

**Results of the 2007
Valley of Peace Archaeology Project:
Yalbac's Settlement**

Report submitted to the Institute of Archaeology
National Institute of Culture and History
Government of Belize

Permit No. IA/H/2/1/07(12)
Accession No. 10199

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2008

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Chapter 1

The 2007 Season at Yalbac: Goals and Results

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For the 2007 Valley of Peace Archaeology (VOPA) season (May 17-June 24), the Institute of Archaeology granted us permission to work at Yalbac to (Figures 1.1 and 1.2): 1) continue excavating the Plaza 1 test pit; 2) continue searching for *stelae* using posthole tests; 3) collect detailed information from temple looters' trenches (mortar, fill, type of stone); and 4) survey the area between Yalbac and the Cara Blanca pools. In what follows, I detail how each of these goals were implemented.

New Mexico State University undergraduate Fabiola Silva conducted her McNair research project (McNair funds first generation university students) on construction patterns (see chapter 2). Project results will assist in the broader VOPA goals on revealing temple life histories. Preliminary results show that construction patterns of the final construction phases exposed in looters' trench profiles, all dating to the Late Classic, distinguish Plaza 2 and Plaza 3 temples (Lucero 2007). Andrew Kinkella (UC-Riverside) continued surveying the area between Yalbac and the Cara Blanca pools for his dissertation project (see chapter 3).

The appendix includes all artifact provenience and curation information.

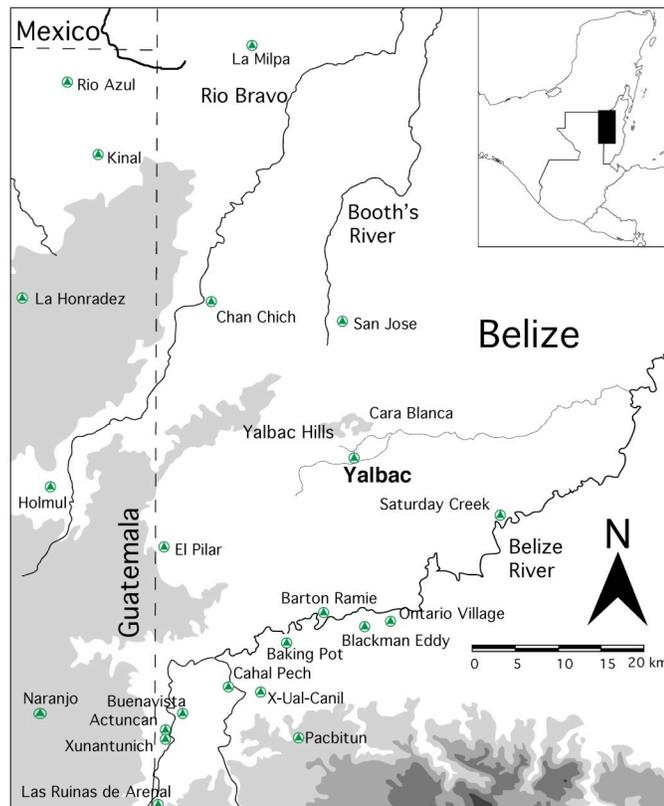


Figure 1.1 Location of Yalbac

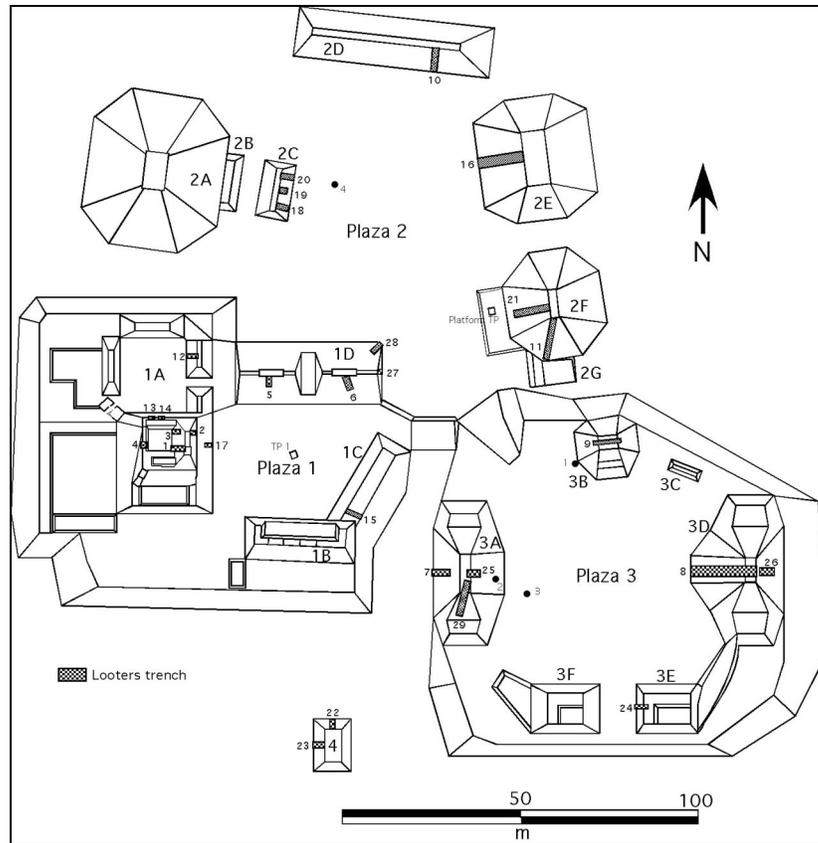


Figure 1.2 Yalbac

2007 Season (May 21-June 29)

Staff

The 2007 VOPA staff consisted of myself (PI), Andrew Kinkella (Field Director, UC-Riverside), and Fabiola Eden Silva (McNair Scholar, New Mexico State University). The VOPA crew also included excavation assistants from the Valley of Peace Village: Cleofo Choc, Isabel Ascencio (Don Luna), Jose Ernesto Vasquez, and Mr. Scott.

Funding and Expenses (US\$)

Funding for the 2007 season was provided by the University of Illinois at Urbana-Champaign (\$10,750) and the McNair Program at New Mexico State University (\$1000) for a total of \$11,750. The amounts listed below include project expenses only. Kinkella and Silva paid their own expenses (airfare, tuition, food, transportation, etc.). Of the total, \$701.50 was for round-trip airfare for the PI; \$1884 was paid to the Institute of Archaeology for the permit application fee and administrative and consolidation fees; \$1771 for labor costs (including social security); \$2400 for vehicle rental; \$999.36 for fuel; \$955.35 for food for PI; \$800 for house and lab rental in Cayo; \$385.35 for the Belize conference (hotel, conference registration fees); and \$1048.49 for supplies including internet, phone cards, field equipment, copying, etc. Total expenses for the 2007 season were \$10,945.05.

