothless) mandible and osteophytes (bone spurs) on the phalanges of the foot, the latter of which are caused by arthritis.

Several artifacts were found in association with the skeleton: one complete unmodified marine shell, two perforated shell discs, five tubular jade beads, two spheroid greenstone beads, one stingray spine, one basal-flanged bowl, and painted stucco (see Figure 11). The unmodified marine shell was found to the southeast of the cranium, with its interior side up. It is a marine bivalve, measuring approximately 11.5 x 13.5 cm, and shows remnants of what may be red pigment on the exterior side (Figure 12); the red coloration may be due to the original shell color. The shell is tentatively identified as *Spondylus* (Norbert Stanchly, personal communication, 2012). The brittle shell was found in two pieces; its weathered surface has four small holes, most probably naturally formed. An area of burnt matrix was found 6 cm below extending to the west of this shell.



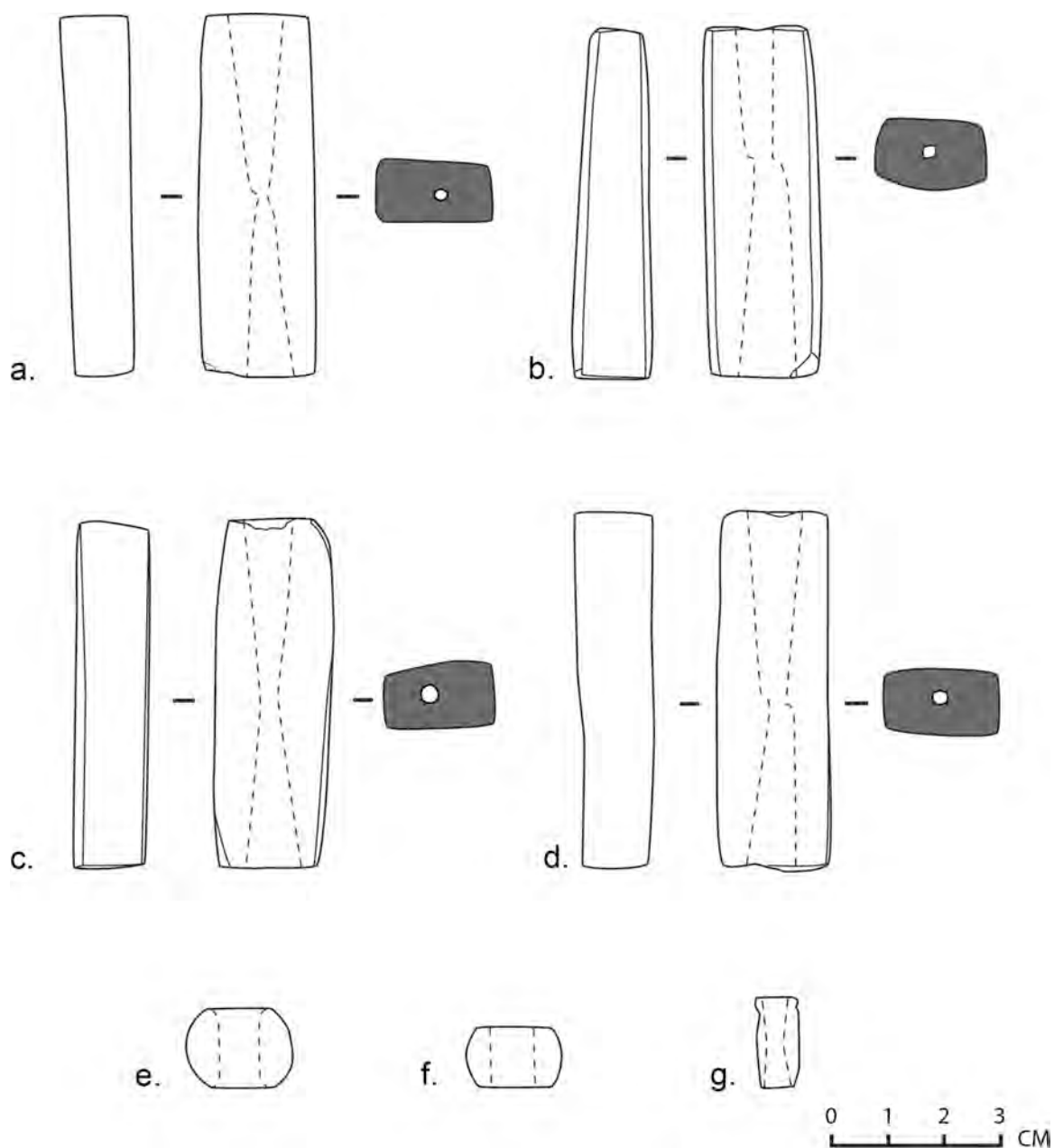
**Figure 13:** Pair of perforated shell discs found in Burial 11: a. western disc; b. eastern disc.

A similar mollusk—identified as *Spondylus*—is reported from an Early Classic tomb at Caracol (S.D. C181-B1) (A. Chase & D. Chase 2009: Figure 31a).

The two perforated shell discs and greenstone objects may have originally formed a composite ornament, possibly a pectoral assemblage or a pair of ear ornaments, based on their proximity to each other and location relative to the skeletal remains (ie. at an elevation deeper than the cranium, ribs, and vertebrae, that is, on the ventral side of the skeleton). Each of the pair of marine shell discs has two concentric grooves on the interior side of the shell along with a central perforation (Figure 13). The westerly disc has an additional, small perforation on the rim. The surfaces of both discs are covered to varying degrees with a calcitic deposit.

Four of the five tubular jade beads are almost identical (Figure 14a-d), and may have even been produced from a single nodule based on the coloration and texture of the pieces. They measure 6.4-6.9 cm long, 2.0-2.1 cm wide, and 1.0-1.4 cm thick, and have a roughly rectangular cross-section. Faint remnants of red pigment were observed on all the external sides of all of the beads. All four beads similarly showed a chipped edge along one side of the perforation—possibly use wear. The placement and distribution of the beads along with the observation that the chipped edges were found adjacent to each other present the possibility that the jade beads were not strung in a linear manner but rather conjoined so that they would hang next to each other.

The fifth tubular jade bead is much smaller (1.6 cm long, 0.8 cm wide) and has a round cross section (Figure 14g). It is slightly grooved on one end. Its small size may have been offset by its intense neon-green-colored streak that characterizes the midsection of the otherwise whitish stone. This neon color was highly sought after in the



**Figure 14:** Jade and greenstone beads found in Burial 11: a. tubular jade bead (northwestern bead marked C on map); b. tubular jade bead (southwestern bead marked C on map); c. tubular jade bead (northeastern bead marked C on map); d. tubular jade bead (southeastern bead marked C on map); e. spheroid jade bead (D on map); f. spheroid greenstone bead (E on map); g. small tubular jade bead (F on map).



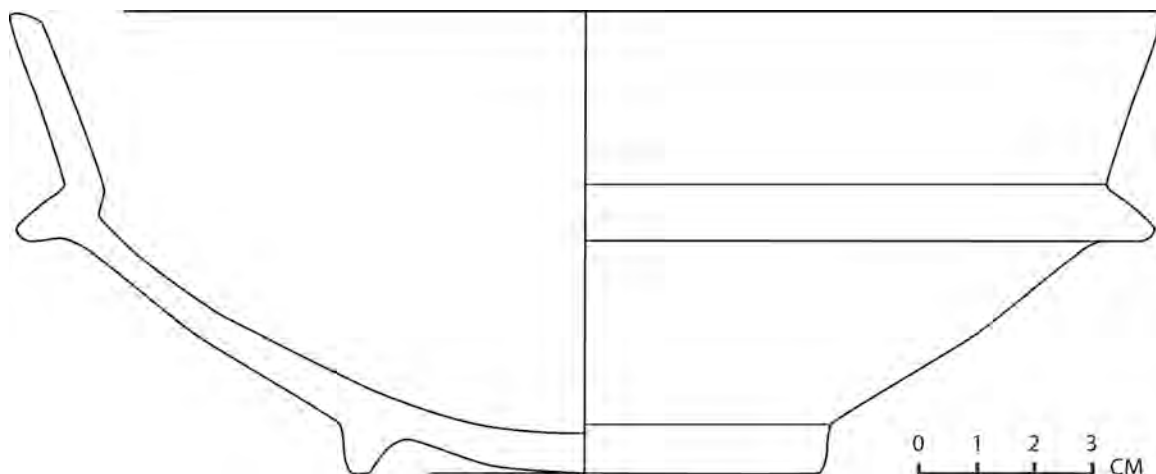
**Figure 15:** Stingray spine (two views) found in Burial 11. Composite photograph by Reiko Ishihara-Brito.

Classic period, as jade objects highlighting this color are often small (Taube and Ishihara-Brito 2012).

The two other greenstone artifacts are spheroid beads. Although one is probably jadeite (1.9 cm wide, 1.5 cm thick) of a white-green color with dark-green streaks, the other is a light-weight, non-jadeite gray-colored stone with a matte surface (1.7 cm wide, 1.1 cm thick) (Figure 14e, f). The latter contains remnants of red pigment on the exterior surface. Contrary to the tubular beads which were biconically drilled, the spheroid jade bead may have been perforated using a string saw. The surface of this bead retains a high polish.

An uncarved stingray spine was uncovered in the eastern-central part of the chamber along the eastern wall. It was adjacent to, and immediately to the west of, the left radial and ulnar shafts of the skeleton. The stingray spine—complete though fragmented into seven pieces—measures 15.0 cm long and 1.0 cm wide and its fragile state of preservation can be observed in the presence of barbs only in one-third of its length near the pointed end (Figure 15). It has been suggested that stingray spines in male burials may have been used as bloodletting tools by means of penis perforation (Chase 1991). It is notable that the stingray spine in Burial 11 was found between the forearm of the individual and the pelvic area, though this is not evidence that the spine was used as a bloodletting implement.

The individual was interred with only one ceramic vessel. It was found east of the legs, in the northeastern corner of the chamber. The complete vessel is a black-slipped basal-flanged bowl of the Balanza Black type (Figure 16). Its rim diameter measures 20.4 cm and the vessel is 7.9 cm high. It has a ring base with a diameter of 8.4 cm. The vessel has a hard, glossy brown-black-colored slip on all sides except below the flange on the



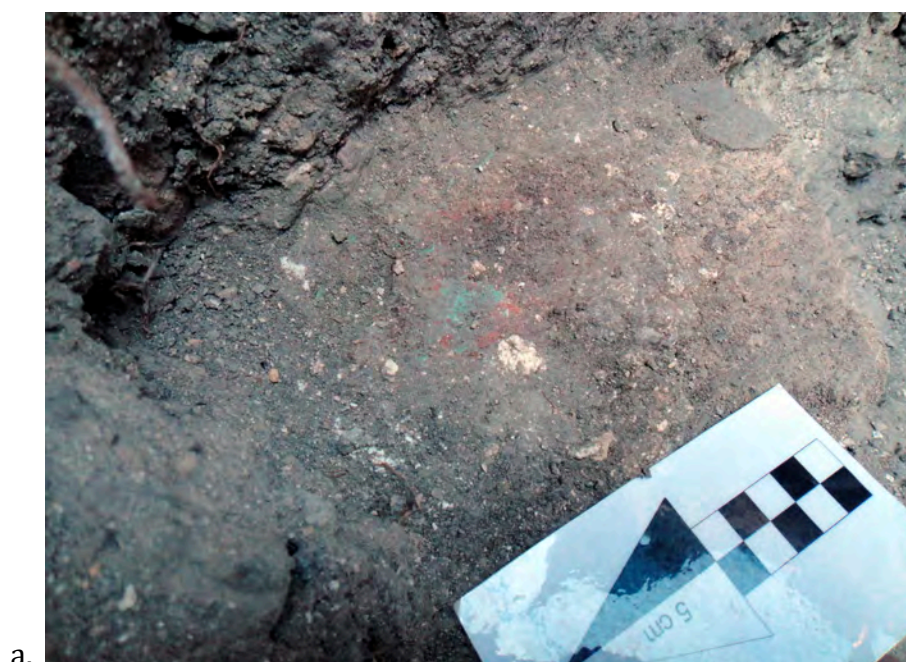
**Figure 16:** Black-slipped bowl (Balanza Black type) uncovered from Burial 11.

exterior wall. The interior of the bowl below the ridge is less glossy—possibly use wear—and in some places, the slip has eroded, showing the underlying paste color. The bowl is made of a fine paste with a bright orange color, which is characteristic of the Balanza Black type of the Early Classic period.

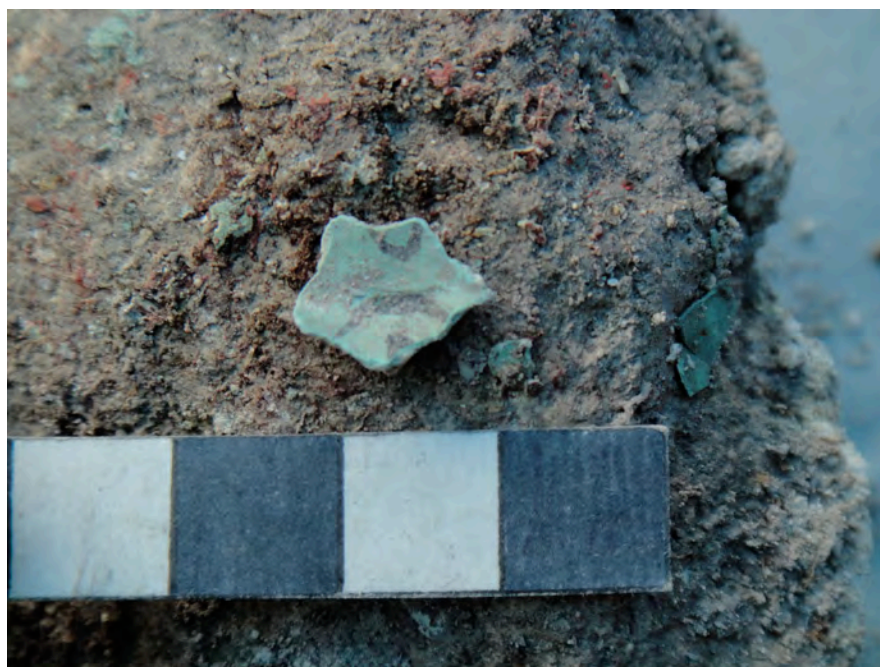
Painted stucco was found in two areas of the chamber: one in the northwestern corner and another along the eastern wall in the central part of the chamber. In the northwestern corner, a dark-colored matrix contained tiny (about 5 mm in size) fragments of stucco painted in red and green were found. The other area with painted stucco was found in the central part of the chamber along the eastern wall, east of the left ulna (see Figure 11). The largest fragment was about 1 cm<sup>2</sup>; the smooth side showed curvilinear elements painted in black atop a turquoise-colored (or greenish) background (Figure 17), and the rough side was painted in red. The surface of the side painted red (or perhaps the original substrate had been painted red and transferred to the stucco) on numerous fragments was consistently rough, suggesting that this was the side that had adhered to an organic substrate, which has long been lost. What was left of the substrate was a dark brown, compact matrix about 1.5 cm thick, and was found directly atop the plaster floor, which was preserved in this small area, but had been broken through in other parts of the chamber to make room for the burial. The painted area was roughly circular and extended about 10 cm in diameter, with the turquoise-green-painted stucco concentrated in the center and the red-painted stucco surrounding it (see Figure 17a).

The finding of this burial in the stair block has important implications for understanding the function of the building in the Early Classic period and its subsequent uses in later periods. We can conclude that the stair block was constructed for the primary purpose of interring the individual, because the stone-lined burial chamber was built as part of and during the construction of the stair block. The burial is not an intrusive feature post-dating the construction of the stair block, as the plaster floor that capped the stair block also served to seal the underlying capstones and the tomb. The stair block





a.



b.

**Figure 17:** Painted stucco found in the central part of the chamber of Burial 11 along the eastern wall: a. in situ; b. fragment of painted stucco.

construction took place in commemoration of the elderly male that was put to rest in the tomb. The location of the stair block and the individual along the central axis of the building as well as its placement near the building's summit reinforce the idea that the interred individual must have been an important elderly figure in Cahal Pech society. While only a single ceramic vessel was interred with him, he was likely of the royal family, if not, closely related to the ruling elite group. The presence of jade beads and marine shell ornamentation suggest the relatively high status he enjoyed. Moreover, the stingray spine may be indicative of his transformative powers (e.g. kingly and/or supernatural powers) (Haines et al. 2008)—perhaps as king or ritual practitioner.

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# **THE DISCOVERY OF A PROTOCLASSIC MAYA TOMB: EXCAVATIONS AT THE SUMMIT OF STRUCTURE B1 AT CAHAL PECH**

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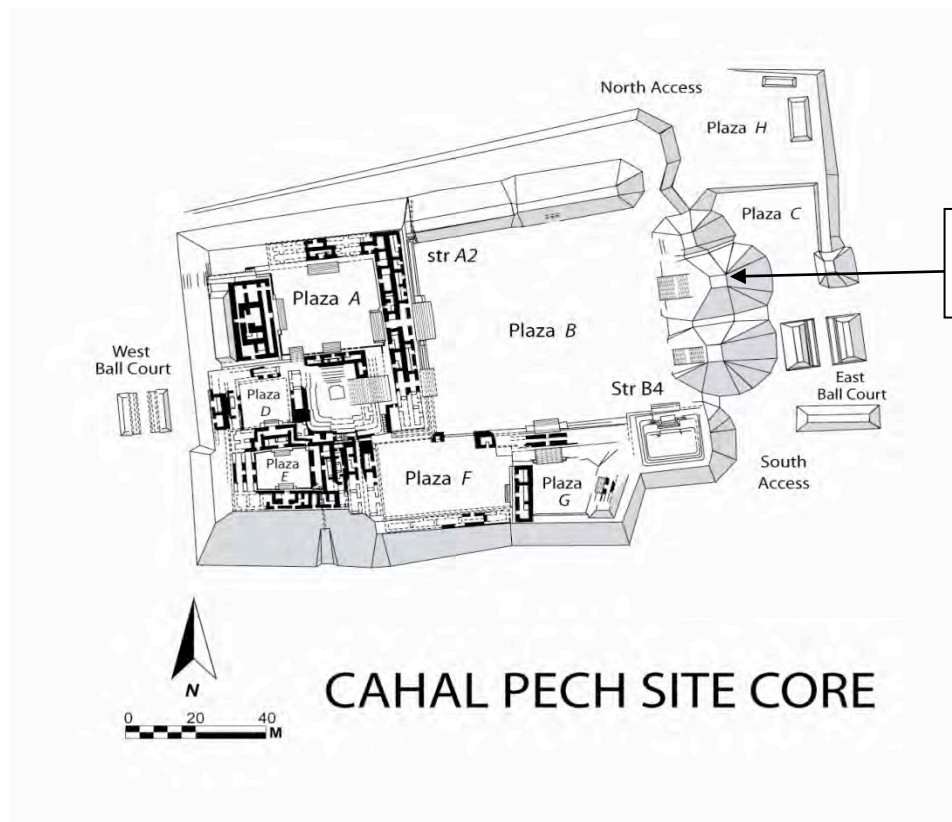
## **INTRODUCTION**

In June and July of 2012, BVAR conducted excavations on the summit of Structure B1, of which the western side of the summit had been investigated in 2011. In 2011, BVAR personnel identified an elaborate Late Classic elite tomb, the contents of which resembled some of the artifacts that Peter Schmidt had uncovered in 1969. Because no report was produced on the tomb discovered in 1969, one of the objectives of the 2011 and 2012 investigations was to assess the extent of his excavations. Our excavation unit was defined based on a depression in the soil, indicative of an earlier excavation. Upon removal of what we presumed to be Schmidt's backfill (in effect, allowing us to determine the extent of his excavation), several unique finds were revealed (see Figure 1).

At the center of the structure, an approximately 5 meter deep chamber was uncovered. It contained two Protoclassic burials (BU8 and BU10). Burial 10 was located approximately 7 meters below modern structure surface, in a crypt. Above Burial 10, an offering niche with two lip-to-lip vessels was found associated with burial 10. Yet above Burial 10, had Burial 8 been exposed, but due to collapse the burial was no longer intact. Both burials included complete vessels

## **BACKGROUND**

Cahal Pech is located on the southern outskirts of modern day city, San Ignacio, in the Upper Belize Valley. Unfortunately, most of the surrounding settlement of ancient Cahal Pech has been succumbed to the growing city. Cahal Pech is located on a hilltop 166 meter above sea level, on the west bank of the Macal River and is surrounded by the foothills to the south (Ball and Taschek 2001). In 1988 extensive investigation were initiated, directed by Dr. Jaime Awe in collaboration with the Belize Tourism Industry



**Figure 1:** Cahal Pech site core (Map used by courtesy of Dr. Awe)

Association (B.T.I.A.) and UNESCO, to preserve the history of the Maya by turning Cahal Pech into a national park (Awe 1992). Although the site had been vividly excavated a chronology still needed to be produced, which became one of the objectives of the investigations conducted by Dr. Awe. He has established that Cahal Pech has been populated as far back as 1200 BC and new evidence supports that the site was extensively used up through the Terminal Classic period (Awe and Schwanke 2005).

## METHODOLOGY

The unit was defined, and the excavations begun. To cover the area of the visible depression, Unit 2-East measured 3.53 m north to south, 1.7m east to west, leaving a 40cm baulk between 2-East and 2-West, which was later incorporated into Unit 2 East. The reason for the baulk was to prevent too much soil to enter the 2 West excavation unit. We screened all soil removed, through either a ¼-inch or 1/8-inch screen; a 1/8-inch was used when bones and other small artifacts were exposed. As the extent of Schmidt's excavation was unclear at the time we initiated excavation, we screened all the excavated soil as we did not know where the backfill would end. Our excavation unit was defined by a depression in the modern surface, which was presumed to indicate the horizontal extent of Schmidt's excavation; thus, our excavations sought to assess the horizontal and

vertical dimensions of the earlier unit. The possibility of uncovering new material was to be expected. We initiated the excavations by removing 10 cm of topsoil. Thereafter, approximately 10 cm of matrix was removed at one time, until heavily decomposed pieces of black plastic were reached at a depth of 180 cm, placed by Schmidt in 1969.

Elevation measurements were taken from the same datum used in 2011, which was a small tree located directly on the border of the northern baulk to facilitate comparisons of the elevations of the units at the summit of Structure B1. The unit was initially assigned EU 4, but was redefined later as EU 2-East. It was evident where Schmidt's unit had been located as excavations begun, as it was clear it was all backfill, until we reached remnants of black plastic, Schmidt had left at the bottom of his unit. However Schmidt's baulks were not straight down, which explains why he just missed a broken polychrome vessel and turtle bones, engraved with hieroglyphs, which was located against the eastern baulk in the northern end of the unit.

All uncovered artifacts will be analyzed. The complete vessels were glued back together and drawn by professional illustrators, Tamara Bower and Tiffani and Michael Thomas. The human remains were analyzed in situ by Ashley McKeown and Rosanne (Rosie) Bongiovann (see McKeown and Bongiovann, this volume) as the bones were very porous and disintegrated as soon as they were removed from the soil. After excavation of the two burials, the shaft which had a depth of 7 meters below the modern surface of the structure, terminated as it became too dangerous to continue, due to the increased risk of collapsing of the baulks. To be able to investigate deeper into the structure, it will be necessary to start from the top where the chamber was initiated, and remove all surrounding architecture, inside the unit. This was not possible in 2012 due to lack of time.

The same sequence of lot numbers continued to be used from the 2011 excavations. The lot numbers had to be distributed between unit 2East and unit B1-3 (Unit B1-3 was initiated in 2011, but eventually paused not to endanger people working inside the tomb (BU7), as B1-3 was on the western facade of the structure, very close to the summit. Excavations were resumed in 2012, see Ishihara from this year.) In unit B1-3 two burials were found: an intrusive burial designated BU9 as well as tomb designated BU11. This explains the designation of the two burials found in the chamber in unit 2-East: BU8 and BU10. (BU1 and BU2 were excavated by P. Schmidt in 1969. BU3, BU4, BU5 and BU6 were all excavated near the base on the western facade of the structure by J. Ball in the 1990s. BU7 was excavated by author in 2011.) (See figure 2, for East-west section view of Structure B1, and figure 5 and 26 for tombs at the summit overview)

When the bottom of Schmidt's unit had been reached, large rocks were removed, which had been placed on a floor, as he had backfilled. Below one of the rocks a hole was exposed and with lights and a camera a chamber was discovered underneath. The



Structure B1, Cahal Pech  
 Section (east-west) drawing  
 Drafted by Jorge Can;  
 Prepared by Reiko Ishihara-Brito



**Figure 2:** East-West section plan of Structure B1 (Drawing by Reiko Ishihara-Brito and Jorge Can)



**Figure 3 (Left):** Vessel 1 from Schmidt's backfill as well as turtle bone, in s  
**Figure 4 (Right):** Restored Vessel 1 from Schmidt's unit.

chamber was partly underneath the baulk, which still needed to be excavated before chamber could be investigated further. In order to access the newly found chamber, baulk was removed, so the hole in the floor could be expanded.

## EXCAVATION RESULTS

### *Backfill*

Few artifacts were recovered in the backfill from Schmidt's excavations. Only a few pieces of ceramic, some freshwater shells and a large quantity of chipped chert which would suggest that the presence of the Late Classic tomb (B1-BU2) Schmidt excavated had been covered by a layer of chipped chert as was the case with the tomb found in 2011 (B1-BU7).

At a depth of 180 cm below modern structure floor, we found two curious artifacts as well as decomposed plastic, the latter indicating that we had reached the extent of Schmidt's unit. Near the baulk in the northeastern part of the unit, behind a large rock, a broken Early Classic Dos Arroyos polychrome basal flange vessel was found along with faunal remains, identified by Norbert Stanchly as turtle bone, with some pieces containing incised hieroglyphs (Figure 3, 4, 9, 27, 28, 29 and Appendix image). In the northwestern part of the unit, upon removing another large rock, a hole appeared

### *Burial 8*

At this level, the architecture had partly collapsed into a burial chamber. Plastic bags were placed above the rubble in the chamber, to protect the contents, while the floor (ceiling of the chamber) was removed. When the chamber was exposed it was carefully investigated and all precautions were taken, not to destroy possible human remains, which were expected to be directly underneath the rubble. This was not the case, and we encountered much more fill than expected before uncovering any indication of human remains.. Large cut stones were finally reached at a depth of 465 cm below datum, indicating the presence of a tomb below. Below these cut stones a few vessels were exposed as well as some burnt limestone or plaster floor, before human remains appeared. The individual was very poorly preserved and the ceiling collapse had caused pieces of bone to be intermixed with the burnt floor.

The interior of the chamber measured approximately 90 cm by 210 cm. Due to the limited space inside the chamber the individual had to be exposed in sections. The cranial area, which was in the southern end of the chamber, was uncovered first. All data concerning the skeletal remains had to be observed in situ as the bones were in a very poor state of preservation. Caitlin Stewart, student at the University of Mississippi, identified the individual as male based on the robustness and diameter of the humeral head (44 mm). The dental attrition suggests the individual to be 30-45 years old. Further analysis of the teeth will be conducted later as several teeth were preserved.

### *Burial 10*

After we had removed the skeleton, we noticed a large sherd in the eastern baulk. Carefully removing the soil around it, two large lip-to-lip Sierra Red bowls were uncovered in a small niche only large enough to contain the two vessels (Figure 16 and 17, as well as Table 3). The lower vessel was broken into 12 large pieces (likely due to the weight of the upper vessel and surrounding matrix), but the upper vessel, which was a tetrapod with small mammiform feet, was fully preserved.

In the south-western end of the chamber, a large quantity of ceramics had been used as fill. It was impossible to remove it all, due to the risk of collapse of the baulk. The loose sherds were collected, and when all excavations in the chamber were terminated, we carefully removed what we deemed possible without endangering ourselves, and then the chamber was sealed up. Further excavations will be able to establish the relationship between the fill and the structure. The ceramic still needs to be analysed.

Below the first burial (BU8), the niche which had contained the two lip-to-lip vessels and the ceramic fill in the baulk (Figure 14), another burial was found (BU10). This individual was in a crypt, with cut stones forming a crypt and with capstones providing the chamber with a ceiling (Figure 18), although they had collapsed. In the crypt an articulated skeleton, with the head towards the south, was uncovered. He was lying face down, head towards west, with his right palm turned up. He had been wrapped

in an organic material, as the soil surrounding his skeleton was darker than the rest of the soil. Interestingly it turned out that he had been placed on top of 4 vessels, all of which indicated it was a Protoclassic burial.

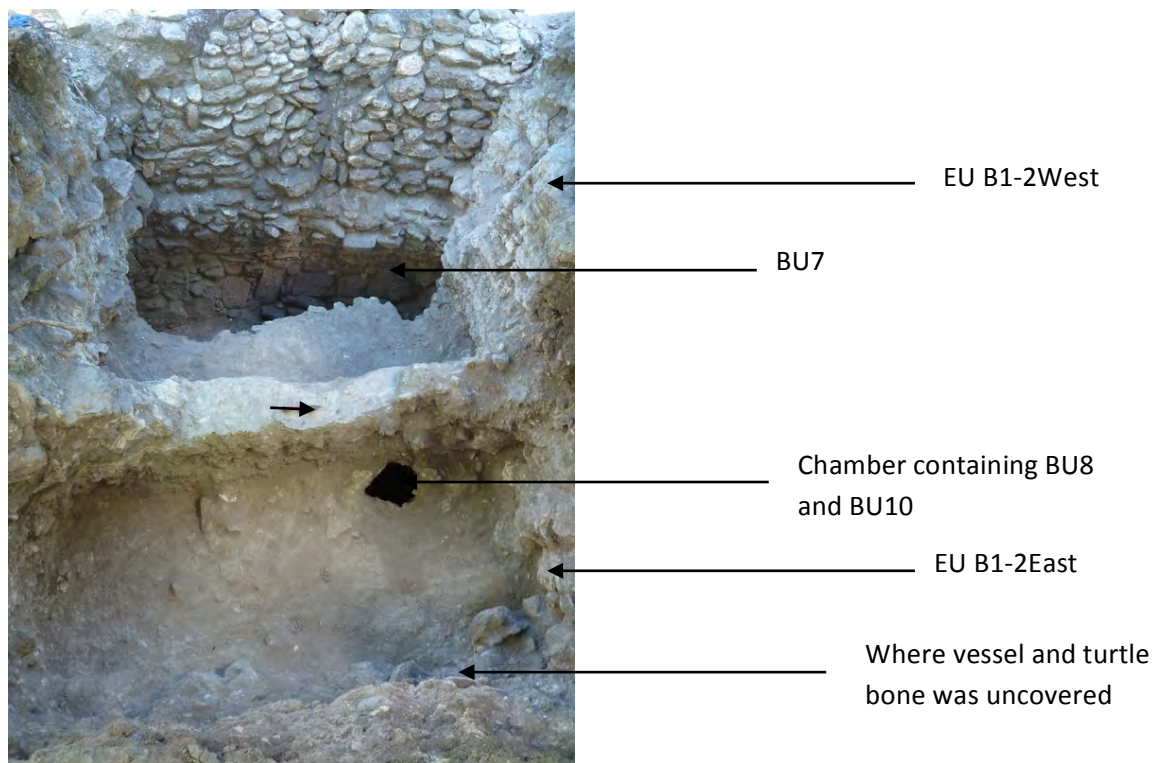
#### *Units and lots*

**EU B1-2East** (Lot B1-25 lvl 1) This level is a cleanup level, removing the top layer of the unit, which has been contaminated and leveling it, as it is sloping downwards towards south. Elevation: NE: 13.5cm Above Datum (AD), NW: 38cm AD, SW: 11cm AD, SE: 20cm Below Datum (BD), Center: 14.5cm AD. This lot included ceramic, chert and jute.

**EU B1-2East** (Lot B1-26 lvl 2) This is a large unit, which was expected to continue until sign of Schmidt's excavations would appear. All excavated soil was screened to check for possible artifacts that Schmidt could have missed. A large amount of chert was uncovered, which indicates the tomb had been buried underneath a layer of chert, which was also seen in the tomb BU7, from 2011, just a few meters westward. From BU7 more than 120 kg of chipped chert had been removed, and some was still left in the baulks. Eventually large rocks were uncovered in B1-2East. Below, a remnant of decomposed plastic was found. This indicates that the big boulder rocks were used as base of the backfill, before Schmidt had filled the rest of the excavated soil back into the unit he had excavated.

Underneath one of the large rocks a hole in the floor was exposed, partly underneath the western baulk. By using a camera it was possible to film inside, what appeared to be a chamber. The western baulk had to be removed, before investigations of the chamber could continue. Excavations of the level had ended as the extension of Schmidt's unit had been reached. Schmidt had excavated through several floors, so the floor reached was floor 4, which means the level below the floor will be level 5. Elevations: NE: 173cm BD, NW: 174cm BD, SW: 176cm BD, SE: 171cm BD, Center: 179cm BD, Vessel: 163cm BD, measurement to the top of the fill inside the chamber, measured through the small hole: 268cm BD. Elevation was taken to compare with BU7, bottom of BU7 chamber: c. 310cm BD. This lot included a polychrome vessel, turtle bone with inscribed hieroglyphs (see below for illustrations, transliteration and translation of the hieroglyphs), as well as 2 molars and 3 canine, but no mandible of the turtle, several large bags of chert, a few pieces of thin squared shell, a few pieces of ceramic and jute.

**EU B1-2East** (Lot B1-30 lvl 1) A baulk between east and west, was created to avoid that too much soil should fall into the western part and into the chamber of BU7, as well as for safety reasons as the western wall inside the chamber of BU7 and above it, was being stabilized to avoid causing any risk to the workmen working on the wall. As the soil from Schmidt's unit was excavated, and a hole had appeared partly underneath the baulk, we had to remove the baulk, in order to continue investigating the chamber below. The process of stabilizing the wall in BU7 to avoid collapse had been completed, and there was no longer a safety issue. It was clear from the stratigraphy of the baulk to see where the level had to be changed, as nicely cut stones were more or less defining the width of the baulk. The cut stones have presumably been part of an early construction



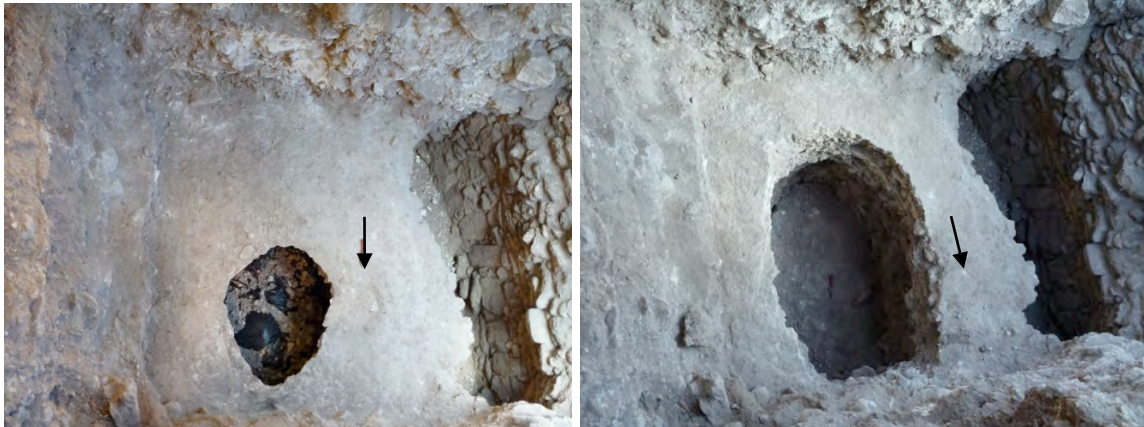
**Figure 5:** overview of the units on the summit of structure B1, facing west, before entering expanding the chamber of BU8 and BU10

phase of the building, with a step on top of the structure before the structure later was extended upwards. Width of the baulk: c. 50cm, width of the stones: 28cm, height: 19cm, length 49cm. Elevation: closing lvl 1, when reaching the cut stones: c. 125cm BD. This lot included ceramic, chert, jute and carbon.

**EU B1-2East** (Lot B1-31 lvl 2/4) This is the second level of the baulk, but to match the stratigraphy of unit B1-2East, it is considered to be level 4. The cut stones were removed, as they were resting on the same plastered floor as reached in Schmidt's unit. Elevation: c. 170cm BD. This lot included ceramic, chert, jute, marine shell, carbon and a small ceramic tube fragment.

**EU B1-2East** (Lot B1-32 lvl 5) The baulk had been leveled with the floor of Schmidt's unit, but there was still a step down to the platform above BU7 in the western side of the now united unit. We decided to level Schmidt's unit to the floor from B1-2West, as the chamber was partly in the western side. The plastered floor, as seen in the platform in unit B1-2West, was reached on the eastern side as well, and is considered as Floor 5. The floor was very well preserved, but had collapsed into the chamber. The top soil of the chamber is considered to be collapse from the floor above it. The floor had to be removed in order to expose the whole extend of the chamber, so the level was changed. Elevation: c. 200cm BD. This lot included ceramic, chert, jute, marine shell, obsidian and carbon.





**Figure 6 (Left):** Lot B1-33

**Figure 7 (Right):** Lot B1-35

**EU B1-2East** (Lot B1-33 lvl 5) This lot is to help distinguish the soils from each other, although we presume the top soil of the collapse inside the chamber belongs to the above Floor 5, it is better to be able to keep everything separated. Plastic bags were placed inside the chamber, to protect the contents and carefully the floor was removed to fit with the edges of the chamber (figure 6). Elevation on top of the collapse: c. 270cm BD. This lot included ceramic, chert, jute and marine shell.

**EU B1-2East** (Lot B1-34 lvl 6) the stratigraphy of the baulk inside the chamber has revealed that another floor has either been cut through or collapsed (Floor 6). In this lot we were focusing on removing the material which is considered to be collapse from floor 5. The material is likewise being kept separate from the actual floor 5 which we removed, in case it should be hard to distinguish collapse from fill. When another floor was reached, the lot was changed, floor 7. Elevation: c. 325cm BD. This lot included ceramic, chert, jute, marine shell and a spindle whirl made of ceramic.

**EU B1-2East** (Lot B1-35 lvl 8) this lot is below a broken plastered floor (7). Several floors had collapsed therefore level 8 and not 7. Not far below another floor (8) was reached, which was considered being a dry-fill/stamp-floor (?). (Figure 7) The lot and level was changed. Elevation: c. 350cm BD. This lot included ceramic, chert and jute.

**EU B1-2East** (Lot B1-36 lvl 9) this lot included BU8, and is below floor 8. A lot of soil was removed, and revealed a few artefacts. At the depth of c. 390cm BD a few rocks were exposed, but they did not construct a floor, so they were photographed and removed. At the depth of 417cm BD, below the rocks, a figurine head fragment was uncovered (4.6cm long, 3.4cm high and 2.2cm thick) (Figure 8).

At the depth of 465cm BD what looked like capstones had been exposed. 3 large and 8 medium and a large amount of small stones were removed. At the depth of 510cm



**Figure 8 (Left):** Tuerto figurine head. **Figure 9 (Right):** Vessel 1, BU8 Ixcancario Orange polychrome vessel



**Figure 10 (Left):** Jade beads from BU8 **Figure 11 (Right):** Vessel 2, Polvero Black potstand

BD, in the north-western corner, an Ixcancario Orange polychrome vessel was exposed (Vessel 1, figure 9 and appendix image 6). It is a tetrapod with mammiform feet dated to the Protoclassic period (100BC-200AD). At the depth of c. 530cm BD in the southern end of the chamber, a rock with an incised hole, was uncovered. Below the rock at the depth of 551cm BD another vessel (vessel 2) was uncovered. It turned out to be a Polvero Black potstand (figure 11, 30, appendix image1 and 7).

Below the rock and vessel, at the depth of approximately 553-572cm BD, human remains were uncovered. Unfortunately the skeletal remains were very poorly preserved and very porous, and moreover the collapse had caused disturbance, so it was no longer articulated. All data recording this individual had to be done in situ, as the bones would disintegrate as soon as it was removed. The skeletal remains were intermixed with pieces of burnt plaster floor, which would indicate that the individual had been placed on top of the floor, and that the collapse had caused disturbance. Two jade beads were found near



**Figure 12 (Left):** Vessel 3, Guacamallo Red-on-Orange tetrapod dish **Figure 13 (Right):** Vessel 4, Ixcantio Orange Polychrome potstand



**Figure 14 (Left):** Construction fill in south-western corner **Figure 15 (Right):** All four vessels from BU8

the skull (Figure 10). Next to the skeleton, towards east another vessel was uncovered, a Guacamallo Red-on-Orange tetrapod dish, with mammiform feet (Figure 12 and 15). At first only half of it was found, but later the other half was uncovered, and it was restored. The burnt floor which was intermixed with the skeleton is visible in the baulk (elevation: 503cm BD) which indicates that the individual should have been located at that depth. Right below the skeleton, at c. 563cm BD, another vessel, an Ixcantio Orange Polychrome potstand, was found (Figure 13, 15 and 30, and Appendix image 2 and 8). As the skeleton was almost excavated, ceramic construction fill became visible in the south-western corner of the chamber. As the walls generally were unstable inside the chamber, removing the fill could jeopardize our safety, and would have to wait. However, the construction fill contained a very large quantity of ceramic sherds. Some were removed, and eventually by the end of the excavations of the chamber we returned to the corner and removed as much fill as possible before sealing the chamber.

When the rest of the skeletal remains had been removed at the depth of c. 572cm BD, and what appeared to be a stamp floor was reached. It was not a floor, but an area of very compact soil, with air looms appearing around it at random places, which caused soil to fall through. It was therefore necessary to investigate whether there was something





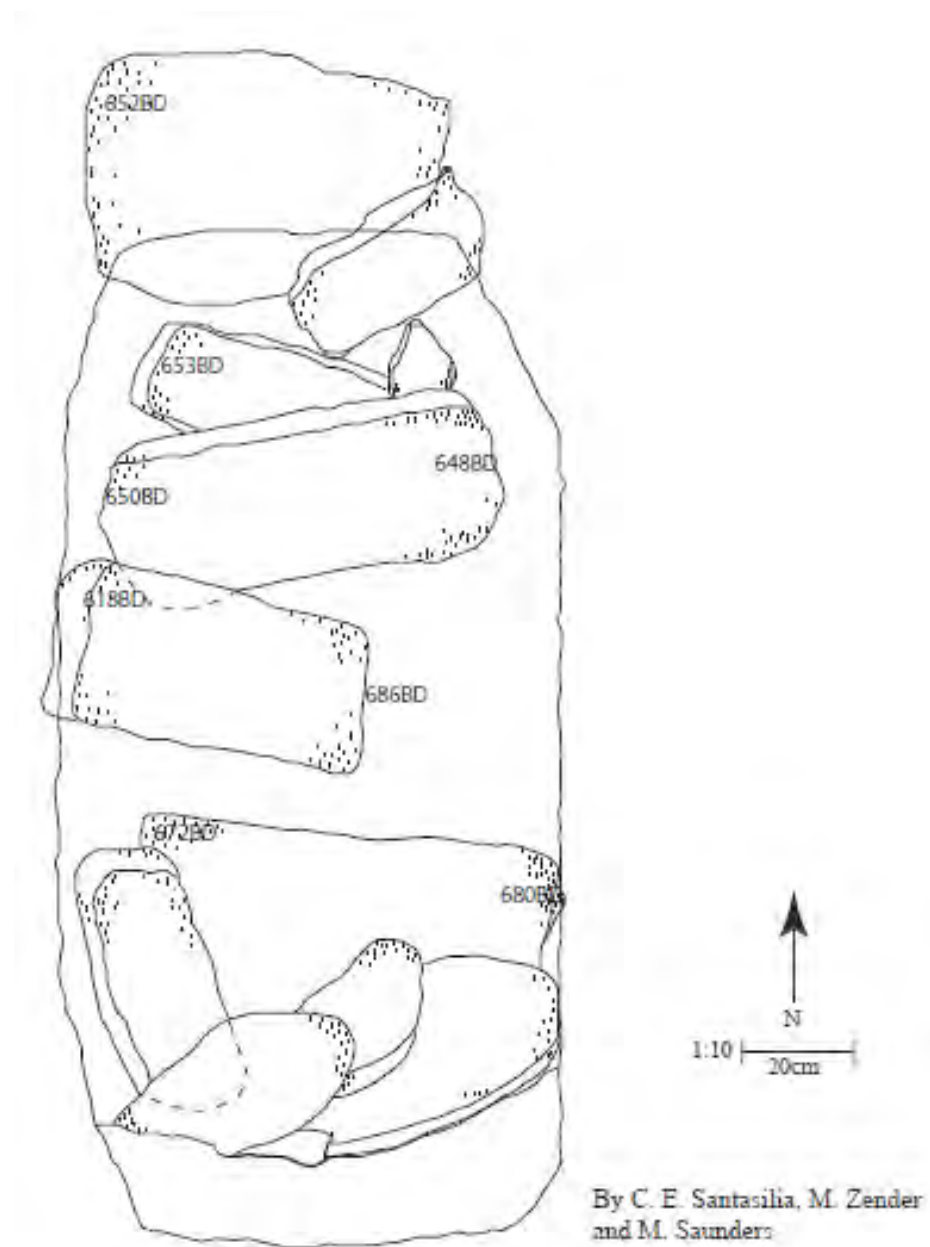
**Figure 16 (Left):** niche in the eastern wall, BU10 offering. **Figure 17 (Right):** restored vessels, BU10 offering

underneath. Before continuing excavations downwards, a sherd stuck in the eastern baulk had to be investigated. The lot was changed as BU8 was completely excavated. Elevation when changing level was 582cm BD. This lot in addition included quite many pieces of ceramic (dated to Preclassic period), slate, a possible stone mano fragment and jute.

**EU B1-2East** (Lot B1-38 lvl 10) This lot is an approximately 60cm by 45cm wide and 35cm high niche. Elevation: c. 555cm BD. The sherd stuck in the baulk, turned out to be part of a large vessel, which had been placed in a small niche lip-to-lip with another vessel. This niche has been interpreted as being related to the burial which was uncovered right underneath (BU10), and must have been an offering placed as the chamber was being cut out, in Preclassic time, before being sealed with the floor, on where BU8 was found. Vessel 1 from BU10 (niche), which was found intact, is a Sierra Red tetrapod bowl, with mammiform feet, Vessel 2 from BU10 (niche), which was broken into 12 pieces, is a Sierra Red tetrapod bowl. The small niche was fully excavated and entailed nothing else. A soil sample was collected from inside the vessel, which will be analysed to determine if something organic may have been placed inside the vessels.

**EU B1-2East** (Lot B1-40 lvl 10) This lot included BU10, and is below BU8. When investigating the air looms, which appeared in the soil below BU8, large cap-stones were exposed. The cap-stones had collapsed, and were no longer resting on the stone walls, surrounding what appeared to be a crypt. The crypt measured 80cm by 210cm. Two of the cut stones walling the crypt were measured: 56cm by 31cm by 16cm and 60cm by 31cm by 16cm.

Below the cap-stones, the human remains of a second individual were found. A thin layer of darker soil indicated that the individual had been wrapped in some organic material. This individual had the head towards the south, facing west. As the space was limited, excavations of the skeleton had to be done in sections. We started with the skull



**Figure 18:** Drawing of the cap-stones of BU10 (the numbers represent elevation)

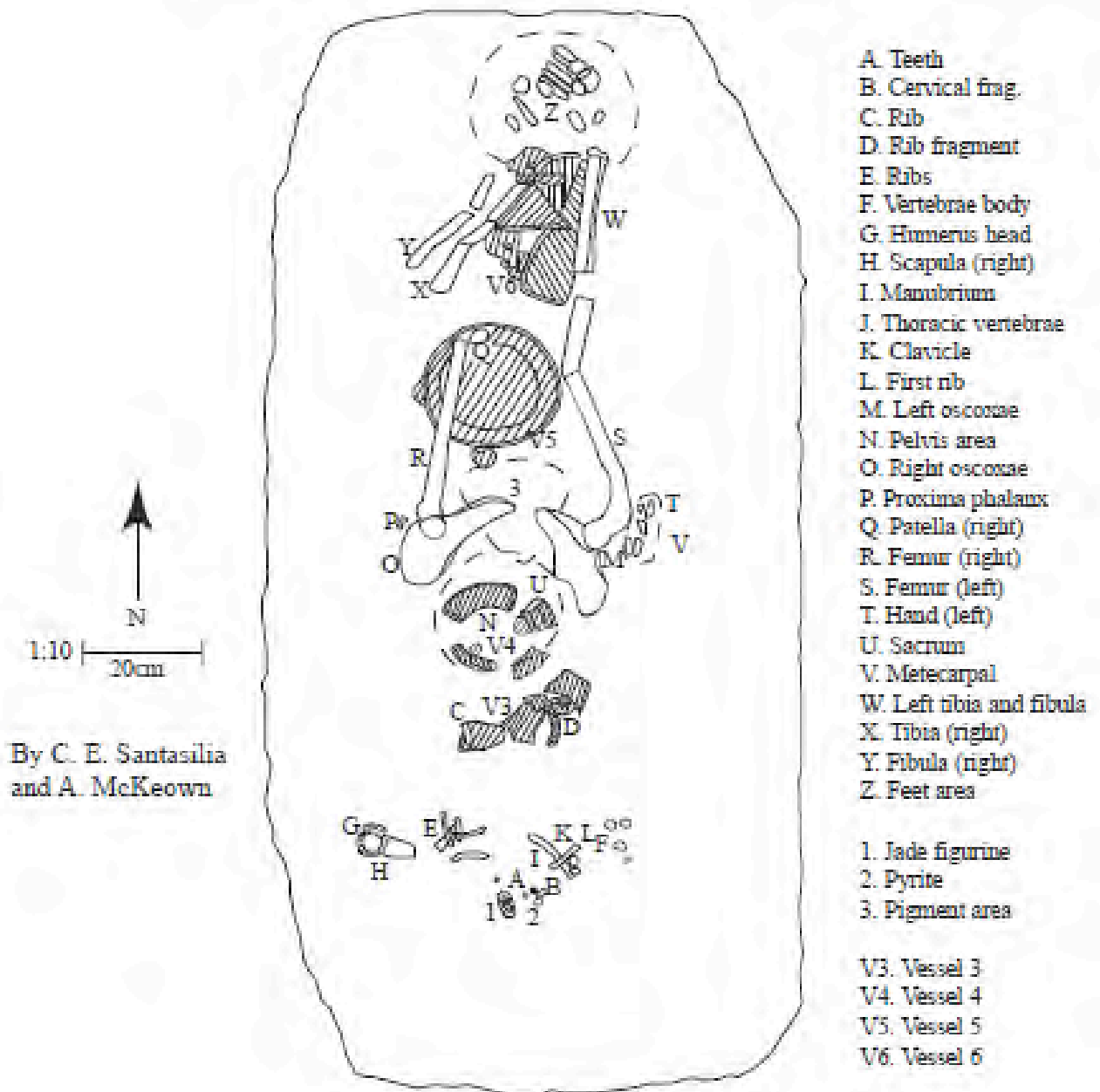
Structure B1, BU10, Layer 1, EU B1-2East, Lot B1-40, lvl 10,



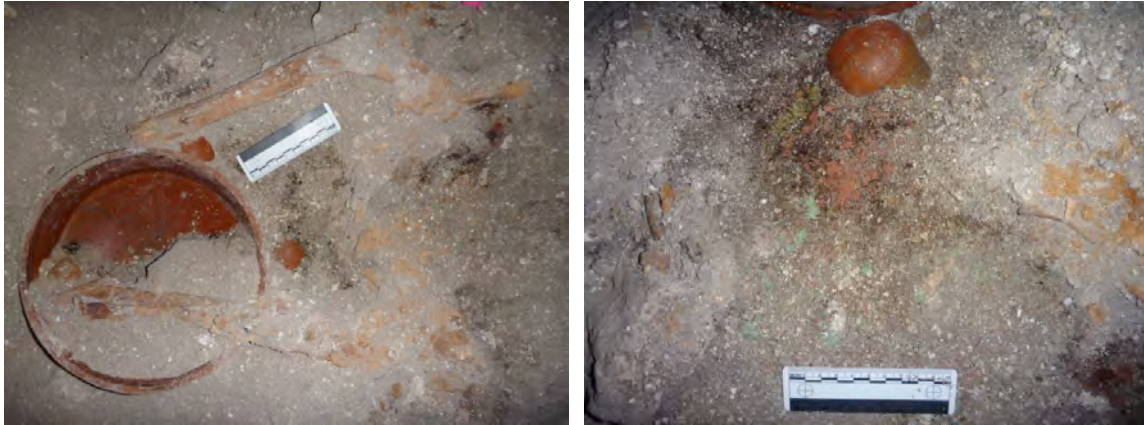
**Figure 19:** First layer of BU10, mainly illustrating the upper body



Structure B1, BU10, Layer 2, EU B1-2East, Lot B1-40, lvl 10,



**Figure 20:** Second layer of BU10, mainly illustrating the lower body



**Figure 21 (Left):** image of femurs on top of vessel 5. **Figure 22 (Right):** close up of pigment below the pelvis area



**Figure 23 (Left):** Jade from BU10 **Figure 24 (Right):** Jade figurine

and slowly extended northwards, as the human remains had been exposed, mapped, photographed and removed. It was a male, lying face-down with his right palm upright. By the skull a small bluish-green-stone figurine was found as well as a jade bead (figure 23 and 24, and appendix image 4). The figurine is typical Preclassic, and still has the incised drill marks from where the eyes, mouth and nose had been made. Around the pelvis area a large quantity of red and green pigment was uncovered.

The individual had been placed on top of 4 vessels. Vessels 3 BU10 (as vessel 1 and 2 are the vessels of the niche) is a San Felipe Brown bowl, it was broken into many pieces, located underneath the sternum (Figure 25). Vessel 4 BU10 is a Sierra Red (Possibly Happy Home Orange) potstand, broken as well, located below the pelvis (figure



**Figure 25:** the four vessels on which the individual was placed



**Figure 26:** Overview of the summit of structure B1, including the crypt excavated just below the stairblock on the western facade of the structure, to the right in the picture



**Figure 30:** The three potstands excavated in the chamber, the first two from left are from BU8, the one to the right is from BU10





**Figure 27 (Left):** Turtle bones in situ below a large rock. **Figure 28 (Right):** The different pieces of bone with glyphs on

25). Vessel 5 BU10 is an Ixcantio Orange Polychrome tetrapod bowl, it was very well preserved, with mammiform feet, located underneath the femurs (Figure 21 and 25). Vessel 6 BU10 Ixcantio Orange Polychrome tetrapod bowl with mammiform feet, was very porous and would only come out as small flakes (figure 22). No indication of writing on it, but as it was very fragmented it is hard to tell whether it could have been some sort of book likewise very well preserved, only broken into large pieces, located underneath the lower legs (Figure 25 and Appendix image 9). The soil in certain areas spongier than in other areas, which is presumably a result of the organic material the individual had been wrapped in. Several matrix (soil) samples were taken which will be analysed. Eventually when the phalanges had been excavated, excavations had come to an end. The bottom of the chamber had been reached at exactly 7m below datum. This lot in addition included ceramic, chert, jute, charcoal/carbon (of which samples were taken) and some very small fragments of pyrite.

## DISCUSSION

Excavations at the summit of B1 in the summer of 2012, revealed information about the elite who had populated Cahal Pech. Including the excavations from 2011, where a Late Classic elite tomb had been uncovered, as well as the information of another Late Classic tomb excavated outside the structure in 2012 just below the stairblock, and the Late Classic tomb from 1969 excavated by Schmidt. Structure B1 has produced a large variety of information on Late Classic period mortuary practices. In addition, further two intrusive burials have been uncovered on Str. B1; one in the summer of 2012, and one by Schmidt in the 1960s.

Both the Preclassic and Late Classic burials show us that the elite at Cahal Pech had extensive means and trading connections, as well as literary skills. Hieroglyphs have been found both in the Late Classic tomb from 2011, as well as supposedly from the Late



1. K'AN-na-[BAHLAM]-?-wa (Title ?)



2. a-ku AJ-\_\_\_\_\_ (name \_\_\_\_\_ turtle)



3. AJAW?  
u-juuch?)



4. u-ju-\_\_\_\_\_ (possessive noun \_\_\_\_\_)



5. yu- (possessive noun?)  
(toponym?)



6. ta?-ja?-NAL?/TE?/EHT?



U-JU-CHI A-KU, U JUUCH AHK "His turtle-shell"

**Figure 29:** All the drawings of the glyphs were drawn by M. Zender and C. E. Santasilia

Classic tomb found by Schmidt. The location of where the hieroglyphs were found this summer indicates their relation to the tomb of 1969. It is likely that it could have been an offering placed near the tomb. Whether the tomb from 1969 was a crypt with stone walls is unknown, as the notes on the tomb was lost, and only a plan of the special finds and skeleton has survived, as well as the special find sheets and most of the artifacts. Without the latter it would not have been possible to date the tomb.

## Glyphs

The hieroglyphs were drawn and analyzed by Marc Zender from Tulane University. The following is based on his notes. Identification of the faunal remains identifying it to be turtle bone was done by Stanchly Norbert, from University of London.

## Vessels

A large number of ceramic vessels were found. All, except the Late Classic one found in Schmidt's unit, were Preclassic. Furthermore, were three potstands found, which is exceptional, and they are all very different both in shape, colour and decoration.

## ACKNOWLEDGEMENTS

The excavations at Cahal Pech in 2012 were made possible through collaboration between several projects and people: The BVAR project (Belize Valley Archaeological Reconnaissance project) which is directed by the Director of Archaeology in Belize, Dr. Jaime Awe, and the high school sub-project AFAR (American Foreign Academic Research) directed by Mat Saunders. Marc Zender, from Tulane University, helped with mapping and analysis of the hieroglyphs, and this year Ashley McKeown, from University of Montana, and student Rosanne Bongiovanni, provided osteological expertise. Caitlin Stewart, from University of Mississippi, also assisted in excavation of the first burial (BU8). We owe thanks to the financial supporters Doug Tilden and Teresa Keller and to everybody who participated in the successful excavations of 2012, who are all interested to see the ancient site of Cahal Pech excavated and restored, which helps us to gain more knowledge about the past Maya civilization. All photographs are by author.