Previous Research

Preliminary survey results from the first field season (June 1-July 10, 1997) in the Valley of Peace area demonstrated a dispersed settlement pattern located away from rivers, and more dense settlement along rivers (Lucero 1997; Lucero et al. 2004). The major goals of the 1998 field season (May 23-July 7) were four, three of which focused in the Cara Blanca area: 1) survey for pools, caves and nearby settlement (Lucero 1999a); 2) test excavate a presumed ceremonial structure at the edge of a pool

(Kinkella 2000); 3) explore a pool for offerings (Osterholtz 1999); and 4) map the river center of Saturday Creek (Lucero 1999a). The major goal of the 1999 field season (May 11-July 1) consisted of collecting chronological data from the river center of Saturday Creek through a test-pitting program (Lucero 1999b). In addition, a brief return trip was made to Cara Blanca, Pool #1 to collect additional chronological data (Kinkella 2000). We also continued mapping Saturday Creek. In 2001, I received a National Science Foundation grant (BCS #0004410) to conduct extensive excavations at Saturday Creek (Jan.19-May 5) (Lucero 2002, 2003a, 2006). We excavated two small residences, a structure from an elite compound, and trenched a temple ball court. We also generated a preliminary map of the core area of Yalbac and surveyed its immediate vicinity to evaluate hinterland settlement (Graebner 2002a, 2002b). In 2002, we excavated two small residences on the outskirts of Yalbac, profiled two looters trenches, continued mapping core features, conducted survey north of Yalbac to the Cara Blanca pools, recorded three more looters trenches (for a total of 29), and tied Yalbac in to the regional archaeology map (Graebner and Lucero 2003; Kinkella 2003; Lucero 2003b; Lucero and Graebner 2003). In addition, NMSU graduate student Hollie Jo Fuhrmann conducted a study of the effects of biomedicine on traditional midwifery in the Valley of Peace Village (Fuhrmann 2003). In 2003 (June 11-27) we focused our efforts on the acropolis (Hooper 2004a, 2004b), continued excavations at the ball court alley (Lucero 2004), and continued survey between Yalbac and the Cara Blanca Pools (Kinkella 2004). For the 2004 season (May 17-June 25), we focused our efforts on profiling temple looters' trenches (Andrade 2005; Lucero 2005), continuing the ballcourt alley test trench (Baron 2005), and continuing mapping the transect between Yalbac and the Cara Blanca pools (Kinkella 2005). For the 2005 season, we focused on range structure profiles (Lucero 2006), completing the ballcourt testing program (Baron 2006), and continuing settlement survey north of Yalbac towards the Cara Blanca pools (Kinkella 2006). We did not work in the field in 2006.

The Search for *Stelae* and *Sacbe*

One of our goals was to probe for *stelae* in front of Yalbac's major temples. Our efforts largely focused in front of Strs. 3A and 3B. We placed posthole tests every meter beginning at the front edge of temples; we had to use hand-picks and trowels because the topsoil was so rocky. To first locate structure edges, we exposed a c. 50 cm section of the edge of the temples facing the plaza. All postholes were backfilled. The postholes did not reveal any *stelae* in front of either temple.

The section in front of Str. 3B exposed a 3-course wall c. 50 cm above the plaza surface (plaster floor)—perhaps a small platform; instead of an expected terrace surface further north, Ernesto and Don Luna exposed another wall, c. 70 cm wide wall. It was difficult to determine the surface north of this wall, although there might have been an eroding plaster surface c. 35-40 cm north of this second wall. Since our goals only included exposing the edge of the temple for purposes of determining where to start placing post-holes, we marked the edge with a stake and labeled flagging tape (which ran c. 110°) and backfilled it. The only diagnostic sherd was a Belize Red Impressed plate or dish. The postholes in front of Str. 3B focused extended about 5 m from the structure edge west into the plaza and about 20 m wide. The plaza floor, which is pretty uneven, is located c. 26-45 cm below the surface.

The section in front of Str. 3A exposed two platform terraces, the upper one c. 15 cm tall. The second one was exposed later, east of the upper oriented 340°. The lower one varies in width; I measured them from the two stakes we had placed on the upper terrace 1 m apart. From the northern stake, the lower terrace measured 1.52 m out (east), while it measured 1.22 m from the southern stake. The lower terrace is only c. 6 cm from the plaza surface (unless it is another terrace platform).

While we did not find a stela, we did find a plain altar stone in the fill of Str. 4, the 'toll house.' Cleofo Choc was cleaning out LT 23 and noted its presence. He probed the surrounding fill for diagnostic ceramics, but did not recover any; he also exposed as much of the stone as possible to reveal its shape and any possible carvings. It is c. 30-35 cm wide and has a diameter of c. 1.25 m (Figure 1.3). The Maya placed the altar stone on its side in the middle of the structure oriented c. 60°.



Figure 1.3 Altar stone in LT 23, Structure 4.

Due to Str. 4's location near the main entryway into Yalbac, we thought the Maya may have built a *sacbe* leading from Str. 4 to the landing/main entrance where one could choose between entering Plazas 1, 2, or 3. Clefo zig-zagged across the entire area from Str. 4 to the landing, but did not note any obvious *sacbe*. While there may not be a *sacbe*, there definitely is a natural thoroughfare.

Plaza 1 Test Pit Continued, But Not Completed

Plaza 1 is surrounded by the acropolis (Str. 1A) and range structures. It is also the most restricted plaza, and is raised as well. It would have been difficult, if not impossible, for people to witness Plaza 1 events from its entrance, which ones reached by a staircase. While ritual activities probably were likely with construction events (i.e., termination and dedication deposits and caches), other kinds of public ceremonies likely took place as well, especially since Plaza 1 does not have any associated temples.

We continued excavations at the 2 x 2 m Plaza 1 test pit since we were unable to complete excavations in 2004 and 2005 (see Lucero 2005, 2006). Our original goal was to collect comparable chronological data to those we collected from the center test pits in Plazas 1 and 2 conducted in 2001 (Graebner 2002a, 2002b). However, instead of the expected sequence of floor-ballast, floor-ballast, we came upon complicated stratigraphy reflecting the fact that the Maya clearly had conducted specific activities, likely ceremonial, frequently and over a long time period. They also maintained and built over earlier phases, and clearly dug into earlier phases to place things and/or to make way for newer building programs. And there can be little doubt that they performed termination rites throughout the centuries (lots of evidence for burning). We recovered ceramics dating from the Middle Preclassic through Late Classic periods. We were unable to complete the test pit this season because of the complicated architecture and strata exposed.

I briefly summarize 2004 results (see Lucero 2005). In 2004 we began with a 2 x 2 m unit oriented 15° over what we thought to be a 2 x 2 m platform (.16 m high) in the center of Plaza 1. Once we started excavations, however, we soon realized that our unit missed the ‘platform.’ We moved the unit south and west to incorporate the architecture we exposed in the southwestern corner. We also changed the unit orientation to 300°. The test pit datum is located 25.42 m from ΔYC at 15°29’50” (75.24 m asl) (shot in the 2005 season). The topsoil (101) yielded a high density of sherds, shell, a speleothem fragment, obsidian, mano fragments, and chert items. We soon came upon a cross-shaped wall or feature consisting of two-courses of cut and un-cut boulders. From near the wall on top of the upper most plaster floor (103, 4-6 cm thick with a pebble and cobble ballast), we recovered Belize Red McRae Impressed sherds (c. A.D. 700-900) from wall fill (102) representing at least five different, incomplete vessels. There are several thick plaster floors and ballasts. One floor ballast (104) consists of large flat limestone blocks with a sandy loam fill (with c. 15% cobbles). We recovered six speleothem fragments, freshwater shell, and sherds, some of which appear to date to Floral Park (c. A.D. 200-300), as do other sherds (Monkey Falls, an Uaxactun Unslipped Ware) (Table 1.1). The undulating plaster and cobble floor underneath floor/ballast 104 (105) yielded Sapote Striated sherds dating to Barton Creek, or 300-100 B.C. Once we removed this floor we came upon two different strata; 107 in the west part and 106 in the remainder. Stratum 107 is a possible uncut boulder wall or a boulder fill. Many of the construction events took place on top of the plaza surface and were concentrated in a relatively small area in the plaza center.

In 2005 I had originally identified the Preclassic bowls and jars as Jenny Creek or Middle Preclassic. However, based on discussions with several people at the 2007 ceramic workshop, everyone agreed that 109 and 118 strata ceramics were mostly Society Hall variety followed by Sierra Red bowls (see Gifford et al. 1976:85-87, 90). Also, L. Kosakowsky further noted that I should not expect to find ‘plates’ in the Late Preclassic since they are rare and the typical Late Preclassic assemblage includes jars, bowls, and ‘dishes’ (personal communication, 2007).

Table 1.1 Plaza 1 test pit artifacts and ceramics

Catalog#	Stratum	Description	Artifacts	Ceramics
2004:				
700	101	Topsoil	Shell, possible speleothem fragment, obsidian blade point, chert flakes, core, chunks, bifaces, utilized flake, mano fragments; 12 x 10 x 13 cm and 12 x 8.5 x 4 cm	Possible miniature jar rim, handles, basal flange, pods, rims (including 8 Belize Red McRae impressed, likely part of 102 vessels); 1-3 possible vessels/plates (18) and body sherds (21); plates may be part of Belize Red cache in 102
701	102	Wall fill	-	Well-fired Belize Red McRae Impressed; Spanish Lookout, A.D. 700-900; 5 different vessels
-	103	Plaster floor	-	-
718	104	Large boulder and cobble fill	Speleothem fragments (4), freshwater shell	~Floral Park-A.D. 200-300-Monkey Falls Uaxactun Unslipped Ware (p. 145)
719	105	Plaster floor	-	Sapote Striated, 300-100 B.C. (p. 107, Fig. 46c)
720	106 (not completely excavated)	Boulder/ cobble fill	Freshwater shell, chert flake	Preclassic bowl (thickened rim);
2005:				
751	106	Plaster/marl fill; wet: 10YR8/3; dry: 10YR8/1	<i>Jute</i> , freshwater shell; charcoal pieces (some 2 x 2 cm), burned sherds, rose quartz (c. 5 x 3 cm), milky quartz (c. 2 x 2 cm)	Preclassic waxy slip, bulge bowl; Middle Preclassic Mars orange sherd
752	107	Marl fill	Very few artifacts	2 black striated sherds

753	108	At first, we thought floor; but plaster/marl fill	Chert flakes (9), limestone biface tip, quartzite biface tip	See below
754	Cache 108 (changed to 108A)	Special deposit; ashy, charcoal flecks	Chert blade and flakes	See below
756	Cache 108A	Special deposit; ashy, charcoal flecks	Freshwater shell, encrusted bird bone (calcium carbonate) ~modified human incisor (filed to a point)	Preclassic squared rim w/ groove bowl; bulge bowl with waxy slip
755	Cache 108B&	Special deposit; ashy, charcoal flecks	Freshwater shell, modified shell	Preclassic bulge bowl, waxy slip; Late Preclassic handles
794	Cache 108D	Special deposit; ashy, charcoal flecks	Freshwater shell, mushroom shaped pink limestone, very burned limestone fragment	Preclassic waxy sherds; Late Preclassic handles
-	109	Small boulder core fill	Not excavated	-
-	110	Cobble and sand fill	-	-
-	111	Plaster floor	-	-
800	112 (not completely excavated)	Special deposit; ashy, charcoal flecks	Bones: 1 burned, 1 ~bird, 2 long bones, 1 ~carved; 1 ~rodent incisor, 1 large phalange, 1 scapula fragment, 1 large incisor, notched obsidian blade, chert biface, blades, and flakes, river shells (11 <i>Nephronaias</i> , 27 spiral), land shells (51 <i>jute</i> , 8 small snails, 9 <i>Pomocea</i>)	Preclassic flared bowl w/ waxy slip, bulge bowl, squared rim bowl; Middle Preclassic decorated jar necks (Baldizon Impressed; 900-300 B.C.); incised orange paste jar rim; Society Hall and Sierra Red, several handles, ~z-angle (Baron Creek; 300-100 B.C.)
795	114	Plaster floor	-	Preclassic bulge bowl; jar rim w/ black interior slip (?); several of the 53 body sherds from same vessel.
801	115	Special deposit; ashy, charcoal flecks	Pink limestone/quartzite pebble, river shell (9 <i>Nephronaias</i> , 19 spiral), freshwater shell (45 <i>jute</i> , 12 small snails, 3 <i>Pomocea</i>), chert blade, chunks, cores (1 with blade scars), flakes (1 fire-cracked), teeth (filed incisor other), bone fragments (1 burned ~vertebrae)	Similar to 112; Late Preclassic; several handles, Society Hall and Sierra Red bowls, flared bowl, waxy slip, Baldizon Impressed and neck sherd, orange paste jar rim
2007:				
826	118	Ashy, charcoal flecks surrounded by small boulders	river shell (1 <i>Nephronaias</i>), freshwater shell (3 <i>jute</i> , 10 <i>Pomocea</i>); charcoal flecks, burned sherds,	Preclassic waxy slip, bulge bowl—Sierra Red (Barton Creek—300-100 B.C.); Middle Preclassic Mars orange sherd
825	109	Ashy, charcoal flecks	River shell (12 <i>Nephronaias</i> w/ 2 drilled holes), freshwater shell (105 <i>jute</i> , 1 small snail, 10 <i>Pomocea</i>); fauna (1 lg distal end, 2 lg phalanges, 1 reptile jaw fragment, 1	Society Hall and Sierra Red bowls (Barton Creek—300-100 B.C.); handles, jars; one potential ~Joventud/transition bowl rim sherd