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## APPENDIX:

### MEASUREMENTS OF VESSELS AND JADE FIGURINE

Burial 8, Table 1:

Description	Rim dia.	Bottom dia.	Inner dia.	Rim thick.	Height	Feet	deco
Vessel 1	20.9cm	18.8cm	19.7cm	0.7cm	11.3cm	6.4x3.5-5.8cm	Frize: 4.5cm
Vessel 2	13.2cm	11.2cm	7.3cm	0.6cm	5.2cm	-	Knubs: c. 2.6-1.9
Vessel 3	27.8cm	24.5cm	22cm	1.1cm	11.5cm	8.8x4.1-5.9cm	Base: 2.3cm
Vessel 4	13.8cm	13.4cm	8cm	0.7cm	8.4cm	-	Frize: 3.7cm

Burial 10, Table 2 and 3:

Description	Length	Width	Thickness
Jade figurine	4.2cm	2.4cm	1.4cm

Description	Rim dia.	Bottom dia.	Inner dia.	Rim thick.	Height	Feet	deco
(Niche) Vessel 1	38-39.4cm	16.8cm	-	0.8cm	12.5cm	4.3-5.1cm	-
(Niche) Vessel 2	45cm	17.8cm	-	1.3cm	16.8cm	-	-
(Burial) Vessel 3	17cm	10.5cm	15.5cm	0.7cm	11.7cm	-	Incised line
(Burial) Vessel 4	14.3cm	14.5cm	8.8cm	0.6cm	11.8cm	-	Frize: 6cm triangles: 2.1-2.5cm
(Burial) vessel 5	22.7cm	22cm	21.3cm	0.8cm	10.6cm	6.8x4.2-6.2cm	Frize: 3.3cm
(Burial) vessel 6	22.8cm	20.5cm	21.2cm	0.8cm	12.3cm	8x2.8-6cm	Frize: 4.6cm

Four aquarelle drawings of the three potstands and the jade figurine, done by Tiffany Thomas:



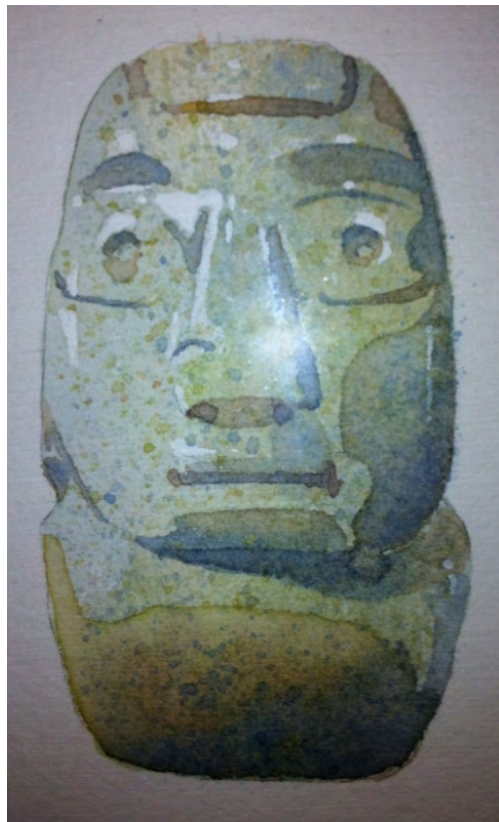
1. Black potstand, BU8 (Vessel 2)



2. Orange polychrome, BU8 (Vessel 4)

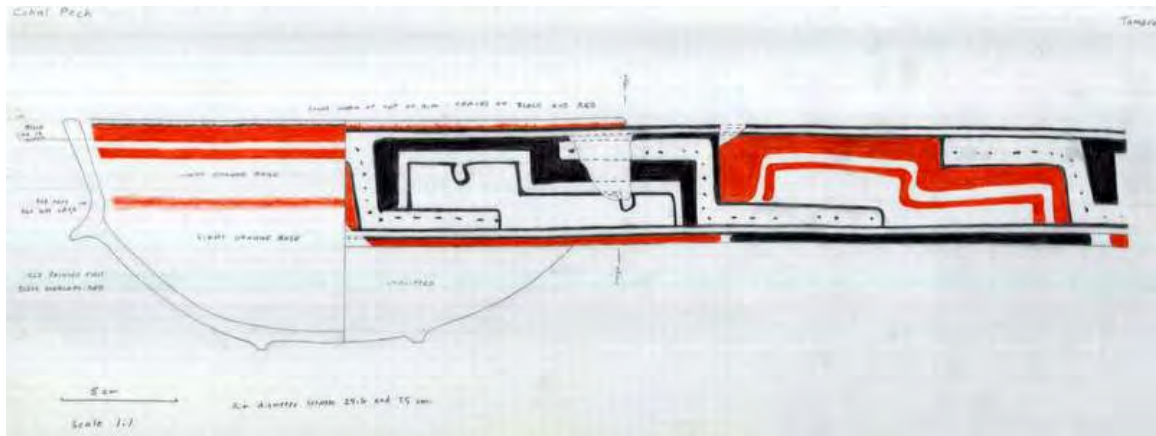


3. Happy Orange potstand, BU10 (vessel 4)

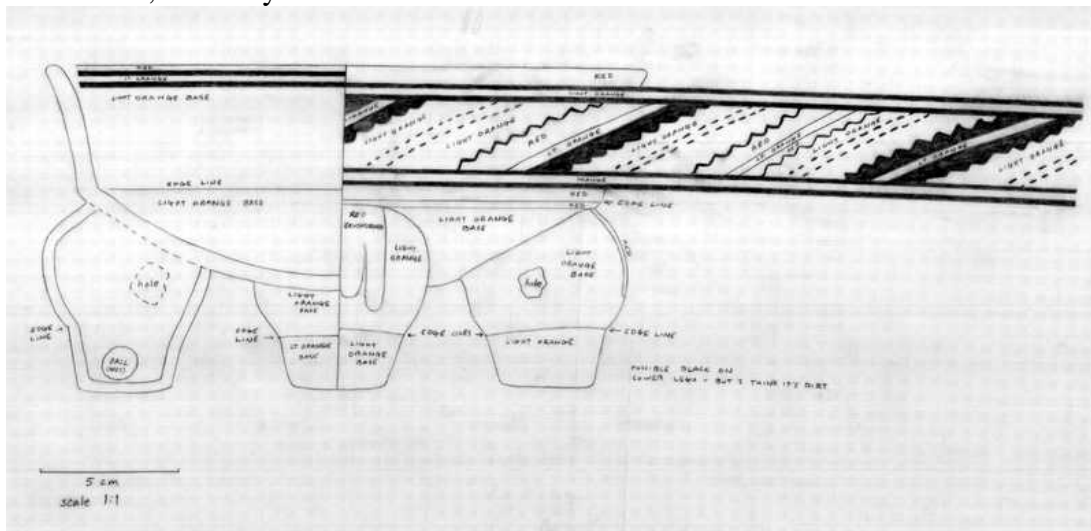


4. Jade figurine, BU10

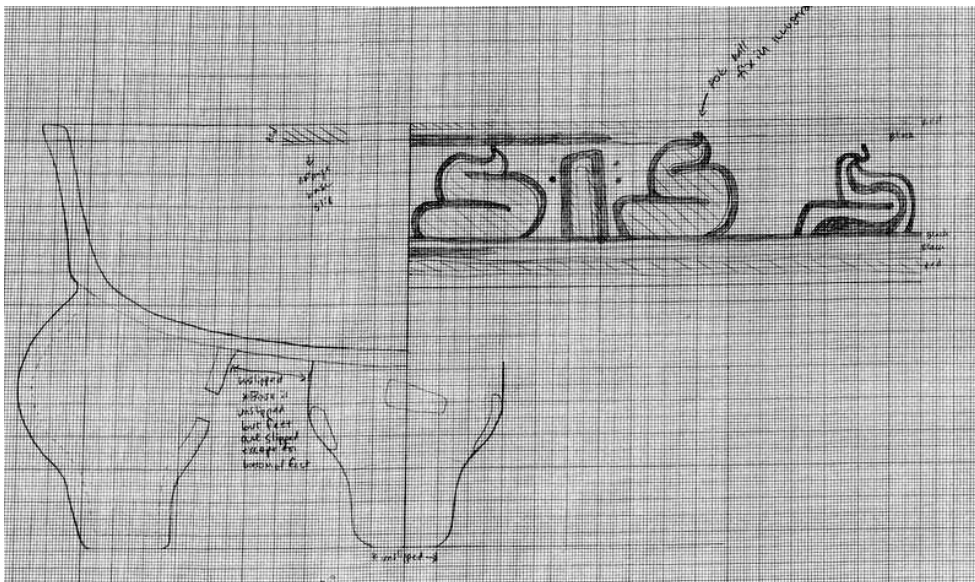
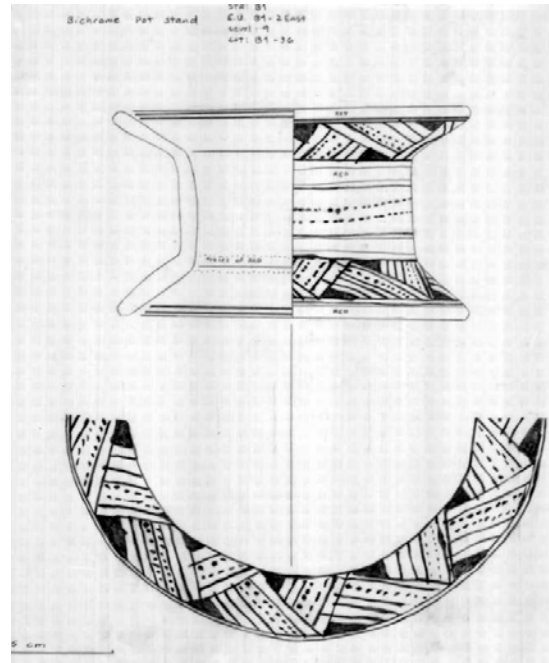
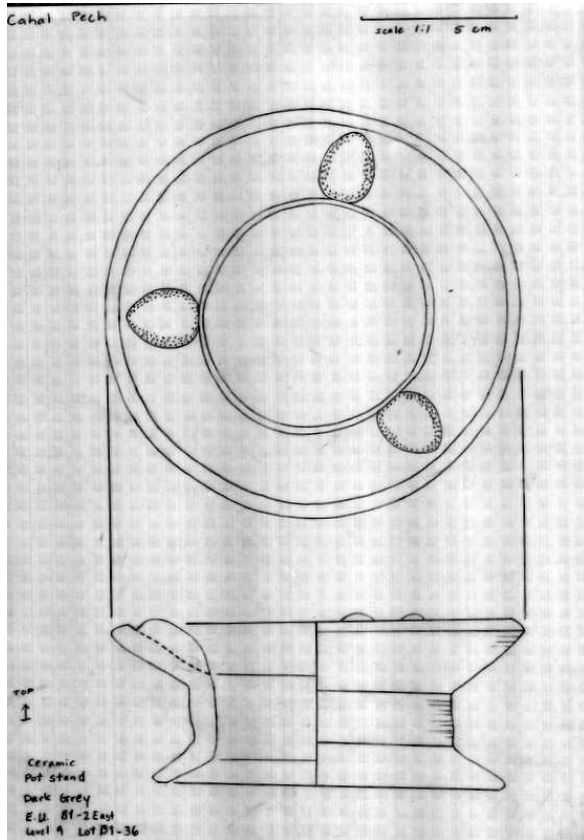
Drawings done by Tamara Bower:



5. Vessel 1, found by P. Schmidt's backfill



6. Vessel 1, BU8



# **PRELIMINARY REPORT ON THE EXCAVATION OF BURIALS FROM STRUCTURES B1 AND B3 AT CAHAL PECH, JULY 2012**

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**Rosanne Bongiovanni**  
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## **INTRODUCTION**

During the summer of 2012, four burials from Structures B1 and B3 at Cahal Pech were excavated by Ashley McKeown and Rosanne Bongiovanni of the University of Montana. Three of the burials were associated with Structure B1 and one was found during excavation of Structure B3. The first burial excavated (Str. B1-Burial 9) was a secondary interment that likely represents a ritual deposit. The two other burials from Structure B1 (Burials 10 and 11) were interred in tombs as was the burial associated with Structure B3 (Burial 1).

## **BURIAL DESCRIPTIONS**

McKeown and Bongiovanni worked with Belize Valley Archaeological Reconnaissance (BVAR) project archaeologists as the human remains and artifacts from the burials were excavated, documented, and recovered. Each burial is described below. Further information for each burial regarding context and location as well as associated artifacts can be found in chapters in this volume by Ishihara-Brito *et al.* (CHP-B1-9 and CHP-B1-11), Santasilia (CHP-B1-10), and Conlon (CHP-B3-1).

### **Structure B1-Burial 9 (CHP-B1-9)**

This secondary interment was encountered by field school students excavating the west façade of Structure B1 above the stair block. The poorly preserved skeletal remains represent at least one adult of unknown sex. The remains were disarticulated with elements of the cranial vault superimposed on sherds from a vessel. The cranium was

oriented such that it rested on the superior aspect with the face to the west (the cranium was resting upside down within the vessel). This position was determined by the exposed endocranial surfaces of the parietals with the sagittal suture oriented along an east-west axis and the superior orbital plates of the frontal facing west. No portions of the inferior aspect of the cranium were noted.

Several long bone shafts were located below the cranial vault and the pottery sherds forming a crude pedestal upon which the vessel likely rested. While the preservation of the skeletal remains was poor, the morphology of shaft fragments suggests the presence of at least radius, humerus, femur and tibia. The proximal and distal ends of the long bones were heavily eroded leaving only shaft fragments. Also present were the second cervical vertebra, a mandibular fragment from the mental (chin) area, and several adult teeth including a canine, a premolar and a molar.

Close to the bottom of the pedestal of disarticulated bones, two bifacial projectile points were present. For more information about the associated pottery vessel and bifacial points see Ishihara-Brito *et al.* (this volume).

The classification of this individual as adult was based on the presence of dentition with fully developed roots. It did not appear that remains from more than one individual were present; nevertheless, a thorough osteological analysis is needed to confirm this.

The arrangement of the disarticulated skeletal elements indicates that is a secondary burial. The presence of a ceramic vessel below the cranium and the bifacial points at the base of the bone pedestal suggests this is likely a ritual deposit.

### **Structure B1-Burial 10 (CHP-B1-10)**

This north-south oriented tomb was accessed via a shaft from the summit of Structure B1. The individual interred in this tomb was in an extended, prone position with the head to the south. The posterior aspect of the cranium was to the east and the face oriented to the west suggesting that the head was resting on its left side. The arms extended along the sides of the torso with the hands lateral to the hips. The hands were palmar surface up. Overall, skeletal preservation was poor, but some organic material was identified on the palmar surfaces of the phalanges from the right hand. A sample was collected for further analysis.

The skeleton is that of a male, likely 30 to 50 years of age. Age is based on assessment of the left pubic symphysis *in situ* and the lack of arthritic changes on the fairly well preserved metacarpals and phalanges.

This individual was placed on top of four vessels. Vessel 1 was below the thoracic vertebrae; Vessel 2 was in the abdominal area; Vessel 3 was under the shaft of the right femur; Vessel 4 was below the left tibia. Between the vessels and bone was a layer of dark organic material and green and red pigments above the organic layer were clearly



visible in the pelvic region. A jade pendant was found in the upper chest region between the bone and the dark organic layer. For more information about the artifacts recovered from this burial see Santasilia (this volume).

### **Structure B1-Burial 11 (CHP-B1-11)**

This tomb burial was located within the stair block on the west façade of Structure B1. This skeleton of an older (40+ years) male was oriented along a north-south axis with the head at the south end of the tomb. The individual was articulated at the time of interment and in an extended, prone position with the arms along the sides of the torso and ankles close together. The vault of the cranium was exposed first with the face to the southwest.

While most skeletal elements were present, the preservation of the remains was poor. The facial elements as well as the elements of the thorax were fragmented. There appears to have been shifting within the burial as several of the remains were not in anatomical order. For example, the right (west) humerus is located with the head at the shoulder girdle and the distal end across the back to the left (east) side of the body. The right (west) radius and ulna were found lying parallel alongside the right (west) side of the body with the ulna superior to the radius. This is consistent with the position of the hand with the metacarpals found palmar surface facing medially. The left (east) arm was found alongside the left (east) side of the body with the radius located medially to the ulna and the hand positioned palmar surface up. The femora were parallel to one another while the tibiae overlapped with the left (east) tibia superior to the right (west).

The age of this individual (40+ years) is based on an edentulous mandible and osteophytic growths on the foot phalanges. The morphology of the mandible (gonial angle ~90°) suggests the sex of the individual was male.

This individual was clearly of elite status based on the burial context and the presence of numerous associated artifacts including jade beads. For more information on the artifacts see Ishihara-Brito *et al.* (this volume).

### **Structure B3-Burial 1 (CHP-B3-1)**

This north-south oriented tomb burial was located within Structure B3 and contained the skeletal remains of an adult female. This extended, supine interment was oriented along a north-south axis with the head to the south. The cranium was resting on its posterior surface suggesting that the face was up. The skeleton was in a fairly good state of preservation with most elements represented. Nevertheless, limestone blocks from the southern end of the tomb had shifted damaging the cranium and collapsed blocks along the west wall covered much of the left thorax and arm.

The individual was classified as female based on a relaxed gonial angle on the mandible and a very small femoral head diameter. The skeleton is clearly that of an adult

based on full skeletal development. Additionally, a fragment of the right side of the mandible exhibits remodeling within the alveolar bone suggesting that either the molars were lost antemortem or were on the verge of being shed. This may indicate an older individual (40+ years).

Jade and bone beads as well as ceramic vessels were found associated with this individual. The beads were in the neck and upper chest region while the ceramics were between the proximal femora. For further information on these items see Conlon (this volume).

## **ACKNOWLEDGEMENTS**

We would like to thank Dr. Jaime Awe, Director of BVAR, for inviting us to participate in the summer 2012 field season. We also acknowledge the contributions of the Belizean archaeologists who worked with us as well as the BVAR staff: Reiko Ishihara-Brito, Catharia Santasilia, and Jim Conlon. Julie Hoggarth, Assistant Director, for her patience as we prepared the contribution.

## EXCAVATIONS ON CAHAL PECH STRUCTURE B4

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### INTRODUCTION

Excavations in 2012 were conducted on Structure B4 in order to document stratigraphically contextualized cultural materials from the early Middle Preclassic Cunil phase (1000–850 BC), as part of a continued effort to deepen our understanding of the occupation during this early time period. Charcoal was collected throughout the strata of the excavation units and will be subject to AMS dating, so as to buttress the ceramic chronology with absolute dates. Two excavation units were opened during the 2012 BVAR field season (Units 10 and 11), the latter of which was extended northward to form a trench (and was divided into Units 12, 13, and 14). Figure 1 shows the profile of the excavation units.

### EXCAVATION UNITS

#### Unit 10

Unit 10, a 2 x 2 m unit, is located in the northeastern corner of the summit of Structure B4-3<sup>rd</sup>. It was excavated down to bedrock. As mentioned above, charcoal was collected for AMS dating and marked in the unit profile drawing.

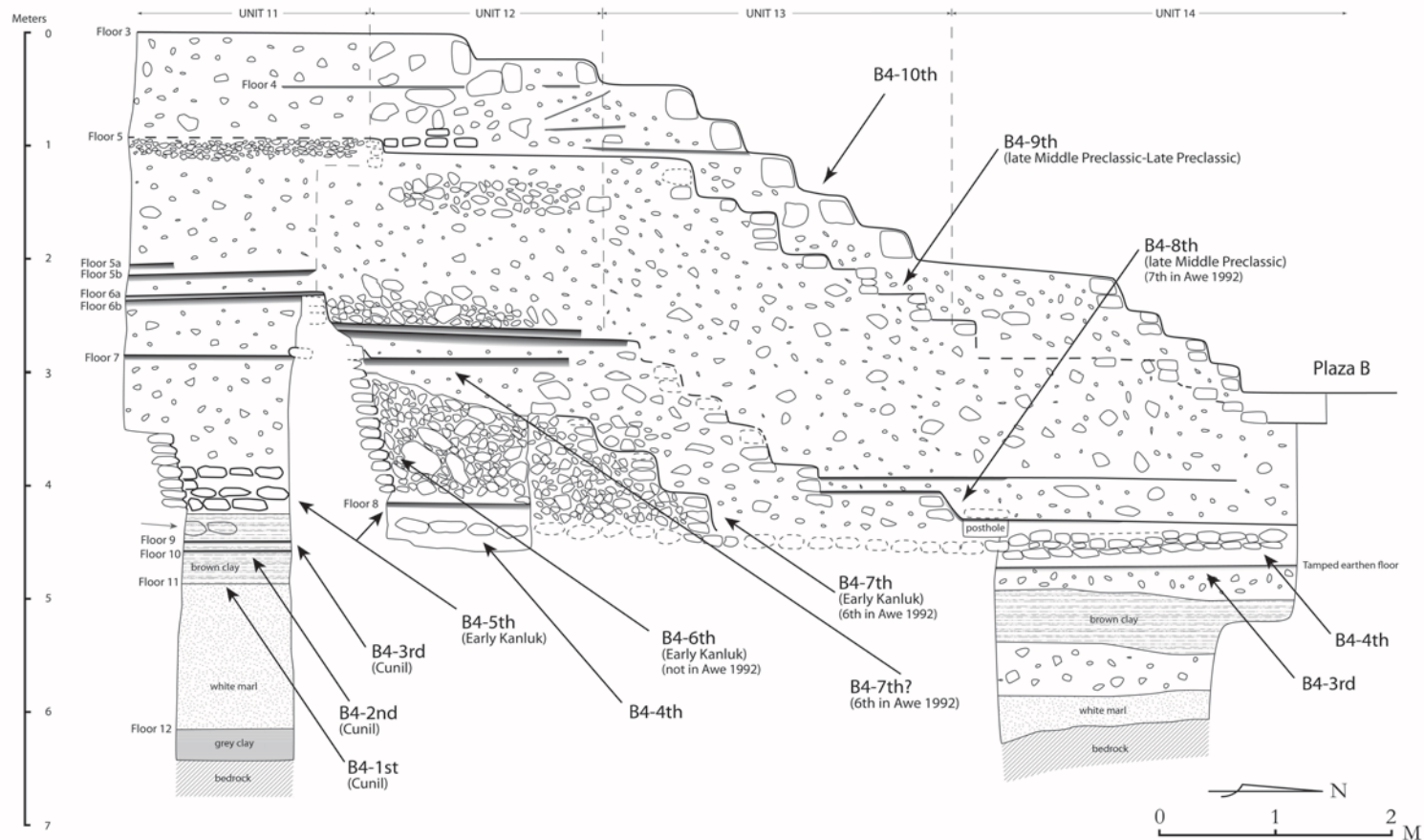
#### Unit 11

Unit 11 was initiated as a 2 x 1.5 m unit (longer on north-south axis). It is located to the west of Unit 10, in the space between Units 4 and 5 which was excavated in 1990 (Awe 1992). In fact, the western extent of Unit 11 overlaps with the eastern extent of Unit 5, as the western baulk of Unit 11 showed backfilled matrix. Due to the spatial proximity to Units 4 and 5, the unit profiles of Units 4 and 5 were frequently consulted in the field during excavation to aid in the identification and correlation of floors. The

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Profile, West baulk  
 Unit 11 and North Trench (Units 12, 13, and 14)  
 Structure B4  
 Cahal Pech, Cayo District, Belize  
 June-August 2012



**Figure 1.** Profile drawing of the west baulk of Unit 11 and North Trench (Units 12, 13, and 14) on Structure B4.

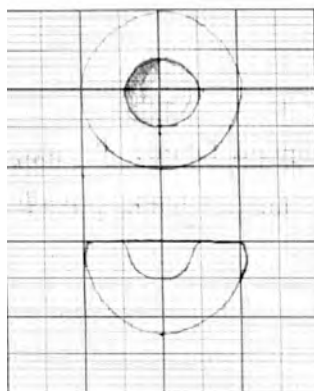
objectives of excavating Unit 11 were to increase sample size of the Cunil-phase assemblage—ceramic and other artifacts—and to collect radiocarbon samples throughout the stratigraphic sequence.

The modern ground surface is the consolidated surface that corresponds to Floor 3, the third-to-the-last construction phase. A unit datum was established 50 cm above the modern surface from which all elevations were taken. About 50 cm below Floor 3, a thin and partially preserved floor—Floor 4—was uncovered. Floor 4 was preserved in an east-west band in the center of the unit with portions of the floor continuing in the northeastern and southwestern corners. Artifacts found below Floor 4 include a human tooth, figurine fragments, freshwater (*jute*) and marine (bivalves) shell, as well as a greenstone celt. Among the ceramic sherds, a colander fragment was collected. The next floor, which had been labeled Floor 5 in Units 4 and 5, was recognized as a floor only after examination of the baulk based on the presence of ballast at 44 cm below Floor 4. This is not surprising as this floor was poorly preserved in the proximal Units 4 and 5 (Awe 1992:115, 125).

At 2.55–2.58 m below datum, or 1.10 m below Floor 4, an intact floor that covered the entirety of the unit was found, and about 4 cm below it, another plaster floor was exposed, which was partially preserved only in the southwestern corner (the rest of the unit contained small—10 cm in size—stones of the underlying construction fill. These two floors were labeled as Floors 5a and 5b. Based on the relative depth, the poorly preserved Floor 6 of Units 4 and 5 likely corresponds to these floors even though only one floor is reported from the earlier excavations (Awe 1992:115, 125). Half a dozen figurine fragments and several centrally perforated conch discs were collected. The majority of ceramics date to the late Middle Formative Mars Orange and Jocote Groups.

Floor 6, found 12 cm below Floor 5b, was a very well-preserved plaster floor, covering the entirety of the unit. Floor 6 had been re-plastered, as two plastered floors (Floors 6a and 6b, each about 4 cm thick) were found one on top of the other with very little matrix and only a few sherds in between the two floors. At the northern end of the unit, the plaster floor curved downward about 28 cm to form a step, which was also observed in Unit 5. The step is composed of three courses of stone. In Units 4 and 5, a plaster floor was found atop which this low platform had been constructed, but this lower floor was not present in Unit 11. Other observations made in Units 4 and 5 were not confirmed in Unit 11. The platform floor in Units 4 and 5 was burnt, but not in Unit 11 (Awe 1992:116). A low, two- to three-course high wall was found at the southern end of Unit 4. The postholes that were found in these units were also not encountered in Unit 11.

Floor 7, a well-preserved plaster floor, was exposed about 44 cm below Floor 6b and 2.86 m below Floor 3. No remains of the apsidal structure associated with this floor that was uncovered in Unit 4 were found in Unit 11, but this is probably because the unit was located to the southwest of the structure. The ceramics from the level below Floor 7 consist of types from the late Middle Preclassic including Savana Orange, Reforma



**Figure 2.** Half-sphere-shaped stone with a central conical depression, found below Floor 7. Scale 1:1.

Incised, Jocote Brown, and possibly Chunhinta Block. Other artifacts include chert flakes, freshwater and marine shell and other faunal remains, and a centrally perforated conch disc. A particularly curious artifact was recovered, though its function is elusive: a half-sphere-shaped stone with a central conical depression. The well-polished, cream-colored stone object measures 2 cm in diameter (Figure 2).

About 64 cm below Floor 7 and 3.30 m below Floor 3, a thin layer of white *sascab*-like matrix with no artifacts was encountered with a grey-colored loose matrix with medium aggregates (20 cm in size) below it. Upon removing this matrix, a seven-course high wall measuring 0.66 m high was uncovered oriented east-west in the southern end of the unit. The white matrix is most likely the weathered plaster floor that capped the platform. As the wall was being exposed, at about 24 cm below the uppermost course of the east-west wall, another wall running perpendicular to it was uncovered. The second wall is oriented north-south and is three to four courses high (0.4 m high); its lowest course is lower than the east-west wall. No plaster floors were found associated with either wall, but a distinct matrix change was observed below these walls. The matrix underlying these architectural features consists of a compact, dark brown clay and coincides with that found in Unit 5 (notes in original profile drawing of Unit 5). The wall oriented east-west was also found in Units 4 and 5, and associated plaster floors were found at the base of the wall (Floor 9 in Awe 1992) as well as atop the raised platform. Below these walls, a small, red sphere object made of an unidentified hard stone was found.

About 10–15 cm below the basal course of the aforementioned seven-course-high wall, a partial line made of a single course of stones was observed in the baulk of the unit which coincides with the cobble floor that was found in the north trench (see below). At the time of excavation, the stones were not recognized as an architectural feature. Although no comparable feature was recorded in Units 4 and 5, it may relate to the series of floors (Floors 10a, 10b, 10c in Awe 1992) documented in the earlier excavations.



Less than 10 cm below the partial line of stones and about 30 and 40 cm below the basal course of the aforementioned seven-course-high wall, two poorly preserved floors—Floors 9 and 10—were encountered with only a few sherds and marine shells found in the matrix between the two floors. They are likely the same two floors found in Units 4 and 5 (Floors 11 and 12 in Awe 1992). Atop Floor 11 of Unit 4, a building platform was found in the eastern quarter of the unit, and the finding of a support beam fragment and pole impressions suggests that a wattle-and-daub structure once stood atop the floor (Awe 1992:120-121, Fig. 23). No comparable evidence was recorded in Unit 11, but this absence of architectural features is probably because floors farther away from building platforms tend to preserve less. In addition, a thick lens of charred and carbonized materials from Unit 4 indicates a possible destruction of the building by fire.

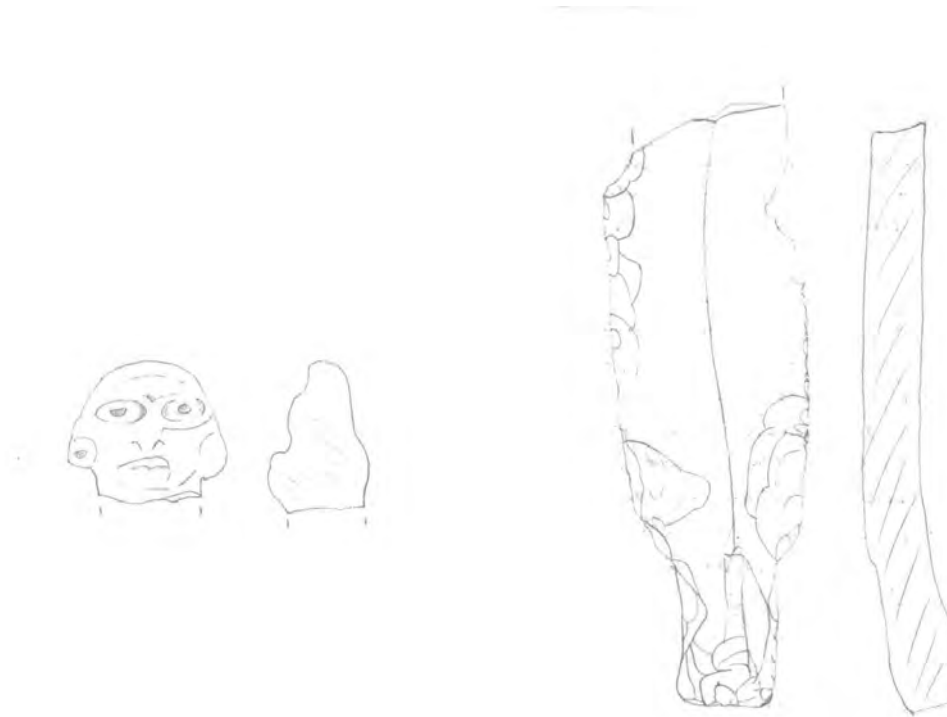
About 30 cm below Floor 10 and 4.85 m below Floor 3, the matrix changed to a compact, white marl. This likely corresponds to Floor 13 in Unit 5, where postholes were observed in the tamped marl surface and steps were crudely cut in the incline leading up to the platform—the earliest construction phase of Structure B4 (Awe 1992:130). Very little cultural material was found in this level, including a few sherds, chert, shells, and an animal bone in addition to a marine shell disc (1 cm in diameter). This level continued for about 1.3 m when the matrix changed to a densely packed grey clay with yellow-brown clay inclusions. No cultural materials were found in this final level.

#### **North Trench (Units 12, 13, and 14)**

The north trench was opened as a northern extension of Unit 11, and was divided into Units 12, 13, and 14 to facilitate documentation of cultural features. The trench was also 1.5 m wide east-west; along the north-south axis, Unit 12 measured 2 m long, and Units 13 and 14 were each 3 meters in length. Bedrock was reached only in Unit 14, because in the other units, architectural features from earlier phases were encountered which hindered further excavation without dismantling them. Unit 12 overlapped with earlier excavations, namely Units 1 and 2 in the southwestern and northeastern corners of the unit.

The north trench helped to clarify and provide a better picture of the architectural sequence of Structure B4. The first floor (Floor 4) found below the modern surface, ie. Floor 3, in Unit 11 was also found in Unit 12. This probably only represents a construction floor and not an architectural phase. Several additional construction floors were encountered in the northern part of Unit 12 and the southern half of Unit 13.

The next architectural floor, Floor 5, which was not preserved at all in Unit 11, was present in Units 12 and 13. At the juncture of Units 11 and 12, a low step was observed. An overhang was excavated into the western baulk to follow a corner that turned to the west. The small tunnel revealed an inset corner, an architectural detail that was continued in the subsequent phase associated with Floor 3. At the base of the low step, a landing continues for about 2.6 m, at which point a series of six steps leads to a

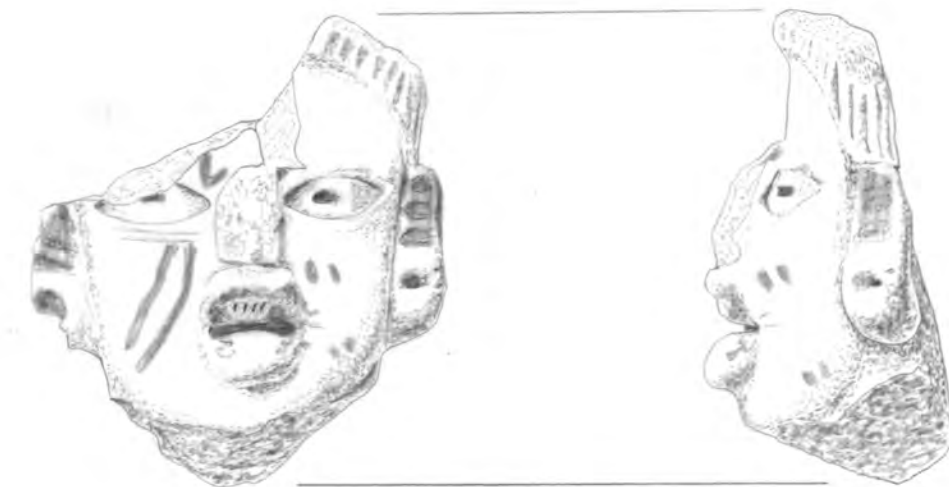


**Figure 3:** Sketch drawings of a figurine head and a stemmed, chert point recovered from below Floor 5 in North Trench. Chert point is approximately 11.5 cm in length.

smaller landing of about 1.7 m. Three low steps lead down to the plaza surface. A sherd scatter was exposed on the steps and consisted of Jocote Brown body sherds and Savana Orange sherds that are possibly from a jar. A small, figurine head and a stemmed, chert point was recovered, its tip broken (Figure 3). Another figurine head was recovered, which contained remnant of red paint to indicate facial markings (Figure 4).

Excavations of Unit 11 and the north trench revealed that the general form of the structure from this phase is mirrored in the subsequent construction associated with Floor 3. Artifacts found below this floor include: 2 polished non-jadeite greenstones (one polygonal flat piece and the other is an oblong piece with a triangular cross section), 3 perforated shell discs, 1 perforated vertebra, 3 obsidian blade fragments, 1 chert stemmed point fragment, 5 figurine fragments, 1 ceramic roller stamp fragment, and 2 slate pieces.

The next floors labeled Floors 5a and 5b found in Unit 11 were not encountered in the north trench. No architectural features associated with these two floors were uncovered, thus it remains unclear whether these floors represent a distinct construction phase or re-plastering events related to the underlying Floors 6a and 6b. The latter scenario may be possible since the northern extent of the floors coincides with the edge of the platform or step associated with Floors 6a and 6b. Floors 6a and 6b were well preserved in Unit 12 as well as in the northern half of Unit 13 and in the southern end of Unit 14. As in the subsequent architectural phase described above, the summit platform



**Figure 4:** Drawing of a figurine head with red facial paint, recovered from below Floor 5 in North Trench.

has a single step, at the base of which lies a landing that measures about 2.65 m. Four steps lead downward to the plaza surface. During the re-plastering event that occurred during this phase as evidenced by the double floor layer, the building was enlarged at the base of the structure by adding a 1-meter wide landing and a single step that dropped down to the plaza surface.

Floor 7 was only found in Units 11 and 12. In the southern end of Unit 12, a single-course-high wall was exposed, and the plaster floor lipped up to this wall. The floor, however, continues in Unit 11, suggesting that the building platform sat atop the plaster floor. A black matrix covered the poorly preserved Floor 7, which ends abruptly in the northern one-third of the unit.

In Unit 12, below Floor 7, a 1.1-meter high wall consisting of 11 (possibly 12) courses of stone was uncovered. It runs east-west and remnants of stucco were observed on the northern face of the upper course. No associated floor was found at the base of this wall. Floor 8, which runs under the wall, was only identified after excavation.

About 50 cm below Floor 7, in the northern quarter of Unit 12 and southern third of Unit 13, three steps were encountered. It is unclear whether the top step that was uncovered represents a platform surface or whether the steps continued higher. Floor 7 may have been associated with these steps, but it seems more likely that Floor 7 was an earlier, lower platform surface that had steps associated with Floors 6a and 6b.

Below Floor 8, flat stones were exposed that initially appeared to be a wall, but in fact, were found throughout the unit. With the excavation from Unit 11 and the rest of the north trench (but not identified in any of the excavations from past years), it appears that these stones form a cobble floor. Excavation of Unit 12 was terminated at this point.

Excavation of Unit 14 continued down to bedrock. The cobble floor that was revealed in Unit 12 was also uncovered in Unit 14. The difference was that the cobble floor in Unit 14 consisted of two to three courses of stone rather than a single layer of stones as in Unit 12. Approximately 10-20 cm below the cobble floor, a tamped earthen floor was uncovered. This coincides with Floor 9 found in Unit 11. The brown clayey matrix found in Unit 11 at a slightly higher elevation—almost 70 cm higher—was found about 20-30 cm below the tamped floor. Another difference with Unit 11 was that, in Unit 14, beneath the brown clay was construction fill (about 35–50 cm thick) atop the white marl stratum. The grey clay found below the marl level in Unit 11 was not present in Unit 14. Bedrock was reached at a slightly higher elevation than in Unit 11 at about 6.05–6.25 m below Floor 3.

## **CONSTRUCTION HISTORY OF B4**

Excavations of Structure B4 in 2012 produced additional data to confirm the previously identified construction sequence—the longest at Cahal Pech—and occupation history of the building. Ten architectural phases were identified this season, which includes two additional phases that had not been reported before (see Figure 1). The terminal and penultimate are not included in this count and are not described here because the consolidated modern surface coincides with the third phase. In the last four phases (B4-7<sup>th</sup> through B4-10<sup>th</sup>), the building had steps on the north side, while the two previous phases (B4-5<sup>th</sup> and B4-6<sup>th</sup>) consisted of a high platform without any evidence of steps. The two additional phases that were identified this season consist of a one-meter high platform and a cobble floor that was found below Floor 8. Some inconsistencies were also noted with previously documented floors, the relationship of which remains unclear, namely the cobble floor and the floor referred to as Floor 10 in earlier excavations. A possible clarification, or at least an alternative interpretation of a previously identified architectural phase, was also made; this refers to Floors 5a and 5b found in Unit 11, which had been identified as a distinct architectural phase whereas it may have been a renovation of the platform surface.

The earliest architectural phase—B4-1<sup>st</sup>—was documented in Unit 11 and the north trench and is represented by a tamped marl floor (Floor 11). Based on excavation results from Unit 5 to the west of Unit 11, Floor 11 in Unit 11 was likely the platform surface that had been scraped and leveled to support a perishable structure, the remains of which were not recovered from Unit 11. The floor found in Unit 14 is at a lower elevation, about 1 m below that found in Unit 11, suggesting that the perishable structure stood atop an elevated platform.

The next two phases, B4-2<sup>nd</sup> and B4-3<sup>rd</sup>, are only represented by tamped surfaces (Floors 9 and 10). Although postholes were documented in earlier excavation units, we encountered none. The platform floor corresponding to B4-4<sup>th</sup> (above Floor 9) was neither encountered in Unit 11 nor in Unit 14. Rather at the corresponding level was a cobblestone floor (which we label as B4-4<sup>th</sup>). It may be that the cobblestone floor was the plaza surface associated with the raised platform found in Unit 4 to the east of Unit 11. The cobblestone surface may also be associated with a comparable floor uncovered in the plaza excavations north of Structure B5; however, the cobblestone floor found in Units 11 and 14 of Structure B4 were at an elevation 90 cm lower than that found in the plaza excavations (see Peniche, this volume).

The fifth architectural phase (B4-5<sup>th</sup>) consists of a 0.7 meter-high raised structure or platform, which was also uncovered in Units 4 and 5. A perpendicular wall found in Unit 11, however, was not documented in earlier excavations, and may be a modification made to the building. The associated plaster floor at the base of the raised building was not found in Unit 11 but was observed in Unit 12.

The next architectural phase (B4-6<sup>th</sup>)—not identified in earlier excavations—is represented by a 1.1-meter high platform. The construction from this architectural phase built over and greatly enlarged the earlier building, both horizontally and vertically. The facing stones of this wall were placed 1.8 m north of the facing stones on B4-5<sup>th</sup> and the platform surface was at least 0.6 m higher.

In the next phase (B4-7<sup>th</sup>), the floor (Floor 7) that covered the construction of B4-6<sup>th</sup> likely altered the overall form of the building, providing the basic architectural template that would be mirrored in subsequent phases for the next millennium. As documented in Unit 4, the base of a perishable structure was found, consisting of a single course of cut stone. This structure is likely the western structure of a pair of structures that sat atop the platform; the eastern building was apsidal in shape (Awe 1992:136). Although inconclusive at this point, a set of a minimum of three steps may have graced the northern face of the platform. The plastered platform, the surface of which was well preserved, stood approximately 1.5 m high.

The next three phases generally have the same architectural form. The top of the platform surface of B4-8<sup>th</sup> stood approximately 2 m above the plaza floor. The building had a platform at its summit, at the base of which was a landing with four steps descending down to a shorter landing and a single step before reaching the plaza floor. At the base of the bottommost step on the plaza floor, a posthole (32-38 cm in diameter) was observed, which had been capped by a stone—likely covered when the overlying floor was constructed. During this architectural phase (B4-8<sup>th</sup>), many modifications were made, including re-plastering events. The summit platform and landing below it were re-plastered with very little fill in between the two plastered floors (Floors 6a and 6b). The summit platform may have been elevated 20 cm (Floor 5a) and later re-plastered (Floor 5b), raising the platform surface an additional 10 cm. These latter two floors had been assigned a distinct architectural phase, but even in the earlier excavations, no evidence of architectural features were found (Awe 1992:137), suggesting that they may simply be

re-plastering episodes of B4-8<sup>th</sup>. Another modification made to this building was at the base of the structure, raising the plaza level and eliminating the building's bottommost step.

B4-9<sup>th</sup> (represented by Floor 5) stood approximately 2.5 m above the floor of Plaza B. As in the previous phase, the B4-9<sup>th</sup> building had a low platform at its summit with two series of steps that led down to the courtyard. The platform surface at the summit was raised about 1.2 m above the last modified plastered surface of B4-8<sup>th</sup>, and the plaza floor was elevated about 0.5 m. At the level of the summit platform, atop the top landing, an inset corner which continued in a westerly direction was uncovered. This architectural detail was retained in the subsequent phase associated with Floor 3 (B4-10<sup>th</sup>).

The tenth architectural phase (B4-10<sup>th</sup>, represented by Floor 3) consists of a 3-meter high building faced with a central stairway that mirrors the underlying previous phase. Perhaps due to the height of the building, several construction floors were detected near the summit including Floor 4 (the others were only recognized after excavation and were not given floor numbers).

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## EXCAVATIONS IN PLAZA B, CAHAL PECH

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### INTRODUCTION

Cahal Pech is a medium-sized Maya center that was strategically placed approximately 2 km south of the convergence of the Macal and Mopan Rivers in the upper Belize Valley. The site core includes an acropolis located in the crest of a steep hill and covers approximately one hectare (Healy et al. 2004). Of the seven plazas that constitute the acropolis, Plaza B represents the largest plaza (approximately 50 x 30 m), which is bordered to the east by Structures B-1, B-2 and B-3, to the south by Structures B-4 and B-5, to the north by Structures B-6 and B-7 and to the west by Structure A-2 (Awe 1992).

Several explorations have been conducted in the past two decades across Plaza B. Based on test pits placed across Plaza B, it has been established that this plaza was the earliest place of architectural construction, built during the Cunil phase of the Middle Preclassic period (Cheetham 1996; Healy et al. 2004). The eight residential units that composed the Cunil village varied in their degree of elaborateness and artifact content but the lack of a sharp differentiation between these households suggests that this population was mainly egalitarian, although with some emergent social differentiation (Cheetham 1996, 1998). During the early facet of the Kanluk phase, public structures and formal plazas appeared (Awe 1992; Cheetham 1996, 1998; Garber and Awe 2008; Healy et al. 2004). Exotic goods such as marine shell, volcanic ash, jadeite and obsidian were imported to the site (Healy et al. 2004). The late facet of the Kanluk phase witnessed an increase in population and construction activity in the core of Cahal Pech (Awe 1992; Cheetham 1996; Healy et al. 2004). These events correlate with technological changes in the obsidian artifacts (Awe and Healy 1994), specialized production of shell beads (Hohman 2002) and an increased presence of hand-made figurines (Zweig 2010).

As Garber et al. (2005) has stated, these test pits in Plaza B have yielded valuable information on habitation and utilization of the natural hilltop but this strategy is not adequate to fully assess architectural features, activity areas, ritual activities and community organization. In an effort to help clarify this utilization and achieve a more comprehensive view of the architectural variability, a north-south trench (52 x 1 m) was excavated over five field seasons from 2004 to 2008. Several extensions were placed east and west of the trench to explore some architectural features. Beneath several stucco

plaza floors (Late Classic Floor 1, Protoclassic Floor 2, Late Preclassic Floors 3a and 3b, and Middle Preclassic Floors 4a and 4b), archaeologists uncovered an amazing sequence of Kanluk and Cunil architecture. Based on the descriptions presented by Garber et al. (2005, 2006, 2007, 2008, and 2009), the finds seem to divide Plaza B into a northern and a southern section since there is an approximately 15-meter space—perhaps the crest of a hill—in which no architectural features were reported. The northern section comprises the area explored by Operations 1a, 1b, 1c, 1e, 1k and 1g and their east and west extensions, while the southern section consists of Operations 1r, 1s, 1t, 1u and 1v.

Three consecutive constructions Platform S, Platform R and Platform Q (registered in Op. 1x) were the first buildings placed in the northern section of Plaza B. These structures could have been contemporaneous to Platform C, made of hard, whitish yellow, tamped marl. This surface was covered by Platform B, a 17.7-meter square platform made of cobble, flat limestone slabs and tamped marl. Platform B could have been contemporaneous to Platform A—found within Op. 1a—and perhaps Platform O and Platform P (in Op. 1y). Platform N and Platform M were next in the construction sequence of the northern section of Plaza B since they were located underlying Platform B in Op. 1x.

In the southern section, the first architectural feature is represented by a modification of the bedrock in which the slope was cut to build a step. Later, one platform made of small stones and surfaced with tamped marl was constructed south of the modified bedrock. Then, a platform made of large stones was placed on top of the tamped-marl and platform made of small stones. This large-stone platform was later covered by Platform J. These four architectural features were located in the southern section of the southernmost operation, Op. 1v. Later, two platforms were built—Platform G and Platform K—which could have either been contemporaneous or consecutive in the sequence. Platform K was a construction whose surface was made of cobbles and marl. It was reported in Op. 1u and 1t, where its northern limit was registered. Approximately 1.80 m north of this platform and slightly higher, Platform G was encountered. This platform was built with irregular stones set in a dark grayish brown clay matrix. The platform was reported in Op. 1r, 1s and 1t where its southern limit was registered. Platform I was next in the sequence. This platform had a light-brown, marl surface located in Op. 1t, 1u and 1v. Lastly, Platform H was built. This platform had a marl surface delimited by a stone wall. It was reported in Op. 1u and 1v, where its southern limit was uncovered.

Both the test pits and the trench excavations have permitted to collect compelling information about Middle Preclassic occupations at Cahal Pech, especially pertaining to the Cunil phase, while the Kanluk phase has been overlooked. In addition, neither the test pits nor the trench yielded representative data that comes from a large block excavation, which is necessary to fully assess architectural variability and compare social spaces. Thus, in order to obtain adequate data to evaluate Kanluk-phase architectural variability, during the summer of 2011, three exploratory test pits were placed on the eastern and southern sections of Plaza B with the goal of locating additional Kanluk-phase architecture. In addition to confirming the wider spatial extent of the Kanluk-phase

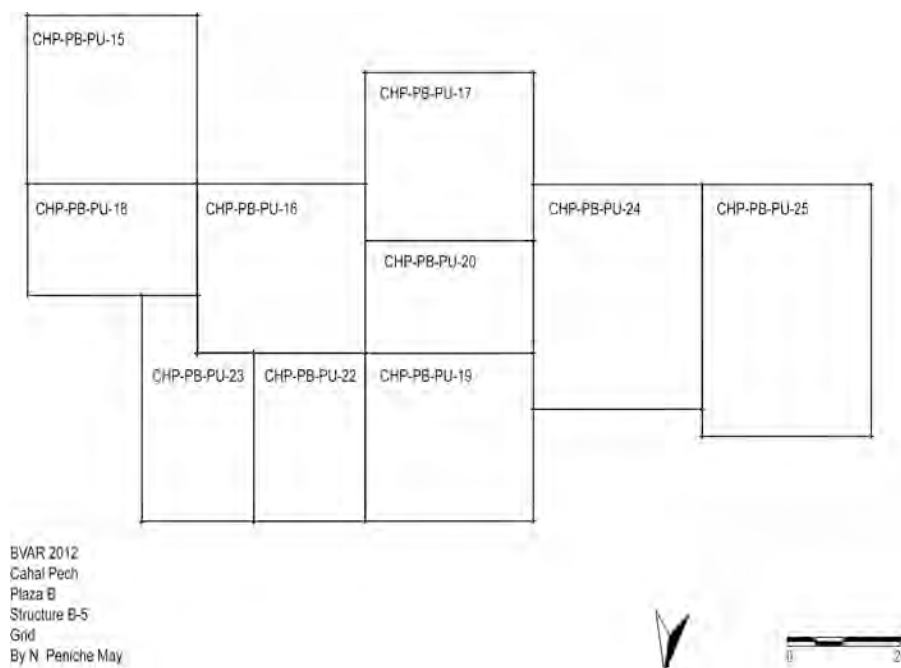


Figure 1. Location of the excavation units placed at the southern edge of Plaza B.

architecture, we also identified previously unknown substructures dating to this period. To further explore these findings, in 2012, I excavated near the southeastern edge of Structure B-5 (on the southern side of Plaza B), exposing a total area of 88 m<sup>2</sup>. This report describes the results of these excavations.

## METHODOLOGY

Three test pits were explored on the eastern and southern sections of Plaza B, resulting in the identification of substructures that have been previously unknown. To further explore these findings, in the 2012 field season, a total area of 15 x 9 m was exposed. This surface was divided into excavation units to facilitate spatial control during excavation (Figure 1). Excavations were conducted using both cultural and arbitrary levels. Context registration followed standards established by the BVAR project (BVAR Supervisor's Manual n.d.). Artifacts were collected and separated based on unit, level, lot and context. Detailed descriptions of the units and lots are included as an appendix to this report. All matrixes were screened through ¼-inch mesh. Collected artifacts are in the process of being analyzed and the results will be discussed in future reports.

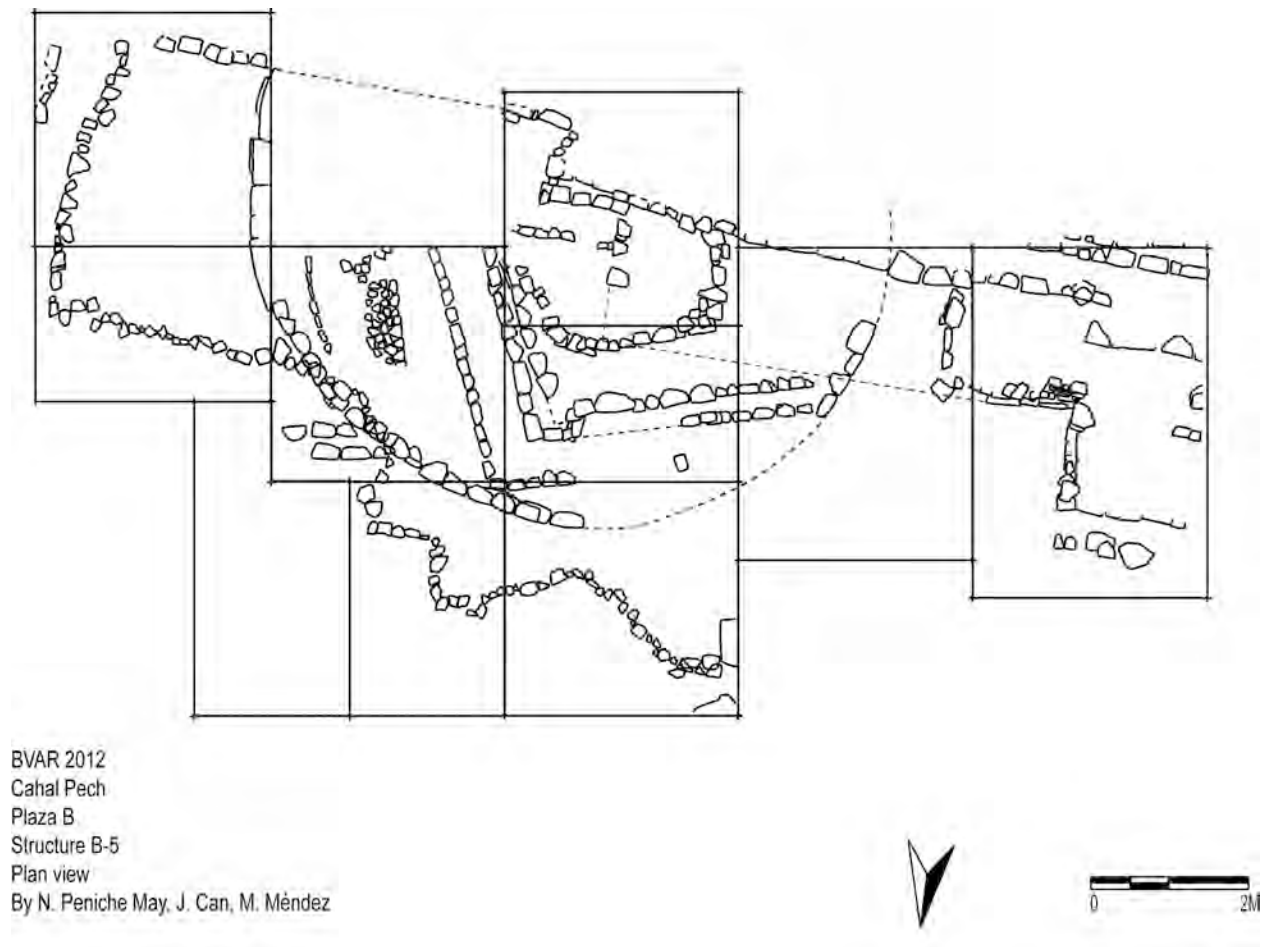


Figure 2. Plan view of the excavated area at Plaza B with the different architectural manifestations uncovered during 2012.

## EXCAVATIONS AT THE SOUTHERN EDGE OF PLAZA B

During the 2012 field season, a total area of 88 m<sup>2</sup> was exposed (Figure 2). As a result, we uncovered an architectural sequence that includes seventeen construction stages, extending from the Cunil (1200–900BC) to the Tiger Run phases (AD 600–AD900). This excavation showed a more complex construction sequence than that established by Cheetham (1996), who explored this area in his Test Pit 10 (Cheetham 1996:15, Fig. a). Ceramic analysis is not yet completed, therefore, the dating of the different construction stages was done using Cheetham’s (1996) architectural chronology. Cheetham (1996) dated each construction stage via ceramic association.



Figure 3. Remains of Cunil-phase architecture in EU CHP-PB-PU-19.

## **Cunil Phase**

### *Stage 1*

Based on the data recovered in the excavation units CHP-PB-PU-16, CHP-PB-PU-17 and CHP-PB-PU-19, we established that the earliest construction stage in the excavated area was a surface made of tamped marl. This marl surface was completely leveled and it was perhaps the original surface of the hilltop.

### *Stage 2*

In CHP-PB-PU-19, we reported an alignment of uncut stones. These stones were placed on top of the tamped marl surface. This alignment may have been the remains of a Cunil sub-structural platform (Figure 3). Nevertheless, we could not establish its dimensions and morphological characteristics.

### *Stage 3*

Subsequent to Stage 3, this possible sub-structural platform was filled using a mix of clay and decomposed limestone. This surface was raised about 30 cm and may have been the patio of another Cunil sub-structure. This building was achieved modifying the slope of the natural hilltop. Three steps were constructed: the two inferior steps were carved into the bedrock and covered with plaster, while the third step was built adding a cut stone. These steps lead into the leveled surface of the hilltop. Evidence of this



Figure 4. Remains of a substructural platform resting on Floor 16.

structure was not uncovered neither in the southern nor the eastern sections of the excavated area.

#### *Stage 4*

The next cultural level was represented by a tamped earth surface that was named Floor 17 in CHP-PB-PU-16 and Floor 15 in CHP-PB-PU-19. This surface was made of small, yellow stones and tamped earth. Cheetham (1996) named this floor Floor 9 and stated that this surface was part of a patio surrounding Structure U10-2, a Cunil-phase sub-structural platform. This platform was made of cobble/flagstones and may have been apsidal or circular in form. The presence of buildings in the area where CHP-PB-PU-17 was excavated could explain why no floor was uncovered in this excavation unit.

#### *Stage 5*

Floor 16 was uncovered in CHP-PB-PU-16. It consisted of a surface made of tamped earth and small yellow stones. Resting on this floor, we uncovered the remains of a sub-structural platform (Figure 4). This platform was documented by a double wall (50 cm thick), which was built with roughly cut limestone blocks.

#### *Stage 6*

The sub-structural platform was completely covered by Floor 15, the next floor in the sequence. This tamped earth surface was only documented in CHP-PB-PU-16. This was the last construction stage dating to the Cunil phase.





Figure 5. Feature 19 uncovered in EU CHP-PB-PU-17.

## **Kanluk Phase**

### *Stage 7*

At some moment during the Kanluk phase, the area was filled in order to raise its elevation. Gray, sandy clay was used to achieve this purpose. On top of this fill, an apsidal sub-structural platform was built (Feature 19). The total dimensions of this building are unknown because we only uncovered a section of the sub-structure (the sub-structure lay partially beneath the Classic-period Structure B-5). Nevertheless, the apsidal platform was at least 2.40 m (east-west) by 1.70 m (north-south) and 0.30 m in height. The retaining wall of this building was made of four courses of limestone blocks, whose faces were roughly cut and shaped (Figure 5).

### *Stage 8*

The next stage was characterized by the construction of a stucco floor, Floor 14. This plaster surface was uncovered in both CHP-PB-PU-16 and CHP-PB-PU-19. Nevertheless, it was not found in the test pit explored in CHP-PB-PU-17, the area where the buildings were placed. Floor 14 may have been the patio associated with Feature 20, the first rectangular platform constructed in this area (Figure 6). The appearance of this rectangular platform, along with the presence of a stucco floor, is significant for the political history of Cahal Pech. Archaeologically, the emergence of social inequality in the Belize Valley in general has been mainly suggested by the appearance of rectangular structures that are interpreted as the first public structures (Garber et al. 2004; Healy et al. 2004). Nevertheless, an analysis of the archaeological artifacts found in this building is needed in order to confirm that Feature 20 was in fact one of the first public buildings at Cahal Pech.

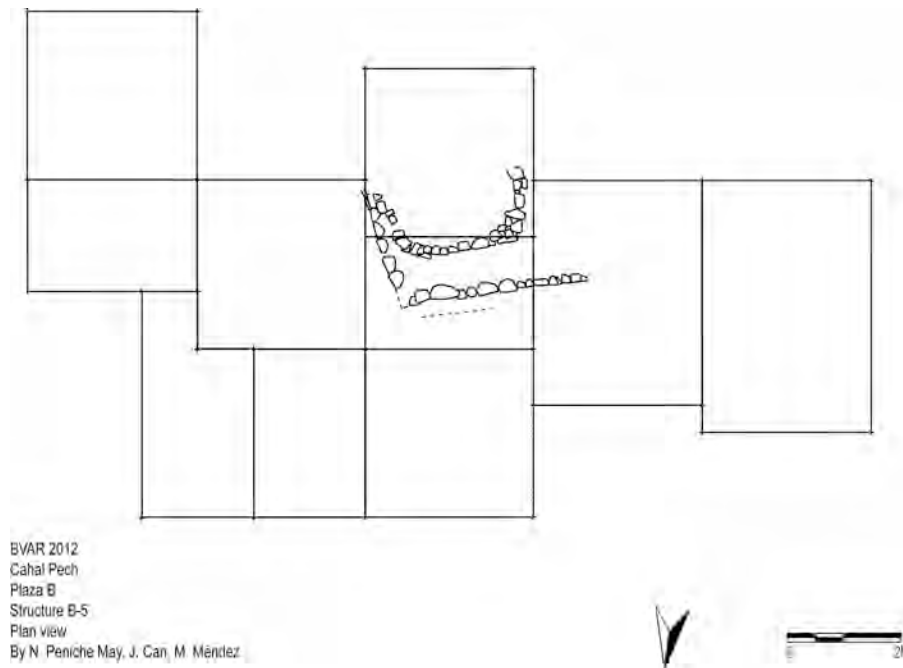


Figure 6. Remains of the apsidal building (Feature 19) and rectangular platform (Feature 20).

The stones used to build the retaining wall of Feature 20 were better cut and their dimensions more regular than the stones used in Feature 19. The total dimensions of this sub-structural platform are unknown because the building was dismantled in pre-Columbian times and part of the platform was located beneath the Classic-period Structure B-5. Nevertheless, a section of 3.16 m (east-west) by 2.20 m (north-south) was exposed. Due to the fact that we only recovered two courses of stones, Feature 20 was only 0.14 m in height. Nevertheless, this building must have been higher, at least 0.40 m in height since it should have completely covered Feature 19, the apsidal structure. It is interesting to note the association of a rectangular platform with a stucco floor. Because ceramic analysis ongoing, at this moment we cannot establish if this event occurred during the early or late facet of the Kanluk phase.

Floor 14 was resurfaced by another stucco floor, Floor 13. This stucco floor was delimited by an alignment made of small slabs, which were resting on fill on top of Floor 14. The small slabs were only recovered in CHP-PB-PU-16. The function of these slabs was not determined nor was their association with any building (Figure 7).



Figure 7. Small slabs delimiting Floor 13 in EU CHP-PB-PU-16.

### *Stage 9*

The next construction stage corresponded to the construction of another rectangular platform that covered Feature 20 and Feature 19. This rectangular platform had an exterior terrace, whose retaining wall was built with smaller stones (0.20 m in length) than the platform's retaining wall (0.30-0.40 m in length). Between the platform and the terrace, there was a space of 0.50 m filled with irregular, uncut stones (Figure 8). Cheetham (1996) suggested that the floor of this terrace was a cobbled surface. Nevertheless, the stones were too irregular to be a surface suggesting that they were part of a core. Again, the total dimensions of this sub-structural platform are unknown because it was dismantled during pre-Columbian times. In addition, part of the building was beneath the Classic-period Structure B-5. We can state, however, that this rectangular platform may have been 0.25 m in height, with at least three or four courses of cut stones. We uncovered only two courses of stones making up the terrace's retaining wall but it may have had at least one more on top to cover the core. A patio with a plastered surface, Floor 12, was associated with this building. The lime plaster connected the basal courses of the platform to the plaza floor. The fill below Floor 12 consisted of dark, sandy clay with organic materials. This fill was a midden-like deposit. A large amount of materials were found in this context, such as ceramic, shell beads, faunal remains and figurine fragments. Cheetham (1996) dated this rectangular platform to the early facet of the Kanluk phase.

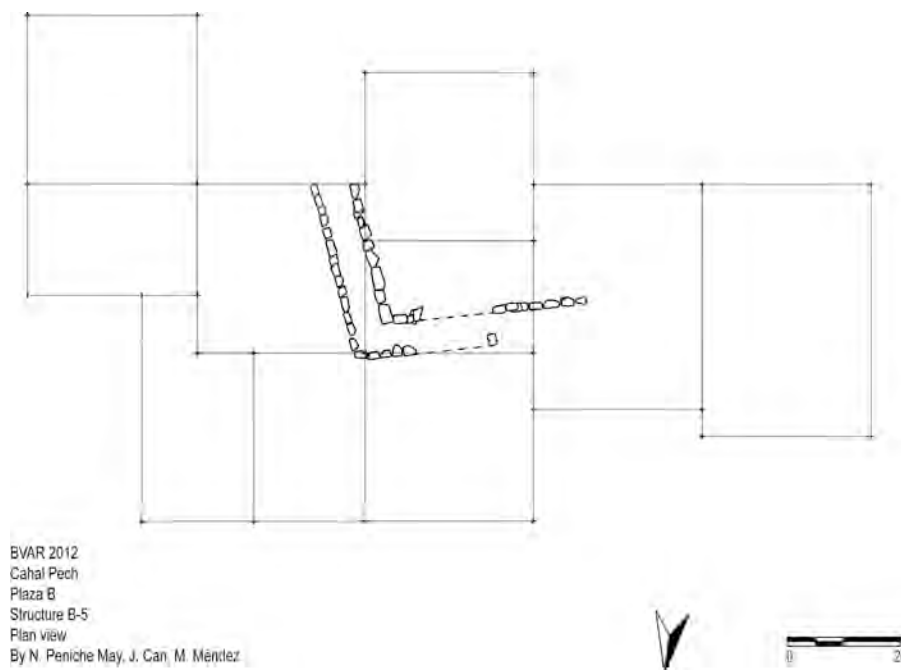


Figure 8. Rectangular platform (Feature 21) with its terrace (Feature 22).

### *Stage 10*

The next construction stage was represented by Feature 12, a circular platform that was approximately 8.50 m in diameter. Feature 12 adds to the sample of round platforms that have been discovered at Cahal Pech—one in the site core, three in the peripheral settlement groups (Aimers et al. 2000) and one in the eastern ballcourt uncovered in 2012 (Ishihara-Brito, this report). These structures have been dated to the late facet of Kanluk phase (650–300 BC). They have been interpreted as having a ritual function (Aimers et al. 2000; Powis et al. 1996).

It was at the moment of Feature 12's construction, when the previous rectangular platforms may have been dismantled. Feature 12 covered the remains of Feature 21 and 22, the rectangular platform and its terrace. This round platform was resting on fill on top of Floor 12. During its construction, a vessel was deposited under the foundation. The round platform's retaining wall consisted of plastered cut stones (0.30 m in length). The plaster that covered the retaining wall was 0.10 m thick. A 1-meter long alignment was constructed off the northeastern end of this round platform. This alignment could be the remains of either a step, a small patio or a subsidiary platform (Figures 9 and 10). If the latter, then, Feature 12 may be considered as a "keyhole-shaped round structure" (Aimers et al. 2000). No original floor surface capping it has been found. Neither postholes nor the remains of a masonry superstructure were found at its summit. This would conform with the architectural tradition at Cahal Pech. According to the literature, round structures at this site were exposed platforms (Aimers et al. 2000).

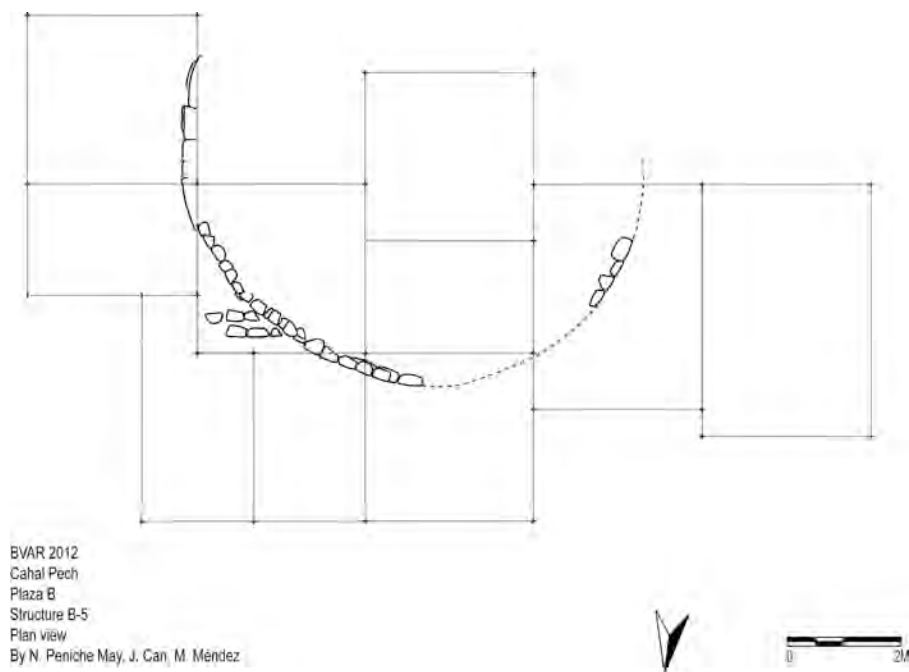


Figure 9. Round platform found at the southern edge of Plaza B.



Figure 10. Excavated area showing several architectural manifestations uncovered: Feature 19, Feature 20, Feature 21, Feature 22 and Feature 12.

A patio surface made of tamped earth (Floor 12b) was associated with this structure, but this could have been constructed later in the history of the round platform. This is because the tamped earth floor was covering about 0.10 m of the plastered basal stone of the round platform as well as Floor 12. The round building was also disturbed by the test pit explored by Cheetham (1996) but it was also dismantled in pre-Columbian times. After its dismantling, it was covered by sandy clay, except in the northern section where dark-gray, sandy clay was reported, which was part of the midden-like deposit mentioned above

### *Stage 11*

Almost at the end of the Kanluk phase, Feature 12 was completely covered by another sub-structural platform, which was dated by Cheetham (1996) to the late-facet Kanluk phase. The main characteristic of this platform consisted of its cobbled/flagstone floor. Cobbled/flagstone platforms have been identified as Middle Preclassic architecture. For instance, Garber et al. (2008) reported evidence of several cobbled platforms dating to this period. The cobbles were regular in their dimensions and were placed really close together. The total dimensions of the cobbled/flagstone platform were not established. We only uncovered its northeastern section, exposing an area of 5.50 m (north-south) by 11.80 m (east-west). The rest of the platform lies beneath the Classic-period Structure B-5 or under the unexcavated area of Plaza B. It is interesting to note that this platform was irregular in shape (Figure 11). No postholes or superstructure were found. If this cobbled/flagstones platform held a superstructure, this may be covered by Structure B-5. North of this platform and partially covering it, we found a plaster surface (Floor 11), which could have functioned as the patio of the cobbled/flagstone platform. Fill below Feature 11 and Floor 11 was different. Beneath Feature 11 and outside Feature 12, we found sandy clay, gray in color mixed with medium-sized stones. Inside Feature 12 no stones were reported. Most interesting, below Floor 11, we discovered dark gray matrix—sandy clay mixed with organic materials—which was interpreted as a midden-like deposit because we found a large amount of materials, such as ceramic, shell beads, faunal remains and figurine fragments.

## **Xakal and Madrugada Phases**

### *Stage 12*

The cobbled/flagstone platform and its plastered patio was completely covered by successive plaster floors, which may have been the surfaces of Plaza B. Stucco floors 10 through 6 may be considered as part of the same construction stage. Minimal ballast deposit separated the different floors and some floors were not distinguished in some areas.



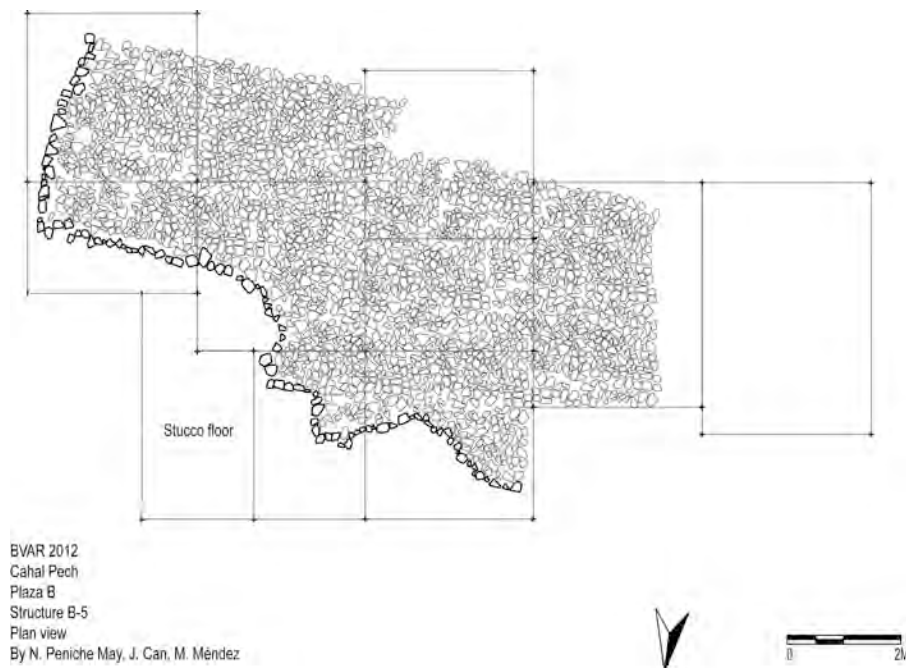


Figure 11. Cobbled/flagstone platform dating to the late facet of the Kanluk phase.

### *Stage 13*

This construction stage was established because we reported an alignment placed on top of Floor 6. This alignment was named Feature 16. It ran east-west, was made of cut stones and faced north. We only uncovered a small section (1.30 m long). Therefore, it was not possible to determine its dimensions nor its formal characteristics.

### *Stage 14*

Feature 16 was completely covered by Floor 4, a smooth plastered surface. In some areas, immediately below this floor, we found Floor 5. Because minimal ballast deposit separated the two floors and both floors were not reported in some areas, we considered that Floor 4 and Floor 5 corresponded to the same construction phase and that they were the same surface. These surfaces were identified by Cheetham (1996) as Floors 2a and 2b.

## **Tiger Phase**

### *Stage 15*

At some moment during the Late Classic, Floor 4 served as the base of a new construction. This building was built with cut limestone blocks (0.20-0.50 m in length). Wedges were used to fill spaces between the stones, which were not completely rectangular in shape. It was not possible to determine the dimensions and formal

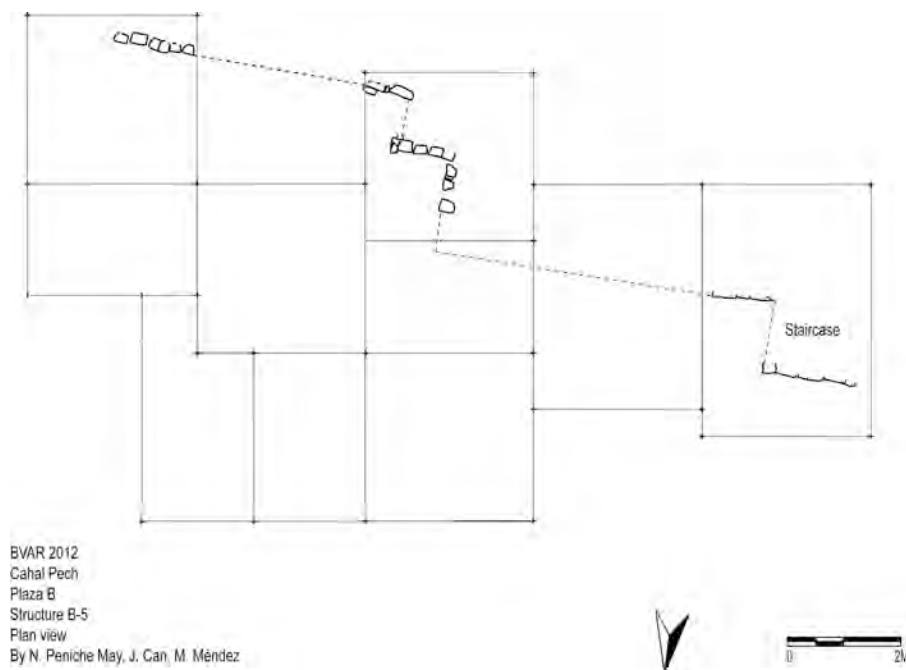


Figure 12. Remains of Structure B-5/sub (Feature 9).

characteristics of this building because it was partially dismantled and reused in the following building. Nevertheless, based on the the remains of this building, we can deduce that this construction was seven courses high and rose at least 0.80 m above Floor 4 (excavation unit CHP-PB-PU-15). In other areas, only the foundation remained (CHP-PB-PU-17 and CHP-PB-PU-25). We expected the building to have outsets and a staircase, which were reused as the foundation of the following building. A plaster floor connected the basal courses of the platform to the plaza floor. This surface was designated Floor 3 (Figure 12).

### *Stage 16*

Ten centimeters above Floor 3, a new floor was built (Floor 2). This floor was not associated with any architecture. Instead, it functioned as the base for the penultimate building of Structure B-5 (Figure 13). Thus, after dismantling Stage 15 of Structure B-5, a new building was constructed placing its foundation on Floor 2. This new building was constructed with cut limestones blocks and used less wedges than the previous construction stage. This building consisted of a body and two terraces. The main body rose 1 m above Floor 2, while Terrace 1 and Terrace 2 elevated 0.64 m and 0.60 m, respectively. A staircase was attached to the main body. The staircase was resting on the foundation of Feature 9. This staircase extended out 0.10 m in such a way that Feature 9's foundation appeared to be a molding. Floor 1, a plaster surface, was associated with this construction stage. This building had two modifications. The first modification consisted of adding an outset close to the staircase. Stones used to build this outset were smaller than the rest of the building (Feature 14). Later, a step was attached

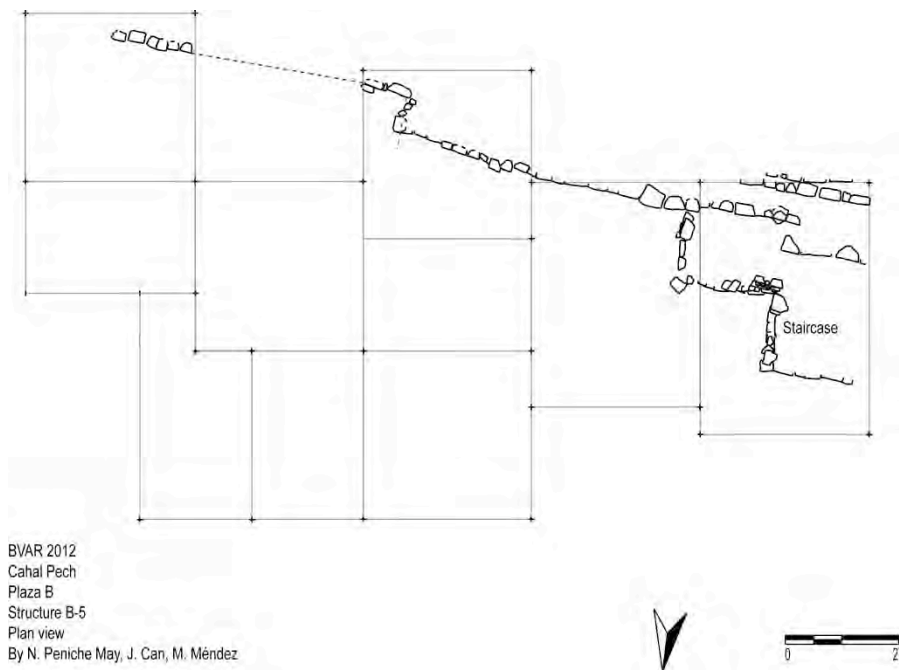


Figure 13. Structure B-5.



Figure 14. Structure B-5: Staircase and attached outset.

to the first terrace as a continuation of the staircase. This step was resting on the stucco floor of the outset described previously.

### **Terminal Classic**

#### *Stage 17*

The staircase of the previous construction stage was dismantled at some moment during the Terminal Classic. A new staircase was constructed. This staircase covered the previous staircase and the two terraces. This phase of the building was poorly preserved. Remains of the staircase were resting on Floor 1.

### **CONCLUSIONS**

Extensive excavations at Plaza B, coupled with the recovery of sealed stratigraphic deposits, have allowed researchers to develop a good understanding of the ceramic sequence and on the Preclassic activities of the early inhabitants of the site. In spite of these accomplishments, there has still been a need to better understand the evolution and variability of the architecture at Cahal Pech. In an effort to address this question, horizontal excavation amounting to 88m<sup>2</sup> was conducted in Plaza B, near the southeastern edge of Structure B-5. Information recorded by these investigations has allowed us to reconstruct a complex architectural sequence that spans from the terminal Early Preclassic to the Terminal Classic period. The architectural sequence we uncovered during 2012 includes seventeen stages of construction.

The architectural sequence shows an increasing investment of labor throughout time. Formal architectural attributes, such as size, shape and materials of construction, all appear to have been architectural elements subject to manipulation by Cahal Pech social actors. Artifacts uncovered during the 2012 excavations suggest an elite context during the Kanluk phase based on the presence of figurine, jade and obsidian objects. Whether the structures had a public or residential function will be determined through subsequent analysis.

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## **APPENDIX: LOT DESCRIPTION**

### **Excavation Unit (EU): CHP-PB-PU-16**

#### *Level 1, Lot PL-B-57*

This lot corresponded to the removal of the humic layer. It consisted of a dark-brown soil mixed with small stones (5-15 cm) and some medium-sized stones, as well as vegetal roots. The consistence of this matrix was compact. The beginning elevation of this lot was 149.6 cm below datum 5A. As we excavated we exposed some big stones and some cut stones that could have collapsed from Str. B-5. These collapsed stones were located at the SE corner of the excavation unit. This lot was ended when we uncovered the ballast of Floor 3 of Plaza B. The ending elevation was 182.4 cm below datum 5A. Cultural remains reported in this lot include ceramic, chert, fresh water shell, limostones, slate, cobble, quartz, marine shell and metal.

#### *Level 2, PL-B-60 and PL-B-61*

Lot PL-B-60 corresponded to the exploration of the level below Floor 3's ballast. As we were digging this lot, we noticed that at the southwestern corner we did not clean enough dirt to completely uncover Floor 3. Therefore, this lot is a mixture of humus above Floor 3 and the its ballast. We decided to end this lot when we uncovered the remains of Floor 3, located at the southwestern corner of the excavation unit, and Floor 4. Lot PL-B-61 consisted of the excavation of Floor 3. Matrix consisted of ballast made of small stones mixed with light brown soil. Matrix was semicompact. The lot ended when we exposed Floor 4, a well preserved stucco floor. Ending elevation was 198.4 cm below Datum 5A.

#### *Level 3, PL-B-62*

This lot is below Floor 4. The matrix consisted of ballast made of decomposed limestone and small stones. Matrix was homogeneous and light brown/gray in color. We ended this lot when we uncovered Floor 5. Ending elevation was 203 cm below Datum 5A. Artifacts reported in this level included ceramic, chert and freshwater shell.

#### *Level 4, PL-B-63*

This lot corresponded to the exploration below Floor 5. The matrix consisted of ballast—decomposed limestone mixed with light brown soil and small stones. After the removal of the ballast we uncovered two floors—Floor 6 and Floor 7. Floor 6 was reported at the southwestern corner of the unit. In the other sections of the excavation unit, we reported Floor 7, which is approximately 8 cm beneath Floor 6. We ended this lot when we uncovered both floors.

#### *Level 5, PL-B-64*

This lot corresponded to the exploration of the level below Floor 6, a badly preserved stucco floor that was only reported at the southwestern section of the excavation unit. The matrix consisted of ballast. We ended this lot when we completely uncovered Floor 7, a well-preserved stucco floor. Ending elevation was 217.6 cm below Datum 5A. Archaeological artifacts recovered during the exploration of this level included ceramic and chert.

*Level 6, PL-B-65*

This lot corresponded to the level below Floor 7. The matrix consisted of ballast made of decomposed limestone and small stones. The lot ended when we uncovered Floor 8, a well-preserved stucco floor. Ending elevation was 222.6 cm below Datum 5A. Cultural materials reported included ceramic and chert.

*Level 7, PL-B-66*

This lot was below Floor 8. Matrix consisted of ballast—decomposed limestone with small stones. Matrix was homogeneous and semicompact. We stopped the lot when we reported Floor 9. Ending elevation was 228.8 cm below Datum 5A.

*Level 8, PL-B-68*

This lot was below Floor 9. It consisted of ballast—decomposed limestone with small stones. After removing Floor 9, we discovered several features. First, we uncovered Floor 10, which was badly preserved. Floor 10 was partially covering two architectural features, which may be Feature 11 and Feature 12 reported at EU CHP-PB-PU-15. Ending elevation of this level was 236.2 cm below Datum 5A.

*Level 9, PL-B-71*

This lot is below Floor 10. It was opened to expose Feature 11—the cobbled floor. Matrix was ballast. Ending elevation was 241.4 cm below Datum 5A.

*Level 10, Lot PL-B-135, Lot PL-B-138, PL-B-150 and PL-B-154*

These lots were opened to register the materials recovered beneath Feature 11, a cobbled-floor platform. The main goal of exploring below Feature 11 was to uncover Feature 12, a round structure reported at CHP-PB-PU- 15. Matrix was sandy clay with small stones. Matrix was gray, loose and homogeneous. After removing the matrix, we noticed several interesting features. A stucco floor was located 30 cm beneath Feature 11 and it could be Floor 12, which was reported at CHP-PB-PU-15. This stucco floor was whitish and well preserved. Feature 12 was resting on top of fill (5-10 cm), placed on Floor 12. We also reported an alignment facing northeast, which may be a rectangular platform. This feature was named Feature 21. Ending elevation was 261.4 cm. Archaeological artifacts recovered included ceramic, chert, freshwater shell, marine shell, obsidian, fauna, serpentine and charcoal.

*Level 10, Lot PL-B-112 and PL-B-92*

These lots were opened to register the materials recovered below Floor 11 (located outside Feature 11, the cobbled platform) and outside of Feature 12. Lot PL-B-112 corresponded to the exploration of the area between Feature 12, the round structure, and the east-west alignment attached to it. Matrix was sandy clay, light brown in color, loose mixed with small pieces of soft limestone. Mixed with the matrix, we also reported medium limestone stones. After removing the matrix, we reported another alignment, that was made of semiworked cut stones that rested on fill. We ended this lot when limestone started to predominate in the matrix. Archaeological materials recovered included ceramic, chert, and freshwater shell.

*Level 11, Lot PL-B-139*

This lot corresponded to the exploration Feature 21 and Feature 12. Matrix is sandy clay with small stones. After removing the matrix, we uncovered Feature 22, an alignment of stones running north-south and facing west. This feature could have functioned as a terrace of Feature 21. Floor 12 reported elsewhere worked as the stucco floor of Feature 21/Feature 22's patio. Ending elevation was 273.6 cm below Datum 5A. Archaeological artifacts reported included ceramic, chert, freshwater shell, slate and three special finds.

*Level 11, Lot PL-B-144*

This lot corresponded to the exploration of the level below the earth stamped floor located outside Feature 12. It was opened to explore the foundation of Feature 12. It was established that this feature rested on top of Floor 12. Matrix was sandy clay, light gray in color. Cultural artifacts reported included ceramic, chert, freshwater shell, quartz, and obsidian.

*Level 11, Lot PL-B-159*

This lot corresponded to the exploration of the level below Floor 12. Matrix consisted of plaster. We ended this lot when we reached another stucco floor named Floor 13. This stucco floor was smooth and white in color. It was delimited by an alignment running north south made of small slabs. This alignment was completely covered by Floor 12. Ending elevation was 283.6 cm below Datum 5A. Archaeological materials reported included ceramic and chert.

*Level 11, Lot PL-B-190*

This lot corresponded to the exploration between Feature 20 and Feature 21. It was opened to explore the foundation of Feature 20. It was established that Feature 20 was covered by core when Feature 21's foundation was built. Matrix was sandy clay, light gray in color.

*Level 12, Lot PL-B-160*

This lot is below Floor 13, inside Feature 12. The matrix is plaster followed by ballast. We ended this lot, when we reached another stucco floor that was named Floor 14, a fairly preserved stucco floor. Ending elevation was 291.8 cm below Datum 5A. Archaeological materials reported included ceramic, chert, and freshwater shell.

*Level 13, Lot PL-B-163*

This lot is below Floor 14, inside Feature 12. The surface had white areas that seemed like a stucco floor, although deteriorated. We decided that it was a stucco floor because we observed a leveled surface in the baulk of the excavation unit. Matrix was ballast, white in color, followed by clay with a few small stones. We ended this lot, when we reached a stamped earthen surface that was named Floor 15. Ending elevation was 302.4 cm below Datum 5A. Archaeological artifacts recovered included ceramic, chert and freshwater shell.

*Level 14, Lot PL-B-164*

This lot is below Floor 15, the stamped earthen surface. The matrix was sandy clay with stones. Beneath Floor 15, we uncovered a double wall. Due to the dimensions of the excavation unit, we only uncovered a 1.10 m section of this feature. This wall was 50 cm thick, and rested on another stamped earthen floor named Floor 16. Ending elevation was 313.4 cm below Datum 5A. Archaeological artifacts reported included ceramic, chert and freshwater shell.

*Level 15, Lot PL-B-167*

This lot is below Floor 16, a stamped earthen surface. Small yellow stones made this feature discernible. Matrix was sandy clay with a few small stones. Matrix was sticky, semicompact, homogeneous and gray in color. This lot ended when we reached another stamped earthen surface, Floor 17. The surface was made of sandy clay and small stones that made it discernible. Ending elevation was 323.2 cm below Datum 5A. Archaeological materials reported included ceramic, chert and freshwater shell.

*Level 16, Lot PL-B-168*

This lot is below Floor 17, a stamped earthen surface made of small yellow stones and sandy clay. Matrix was gray clay, homogenous and semicompact. We ended this lot when we noticed a change in the matrix, which start being withish due to decomposed limestone inclusions. 327.4 cm below Datum 5A. archaeological materials reported included ceramic, chert and limestone.

*Level 17, Lot PL-B-169*

This lot corresponded to the exploration of the level of whitish clay—clay mixed with decomposed limestone. Matrix was heterogeneous and semicompact and it was fill. At the end of the level, we reported decomposed limestone, which was concentrated at the western and southern section of the excavation unit. Ending elevation was 338.6 cm below Datum 5A. Archaeological materials reported included ceramic, chert and charcoal.

*Level 18, Lot PL-B-170*

This lot corresponded to the exploration of fill. Matrix consisted of gray clay with small stones. Small lens of decomposed limestone and yellow clay were present in the matrix. We ended this lot when we started to report black soil. Ending elevation was 394.2 cm below Datum 5A. Ceramic, chert, freshwater shell and granite were materials reported at this level.

*Level 19, Lot PL-B-174*

This lot corresponded to the exploration of fill. Matrix was clay mixed with decomposed limestone, dark black soil and lens of yellow clay. Few big stones were part of the matrix. Matrix was sticky, compact and heterogeneous. We ended this level when we uncovered a white leveled surface made of marl. This surface had a slope towards north. Few centimetres above this surface, we reported a mano or grinding stone. Ending elevations were 447.8 cm below Datum 5A. Archaeological artifacts included ceramic, chert, freshwater shell, granite and cobble.

*Level 20*

This level corresponded to the exploration of the level below the white marl surface. Matrix was marl. It was compact and homogeneous. No cultural materials were reported at this level. We ended this level arbitrarily, since matrix was quite compact and no cultural artifacts were reported. Ending elevation was 536.6 cm below Datum 5A.

**EU CHP-PB-PU-17**

*Level 1, Lot PL-B-58*

This lot corresponded to the excavation of the dark brown soil mixed with small and medium stones, as well as with some tree roots. The consistence of this matrix was compact. Beginning elevation was 116.6 below datum 6A (50cm above Datum 5A). As the excavation proceeded, we uncovered cut stones, which could have been stones collapsed from Str. B-5. Because this cut stones were all over the excavation unit, we decided to end the lot at this level. Ending elevation of this lot was 130.8 cm below datum 6A. Cultural remains reported in this lot include ceramic, chert and freshwater shell.

*Level 2, Lot PL-B-59 and Level 3, Lot PL-B-68*

This lot corresponded to the exploration below the level of the cut stones. This lot consisted of humus and collapse. After removing the cut stones, we reported humic soil mixed with medium stones. As the excavation proceeded, we reported an alignment of stones at the southwestern section of the excavation unit, which was named Feature 13. Feature 13 was made of coarse cut stones. Inside Feature 13, we reported remains of a stucco floor. Because it was resting on fill, we thought that Feature 13 may represent a Terminal Classic structure. Outside of the feature, we reported fill and humic soil.

As the excavation continued, we reported another alignment of stones, north of Feature 13. This alignment consisted of two courses of cut stones, which were forming an outset. We named this alignment Feature 14. This wall had the same orientation than Feature 9, reported at EU CHP-PB-PU-15. However, we considered that it is unlikely that Feature 14 was the same than Feature 9 since they rested on Floor 2 and Floor 4, respectively. However, we could determine that, although Feature 9 was earlier than Feature 14, they were contemporaneous at some point. We could also establish that Feature 13 rested on top of Feature 14 and it was one of the terraces of Str. B-5. Ending elevation of this lot was 190.2 cm below Datum 6A. Cultural materials reported in this level included ceramic, chert, granite, quartz, freshwater shell, marine shells, fauna and two special findings.

#### *Level 4, Lot PL-B-69*

This lot corresponded to the exploration of the level below Floor 1, located outside of Str. B-5. It consisted of ballast—decomposed limestone with small stones. The color of the matrix is light brown. During the exploration of the level below Floor 1, we reported another alignment of stones that extends approximately 25 cm northwards of Feature 14. This alignment, named Feature 15, was covered by Floor 1 and it was resting on Floor 2. Ending elevation was 222 cm below Datum 6A.

#### *Level 5, Lot PL-B-72 and Lot PL-B-100*

This lot corresponded to the excavation below Floor 2. It was divided into two lots. Lot PL-B-72 was located outside Feature 15, while Lot PL-B-100 included the area inside this feature. The matrix consisted of ballast—decomposed limestone plus small stones. Through the excavation of these lots, we found out that Feature 15 continued going down. These lots ended when we reached Floor 3. Ending elevation was 229.4 cm below Datum 6A. Cultural materials recovered included ceramic, chert and freshwater shell.

#### *Level 6, Lot PL-B-73 and Lot PL-B-158*

This level was below Floor 3. It was divided into two lots. Lot PL-B-73 was located outside Feature 15, while Lot PL-B-158 included the area inside this feature. The matrix consisted of ballast—decomposed limestone plus small stones. As we explored Floor 3, we uncovered an alignment running N-S and facing west that was part of Feature



15. This feature consisted of two courses of stones, which rested on Floor 4. These lots ended when we reached Floor 4. Ending elevation was 233 cm below Datum 6A. Cultural materials recovered included ceramic, chert and freshwater shell.

*Level 7, Lot PL-B-75 and Lot PL-B-161*

This level was below Floor 4. It was divided into two lots. Lot PL-B-75 was located outside Feature 15, while Lot PL-B-161 included the area inside this feature. The matrix consisted of ballast—decomposed limestone plus small stones. Lot PL-B-75 ended when we reached Floor 4a, a well preserved stucco floor. Ending elevation was 238 cm below Datum 6A. Cultural materials recovered included ceramic, chert and freshwater shell.

*Level 8, Lot PL-B-77*

This lot was below Floor 4a. Matrix was ballast, light gray in color, homogeneous and compact. We reported Feature 16, which is an alignment running E-W and facing north. Apparently, Feature 16 continued beneath Feature 15. Feature 16 was made of semi-worked stones of several dimensions. We ended this lot when we reported Floor 5, another stucco floor. Ending elevation was 256 cm below Datum 6A.

*Level 9, Lot PL-B-81*

This lot is below Floor 5. Matrix is ballast—decomposed limestone with small stones. Matrix is light gray in color, homogeneous and compact. Floor 5 partially covered Feature 16 (E-W alignment). We ended this lot when we reported Floor 6, a badly preserved stucco floor. The plaster of the floor was only reported near Feature 16. Feature 16 was resting on Floor 6, although in some areas this feature rested on fill. Feature 16 was made on semi-worked cut stones and we only reported its foundation. Ending elevation was 256.4 cm below Datum 6A.

*Level 10, Lot PL-B-83 and Lot PL-B-162*

This lot was below Floor 6, a badly preserved stucco floor. It was divided into two lots. Lot PL-B-83 was located outside Feature 15, while Lot PL-B-162 included the area inside this feature. Matrix consisted of ballast, which was compact, homogeneous and light gray in color. Floor 6 may be considered a resurface of Floor 7, the next stucco floor that was reported. Ending elevation was 260.6 cm below Datum 6A.

*Level 11, Lot PL-B-84*

This lot was below Floor 7, a badly preserved stucco floor. Matrix consisted of ballast, which was compact, homogeneous and light gray in color. This lot ended when we reported Floor 8. Ending elevation was 270 cm below Datum 6A.

*Level 12, Lot PL-B-86 and Lot PL-B-165*

This lot was below Floor 8. It was divided into two lots. Lot PL-B-86 was located outside Feature 15 and Feature 16, while Lot PL-B-165 included the area inside Feature 15. Matrix was ballast, which was homogeneous, compact and light gray in color. We ended this lot when we uncovered Floor 9. Ending elevation was 274.6 cm below Datum 6A.

*Level 13, Lot PL-B-88*

This lot corresponded to the exploration of the level below Floor 9, outside Feature 15 and Feature 16. Matrix was ballast, compact, homogeneous and light gray in color. We ended this lot when we uncovered Floor 10, another stucco floor. Ending elevation was 276.6 cm below Datum 6A.

*Level 14, Lot PL-B-89 and Level 15, Lot PL-B-91*

This lot corresponded to the exploration below Floor 10, outside Feature 15 and Feature 16. Matrix was ballast, compact, homogeneous and light gray in color. We ended this lot when we uncovered Feature 11—the cobbled-floor platform. Ending elevation was 285 cm below Datum 6A.

*Level 16, Lot PL-B-133, Lot PL-B-153, Lot PL-B-166, and Lot PL-B-172*

These lots corresponded to the exploration of the level below Feature 11. The matrix of this level was sandy clay mixed with small stones. As we were digging, we reported the remains of an apsidal structure. This structure was built with unworked limestones stones. At the edge of the unit, we reported another alignment—Feature 20, the remains of a rectangular platform. We ended this level when we reached the fill of Feature 19 and we uncovered the wall of this feature. Ending elevation was 213.2 cm below Datum 7. Archaeological artifacts reported included ceramic, chert, marine shell and freshwater shell.

*Level 17, Lot PL-B-176 and Level 18, Lot PL-B-177*

This lot corresponded to the exploration of the fill inside Feature 19, the apsidal structure. Matrix is sandy clay, gray in color, homogeneous and compact. A few small stones and some big stones were reported among the matrix. A large amount of materials were reported at this level. We ended these levels when bedrock was reached. Ending elevation was 347.8 cm below Datum 8. Cultural materials reported included ceramic, chert, freshwater shell and marine shell.

**EU CHP-PB-PU-18**

*Level 1, Lot PL-B-70*

This lot consisted of the removal of the dark brown organic soil, mixed with small stones. Beginning elevation of this lot was 165.4 cm below Datum 5A. After removing the humus, we uncovered the ballast of a stucco floor. Based on data obtained at EU CHAP-PB-PU-15 and EU CHAP-PB-PU-17, we established that this floor was Floor 3 of Plaza B. Ending elevation of this lot was 197 cm below Datum 5A. Artifacts recovered during the excavation of this lot included ceramic and chert.

*Level 2, Lot PL-B-74*

This lot corresponded to the level below Floor 3. Matrix consisted of ballast, which was compact and light brown in color. We ended this lot, when we uncovered Floor 4. Ending elevation was 206.4 cm below Datum 5A.

*Level 3, Lot PL-B-76*

This lot corresponded below Floor 4. Matrix consisted of ballast, which was compact and light gray in color. We ended this lot, when we uncovered Floor 5. Ending elevation was 213.8 cm below Datum 5A.

*Level 4, Lot PL-B-78*

This lot corresponded to the level below Floor 5. Matrix consisted of ballast, which was compact and light brown in color. We ended this lot, when we uncovered the ballast of Floor 6. Ending elevation was 221 cm below Datum 5A.

*Level 5, Lot PL-B-79*

This lot corresponded to the level below Floor 6's ballast. Matrix consisted of ballast, which was compact and light gray in color. We ended this lot when we uncovered the ballast of Floor 7. After a revision of the floor sequence, we noticed that the distinction between Floor 6 and Floor 7 was difficult to make in this excavation unit. Ending elevation was 224.6 cm below Datum 5A.

*Level 6, Lot PL-B-80*

This lot corresponded to the level below Floor 8's ballast. Matrix consisted of ballast, which was compact and light brown in color. We ended this lot, when we uncovered the ballast of Floor 9. Ending elevation was 235 cm below Datum 5A.

*Level 7, Lot PL-B-82*

This lot corresponded to the level below Floor 9. Matrix consisted of ballast, which was compact and light gray in color. We ended this lot, when we uncovered the ballast of Floor 10. Ending elevation was 242.2 cm below Datum 5A.

*Level 8, Lot PL-B-85*

This lot corresponded to the level below Floor 10. Matrix consisted of ballast, which was compact and light brown in color. As the excavation proceeded, we uncovered Feature 11 and its northeastern corner. North of Feature 11, we reported another stucco floor, named Floor 11 at the excavation unit CHP-PB-PU-15. Floor 11 was at the same level than Feature 11. Ending elevation was 246.2 cm below Datum 5A.

*Level 9, Lot PL-B-87*

This lot is below Floor 11, the stucco floor located north of Feature 11. Matrix was ballast—decomposed limestone with small stones. Matrix was compact, homogeneous and light brown in color. Beneath the ballast, we reported a layer of medium stones. We stopped this lot when we reached this layer. Cultural materials reported included ceramic and chert.

**EU CHP-PB-PU-19**

*Level 1, Lot PL-B-90*

This lot corresponded to the excavation of the humic layer consisting of dark brown soil, mixed with small stones and tree roots. Matrix was loose and homogeneous. Beginning elevation of this lot was 87.4 cm below Datum 7 (50 cm below Datum 5A). After removing the humus, we reported a fairly preserved stucco floor—Floor 3. We ended this lot at this level, 145.8 cm below Datum 7. We noticed that this floor was broken at the southern edge of the unit. The disturbance appeared to have a square shape (1.50 m by 1.50 m). Cultural materials reported at this level included ceramic, chert, fresh water shell, obsidian and charcoal.

*Level 2, Lot PL-B-96*

This lot corresponded to the level below Floor 3. Matrix consisted of ballast, which was compact and light gray in color. We ended this lot when we uncovered Floor 4, which was broken in some areas. Ending elevation was 148.6 cm below Datum 7. Archaeological artifacts reported included ceramic and chert.

*Level 3, Lot PL-B-97*

This lot corresponded to the level below Floor 4. Matrix consisted of ballast, which was compact and light brown in color. We ended this lot when we uncovered Floor 5, a poorly preserved stucco floor. Ending elevation was 152.4 cm below Datum 7. Archaeological artifacts reported included ceramic and chert.

*Level 4, Lot PL-B-99*

This lot corresponded to the level below Floor 5. Matrix consisted of ballast, which was compact and light brown in color. We ended this lot when we uncovered

Floor 6. Ending elevation was 163.8 cm below Datum 7. Archaeological artifacts reported included ceramic and chert.

*Level 5, Lot PL-B-101*

This lot corresponded to the level below Floor 6. Matrix consisted of ballast, which was compact and light gray in color. We ended this lot when we uncovered Floor 7, which was disturbed at the northeastern corner of the excavation unit. Ending elevation was 168.6 cm below Datum 7. Archaeological artifacts reported included ceramic and chert.

*Level 6, Lot PL-B-103*

This lot corresponded to the level below Floor 7. Matrix consisted of ballast, which was compact and light gray in color. We ended this lot when we uncovered Floor 8, which was disturbed at the northeastern corner of the excavation unit. Ending elevation was 175.6 cm below Datum 7. Archaeological artifacts reported included ceramic, chert and quartz.

*Level 7, Lot PL-B-104*

This lot corresponded to the level below Floor 8. Matrix consisted of ballast, which was compact and light gray in color. After removing this floor, we uncovered the northern limit of Feature 11, as well as, Floor 11 located north of the cobbled floor. Floor 9 and Floor 10 were not reported at this excavation unit. Ending elevation was 183.4 cm below Datum 7. Archaeological artifacts reported only included ceramic.

*Level 8, Lot PL-B-141, and Level 11, Lot PL-B-148*

These lots corresponded to the exploration below Feature 11 in order to explore Feature 12. Matrix was sandy clay, dark gray in color, homogeneous and semicompact. The lot ended when we uncovered Feature 12. Ending elevation was 237.8 cm below Datum 7. Archaeological artifacts reported included ceramic, chert, freshwater shell, marine shell, and obsidian.

*Level 8, Lot PL-B-113*

This lot was opened to explore the level below Floor 11, the stucco floor reported north of Feature 11. As the excavation developed, we noticed that Floor 11 covered a small surface of Feature 11. Matrix was sandy clay, dark gray in color. Matrix was loose and homogeneous. This lot is different from the other levels because of the large amount of pottery recovered and the diversity of materials. This lot was arbitrarily ended because we wanted to reduce the size of the excavation unit. Ending elevation was 197.7 cm below Datum 7. Archaeological artifacts reported included ceramic, chert, freshwater shell, marine shell, quartz, obsidian, slate, daub and shell beads.

*Level 9, Lot PL-B-131*

This lot was opened to continue exploring the level below Floor 11. The excavation unit was reduced to 1.80 m x 0.80 m. Matrix consisted of sandy clay with few small stones. It was loose, homogeneous and brown gray in color. Charcoal was spread across the level. The amount and diversity of materials decreased from the previous level. We ended this lot because we noticed a whitish surface which may be a floor (Floor 12b). Ending elevation was 226.8 cm below Datum 7A. Archaeological materials included ceramic, chert, freshwater shell, marine shell and charcoal.

*Level 10, Lot PL-B-132*

This lot was opened to explore the level below the whitish gray fill below Floor 11 (Floor 12b), located outside Feature 11. Matrix is sandy clay mixed with soft limestone stones. Matrix is gray in color and semicompact. Archaeological artifacts reported in this lot included ceramic, chert, freshwater shell, charcoal, slate and shell beads.

*Level 12, Lot PL-B-149*

This lot was opened to explore the level below Floor 11, outside Feature 12. Matrix is sandy clay. It is sticky, semicompact and gray in color. Outside Feature 12, we reported a stamped earthen surface that partially covered Feature 12's wall. This surface may have been the patio surface of Feature 12. This stamped earthen floor was built on top of Floor 12. Ending elevation was 249.2 cm below Datum 7. Archaeological materials reported included ceramic, chert, freshwater shell and marine shell.

*Level 13, Lot PL-B-152*

This lot was opened to explore the level below the earthen stamped floor associated to Feature 12. Matrix was sandy clay, gray in color and homogeneous. Because of the weather was sticky. The lot ended when we reported Floor 12, associated to Feature 21/Feature 22. Ending elevation was 164.4 cm below Datum 8. Archaeological artifacts reported included ceramic, chert, freshwater shell and marine shell.

*Level 10, Lot PL-B-193 and Level 14, Lot PL-B-178*

This lot corresponded to the exploration below Floor 12, the stucco floor associated with Feature 21/Feature 22. Matrix consisted of ballast—decomposed limestone with fill consisting of gray sandy clay, which was compact and homogeneous. We ended this lot when we reported a white surface that may represent a stamped earthen floor, which was named Floor 13. Ending elevation was 183.6 cm below Datum 8. Archaeological artifacts reported included ceramic, chert, fauna, and freshwater shell.

*Level 11, Lot PL-B-194*



This lot corresponded to the exploration of the level below Floor 13, a white stamped earthen floor. Matrix was sandy clay, gray in color, homogeneous and semicompact. We ended this lot when we reported a change in the matrix. Matrix started being mixed with decomposed limestone. Ending elevation was 318 cm below Datum 9. Archaeological artifacts reported included ceramic, chert, freshwater shell, charcoal, fauna, and obsidian.

*Level 12, Lot PL-B-201*

This lot corresponded to the exploration of fill below Floor 13, a white stamped earthen floor. Matrix was sandy clay mixed with decomposed limestone. Matrix was gray in color and semicompact. We ended this lot when we reached a level made of stones and decomposed limestone / clay. This feature was interpreted as the remains of Cunil architecture. Ending elevation was 322.8cm below Datum 6A. Archaeological materials reported are ceramic, chert and freshwater shell.

*Level 13, Lot PL-B-203*

This lot corresponded to the exploration of fill below Floor 13, a white stamped earthen floor. Matrix was clay and marl with large stones. The stones were removed and we reported marl fill. Ending elevation was 480 cm below Datum 6A.

*Level 15, Lot PL-B-179*

This lot corresponded to the level below Floor 13, a stamped earth floor. Matrix is sandy clay, gray in color, homogeneous and semicompact. We ended this lot when we reached Floor 14, a surface made of stucco. Ending elevation was 183.5 cm below Datum 8.

*Level 16, Lot PL-B-180*

This lot corresponded to the level below Floor 14, a stucco floor. Matrix is sandy clay, gray in color, homogeneous and semicompact. We ended this lot when we reached Floor 15, a stamped earthen floor. Ending elevation was 248 cm below Datum 8. Archaeological artifacts reported in this lot included ceramic, chert, freshwater shell and fauna.

*Level 17, Lot PL-B-183*

This lot corresponded to the level below Floor 15, a stamped earthen floor. Matrix is fill made of clayish marl, which was light gray in color, homogeneous and semicompact. We ended this lot when we reported a marl surface. We reported large stones that were placed on top of this marl surface. These stones were interesting since we did not report any similar stones at the other units. We interpreted them as the

remains of a Cunil structure. Ending elevation was 257.4 cm below Datum 8. Archaeological artifacts reported included ceramic, chert, freshwater shell and charcoal.

*Level 18, Lot PL-B-184*

This lot corresponded to the exploration of the level with large stones that were placed on top of a marl surface. Matrix was fill made of marl. Matrix was compact, white and homogeneous. We ended this lot when we removed the large stones. Ending elevation was 323.6 cm below Datum 8. Archaeological materials reported included ceramic, chert, freshwater shell, quartz, charcoal and fauna.

*Level 19, Lot PL-B-188*

This lot corresponded to the level below large stones placed on top of a marl surface. Matrix was fill made of marl. Matrix was compact, white and homogeneous. We ended this lot when the fill was too compact to continue digging. Ending elevation was 342.6 cm below Datum 8.

**EU CHP-PB-PU-20**

*Level 1, Lot PL-B-93*

This lot corresponded to the excavation of the humic layer consisting of dark brown soil, mixed with small and medium stones. Matrix was loose and homogeneous. Beginning elevation of this lot was 93 cm below Datum 7 (50 cm below Datum 5A). After removing the humus, we reported the ballast of Floor 3. We ended this lot at this level, 127.4 cm below Datum 7. Cultural materials reported at this level included ceramic, chert, fresh water shell, and fauna.

*Level 2, Lot PL-B-94*

This lot was opened to explore the level below Floor 3's ballast. Matrix was ballast—decomposed limestone mixed with humus and small stones. Matrix was compact, light brown in color and homogeneous. After removing the ballast, we reported two stucco floors, Floor 4b and Floor 4a. Floor 4b's was a resurface of Floor 4 and, in some areas, it was difficult to distinguish between them. Ending elevation was 145 cm below Datum 7.

*Level 3, Lot PL-B-95*

This lot was opened to explore the level below Floor 4b and try to expose Floor 4. Matrix was ballast—decomposed limestone plus small stones. Matrix was compact, light gray on color and homogeneous. We ended this lot when we uncovered Floor 4's ballast. Ending elevation was 150 cm below Datum 7. Materials reported included ceramic, chert and freshwater shell.

*Level 4, Lot PL-B-98*

This lot corresponded to the exploration below Floor 4. Matrix is ballast—decomposed limestone with small stones. Matrix is compact, homogeneous and light gray in color. We ended this lot when we uncovered Floor 5. Ending elevation was 154.4 cm below Datum 7. Materials reported included ceramic, chert, freshwater shell.

*Level 5, Lot PL-B-102*

This lot corresponded to the exploration of the level below Floor 5. Matrix was ballast—decomposed limestone with small stones. Matrix was compact, homogeneous, and light gray in color. This lot ended when we reported the ballast of Floor 6. Ending elevation was 160.8 cm below Datum 7. Cultural materials reported were ceramic and chert.

*Level 6, Lot PL-B-105*

This lot corresponded to the level below Floor 6. Matrix was ballast—decomposed limestone with small stones. Matrix was compact, homogeneous and light gray in color. The lot ended when we uncovered Floor 7. This floor was fairly preserved, although we only reported its ballast. Ending elevation was 167.8 cm below Datum 7. Artifacts reported only included ceramics.

*Level 7, Lot PL-B-106*

This lot was below Floor 7. Matrix was ballast—decomposed limestone with small stones. Matrix is compact, homogeneous and light gray in color. We ended this lot when we reported Floor 8, a badly preserved stucco floor that was a replaster of Floor 9. In some areas, it was difficult to differentiate between Floor 8 and Floor 9. Ending elevation was 171.8 cm below Datum 7. Artifacts reported included ceramics, chert and obsidian.

*Level 8, Lot PL-B-108*

This level was below Floor 8. Matrix was ballast made of decomposed limestone with small stones. Matrix was compact, homogeneous, and light gray in color. This lot ended when we uncovered the ballast of Floor 9. Ending elevation was 175.8 cm below Datum 7. Cultural materials included ceramic and chert.

*Level 9, Lot PL-B-109*

This lot corresponded to the exploration of the level below Floor 9. Matrix was ballast made of decomposed limestone with small stones. Matrix was compact, homogeneous, and light gray in color. This lot ended when we uncovered the ballast of Floor 10. Ending elevation was 177.6 cm below Datum 7. Cultural materials included ceramic and chert.

*Level 10, Lot PL-B-110*

This lot corresponded to the level below Floor 10. Matrix was ballast made of decomposed limestone with small stones. Matrix was compact, homogeneous, and light gray in color. This floor covered Feature 11—the cobbled floor. The exposure of this feature marked the end of this lot. Cultural materials included ceramic, chert and freshwater shell.

*Level 11, Lot PL-B-146 and Lot PL-B-147*

This lot was below Feature 11, the cobbled stone platform. Matrix was fill made of sandy clay, with a few small stones. Matrix was compact, gray in color and homogeneous. After removing the matrix we reported Feature 12. We ended this level, when we reported this architecture. Ending elevation was 242.6 cm below Datum 7. Archaeological artifacts reported included ceramic, chert and freshwater shell and marine shell.

*Level 12, Lot PL-B-151*

This lot was below Feature 11 and inside Feature 12, the round structure. We uncovered Feature 21 and Feature 22—two alignments running north-south. Matrix was sandy clay, which was gray in color, sticky and semi-compact. Between these two alignments, we reported core that suggested that these features could have been part of the same platform. Floor 12 was reported outside Feature 22 and it was lipping into Feature 22. Ending elevation was 317 cm below Datum 6A. Archaeological artifacts reported included ceramic, chert, and freshwater shell.

*Level 12, Lot PL-B-155*

This lot was below the uppermost stone of Feature 12, and inside Feature 21. Matrix was fill made of sandy clay with small stones. Matrix was gray in color, homogeneous and compact. Ending elevation was 319 cm below Datum 6A.