			vertebrae, 11 long bone fragments, 8 other); 4 white chert blades, chert cores, flakes, and chunks
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In 2005 (see Lucero 2006), we removed the backdirt and continued excavating stratum 106, a thick marl/plaster fill deposit with soft marl cut stones in the eastern third of the unit. We used the original 2004 datum located 31 cm from the southwest corner at 240°, 14 cm above the surface. Stratum 106 was quite thick with lots of artifacts including ceramics and shells. This stratum covered stratum 108, within which (i.e., the Maya likely dug through parts of 108) were several layers of concentrated artifacts within grayish ashy sandy clay loam including a high proportion of jar rims followed by bowls and handles, a few lithics, and unmodified *Pomocea* shells, jute shells, and *Nephronaias* shells. A similar proportion of artifact types were recovered from strata 112 and 115, as well as cache 108 (changed to 108A, to which we added cache 108B&C, and 108D), suggesting that they actually represent the same event or similar events conducted several times. The different cache 108 designations reflect different concentrations of artifacts. The artifact assemblage was so consistent throughout these strata that there almost appeared to be a set assemblage, a recipe if you will, of whole and broken items. Other artifacts added to the ‘mix’ include a quartzite biface tip, chert blades and flakes, faunal remains (e.g., bird bone, rodent teeth, a carved tooth, etc.), filed human incisors, a notched obsidian blade and a few other items, all listed on Table 1.1. We removed most of the stratum 108, revealing 109, but still have a small portion on the extreme south side. We did not have time to excavate fill 109 in 2005, a small boulder dry core fill.

Due to the similarity of these strata, we inadvertently dug through a few strata a little, which we realized in the west wall profile. Stratum 110 (cobble and sandy clay fill), which we dug through while excavating 107; it was noted in the northwest corner of the unit. Once we realized this, we began excavating 107 and 110 separately, though not much was recovered from 110. Also missed were plaster floor 111, fill 112 (underneath 111), and fill 113 (loose cobble and sand fill). Fill 113 is found beneath 107 and did not yield any obvious artifacts. At first, it appeared that stratum 112 cut through floor 114 (over 115); however, once we removed floor 114, strata 112 and 115 appear to represent the same event/deposit. Artifacts from 112 largely concentrated in the north side. In the northeast corner underneath 112 we exposed stratum 117, a white marl or plaster fill with medium boulders, which we did not excavate. Stratum 116 may have been a wall.

Floor 114, which did not extend much beyond the northwest corner of the unit, appeared to have been cut into by strata 112 and 115. Further, in the center north area underneath three boulders might be a small bit of plaster floor that is on top of 115. Alternatively to the idea that cache 108, 112, and 115 are the same, they could also reflect the fact that the Maya conducted the same activities again and again. Ceramics from the three strata, however, indicate a predominance of Barton Creek ceramics (300-100 B.C.). At the end of the 2005 season we covered the unit with clear plaster before backfilling.

In 2007 due to wall collapse, we needed to replace the southwest corner datum stake in the northeast corner, at 10 cm above surface. Mr. Scott removed the remnants of stratum 108 in the northeastern corner and came upon a concentration of rocks (cobbles and small boulders), which I labeled stratum 118 (c. 80 x 40 cm in size); the rocks seem to surround a small pocket with the ‘usual’ recipe of artifacts described above for stratum 109. By this point due to the surrounding complex stratigraphy, we concentrated our efforts in the northeast area (c. 1.2 x .78 m) of the original 2 x 2 m unit in stratum 109, which we had started excavating in 2005. Several jaw bones (e.g., a rodent of some type) were also recovered from stratum 109, as well as burnt plaster (Figure 1.4). Mr. Scott also noted that several of the sherds were found flat against rocks; either they were placed purposely like that, or they fell off a possible ‘altar’ to the west. We also recovered round, flat bases (Figure 1.5); it appears that the Maya had purposely broken off the remainder of the vessels. And several sherds had burned debris on one side. Strata 118 and 109 look like they both terminate at the same level. Once we cleaned the surfaces for the final photographs, it is clear that the artifacts concentrate in the northern portion of the unit—that is, surrounding and around stratum 118. When we continue work here, we need to make sure we removed all of stratum 109.

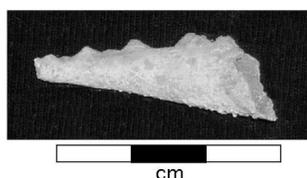
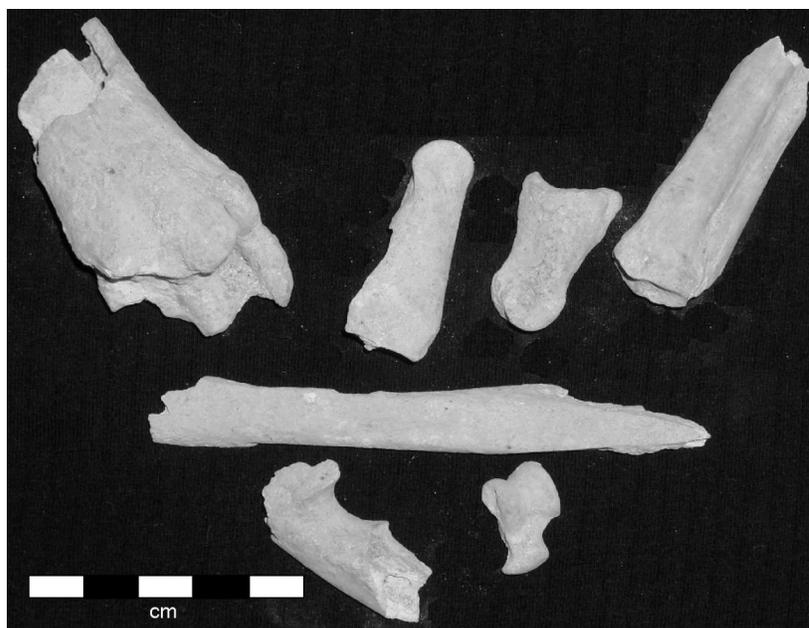


Figure 1.4 Faunal remains, including jaw bone (at bottom)

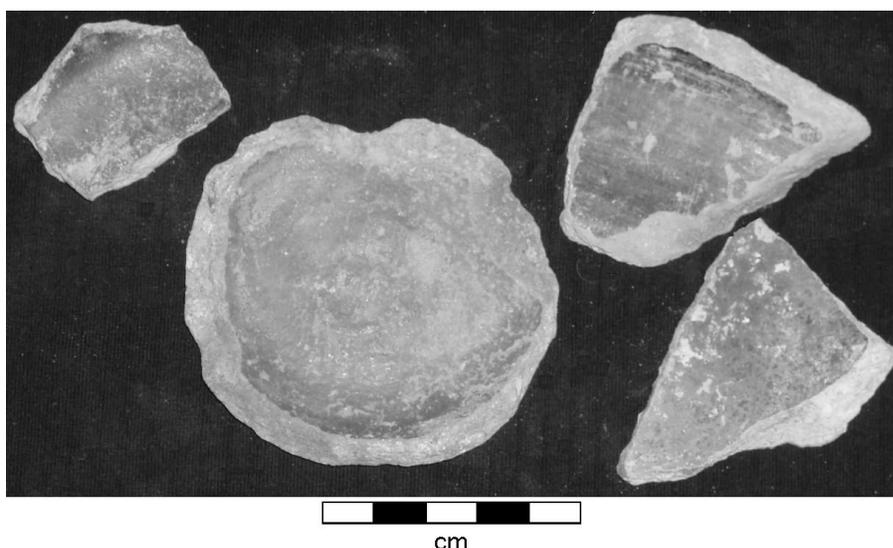


Figure 1.5 Flat bases

While drawing the profile in the north and south walls, I realized that we had gone through a thin plaster floor; it does not appear to extend across the entire unit (Figure 1.6). The floor appears in the entire wall of the north wall and c. 24 cm in the south profile (the west side).

On 1 June, I decided to close down Plaza 1 TP because I realized I needed proper funding and time to do it right. My plan is to finish this test pit next time I have funding for a long season. The entire unit is

lined with construction plastic lining; before lining the unit, we placed non-diagnostic artifacts from the 2004 and 2005 seasons at the bottom of the unit. The plastic overhangs the edge, which will make it easy for us to locate the unit in future.

What is notably absent, if this were a domestic context, is manos, metates, and chert flakes and tools. Even if we find in future evidence, the Maya clearly considered this spot to be of some significance.

The profiles show at least nine major building episodes (see Figures 1.6 and 1.7). The earliest exposed feature (1st) consists of a plaster floor, likely dating to before 300 B.C. Unfortunately, since we removed the floor and ballast as part of stratum 109, the contexts were mixed. But this might also explain why we recovered, in addition to Society Hall and Sierra Red bowls (Barton Creek, 300-100 B.C.), handles and jars, a potential Joventud/transition bowl rim sherd. It was after this floor that the Maya of Yalbac began building non-floor features (2nd episode), in this case, a possible altar built of boulders (stratum 109). It was also at this time that we began finding the 'recipe' of artifacts (see Table 1.1).

The 3rd episode appears to have been a platform or altar (117, wall 116). The Maya then added (4th episode) a floor and ballast (111, 112), after which they built another platform/altar (5th episode) (113, 110, 107, and likely 106) after they had performed a major termination event (112, 115, 108A, B, C, and D), which they sealed with plaster (114, not visible in profiles). Less substantial building phases followed: the 6th re-building consists of a plaster floor and ballast (105). All of these episodes date to the Preclassic; while we found sherds dating to c. 900-600 B.C. (Baldizon Impressed) with the earliest exposed platform/altar (112) (see Table 1.1), the earliest exposed features likely date to c. 300-100 B.C. (floor 105). After these construction phases, we noted several re-plasterings (not necessarily obvious in the profiles) that appear to have been done in the Preclassic as well. The Maya continued to maintain and use the platform/altar until the next noticeable episode (7th), consisting of a thick ballast and plaster floor (104, 103A) sometime between A.D. 200 and 300. Also at this time, the Maya added to floor 103A (8th), but only a small section as seen in the west wall profile (103). We also noted several pits the Maya had dug through several of the floors and strata, as the west, south, and north walls illustrate (e.g., through 103A and 105). We did not recover anything significant from the pits, which may indicate that the Maya deposited organic materials. They covered/re-plastered some of the pits. The 9th and most recent event (dating to c. A.D. 700-900), as mentioned above in the 2004 season summary, consisted of a cross-shaped wall with two-courses of cut and un-cut stones (not visible in any of the profiles since the entire feature was removed); we found Belize Red McRae Impressed sherds from wall fill (102) representing at least five different vessels.

The Maya of Yalbac clearly considered the plaza center to be of some significance. If the Maya performed rituals, we need to find out why they conducted them in the plaza center versus the temples. Perhaps the Maya at Yalbac utilized temporary, semi-permanent, or permanent altars, at least in Plaza 1. In the Colonial period in the Yucatán, Bishop de Landa noted that many rites took place in the temple, but more often in the plaza at temporary altars (often a pile of stones) (e.g., those in honor of Kukulcan, Itzamna) (Tozzer 1941:152, n. 756, 163, n. 854).

Small-Scale Projects at and Near Yalbac

While we were unsuccessful this season re-locating the ancient Maya site of San Jose, we did visit the abandoned Maya village of San Jose (abandoned in the 1950's and 60's) thanks to Robert Cavness and his crew. They re-located the village while opening up old logging roads, and cut a trail for us. Robert also had three of his crew to show us the village. Robert and his crew will keep an eye out for