**EU CHP-PB-PU-22 and EU CHP-PB-PU-22b**

*Level 1, Lot PL-B-111 and Lot PL-B-121*

This lot consisted of dark brown soil mixed with small and medium stones. Beginning elevations of this lot was 161.2 cm below Datum 5A. After removing the humus, we reported two stucco floors—Floor 4a and Floor 4b. Floor 4b was a replaster of Floor 4a and it was only reported at the southern section of the excavation unit. Ending elevation of this lot was 194.4 cm below Datum 5A. Archaeological artifacts recovered during the excavation of this lot included ceramic and chert.

*Level 2, Lot PL-B-114 and Lot PL-B-122*

This lot was opened to explore the level below Floor 4b. Matrix consisted of ballast made of decomposed limestones plus small stones. Matrix was compact, homogeneous and light gray in color. Ending elevation was 200.4 cm below Datum 5A. Artifacts reported included ceramic and chert.

*Level 2, Lot PL-B-114 and Lot PL-B-122*

This lot was opened to explore the level below Floor 4b. Matrix consisted of ballast made of decomposed limestones plus small stones. Matrix was compact, homogeneous and light gray in color. These lots ended when we reported Floor 4a. Ending elevation was 200.4 cm below Datum 5A. Artifacts reported included ceramic and chert.

*Level 3, Lot PL-B-115 and Lot PL-B-123*

This lot was opened to explore the level below Floor 4b. Matrix consisted of ballast made of decomposed limestones plus small stones. The ballast was compact, homogeneous and light gray in color. These lots ended when we reported the ballast of Floor 5. Ending elevation was 206.4 cm below Datum 5A. Artifacts reported included ceramic and chert.

*Level 4, Lot PL-B-116 and Lot PL-B-124*

This lot corresponded to the level below Floor 5. Matrix consisted of ballast made of decomposed limestones plus small stones. The ballast was compact, homogeneous and light gray in color. These lots ended when we reported the ballast of Floor 6. Ending elevation was 218.8 cm below Datum 5A. Artifacts reported included ceramic and chert.

*Level 5, Lot PL-B-117*

This lot corresponded to the level below Floor 6. Matrix consisted of ballast made of decomposed limestones plus small stones. The ballast was compact, homogeneous and light gray in color. This lot ended when we reported the ballast of Floor 7. Ending elevation was 222.6 cm below Datum 5A. Artifacts reported included ceramic and chert.

*Level 6, Lot PL-B-118 and Lot PL-B-125*

This lot corresponded to the level below Floor 7. Matrix consisted of ballast made of decomposed limestones plus small stones. The ballast was compact, homogeneous and light gray in color. These lots ended when we reported the ballast of Floor 8. At the middle point of the excavation unit CHP-PB-PU-22 we reported a large stone that was highly visible on the floor. Ending elevation of these lot was 226.8 cm below Datum 5A. Artifacts only included ceramic.

*Level 7, Lot PL-B-119 and Lot PL-B-126*

This lot corresponded to the level below Floor 8. Matrix consisted of ballast made of decomposed limestones plus small stones. The ballast was compact, homogeneous and light gray in color. These lots ended when we reported the ballast of Floor 9. This ballast was poorly preserved and, in some areas, it was not preserved at all. It was difficult to separate between Floor 9 and Floor 10. The stone reported at the previous level was covered by this floor. Ending elevation was 234.6 cm below Datum 5A. Artifacts reported included ceramic, chert and freshwater shell.

*Level 8, Lot PL-B-120 and Lot PL-B-127*

This lot corresponded to the level below Floor 9. Matrix consisted of ballast made of decomposed limestones plus small stones. The ballast was compact, homogeneous and light gray in color. These lots ended when we reported Floor 11, the stucco floor that extended outside of Feature 11—the cobbled-floor platform. The large stone reported at previous levels was resting on the fill of Floor 11. This is, Floor 11 was broken at the area where the possible monument was placed. This monument was a large limestone block measuring 1.10m x 0.70m x 0.16m. It was carved but it was not possible to establish the image. Ending elevation was 240.6 cm below Datum 5A. Artifacts reported only included ceramic.

*Level 9, Lot PL-B-157*

This lot corresponded to the level below Feature 11. This lot was opened to uncover Feature 12. Matrix consisted of sandy clay, gray in color, homogeneous and semicompact. Ending elevation was 290 cm below Datum 6A. Archaeological artifacts reported included ceramic, chert, obsidian and freshwater shell.

*Level 9, Lot PL-B-156, and Lot PL-B-129*

This lot was opened to explore the level below Floor 11. Matrix consisted of ballast followed by fill made of sandy clay with a few amount of small stones. was brown in color, homogeneous and loose. As we were digging, we reported a level of stones, whose dimensions were diverse and uncut. We ended this lot when we reported these stones. Ending elevation was 314 cm below Datum 6A. Archaeological artifacts reported included ceramic, and chert.

*Level 9, Lot PL-B-128*

This lot was opened to explore the level below Floor 11, where this stucco floor was broken. Matrix consisted of sandy clay with a few amount of small stones. Matrix was brown in color, homogeneous and loose. As we were digging, we reported a level of stones, whose dimensions were diverse and uncut. We topped this level arbitrarily.

Ending elevation was 266.2 cm below Datum 5A. Archaeological artifacts reported included ceramic, and fauna.

***EU CHP-PB-PU-23***

*Level 1, Lot PL-B-130*

This lot consisted of the removal of the organic dark brown soil, which was mixed with small stones. Beginning elevation of this lot was 163.3 cm below Datum 5A. We ended this lot when we reported Floor 4b and Floor 4a. The state of preservation of Floor 4b was poor, because of that, in some areas was possible to observe Floor 4a. Floor 4b must be considered as a resurface of Floor 4a. Ending elevation was 197.2 cm below Datum 5A. Cultural materials reported at this level included ceramic and chert.

*Level 2, Lot PL-B-134*

This lot corresponded to the exploration below Floor 4b. Matrix is ballast—decomposed limestone with small stones. Matrix was compact, homogeneous and light brown in color. This lot ended when we reported Floor 4a. Ending elevation was 202.4 cm below Datum 5A. Archaeological artifacts reported included ceramic, chert and quartz.

*Level 3, Lot PL-B-136*

This lot corresponded to the exploration below Floor 4a. Matrix is ballast—decomposed limestone with small stones. Matrix was compact, homogeneous and light gray in color. This lot ended when we reported Floor 6. Ending elevation was 215.4 cm below Datum 5A. Archaeological artifacts reported included ceramic, chert and quartz.

*Level 4, Lot PL-B-137*

This lot corresponded to the exploration below Floor 6. Matrix is ballast—decomposed limestone with small stones. Matrix was compact, homogeneous and light brown in color. This lot ended when we reported Floor 7. Ending elevation was 222.6 cm below Datum 5A. Archaeological artifacts reported only included ceramic.

*Level 5, Lot PL-B-140*

This lot corresponded to the exploration below Floor 7. Matrix is ballast—decomposed limestone with small stones. Matrix was compact, homogeneous and light gray in color. This lot ended when we reported Floor 8. Ending elevation was 228.8 cm below Datum 5A. Archaeological artifacts reported included ceramic, and chert.

*Level 6, Lot PL-B-142*



This lot corresponded to the exploration below Floor 8. Matrix was ballast—decomposed limestone with small stones. Matrix was compact, homogeneous and light gray in color. This lot ended when we reported Floor 11. Ending elevation was 237.6 cm below Datum 5A. Archaeological artifacts reported included ceramic, and chert.

*Level 7, Lot PL-B-143 and Level 8, Lot PL-B-145*

This lot corresponded to the exploration below Floor 11. Matrix was ballast—decomposed limestone with small stones—followed by fill. The fill was made of sandy clay with small stones. Matrix was sticky, gray in color and homogeneous. This lot ended when we reported a layer of small and medium stones. Ending elevation was 267 cm below Datum 5A. Archaeological artifacts reported included ceramic, chert, freshwater shell, obsidian, marine shell, slate, and charcoal.

***EU CHP-PB-PU-24***

*Level 1, Lot PL-B-171*

This lot corresponded to the removal of the humic layer—organic, dark brown soil with small stones. Beginning elevations of this lot was 168.2 cm below Datum 9 (20 cm below Datum 6A). We ended this lot when we reported collapsed stones from Str. B-5. At the north edge of the excavation unit, the level ended on the stucco Floor 4. Ending elevation of this lot was 228.8 cm below Datum 9. Cultural materials reported included ceramic, chert, freshwater shell, quartz, daub, fauna and granite.

*Level 2, Lot PL-B-175*

This lot is a mixture of contexts: collapse coming from Str. B-5 and the ballast of Floor 1, Floor 2 and Floor 3. Because of the bad preservation of these floors and because the context was already mixed, we decided to excavate this context as a single lot until reaching Floor 4. The removal of these contexts allow the uncovering of the north wall of Str. B-5 (Feature 14), as well as the lateral side of its staircase. Ending elevation of this lot was 231.8 cm below Datum 6A. Cultural materials reported included ceramic, chert, freshwater shell, quartz, fauna, and obsidian.

*Level 3, Lot PL-B-182*

This lot corresponded to the level below Floor 4. Matrix is ballast—decomposed limestone with small stones—and fill. Matrix was compact and light gray in color. This lot ended when we reported Floor 6 (Floor 5 was not reported). Ending elevation was 246.8 cm below Datum 6A. Archaeological artifacts reported included ceramic, chert and freshwater shell.

*Level 4, Lot PL-B-185*

This lot corresponded to the level below Floor 6. Matrix is ballast—decomposed limestone with small stones. Matrix was compact, homogeneous and light gray in color. This lot ended when we reported Floor 8 (Floor 7 was not reported). Ending elevation was 267.2 cm below Datum 6A. Archaeological artifacts reported included ceramic and chert.

*Level 5, Lot PL-B-186*

This lot corresponded to the level below Floor 8. Matrix was ballast—decomposed limestone with small stones. Matrix was compact, homogeneous and light gray in color. This lot ended when we reported Floor 10. Ending elevation was 277.2 cm below Datum 6A. Archaeological artifacts reported included ceramic, chert and freshwater shell.

*Level 6, Lot PL-B-187*

This lot corresponded to the level below Floor 10. Matrix was ballast—decomposed limestone with small stones—and fill. Matrix was compact, homogeneous and light gray in color. This lot ended when we reported Feature 11—the cobbled-floor platform. Ending elevation was 283 cm below Datum 6A. Archaeological artifacts reported included ceramic, chert, freshwater shell and marine shell.

*Level 7, Lot PL-B-189, and Lot PL-B-191*

These lots corresponded to the exploration of the level below Feature 11. It was divided into several lots. Lot PL-B-189 corresponded to the level below Feature 11 and ended when we reported the uppermost stone of Feature 12. Lot PL-B-191 corresponded to the level below Feature 11 and outside Feature 20. Level 7's matrix was fill, which was made of sandy clay. It was compact, homogeneous and light gray in color. Archaeological artifacts reported in this level included ceramic, chert, quartz, freshwater shell, marine shell and fauna.

*Level 7, Lot PL-B-192*

Lot PL-B-192 was located outside Feature 19 and inside Feature 12. Matrix of this lot was fill, which was sandy clay with stones. Matrix was compact, homogeneous and less clay-like than the matrix reported below Feature 11. The lot ended at the level of Floor 12. Ending elevation was 317.2 cm below Datum 6A. Archaeological material reported included ceramic, chert, freshwater shell, marine shell and fauna.

*Level 7, Lot PL-B-196*

This lot was located outside Feature 12. Matrix was sandy clay, which was compact, homogeneous and gray in color. We ended this lot when we reported Floor 12. Ending elevation was 312.5 cm below Datum 6A. Archaeological materials reported were ceramic and chert.

*Level 7, Lot PL-B-199*

This lot was opened to explore between Feature 20 and 21. Matrix was sandy clay, compact and homogeneous. We ended this lot at the level of Floor 12. We reported ceramic, chert and freshwater shell.

*Level 8, Lot PL-B-197*

This lot was located outside and below the level of Feature 12. Matrix was sandy clay, which was compact, homogeneous and gray in color. This lot was arbitrarily ended. Ending elevation was 322.5 cm below Datum 6A. Archaeological materials reported were ceramic and chert.

**EU CHP-PB-PU-25**

*Level 1, Lot PL-B-173*

This lot corresponded to the removal of the humic layer—organic, dark brown soil with small stones and some big stones. Beginning elevations of this lot was 81.8 cm below Datum 9 (20 cm below Datum 6A). During the excavation, we reported the northern wall of Str. B-5 and a staircase. We ended this lot when we reported collapsed stones from Str. B-5. Ending elevation of this lot was 123 cm below Datum 9. Cultural materials reported included ceramic, chert, freshwater shell, limestone, and obsidian.

*Level 2, Lot PL-B-181*

This lot consisted of fill beneath the last construction phase of Str. B-5. This architecture was poorly preserved. It was represented by a staircase built on top of a Late Classic building. This staircase was resting on top of fill—perhaps the ballast of Floor 2. After removing the cut stones of the last construction phase, we uncovered Late Classic architecture as well as Floor 2 and Floor 3. We only reported ceramic artifacts.

*Level 3, Lot PL-B-200*

This lot corresponded to the clearing of Str. B-5's staircase. We established that the staircase was dismantled, perhaps during the construction of the last construction phase of the structure. We reported ceramic and chert.

# WESTERN AND NORTHERN SETTLEMENT SURVEY OF CAHAL PECH

**Wendy Rae Dorenbush**

California State University, Los Angeles

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## INTRODUCTION

The 2012 settlement survey of Cahal Pech is the second field season of the settlement investigation led by Wendy Dorenbush, under the direction of Dr. Jaime Awe. The goals of the settlement survey are to document the settlement features in the periphery around the site core, observe patterns in settlement orientation, grouping, and distribution over various geographical landscapes, determine the settlement boundary of Cahal Pech, and document modifications in landscape features along with land-use patterns.

In 2011, Dorenbush led a team of BVAR students and one workman in a survey in the southern periphery of Cahal Pech. Although this was a pilot season for Dorenbush, the survey of the southern periphery had been initiated by Awe and colleagues from 1988 to 1994 (Awe *et al.* 1990; Awe and Brisbin 1994). However, the previous survey only documented the plazuela groups with pronounced architecture, leaving smaller and more discrete settlement features between these groups undocumented. Dorenbush initiated her survey with the goal to systematically map the entire peripheral settlement using a survey-grid methodology; a similar strategy was employed by the BVAR team when investigating the settlement at Baking Pot (Hoggarth, this volume; Hoggarth *et al.* 2008; Conlon 1995, 1997; Conlon and Ehert 2000, 2001). The same methodology was employed for the 2012 field season.

## BACKGROUND

The site core of Cahal Pech is located on a steep hill overlooking the modern town of San Ignacio, the capital of the Cayo District of Belize, in the upper Belize River Valley. The visible landscape features from the ceremonial center includes the Macal River to the east, the Maya Mountains to the south, the alluvial valleys to the west, and the confluence of the Macal and Mopan Rivers to the north. The setting of Cahal Pech is unique within the Belize River Valley, making the site a prime location for exploring the differences in settlement patterns over a

variety of landscapes.

The Cahal Pech Project, directed by Awe from 1988 to 1994, conducted research at Cahal Pech with the objectives to: “1) halt further destruction of the center, 2) produce a map of the site, demarcating an area to be established as a national park, 3) develop the site for tourism, and 4) obtain the data for publishing a preliminary guide book which could be sold to tourist and help to increase local cultural awareness” (Awe 1992: 44-45). Cahal Pech was designated as a National Park in 1988 (Awe and Brisbin 1992:7).

The project subsequently evolved into the Belize Valley Archaeological Reconnaissance Project (BVAR) in 1992, and the results of the 1988 to 1992 survey produced a map in 1994 by Shawn M. Brisbin (Figure 1). The project focused on groups that were in immediate danger of being destroyed due to development, which accounts for the “gaps” between the groups on the maps. Awe and Brisbin described the tribulations of the survey in their “*Now You See It, Now You Don’t*” article: “Quite often surveying in an area would have to be put on hold in order to allow the survey team to take off and map settlements that had been exposed by land clearing for the construction of new homes” (Awe and Brisbin 1992:4). The problems of surveying in dense jungle vegetation does not equate to problems with the destruction of cultural materials from modern development and looting.

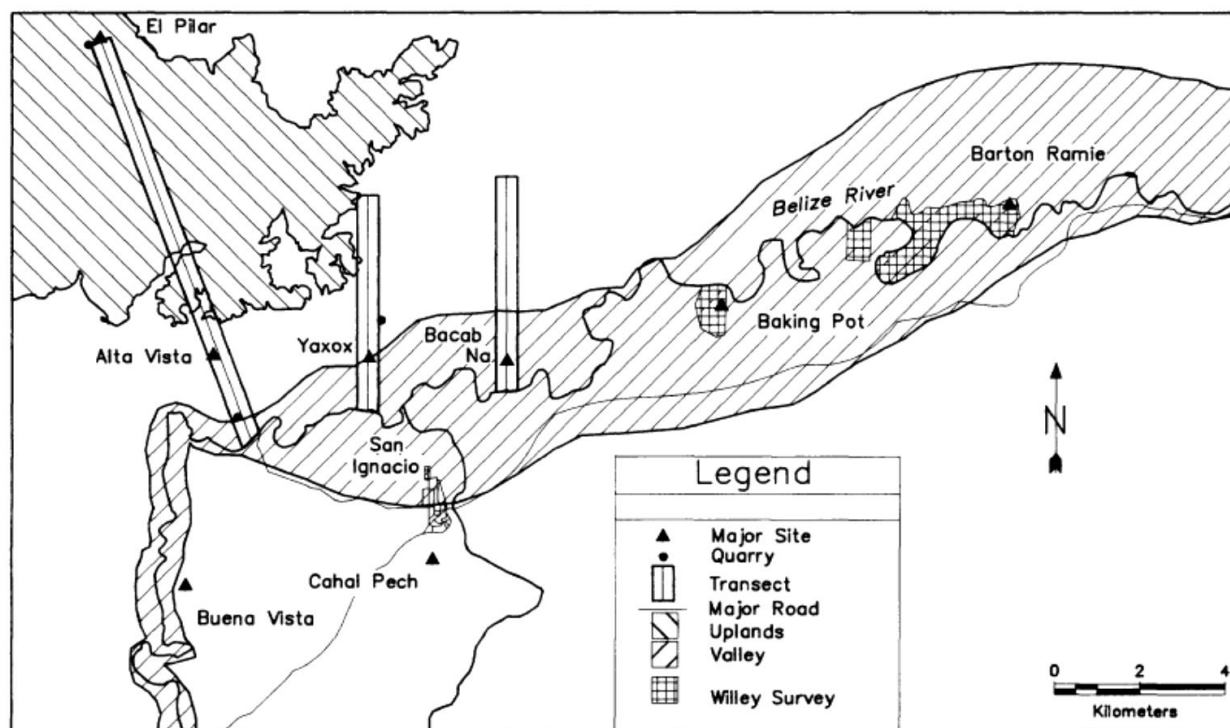
As modern development expands, the frequency of looting increases, putting the outlying settlement of Cahal Pech in danger. BVAR reinitiated the settlement survey of Cahal Pech in 2011. The goals were to systematically map the peripheral settlement; document the variety of settlement features across the landscapes; determine the settlement boundary of Cahal Pech; and observe patterns that relate to a larger regional context.

## PREVIOUS RESEARCH

### *Settlement Research in the Belize River Valley*

The study of settlement patterns in Maya archaeology developed in theory and method in the Belize River Valley, initiated by Gordon Willey and colleagues at the site of Barton Ramie in the 1950s. Willey’s (1965) description of settlement at Barton Ramie was the first of its kind in the Maya area.

Willey and his colleagues were aware that the Belize River Valley was densely settled but focused their research on the alluvial bottoms in pursuit of observing specialized agricultural patterns (Willey *et al.* 1965; Ford and Fedick 1992:37). Ford and Fedick noted in the BRASS report that in comparison with other sub-regions of the central Maya Lowlands, the upper Belize River Valley “exhibits relatively high settlement density” (Ford and Fedick 1992:39). This pattern seems to hold true for the settlement at Cahal Pech. The BRASS study focused its survey north of the Mopan River, recording settlement features, mounds, terraces, *aguadas*, and *chultunob*, Ford and Fedick also documented environment-settlement relationships and land resources (capability) across various landscapes (i.e. uplands, foothills, and valleys) (Ford and Fedick 1992:39).



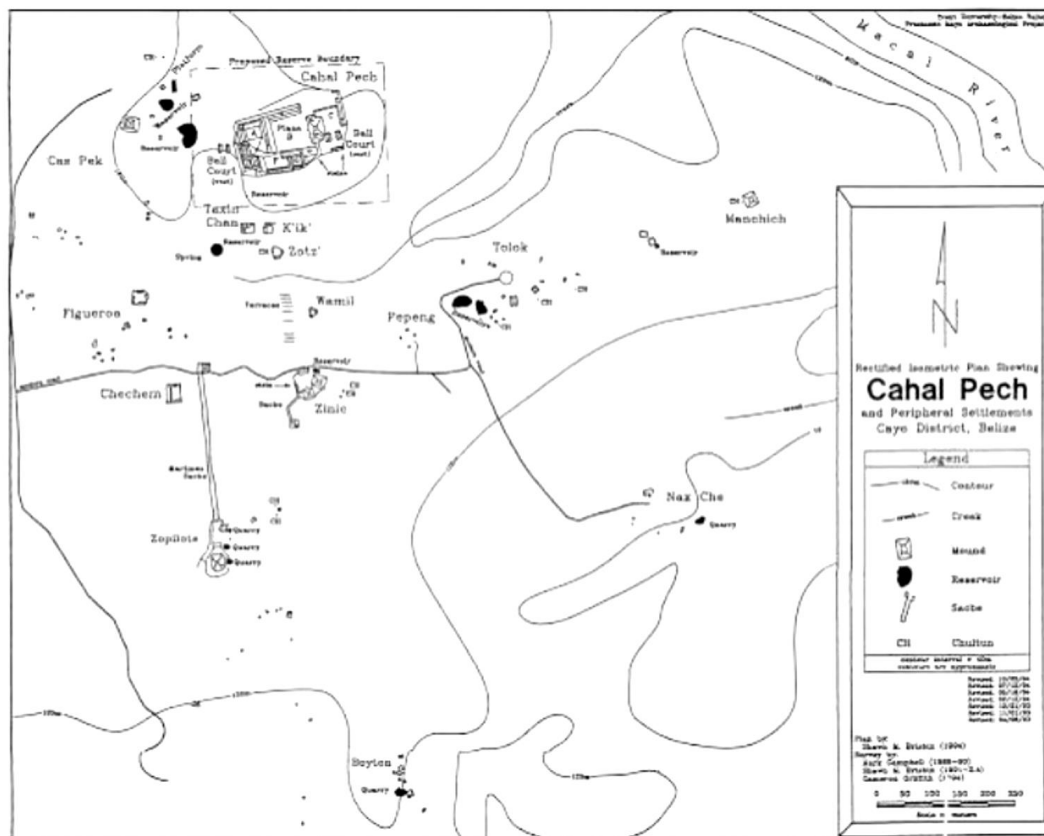
**Figure 1:** BRASS study area (Ford and Fedick 1992:37).

Wendy Ashmore, Jason Yaeger, and Cynthia Robin carried out settlement studies through the Xunantunich Settlement Survey (XSS) which began in 1992 as part of the Xunantunich Archaeological Project (XAP). Their pilot season established that their goals were "to understand Xunantunich as an ancient community" and to place the site "into a larger regional context" (Yaeger 1992:111). The settlement survey lasted until 1995 when the project completed surveying the hinterlands. However, much like at Cahal Pech, settlement research shifted to the excavations of San Lorenzo (Yaeger and Villamil 1996) and smaller groups in rural areas of the hinterlands (Robin 1996).

#### *Settlement Research at Cahal Pech*

The acropolis was the primary focus of research and only the immediate periphery was surveyed. Several mounds and landscape features were recorded to the South and West (Figure 2). The final report suggested that the supporting population settled along the banks of the Macal River to the south and east.

After 1994, little was reported on the peripheral settlement of Cahal Pech, other than at *plazuela* groups with pronounced architecture (Zotz, Zubin, Manchich, Tolok, Tznic, Zopilote etc.). While the focus of research at Cahal Pech transitioned from survey to excavation at this time, BVAR commenced surveys at Baking Pot in 1994 and 1995 (Conlon 1995).

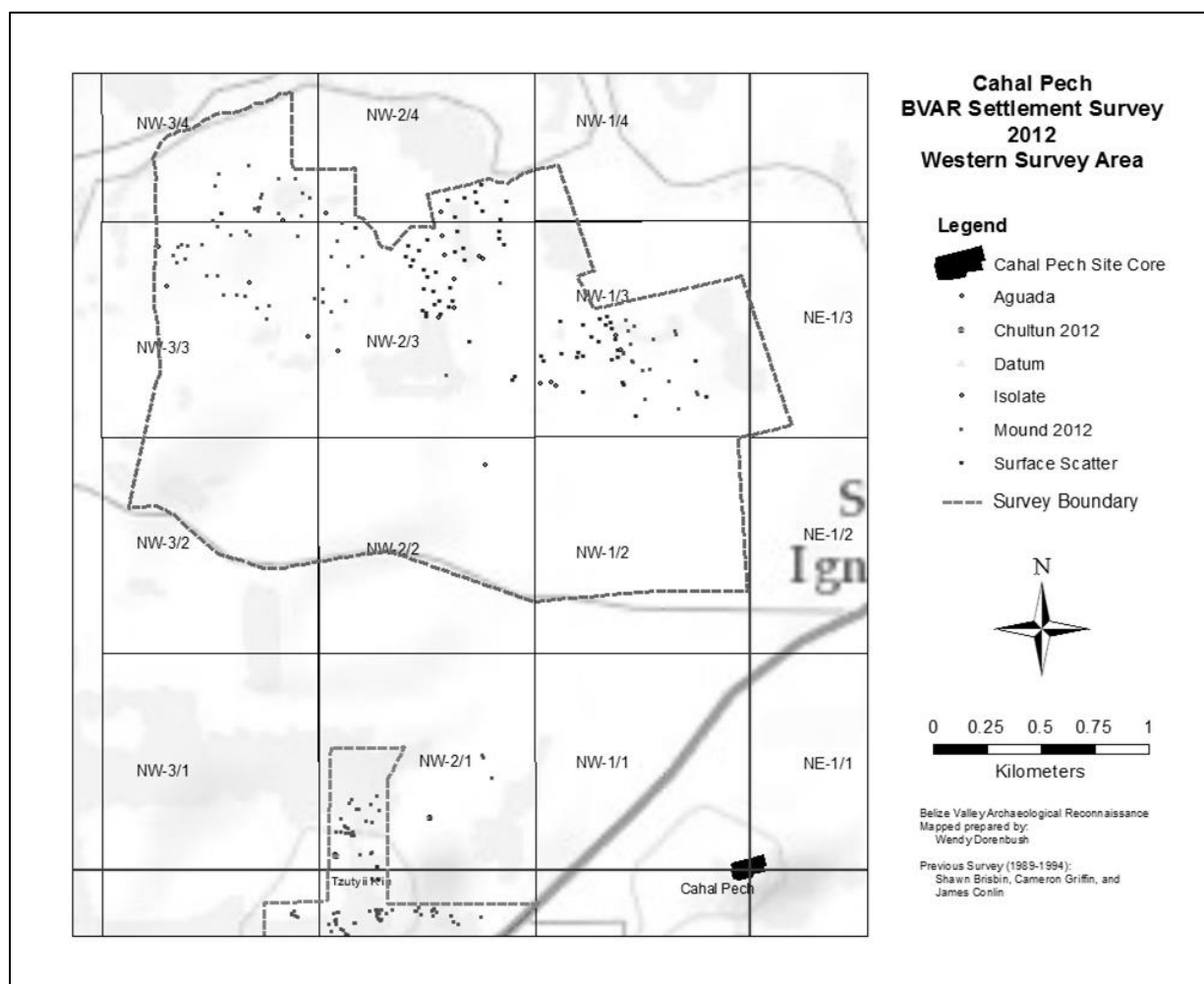


In 2011, BVAR reinitiated the settlement survey of Cahal Pech. Investigation started in the southern periphery because it was less disturbed by modern development in comparison to the other areas. The 1994 map was used to orient the survey. A base line was established on the southern limit of the Cahal Pech Archaeological Reserve boundary. The goal for the 2011 season was to document settlement features between the previously recorded plazuela groups in the southern periphery.

## METHODOLOGY

Building upon the 2011 settlement research in the area south of Cahal Pech, the primary focus for the 2012 BVAR Cahal Pech settlement research focused in the northwest quadrant (Figure 3). Before starting work in the north, the survey began investigating two areas to the west of Cahal Pech around the Tzutziy K'in group (see Ebert and Dennehy, this volume). After a week in this area, the survey began working in the northwest quadrant of the northern periphery. Cultural and geographic features were recorded using a handheld GPS and field notebook. Sketch maps were drawn with either tape or pace measurements of features.





**Figure 3:** Map of 2012 Settlement Survey: Northwestern quadrant.

The northern settlement of Cahal Pech is located primarily in modern agricultural fields and residential development. Bullet Tree Road bisects the northern extent along an east-west axis and this was used as an arbitrary base line for the survey. As most of the area surveyed was on private property, the survey utilized a grid sampling strategy using modern property boundaries so as to avoid conflict with property owners. This allowed the 2012 survey to cover an area of 7.1 square-kilometers (Figure 3). Within each survey grid, the crew lined up in 10 to 20 meter intervals, based on visibility, along a baseline and walked the entire area, documenting features with a handheld Garmin GPS and tape and compass. If artifacts were identified on the surface, the crew would line up and pass over it once, collecting any diagnostic ceramics or special finds on the surface. Once the pedestrian survey was completed on one property, the survey would continue to the next property. The survey began work in the orchards behind Hode's Place and continued north towards the confluence of the Macal and Mopan Rivers, which became the northern boundary for the 2012 field season. The survey then moved west and continued the same pattern of walking southward from the river towards Bullet Tree Road, which was used as the southern boundary.

The survey identified over 250 mounds during the 2012 field season. For the purposes analysis, the settlement of Cahal Pech was divided into a grid. The midpoint of the site core, distinguished by the terrace boundary in Plaza B, is used as the central axis for the grid. Each square of the grid is one square-kilometer (Figure 5).

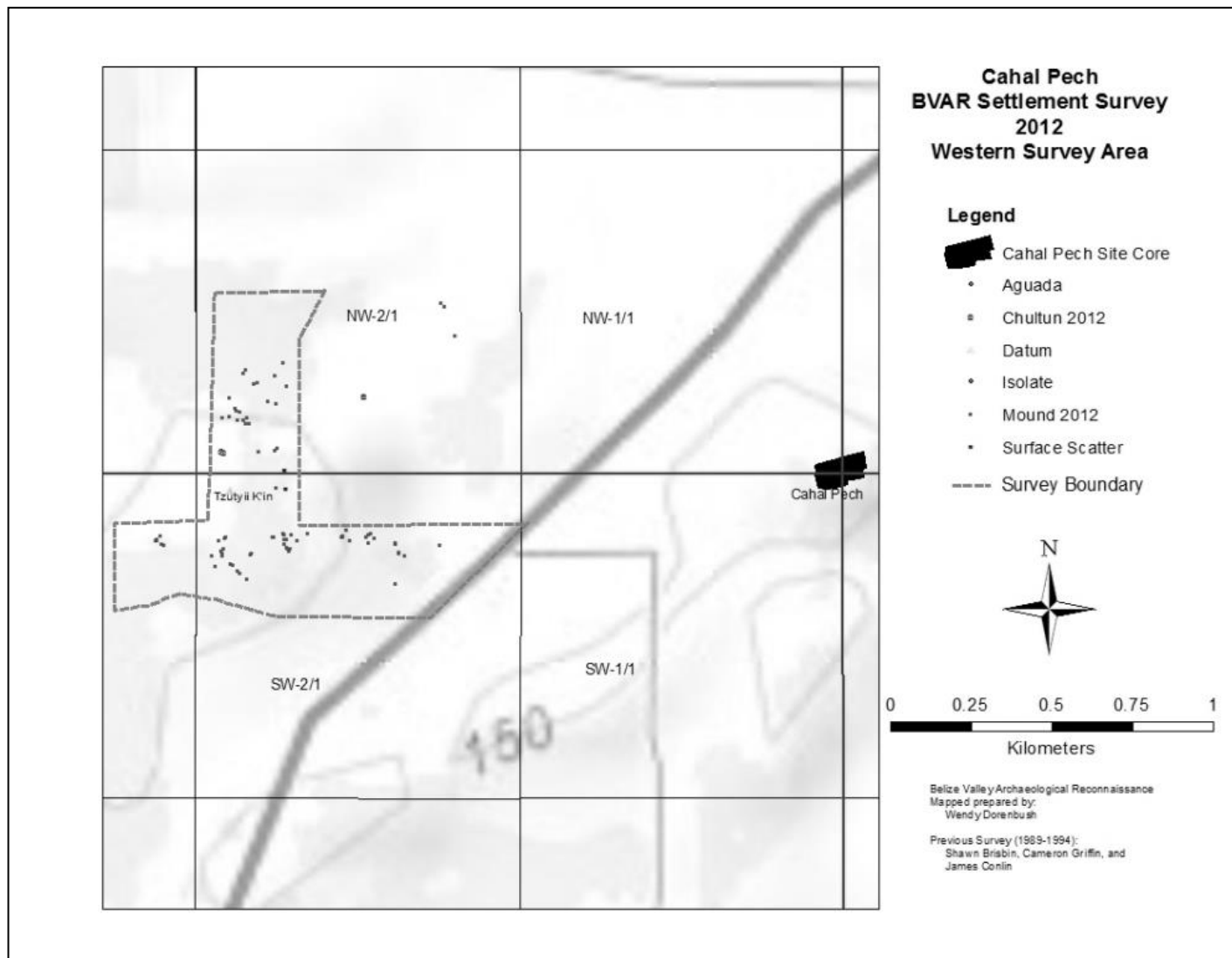
## **SURVEY RESULTS**

### *Cahal Pech Western Settlement*

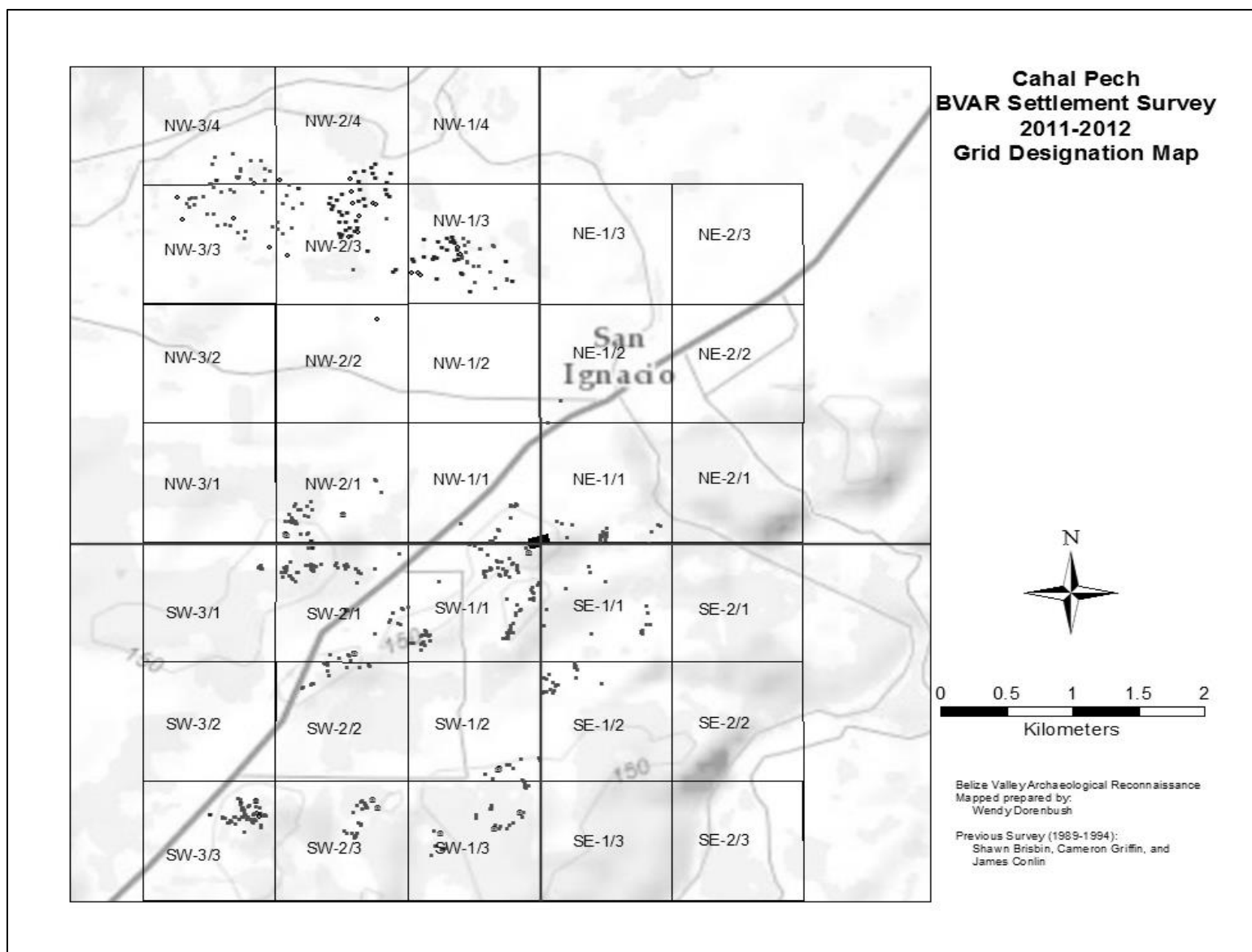
A large formal house group west of Cahal Pech, named Tzutziy K'in, was discovered in January by Awe. The group was excavated by Claire Ebert and Tim Dennehy (this volume). Dorenbush began a pedestrian survey around the border of the group documenting two aguadas, several isolated or small groups of mounds, two possible chultunob, and a creek to the north that appeared modified with possible damming features (Figure 4). The survey crew followed a seasonal creek from Tzutziy K'in going north towards Bullet Tree Road, mapping in features along its sides. Due to lack of participation by landowners on both sides of the Tzutziy K'in group, the crew was not able to collect data on the adjacent properties. The survey continued on the Windy Hills Eco-Resort property, the area south of the road that leads to Tzutziy K'in. A smaller group of mounds, the tallest barely 2 meters above surface, was located roughly 200 meters southwest. This group consisted of 6 mounded features centered around a plaza. Two other groups of mounds were located on the Windy Hills property. Another *plazuela* group on a property southwest of Cahal Pech was discovered during the off season by the property owner while clearing his land for a pasture. This area was not surveyed in 2011 during the Southern periphery survey. The group consisted of three, possibly four, mounds built onto a platform that had been badly bulldozed. The western periphery was not completed during the 2012 field season and it will be the initial concentration of the survey in the 2013 field season. The area to the South of Bullet Tree Road and North of the George Price Highway (Figure 3) will be investigated using the same methodological technique.

### *Cahal Pech Northern Settlement*

In the 1988 Cahal Pech Project Report, the visual survey of the Cahal Pech hinterlands noted that the northern periphery would be difficult because of the location of San Ignacio. The town caps the immediate northern periphery and after 2 kilometers north of the site core the area is mostly utilized for modern agriculture. Awe, Campbell, Bill and Addyman suggested that the settlement density is lower than in the south, east, and west (Awe et al. 1988:7-8). This assumption came about because this area lies in a alluvial valley between the two branches of the Belize River and susceptible to periodic flooding, making it a prime area for agriculture (Awe et al. 1988:8). The Cahal Pech Project report suggests that agriculture is the primary function; however the 2012 survey found residential features throughout the area suggesting a more complex function.



**Figure 4:** Map of 2012 Settlement Survey: This map displays the locations of mounded features west of Cahal Pech.



**Figure 5:** Map of settlement survey grid. Each square is 1 km<sup>2</sup>.

The 2012 survey focused on the area between the Mopan River, its confluence with the Macal River, the town of San Ignacio, and Bullet Tree Road. Most of the cultural features recorded in this area were found in quadrants NW-1/3, NW-2/3, NW-3/3, NW-2/4, and NW-3/4 (Figure 4). 67 mounds, 65 surface scatters, 7 *aguadas*, and terracing features were recorded within this area. The surface scatters were presumably mounds at one point, evidence of white marl, construction fill, limestone, and cultural materials were found on each scattered feature. Diagnostic ceramic materials were collected if present.

A driving and pedestrian survey was conducted through the areas with modern development to the North of Cahal Pech, prior to investigating fields, pastures, and undeveloped areas. No remains were located on plots that were fully developed. Some plots that had not been cleared of vegetation had settlement features; however most, especially the larger mounded features, were disturbed from looting.

The survey cut transects according to properties. Once the suburbs of San Ignacio had been surveyed, the crew worked within the agricultural fields and pastures. 100% sampling was accomplished in cattle pastures and cleared fields. On properties with secondary brush that was dense, a transect was cut every 20-30 meter interval depending on visibility and property size.

Approximately two kilometers North of Cahal Pech, where the town area of San Ignacio tappers off and the agricultural fields begin, we found densely settled areas. The distribution of the settlement features followed similar patterns found at Baking Pot and in the lower alluvial valleys of sites within the Belize River Valley (Hoggarth et al. 2008). The northern settlement lies in quadrants NW1/3, NW2/3, NW3/3, NW2/4, and NW3/4. The northwest settlement of Cahal Pech revealed contrasting settlement configurations compared to the southern settlement. Housemound features are more evenly and widely distributed in the northwestern rural area. One of the most interesting areas, however, lacked surface features however 2 *aguadas* were recorded. Also, as the land began to rise in elevation, the survey documented one terrace along a gentle slope. This area is approximately 2 square-kilometers and was located amidst a densely settled area. The area may have had an agricultural function. However, further investigation is needed to determine site function.

### *Surface Collections*

Due to the destruction of 49% of the mounded features in the northern periphery from plowing and modern agriculture, artifacts were exposed on the surface. A sample of diagnostic ceramic artifacts were collected. All obsidian bladelets were collected as well as a sample of lithic materials which include chert bifaces and celts, limestone bark beaters, and some carved slate fragments. The slate fragments appear to be fragments of a slate mace described by Willey in his collection of artifacts from Altar de Sacrificios (1972). There were also many fragments of granite *manos* and *metates* found on the mounded features in the northern periphery. Ground stone artifacts were left *in situ* but were noted, photographed, and counted. The diagnostic ceramic collection from 2011 and 2012 have not yet been analyzed; however, this will take place during the 2013 field season.

### *Special Finds*

In lot CHP-SR1-056, four special finds were collected on the surface. This feature is described as two large (plowed) mounds on a platform. The mounds were 16 meters and 18 meters in width and 14 meters in length and approximately 1.5 meters tall; however due to the modern disturbance by plowing, they were possibly taller. The platform that the mounds rested on was approximately 38 meters by 18 meters. Their orientation was North-South as the two mounds lay parallel to each other. 65 diagnostic ceramic sherds, several of which were polychrome and dichrome fragments, 14 black obsidian bladelets, one bark beater, 2 chert bifaces, a thin chert bifacial tool, and metate and mano fragments, which were left *in situ*, were amongst the general collection for this mound. The special finds included: a carved jade pendant, with a possible Primary Bird Deity motif (SF-SR1-001); a polyhedral obsidian core fragment (SF-SR1-004); a miniature whole ceramic, ash-temper vessel with perforated sides (SF-SR1-005); and a green Pachuca obsidian bladelet fragment (SF-SR1-003). Nearby, a whole polyhedral core (SF-SR1-006) was located and recorded as an isolate (Figure 6A-F).

The remainder of special finds was found within another group of mounds less formally organized and equally destroyed by modern agriculture. This area is approximately 450 meters west of lot CHP-SR1-056. The largest scatter, designated as lot CHP-SR1-058, with a diameter of 51 meters and an approximate height of 1 meter, had many diagnostic ceramic fragments, chert bifaces, mano and metate fragments, and jute shells, the latter two were left *in situ*. The special find from this feature was a piece of worked bone that may have been a handle. Approximately 50 meters to the west, another scatter had a piece of worked marine shell (SF-SR1-008) that looks like a possible awl. Another modified marine shell fragment (SF-SR1-009), a possible pendant, was found near a house on the edge of an corn field, so the context of this artifact is compromised.

500 meters to the west is the property of Don Frutos. While asking for his permission to work on his land, he gave the project a polychrome ceramic fragment with two glyphs on the inside of the rim (SF-SR1-011). Awe identified the ceramic as a Cabrito Cream polychrome, a Late Classic type. Don Frutos found the piece while building his house. His house is on top of a platform, 28 meters by 23 meters, approximately 1.5 meters tall. The modern house is located in the center of the platform, and while establishing the foundation, Frutos said that two mounds had once been there. They were leveled during the construction. In one of his corn plots, about 50 meters from the house, was another mound that had been plowed and on the surface was a piece of polished greenstone (SF-SR1-010).

### *The Anomalous Area*

An area of approximately 2 km<sup>2</sup> revealed little to no surface features along Bullet Tree Road leading toward the densely settled areas to the north. This area is intriguing because of its shape, size, and proximity to a largely settled area. One proposition is that since the area is located in the midst of modern residential development, many of the cultural features could have been cleared or destroyed by bulldozers when the lands were cleared. Most of the vegetation in these areas was secondary growth, suggesting that the natural forest was cleared years ago.



A.



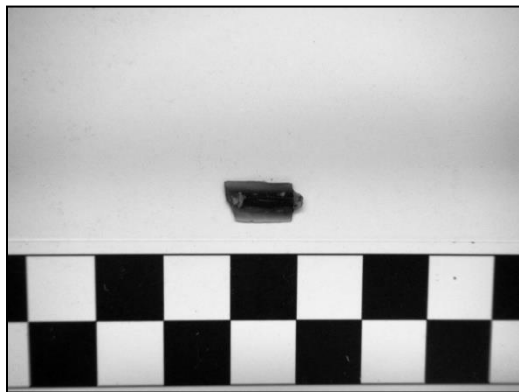
B.



C.



D.



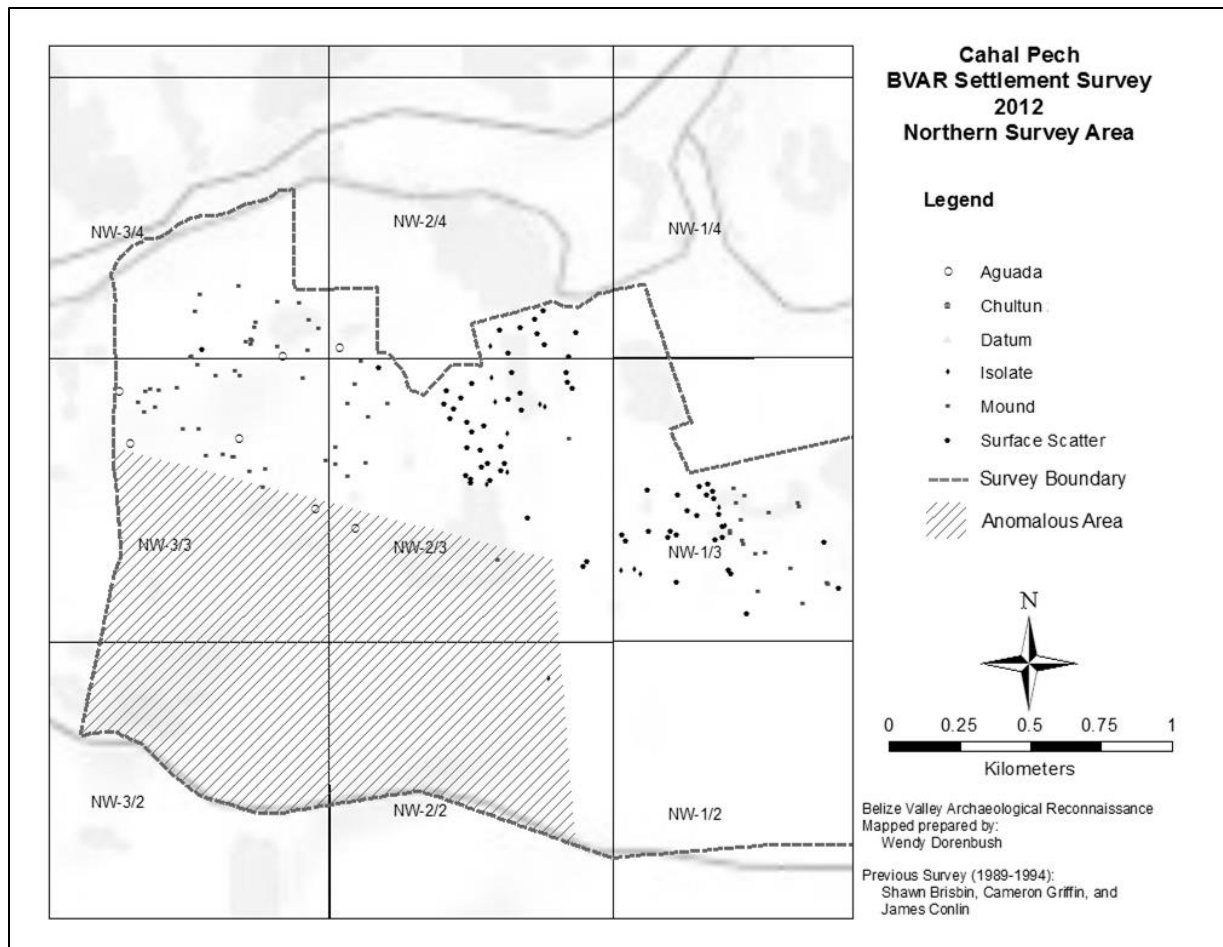
E.



F.

**Figures 6:** Special finds recovered from the 2012 Cahal Pech settlement survey. A.) Cabrito Cream polychrome fragment; B.) Miniature vessel; C.) Carved jade pendent; D.) Polyhedral obsidian core; E.) Pachuca obsidian bladelet fragment; F.) Worked bone.





**Figure 7:** Map of surveyed area devoid of settlement and less modern disturbance.

However, only two plots of land are currently developed. One is occupied by the hospital and the other an eco-resort with a medicine trail that had been reasonably untouched but maintained by the resort staff. The other, and more probable, explanation for this area is that it was maintained by the Maya as an agricultural field or a cultivated forest. Further testing of this area will determine the function.

## DISCUSSION

The patterns of distribution, size, and type of settlement features in the northern periphery of Cahal Pech differ to those documented to the south. The average mound density per square kilometer (Table 1) to the north is 14.43, whereas the southern periphery doubles in density with an average of 33.90 mounds per kilometer<sup>2</sup>. The size of housemounds also reflect a change in settlement configurations from north to south (Table 2). Excluding the elite residential structures that were recorded by the previous survey, the housemounds in the southern periphery averaged 7-8 meters at the base and were generally less than a meter tall. Settlement clusters in groups of 3-4 housemounds, usually centered around a patio, with resource-management features

Area	No. of Mounds	Mounds / Km <sup>2</sup>
S. Periphery	339	33.9
SE Quad	37	18.5
SW Quad	302	37.75
N. Periphery	202	14.43
NW Quad	180	15
NE Quad	22	11
Total	541	23.52

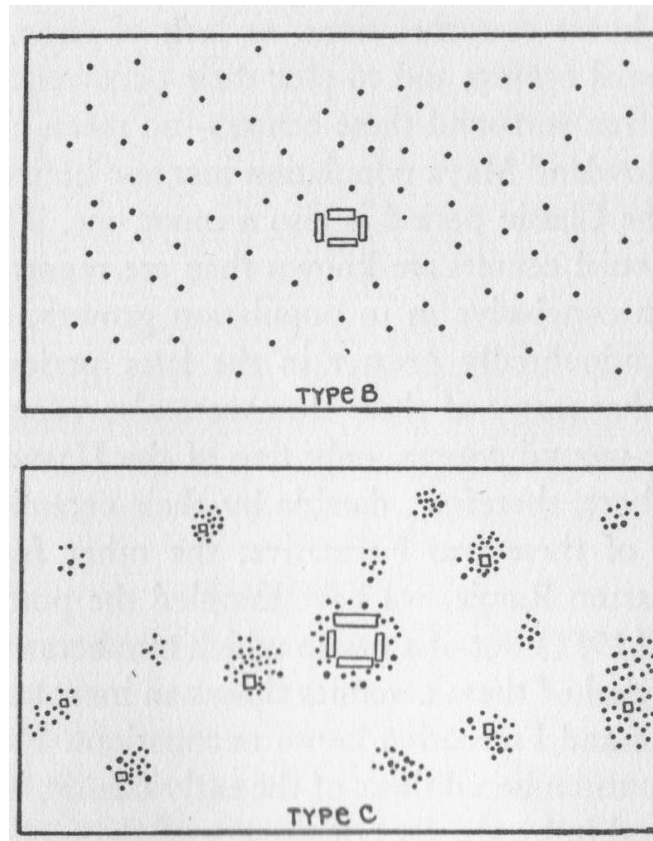
**Table 1:** Mound density per square kilometer (refer to Figure 5 for a map of the mound distribution).

Periphery	Length(M)	Width (M)	Diameter (M)	Height (M)
Northern	12.08	11.71	29.5	1.07
Southern	8.39	7.56	15.5	0.92

**Table 2:** Average housemound sizes in the northern and southern peripheries.

(Ashmore 1981) such as terraces and chultunob nearby. The northwestern settlement at Cahal Pech is more evenly distributed throughout the low valley north of the site core. The housemounds were on average 12 meters at the base and were taller than 1 meter. While the northern periphery is heavily disturbed due to modern development, it is likely that the settlement pattern would have been continuous until the elevation of the landscapes begins to rise. As the valley rises into the hills, settlement changes from being evenly distributed to clustered in communities on hilltops.

These patterns in lower elevations are similar to other sites such as Baking Pot, Barton Ramie, with settlement in alluvial valleys (Conlon 1995; Hoggarth et al. 2008; Willey et al 1965). The variations of patterns appear to be related to the landscapes on which they are observed. The predictive model used in Ford and Feddick's survey of the Upper Belize River Valley describes these patterns based on soil capacities and environmental factors (1992). The settlement at Cahal Pech appears to have the same patterns when it comes to the geographical landscape. Depending on whether the land is hilly or in a low valley, the Maya distributed themselves in two types of patterns. To the north, the settlement has more widely distributed isolated mounds, some of which are build onto large platforms with multiple structures. The settlement closely resembles Willey's "type B" pattern from his idealized model, whereas the southern periphery exhibits a "type C" pattern (Willey 1956:111) (Figure 8).



**Figure 8:** Idealized models for lowland Maya settlement (Willey 1956:111).

The mounded features and surface scatters of the northern periphery were more evenly distributed than the settlements in the southern periphery. This is most likely due to the low-lying nature of the topography which floods periodically. Most housemounds appear to have been built on platforms to raise the structures above the flood line. Until excavations are carried out, the chronology of this area is relatively unknown. However, due to the destruction of nearly half of mounded features in the northwest quadrant, some diagnostic ceramic artifacts recovered alluded to the area's occupation. For example, on mound A272, lot CHP-SR1-056, an Early Classic mammiform-foot fragment was collected amongst Terminal Classic Cayo-unslipped fragments. Surface scatters lack context, however, the typology of ceramics allow for an estimate of the chronology. However, earlier materials will be under represented in this study until excavation takes place.

Landscape features and modifications transitioned from north to south as well. Terracing was the most common landscape feature in the south. As the elevation dropped, terracing declined in frequency and was replaced by water management features. More aguadas and modified creeks were recorded in the northern extent of Cahal Pech.

The Maya of Cahal Pech showed an intimate relationship and understanding of their environment through their settlement. It is apparent that settlement patterns, orientations, and distributions change over various landscapes. Excavations of the northern and western

settlement at Cahal Pech have not been carried out but are planned to take place once the survey has been completed.

## ACKNOWLEDGEMENTS

I would like to thank Jaime Awe, Julie Hoggarth, Rafael Guerra, Nancy Peniche, Miguel Tzib, Abraham Guerra, the 2012 BVAR field students and staff for their continued support and help throughout the field season and beyond. I also want to thank California State University, Los Angeles for providing funding for field research (Alumni Association Scholarship, RSCA Graduate Funds for Research, and the ASI General Scholarship).

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## **PRELIMINARY INVESTIGATIONS AT TZUTZIIY K'IN**

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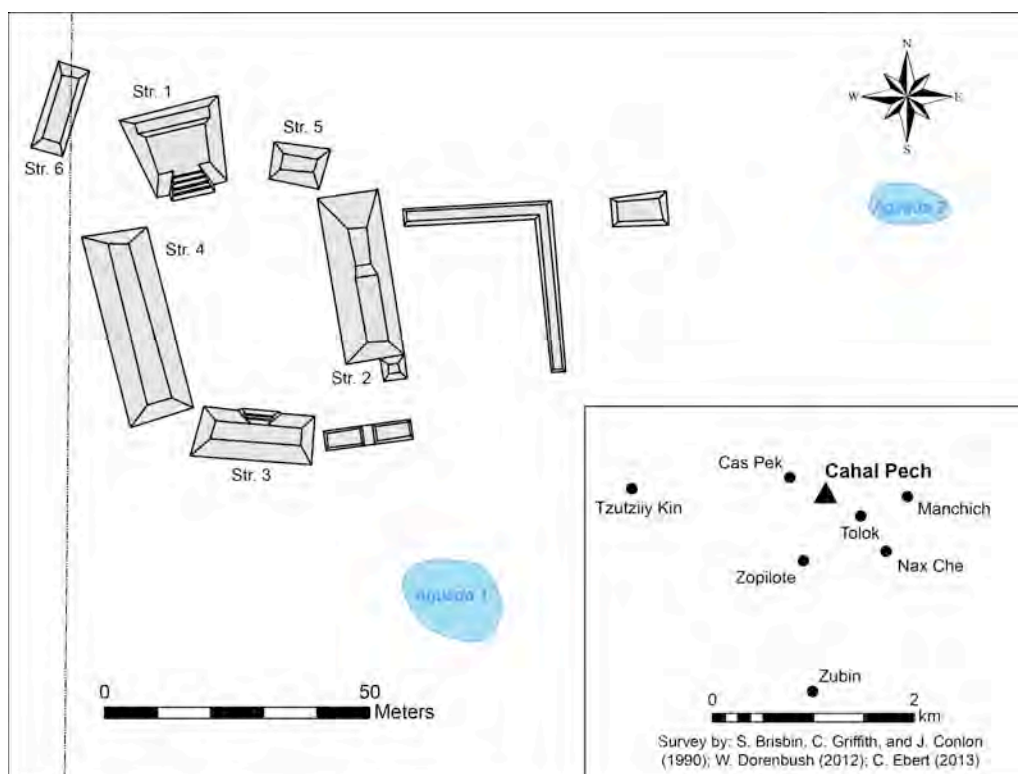
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### **INTRODUCTION**

The aim of investigations at the Tzutziiy K'in (TK) Group is to examine changes in ancient Maya households as populations expanded and became more urbanized and hierarchical in the Belize Valley during the Preclassic period (ca. 1000 BC - AD 250) and into the Classic period (ca. AD 250-900). The TK Group is a large residential group located 1.78 kilometers as the crow flies (Plaza center: 16Q 277601N 1896841E, ~180 m asl) from the ceremonial center of Cahal Pech, one of the major political centers in the upper Belize River Valley (Figure 1). Preliminary investigations presented in this report suggest that settlement at TK began in the Middle Preclassic around 500 BC and lasted through the Terminal Classic, roughly contemporaneous with major occupation at Cahal Pech.

Investigations by archaeologists working in the Maya Lowlands have identified that many of the hallmarks of Classic Maya society (e.g., kingship, public architecture, hieroglyphic writing) developed during the Preclassic Period (Healy 2006). Prior to this time, the ancient Maya lived in small, egalitarian, and economically autonomous household groups. Demographic expansion and economic growth during the Middle Preclassic (1000 – 400 BC) and into the Late Preclassic (400 BC – AD 250) periods in the Belize Valley (Clark and Cheetham 2002) were accompanied by the appearance of public architecture and some larger household groups, suggesting increasing centralization of economic power and the emergence of higher status individuals within local communities (Earle 1997). At this time a shift can be noted in the appearance of more standardized ceramics, evidence of long-distance trade networks dealing in exotic tools, and the beginnings of specialized household craft production in the archaeological record throughout the Belize Valley (Awe 1992). Archaeological research in other areas of the Maya Lowlands suggests these changes were far-ranging during the Middle and Late Preclassic Periods (Clark and Cheetham 2002).





**Figure 1:** Plan of architectural features identified and mapped at Tzutziy K'in. Inset shows location of Tzutziy K'in relative to Cahal Pech and other settlement groups.

Previous explanatory models for the development of stratification in Mesoamerica have traditionally described change in economic production, consumption, and distribution of resources as a consequence of the unidirectional growth of hierarchy, emphasizing actions of elites (Brumfiel and Earle 1987). Such perspectives discount behaviors that likely occurred at differing local and regional scales with varying effects on households. The household was the most basic economic unit in ancient agrarian societies. Among the Maya, a household can be defined as a task-oriented, co-residential group that conducts daily activities within a place of dwelling (Flannery 1976). Economic interaction integrated households into larger social and political networks, where the tensions between self-interest and collective values motivated individual action towards accumulating resources and status (Hirth 1993). Preliminary excavations at TK are aimed at examining the distribution, scale, and technology of ancient Maya household activities at the site. Change in artifact assemblages over time and in comparison to larger sites like Cahal Pech can demonstrate differences that are likely the result of economic, and thus social, inequalities.

All excavation at TK focused on recovering temporally diagnostic materials (e.g., diagnostic ceramics, carbon samples, human and faunal remains) to help construct a chronology for household growth and scale of economic activities at the site throughout its occupation. To date, six radiocarbon samples taken from excavation throughout TK have been analyzed (Table 1). Samples were processed at the Penn State Human

**Table 1:** Radiocarbon dates for Tzutziy K'in. All AMS  $^{14}\text{C}$  dates were calibrated using OxCal 4.2 (Bronk Ramsey 2013)

Sample	UCIAMS Number	Lot	Str.	Unit	$^{14}\text{C}$ age (BP)	Cal. yr. (2- $\sigma$ range)
TKG-14	121552	1034	3	3-1	$2150 \pm 20$	352-111 BC
TKG-03	123530	1013	1	LT 1	$1770 \pm 15$	220-335 AD
TKG-11	121551	1000	1	LT 1	$1595 \pm 15$	420-535 AD
TKG-20	121553	1040	2	LT 3	$1555 \pm 15$	432-550 AD
TKG-04	123531	1000	1	LT 1	$1545 \pm 15$	432-567 AD
TKG-25	121554	1060	2	2-3	$1365 \pm 15$	646-672 AD
TKG-23	123532	1058	2	2-2	$1255 \pm 15$	684-780 AD
TKG-06	121549	1015	1	1-2	$1245 \pm 20$	685-862 AD
TKG-08	121550	1018	1	1-4	$1225 \pm 15$	713-879 AD

Paleoecology & Isotope Geochemistry lab, and were processed at the UC-Irvine Keck Carbon Cycle AMS Facility. Results of this analysis are discussed throughout the text.

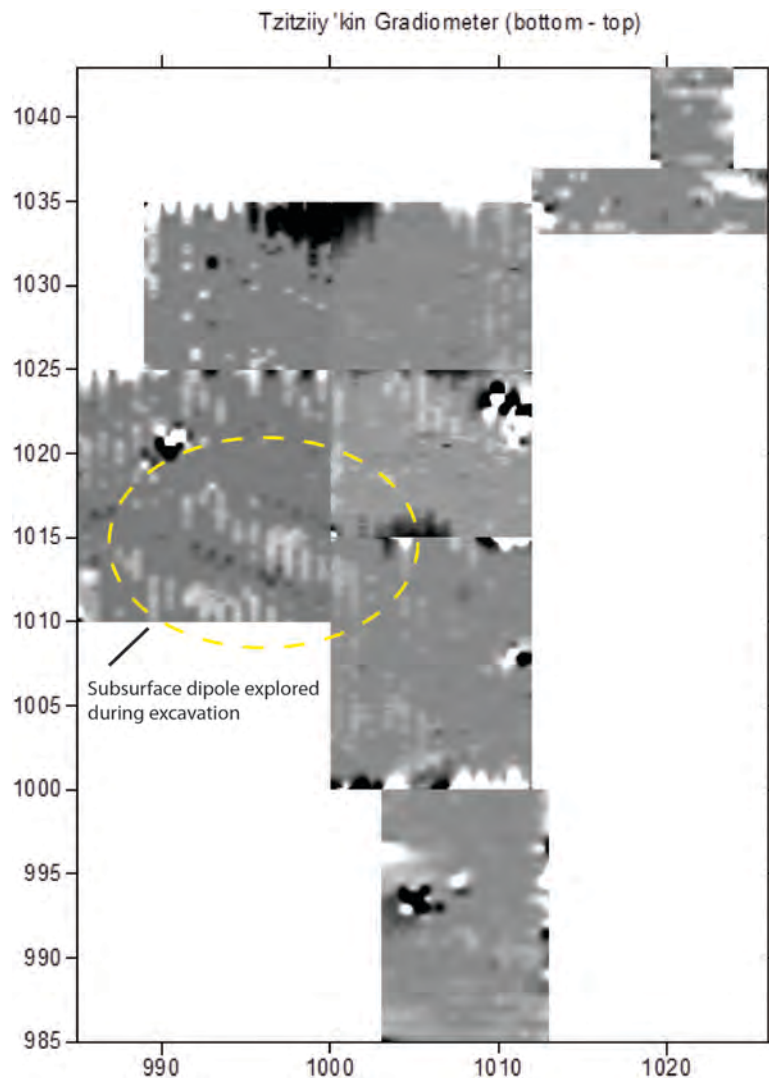
## SITE SETTING, MAPPING & MAGNETOMETER SURVEY

Tzutziy K'in was initially documented on May 14, 2012. Prior to this time there was no public knowledge of the site, perhaps due to its location on private property. The site was heavily looted, with evidence of older and more recent activity in certain areas of the site. All visible architectural features were mapped and documented (Figure 1). The site sits atop a small hill and is composed to two main plazas. A total of seven structures outline the main plaza, with the four largest structures located on each of the cardinal directions. Structure 1, 2, and 3 were investigated through excavation, as well as the main plaza. A second smaller, open plaza is located to the east of the main plaza and is bounded to the north and east by two range structures (these structures are not numbered). Another large mound is located to the east of the architectural core of the site, though it is almost entirely looted. Two possible *aguadas* are also associated with the site. The largest is located to the south and downhill of the main plaza. While it has been disturbed by bulldozing, the presence of cut limestone blocks within the depression suggests possible construction. A second, smaller *aguada* is located east of the main architecture. Clearing of grass on adjacent property to the east of TK revealed terracing, likely agricultural, downhill of the site. Future work will document the extent and nature of terracing associated with the site.

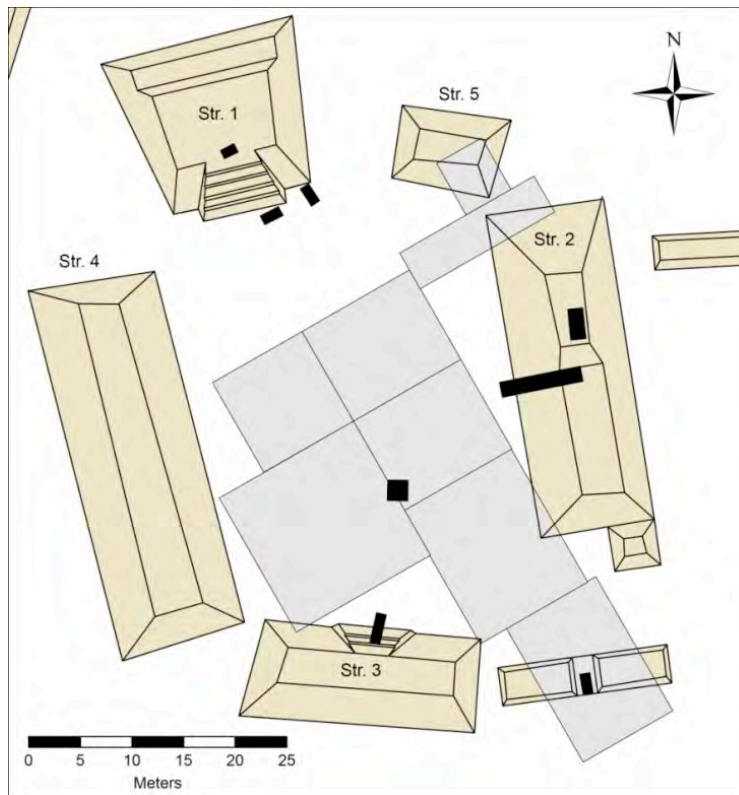
Magnetometer survey was performed at TK in the main plaza in order to locate subsurface features for excavation. Magnetic surveys can be used for detailed mapping of subsurface archaeological (e.g., architectural, thermal) features. Magnetometers are able to detect the presence of items with strong dipolar signatures that represent magnetic anomalies. Metal items, features composed of burned soil, and rocks (i.e., architecture) are easily detectable. At TK, the magnetometer survey performed by Dr. Hector Neff was

used for a low-resolution exploratory survey on the plaza to locate architecture and burning features that contain potentially datable materials, focusing on the recovery of carbonized organic material for  $^{14}\text{C}$  dating (Figure 2).

The magnetometer survey revealed several subsurface anomalies in the plaza. Large dipoles along the east of the plaza and in front of the west structure were later identified as metal objects resting on the surface, including nails and a machete file. A less obvious long anomaly runs the span of the plaza, more or less west-to-east, which initially was hypothesized to be composed of subsurface architectural features. This was investigated by a unit in the plaza, PLZ-1 (Figure 3).



**Figure 2:** Results of magnetometer survey showing the location of large subsurface dipole in plaza targeted for excavation.



**Figure 3:** Locations of excavations units and grid used for magnetometer survey at Tzutziy K'in

## EXCAVATIONS

### *Structure 1*

Structure 1, the northern-most structure in the main plaza, was the most heavily looted at the site. Salvage excavations were conducted in looter's trenches and profiles exposed by looters were cleared to gain an understanding of the stratigraphic construction sequences. Initial investigations began in Looters Trench 1 (LT1) on the south side of the structure centerline, an area likely targeted by looters as the location of a burial. Looters tunneled into the structure from the plaza approximately 5.5 meters, exposing an earlier interior platform construction (also exposed in looter's trench LT2 on the southwest

corner of Structure 1). Two units were placed within the extent of LT1 to clarify stratigraphic sequences. Unit 1-1 was placed inside of Structure 1, taking advantage of the interior of the structure exposed by LT1. Unit 1 was a 1.5 by 1 meter unit, with the goal of excavation to correlate construction sequences from the interior of Structure 1 with another unit, Unit 1-2, placed south of Structure 1 in the plaza. Both units were excavated to bedrock. The top of the structure was also cleared of humic and looter's debris, exposing a complex series of interior benches that composed a superstructure (described in detail below).

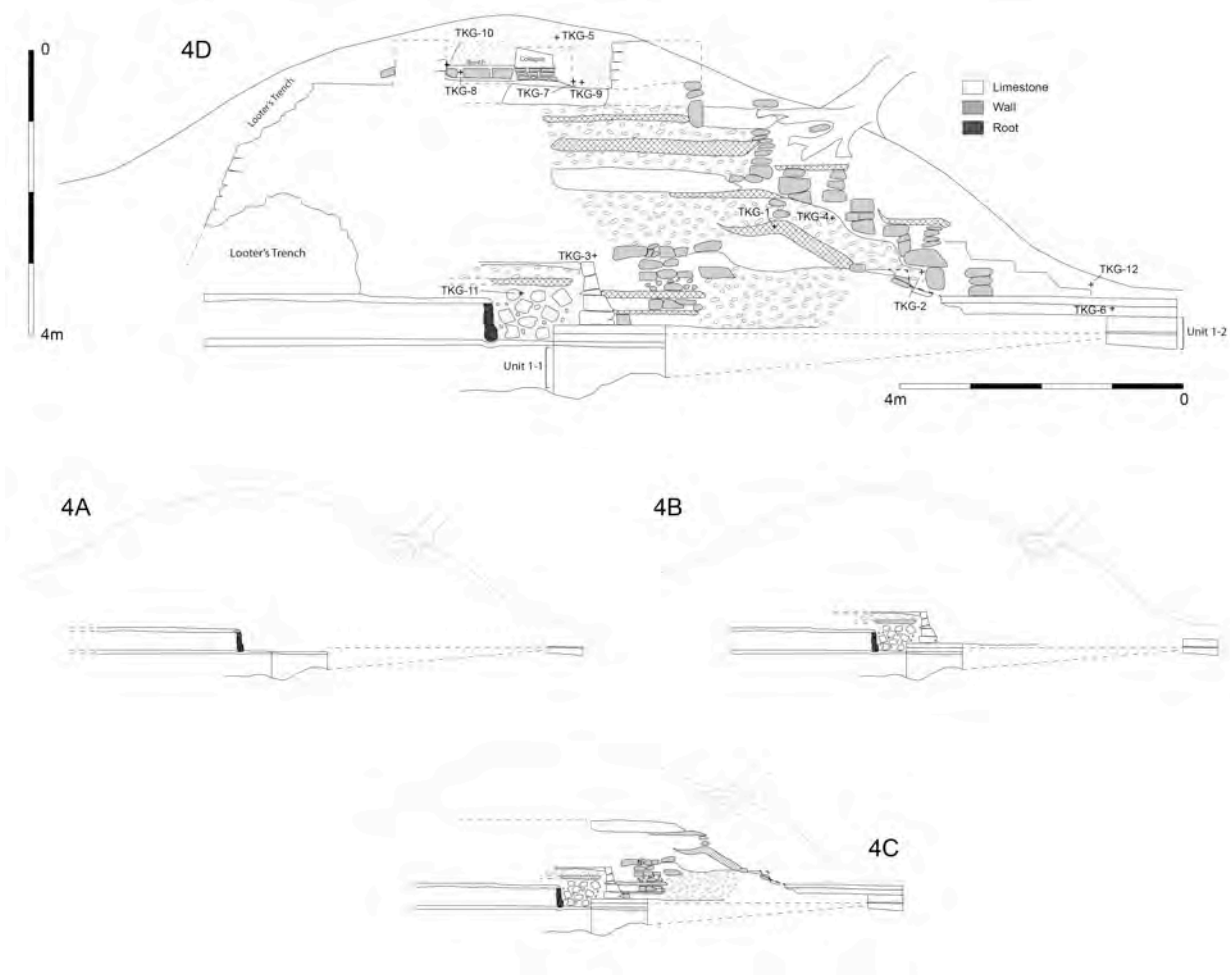
A centerline profile exposed a total of four major construction episodes for Structure 1 (Figure 4):

**TK-1 1<sup>st</sup>:** The earliest construction consisted of a small platform placed on top of a plaster floor (which does not extend completely to the plaza in front of the structure). This structure is visible in LT1, LT2 and in another looter's trench at the back of the structure (Figure 4a).

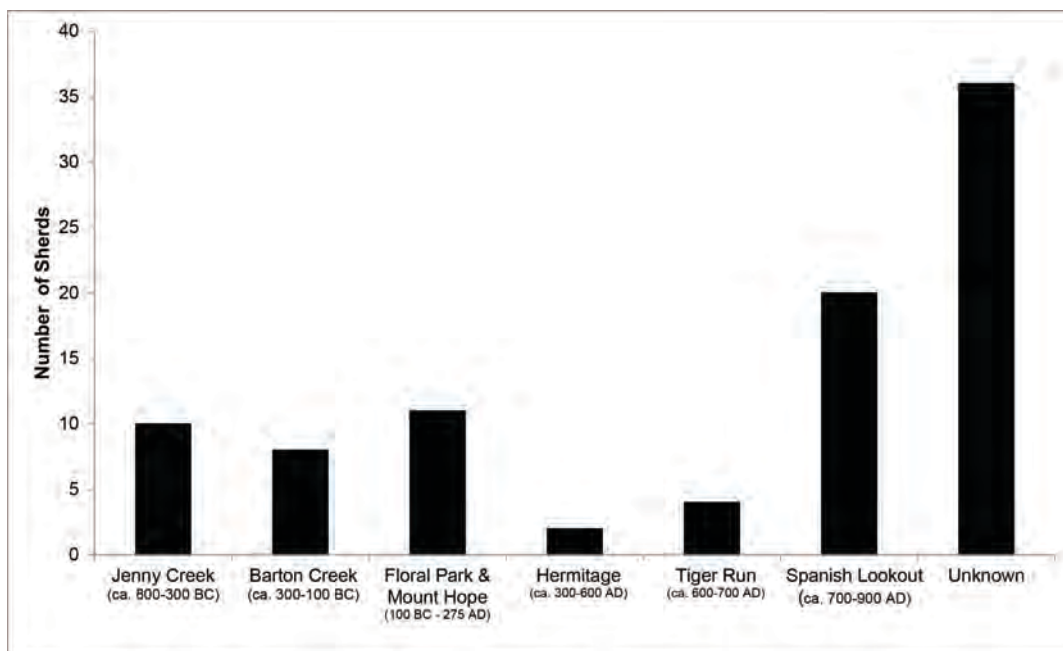
**TK-1 2<sup>nd</sup>:** Subsequent construction consisted activities focused on building an apron-molded platform with an interior of rubble fill and a single construction floor (Figure 4b). A <sup>14</sup>C date (TKG-11) taken from within the fill of the platform places construction in the Early Classic, between 420-535 cal BC. Another <sup>14</sup>C sample (TKG-3), collected from just outside of the TK-1 2<sup>nd</sup> produced a 2 $\sigma$  date range of cal AD 220-335. This suggests that the structure was in used through the Late Preclassic and into the Early Classic Period.

**TK-1 3<sup>rd</sup>:** The largest construction episode for the structure was composed of a series of fill episodes interspersed with construction floors in order to give shape to the structure, which had a stairway facing the plaza. In profile, only the first step was intact. The stairway would have corresponded with a thick plaster floor composing the top of the structure (Figure 4c). The <sup>14</sup>C sample TKG-6 was collected just below the plaza floor that corresponds to the third construction episode at Structure 1, and produced a Late Classic date of 685-862 cal AD.

**TK-1 4<sup>th</sup>:** The final phase of construction corresponds with the superstructure found at the top of the building during excavations. There may have been up to seven steps leading up to the top of the building (Figure 4d). The superstructure, part of the terminal phase of construction on Structure 1 was heavily disturbed by looting. Nonetheless a small room on top was uncovered. A constructed wall 2m long and 1m tall sat in the middle of the room, which may indicate that the room had two doorways, however this remains unclear due to looting activity. The partitioning wall was placed directly in front of a bench that runs east-to-west across the room. The bench continued to the back of the building, terminating in a wall that would be the back of the room. Both the bench and the partitioning wall were plastered over in a single event, suggesting that their construction was contemporaneous. A <sup>14</sup>C sample TKG-8 produced a 2- $\sigma$  date range of AD 713-879, and post-dates the placement and plastering of the bench.



**Figure 4:** (A) Earliest construction at Structure 2; (B) Construction of apron-mold platform; (C) Penultimate and largest construction



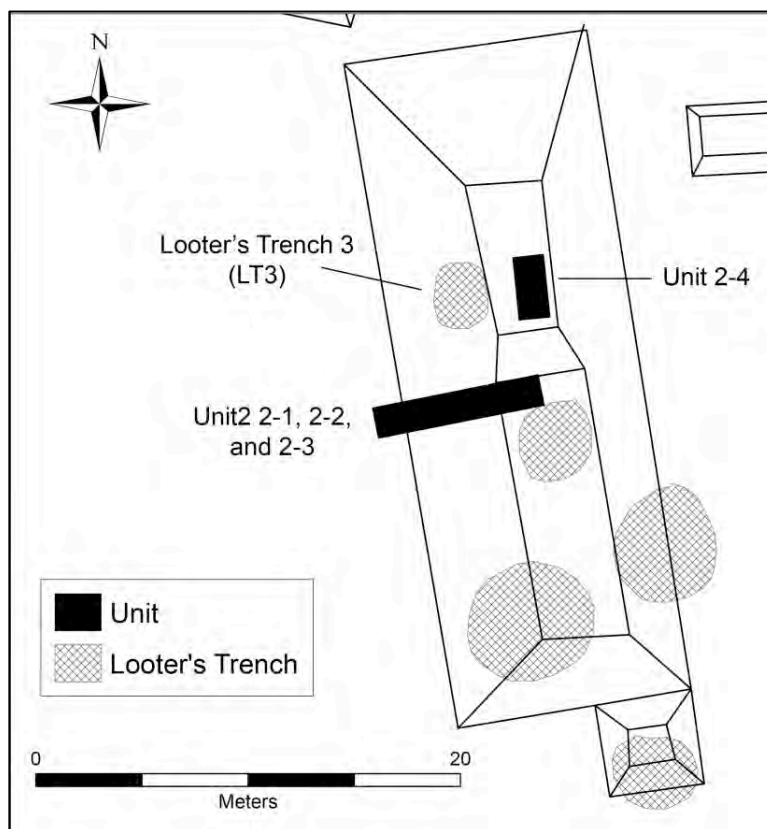
**Figure 5:** Count of diagnostic sherds from Structure 1 by group, with corresponding date noted.

Preliminary ceramic analysis of diagnostic ceramics collected from LT1 was conducted to the ceramic group level where possible. Results suggest that construction at Structure 1 spans from the Preclassic through Terminal Classic Periods (Figure 5). Of the 91 diagnostic sherds collected, 35 were of unknown types. While it is not a completely representative sample, it suggests that occupation and construction at the site began fairly early, possibly as early as ca. 500 BC. Radiocarbon dates for TK-1 3<sup>rd</sup> and TK-1 4<sup>th</sup> indicate that largest episodes of construction at Structure 1 took place in the Late Classic. Ceramic analyses are in agreement with these dates as the majority of diagnostics come from the Spanish Lookout Complex.

### *Structure 2*

Structure 2 is located on the eastern side of the TK Group main plaza. A pattern identified at other Maya centers including Cahal Pech, eastern structures are often significant locations in terms of ritual and religious activity (Chase 1994; Chase and Chase 1994). Structure 2 is composed of two parts: a larger main northern structure and a small, low addition to the south that extends to the edge of the main plaza. The large main structure was additionally separated into a taller northern summit and a lower southern platform.





**Figure 6:** Locations of excavation units and looter's trenches on Structure 2.

Structure 2 was targeted for excavation because of its location on the main plaza. Three units were placed along the centerline on Structure 2 (Units 2-1, 2-2, and 2-3) and a single unit was positioned on the summit, on the north side of the building (Unit 2-4). The goal of excavation in all units was to examine the construction sequence of the building and to recover temporally diagnostic artifacts and materials. The structure was heavily looted and units were placed in order to avoid damaged areas. Salvage excavation was conducted in a looter's trench located on the west side of the building (LT3) with goal of recovering additional stratigraphic information about the building (Figure 6).

#### *Units 2-1, 2-2, and 2-3*

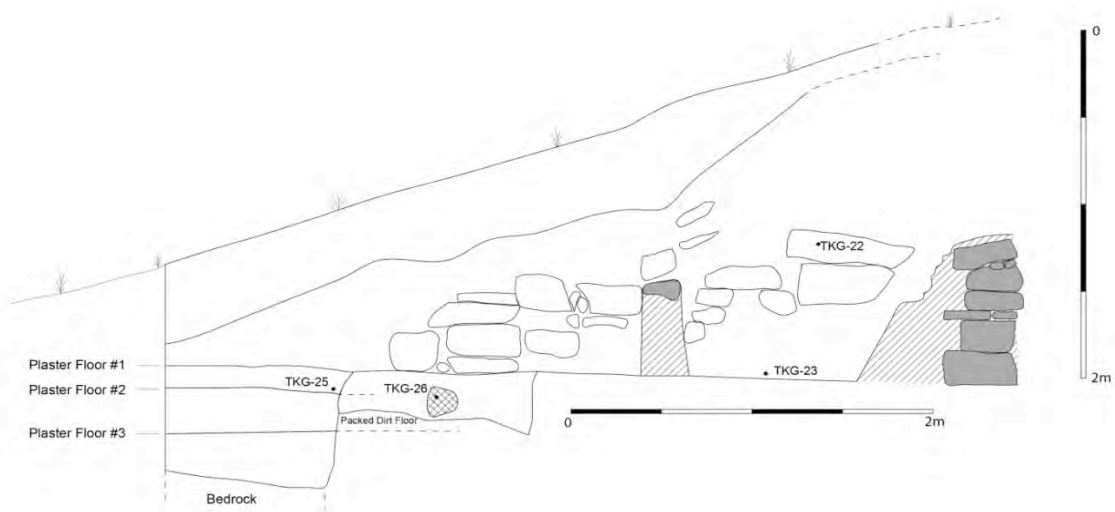
Unit 2-1 began as a 1.5 x 3 meter unit placed on top of Structure 2 running approximately east-to-west down the center of the building. The unit was placed in order to avoid several large looter's trenches had destroyed much of the building. The goal of excavations was to locate a central staircase and to help define the architectural configuration of the structure. After initial clearing of humic debris from the top on the structure and in the unit, large limestone cobbles were uncovered, including several that were aligned along the north side of the unit, running east-to-west. The unit was then extended 7 meters (Unit 2-2 and 2-3) into the plaza in front of Structure 2 in order to continue exposing the wall alignment and other associated architectural features that



**Figure 7:** Locations of excavation units and looter's trenches on Structure 2.

composed the western edge of the building. Figure 7 shows exposed architecture from all three contiguous units. Excavations at Structure 2 revealed a complicated sequence of construction. At least four major construction phases were identified:

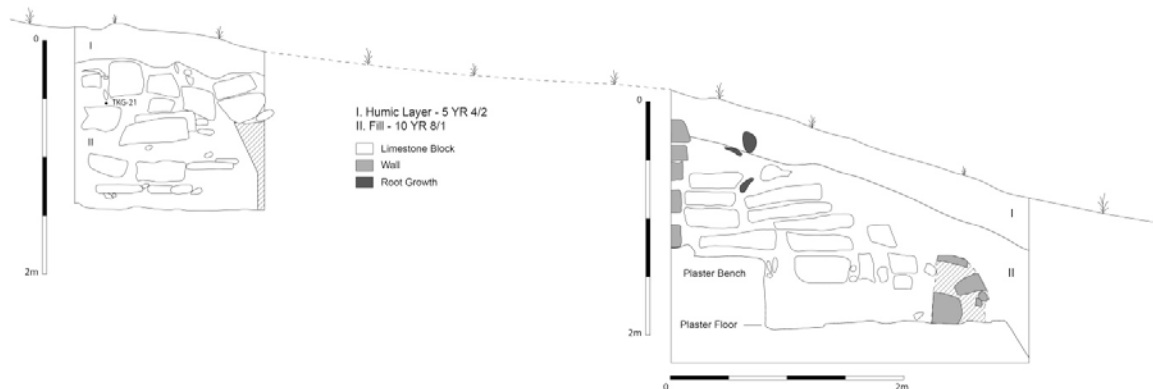
**TK-2 1<sup>st</sup>:** The earliest construction at Structure 2 consists of a series of three plaster floors that were placed above bedrock. A radiocarbon sample (TKG-25) collected directly from the surface of plaster Floor 2 produced a date of 646-672 cal AD, placing all subsequent construction activities at the structure well within the Late Classic. Excavation beneath Floor 2 encountered Feature 1. Feature 1 consisted of a large amount of medium sized cobbles (5-10 cm in diameter) arranged into a circular shape approximately 1 meter in diameter (Figure 9). Feature 1 was initially bisected, with excavation concentrated in the southern half. During excavation, several ceramic sherds and chert flakes were collected. Excavation was expanded to the northern half of the feature. There, beneath the



**Figure 8:** North profile of Units 2-1, 2-2, and 2-3.



**Figure 9:** Unit 2-3 showing northern stepped wall and circular stone feature, center.



**Figure 10:** South profile of Units 2-1, 2-2, and 2-3.

northwest quadrant of the feature, we found the remnants of the rim and neck of a jar that can be re-fit to form an almost complete rim. The matrix beneath the stone circle consisted of a hard-packed matrix that was light brown-grey in color. Excavation beneath Feature 1 revealed the first construction at Structure 2, which consisted of a thick plaster floor (~ 3 cm). Because of the presence of other architectural elements, it is unclear if the floor (Floor 3) continues to the east underneath later construction. Bedrock was encountered approximately 30 cm beneath Floor 3.

**TK-2 2<sup>nd</sup>:** The first construction at Structure 2 consisted of the western structure wall that is associated with plaster Floor 1 (Figure 8). A sloping apron wall is located in the north side of the unit. In the south half of the unit small inset, roughly 50 cm deep, is present forming a low bench (Figure 10) The Plaster floor 1 lips up onto this bench, and it appears that at one time the apron side-wall was covered in plaster as well. Located on the floor in front on the apron wall was a large circular stone approximately 50 cm in diameter (Figure 11). The stone was cracked in half roughly down the middle when found. No markings or carvings adorned either surface. A small radio carbon sample (TKG-26) was collected from beneath the stone after it was flipped over and removed. Additionally as several sherds that appear to be from a single ceramic vessel were located beneath the stone.

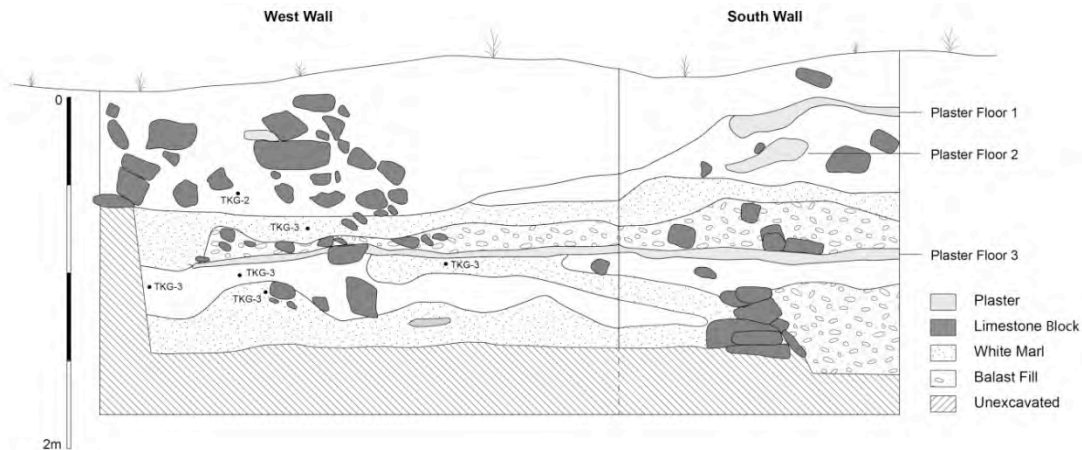




**Figure 11:** Unit 2-2 showing northern stepped wall as well as sloping apron wall and large heart-shaped stone.

**TK-2 3<sup>rd</sup>:** During the second construction episode, two parallel walls were placed perpendicular to the apron wall on top of Floor 1. They also line the north and south baulks of the unit (Figures 8 and 10). The wall consisted of large cut limestone blocks and extended approximately 1 meters west towards the plaza, as shown in Figures 7 and 8, suggesting that at least a portion Structure 2 was considerably enlarged. The walls both abut a low retaining wall located on the west side of the structure, also shown in Figures 7 and 8. Subsequently the space between the walls was filled in. A radiocarbon sample (TKG-23) collected from the bottom of the fill dates its placement to cal AD 684-780 (Figure 8). While the placement of the parallel walls, retaining wall, and fill are interpreted as relatively contemporaneous events, they may have taken place in stages.

**TK-2 4<sup>th</sup>:** The final construction episode on Structure 2 consisted of the placement of an outset stairway leading into the plaza. The steps are located on the north side of the unit (Figure 10). The first two steps were still intact, though the stairway may have had as many as four steps.



**Figure 11:** West and South wall profiles of Unit 2-4.

### *Unit 2-4*

Unit 2-4 was placed on the summit of Structure 2, on the north side of the building. The goal of excavation was to encounter datable material and to better understand the stratigraphy of the structure. The unit was 1.5 by 3 meters and was placed running approximately north-to-south. Immediately in front of this unit was a deep looter's trench (see *Looter's Trench 3* below). Unit 2-4 was placed just behind the looter's trench to help relate to the stratigraphy in each excavation.

The first level of excavation focused on clearing humic layer debris from the surface of the structure, and uncovered ceramics, chert, one jute shell, a fishing net weight, and one *incensario* fragment (bulky ceramic with applique). Chert items found include cores, flakes, at least one bifacial hoe fragment. Similar types of artifacts were recovered throughout excavation of the entire unit, in addition to obsidian blade fragments. The first level ended at a highly eroded plaster floor in the southern portion of the unit, presumably the terminal construction for the building. Floor 1 was identified at a fairly shallow depth on the east side of the unit, with the plaster floor at its most shallow depth in the northeast corner of the unit. A second plaster floor was seen in profile below the first, though it was also eroded (Figure 11).

Below the first two floors was a layer of white marl construction fill. Beneath the marl was a level of ballast fill approximately 20-40 cm thick with some larger stones throughout. The marl and ballast fill episodes capped a third plaster floor that spanned across the entire unit except in the northern most section. Floor 3 was located at depths of approximately 120-140 cmbd.

Immediately below the third plaster floor a layer of white marl was present, interspersed with more compact fill consisting of 10YR 6/2 matrix with small rocks and carbonized plant materials throughout. Several  $^{14}\text{C}$  samples were collected (TKG-31,

TKG-32, and TKG-34) from the fill that are contemporaneous to the fill episodes. Further excavation into the construction fill revealed a mass of cut stones, perhaps the remains of a short collapsed wall in the southeastern portion of the unit. North of the wall, the pattern of white marl and soil fill continued, while to the south (outside of the construction) the area was filled in with ballast stones.

Excavation of Unit 2-4 was terminated at approximately 185-190 cmbd due to time constraints. The unit was covered with a tarp and backfilled. Future endeavors at the unit will continue with excavation and focus on recovering a larger sample of  $^{14}\text{C}$  samples in order to construct a relatively precise chronology for construction of Structure 2. Additionally, ceramic analysis will aid in developing a chronological framework and constructing models for the development of the group.

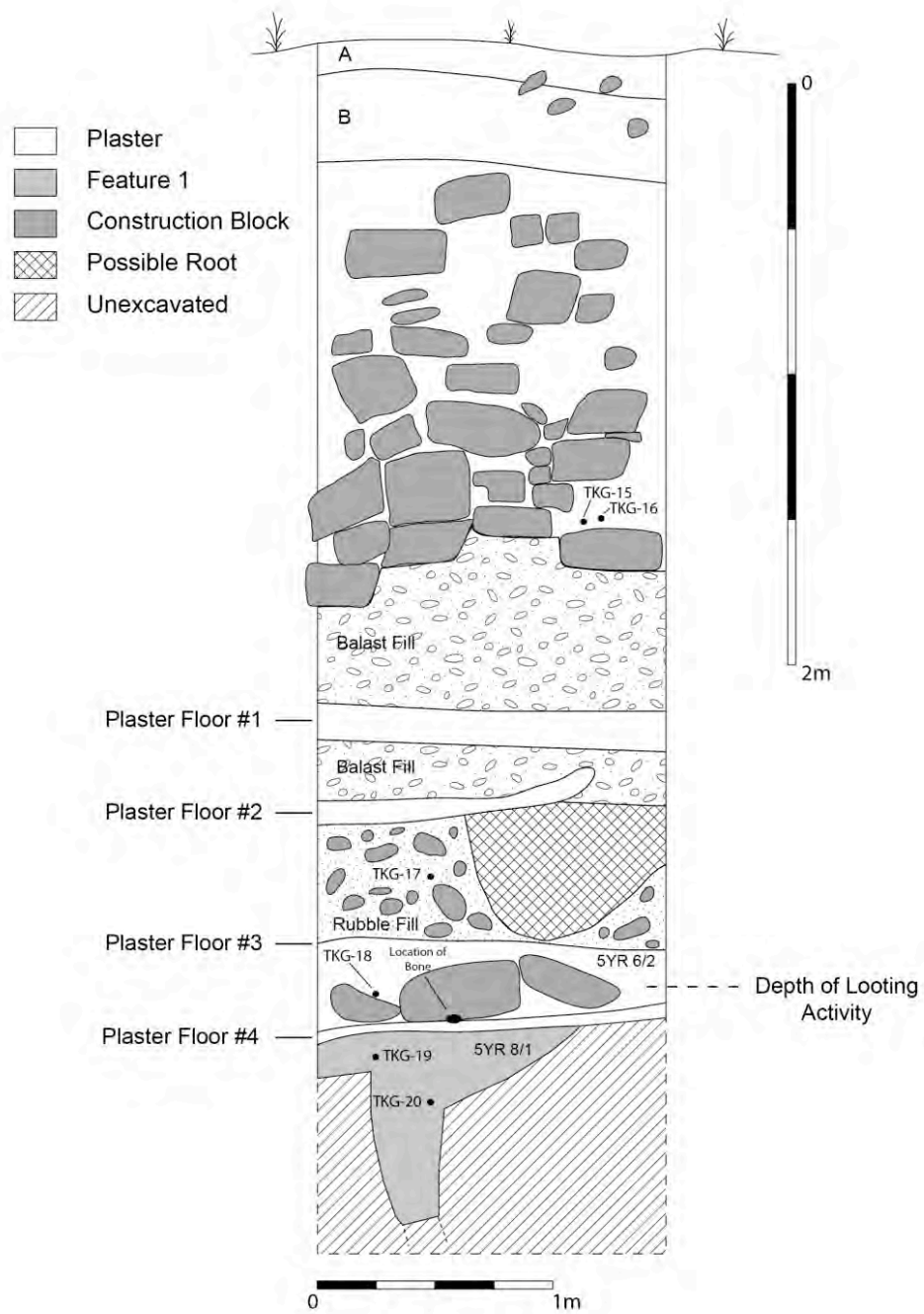
### *Looter's Trench 3*

As part of excavations on Structure 2, Looter's Trench 3 (LT3) was cleared of looting debris for further investigation. Modern looting likely took place approximately 20-30 years before the 2012 season at the site, and it appears that the looter's back dirt and trench may have collapsed in onto itself. LT3 was a deep vertical hole dug approximately 7 meters down into the structure from its surface. In the profile exposed by the looting activity, the exterior face of the west wall of Structure 2 is visible, along with several floors beneath that level (Figure 12). During clearing, only diagnostic artifacts and special finds were collected in order to gain a better temporal understanding of the construction.

While formal ceramic analysis has yet to be undertaken, initial examination of ceramics during excavation suggest that looters penetrated Preclassic through Terminal Classic construction. One small jade bead was recovered from looters back dirt on the surface of Structure 2. Despite the presence of this item, it does not appear that looters encountered any formal burials or other rich deposits. After LT3 was cleared to an undisturbed level, all artifacts were collected.

Immediately beneath looting activity lay 4 large boulders approximately 80cm to 1m in diameter. Human bone fragments were present on top of the boulders. After the boulders were removed, a larger amount of bone fragments appeared. They lay above a plaster floor that was broken in two separate locations (Features 1 and 2), and were re-plastered in antiquity. The western most Feature 1 was targeted for additional investigation as it was easily completely exposed. The extent of Feature 2 is unknown though it likely continued further into the structure.





**Figure 12:** Profile of LT3 exposure Feature 1.

Feature 1 consisted of a conical pit dug in construction fill (5YR 8/1 white sandy loam with plaster inclusions) directly above bedrock. Several more bone fragments and two teeth were recovered from the feature. No other artifacts were found. The function of Feature 1 remains unclear. Due to its size, it could not hold a complete primary burial, but may have instead represented some type of cache or secondary burial typically associated with eastern shrine buildings in the Belize Valley (Chase 1994; Chase and Chase 1994). A radiocarbon sample (TKG-20) collected from the matrix within Feature 1 produced a 2- $\sigma$  date range of 432-550 AD. The Early Classic date of the feature indicates that it was constructed prior to the bulk of construction activity uncovered in Units 2-1, 2-2, and 2-3.

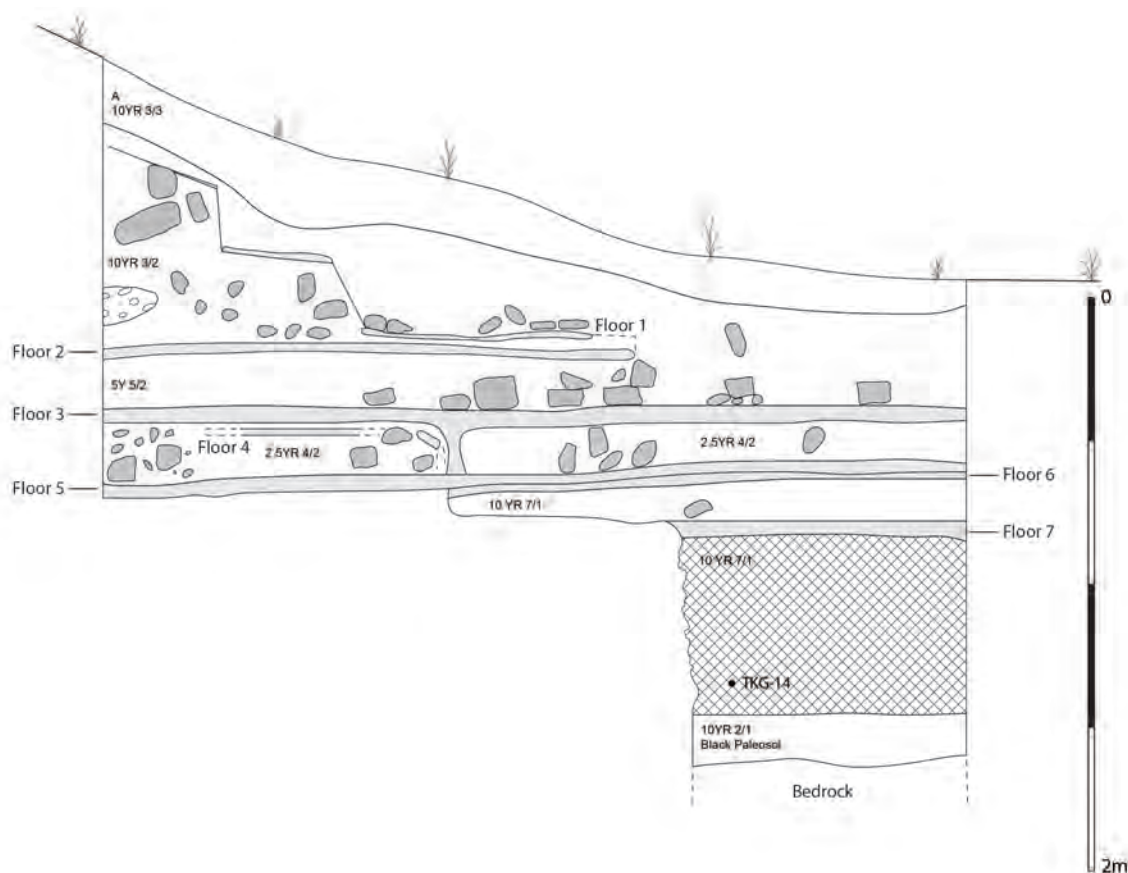
### **Structure 3: Unit 3-1**

Excavations on Structure 3 consisted of a single 1 by 3 meter axial trench placed at the center of the structure and extending into the TK Group plaza. Because this structure suffered the least damage from looting at the site, the goal of excavation was to recover chronologically secure contexts. A total of eight distinct construction events were identified at Structure 3 (Figure 13).

The first two levels of excavation exposed a plaster floor (Floor 1) covering stairway leading up the front of the structure, the final construction phase of Structure 3. The first step of three had a longer run (80 cm) than the second and third steps (25-30 cm). The first step of the structure was later revealed to be part of the penultimate construction phase. It appears to be a low platform that was plastered over by Floor 2. Floor 2 runs under the second and third steps into the structure suggesting that it originally functioned as a low platform, composing an earlier structure. Large cut stone blocks were present in the southeast corner of unit, which may have composed the northern edge of stairway of the structure.

Beneath the final and penultimate construction phases, Floor 3 was encountered. Floor 3 extended completely across unit except in the southwest corner of unit, where it likely existed at one point but was degraded. Floor 3 slopes up slightly, located at a depth of 166 cmbd at north/front of the structure and 173 cmbd on south side of unit.

Excavations continued to investigate the materials below Floor 3 in the next construction phases, represented by Floor 4. The matrix above Floor 4 consisted of a compact light tan gray fill with plaster inclusions. Ceramics and chert were recovered from the fill, as from the rest of the excavation up to this point. However additionally freshwater shells (*jute*) and three pieces of slate were also recovered. After fill was removed, Floor 4 was encountered. Although mostly degraded, Floor 4 represents the construction of another low platform, and is only present in the portion of the unit inside the structure.



**Figure 13:** North wall profile of Unit 3-1.

Beneath this level, another flat floor (Floor 5) extended across the entire unit, beneath the Floor 4 platform and into the plaza. Floor 6 rests immediately below Floor 5, and extends across the unit as well, and is interpreted as a plastering event. Preliminary examination of ceramics recovered below Floor 5 (Lots 1032-1037) contained Preclassic ceramics, primarily from the Sierra Red Group. Approximately 10 cm below Floor 6, the final floor (Floor 7) in the Structure 3 construction sequence was encountered.

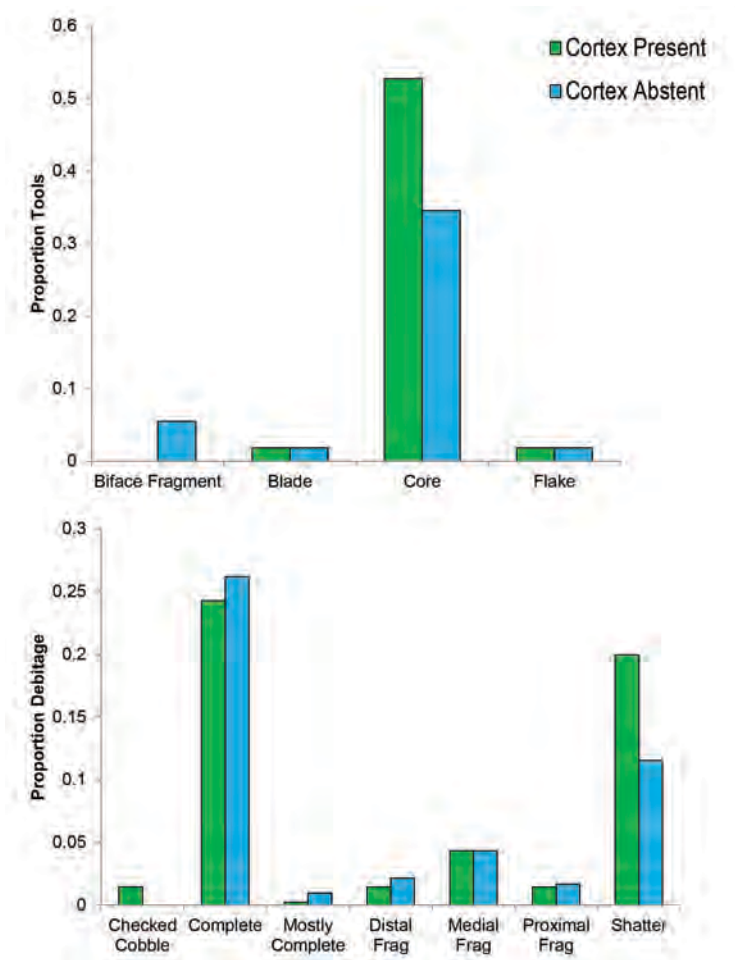
A layer of “midden” fill was identified immediately beneath Floor 7, containing high concentrations of ceramics, obsidian, chert, freshwater shell, marine shell, bone, several granite *mano* fragments. Freshwater shell was present in the form of 2 jute shells. One  $^{14}\text{C}$  sample (TK-14) was collected from 35 cm below the base of Floor 7. The sample was taken from inside a large limestone block with what appears to be natural holes in various sizes. Radiocarbon analysis produced a 2- $\sigma$  date range of 325-111 BC, and dates the placement of the fill below Floor 7, but has not yet been analyzed. A change in soil color and type to a 10 YR 2/1 black clay paleosol signaled the termination of the midden fill. Similar strata have been encountered throughout the Maya lowlands

and represent the first soils encountered by initial settlers of a region (Beach et al. 2006). Very few artifacts were found in the paleosol matrix, and perhaps have been vertically displaced from superseding levels through time. Excavation ended when bedrock was encountered at a level of about 3 meters below datum.

Based on this evidence, the fill below Floor 7 may have been used to level out the TK Group hilltop prior to construction. Magnetometer data suggests that bedrock is unevenly shallow in the main plaza with some areas naturally higher (e.g. at PLZ-1) than others (e.g. those in the southern portion of the plaza). The residents of the group were able to harness enough manpower to shape the hill during the Late Preclassic period before extensive construction activities took place. Earle (1991) has proposed that the primary method emerging elites in chiefdoms used to mobilize labor and to control resources is through property rights. Perhaps the TK Group may have already held more sway during the Preclassic compared to their neighbors living in smaller surrounding plazuela groups.

#### *Lithic Analysis and Preliminary Interpretation*

Items produced from local chert and exotic materials, including obsidian and jade, comprise the lithic assemblage at the TK Group. Preliminary lithic analysis was conducted for all chert tools and debitage recovered from Unit 3-1. Results of these analyses are assumed to be largely similar for the whole group. Locally produced artifacts include chert tools (primarily cores with some large biface fragments and two blades) with cortex present on more than 50% of the total assemblage (Figure 14). Cortex was also present on over 50% of all debitage recovered from the unit, indicating early stage reduction. This suggests local acquisition of raw materials and expedient tool production, a pattern noted in other regions of the Maya Lowlands (Aoyama 2007). Johnson and Andrews have suggested that locally available chert in the Belize River Valley is of low quality, resulting in onsite use of expedient technologies (Johnson and Andrews 2010:86) consistent with household production and on-site consumption. The presence of finished obsidian tools indicates some form of trade during occupation at the TK Group. Future inquiries into the nature of the lithic assemblage at the site will focus on XRF analyses to source obsidian artifacts.



**Figure 14:** Relative proportions of lithic tools and debitage with and without cortex by type.

## Plaza Excavations

### *Unit PLZ -1*

Two units were placed in the main plaza at the TK Group. PLZ-1 was a 2 by 2m unit placed in the southern portion of the plaza in order to investigate the presence of a long anomaly running approximately east-to-west identified during magnetometer survey. Excavations proceeded in two levels, with the first level revealing the possible presence of a plaster floor. While highly degraded, this floor is consistent with the depth of the floor found in front of Structure 2. After the first level, the unit was bisected and excavation continued in the northern most 1 by 2m portion of the unit. The second level consisted of rubble fill, which sat immediately on top of bedrock. Bedrock was encountered at a shallow depth of 80 cm below ground surface. The bulk of the artifact

assemblage recovered was composed primarily of chert debitage, though few artifacts were recovered overall. The shallow depth of bedrock at this location likely is the cause of the large magnetometer anomaly. Bedrock was encountered at a much greater depth in other, nearby excavations at the TK Group (e.g., Unit 3-1 and PLZ-2 described below). Evidence for landscape modification exists in these areas, specifically leveling out the uneven hilltop upon which the TK Group was constructed.

#### *Unit PLZ-2*

PLZ-2 was a 1 by 2m unit running north-to-south placed on the south side of the main plaza at the TK Group. The goal of the excavation was to investigate the composition of a man-made gradual rise that bounds the main plaza to the south, as well as to gain temporal information concerning the timing for the placement of the feature in relation to the construction in the rest of the group. After initially clearing the humic debris, a midden fill matrix was encountered. The fill was composed of a 10YR 4/2 dark grey brown organic rich matrix with domestic artifacts including utilitarian ceramic, *mano* fragments, 4 obsidian blade fragments, and a large amount of chert material (mostly cores and flakes) throughout. In the west wall of the unit, a wall was present constructed from cut stone blocks. One piece of carbon was recovered from area beneath a *mano* at a depth of 78 cmbd on west wall. The sample originates from below the wall and predates its placement. Below the wall, two episodes of rubble fill were encountered, both composed of a sandy loam that contained a large amount of small rocks. Each construction episode was distinguished by a “floor”, likely the result of packing the fill into place. Few artifacts were recovered from the fill. Beneath the fill episodes, the same buried A Horizon was present in Unit 3-1, Structure 3, indicating that this area of the plaza was level prior to construction as well.

Initial interpretation of the construction sequence suggests that the midden fill was laid down prior to placement of a large stone wall, and that the wall acted as a retainer for fill that was subsequently added to level off the area (Figure 15). Additional exposing of the wall revealed that it extends into the plaza, with a perpendicular alignment running east-to-west abutting the wall in the plaza. Exposed limestone to the east mirror this pattern and suggest that the architecture may have served to mark a passage way across the rise, and entrance into the plaza of the main plaza at the TK Group.

## **PRELIMINARY RESULTS AND CONCLUSIONS**

The first season of research at Tzutziiy K'in has yielded interesting chronological information and data concerning the populations living around Cahal Pech. Initial excavations revealed that the group was first settled sometime during the Late Preclassic and was inhabited, likely continuously, through the Terminal Classic period. Settlement at similar large groups near Cahal Pech, for example the Cas Pek Group, have congruent chronological sequences (Cheetham *et al.* 1993). Beginning in the Late Preclassic occupation at Tzutziiy K'in was firmly established, consistent with previously





**Figure 15:** West profile of PLZ-2 showing rock alignment running north-to-south, with subsequent levels of fill beneath.

documented evidence of demographic expansion at Cahal Pech and its hinterlands during this time (Awe 1992).

Early occupation at the group was likely small-scale, and construction of platforms did not begin until the Early Classic. Initial construction of Structure 1 prior to ca. AD 400 was small, consisting of a low platform, and may have not required much labor investment. On the other hand, a considerable amount of labor was focused on leveling out the site before any large-scale construction took place, as revealed in excavations at Structure 3 and on the edge of the plaza. It appears that, over time, settlement expanded into the area surrounding Tzutziy K'in, in addition to larger scale construction episodes in the main plaza. The final construction episodes on both Structures 1 and 2 were large-scale and date to the Late Classic. It is clear that during the Terminal Classic period the residents of Tzutziy K'in were likely high-status. The scale of construction suggests that the residents of Tzutziy K'in possessed the resources needed to remodel buildings often. The modest bench located in the superstructure of Structure 1 may be associated with the status of the individuals who occupied the house groups in the Late Classic. At sites like Copan, benches served as potent political



symbols, and in royal or high-status contexts are often the public focal points of tribute and gift presentation (Stuart 1995: 368; Webster *et al.* 1998). While the identity and exact status of the residents of the site remains unknown, perhaps they were closely affiliated with the ruling elite at Cahal Pech or served in some sort of administrative capacity. Future work will focus on refining chronological and stratigraphic interpretations at the group, which will elucidate the sequence of construction activities. The sequence of these activities will be compared to data from Cahal Pech to investigate the relationships between Tzutziiy K'in and the ceremonial center.

Future work will also focus on expanding excavations at Tzutziiy K'in in order to better understand the group and its socioeconomic connections with Cahal Pech and in a broader context within the Belize Valley. Excavations will be expanded in the group, and agricultural features will be explored. In the lab, detailed analysis of artifact assemblages will be performed. Ceramics will be compared to a standard typology for Cahal Pech and Baking Pot, focusing on change over time in percentage of wares indicative of craft specialization. Lithic artifacts, including chert and obsidian tools, flaked stone debitage, and ground stone, will be examined to determine if tool production took place within the house group or if tools were obtained through trade. The presence or absence of exotic materials, such as marine shell, jade, and obsidian would indicate long-distance trade. Geochemical analysis (e.g., XRF, INAA) of these artifacts will be used to determine source locations and reconstruct long-distance exchange. Household studies have generally been neglected in the Maya region in favor of research emphasizing ritual, ceremonial, and elite aspects of ancient Maya society. As new insights into the scale and timing of social changes within households are developed and refined, they can help generate more general models of the mechanisms through which sociopolitical development occurs at the household, community, and regional scales.