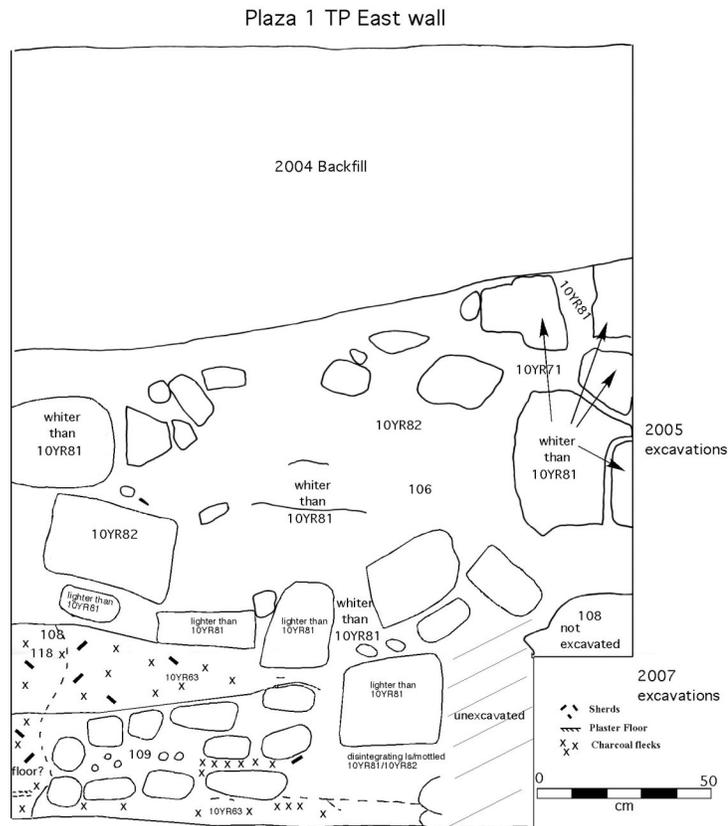


Figure 1.7 Plaza 1 TP east wall

San Jose. Nor did Kinkella find Mun Diego (see chapter 3). Clearly the location of the Maya sites of San Jose and Mun Diego are incorrectly demarcated on maps.

With our greater focus on looters' trenches (see Silva, this volume), I was able to note more details about them. While cleaning up LT8, Str. 3D, we noted a dry core (vs. mortared) in what we had labeled Level II in 2002 and defined as "clayey silt loam (10YR72) with some cobbles and a few pebbles" (Lucero 2003:4, Figure 1.4). The fill is quite loose, predominantly of cobbles and pebbles; it is so loose it just falls out when using a whiskbroom. From the north wall of LT 8, we extracted a light pink limestone boulder (vs. dolomite) (10R66). Also of note is the notable presence up top of Str. 3D of fine-grained, hard limestone boulders—a few shaped ones. I would estimate that 50-60% of the fill consists of the hard limestone; perhaps the Maya used softer limestone to make faced stones. Alternatively, the exposed faced stones could felt the effects more of weathering. The loose dirt in other strata may have trickled down from the topsoil and mixed with weathered limestone in other strata, including Level IV, which also appears to have been a dry core fill—made up of larger stones than in Level II.

We also recovered 'colored' limestone from LT 25, Str. 3A, a mortared fill deposit—c. 50% of the fill was comprised of this yellowish limestone. It is quite soft, so we have also noted yellow soil. Both are concentrated on the west side of the LT, that is, closer to the summit. While most of LT 29 is covered in black plastic from the 2004 season, I still do not notice as much yellow stones. And there was a greater proportion of hard limestone in LT 29 when compared to LT 25—perhaps because LT 25 is more exposed to the elements.

Upon closer inspection, we noted some changes in LT 9, Str. 3B as well. The lower fill in the south wall is not mortared as we thought in 2004.

At LT 11, Str. 2F, what I had labeled a mortared fill in 2004 might turn out to be a mixture of plaster mortar and topsoil. LT 21 at the same structure exposed what might be a tightly stacked wall for the upper-most terrace—perhaps even without mortar. About 30% of the limestone is of the hard variety in

LT 21 debris.

With the mortar/fill samples Silva collected, it is clear that the mortars are whiter in Plaza 2 temples than Plaza 3 ones. LT 16 of Str. 2E might even have whiter mortar than the larger temple, Str. 2F. Further, underneath the tree trunk in the east wall of LT 16, there might be a thick plaster floor that is concentrated in a small area at the center of the temple summit. Either we missed drawing this in 2002, or looters expanded it further into the temple. About 10% of the debris consists of the hard limestone at LT 16. Silva also collected a red-brick stone from this LT

LT 10 at one of the range structures, Str. 2D, has exposed a 5.5 cm thick plaster floor in its north (back) side. About 20% of the debris is hard limestone.

Concluding Remarks

Each season brings us closer to appreciating Yalbac's place in Maya society. While there are several 'classic' Maya features (temples, ballcourt, acropolis, range structures, etc.), it also has some unique features, especially the temple platforms and the Plaza 1 altar/platform. Future fieldwork should provide the answers as to what purposes they served. Also, the location of Yalbac on the eastern periphery of the southern Maya lowlands also likely played in role in center-planning by its inhabitants. The lack of obvious iconography and inscriptions also need explaining, though it is easier to explain the lack of hieroglyphs since they are usually only found at larger centers.

Acknowledgements

I would like to thank the Institute of Archaeology for their continued support. I appreciate Robert Cavness and his team at Yalbac Ranch and Cattle Corporation for their permission to work at Yalbac. I would like to thank Mrs. Choc of Valley of Peace Village for providing wonderful breakfasts and lunches. And none of VOPA field efforts would have been possible without the friendship and support of our excavation assistants from the Valley of Peace Village—Cleofa, Don Luna, and Ernesto. And thanks go to Mr. Scott for maintaining the equipment and the VOPA shed on his property. I also want to thank Josalyn Ferguson for identifying the shell, and Laura Kosakowsky, Kat Brown, and Lisa LeCount for their assistance with the Preclassic Plaza 1 ceramics. Finally, I want to thank Bob and Netty Jones for welcoming me into their family.

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Appendix
2007 Artifacts and curation information