## ACKNOWLEDGEMENTS

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# **EXCAVATIONS AT LOWER DOVER PLAZA F: RESULTS OF THE 2012 SEASON**

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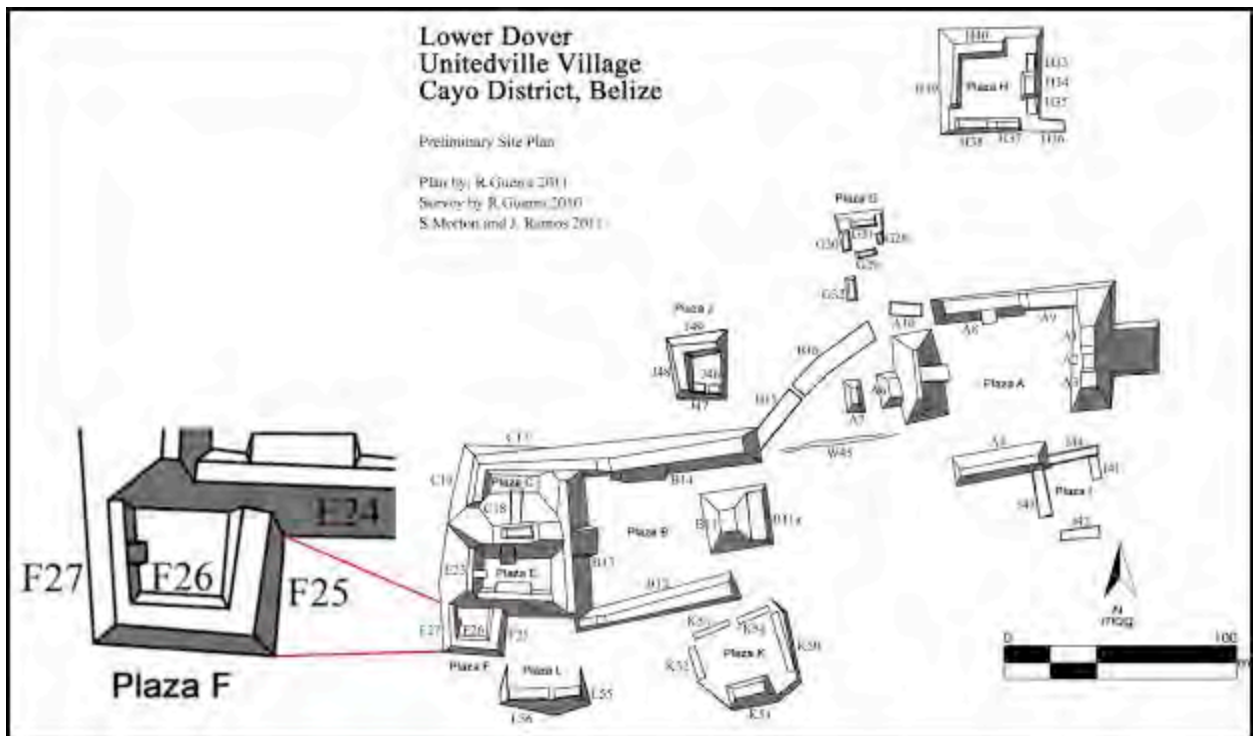
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## **INTRODUCTION**

In the summer of 2012, the Belize Valley Archaeological Reconnaissance Project (BVAR) continued excavations at the site of Lower Dover, Unitedville, Cayo District, Belize. Lower Dover is on the property of William and Madeline Reynolds in the Village of Unitedville, 7 miles east of San Ignacio. It is located on the southern bank of the Belize River directly across from Barton Ramie, approximately 6 km east of Baking Pot and 3 km west of Blackman Eddy. The site is bordered on the north by the Belize River, on the east by Lower Barton Creek and on the west by the Upper Barton Creek (Guerra and Morton 2011; Guerra 2011). The ceremonial center consists of 9 formal and 2 informal plaza groups with 56 structures, including one ballcourt (Figure 1), and a possible aguada just north of Plaza A.

## **PREVIOUS RESEARCH**

Archaeological investigations have been conducted at surrounding sites as far back as the 1920's (Ricketson: 1929), including Floral Park (Willey et al. 1956), Blackman Eddy (Driver and Garber 2004), and Barton Ramie (Willey et al. 1956, Gifford et al. 1976), but it is unknown what connections and relationships these sites had with Lower Dover. In 2010 the Belize Valley Archaeological Reconnaissance Project initiated archaeological research at Lower Dover. The preliminary research focused on site mapping and developing site chronology. Previous research at Lower Dover identified two distinct phases of occupation dating to the latter part of the Late Classic period (A.D. 800 - 900) at Plazas A and G (Guerra 2012; Arksey et al. 2011).



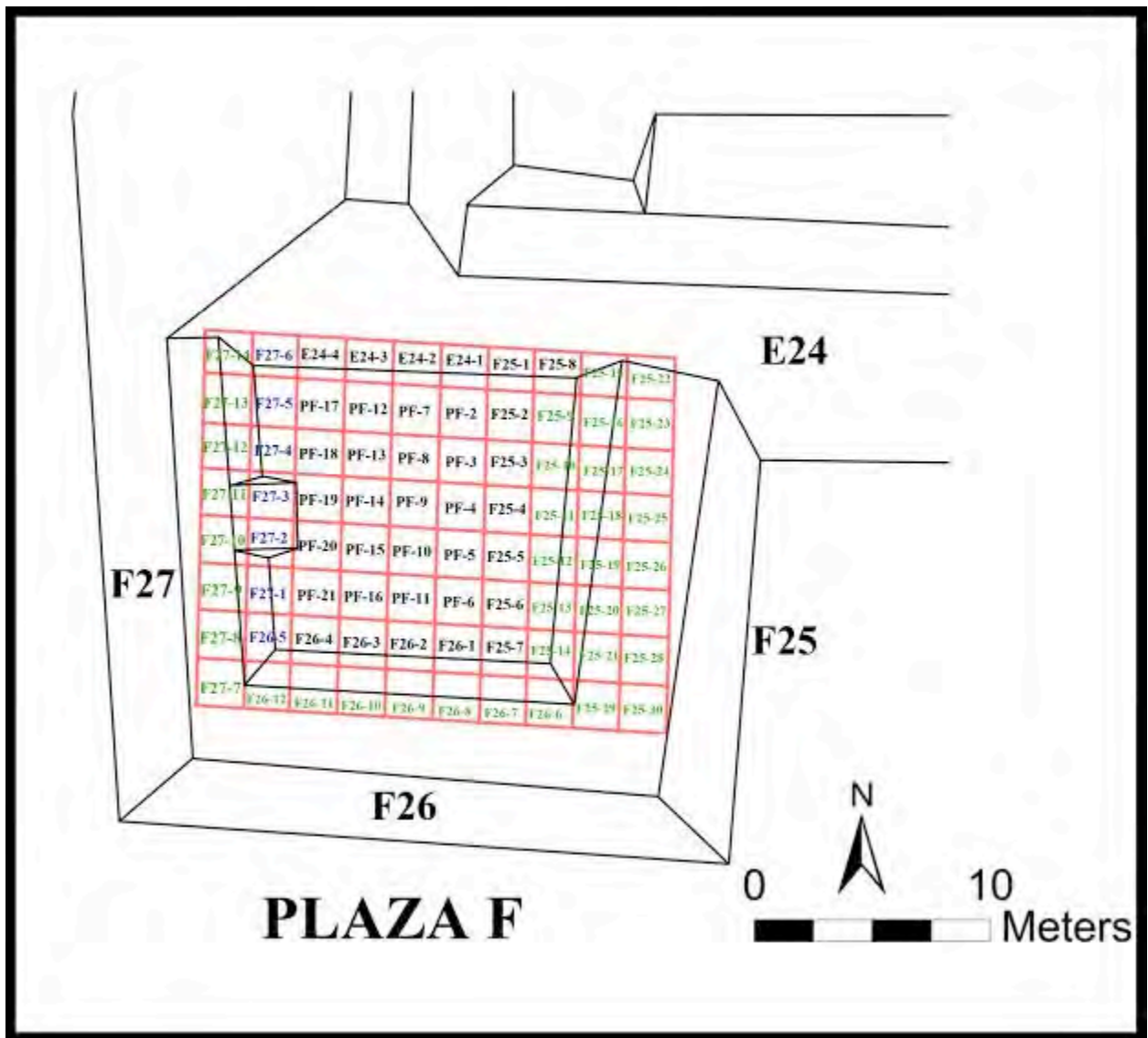
**Figure 1:** Lower Dover site core plan with Plaza F inset.

Wolfel et al (2009) identified one scroll foot on the surface of Plaza F, indicating possible early post classic occupation or temporary reoccupation of the plaza and structures.

## METHODOLOGY

Excavations at Plaza F were initiated as a part of the continuing BVAR research at Lower Dover focused on determining site function, chronology and sociopolitical relationships in the Belize Valley.. Covering an area of approximately 100 sq. meters, Plaza F is the southernmost plaza in the Acropolis complex. The plaza consists of three structures (F25, F26 and F27), attached to the southern end of structure E23 and E24 forming a formal courtyard (Figure 1). Working on the assumption that this area may represent the latest phase of occupation at the site the 2012 excavations, we focused on collecting chronological and spatial data to define Plaza F both spatially and temporally.

To begin the 2012 excavations, the interior of Plaza F was covered in a grid network of 2 x 2 meter units (Figure 2). Surface artifacts in each 2 x 2 meter unit were collected. The surface collection served for analysis of the terminal occupation. At the centerline of each cardinal direction, one 2 x 2 unit was initiated along the base of each structure (E24, F25, F26, and F27) in order to identify the plaza floor and the base of the architecture. Once the structure's architecture and plaza floor were defined adjacent units were opened to continue large-scale exposure of the structures to identify orientation and extent of the basal architecture. One plaza unit was selected along the base of Structure



**Figure 2:** Plaza F plan with unit grid.

E24 to conduct vertical excavations of the plaza in order to collect data to assess the chronology of the plaza floor. Additional units at the summit of structure F25 and F26 were planned, for the collection of chronological material of the structures, but were never commenced due to time constraints. Due to heavy rains several units had to be abandoned as a result of continued flooding. These units will be recommenced in the 2013 field season.

Excavation levels were designated by either by arbitrary, cultural or natural stratigraphic differentiation. Each level or features were assigned individual lot numbers (Table 1.) in order to keep horizontal and vertical control.

The data presented below are the results of the 2012 field season.

## RESULTS FROM SURFACE COLLECTION

Prior to excavations, a surface collection was performed in all units of Plaza F, yielding an mixture of artifacts and ecofacts including ceramic sherds, obsidian flakes, chert tools and debitage, faunal bone, daub, and freshwater shell. No diagnostic ceramics were identified in the field. However, a detailed analysis of the washed and processed ceramic material is pending.

## RESULTS FROM EXCAVATIONS

### Structure E24

Excavations were initiated along the base of Structure E24 to determine the architectural alignment, overall form and function of structure E24, as well as recovery of any special deposits that may be found. E24 forms the northern boundary of Plaza F, the southern building of Plaza E. Units E24-1 through E27-4 (all 2 x 2 m units) were placed east to west respectively (Figure 2.). These units served to determine extent of architectural components of structure E24. E24-1 and -4 were not opened due to time constraints. Units were excavated using culturally significant levels. Level 1 was comprised of humus and collapse.

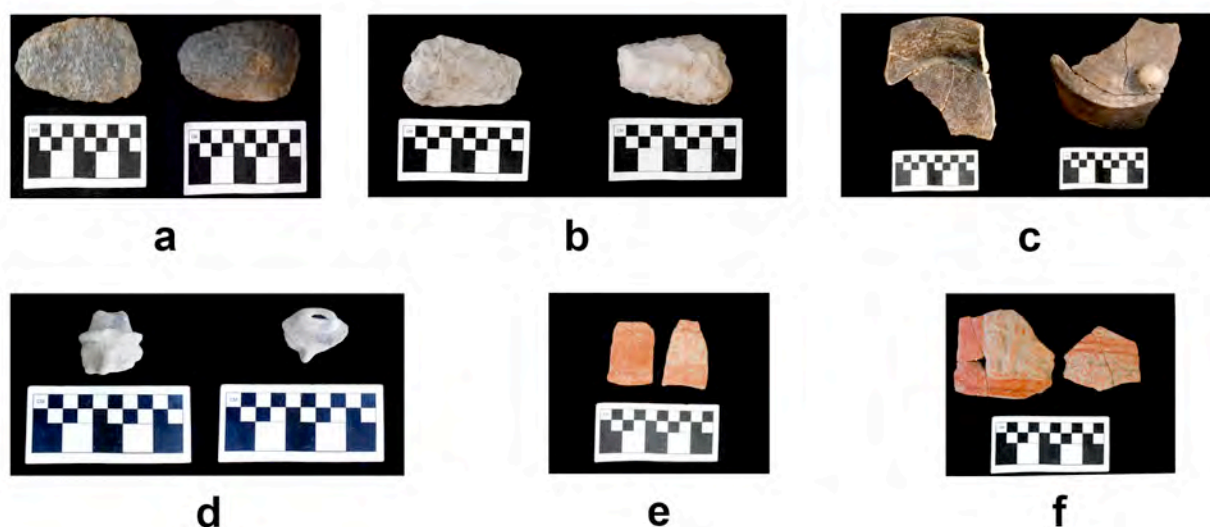
#### *Unit E24-1*

Unit E24-1 was commenced along the northern periphery of Plaza F. Level 1 matrix comprised of a mixture of black humic loam and a light grey sandy loam patches interspersed with limestone block ranging from 10-25 cm in length. The latter is probably as a result of collapse from the 4 meter high structure to the north of the unit. Due to heavy rains and constant flooding of the unit it was abandoned after digging 19 cm. Based on the excavations in Unit PF-7, adjacent to the southwest of unit E24-1, the plaza floor is 60 cm below this level. Dispersed throughout the unit were several ceramics tentatively identified as possible terminal classic ceramics, including 6 fragments of *Ahk'utu* Molded Carved and one ocarina fragment. The molded carved fragments included portions of a scene and the PSS. The figurine fragment is anthropomorphic in the form of an individual with a hat reminiscent of the *Duende*. Other artifacts recovered from this level included obsidian prismatic blade fragments, Jute and chert flakes (Figure 3.).

#### *Unit E24-2*

Unit 24-2 lies to the west of Unit 24-1 along an east west axis. As with Unit E24-1 excavations were commenced to attempt to uncover the structure's base as well as any





**Figure 3.0:** Artifacts recovered from Structure E24. a, b and c recovered from EU E24-1 (a- granite celt, b-chert biface, c-tripod vessel), d,e and f recovered from EU E24-2 (d- anthropomorphic ocarina fragment, e and f-*Ahk'utu* Molded- Carved fragments)

buried features. A total of 25 cm were excavated in this unit before it was halted due to heavy rains and flooding of the unit. The matrix of this unit was disturbed by bioturbation, especially in the western half of the unit. The matrix was very similar to unit E24-1 and contained a mixed stratum of black humic loam and light grey sandy loam. The fill also consisted of large cut stone measuring between 15 and 30 cm in length as well as smaller cobbles measuring 5-15 cm in diameter. The larger cut stones are possibly from collapse of the upper portion of structure E24 while the smaller cobbles may have been as a result of the bioturbation seen in the western portion of the unit. Neither the plaza floor nor the structures base was uncovered in this unit before it was halted. A similar artifact composition to unit E24-1 was recovered from this unit. The recovered material included several fragments of the *Ahk'utu* Molded Carved, possible terminal classic ceramic sherds, jute, obsidian fragments and chert flakes. No ocarina fragments were recovered from this level (Figure 3.).

### Structure F25

Excavations along Structure F25 were initiated to determine architectural alignment, overall form and function of the building. F25 forms the eastern boundary of Plaza F and is 1.6m in height. Based on the exposed architectural alignment at the summit and along the eastern side of the building it is likely that this building was used as an entrance into plaza F. Units F25-1 through F27-7 (all 2 x 2 m units) were placed north to south, along the base of the structure (Fig. 2.0). These units served to determine extent of architectural components within the plaza. F25-1, 2, 3, and 7 were not opened due to time constraints. All Units were excavated using culturally significant levels. Level 1

comprised of humus and collapse. Matrix samples for further studies were collected from the units from within the collapse as well as from directly above any plaza floor identified.

#### *Unit F25-4*

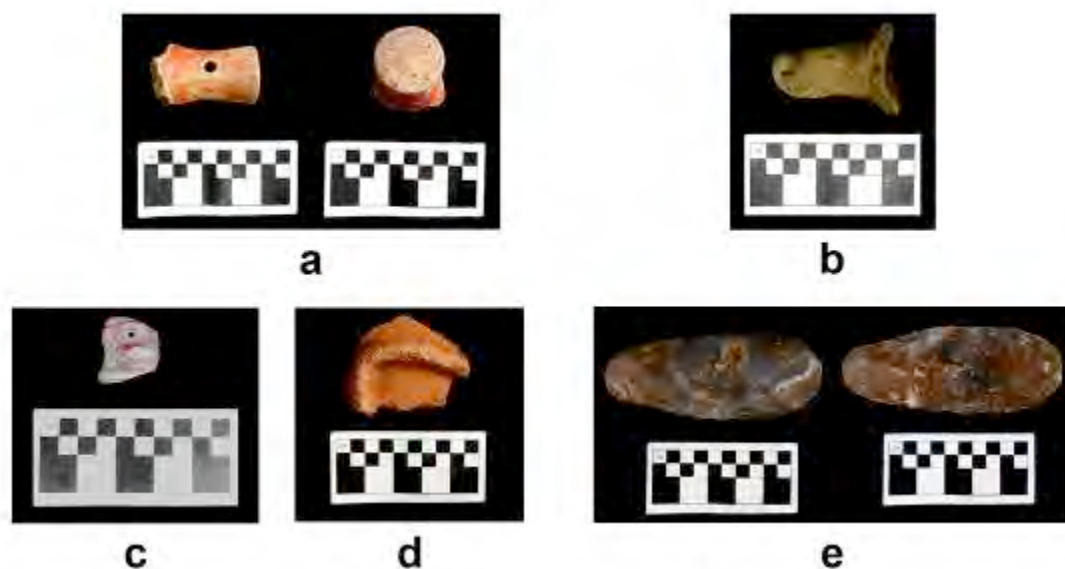
Unit F25-4 lies to the north of Unit F25-5 and was started in an attempt to identify possible structural alignment of the base of the structure. The Unit was excavated to a depth of 7 cm to the east and between 18 and 39 centimeters, from south to north, along the western edge of the unit. Along the western center edge of the unit at a depth of 39 cm a partially preserved plaster floor was exposed along the eastern half of the unit. However, due to high rainfall the unit was closed due to flooding. A dark grey sandy silt matrix comprised the fill in this unit and was consistent with other units on the structure. This fill included collapsed debris, cut limestone blocks ranging from 10-20 cm in length, as well as smaller cobbles ranging from 5-12 cm in diameter. No architectural alignment was noted at the time of closing the unit. Artifacts collected during the excavations included ceramic sherds, obsidian blade fragments, jute, chert flakes, and daub. One scroll foot and an hourglass shape foot of tripod vessels were recovered in this level (Figure 4). These types of feet are indicative of the early post classic (A.D. 890-A.D.1150). Both belong to the *Paxcaman* Red: *Paxcaman* Variety of the late faucet New Town Ceramic complex (Gifford 1976:297-300).

#### *Unit F25-5*

Unit F25-5 is a 2 x 2 m unit that was placed at the base of the structure along the presumed central east – west axis. This unit was started in hopes of uncovering the basal platform of the structure and possible steps leading up the eastern side of the plaza to the summit of structure F25. Level 1 of this unit comprised of a black loamy humic layer with interspersed rocks ranging from 8-20 cm in diameter. At 25 cm below the surface cut limestone blocks measuring between 13-35 cm in length were removed as they did not form any architectural alignment and were probably the result of collapse from the summit platform or other structural alignment above the unit. At approximately 40 cm below the surface, along the western half of the unit a deteriorated plaster floor was uncovered. The floor preservation increased from north to south as the depth increased going from 39 cm in the northwest to 45 cm in the southwest corner. No evidence of surface use was noted on the plaza floor.

Along the eastern half of the unit a loose alignment of small cut limestone blocks measuring 13-28 cm in length was noted on the floor surface. This feature, a single course of limestone blocks, measured 10 cm high by 160 cm long and extended from the northern baulk to the south. It is possible that this represents the basal courses of the structure's platform along the plaza floor. No additional courses were identified in this unit or the adjacent northern unit.

Among the artifacts found in this unit were numerous ceramic rim sherds, figurine fragments, ceramic feet, jute shells, daub, obsidian and chert blades, chert flakes and



**Figure 4.0:** Artifacts recovered from Structure F25. a and b recovered from EU F25-4 (a- *Paxcaman* hourglass tripod foot, b-*Paxcaman* scroll foot), c,d, and e recovered from EUF25-5 (c-anthropomorphic figurine fragment, d-*Pedregal* Modeled censer fragment, e-Chert Biface)

debitage, and faunal remains (Figure 4). A figurine fragment of a “chubby” cheeked individual was found towards the northeastern portion of the unit. Notable among the ceramic fragments is one fragment of a *Pedregal* Modeled incensario which was recovered in the northern half of the unit. The recovered portion includes the modeled eyebrow and a rim portion. A complete chert biface was found along the centerline of the unit. All artifacts were discovered in the collapse and no spatial distribution associated with the floor was possible.

## Structure F26

Excavations along Structure F26 were initiated to determine architectural alignment, overall form and function of the building. F26 forms the Southern boundary of Plaza F. Units F26-1 through F26-5 (Figure2), all 2 x 2 m, were placed east to west respectively to uncover the basal platform of the building and recover any deposits that may have been associated with the use of the front of the building. These units were intentionally placed here to overlap the building platform and the plaza floor to maximize the data being collected. F26-5 was not opened due to time constraints. Level 1 was comprised of humus and collapse until the architecture or the plaza floor was established, except where notable deposits were uncovered. Matrix samples were collected from the units from within the collapse as well as from directly above the plaza floor to be used for later archaeobotanical studies.

### F26-1

Unit F26-1 was established at the southeast corner of Plaza F and laid adjacent to F25-7 (Figure 2). Excavation was carried out utilizing cultural levels to include the humus and collapse as one stratum.

Level 1, of black loamy soil rich with deteriorating leaves from a nearby Cohune Palm (*Attalea cohune*) was removed to expose a layer of collapsed cut limestone blocks. After photographs were taken the stones not believed to be part of the architecture were removed to expose the in situ basal course of the building. A layer of ceramics, carved bone fragments and other materials were found in the north half of the unit on the floor along front of the structure extending south to the adjacent units. This layer was cleaned to expose the extent of the cache within the unit. After photographs and elevations were taken, a new level (Level 1b) was initiated to collect the upper level of exposed artifacts. Level 1 final measurements ranged from 32 cm on the SE corner to 14 cm in the SW corner, indicating that the collapse was more extensive along the SE corner of the unit, close to the corner of structure F25 and F26. Artifacts from this level included rim and body ceramic sherds, ground stone in the form of fragmentary mano and metate, chert flakes and obsidian fragments (Figure 5). The rest of the cache was separated into levels 1A and 1B, 1A being the upper level of exposed artifacts and level 1B being the artifacts lying directly on the plastered plaza floor surface. These levels were comprised of a light grey sandy loam matrix.

Level 1A extended in the northern half of the unit from east to west with greater concentration along the northwestern quadrant. This level only represents the uppermost artifacts exposed and included ceramic sherds, one biface fragment, ground stone fragments, obsidian blade fragments, jute shell, apple snail shells (*Pomecia* spp.) and one partial mandible fragment of a white tail deer exhibiting cut marks (Stanchly this volume).

Level 1B was excavated to the plaza floor to a depth of 14 cm in the NE to 22 cm in the SW. This level comprised the larger volume of the deposit collected from the plaza area. Materials collected from this level included ceramic rims and body sherds as well as specialized ceramics including spindle whorls. One partial vessel of the Belize Red group, a shallow red plate with incisions on the exterior and interior was also collected from this level (Figure 5). Lithic materials included chert flakes, fragmentary chert bifaces, obsidian blade fragments and ground stone including mano and metate. A total of 33 faunal remains were collected and included domestic dog, parrotfish, mud or musk turtle, indeterminate turtle, and several unidentifiable mammal fragments. Modified bone included 11 specimens with four debitage associated with bone tool or artifact production, and partial rasp (Stanchly this volume). Additional materials collected from this area included jute and apple snail shells. No additional floor feature was noted on the floor.

The architecture in this unit comprised of a single course of limestone block laid on the plaza floor extending from east of the unit for 1m ending at the base of step one of the structure (Figure 7). This feature likely mirrors the stair side outset found in units

F26-2 and 3 respectively. The exposed step of the structure spanned the remaining 1 meter of the unit, composed of a 4 course, 30 cm high, limestone block measuring 31 cm from the base of the outset to the front of the step (Figure 9).

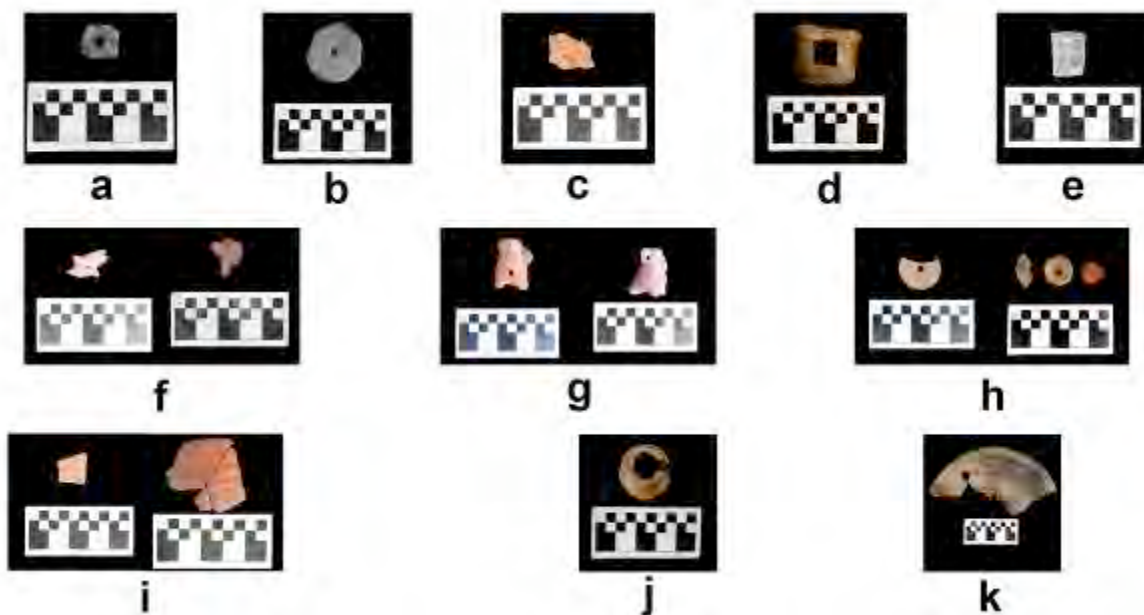
#### *F26-2*

This unit lies to the west of Unit F26-1 at the front of the structure along the presumed north south axis. The unit was initiated to expose the structure's basal platform and any step features along the central axis.

Level 1 of the unit comprised of a black loamy soil with heavy concentrations of Cohune root from a tree adjacent to the southern edge of the unit. Bioturbation from these roots was extensive as noted by displacement of large limestone blocks that were initially a part of the central staircase. The entire humic layer was removed to expose a layer of collapsed architecture. Once photographed and recorded, limestone blocks that were obvious collapse were removed to expose the underlying architecture of the stairs and the structure. In the northern half of the unit a layer of deposit was exposed that covered the plaza area and extended on to the first step of the stair case. This area was cleared to distinguish the extent of the deposit that extended the entire northern half of the unit. Once exposed the deposit was collected as level 1A, being the exposed surface ceramics and level 1B the entire deposit lying on the plaza floor. These levels were comprised of a light grey sandy loam matrix consistent with unit F26-1. Level 1 artifacts included ceramic rim and body sherds, most notably an *Ahk'utu* Molded carved fragment and a ceramic spindle whorl. Lithic materials recovered were chert flakes with no obvious tools. Faunal remains included jute shell and fresh water bivalves. Several obsidian blade fragments were also recovered from this level (Figure 5).

Level 1A encompassed the artifact material uncovered on the surface of the deposit. After exposure of the entire deposit in the unit, photographs and recording, the artifacts were collected as a single lot. Artifacts from this level include ceramic rim and body sherds as well as specialized ceramics including *Ahk'utu* molded carved, spindle whorls and ocarina (including one functional). Chert flakes and one biface fragment and ground stone fragments were recovered from this level (Figure 5). Obsidian blade fragments, jute and apple snail shells were also recovered. Lastly a single bone from an unidentified animal was recovered from this lot (Stanchly this volume).

Level 1B was excavated to the plaza floor at a depth of 22 cm in the east and 17 cm in the west. All of this level was collected as one lot and encompassed the northern half of the unit extending onto the first step of the structure. The deposit collected in this level included ceramics, chert, ground stone, faunal remains and obsidian fragments. Ceramic artifacts included rim and body sherds including *Ahk'utu* fragments including portions of a PSS as well as fragment with geomorphic designs. Other ceramics included a partial Belize Red plate, a Platon Punctated bowl fragment, and 1/3 of a daylight orange plate, the upper portion of a three prong censer and several zoomorphic ocarina fragments. Chert objects were flakes and a biface fragment (Figure 5). Faunal remains recovered included fresh water shell and marine shell as well as other animal remains.



**Figure 5.0:** Artifacts recovered from Structure F26. a, b, c d and e recovered from EU F26-1 (a and b-ceramic spindle whorls, c-*Ahk'utu* Molded- Carved, d-Hollow ceramic foot, e-chert biface fragment), f, g, h, i, j and k recovered from EU F26-2 (f and g-anthropomorphic ocarina fragment, h-ceramic spindle whorls, i-*Ahk'utu* Molded- Carved, j-miniature vessel, k-three prong censer fragment)

Fresh water shells include jute and apple snail shells. Marine shell recovered were polished conch or chank shell and an incomplete shell tinkler or inlay from an olive snail. Other animal remains were a total of 33 pieces and domestic dog, armadillo scute, turtle carapace, and unidentified mammal bones (Stanchly this volume).

The architectural features exposed include 1.7 m of the staircase and 30 cm of the stair side outset. As in unit F26-1 the step was four courses (Figure 9), 30 cm high sitting directly on the plaza floor and extended to the north at 30 cm from the front to the base of the stair side outset. The stair side outset in this unit was 6 courses high and measured 45 cm in height. The floor was a well preserved plaster floor covering the entire northern half of the unit with very little variation in color or elevation. No floor burning was evident. The floor and the stair side outset extended into the adjacent western unit.

### *F26-3*

Unit F26-3 is adjacent and west of unit F26-2 and was excavated to continue exposing the terminal phase architecture of the building, as well as the deposit uncovered in units PF 26-1 and PF26-2.

Level 1 was excavated to remove the black loam matrix to expose the collapsed architecture. After carefully recording the collapsed architecture, it was removed to

expose the in situ cut limestone blocks of the stair side outset and the basal platform (Terrace 1 [T1]) of the structure. At 20 cm above the floor level, in unit F26-2, in the northern half of the unit, the deposit identified in previous units was exposed along the eastern portion of the unit. The extent of the deposit was uncovered to the west. It was noted that the deposit's concentration dropped off significantly noted by the decrease in elevation and the exposure of the plaza floor along the western edge of the unit. This indicated that the extent of the deposit along the front of the building only spanned units F26-1, F26-2 and F26-3 for a total length of 465 cm from east to west. As in previous units the deposit was separated into level 1A and 1B and collected as separate lots. The matrix of these levels was consistent with the other units. Artifacts collected from Level 1 included ceramic body and rim sherds, chert flakes, obsidian fragments, jute shells, daub and a white-tailed deer bone fragment.

Level 1A included all the exposed surface material of the deposit. Artifacts recovered include ceramics, chert flakes, daub, obsidian fragments and jute and apple snail shells (Figure 6).

Level 1B was excavated to include the rest of the deposit to the plaza floor. This level measured 19 cm on the east side and 0 cm on the western edge of the unit. The deposit collected in this level included ceramics, chert, ground stone, faunal remains and obsidian fragments. Ceramic artifacts included rim and body sherds including *Ahk'utu* fragments, partial Belize Red vessel, basal sherds of a Daylight Orange plate and the upper portion of a three prong censer. The latter being the second part of the censer fragment recovered in F26-2. Additional ceramics included a portion of an unidentified red molded vessel (Figure 6) and ocarina fragments. Chert objects were flakes and a biface fragment. Faunal remains recovered included fresh water and marine shell as well as other animal remains. Fresh water shells include jute and apple snail shells. Other animal remains included small to medium sized bird, unidentifiable mammal and indeterminate bone shaft fragments. Two of the specimens are modified and may be portions of a bone tube and pin (Stanchly this volume).

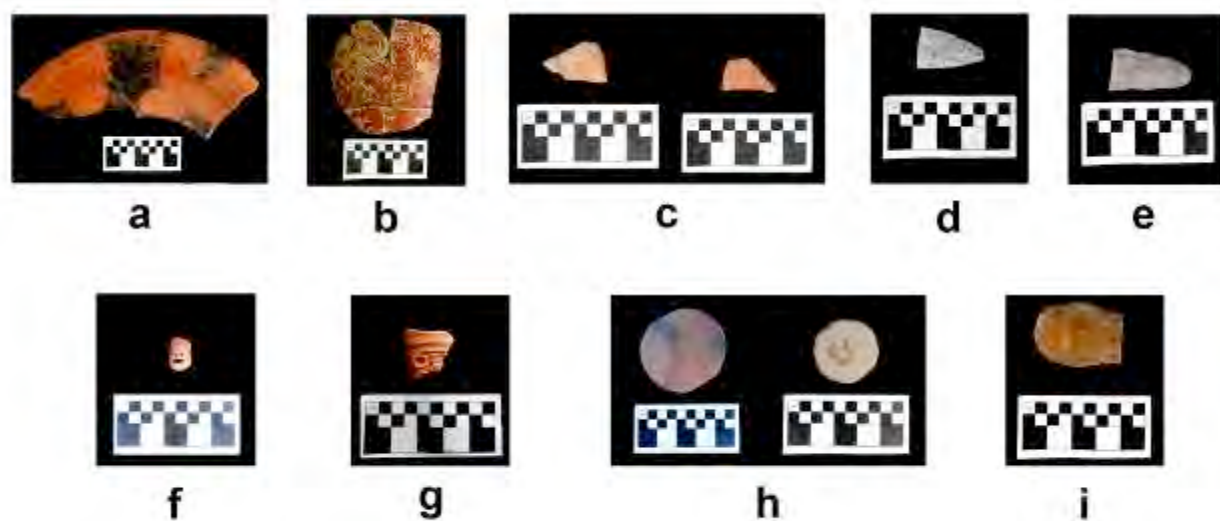
The architectural components uncovered in this unit were the remainder of the stair side outset and the basal platform of the structure. The portion of the outset exposed in this unit measures 95 cm long by 60 cm wide and 45 cm high. A 1m portion of T1 was exposed in this unit. The platform was 8 courses and 70 cm high slumping north into the plaza. No variation in floor color or elevation was noted. The floor and T1 continued into the adjacent western unit F26-4.

#### *F26-4*

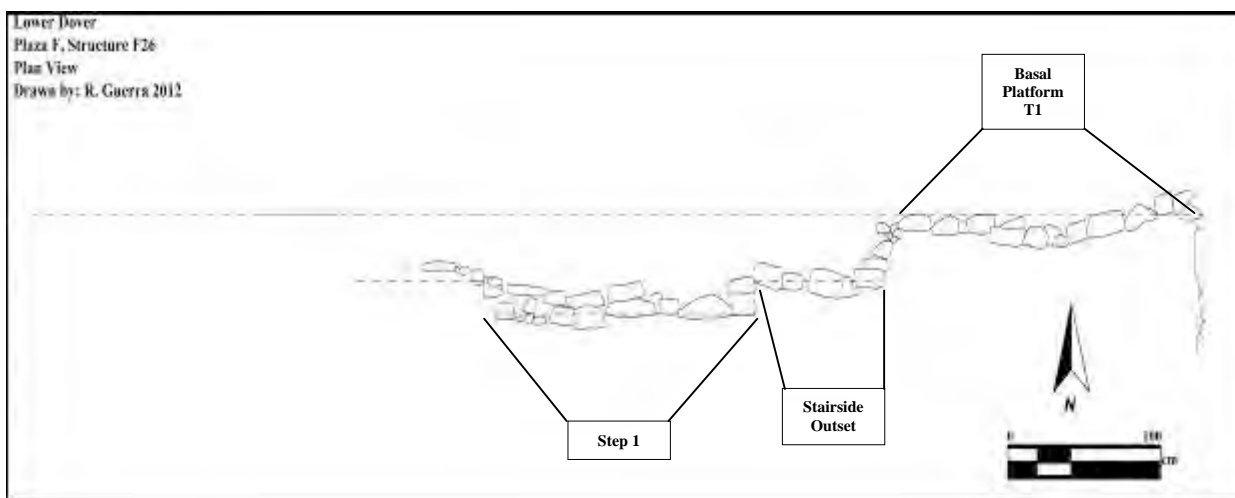
Unit F26-4 is adjacent to unit F26-3 to the west. This unit was excavated to continue exposing the plaza floor and the extent of the structure's basal platform. This unit was excavated in two layers.

Layer 1 comprised a 12 cm layer of black loam soil consistent with the humic layer of other units. This level produced very little artifact material and included ceramic

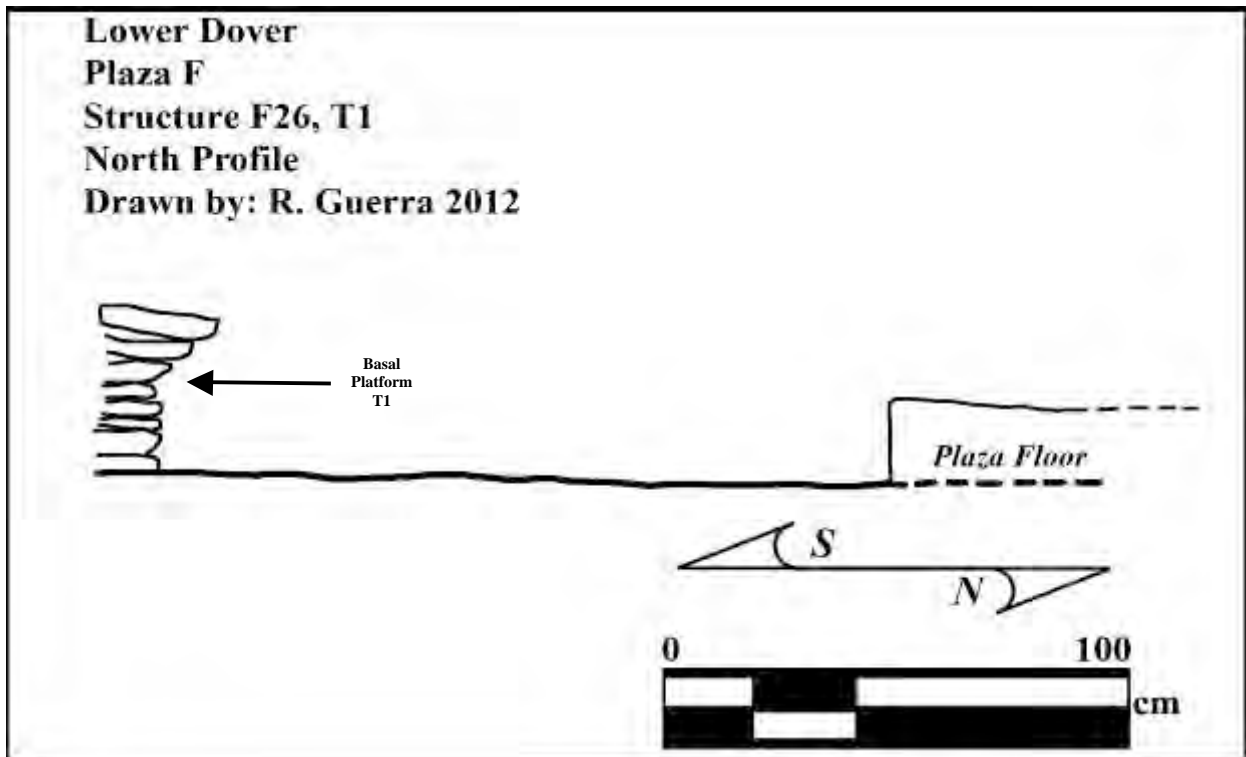




**Figure 6.0:** Artifacts recovered from Structure F26. a, b, c, d and e recovered from EU F26-3 (a- daylight orange vessel rim, b-unidentified molded carved vessel, c-*Ahk'utu* Molded-Carved, d and e-chert biface fragments), f, g, h, and i, recovered from EU F26-4 (f - anthropomorphic ocarina fragment, g-*Ahk'utu* Molded-Carved, h-ceramic spindle whorls, i-chert biface fragment)



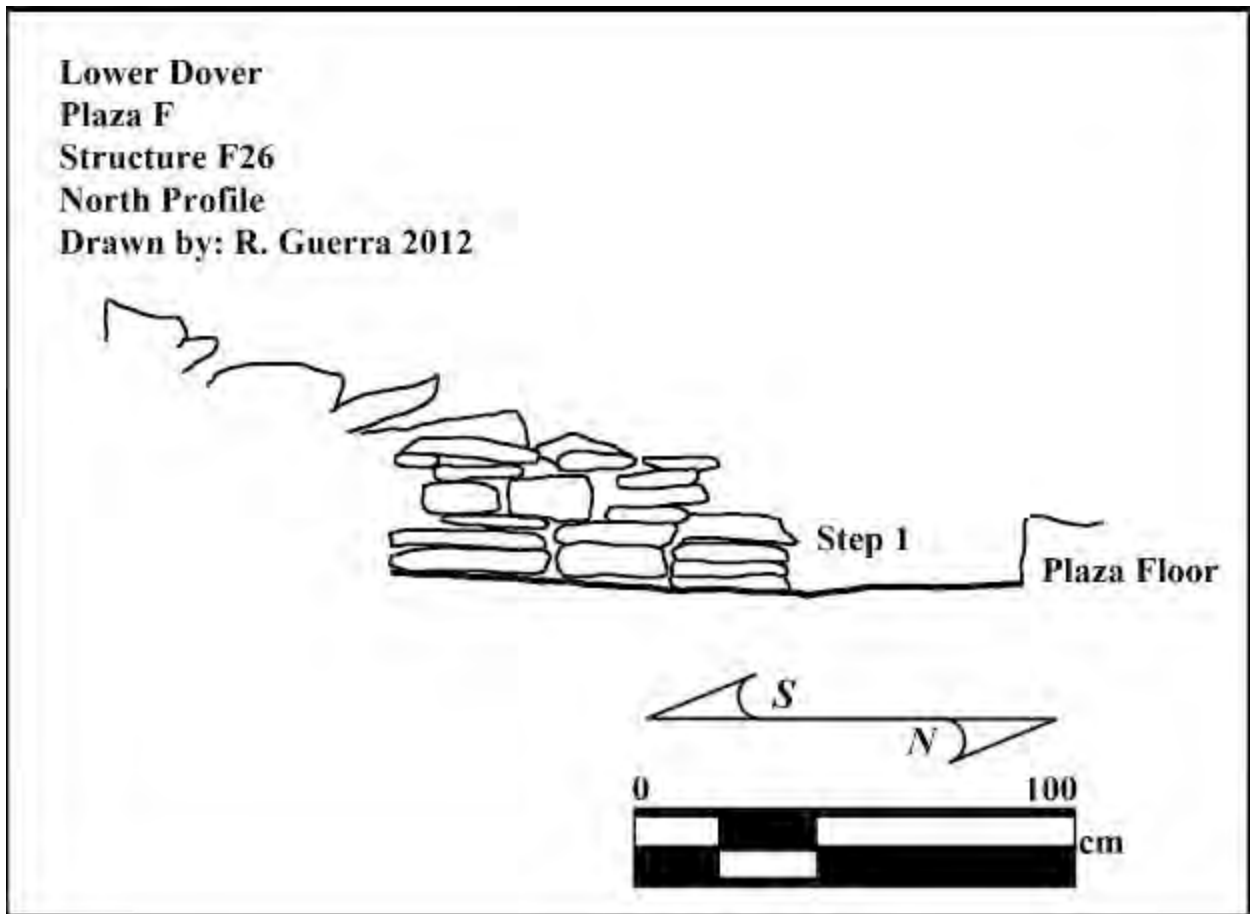
**Figure 7.0:** Plan view of structure F26



**Figure 8.0:** Profile of T1, Structure 26.

sherds, lithic flakes and daub. The upper course of the platform was exposed along structure F26 and a second platform was exposed in the SW corner of the unit. This platform extended north from the T1 of F26 and is the basal platform for the western structure F27.

Level 1a was commenced when the humic layer was removed to expose a light grey sandy loam layer consistent with the collapse matrix of the other units to the east. This matrix was excavated as one level as the deposit from the previous units appeared to terminate in unit F26-3. However care was taken at 10 cm above the plaza floor to ensure the exposure of additional deposits directly on floor. The removal of this level exposed a well preserved plaza floor in front of T1 extending across the unit from the east to the west and possibly under T1 for structures F26 and F27. Both platforms are of similar dimensions comprising of 8 courses, 72 cm in height (Figure 8). T1 of structure F26 is slumping north into the plaza while T1 of structure F27 is slumping east also into the plaza. Artifact remains recovered from this level were consistent with other levels of humus and collapse of the other units on structure F26. Ceramics, chert, daub, obsidian, granite and shell were recovered from this level. No specialized artifact types were noted from this unit (Figure 6).



**Figure 9.0:** Profile view of exposed staircase on Structure F26.

### Structure F27

Units were placed along the eastern face of structure F27 in order to investigate the nature and extent of the architecture of the building. Units F27-1 through F27-6 extended from the south to north. Only one unit was opened at the beginning of the season, Unit F27-4. This unit was chosen as it was the only area undisturbed by recent tree growth. All the other units had large roots from a large, 60-80 cm diameter, Hog plum tree (*Spondias mombin*) growing in unit F27-2.

#### Unit F27-4

This unit was commenced at the beginning of the season to define the structure's architecture as well as define the relationship of the plaza floor to the structure. Level 1 of the unit comprised of a black loamy humic layer with very little artifacts recovered. The unit was excavated a total of 35 cm and was abandoned after heavy rains continuously flooded the area. Additionally unit F26-3 and 4 had already exposed architecture and most of the efforts were focused in this area to continue exposing the architecture of structure F26. Several small ceramic sherds and various chert flakes were recovered from this unit.

## Plaza Units

Most of the research efforts were focused on determining the extent of the architectural forms that bound the plaza and only one plaza unit, PF7, was excavated in order to determine the chronological sequence of the plaza area for later comparison to the sequences within structures (Figure 11 ).

### *Unit PF7*

Unit PF7 is directly south of unit F24-2 within the plaza area. This unit was commenced to provide vertical excavation into the plaza area to recover chronological material as well as any subsurface deposits in front of structure E24.

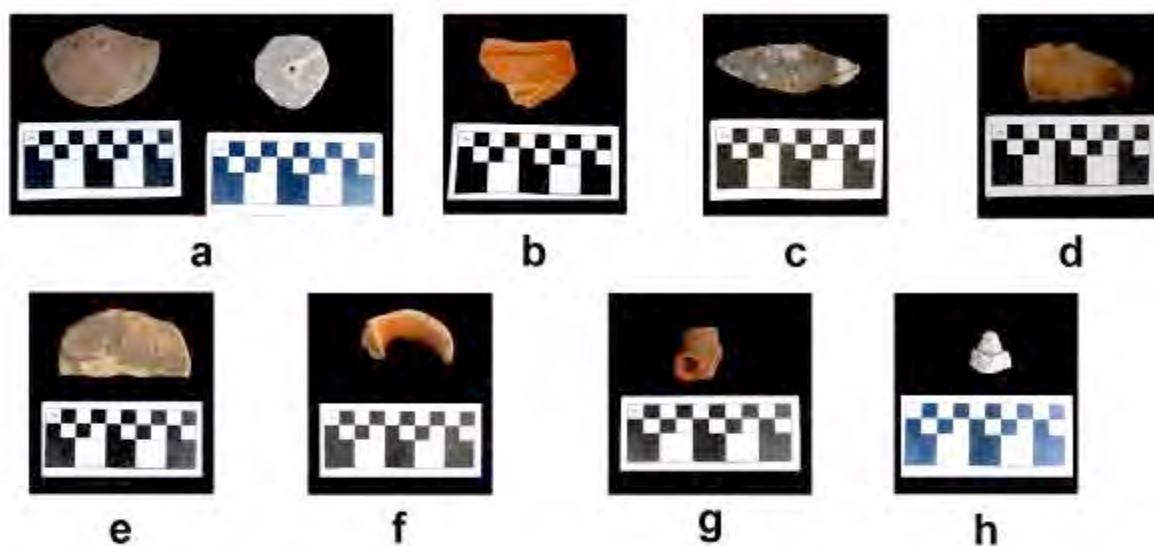
Level 1 of the unit included all the humus and collapse from the present day ground surface to the first plaza floor. This layer measured 33 cm in the south and 74 cm in the north due to the collapse from structure E24. At this level Plaza Floor 1 was exposed across the whole unit. Ceramics from this level included rim and body sherds as well as 4 fragments of *Ahk'utu* molded carved and a spindle whorl. Lithic materials recovered were chert flakes and biface fragments. Few jute shells were collected and a small perforated slate fragment was identified (Figure 10). At this point the unit was subdivided along the east west axis to form two subunits, one in the northern half and the second in the second half of the original unit. This was done in the interest of time and also to preserve part of the unit for further research if needed.

Level 2 included the plastered floor and ballast of floor one with smaller cobbles ranging from 5-12 cm in diameter. At a depth of 10 cm in the north and 14 cm in the south, a second plastered floor was reached. This floor covered the entire unit and was discolored medium grey from what appears to be burning. The floor color was uniform throughout the unit indicating a relatively large scale event. A few ceramic sherds were recovered from this unit with no additional cultural material.

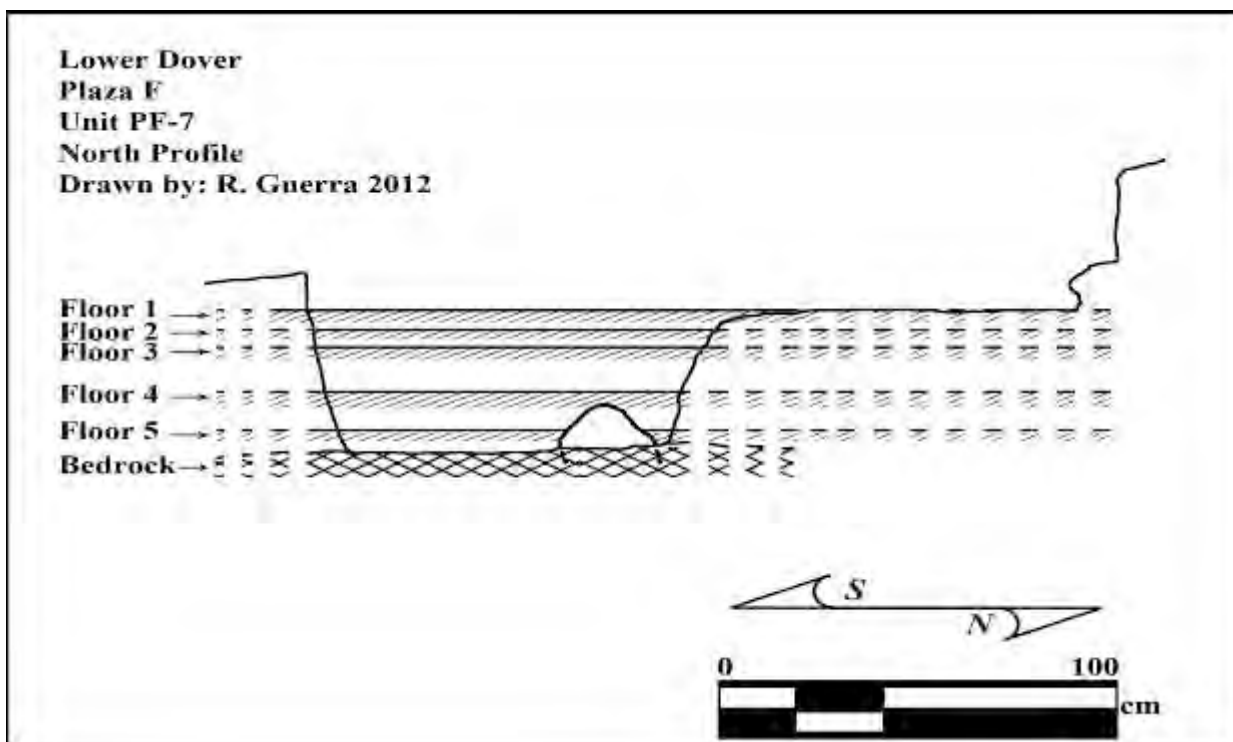
Level 3 was removed to a depth of 8 cm below floor one. This included the plastered surface and the ballast of floor 2 and a third plaza floor was identified at this depth. Three non diagnostic ceramic sherds and numerous chert flakes were recovered from this level. No additional cultural materials were identified in this level.

Level 4 included the plastered surface and any ballast below floor 3. At a depth of 24 cm a fourth plastered surface was uncovered, extending across the entire subunit. The matrix of this level was a light orange sandy clay soil with small cobble inclusions ranging from 6 -9 cm in diameter. Several ceramic sherds were recovered from this area along with an abundance of chert flakes and some jute shells. Given the composition of the matrix it is likely that the fill originated from an alluvial deposit near the Belize River. No additional artifacts were identified in this level.

Level 5 included the plastered surface and ballast of floor 4. Characterized by a light grey sandy fill with inclusion of small cobbles, this layer was excavated to a depth



**Figure 10.0:** Artifacts recovered from Plaza Unit PF-7. a, b, c, and d recovered from Level 1 (a- ceramic spindle whorls, b- *Ahk'utu* Molded- Carved, c- stemmed biface, d- chert biface fragment), e, f, g, and h recovered from Level 5 (e – ceramic spindle whorl, f – ceramic strap handle, g – and h- ceramic figurine fragments)



**Figure 11.0:** Profile view of Unit PF-7.

of 30 cm to a fifth floor. Floor 5 extended uniformly across the subunit with little to no variation in elevation or color. Ceramic artifacts collected in this level included one spindle whorl and two figurine fragments. The first figurine fragment was an upper right torso with an appliquéd arm band and the second a hollow fragment, possibly a lower torso (Figure 10). Numerous chert flakes were recovered from this level with no additional cultural materials identified.

Level 6 was excavated to a depth of 23 cm in the north and 32 cm in the south. This level included the plaster floor and ballast of floor 5 to limestone bedrock. The matrix of this lot was consistent with level 5 and included small cobbles ranging from 4-10 cm in diameter. Jute shells were the only cultural materials collected from this level.

### **Lower Dover Rockshelter**

Located 14m southwest of Plaza G is a small opening in the limestone that could have possibly been utilized as a rockshelter during the occupation of the area. The opening is 70cm from the ground surface to the ceiling at the dripline of the feature; however, there is enough space inside for several people. A large portion of the ceiling appears to have collapsed, meaning that the area inside was more conducive to being a shelter or at least a temporarily habitable area prior to the present. The purpose of excavation here was to determine if any cultural activities were conducted inside that may lead to understanding the use of the space. These excavations were conducted during a 4 day weekend.

#### **LWD-RS1**

A 1.5 x 2m unit starting at the northern interior wall and extending south to just outside the dripline was set up in the rockshelter. Organics and debris were removed, as well as limestone pieces that had collapsed from the ceiling of the space. In the surface collection, severely weathered ceramic sherds were found, along with chert, daub, an apple snail, and faunal remains. Excavation began with contoured arbitrary levels of 10cm.

The humus contained a large amount of limestone, and it was difficult to discern when any collapse took place due to the odd scattering of stones in Level 1. Most cultural material came from the surface layer and from the top 3-5cm of the matrix layer, possibly as a result of wash from Plaza G. Few ceramic sherds, faunal remains, quartz and obsidian were found at the dripline.

Level 2 began at the northernmost portion of the unit, directly beneath the back wall of the rockshelter farthest away from the entrance within the light zone. As excavation progressed, a rock was removed, revealing a cavity beneath it. Focus was then placed on taking that area further down until a surface was reached.

At a depth of 40cm there was burned limestone. Following this burned surface to the eastern boundary of the unit, matrix and small pieces of limestone were removed, as well as several pieces of burned ceramic. A faunal mandible was exposed at 30cm beneath the surface, and was resting directly on top of a larger piece of burned limestone. Due to time constraints the unit was ended and backfilled. However, given the nature of the surface and the artifacts found this area should be revisited in the future to determine the extent of the burned surface.

## **DISCUSSION AND CONCLUSION**

Limited excavations were conducted at Lower Dover Plaza F in order to define the form, function and construction chronology of the southern plaza within the acropolis complex of Lower Dover. The excavations were able to partially define the southern structure of the plaza and collect material associated with the terminal architecture. In addition, vertical plaza excavations along the northern edge of the plaza were able to document several construction periods in the platform as well as collect additional material for relative dating.

The exposure along the base of Structure F26 uncovered a deposit that was left on the plaza floor and the stairs of the structure. These types of deposits have often been discussed in relation to terminal occupation of a site and it has been suggested that they represent termination ritual or rapid abandonment activities (Chase and Chase 2003). The deposit although only partially recovered included ceramics, chert, obsidian, shell, faunal remains and ground stone. Very little evidence of any burning of the materials was noted, with the exception of on deer antler fragment. No burn stains were identified on the surface of the plastered floor. The recovered assemblage is very similar to deposits identified at other Belize Valley sites, namely Cahal Pech, Xunantunich, Baking Pot and Pook's Hill, and has been suggested to be associated with temporary reoccupation or pilgrimages to sacred spaces engrained in the social memory of communities (Awe Pers. Comm. 2013).

Structure F25 deposit included specialized ceramics such as figurine fragments, ocarinas (partial and complete), serving vessels, as well censer fragments. These recovered ceramics indicate that the deposit dates to the Terminal Classic and the Early facet of the Postclassic. The faunal analysis from the deposit indicates some stages of tool production from bones and shell. Unfinished or blank spindle whorls also indicate the reuse of some of the materials or a small workshop. In addition the ceramic and faunal in the deposit may also indicate some form of 'feasting' or consumption event. Additional excavations in this plaza will be able to define the extent of the deposit across the plaza floor as well as identify other similar deposits along the base of the other structures. This will help us to understand the activities associated with this plaza and the structures.



<b>Belize Valley Archaeological Reconnaissance Project</b>						
<b>Excavation Operations</b>						
<b>LOT INDEX</b>						
<b>Site</b>	<b>OP</b>	<b>STR</b>	<b>Unit</b>	<b>LVL</b>	<b>Lot #</b>	<b>Description</b>
Lower Dover	SR3	E24	E24-1	1	E24-1	Humus
Lower Dover	SR3	E24	E24-2	1	E24-2	Humus
Lower Dover	SR3	E24	E24-3	Surface	E24-3	Surface Collection
Lower Dover	SR3	E24	E24-4	Surface	E24-4	Surface Collection
Lower Dover	SR3	F25	F25-1	Surface	F25-1	Surface Collection
Lower Dover	SR3	F25	F25-2	Surface	F25-2	Surface Collection
Lower Dover	SR3	F25	F25-3	Surface	F25-3	Surface Collection
Lower Dover	SR3	F25	F25-4	Surface	F25-4	Surface Collection
Lower Dover	SR3	F25	F25-5	Surface	F25-5	Surface Collection
Lower Dover	SR3	F25	F25-6	Surface	F25-6	Surface Collection
Lower Dover	SR3	F25	F25-7	Surface	F25-7	Surface Collection
Lower Dover	SR3	F26	F26-1	1	F26-6	Humus
Lower Dover	SR3	F26	F26-1	1a	F26-10	On Floor Deposit
Lower Dover	SR5	F26	F26-1	1b	F2613	On Floor Deposit
Lower Dover	SR3	F26	F26-1	Surface	F26-1	Surface Collection
Lower Dover	SR3	F26	F26-2	1	F26-7	Humus
Lower Dover	SR3	F26	F26-2	1a	F26-11	On Floor Deposit
Lower Dover	SR6	F26	F26-2	1b	F2614	On Floor Deposit
Lower Dover	SR3	F26	F26-2	Surface	F26-2	Surface Collection
Lower Dover	SR3	F26	F26-3	1	F26-8	Humus
Lower Dover	SR4	F26	F26-3	1a	F26-12	On Floor Deposit
Lower Dover	SR7	F26	F26-3	1b	F2615	On Floor Deposit
Lower Dover	SR3	F26	F26-3	Surface	F26-3	Surface Collection
Lower Dover	SR3	F26	F26-4	1	F26-4	Humus and Collapse
Lower Dover	SR3	F26	F26-4	1a	F26-9	Humus and Collapse
Lower Dover	SR3	F26	F26-5	Surface	F26-5	Surface Collection
Lower Dover	SR3	F27	F27-1	Surface	F27-1	Surface Collection
Lower Dover	SR3	F27	F27-2	Surface	F27-2	Surface Collection

Lower Dover	SR3	F27	F27-3	Surface	F27-3	Surface Collection
Lower Dover	SR3	F27	F27-4	1	F27-7	Humus and Collapse
Lower Dover	SR3	F27	F27-4	Surface	F27-4	Surface Collection
Lower Dover	SR3	F27	F27-5	Surface	F27-5	Surface Collection
Lower Dover	SR3	F27	F27-6	Surface	F27-6	Surface Collection
Lower Dover	SR3	Plaza F	PF-10	Surface	PF-20	Surface Collection
Lower Dover	SR3	Plaza F	PF-11	Surface	PF-21	Surface Collection
Lower Dover	SR3	Plaza F	PF-12	Surface	PF-22	Surface Collection
Lower Dover	SR3	Plaza F	PF-13	Surface	PF-23	Surface Collection
Lower Dover	SR3	Plaza F	PF-14	Surface	PF-24	Surface Collection
Lower Dover	SR3	Plaza F	PF-15	Surface	PF-25	Surface Collection
Lower Dover	SR3	Plaza F	PF-16	Surface	PF-26	Surface Collection
Lower Dover	SR3	Plaza F	PF-17	Surface	PF-27	Surface Collection
Lower Dover	SR3	Plaza F	PF-18	Surface	PF-28	Surface Collection
Lower Dover	SR3	Plaza F	PF-19	Surface	PF-29	Surface Collection
Lower Dover	SR3	Plaza F	PF-2	Surface	PF-12	Surface Collection
Lower Dover	SR3	Plaza F	PF-20	Surface	PF-30	Surface Collection
Lower Dover	SR3	Plaza F	PF-21	Surface	PF-31	Surface Collection
Lower Dover	SR3	Plaza F	PF-3	Surface	PF-13	Surface Collection
Lower Dover	SR3	Plaza F	PF-4	Surface	PF-14	Surface Collection
Lower Dover	SR3	Plaza F	PF-5	Surface	PF-15	Surface Collection
Lower Dover	SR3	Plaza F	PF-6	Surface	PF-16	Surface Collection
Lower Dover	SR3	Plaza F	PF-7	1	PF-32	Humus and Collapse
Lower Dover	SR3	Plaza F	PF-7	2	PF-36	Ballast
Lower Dover	SR3	Plaza F	PF-7	3	PF-37	Ballast
Lower Dover	SR3	Plaza F	PF-7	4	PF-38	Ballast
Lower Dover	SR3	Plaza F	PF-7	5	PF-39	Ballast
Lower Dover	SR3	Plaza F	PF-7	6	PF-41	Balast
Lower Dover	SR3	Plaza F	PF-7	7	PF-42	Ballast
Lower Dover	SR3	Plaza F	PF-7	mixed	PF-40	Levels 3-5 Baulk
Lower Dover	SR3	Plaza F	PF-7	Surface	PF-17	Surface Collection
Lower Dover	SR3	Plaza F	PF-8	Surface	PF-18	Surface Collection
Lower Dover	SR3	Plaza F	PF-9	Surface	PF-19	Surface Collection

**Table 1.0:** Lot number for the 2012 excavation units.

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# **PRELIMINARY ANALYSIS OF THE FAUNAL REMAINS FROM PLAZA F, LOWER DOVER, BELIZE: 2012 FIELD SEASON**

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Trent University**

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## **INTRODUCTION**

The site of Lower Dover is located in Unitedville, Cayo District, Belize, approximately five kilometers east of the major centre of Baking Pot. The Lower Dover site core is situated south of the Belize River between Upper Barton Creek and Lower Barton Creek (Guerra 2011). The site core consists of several dozen structures, one ball court, and at least eight formal plaza groups.

This report summarizes the preliminary observations made of 97 faunal remains recovered from the Lower Dover site and presented to the author for analysis. The faunal assemblage was recovered during excavations conducted in Plaza F and associated with excavation units placed within the plaza and Structures F25 and F26 respectively. Plaza F is one of four plazas that together comprise the site's acropolis complex (Guerra 2011:3).

The preliminary analysis of the assemblage resulted in the identification of local and non-local vertebrate and invertebrate taxa including bird, mammal, reptile, fish, and marine shell. These were found to include domestic dog, nine-banded armadillo, white-tailed deer, parrotfish and olive shell. The assemblage analyzed to date is representative of both food refuse and debitage associated with bone artifact production. The assemblage, which is all collected from stratigraphic levels identified as humus and/or collapse, may represent refuse materials associated with abandonment or post-abandonment uses of Plaza F. The presence of marine shell and parrotfish remains indicates access to the Caribbean Sea through established trade networks or direct exploitation. Although the marine shellfish may have been consumed, their presence on the site is more likely associated with their use as raw materials for shell ornament production or finished artifacts.

Several bone specimens exhibit cultural and natural modifications resulting from heat exposure and bone artifact production. Incomplete bone artifacts are noted, including tubes, a bead, pins, a rasp, and, possibly, a flute. A total of 28.9% of the assemblage is intentionally worked and all of these specimens were recovered from a single excavation

unit within Structure F-26. The relative percentage of bone debitage and artifacts associated with Structure F-26 may suggest that it was a locus for craft production.

## **METHODS**

The assemblage was examined by the author in Belize during August 2012. All materials had been washed and dried prior to analysis. For the purposes of this preliminary analysis, no skeletal reference collections were used. All secure identifications were made based on the author's experience and with the aid of published reference keys. Published keys utilized include, for mammals, Gilbert (1980) and Olsen (1964), for birds Gilbert *et al.* (1981), for reptiles Olsen (1968).

Taxonomic nomenclature is based on the following references: for mammals, Emmons (1990) and Reid (1997), shells follow Tucker Abbott and Morris (1995), and turtles follow Ernst and Barbour (1989) and Lee (2000). Fish nomenclature follows Böhlke and Chaplin (1968) and Greenfield and Thomerson (1997). Bone nomenclature (e.g. specimen, element) follows Lyman (1994).

The faunal sample was initially sorted into identifiable and unidentifiable groups. The specimens are quantified as NISP (Number of Identified Specimens) and considered "identified" when they possessed diagnostic morphological characteristics that enabled their identification to zoological class or lower taxon. Bone fragments that could not be sorted to the basic level of zoological class are considered "unidentifiable".

For all identifiable specimens the following observations were recorded when possible: lowest zoological taxon present; element or portion thereof represented and side; age estimates (based on the degree of epiphyseal fusion and attrition), and any natural or cultural modifications.

Worked bone and shell are noted but are not discussed in detail as they await further detailed analysis. However, the worked bone assemblage is subject to a preliminary discussion in the context of "Maya bone crafting" following Kitty Emery's (2008) informative study of Maya bone tool production techniques. Nomenclature for worked bone follows Emery (2008).

## **GENERAL CHARACTERISTICS OF THE FAUNAL REMAINS**

The faunal sample presented for analysis consisted of 97 specimens recovered during the excavation of two structures and the plaza within Plaza F. Of these, 83 (85.6%) could be assigned to one of five zoological classes (Table 1). The remaining 14 specimens are unidentifiable bone fragments.



<b>Table 1: Distribution of NISP by Zoological Class</b>		
<b>Zoological Class</b>	<b>NISP</b>	<b>% NISP</b>
Class Gastropoda	3	3.61
Class Osteichthyes	1	1.20
Class Reptilia	24	28.91
Class Aves	2	2.41
Class Mammalia	53	63.85
<b>Total</b>	<b>83</b>	

<b>Table 2: List of Lower Dover Taxa</b>	
<b>Scientific Name</b>	<b>Common Name</b>
<b>Invertebrates</b>	
<b>Class Gastropoda</b>	<b>Univalves or Snails</b>
Family Olividae	Olive Shells
<i>Oliva</i> sp.	Olive snail
<i>Oliva reticularis</i>	Netted Olive snail
<b>Vertebrates</b>	
<b>Class Osteichthyes</b>	<b>Bony Fishes</b>
Family Scaridae	Parrotfish
<b>Class Reptilia</b>	<b>Reptiles</b>
Order Testudines	Turtles
Family Kinosternidae	Mud and Musk Turtles
<b>Class Aves</b>	<b>Birds</b>
<b>Class Mammalia</b>	<b>Mammals</b>
Family Dasypodidae	Armadillos
<i>Dasypus novemcinctus</i>	Nine-Banded Armadillo
Order Carnivora	Carnivores
Family Canidae	Dog Family
<i>Canis familiaris</i>	Domestic Dog
Order Artiodactyla	Even-Toed Ungulates
Family Cervidae	Deer
<i>Odocoileus virginianus</i>	White-Tailed Deer

The 83 specimens identified to zoological class or lower taxon, include representatives of one invertebrate and six vertebrate taxa (Table 2). The only invertebrate class represented is the gastropoda (i.e.univalves). Vertebrate identifications include bony fish, reptilian, bird, and mammalian zoological classes.

### **Taphonomy**

Preservation of the sample is considered poor. Few complete elements were noted (n=3). The majority of the sample (96.9%) consists of fragments. This is reflected in the number of identifiable specimens. Only 36 specimens, or 43.4% of the faunal sample, could be identified to a taxon below the level of zoological class.

The high percentage of unidentifiable specimens is a common feature of Maya archaeofaunas and is due to a combination of natural and cultural taphonomic agents. The humid and wet environment of the tropics is not conducive to bone survivorship. Preservation of bone will depend greatly on the degree of exposure to the natural elements of the neo-tropical forests. The practice of re-disposing bone refuse, butchering of bone during processing for meat, and the reductive processing of bone for artifact production are all cultural factors that contribute to increased bone fragmentation (Stanchly 2004).

### **The Invertebrate Assemblage**

#### *Class Gastropoda (Snails or Univalves)*

All three of the invertebrate specimens are identified as univalves (Class Gastropoda), and all are marine shell. This accounts for 3.1% of the faunal assemblage. They include a single netted olive shell, one specimen identified as a member of the Olive shell family, and one unidentified marine shell fragment, possibly a conch or chank fragment. Two of the specimens are worked.

**Netted Olive** (*Oliva reticularis* Lamarck) – This species of olive shell is represented by a single water worn specimen. Identification as netted olive is based on size and thickness of the specimen. The specimen was recovered from the humus level associated with Structure F25.

**Indeterminate olive shell** (*Oliva* sp.) – A single worked specimen, possibly an inlay, is identified only as olive shell and was recovered from Str. F26. The specimen has been polished on all of its exterior surfaces. No measurements have been taken to date.

**Unidentified gastropod** – One unidentifiable worked marine shell fragment was recovered from Str. F26. The specimen has three polished surfaces and may have been part of an inlay. The piece appears to have been cut from the lip of the shell and it may be from a conch or chank sized shell.

<b>Table 3: Distribution of Vertebrates by Zoological Class</b>		
<b>Zoological Class</b>	<b>NISP</b>	<b>% NISP</b>
Class Osteichthyes	1	1.06
Class Reptilia	24	25.53
Class Aves	2	2.13
Class Mammalia	53	56.38
Class Unknown	14	14.89
<b>Total</b>	<b>94</b>	

<b>Table 4: List of Mammals</b>		
<b>Scientific Name</b>	<b>NISP</b>	<b>% NISP</b>
<i>Dasyopus novemcinctus</i>	1	1.89
<i>Canis familiaris</i>	2	3.77
<i>Odocoileus virginianus</i>	4	7.55
Family Cervidae	1	1.89
Order Artiodactyla	1	1.90
Unidentified mammal	44	83.02
<b>Total</b>	<b>53</b>	

### **The Vertebrate Assemblage**

The Lower Dover vertebrate faunal assemblage recovered during the 2012 field season included 94 specimens representing the zoological classes of mammal, bird, reptile, and fish (Table 3). Of these, 53 (56.4%) are of mammalian origin, two (2.1%) are avian, 25 (25.5%) are reptilian, and one (1%) is fish.

A total of 34 specimens are identifiable to a zoological taxon below class and include representatives of 8 taxa. These include parrotfish, domestic dog, mud or musk turtle, armadillo, domestic dog, and white-tailed deer.

The majority of the identified skeletal elements are post-cranial bones, dominated by long bones of both the forelimb and hind limb, excluding those remains identified as turtle and armadillo. These are represented by bones of the exoskeleton (i.e., carapace and dermal scutes). The relative abundance of limb elements suggests that the bones represent discarded food refuse, as these represent greater meat yielding body portions. However, the number of modified bones may alternatively suggest that at least some of the sample represents the by-products of bone crafting.

#### *Class Mammalia (Mammals)*

Mammal bones account for 53 specimens or 56.4 % of the Lower Dover assemblage presented for analysis. They were found to include nine representatives of five taxa and at least three species (Table 4). A total of 22 specimens are modified. Of these, 13 are worked and are either unfinished artifacts or the by-products of artifact

production. These are discussed in greater detail below in the section on modified faunal remains.

**Nine-banded armadillo** (*Dasypus novemcinctus* Linnaeus) – One element, a dermal scute, was recovered from Structure F-26. Armadillo are considered a valuable source of meat today and were consumed by the ancient Maya. However, the presence of a single dermal scute does not preclude its presence within the assemblage as an intrusive element.

**Domestic Dog** (*Canis familiaris* Linnaeus) – Dog is represented by two specimens, both partial humeri from two dogs, one of which was immature. Both were recovered from Str. F-26. The humerus from the immature dog is a distal fragment that is primary debitage associated with bone working.

**White-tailed deer** (*Odocoileus virginianus* Zimmerman) – All four deer specimens are from Str. F-26 excavations. They include a complete proximal phalanx, a partial left mandible, the distal portion of a left humerus, and a complete left astragalus. Cut marks are noted on the mandible and humerus and may also be present on the proximal phalanx. The cut marks may be related to skinning associated with hide removal rather than butchering but this determination requires more detailed analysis.

**Unidentified deer** (Family Cervidae) – One specimen, an antler tine, remains to be identified to deer species. The fragment has been slightly charred and polished due to heat exposure.

**Even-toed ungulate** (Order Artiodactyla) – A partial left calcaneum is identified to this order. It is from a small deer or peccary but a secure identification awaits comparison to a reference collection. The bone was recovered from Str. F-26.

**Unidentified mammal** (Class Mammalia) – Approximately 45.4% of the mammalian assemblage was too fragmented to identify to zoological taxon lower than Class Mammalia. The 44 unidentified mammal specimens likely contain additional representatives of those taxa discussed above, as well as additional taxa. Where possible these were sorted by body portion or element represented, and the size of animal represented.

All except one of the unidentified mammal bones were recovered during excavation of Str. F-26. Cranial elements account for only one specimen, a partial mandible from a medium to large sized animal. Axial bones include six unfused vertebrae from medium to large sized immature animals. Limb bones account for 35 specimens. These are mainly shaft portions. Of these, 13 are worked and include incomplete bone artifacts and the debitage associated with bone working. These are discussed in greater detail below. Cut marks are noted on two specimens and three fragments exhibit signs of weathering. One specimen is spirally fractured. All of the unidentified mammal bones are from medium to large animals. One large bone, possibly a femur, is from a juvenile animal.

### *Class Reptilia (Reptiles)*

A total of 24 reptile bones were recovered from Str. F-26. All are identified as turtle carapace fragments. Of these, four are identified as mud or musk turtle (Family Kinosternidae). The remaining 20 fragments could not be identified to a lower taxon. However, some of these are considered to be identifiable with the aid of a skeletal reference collection and will be re-examined at a future date.

### *Class Aves (Birds)*

Two bones are identified as bird. Both specimens are too fragmented to be considered identifiable to a lower taxon. Both specimens are ulna fragments from small to medium sized birds. One has been rodent gnawed.

### *Class Osteichthyes (Bony Fishes)*

Given the location of Lower Dover in close proximity to the Belize River and Upper and Lower Barton Creek, we might expect greater amounts of fish bone in the assemblage. However, only one specimen, a parrotfish (Family Scaridae) from the Caribbean Sea, was identified. The parrotfish is represented by a partial premaxilla bone. The specimen is considered identifiable to species and will be re-examined in the future through comparison with a skeletal reference collection.

## **THE DISTRIBUTION OF THE LOWER DOVER FAUNAL ASSEMBLAGE**

The faunal remains were recovered from excavations in Structure F-25, F-26 and a plaza unit in front of Str. F-26. Four excavation units (F26-1, F26-2, F26-3 and F26-4) yielded 91 faunal remains, or 93.8% of the assemblage. Excavations in Str. F-25 yielded a single faunal specimen, while five specimens were recovered from the plaza excavation unit in front of Str. F-26. It is possible that the relative abundance of faunal material recovered from Structure F-26 may simply be the result of the volume of excavation conducted to date.

**Table 5: Lower Dover Faunal Distribution by Structure**

<b>Structure</b>	<b>No. of Specimens</b>	<b>%</b>
F-25	1	1.03
F-26	91	93.81
Plaza Unit F-26	5	5.15
<b>Total</b>	<b>97</b>	

<b>Table 6: Structure F-26 List of Taxa</b>		
<b>Zoological Taxon</b>	<b>NISP</b>	<b>% NISP</b>
<i>Oliva</i> sp. – Olive snail	1	2.32
Family Scaridae – parrotfish	1	2.32
Family Kinosternidae – kinosternid turtles	4	9.30
Order Testudines – turtle	12	27.91
Class Aves – unidentified bird	1	2.32
<i>Canis familiaris</i> – domestic dog	1	2.32
<i>Odocoileus virginianus</i> – white-tailed deer	2	4.65
Class Mammalia – unidentified mammal	12	27.91
Unidentified bone	9	20.93
<b>Total</b>	<b>43</b>	

### Structure F-25

*Excavation Unit F25-5* – A single specimen, a water worn partial olive shell, was recovered from the humus layer within Lot F25-58.

### Structure F-26

A total of 91 faunal remains were recovered from four excavation units and nine separate excavation lots. The remains were found to include representative taxa from five zoological classes including snail, bird, mammal, and reptile (Table 6). Marine, terrestrial, and riverine taxa are present. A total of nine bone specimens could not be identified to zoological class. Modified bone and shell account for 13 specimens. These were found to include a partial shell tinkler or inlay, an incomplete rasp, a bone pin or bodkin, and a possible bone flute. In addition to these unfinished or fragmented artifacts, several specimens exhibited cut marks and bone debitage was also noted.

*Excavation Unit F26-1* – A total of 43 remains were recovered from four excavation lots. Lot F26-10 was found to include two specimens, a partial mandible from an unidentifiable medium to large sized mammal, and a partial left mandible from a white-tailed deer. Cut marks are noted on the inferior surface of the deer mandible.

Lot F26-13 accounts for 33 specimens, or 76.7% of the faunal remains recovered from excavation unit F26-1. This lot is interpreted as a mixed humus and collapse level. The 33 specimens include domestic dog, parrotfish, mud or musk turtle, indeterminate turtle, and several unidentifiable mammal fragments. Modified bone includes 11 specimens. Of these, two specimens exhibit cut marks, four are debitage associated with bone tool or artifact production, and one is a partial rasp. Carnivore gnawing is present on one specimen. One unidentified mammal bone fragment exhibits ‘juvenile cortex’ indicating it is from a juvenile. One vertebra specimen is unfused, indicating it is from an immature mammal.

A single specimen was recovered from Lot F26-14. It is an incomplete shell tinkler or inlay manufactured from an indeterminate olive snail.

Lot F26-59 accounts for seven specimens, or 21.2% of the F26-1 excavation unit faunal sample. The specimens include a proximal phalanx of a white-tailed deer, an unidentifiable partial ulna of a small to medium sized bird, two modified but indeterminate mammal long bone shaft fragments, and three unidentified bones. A total of three bones are worked and include a partial bone pin or bodkin, a possible incomplete bone flute, and one specimen that exhibits polishing of its exterior surface.

*Excavation Unit F26-2* – A total of 34 faunal remains were recovered from two excavation lots. Lot F26-11 included a single unidentifiable long bone shaft fragment from a medium to large sized mammal. The specimen has been extremely weathered resulted in the erosion of all bone surfaces. A cut mark may be present but additional analysis is necessary to determine this.

The remaining 33 specimens were recovered during the excavation of Lot F26-14. These include an unidentified modified marine shell specimen, a domestic dog partial humerus, one armadillo dermal scute, eight fragments of unidentified turtle carapace, and 22 unidentified mammal bones. A total of eight specimens are modified. These include the unidentifiable marine shell fragment. This piece has been polished on three surfaces and is likely the lip portion of either a conch or chank shell. Two mammal long bone fragments are interpreted to be bone debitage. Two additional mammal long bone shaft fragments are either incomplete bone tubes or the debitage related to the manufacture of a bone tube.

*Excavation Unit F26-3* – The seven specimens from this excavation unit were recovered from two separate lots. A complete white-tailed deer astragalus element was recovered from Lot F26-8. The remaining six specimens are from Lot F26-15 and included a partial ulna from an unidentified small to medium sized bird, an unidentifiable mammal long bone fragment, and two indeterminate bone shaft fragments. Two of the specimens are modified and may be portions of a bone tube and pin.

*Excavation Unit F26-4* – All six specimens presented for analysis were recovered from Lot F26-9. These included one partial white-tailed deer left humerus with cut marks, an indeterminate deer antler type exhibiting signs of heat exposure, the calcaneum of an indeterminate artiodactyl, two unidentifiable mammal long bone fragments, and one incomplete bone bead unidentifiable to zoological class. One of the mammal long bones has been polished on one surface and also exhibits a cut mark.

## **Plaza F-26**

A total of five vertebral fragments from an immature but unidentified mammal or mammals, were recovered from Lot PF26-9 in Excavation Unit PF26-4. The fragments are all from a medium to large-sized animal and may fit together. None of the fragments are considered identifiable.



<b>Table 7: List of Modified Remains</b>				
<b>Taxa</b>	<b>Body Portion</b>	<b>Element</b>	<b>Type of Modification</b>	<b>NISP</b>
Domestic dog	forequarter	humerus	debitage	1
Unknown, cf. bird	limb	long bone shaft	tube?	1
Unknown, cf. mammal	indeterminate	indeterminate, cf. long bone	debitage	4
Unknown, cf. mammal	limb	long bone shaft	bead	1
Bird	wing	cf. ulna shaft	rodent gnawed	1
Marine shell	cf. lip		inlay?; polished	1
Mammal	limb	long bone shaft	cut marks	1
Mammal	limb	long bone shaft	spiral fracture	1
Mammal	limb	long bone shaft	weathered	2
Mammal	limb	long bone shaft	weathered; cut mark?	1
Mammal	limb	long bone shaft	pin/bodkin	1
Mammal	limb	long bone shaft	debitage	5
			debitage; carnivore	
Mammal	limb	cf. humerus/femur	gnawed	1
Mammal	limb	long bone shaft	pin?	1
Mammal	cf. hindquarter	cf. femur	rasp	1
Mammal	limb	long bone shaft	tube?	2
Mammal	limb	long bone shaft	debitage; cut mark	1
			cut mark; carnivore	
Unknown	indeterminate	indeterminate	gnawed	1
Unknown	limb	long bone shaft	flute?	1
Deer	antler	tine fragment	heated – charred	1
White-tailed deer	forequarter	humerus	cut marks	1
White-tailed deer	foot	proximal phalanx	cut marks?	1
White-tailed deer	cranial	mandible	cut marks	1
Olive shell	body		tinkler/inlay?	1
Netted olive shell	spire		weathered – water worn	1

## MODIFIED FAUNAL REMAINS

A total of 34 of the faunal remains exhibit signs of natural or cultural modification (Table 7). These include three marine shells and 30 bone specimens. All were recovered during the excavation of Structure F-26. Of these, 28 are intentionally worked. Modifications noted include rodent and carnivore gnawing, charring and browning as a result heat exposure, cut marks, weathering, spiral fracturing, and alterations resulting from the removal of bone debitage and the production of bone tools and artifacts. Some specimens exhibit several types of modification.

Emery (2008) has recently published an informative study on the techniques of Maya bone working based on a sample of more than 4,000 modified bones recovered from a single locus at the lowland Maya site of Dos Pilas, Guatemala. Her analysis suggests that the mechanics of Maya bone working was similar throughout Maya history (Emery 2008:217). Furthermore, animal bone modification techniques are finite and there is little variation in the techniques of bone working across the Maya area. The Dos Pilas

<b>Table 8: Bone Artifact Production Reduction Hierarchy (after Emery 2008)</b>	
<b>Modification Stage</b>	<b>Description</b>
Stage 1: Primary & Secondary Debitage Removal	<ul style="list-style-type: none"> <li>- primary reduction of epiphyses/metaphyses (transverse cut for removal of epiphyseal ends)</li> <li>- secondary reduction of surface irregularities (removal of non-epiphyseal debitage via transverse/longitudinal cuts)</li> </ul>
Stage 2: Core Production & Finishing	<ul style="list-style-type: none"> <li>- one or more transverse cuts in preparation for core production cuts</li> <li>- primary core finishing (smoothing of external surface)</li> <li>- secondary core finishing (smoothing of one or both of transversely cut core ends)</li> </ul>
Stage 3: Primary Blank Production	<ul style="list-style-type: none"> <li>- primary reduction of cortical core into 'blanks' or performs (unsmoothed longitudinal cuts, longitudinal scores, superficially irregular surfaces)</li> <li>- secondary reduction of cortical core into 'blanks' or performs (secondary thinning, cutting of unfinished blank)</li> </ul>
Stage 4: Blank Finishing	<ul style="list-style-type: none"> <li>- cortical and longitudinal edge smoothing and removal of terminal blank butts (high degree of cortical and edge finishing)</li> <li>- tertiary reduction (longitudinal splitting to create fine squared blank)</li> </ul>
Stage 5: Artifact Production	<ul style="list-style-type: none"> <li>- final stages of production and finishing of both blanks and artifacts</li> </ul>

collection also allowed Emery to propose a five stage reduction hierarchy for bone artifact production. These are summarized in Table 8.

The Dos Pilas assemblage also highlighted the fact that Maya bone crafters favoured “the sturdiest and straightest long bones...of large mammals” (Emery 2008:216). This is certainly true of the modified remains recovered from Structure F-26 at Lower Dover. As Table 7 above indicates, the majority of the bone debitage and artifacts are modified from these sturdy and straight mammalian long bones.

At this stage of our analysis of the modified faunal remains from Lower Dover, little can be said with regard to the reduction sequences noted in the assemblage. To be sure, there are some specimens that are clearly associated with the earliest stages of reduction, namely primary and secondary debitage removal. The distal humerus of a domestic dog recovered from excavation unit F26-1 is a clear example of primary debitage removal as evidenced by the single rough transverse cut made just below the element's epiphysis/metaphysis. Future analysis of the Lower Dover worked faunal assemblage will include detailed evaluation of the bone artifact reduction hierarchy in comparison to that published by Emery for the Dos Pilas assemblage, and assemblages from other sites in the Belize Valley.

## **DISCUSSION AND CONCLUSIONS**

The preliminary analysis of 97 bone and shell specimens recovered from the Plaza F excavations at Lower Dover during the 2012 field season indicates that animals were utilized for a variety of purposes including as a food source and as raw material for the production of shell and bone artifacts.

The preliminary analysis of the assemblage resulted in the identification of local and non-local vertebrate and invertebrate taxa including bird, mammal, reptile, fish, and marine shell. These were found to include domestic dog, nine-banded armadillo, white-tailed deer, parrotfish and olive shell. The assemblage, which is all collected from stratigraphic levels identified as humus and/or collapse, may represent refuse materials associated with abandonment or post-abandonment uses of Plaza F.

The presence of marine shell and parrotfish indicates access to the Caribbean Sea through trade or direct exploitation. Although the marine shellfish may have been consumed, their presence on the site is primarily associated with their use as raw materials for shell ornament production or finished artifacts.

Several bone specimens exhibit cultural and natural modifications resulting from heat exposure and bone tool and/or artifact production. Several incomplete bone artifacts are noted, including tubes, pins, a rasp, and a partial flute. A total of 28.9% of the assemblage is intentionally worked and all of these specimens were recovered from a single excavation unit within Structure F-26. The relative percentage of bone debitage and artifacts recovered from excavations of Structure F-26 may suggest craft production is associated with this locus. The nature of bone working associated with Str. F-26 awaits further analysis.

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# **EXCAVATIONS OF CHULTUN LWDCH1, LOWER DOVER, UNITEDVILLE, BELIZE**

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## **INTRODUCTION**

Excavations of chultun LWDCH1 were conducted in the summer of 2012 as part of the ongoing research conducted by the Belize Valley Archaeological Reconnaissance (BVAR) project at the site of Lower Dover, Unitedville, Belize. Lower Dover is located on the southern bank of the Belize River directly across from Barton Ramie, approximately 6 km east of Baking Pot and 3 km west of Blackman Eddy. The site is bounded on the north by the Belize River, on the east by Little Barton Creek and on the west by Barton Creek (Guerra and Morton 2012). LWDCH1 is one of the first chultunob to be discovered within the site core of Lower Dover and the first to be excavated.

Chultunob are most accurately described as small subterranean chambers, which are ubiquitous throughout the Maya lowlands. Chultunob are found only where bedrock is relatively close to the surface, such as in the karst hills, and are not found on the alluvial plain. (Aylesworth 1993:81) While the presence of chultunob in the Maya world has been consistently documented in their relation to domestic settlement, the function and meaning of these features remain somewhat unclear. One foundation of chultun research is the notion of diachronic functional variation, which applies to chultunob on the individual level. Generally, it is believed that changes in function did not happen during the same time period. For example, a chultun originally excavated for water storage may have been used for human interment centuries later. This multi-functional, or at least bi-functional idea is commonly accepted. Undoubtedly the most common explanation for these underground caverns is the notion of water storage as a primary purpose, followed by food storage or refuse deposit when the chultun is no longer able to retain water. (Puleston 1965). Indeed this explanation is at least partially correct in many instances. "It has long been known that the large (ca. 6 m deep), plaster-lined and bottle-shaped chultuns found in northern Yucatan, and occasionally further south such as Uaxactun were in fact cisterns" (Smith 1950:17). However, smaller chultunob and those devoid of any plaster coating, thus unable to hold water, such as ones discovered in Belize (Gray 2000:93), may warrant a more comprehensive analysis to fully explore their primary and secondary functions.

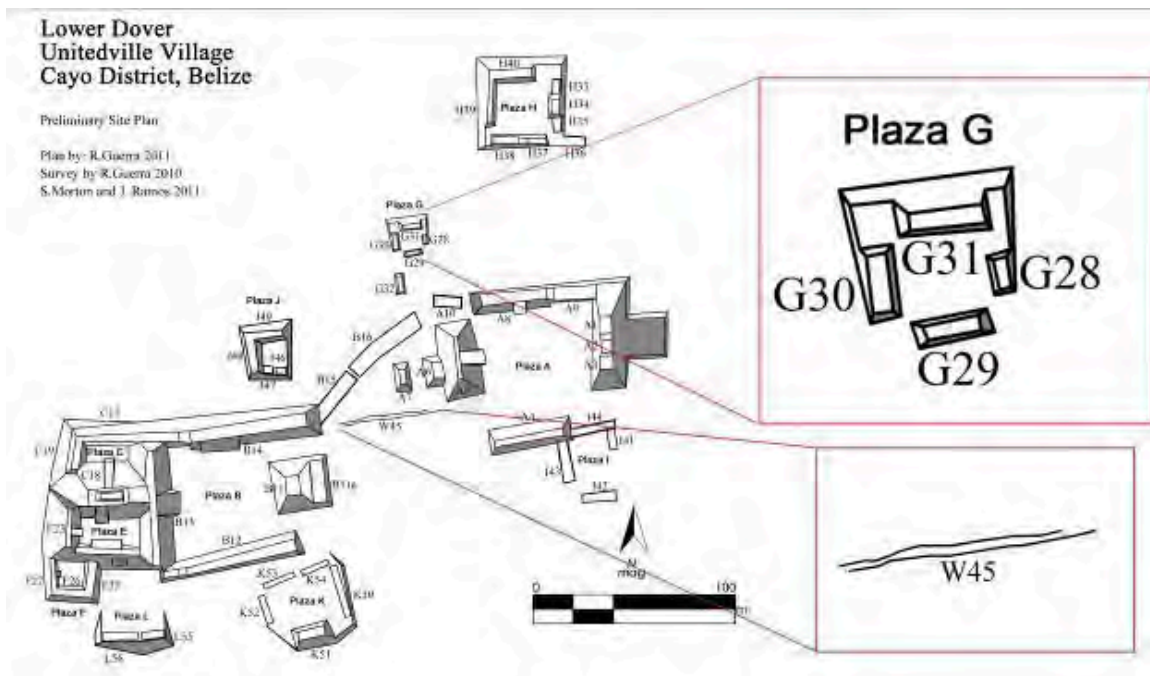


Figure 1- Map of Plaza G within the monumental center of Lower Dover (Guerra 2011).

The excavation of LWDCH1 marks the beginning of a multi-year investigation intended to expand the overall understanding of chultunob function and meaning within the Belize River Valley through the use of mapping, excavation and the introduction of phosphate analysis. The following report should serve to summarize the findings on LWDCH1 as well as place it's discovery in the context of a wider pattern of chultun use across the Maya world.

## BACKGROUND

The Belize River Valley is located in the Cayo district of Western Belize, including several major archaeological sites including Cahal Pech, Lower Dover and Baking Pot. Previous investigations of chultunob specifically within the Belize River Valley have been sporadic in nature as their discovery and occasional excavation are often secondary to the primary goals of the investigator. However, the BVAR project has noted the presence of chultunob particularly within the site of Cahal Pech in various field reports (Awe & Campbell 1988, 1989, 1991, 1992), refuting the previous claims made by Willey et al. (1965) that chultunob do not occur in the Belize River Valley. Noted investigations of chultunob within the Cahal Pech periphery include the Tolok group (Powis 1991, 1992), the Hospital group (Awe 1992), the Zotz group (Awe, Aimers & Blanchard 1991), the Cas Pek group (Awe et al. 1992) and the Zubin group (Iannone 1993). Additionally, investigations were previously undertaken on four chultunob from the site of X-uul-canil located in the Cayo district (Gray 2000) as well as one chultun in the periphery of Baking Pot (Perkins 2011).



Chultun LWDCH1 was initially discovered during the 2010-2011 field season through excavations on Plaza G within the site core of Lower Dover. Plaza G (Figure 1) is a small plaza located to the north of the ballcourt. The group consists of one formal plaza and a low-lying platform to the south west of the main plazuela (Guerra 2012).

## **METHODOLOGY**

The chultun was prepared for excavation by clearing large vegetation and surface debris from the visible entrance. In accordance with Iannone's observation (1994:99) that a chultun constituted a "readily definable space", the chamber itself served as the primary excavation unit. Within the chamber, vertical control was maintained by excavating in natural levels. Standard archaeological excavation procedures were used including troweling, brushing and screening through a ¼ inch mesh screen. All artifacts collected were bagged and labeled according to unit, level and artifact type each day.

### **Use of Phosphate (PO<sub>4</sub>) Analysis**

In addition to mapping and excavating further chultunob within the Belize River Valley, the introduction of phosphate analysis can lend another layer to our understanding of the role these features played in daily life. Phosphate analysis is increasingly used in archaeology as an indication of past human activity due to the consistent generation of organic matter as a result of human agency. "Certain activities associated with settlement and other anthropogenic occupations generate phosphate levels that are easily discernible from natural phosphate levels." (Ullrich 2010) Phosphate testing can help determine how specific buildings, features and sites were used, including the duration and intensity of use. These traits make phosphate analysis especially valuable for chultunob investigation as having the ability to quantify human interaction can speak to both habitual and chronological use. Further, it may be possible to discern additional information about specific contents by identifying elevated levels of organic matter. For example, as noted in previous research, human remains have occasionally been buried within chultunob (Gray 2000). However, due to natural factors such as flooding, extreme deterioration of remains has often made it difficult to determine if individuals were buried intact or if partial skeletal fragments were used as secondary interments. Phosphate analysis may be able to help differentiate these practices by allowing us to examine the volume of bone present. "Bone is one of the largest contributors to anthropogenically-augmented phosphate levels because phosphorus is present in bone as hydroxyapatite, which is not affected by plant uptake of the nutrient." (Weston 1995:20)

Phosphate analysis was conducted in this excavation through the use of LaMotte brand phosphate test kits. Test results were recorded on a scale of low, medium or high depending on the amount of phosphate present in the soil sample taken. A reading of "low" indicated a ppm (parts per million) PO<sub>4</sub> of 0.0 - 0.3, "medium" as 0.4 - 0.8 and "high" as a ppm PO<sub>4</sub> of 0.9 - 2.0. All test results were recorded daily and photographed when possible.



**Figure 2:** Beginning Excavations (LWDCH1) Photo by C. Perkins

## EXCAVATIONS

### LWDCH1 - Level 1, Lot LWDCH1-1

Beginning elevations:

NE: 100cm SE: 76cm SW: 90cm NW: 95cm Center: 160cm Datum: 1

Ending elevations:

NE: 142cm SE: 112cm SW: 128cm NW: 131cm Center: 251cm Datum: 1

Level 1 of LWDCH1 (Figure 2) was opened with the purpose of removing the surface materials and debris blocking the entrance. Datum #1 was established 260cm from the north base of the entrance at a height of 20.5cm from the surface. Three soil samples were taken from the surface in order to examine initial phosphate levels and establish a baseline level for the area. These included Sample 1, 12m to the west of the chultun, Sample 2 on the surface of the chultun itself, and Sample 3, 6m to the east of the chultun. While Sample 1 resulted in a medium reading (0.4 -0.8 ppm PO<sub>4</sub>), Samples 2 and 3 both produced a low result (0.0 - 0.3 ppm PO<sub>4</sub>) (Figure 3). These results were not surprising as low levels of phosphate were anticipated during the early phases of excavation. Higher levels were expected further on as we gained access to areas where human activity was hypothesized to have previously occurred. During the initial clearing phase of this level, various artifacts were uncovered including ceramic, chert, daub, freshwater shell and obsidian.

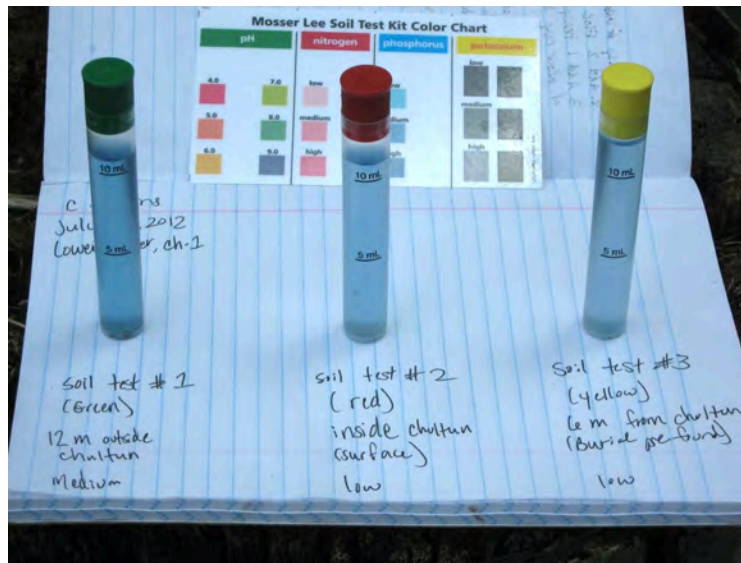


Figure 3: PO4 samples 1,2, 3 (LWDCH1) Photo by C. Perkins.

#### LWDCH1- Level 2, Lot LWDCH1-2

Beginning elevations:

NE: 142cm SE: 112cm SW: 128cm NW: 131cm Center: 251cm Datum: 1

Ending elevations:

NE: 171cm SE: 145cm SW: 152cm NW: 163cm Center: 274cm Datum: 1

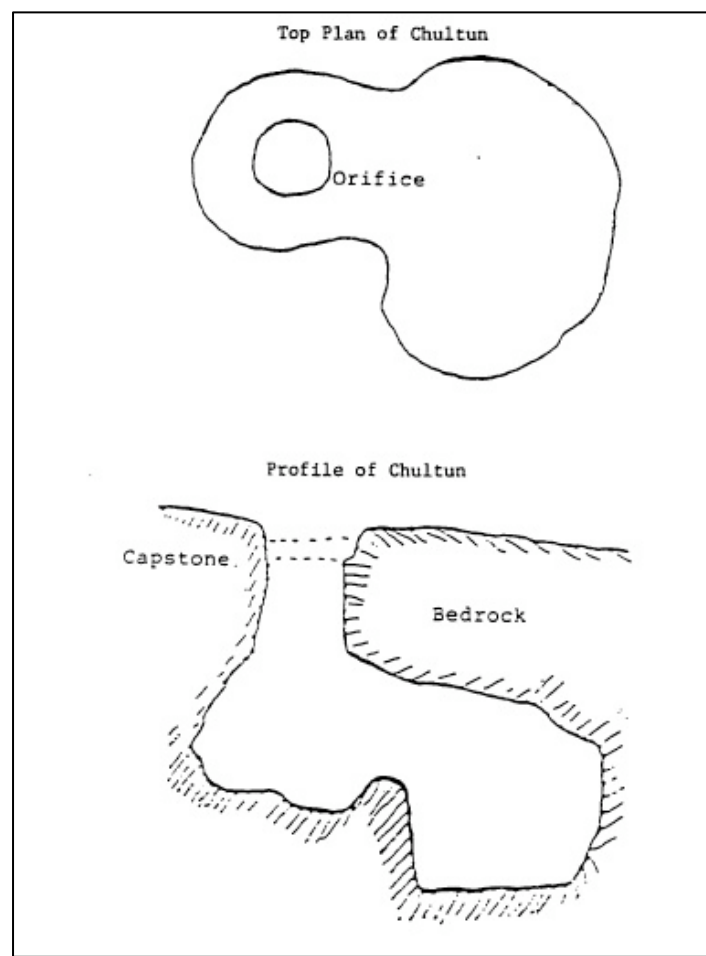
Lot LWDCH1-2 was opened as the matrix changed from surface materials to a dark brown humic layer (Figure 4). At this point the chultun became accessible and entry was possible. I remained in this level for the remainder of excavations as the humic layer continued until we reached the natural floor. Through the course of excavations, I discovered an additional entry point from below the surface, which I believed to be the original entrance. A 1m x 1m unit was put in on the surface to expose this entrance (see section G31-2). Additionally, what I believe was an intact capstone (Figure 5) was found directly below this area. This discovery led me to hypothesize that my original access point was most likely a collapsed antechamber.

One of the more notable features discovered while excavating LWDCH1 was the presence of a small shelf-like structure on the posterior wall (Figure 6). While my initial inclination was to describe the feature as an altar, I hesitate in applying that label. Undoubtedly, the word “altar” brings with it a connotation of religion or ritual, of which I found no artifacts or evidence thereof. Rather, artifacts uncovered in this level were more pedestrian in nature, lending credibility to the theory that many items were washed in over time from the surrounding structures in Plaza G. Ceramics, chert, obsidian, quartz, freshwater shell, daub, marine shell, and an inordinate amount of faunal bone (most of which we believe to be recent) comprised the majority of materials recovered. Among these items were a few special finds including a pure white small biface and a fragment of a ceramic vessel that resembled a tropical bird (Figure 7).



**Figure 4 (Top):** LWDCH1, Level 2- Beginning of Excavations, Original Access Point. **Figure 5 (Middle):** LWDCH1, Level 2- Capstone. **Figure 6 (Bottom):** End of Excavations, View of Posterior Wall (LWDCH1-2). Photos by C. Perkins.





**Figure 7 (Top):** Ceramic Bird Vessel Fragment (LWDCH1-2) Photo by C. Perkins.  
**Figure 8 (Bottom):** Profile of Lateral Chultun (Puleston 1971)



**Figure 9:** Primary Entrance (G31-2) and Collapsed Chamber (LWDCH1-2) Photo by C. Perkins).

At the end of excavations of LWDCH1-2, the chultun's dimensions were 372cm from the antechamber to the posterior wall of the primary chamber (N-S), 208cm from the collapsed entrance to the posterior wall of the primary chamber (N-S), 204 cm across the primary chamber (E-W) and 105cm in height. Final excavations revealed the morphology to closely resemble that of a lateral (shoe-shaped) chultun (Figure 8), first record by Puleston in 1971.

#### G31-2 – Level 1, Lot G31-2

Beginning elevations:

NE: 41cm SE: 57cm SW: 52cm NW: 39cm Center: 61cm Datum: 1

Ending elevations:

NE: 61cm SE: 66cm SW: 64cm NW: 55cm Center: 70cm Datum: 1

The purpose of excavation unit G31-2 was to expose the original entrance identified in unit LWDCH1-2 (Figure 9). A 1m by 1m unit was placed on the anterior surface of structure G31 in Plaza G. Artifacts recovered in this unit were typical of previous surface excavations within Plaza G and included ceramic, chert, daub, freshwater shell and obsidian. Excavations were concluded on this unit once the primary entrance was fully exposed.

**Table 1:** Total Artifact Frequencies (grouped by artifact class).

FREQUENCIES		
Artifact Class	Total	Notes
Ce	1899	423 Diagnostic sherds
Ch	968	72 worked pieces (non-debitage)
Db	0	Freq not counted, weight 122.93 oz
Fa	53	1 polished, 1 burnt
Fs	263	
Ms	4	
Ob	8	
Qz	2	2 clear glass-like flakes
<b>Total</b>	<b>3197</b>	

## ARTIFACT ANALYSIS

Throughout the course of excavations at LWDCH1, over 3,000 individual artifacts were recovered (Table 1). While the majority of these artifacts were items such as lithic debitage or non-diagnostic ceramic, several notable items were uncovered as well. These include a partial ceramic bird vessel (Figure 7), a small milky-white biface (Figure 10) and diagnostic ceramic typical of the Belize Red variety. Belize Red ceramics typically date to the Late Classic period (A.D. 600-900) and have been known to contain features called “mend holes” or “crack-lacing” (Figure 11). (Aimers 2012:68). While the ceramics within the chultun were indicative of the Late Classic period, this does not provide conclusive evidence as to the exact date of the chultun. Due to the collapsed antechamber and exposed opening, it is possible several artifacts washed inside the chultun from the surrounding structures in Plaza G.

## CONCLUSIONS

While excavations of chultun LWDCH1 added important data to the archaeological record such as specific morphology and artifact assemblage, questions concerning function remain. Phosphate soil samples taken at all stages of excavation (  $N = 40$ ) produced varied results between ppm PO<sub>4</sub> of 0.0 - 0.8, but never reached a “high” level of above 0.9. With a lack of significant contrasting values, it is impossible to make assumptions concerning the level of human interaction with the site based solely on the amount of PO<sub>4</sub>. Additionally, the lack of human remains within LWDCH1 severely limits the ability to hypothesize about ritual or secondary function. Overall, the available evidence does not allow for straightforward interpretations. To provide more solid evidence for the intended function of chultunob within Lower Dover, more in situ artifacts and remains must be found through additional excavation.





**Figure 10 (Top):** White Biface (*LWDCH1-2*). **Figure 11 (Bottom):** Ceramic Sherds With Mend Holes, Belize Red Variety(*LWDCH1-2*) *Photo by C Perkins*

## ACKNOWLEDGEMENTS

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# **A CONTINUATION OF INVESTIGATIONS AT LUBUL HUH (M-410) BAKING POT, BELIZE**

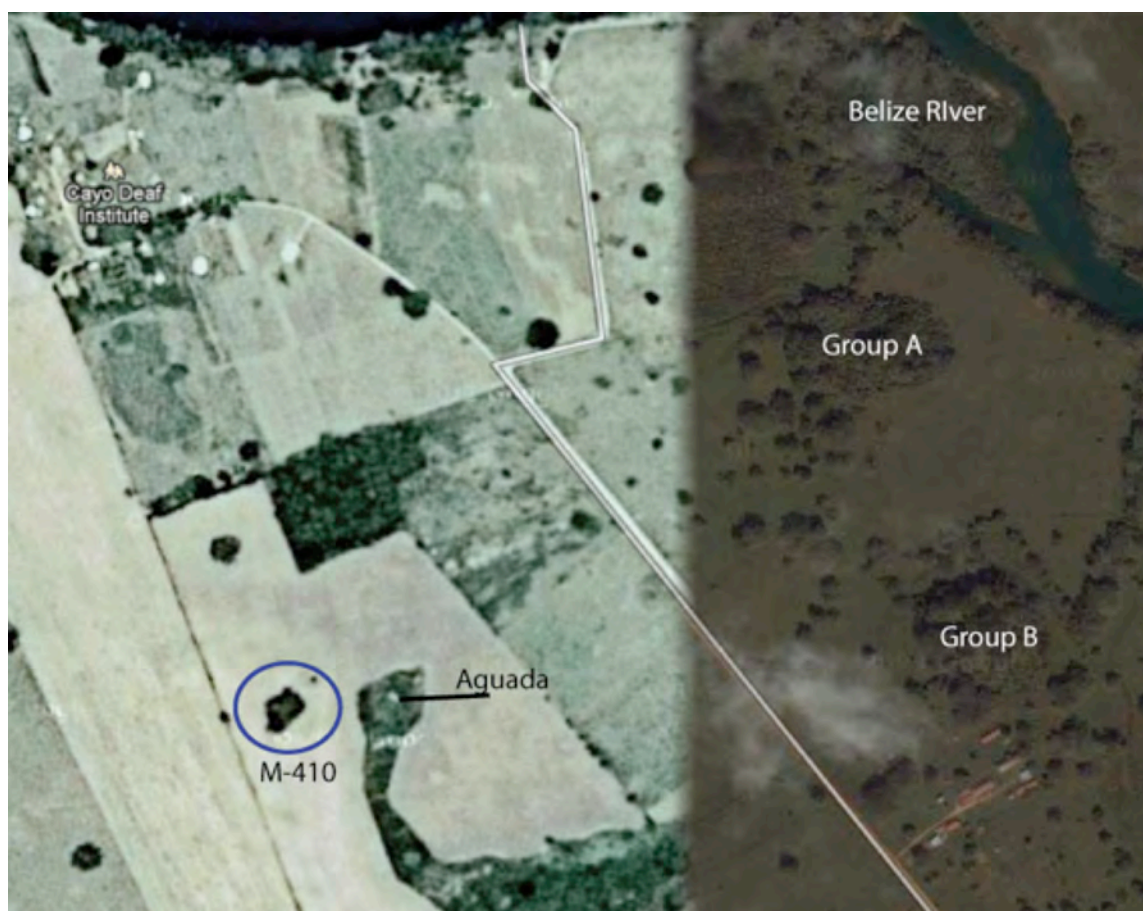
**Christina L. Zweig**  
**University of Wisconsin-Milwaukee**

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## **INTRODUCTION**

The site of Baking Pot is located in western Belize on the southern bank of the Belize River between the modern cities of San Ignacio and Belmopan. The monumental center is composed of two architectural groups (Group A and B), which are connected by a causeway (Helmke and Awe 2008:84). Currently trees and overgrowth cover the architecture of the site core and the surrounding areas are maintained as cleared pasturelands. The site of Baking Pot was occupied in the Middle Preclassic period (c. 600-300 B.C.) through the Early Postclassic period (A.D. 1200), and reached its peak in the Late Classic period (A.D. 600-850) (Hoggarth *et al.* 2008:158).

Several large archaeological projects have conducted investigations at Baking Pot with the earliest by Oliver Ricketson Jr. in 1924 (Ricketson 1929). The trend of research at the site had focused primarily on the monumental centers until the early 1990s when the primary focus was directed to survey and the excavation of peripheral settlement groups (Conlon and Ehret 2000). With particular attention to settlement groups at Baking Pot, the Belize Valley Archaeological Reconnaissance Project has conducted extensive previous research on residential structures located in the periphery of Baking Pot, (Audet 2002; Audet and Awe 2000; Conlon 1993,1996; Conlon, Finlayson, and Powis 1995; Conlon, Powis, and Hohmann 1994; Moore 1999; Powis 1993). The Bedran Group, Atalaya Group, and Yaxtun Group are included as the more extensively investigated settlement groups. Previous research interests included the chronology of occupation, functional uses of the structures, and to define the orientation, size, and shape of the structures.

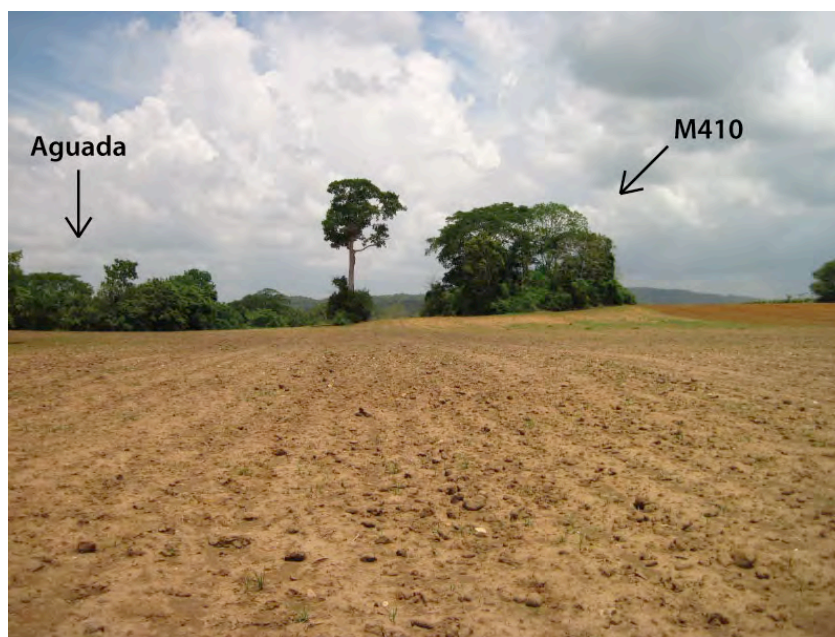


**Figure 1:** M-410 and the surrounding area including Groups A and B.

In 2007 the northwest area (1 km<sup>2</sup>) of the Baking Pot site, near the Cayo Deaf Institute, was completely mapped and surveyed. This area revealed dispersed settlement, generally on a raised ground above the flood plain of the river (Hoggarth *et al* 2008:167). Other than initial survey this area was limited in previous research goals and was chosen in the 2011 field season for continued settlement research. This area was mapped during the 2007 field season, however the report does not go further in depth on M-410 in particular. M-410 was chosen for the 2011 field season to conduct preliminary investigations and to gather information regarding the occupational sequence at the plazuela group. The investigations continued and thus far completed in the 2012 field season.

## METHODOLOGY

The M-410 plazuela group was chosen to add to the already growing peripheral settlement research with focus on household groups. Two approaches of investigation were implemented during the 2011 and 2012 field seasons. This included test pit excavation with the intent to collect data regarding the chronological sequence of the



**Figure 2:** Looking south at M-410 and surrounding area.

structures, and large-scale excavation to expose terminal architectural levels. The test pit units were roughly aligned with the previous season's units of approximately 20°-30° west of north and other units were placed in the same orientation in an attempt to create an alignment with the architecture. Excavations were conducted by using arbitrary, cultural, and natural levels with the use of a datum and tape measure to document elevations. Artifacts were collected and separated based on unit, level, and lot, and when appropriate feature number. All excavated matrix was screened through ¼ inch mesh. Artifacts collected from 2011 and 2012 have been through initial analysis, but more extensive results will be included in future publications. All three test pit excavations were unfinished in the 2011 season and in the 2012 season those investigations were completed with additional excavation that partially exposed structures M-410A and M-410B. All units were backfilled at the conclusion of the 2012 field season.