Cat#	Site	Unit	Stratum/ Context	Freq	Code, description and comments	Curation location
825	Yalbac	Plaza 1 TP	109	10	4-20-10 <i>Pomocea</i> shells	IOA
825	Yalbac	Plaza 1 TP	109	12	4-10-10 <i>Nephronaias</i> shells	IOA
825	Yalbac	Plaza 1 TP	109	1	4-10-10 <i>Nephronaias</i> shell with 2 drill holes	IOA
825	Yalbac	Plaza 1 TP	109	105	4-20-10 Jutes	IOA
825	Yalbac	Plaza 1 TP	109	24	3-12-10, 3-10-10, fauna: 1 lg distal en 2 lg phalanges, 1 reptile jaw fragment vertebrae, 11 long bone fragments, 8 other	IOA
825	Yalbac	Plaza 1 TP	109	231	1-20-90 unslipped body sherds (24 w/ burned surfaces; many striated—jars, likely)	Shed
825	Yalbac	Plaza 1 TP	109	59	1-20-90 slipped body sherds, mostly r	Shed
825	Yalbac	Plaza 1 TP	109	7	1-5-60 handles	IOA
825	Yalbac	Plaza 1 TP	109	8	1-50-50 jar necks	Shed
825	Yalbac	Plaza 1 TP	109	4	1-5-15 lids (1 slipped)	IOA
825	Yalbac	Plaza 1 TP	109	9	1-5-30 (including 2 Z-angle)	IOA
825	Yalbac	Plaza 1 TP	109	11	1-20-90 diagnostic sherds (including 1 ~figurine fragment)	IOA
825	Yalbac	Plaza 1 TP	109	11	1-5-12 jar rims	IOA
825	Yalbac	Plaza 1 TP	109	21	1-5-11 bowl rims	IOA
825	Yalbac	Plaza 1 TP	109	2	2-10-13 chert cores	Shed
825	Yalbac	Plaza 1 TP	109	5	2-10-11 chert flakes	Shed
825	Yalbac	Plaza 1 TP	109	5	2-10-18 chert chunks	Shed
825	Yalbac	Plaza 1 TP	109	4	2-10-19 chert blades (all white in color)	Shed
825	Yalbac	Plaza 1 TP	109	1	2-12/22-17 fine-grained granite or limestone flake	Shed
825	Yalbac	Plaza 1 TP	109	1	2-12-90 very burned limestone chunk/rock	Shed
826	Yalbac	Plaza 1 TP	118	1	1-5-11 bowl rim	IOA
826	Yalbac	Plaza 1 TP	118	1	1-5-30 base (unslipped)	IOA
826	Yalbac	Plaza 1 TP	118	9	1-20-90 body sherds (2 slipped, 2 burn surface)	IOA
826	Yalbac	Plaza 1 TP	118	4	4-20-10 land shell—3 jutes, 1 <i>Pomoc</i>	IOA
826	Yalbac	Plaza 1 TP	118	1	4-10-10 <i>Nephronaias</i>	IOA
826	Yalbac	Plaza 1 TP	118	1	5-10 charcoal	IOA
827	Yalbac	Str. 3D LT 8 up	#13	2	1-20-92 VA body sherds	Shed
828	Yalbac	Str. 2E LT 10	Clean-up	2	1-5-13, 1-5-50; LC plate sherd, jar neck	Shed
829	Yalbac	Str. 1A LT 1'	Clean-up	1	1-5-36 annular base	Shed
829	Yalbac	Str. 1A LT 1'	Clean-up	3	1-5-50 jar necks	Shed
829	Yalbac	Str. 1A LT 1'	Clean-up	1	1-5-12 LC turnip jar sherd	Shed
829	Yalbac	Str. 1A LT 1'	Clean-up	1	1-5-11 LC red-slipped VA bowl rim	Shed
830	Yalbac	Str. 3B LT 9	Clean-up	1	1-5-13 LC VA plate	Shed
831	Yalbac	Str. 1D LT 2'	#12	1	1-5-11 LC VA straight-sided bowl	Shed
832	Yalbac	Str. 5 sm. mour	Surface	1	1-5-11 bowl rim	IOA
833	Yalbac	Str. 3B S. Ed	Clean-up	2	2-10-12 chert biface	IOA
833	Yalbac	Str. 3B S. Ed	Clean-up	2	1-5-36 annular bases	IOA
833	Yalbac	Str. 3B S. Ed	Clean-up	2	1-5-11 bowl rims	IOA
833	Yalbac	Str. 3B S. Ed	Clean-up	1	1-5-12 jar rim	IOA
833	Yalbac	Str. 3B S. Ed	Clean-up	1	1-5-14 vase rim	IOA

834	Yalbac	Str. 3A E. Edg	Clean-up	2	2-10-11 chert flakes	Shed
834	Yalbac	Str. 3A E. Edg	Clean-up	1	2-23-19 obsidian blade fragment	Shed
834	Yalbac	Str. 3A E. Edg	Clean-up	1	1-5-36 LC annular base	Shed
834	Yalbac	Str. 3A E. Edg	Clean-up	2	1-5-12 LC everted jar rims	Shed
834	Yalbac	Str. 3A E. Edg	Clean-up	1	1-5-13 LC Belize Red Impressed plate	Shed
834	Yalbac	Str. 3A E. Edg	Clean-up	1	1-5-11 LC bowl	Shed
834	Yalbac	Str. 3A E. Edg	Clean-up	2	1-5-10 rims	Shed
835	Yalbac	Strs. 3A Edg	Clean-up	1	4-20-10 <i>Nephronaias</i> shell	IOA
835	Yalbac	Strs. 3A Edg	Clean-up	1	1-5-60 handle	IOA
835	Yalbac	Strs. 3A Edg	Clean-up	1	1-5-37 flat base	IOA
835	Yalbac	Strs. 3A Edg	Clean-up	1	1-5-50 jar neck	IOA
835	Yalbac	Strs. 3A Edg	Clean-up	1	1-5-13 plate sherd	IOA
835	Yalbac	Strs. 3A Edg	Clean-up	1	1-5-11 or 1-5-14 incurving bowl or va	IOA
					(thin-walled VA)	
835	Yalbac	Strs. 3A Edg	Clean-up	2	1-20-90 body sherds (1 ~Mars Orange	IOA
836	M127	Surface		1	1-5-12 LC everted jar rim	IOA
837	M72	Surface		1	1-5-12 LC everted jar rim	IOA
838	M78	Surface		1	1-5-11 LC VA bowl rim	IOA
839	M112	Surface		1	1-5-11 LC VA bowl rim	IOA
840	M91(?)	Dozer cut		2	1-5-11 bowl rims	IOA
840	M91(?)	Dozer cut		1	1-5-12 jar rim	IOA
841	M109	Surface		1	1-5-11 bowl rim	IOA
842	M87	Surface		1	1-5-13 LC VA plate sherd	IOA
843	M114	Surface		1	1-5-50 jar neck	IOA
844	M74A	Surface		6	1-5-12 LC everted jar rims	IOA
844	M74A	Surface		1	1-5-13 LC VA plate rim	IOA
844	M74A	Surface		1	1-5-11 bowl rim	IOA
845	M74C	Surface		2	1-5-12 LC everted jar rims	IOA
845	M74C	Surface		1	1-5-50 jar neck	IOA
845	M74C	Surface		3	1-5-11 LC VA bowl rims	IOA
846	M107	2 nd terrace fro	Surface	6	1-5-10	IOA
		bottom				
847	M97	Tree fall		2	1-5-11 LC VA bowls	IOA
848	M104	BC TP	101	2	1-5-10 rims	IOA
848	M104	BC TP	101	1	1-20-90 body sherds	IOA
848	M104	BC TP	101	1	1-5-15 possible lid	IOA
849	M132	Outside cave	Clean-up	1	1-5-12 ~LC jar rim	IOA
		entrance				
850	M104	BC TP	102	2	1-20-90, 1-5-50 body, jar neck	IOA
850	M104	BC TP	102	1	2-24-90 brown crystal	IOA
851	M104	BC TP	105	2	2-10-13 chert cores	Shed
851	M104	BC TP	105	1	1-5-11 bowl rim	IOA
852	M103	Tree fall	Near	2	1-5-17 basal flanges	IOA
			largest			
			structure			
852	M103	Tree fall	Near	1	1-5-36 annular base	IOA
			largest			
			structure			
852	M103	Tree fall	Near	3	1-5-12 jar rims	IOA
			largest			
			structure			
852	M103	Tree fall	Near	2	1-5-50 jar necks	IOA
			largest			
			structure			