## **M-410 INVESTIGATIONS**

M-410, also known as *Lubul Huh* (Falling Iguana), is located west of Group B approximately 870m and is surrounded by actively cultivated agricultural fields. The Belize River is approximately 830m north of M-410 and the surrounding immediate area of the mound has a slope declining west to east with a natural water reservoir 130m east of M-410 (see Figure 2). The mound is overgrown with large trees and vegetation, and because of its size the mound has not been plowed or disturbed by agricultural processes. With the exception of the outer edges and corners, the mound appears to have been left undisturbed from modern farming and looting. From superficial observations the mound is a larger platform with at least two superstructures. The larger structure is west of the patio and the second structure is north of the patio. The dimension of M-410, judging by current surfaces, was approximately 45m-north south and 62m-east west. Due to the platform being situated on the natural slope, the platform height appears to be

approximately 1m-1.5m on the west side and 2m-2.5m on the east side. The orientation of the architecture is roughly aligned with the cardinal directions.

Preliminary investigations were initiated in 2011 but were incomplete by the conclusion of the field season. The goal in 2011 was to collect data regarding the occupational sequence of the structures on M-410 and to get a sense of the status of the occupants. A test pit was placed in both visible structures and a third was placed in the patio. The intent of the 2012 investigations was to complete the chronological and sequence testing begun in the prior season and to expose the terminal phase architecture of structure M-410A and M-410B. The three units that were excavated to sequence the mound were completed and the partial exposure of structure M-410A and M-410B was successful during the 2012 season.

### **Structure 410A Test Unit**

#### *2011 Investigations*

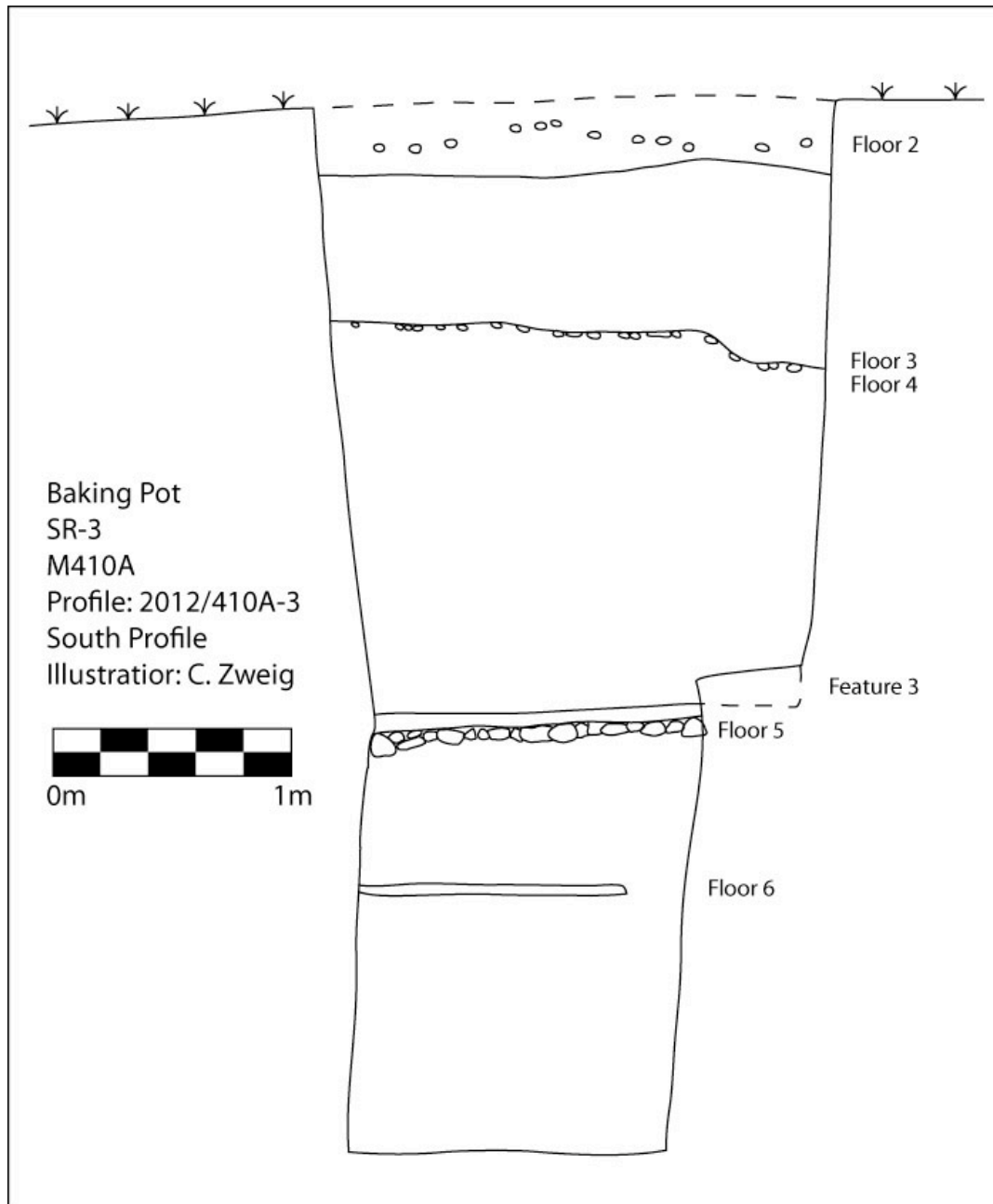
Structure 410A was visibly the tallest and largest structure on the platform. The range type structure was situated on the west side of the patio and had a height of approximately 2m from the patio surface. A 2m x 2m test unit (EU 410A-1) was placed where the center of the structure was estimated and though the excavations were incomplete during 2011 there were four construction phases identified. These phases included a stamped earth surface, cobble floor, chert and cobble floor, plaster floors, and some stone wall features. The fill throughout the sequence consisted of compacted clay with little variation in consistency. The last construction phase encountered was a line of alluvial boulders (Feature 3) along the west baulk of the unit with a plaster floor (Floor 5) associated with the stones.

#### *2012 Investigations*

The backfill had been removed from the previous field season and we proceeded to break through the floor (Floor 5) associated with the alluvial boulder wall (Feature 3). We left the alluvial boulders intact and reduced the size of the excavation to accommodate. The fill underlying the floor was similar to what had been observed previously below the other floors. The fill was composed of an orange-brown silty-clay and included daub, carbon, and plaster inclusions. The fill remained consistent and was extremely compacted.

We continued excavating and found a thin line of plaster in the south and east baulks of the excavation unit. This line of plaster was designated a partial floor (Floor 6) and was 85 cm below the previous floor (Floor 5) associated with the alluvial boulder wall (Feature 3). Below the partial floor there were few artifacts recovered and the fill below this was an orange-brown silty-clay with some sand, but with no inclusions. There were no more features found in this excavation unit during the 2012 field season and we concluded the investigations approximately a meter below the partial floor. The reason





**Figure 3:** EU 410A-1 south profile.



for the conclusion was mostly due to lack of time and resources, but there is confidence that this elevation was presumably close to culturally sterile levels.

During the course of excavation in the 2011 and 2012 field seasons a variety of artifacts were collected including ceramic sherds, chert debitage, pieces of quartz, daub, obsidian, freshwater shells, fragments of marine shell (some with evidence of burning), few fragments of granite, faunal remains, several pieces of slate, and small amounts of carbon. Particular artifacts to mention are two chert eccentrics (SF# 410A-1/2), two jadeite beads (SF #410A-4/5), and a clear crystal quartz spire (SF# 410A-3). Other artifacts to note were found in the fill below Floor 4 and this includes a jadeite figurine appendage (SF#410A-6) and a chert point form (SF# 410A-7). Above Floor 5 there was a crown to a human molar (SF# 410A-8) found in the fill. During the 2012 investigations there were no artifacts found below Floor 5 of special note.

### **Structure 410B Test Unit**

#### *2011 Investigations*

Structure 410B was the second visible structure on M-410 and was located on the north side of the patio. It was a similar range type structure as 410A but only reached an elevation of approximately 1m above the patio surface. The test unit (EU 410B-1) was also placed in an estimated center location atop the structure, however there were many natural obstacles with a very large tree in particular. The unit initially was 2m x 2m and then later expanded (3.5m x 3m) to follow terminal architecture. Additional extensions (EU 410B-1A, B, C, D) were also placed but the test unit area remained 2m x 1.1m. During the course of the test pit excavations we encountered four floors including a stamped earth, cobble, and plaster floors. Several features were identified in association with the terminal architecture and one in the test unit.

#### *2012 Investigations*

At the conclusion of the 2011 field season it was presumed that EU 410B-1 had reached elevations within natural stratigraphy. We continued from the elevation that concluded the 2011 season and excavated another 271cm. We found no further cultural features during the course of excavations. The soil was primarily a light orange-brown compacted silty-clay and there was no real change in the soil as we concluded the excavations. The artifacts were very limited with possibility of artifacts falling from the surrounding baulks. We were satisfied that we had penetrated natural stratigraphy that was culturally sterile.

#### *2012 Investigations: Feature 1*

It was a desire in the 2012 field season to further investigate Feature 1, a limestone enclosure (see Figure 5), and see if there were anything significant enclosed in this area. This involved removing the backfill from the unit 410B-1 and the surrounding

extensions that were excavated in 2011. The stones located within the feature were removed and following removal we exposed a portion of Floor 3 (See Figure 5). This section was broken, and at this point it was unclear if the breakage was from natural root disturbance or possible cultural disturbance. It is important to note that the disturbances included a large root passing through the feature. As excavations continued there was quite a bit of collapse that needed removal and this uncovered the east wall of Feature 1. The east wall was a multiple course wall of small sized stones that extended south. Unfortunately focus on this investigation was secondary and this investigation remains inconclusive.

There was a wide range of artifact types collected from EU 410B-1 in the test unit and within Feature 1. Items collected included ceramic sherds, chert debitage, pieces of daub, quartz, fresh water shells, faunal remains, limestone, obsidian bladelets and flakes, marine shell, carbon, and granite. The special finds collected from the 410B test unit excavations included polished bone (SF# 410B-1), a marine shell bead (SF# 410B-2), and a piece of incised bone (SF# 410B-3). All of these finds were from the context associated with Feature 5 and its floor (Floor 4). There was also a modified chert core (SF# 410B-9) that was found in association with Feature 1. The core is partial, but may have been rounded like a ball with a perforation through the center of the core. There is also a thinly etched circle on the surface of the surviving core. The identification of this item is currently not definitive. During the course of the 2012 field season there were no other additions to the special finds from the test unit, but there were several collected from EU 410B-2. These were found in front of Structure 410B as apart of a terminal deposit that will be explained in more detail later in this report.

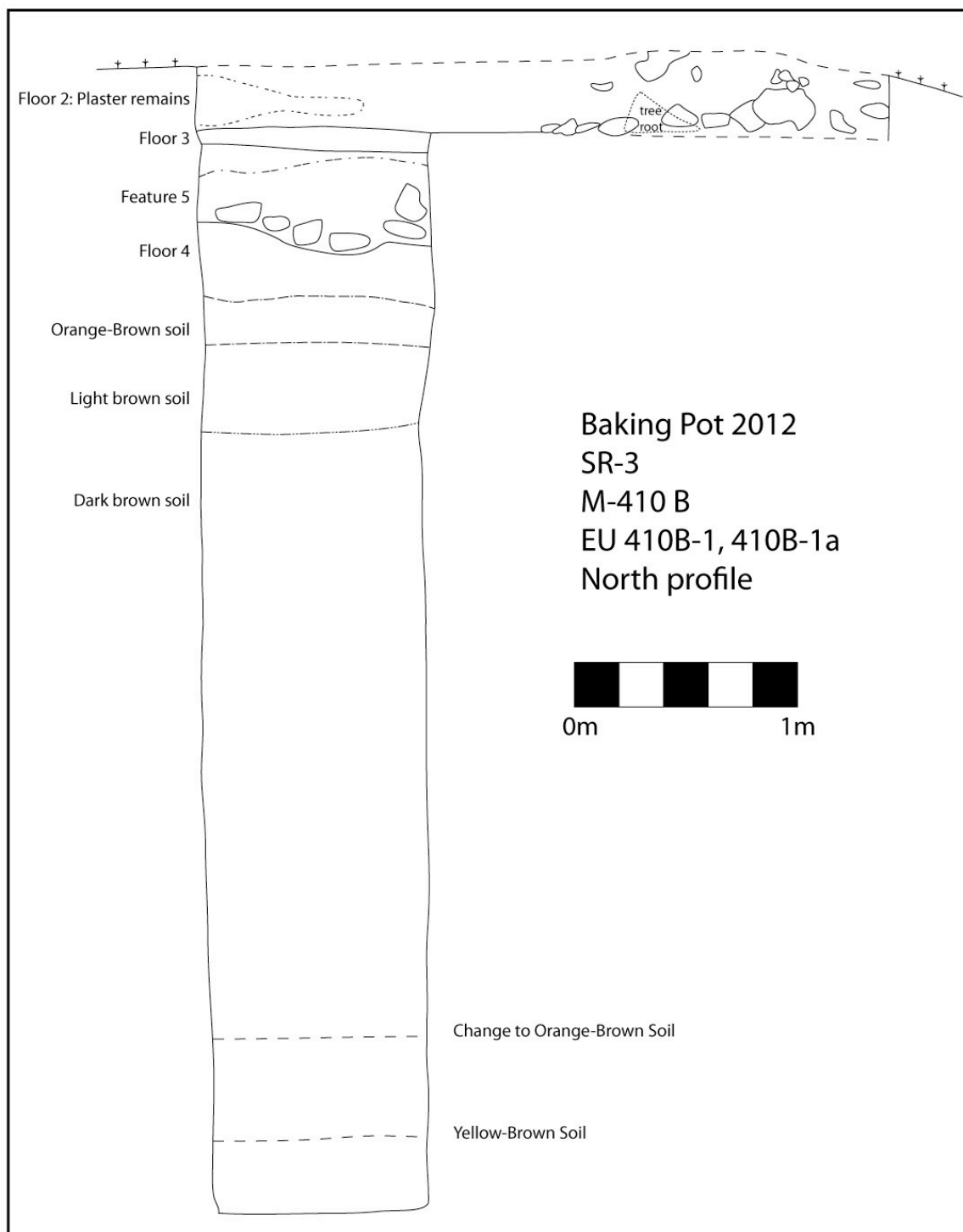
### **Structure 410P Test Unit**

#### *2011 Investigations: EU 410P-1*

The patio area was designated as 410P and the test unit (EU 410P-1) was placed somewhat center and east to avoid trees and other larger vegetation. The unit was 2m x 2m with a later 1m x 1m extension. During the course of excavations two floors, two features, and one cache were documented. The floors only included a stamped earth and a cobble floor, and the features were concentrations of ceramic sherds and other materials. The cache included two bowls placed lip to lip and a partial vessel.

#### *2012 Investigations: EU 410P-1*

We continued the excavations in the 2m x 1m test pit area and concluded that the elevation we concluded at in the 2011 was in natural stratigraphy levels. There were no more cultural features designated during the course of the excavations, but there was an anomaly observed in the north baulk of the excavation unit approximately 4m below the surface. There appeared to be a concentration of inclusions that consisted of plaster, daub, and carbon. The soil below this anomaly was a darker yellow-brown silty-clay. Unfortunately we were not able to investigate fully before the unit became flooded and caved in on itself prior to the season's conclusion. The last elevation measurements were



**Figure 4:** North profile of EU 410B-1.



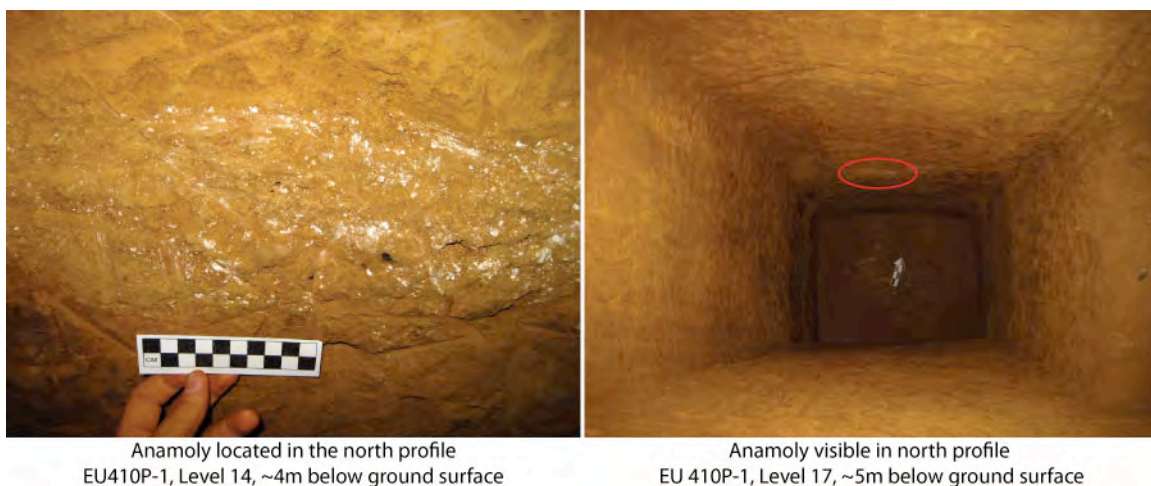
Feature 1 prior to excavation

Feature 1 with broken Floor 3

**Figure 5:** Feature 1 on structure 410B.



**Figure 6:** Special finds from structure 410B.



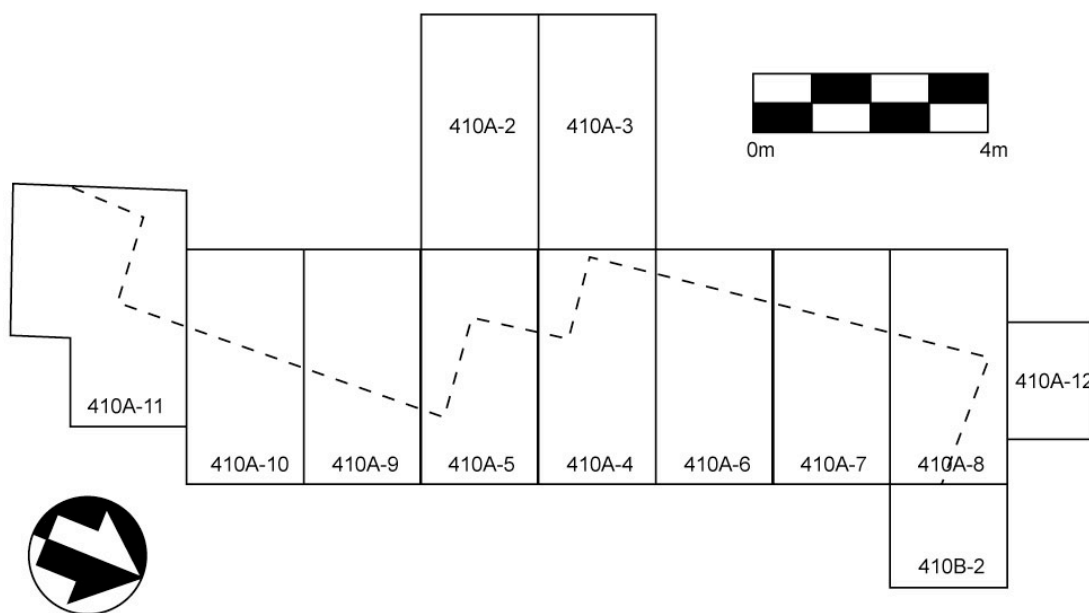
**Figure 7:** Anomaly visible in EU 410P-1 with close up and vertical views.

approximately 545cm below the surface. There was confidence that this excavation unit was in culturally sterile levels before it was closed.

## TERMINAL ARCHITECTURE EXCAVATIONS

### Structure 410A

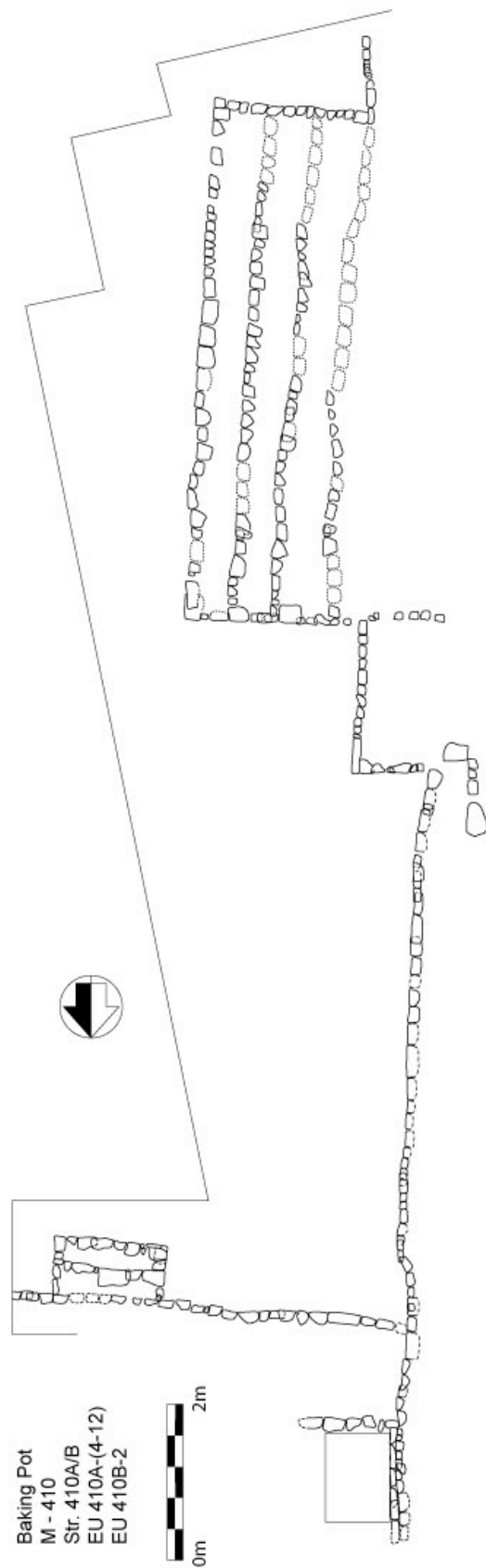
For the 2012 field season we wanted to expose the architecture on M-410 and decided to focus on the largest structure on the mound (STR 410-A). Based on our visual assessment we attempted to find the center of structure 410-A, which we presumed would have a central stairway, and placed several units along the perceived centerline of the structure. We attempted a grid like system by consistently using 4m x 2m excavation units. The units were set at a 30° west of north in an attempt to align the units with the architecture, however it was later discovered that the architecture runs more true to a north and south orientation. EU 410A-2 and 410A-3 were situated higher up along the slope on the front of the structure and toward the top where it levels out. EU 410A-4 and 410A-5 were immediately east and down the slope onto the patio area. We excavated through topsoil and underlying subsoil levels until the architecture was exposed. Further extensions were placed north and south of EU 410A-4 and 410A-5 to follow the structure along the patio floor and some of the excavation unit dimensions were not consistent with surrounding obstacles (i.e. trees).



**Figure 8:** Outline of structure 410A with the layout of the excavation units.

Overall the architectural preservation was quite good. There were several areas that tree roots had disrupted the architecture and caused some collapse. The patio floor along the façade of the structure was well preserved. The architectural materials of 410A consisted of multi-course (~10-15) limestone walls and the stones were not consistent in size. There were larger stones located on the corners and in the insets of the wall. In the several areas that experienced collapse the underlying fill to the structure was exposed consisting of clay fill and this was consistent with what had been seen in other excavations units. Higher on the structure in EU 410A-2 and 410A-3 we had attempted to see more of the architecture, but in these areas there was more erosion and the surface had fill exposures with a cobble floor toward the top of the structure. In EU 410A-5, 9, 10, and 11 we had exposed the central stairs. The central stairs face east and are flanked by buttress walls that may have been a later addition, but is unknown without further investigation. In EU 410A-6 and 7 we exposed more of the façade wall, which was mostly collapsed due to a large tree root. In EU 410A-8 we found the juncture of structures 410A and 410B, and in EU 410A-12 we attempted to see how the structures were combined on top of structure 410B. There we found a small step and a broken floor at the base of the step. In EU 410B-2 we wanted to follow the façade of structure 410B and we found a smaller set of stairs that led from the patio on to the structure. Overall, many of the structural elements that articulate with the patio area were exposed and in good condition, and during the investigations we collected a large number and a variety of artifacts that were along the front of structures 410A and 410B in terminal deposits.





**Figure 9:** Terminal architecture exposed on structures M-410A and M-410B.



### *EU 410A-2,3*

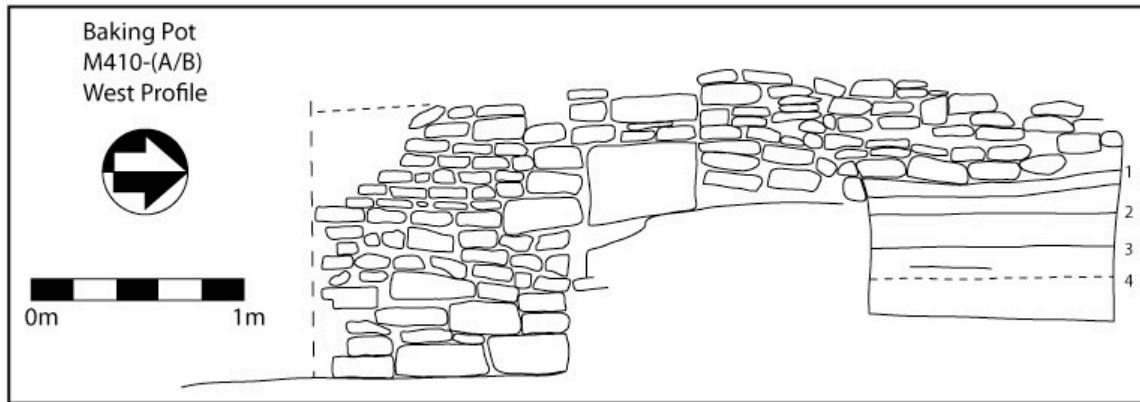
These units were placed higher on the front of structure 410A and the purpose of the units was to expose the upper tier of the structure. During the course of excavations it was determined that this area of the structure was more eroded and less preserved due to root damage and weathering. It can be assumed that most of the structure at this elevation has similar preservation complications. Regardless, we exposed a cobble floor toward the summit of 410A and this floor was consistent with the cobble floor exposed in EU 410A-1 (Floor 2). The artifacts found in EU 410A-2 and 410A-3 included ceramic sherds, pieces of chert, daub, quartz, obsidian, slate, faunal remains, and granite. Some of the granite objects included mano and metate fragments.

### *EU 410A-4,5,9,10,11*

The southern most exposure encountered during the investigations was the center stairway for structure 410A. The stairway was 6.7m wide and it projected east from the structure approximately 2.1m from the buttress walls. There were four levels of steps exposed that were more preserved toward the bottom at the patio and as the elevation increased the preservation decreased. Other preservation complications included two trees growing on top of the stairs. The steps have multiple courses with the bottom step having the highest rise with six thin courses of cut limestone (Rise = 20cm, Run = 40cm). The next step had four thin courses of cut limestone (Rise = 10cm, Run = 15cm). Buttress walls flanked the stairway, and while the southern wall was only partially exposed the northern wall was fully exposed. The north buttress wall was 1.92m wide and project east from the façade wall of 410A by 1.04m. The front of the buttresses angle back from the base at the patio toward the structure at approximately a 63° angle. The technique of using underlying clay fill with overlying facing cut limestone appeared to be consistent for the structure. The placement of the stones for the buttress walls against the façade wall suggests that the buttresses may have been a later addition, but it also may have been the preference for construction. There were features found in the insets and corners for the north corner and buttress of the stairs, which will be discussed in further detail.

### *EU 410A-7,8,12*

In EU 410A-8 we located the juncture of structures 410A and 410B and within units EU 410A-7,8, and 12 we found a terminal deposit that was along the wall of Structure 410A and in the corner of the two structures. In EU 410A-12 we attempted to examine how the two structures articulated from the top of structure 410B. There on top of Structure 410B we found a small step and a broken floor just in front at the base of the step up to Structure 410A. We first excavated the materials from within the area of the broken floor (~50cm x 40cm) until it was impossible to go further without expanding the area. Before expanding the excavation we could already see in the profile a series of



**Figure 10:** Profile of structure 410B at the juncture with structure 410A.



EU410A-12 end of level 1,  
looking west at the broken floor.

EU410A-12, Floor 2 with  
burned section NW corner.

**Figure 11:** EU 410A-12 and the broken floor on structure 410B.

floors that had been broken through in a similar fashion to the first. We then setup a 100cm x 80cm unit surrounding the broken area in the floor with the alignment to the step. The disturbance penetrated through four plaster floors and upon excavation it was observed that Floor 2 had evidence of burning on its surface. However, there were no objects or remains found to determine reasoning for the disturbance of the broken floors. It was concluded that the disturbance was prehistoric in nature and it was suspected that there may have been a removal of a deposit from this area, but this suspicion remains inconclusive.



**Figure 12:** Structures 410A and 410B juncture, and 410B stairway .

## **Structure 410B**

### *EU 410B-2*

As a part of the investigations to examine the terminal architecture on M410 it was intended to expose a portion of the façade of Structure 410B. However, due to limited time we were only able to extend one unit (EU 410B-2) to find the stairs leading up to 410B from the patio. It was excavated similar to the procedure used in exposing the façade of Structure 410A. The unit dimensions were dictated by natural obstacles and were set at 2.5m x 1.5m. The stairs that led to 410B were two tiered steps made of limestone facing stones, similarly to the stairs of 410A. The stairs were 145cm wide and extended south of Structure 410B by 70cm with a rise of 20cm and a run of 30-35cm for each step. There were no other architectural elements to the stairs and the façade of 410B was consistent to the construction techniques of Structure 410A.

## **Terminal Deposits**

Several features were encountered during the excavations of Structure 410A. These features were concentrated in the corners or insets of the stairs, buttress walls, and at the junction of STR 410A and STR 410B. These were considered terminal deposits and they contained a high volume of artifacts with ceramic being the most predominate type (See Table 2).



**Figure 13:** Feature 6 with a large partial jar and mano in situ.

#### *Feature 4*

Feature 4 was located in EU 410A-5 at the base of the wall between the north side of the stairs and the flanking buttress wall (See Figure 14). The feature had several kinds of artifact types with the most represented being ceramics. There were two metate fragments, a hammerstone, a marine shell tinkler (SF#410A-15), carved faunal bone (SF#410A-11), a basalt weight (SF#410A-50), a stingray spine (SF#410A-31), and a pyrite circular object (SF#410A-10). As we excavated in the surrounding unit we continued to find a large quantity of artifacts that were likely associated with Feature 4.

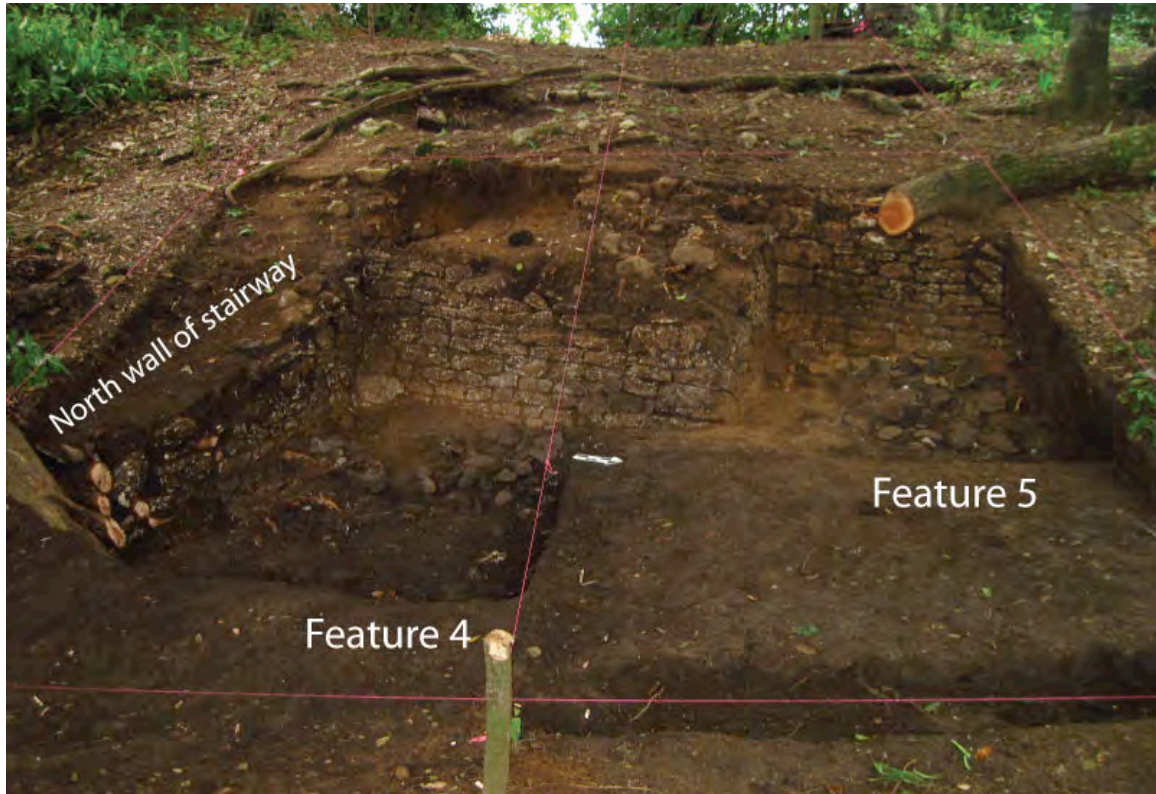
#### *Feature 5*

Feature 5 was located in EU 410A-4 against the structural wall in the corner next to the north buttress wall (See Figure 14). A variety of artifacts were collected (see Table 2) and the objects appear to be broken and deposited against the inset corner. There were partial vessels, three metate fragments, four mano fragments, a hammerstone, and an intact obsidian blade present in this deposit. Some of the special finds included limestone spindle whorls, a marine shell tinkler, and molded ceramic sherds (see Table 1).

#### *Feature 6*

Feature 6 was located at the juncture of Structures 410A and 410B and was another terminal deposit consisting primarily of ceramic remains. One of the elements to the feature that seemed more placed was a very large complete but broken jar rim/neck was placed with two complete manos at this corner of the two structures. Other artifacts from this feature included another partial vessel, grooved limestone, engraved bone,





**Figure 14:** Features 4 and 5 with artifacts in situ.

several ceramic figurine fragments, a slate axe head, petrified wood, and many more artifacts (see Tables 1 and 2).

#### *EU 410A-6*

Excavation unit 410A-6 did not contained a specific deposit but still held a large volume of artifacts that were concentrated more toward Structure 410A. While these artifacts were not included in a specific concentration this area still contained the overall termination deposit. Within this unit there was a partial vessel, two petrified wood fragments, and many ceramics (See Tables 1 and 2). Commonly in all the units placed in front of the structures held the highest volume of artifacts toward the structural walls and the frequency decreased as the unit extended further into the patio area.

#### *410A Stairway*

The areas on and in front of the stairs did not contain the same frequency of artifacts as the units that contained structural walls and patio floor. It is suspected that this difference may be due to higher exposure and runoff that may have occurred in this area more than against the structural walls. The same range of artifacts were present but in lower frequencies (see Table 2). Some of the special finds from the stairs included engraved bone, a limestone spindle whorl, two granite grooved stones, and several ceramic objects (See Table 1).



**Figure 15:** A sample of ceramic artifacts from structure 410A terminal deposits.



**Figure 16:** A sample of non-ceramic artifacts from structure 410A terminal deposits.

### *Upper Tier 410A*

The units placed higher on Structure 410A had the most preservation challenges due to erosion and this likely affected the frequency of cultural finds collected from these areas. The variety of artifact type was still present but frequencies were lower. There were no artifacts collected from these units that were considered special finds, but there were mano and metate fragments collected from this area.

## **DISCUSSION**

The 2011 field season had the goal to conduct preliminary investigations at M-410 with the intent to collect data that would give information in regards to the occupational sequence of the plazuela group and to infer on the status of the ancient occupants. In the 2012 season it was intended to complete the investigations of chronological sequencing and to expose some of the terminal architecture of the two superstructures. There was also an interest in using the collected data and interpretations for a comparison with other mound groups at the site of Baking Pot. While investigations only exposed the mound partially and some of the artifact analysis incomplete, there are still deductions that can be made.



**Table 1:** List of special finds from M-410 terminal deposits

<b>Special Find #</b>	<b>Description</b>	<b>Excavation Unit</b>
410B-4	Ceramic Figurine Fragment	410B-2
410B-5	Ceramic Figurine Face/Mask	410B-2
410B-6	Ceramic Spindle Whorl	410B-2
410B-7	Ceramic Face/Nose Fragment	410B-2
410B-8	Carved Bone Fragment	410B-2
410A-9	Limestone Spindle Whorl	410A-4 Feature 5
410A-10	Pyrite Circular Object	410A-5 Feature 4
410A-11	Faunal Bone Carved	410A-5 Feature 4
410A-12	Modified Ceramic	410A-4 Feature 5
410A-13	Ceramic Figurine Fragment	410A-4 Feature 5
410A-14	Limestone Spindle Whorl	410A-4 Feature 5
410A-15	Marine Shell Tinkler	410A-5 Feature 4
410A-16	Marine Shell Tinkler	410A-4 Feature 5
410A-17	Ceramic Figurine Fragment	410A-8 Feature 6
410A-18	Engraved Bone	410A-10 Stairs
410A-19	Limestone Spindle Whorl	410A-9 Stairs
410A-20	Grooved Granite/Weight	410A-10 Stairs
410A-21	Ceramic Ocarina Fragment	410A-8 Feature 6
410A-22	Grooved Limestone	410A-7 Feature 6
410A-23	Ceramic Ocarina Fragment	410A-8 Feature 6
410A-24	Engraved Bone	410A-8 Feature 6
410A-25	Engraved Bone	410A-7 Feature 6
410A-26	Grooved Granite/Weight	410A-9 Stairs
410A-27	Ceramic Figurine Fragment	410A-7 Feature 6
410A-28	Modified Ceramic	410A-7 Feature 6
410A-29	Ceramic Figurine Fragment	410A-7 Feature 6
410A-30	Ceramic Figurine Fragment	410A-11 Stairs
410A-31	Stingray Spine	410A-5 Feature 4
410A-32	Ceramic Molded Vessel Foot	410A-6
410A-33	Ceramic Figurine Head Fragment	410A-6
410A-34	Ceramic Spindle Whorl	410A-11 Stairs
410A-35	Grooved Granite	410A-12 Feature 6
410A-36	Ceramic Spindle Whorl	410A-4 Feature 5
410A-37	Ce Rim Fragment/ Ocarina Foot	410A-4 Feature 5
410A-38	Molded Ceramic Sherd	410A-4 Feature 5
410A-39	Molded Ceramic Sherd (glyphs)	410A-4 Feature 5
410A-40	Molded/Modified Ceramic	410A-5 Feature 4
410A-41	Molded Ceramic Sherd	410A-5 Feature 4
410A-42	Engraved Ceramic Sherd	410A-5 Feature 4
410A-43	Obsidian Core	410A-12 Feature 6
410A-44	Ceramic Figurine Head Fragment	410A-12 Feature 6
410A-45	Marine Shell Tinkler	410A-12 Feature 6
410A-46	Molded Ceramic Sherd	410A-8 Feature 6
410A-47	Ceramic Figurine Fragment	410A-7 Feature 6
410A-48	Ceramic Molded Sherd	410A-6
410A-49	Ceramic Molded Sherd	410A-10 Stairs
410A-50	Basalt Weight	410A-5 Feature 4
410A-51	Slate Axe Head	410A-8 Feature 6

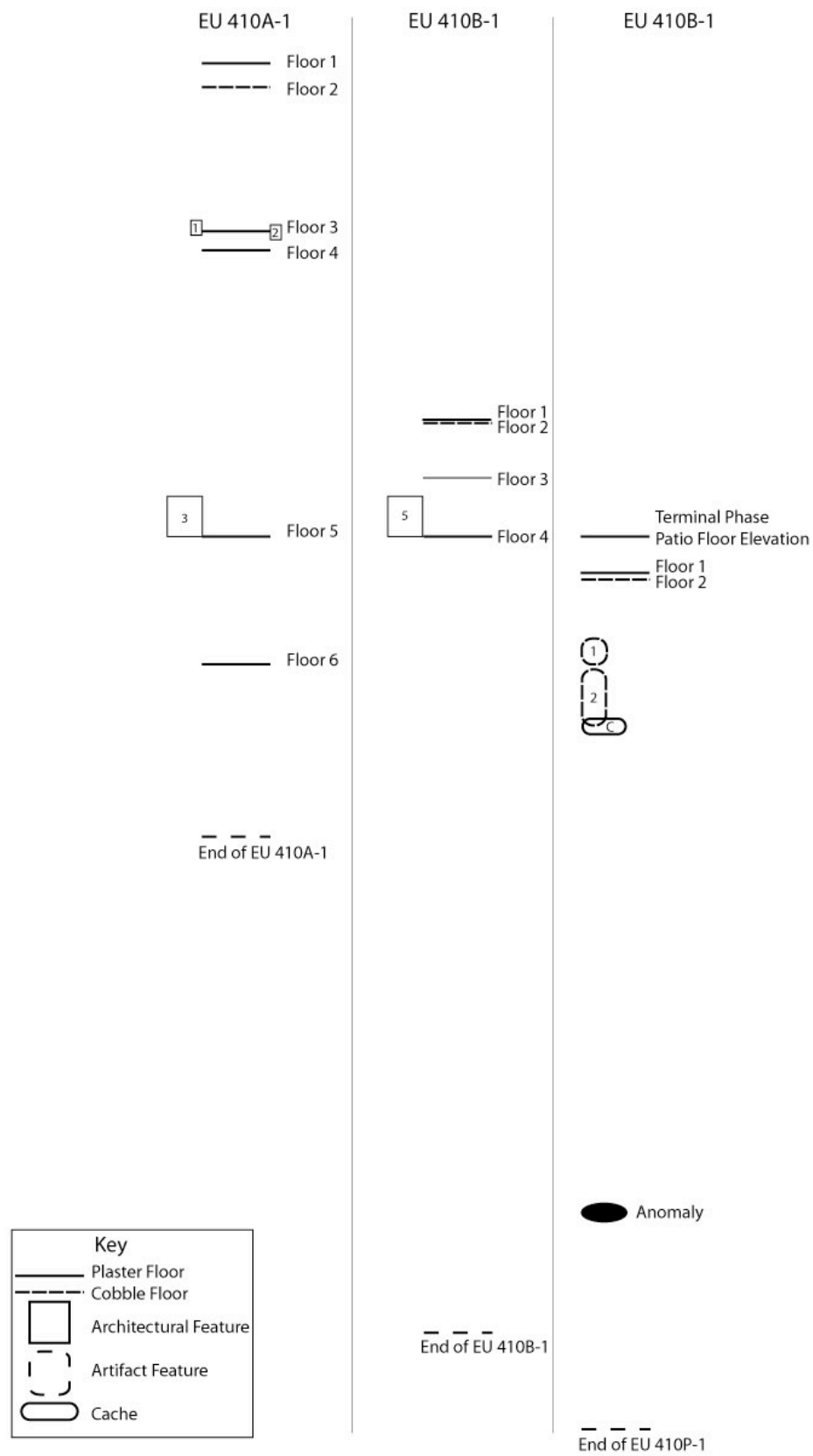
## Construction and Materials

In the previous report on M-410 (Zweig 2012) it was mentioned that in regards to the configuration of M-410 there are similarities with the Atalaya, Bedran and Yaxtun Groups of Baking Pot. The four groups are on raised platforms with superstructures of two to four structures, and are roughly aligned with the cardinal directions. The tallest structures per group do differ. M-410 has its tallest structure configured on the west side of the patio, while the Yaxtun's tallest structure is situated on the north side of the patio and the Atalaya and Bedran Groups have theirs on the southern edge of the patio.

There are similarities to the type of materials used in construction on M-410 and the other groups. On M-410 the use of clay fill was predominate for both structures and the patio. The floors varied with some being a layer of plaster on top of the clay fill, cobbles on top of clay fill with no plaster, and only few instances that plaster was used in combination with stones as a ballast. Conlon (1993:188) commented that at the Bedran Group, "construction fill begins as medium ballast type fill in the Early Classic and eventually converts to a more clay based fill with some minor use of small rubble just underneath the plaster surfaces as the Late Classic construction begins." Powis (1993) also commented that the fill from the Bedran Group was red-brown clay-loam mixture with construction ballast. At the Yaxtun Group (Audet and Awe 2001) there was a Preclassic occupation documented in Structure 198 with a low building platform with a poorly preserved plaster floor laid over small river cobbles that were used as ballast above an alluvial soil fill. "These materials and type of construction reflect a pattern that is typical at Baking Pot and its occurrence in Preclassic levels at Yaxtun suggests that it persisted throughout the occupation at the site" (Audet and Awe 2001: 7). The last phase of construction on the Yaxtun Group included a poorly preserved plaster floor with only a single line of crude limestone and alluvial boulders outlining the perimeter of the platform (Audet and Awe 2001: 8). There was also mention of large river cobbles used on Mound 2 of the Bedran Group to form a retaining wall, and isolated large cobbles were also reported on Mound 1 (Conlon, Powis, and Hohmann 1994:239). The use of alluvial boulders was documented at M-410 in the excavations on both Structures 410A (Feature 3) and 410B (Feature 5).

The floor materials and techniques varied slightly on M-410, but the use of clay fill for the general construction of the mound did not. When we had exposed the top of 410B at the junction with 410A it appeared there was a cobble floor on top of structure 410B. This is consistent with the cobble floors seen in EU 410A-1 and 410A-2 on top of Structure 410A, and the cobble feature mention from 2011 in EU410B-1 (Zweig 2012:8). All test units found compact surfaces, with an underlying level of a cobble floor. It is suspected that the terminal phase of architectural construction would have been these cobble floor levels, with the above hard surface as a possible later occupational result. There is continuity between the elevations collected between all of the units and the corresponding features of similar materials.

In terms of relationships between the architecture and cultural features located on M-410, there were some interesting observations made by examining the elevations taken



**Figure 17:** Elevation relationships of the architecture and features from M-410 to scale.

of the different features. In Figure 17 the elevation relationships are shown to scale to demonstrate possible relationships between features. One of the relationships noted was the elevation of the terminal patio plaster floor and the elevations of Structure 410B Floor 4 and Structure 410A Floor 5. All of these floors occur at the same elevation and are constructed with the same materials. It is also interesting to note that Feature 3 from 410A with Feature 5 from 410B are both constructed with the same alluvial boulder material. In terms of future analysis it would be worthwhile to examine the relationships of these features chronologically. Additionally, another corresponding relationship includes Floor 6 from Structure 410A and the features and cache from EU 410P-1. There are no conclusions that can be made about these relationships until artifact analysis is performed to further examine the occupational sequence at M-410. Additional investigations would also be beneficial to further define how construction materials and uses varied over time at the settlement of M-410.

### **Artifacts**

The types of artifacts collected from M-410 were also consistent with artifacts found from other plazuela groups at Baking Pot. From the Yaxtun Group, while exposing terminal architecture, Audet (2002:94) found items such as a bone needle, two fragments of modified bone, a modified conch fragment, six obsidian blade fragments, a chert biface, and two metate fragments. Other objects mentioned were described as household artifacts including twenty manos, thirty-four metates, several hundred obsidian blade fragments, numerous ceramics, spindle whorls, celts, and chert bifaces. Some of the status items described included three tinkler shells, two jade beads, ten ceramic beads, one canine tooth, and a conch shell bead and adornments (Audet 2002:95). These are all similar objects that have been found during the course of investigations at M-410.

### **Ritual**

The conclusion of the ritual nature of the features from M-410 was primarily deduced from the similarities seen from other groups around Baking Pot. The Bedran Group evidence at Mound 1 included a Late Classic dedicatory cache (c. A.D. 800) and a red ochre stain was located on this same platform. In Mound 2 there was a half vessel cache, which was similar to that of Cache 1 in Structure 1 (Conlon 1993:192). In the 1994 season there were numerous caches reported at the Bedran Group. Some examples include: Cache 19, an eroded partial vessel of the Belize Red Type; Cache 20, adjacent to Cache 19 with two inverted “finger” bowls; Cache 21, a partial vessel; Cache 22 and 23, partial vessels with a wide variety from utilitarian ollas to portions of beautiful polychrome vessels; Cache 24, three chert bifaces (Conlon, Finlayson, and Powis 1995:58).

At the Boca Raton Group within the Bedran Group cluster, Cache 8 included a large concentration of sherds. A number of the sherds could be refitted together to form partial vessels and there was one single eccentric. Also at the Yaxtun Group there was a large concentration (Cache 5) of Late to Terminal Classic ceramics with pottery stacked 20cm thick with many utilitarian sherds and none were complete (Audet 2002: 97).

The Yaxtun Group had caches from Structure 198 described from the Classic period. Cache 1 contained a Balanza Black dish (Early Classic) and other ceramics from the level date to the Terminal Classic. Cache 2 contained a partially complete bowl at the juncture between two walls. Cache 3 was a ceramics cluster that was directly on the terminal phase floor. Cache 4 had three manos, two metates, four chert bifaces, and a complete Belize Red dish. Cache 5 contained a large concentration of Late to Terminal Classic ceramics with pottery stacked 20 cm thick with many utilitarian sherds and none were complete (Audet 2002: 95-97). At the juncture between Structure 198 and 199 there was a cache of highly eroded ash tempered sherds that date from the Terminal Classic-Early Post Classic (Audet and Awe 2000:10). Other features associated with ritual activity included a cached rounded vessel below the penultimate floor and in the fill of this phase there were also the remains of a termination cache (Audet and Awe 2000:9). There was a charcoal layer surrounded by clay was found with painted Early Classic sherds inside. Also on the plaza floor there were several cached sherds forming half a plumbate vessel.

### *Terminal Deposits*

In the course of exposing the façade of both structures of M410 it was very noticeable that the frequency of artifacts being collected from the front of the structures was quite sizeable (See Table 2). As we continued exposing the structures we were able to distinguish certain areas of more concentrated artifacts, which we designated as features. In general across the front of the structures on the patio surface the artifacts were concentrated toward the structure's wall. Several of the units (EU 410A-4, 6, and 7) extended further into the patio area as a result of the orientation of the units and the structure. It was observed in these units that the areas closest to the structure held a higher frequency of artifacts than the areas toward the patio center. These concentrations of artifacts were considered terminal deposits that were likely associated with the abandonment of the area.

**Table 2:** Artifact types and frequencies from terminal deposits of structure 410A.

Terminal Deposit Frequencies											
Artifact Type	Feature 4 / EU 410A-5			Feature 5 / EU 410A-4			Feature 6				EU 410A-6
	Lot 410A-16	Lot 410A-17	Total	Lot 410A-15	Lot 410A-18	Total	EU 410A-7	EU 410A-8	EU 410A-12	Total	
Ceramic sherds	2,257	2,207	4,464	3,403	6,779	10,182	11,172	4,427	1,306	16,865	9,309
Chert	228	327	555	668	712	1,380	2,145	665	386	3,196	2,051
Daub	59	36	95	77	171	248	288	645	117	1,050	223
Faunal remains	67	31	98	30	178	208	70	49	16	135	81
Freshwater shell	3	—	3	—	12	12	2	6	5	13	4
Granite	7	—	7	3	13	16	18	42	13	73	29
Limestone	—	—	—	1	1	2	—	—	—	—	—
Marine Shell	2	—	2	—	2	2	—	—	—	—	—
Obsidian	10	9	19	14	14	28	18	9	6	33	15
Pyrite	1	—	1	—	—	—	—	—	—	—	—
Quartz	16	17	33	29	17	46	115	44	38	197	185
Slate	—	—	—	—	—	—	—	1	—	1	1
Wood (petrified)	—	—	—	—	—	—	—	1	—	1	2
Lithics	1	—	1	—	—	—	—	—	—	—	—
Unknown	7	—	7	—	4	4	—	1	—	1	—
Total	2,658	2,627	5,285	4,225	7,903	12,128	13,828	5,890	1,887	21,605	11,900

The topic of terminal deposits is not a new concept in the discourse of Maya archaeology, but its definitions and interpretations are a continual development. Coe (1965: 462) has defined terminal deposits as “may have been simply left in a whole or fragmentary state on the surface of an obsolete structure or superficially intruded into it.” He also clarifies that in general portable objects are often the primary constituents of such deposits, but architectural elements may also be included. Mock (1998: 5-6) more recently offered definition toward termination behaviors and their remains. She clarified that they are intentionally destroyed material objects that are typically scattered or otherwise destroyed in areas perceived as liminal or transitional. She further describes that these deposits are typically encountered at indices on structures, including stairways, axial centers, portals, or interior and exterior corners. Terminal deposits may possibly be a result of such actions including defacement, mutilation, breaking, burning, or alteration of portable objects, sculptures, stelae, or buildings.

There are no monumental architectural features or monuments on M-410 available for destruction, but the heavily fragmented remains of artifacts pushed up against the walls of the structures with concentrations in the corner and insets seems to pattern correspondingly to Mock’s description of terminal deposit placement. It is also speculated if the broken floors at the junction of the two buildings may have been a removal of a deposit, which may have functioned as a ritual termination to the structures. However this would require more research and argument before a more conclusive statement could be made.

#### *Termination Deposit Artifacts*

The Bedran Group had mention of sherd cluster caches as evidence of ritual activity. The sherd cluster caches are described as having parts of the vessels that range from  $\frac{1}{4}$  to  $\frac{3}{4}$  complete and interpret them as a possibility that the elements comprising the sherd clusters were simply refuse collected from in and around the immediate settlement for use as fill construction, but this was reconsidered because these deposits differ from sherds found more typically distributed relatively homogenously throughout the construction fill (Conlon, Finlayson, and Powis 1995: 58). The partial vessels within the sherd clusters were considered evidence of the purposeful removal of portions of vessels either before or after deposition. This description and pattern of sherd cluster caches from the Bedran Group is very similar to Features 1 and 2 from 410P excavations, and Feature 4 from 410B (Zweig 2012: 9,12-14). Both 410P features were found likely associated with another cache and within the fill below a cobble patio floor. There was also mention at the Boca Raton Group that within a terminal architectural collapse there was Cache 7 that included a cluster of sherds (Conlon, Powis, and Hohmann 1994: 240). Cache 3 from the Yaxtun Group was a ceramics cluster that was directly on the terminal phase floor (Audet 2002: 97). These ceramic cluster caches are reminiscent of Feature 4 from Structure 410B, a concentration of ceramic sherds along Feature 1. The placement of large quantities of artifacts against the front of the M-410 structures with more focus in the corner and insets, while not specifically buried within structural fill, are being considered terminal deposits.



**Figure 18:** Molded-carved ceramic sherds from M-410 terminal deposits.

The terminal deposits from M-410 had many artifacts with the highest frequency being ceramics. There has yet to be any in depth analysis of the ceramics from the 2011 and 2012 field seasons, but upon preliminary observations with J. Hoggarth the ceramics from the terminal deposits mostly date to Spanish Lookout phase, which ranges from the Late Classic into the Terminal Classic time periods. Several of the ceramic specimens include molded-carved ceramics. This type has been seen elsewhere at Baking Pot, including the Yaxtun Group and has mostly been associated with sherds diagnostic of the Terminal Classic and so termed “abandonment occupation” (Helmke 2000: 24-26). “The archaeological context in which molded-carved vases are discovered demonstrate that they are almost exclusively found in deposits of terminal occupation” (Helmke 2000: 27). It also seems that molded-carved vessels were considered associated with more upper elite, non-royal segments of society and their absence from more common “housemounds” was indicative that lower social segments did not have access to these vases (Helmke 2000: 29-31).

The ocarina fragments found in the termination deposits in front of structure 410A have similar stylization compared to the ocarinas shown from the Late Classic in the artifacts from Altar de Sacrificios (Willey 1972: 27). Artifact 410A-23 is suspected to be a more stylized ocarina with an anthropomorphic face with puffed out cheeks and coffee bean shaped eyes (See Figure 15). The remaining portion of the body of the fragment shows a punctuation or impressed stylization similar to some late classic bird figurines found from Altar de Sacrificios (Willey 1972: 24, fig.18: h). This could be indicative of an implied costume or zoomorphic qualities included with the whistling figure. Also from the ceramic figurines the technique in construction of the materials and the stylization of adornments (i.e., hats, earplugs) suggest Late Classic stylization and forms. Some of the examples that can show this comparison are included in the artifacts described from Altar de Sacrificios (Willey 1972: 14-76). A more specific example is the flute fragment found in the 410A termination deposits (SF# 410A-17). The figure on the flute fragment wears a smooth flapped hat and two disk shaped applied earplugs (See Figure 15). This stylization is also seen on Late Classic style flutes elsewhere (Willey 1972: 69, fig. 57: b, c, d, g).

More of the ceramic finds included perforated potsherd discs or spindle whorls. Mano and metate fragments were found in the deposits. Several limestone spindle whorls, plain and decorated, were found. We had several stones that were from fist sized



to slightly larger that were grooved (See Figure 16). This groove was very similar to anchors described elsewhere (Willey 1972: 133), but their smaller size indicates it may have been to weigh down something smaller or lighter. There were several spherical hammerstones collected. Many bifaces and other categories of tools made of chert were collected, some in different stages of production. The obsidian collected from the termination deposits were mostly in bladelet form and one obsidian core was collected. Jade was collected from the mound, and some unknown forms made of basalt were also found. Several shell tinklers were found and are small univalve shells. Rounded adornos were found, which may have served as inlays.

## CONCLUSION

In the 2012 field season we wanted to continue the excavations to further understand the occupational sequence of M-410 and to expose terminal architecture on Structure M-410A and M-410B. We successfully located the center stairway for M-410A and other stairways associated with M-410B. The juncture of the two structures was exposed and all associated artifacts surrounding these areas were collected. We were able to document the exposed architecture by mapping in the units and also documented the unexposed architectural space with a total station. Currently any physical investigations are satisfied and more analysis of the artifacts collected is warranted.

## ACKNOWLEDGEMENTS

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