852	M103	Tree fall	Near largest structure	1	1-5-11 bowl rim—possible EC bowl (IOA lighter under-slip)	
853	M135	Surface			1-5-13 ~plate rim	IOA
854	M154	Surface		1	1-5-13 LC VA plate rim	IOA
855	M129(3?)	Surface		1	1-5-13 LC VA plate rim	IOA
855	M129(3?)	Surface		1	1-5-12 LC everted jar rim	IOA
856	Rockshelter	Surface		1	1-5-10 rim	IOA
857	M132	Cave TP	101	7	1-20-90	IOA
857	M132	Cave TP	101	3	1-5-12 LC jar rims	IOA
857	M132	Cave TP	101	1	1-5-11 LC bowl rim	IOA
858	M159	Tree fall		1	1-5-12 LC jar rim	IOA
859	M170	Larger structure	Surface	2	1-5-50 jar necks (1 VA)	IOA
860	M6 Pool	LT	Clean-up	1	2-22-90 granite cobble	Shed
860	M6 Pool	LT	Clean-up	3	1-5-12 jar rims (2 LC everted)	IOA
861	M6 Pool	TP	101	1	2-10-12 biface fragment	Shed
861	M6 Pool	TP	101	2	4-20-10 land shell	Shed
861	M6 Pool	TP	101	1	2-10-11 chert flake	Shed
861	M6 Pool	TP	101	1	1-5-50 jar neck	IOA
861	M6 Pool	TP	101	15	1-20-90 body sherds (2 VA slipped, 6 VA)	Shed
861	M6 Pool	TP	101	1	2-10-19 white chert blade	Shed
862	M112	LT	In context	9	1-5-11 LC VA bowl sherds from same vessel	IOA
863	M112	LT	In context	1	1-5-50 jar neck	IOA
864	M186	Strs. C and I	Bump	3	1-5-13, 1-5-11 (2 LC plate, 1 LC bowl)	IOA
865	M124	TP	101	3	1-2-90 body sherds	IOA
865	M124	TP	101	1	1-5-17 flange	IOA
865	M124	TP	101	1	1-5-12 LC everted jar rim	IOA
866	M173	'rivenl'	Surface	1	2-10-11 chert flake	IOA
866	M173	'rivenl'	Surface	1	1-5-50 jar neck	IOA
866	M173	'rivenl'	Surface	2	1-5-12 jar rims (1 LC everted)	IOA
866	M173	'rivenl'	Surface	1	1-5-13 LC plate rim	IOA
867	M124	Stela TP	101	13	1-20-90 body sherds	IOA
867	M124	Stela TP	101	1	1-5-17 flange	IOA
867	M124	Stela TP	101	2	1-5-13 plate (~LC)	IOA
867	M124	Stela TP	101	3	1-5-11 (2 straight-sided bowls) (~LC)	IOA
868	M124	Stela TP	102	9	1-20-90 body sherds	IOA
868	M124	Stela TP	102	1	1-25-90 diagnostic sherd	IOA
868	M124	Stela TP	102	1	1-5-50 jar neck	IOA
868	M124	Stela TP	102	1	1-5-37 flat base	IOA
868	M124	Stela TP	102	2	1-5-13 plate rims	IOA
868	M124	Stela TP	102	2	1-5-12 jar rims	IOA
869	M186	Str. A LT	Wall mortar	1	1-5-12 LC everted jar rim	IOA
870	M104	Surface	-	1	2-10-12 biface	Shed
871	M124	TP	102	2	1-20-90 body sherds	IOA
871	M124	TP	102	1	1-5-13 LC plate rim—possible Mt. Pi Ridge/Tepeu 1	IOA
872	M170	TP	101	-	Burial vessel #1; 1-5-42 LC VA impressed plate—nearly complete. Achote Black	IOA
873	M170	TP	101	2	2-10-11 chert flakes	Shed

873	M170	TP	101	3	1-20-90 body sherds	Shed
874	M170	TP	101	-	Burial vessel #2; 1-5-42; black-on-orange thin-walled vase—nearly complete	

*The shed is on the property of Mr. Scott, Valley of Peace Village

Chapter 2

Classic Maya Temple Attributes: A Labor Investment Analysis at Yalbac, Belize

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Maya temples have long been an object of fascination for many scholars and people worldwide. Cross-culturally, temples are viewed as political and religious arenas for people of various statuses (Lucero 2007). “From the onset of the “discovery” of Maya centers, architecture was the most immediate and conspicuous from of evidence of the complexity, power and splendor of the Maya civilization” (Abrams 1994:2). Mayanists have long depended on *stelae*, “upright stone slab embedded in to a horizontal surface, often covered with sculpture and hieroglyphic texts,” and their inscriptions to provide clues about temples and about Maya royal life (Houston 2001:687). “The decipherment [of Maya hieroglyphs] has recovered the names of kings, their families, members of their courts, artists and builders who served them” (Schele and Mathews 1998:172). Maya iconography has shown that temples were vital in Maya religious life and were a link between commoners and royals.

For several decades, investigations geared towards Maya temples have been exclusive to temples at large sites with iconography and inscriptions. In this chapter, I detail architectural data from the site of Yalbac, Belize. By collecting mortar samples and comparing construction patterns, it should be possible to assess if temples have distinguishing characteristics; and if this were the case then different groups might have built temples for various purposes (Lucero 2007).

Mortar

“Limestone (calcium carbonate) is a sedimentary rock of high solubility and workability found on the surface geology of the Yucatan Peninsula, highlands of southern Mexico, central Guatemala, western Honduras and Belize” (Abrams 2001:403). “Its uses range from material for stone masonry in elite architecture, lime wash and lime plaster used on buildings and artifacts, protect surfaces and prime them for painting to ceramic figurines, stelae and paper for writing” (p. 402).

Although limestone served several purposes, the Maya used it most frequently for architecture. The burning of limestone in large wood open-air kilns produces plaster and mortar. Mortar is a cement-like mixture of dehydrated limestone, water, and sand, which was used for masonry, fill, and plaster (Abrams 2001:403). Mortar is the crucial component of this labor investment analysis. “The burning process releases carbon dioxide from the calcium carbonate, but subsequent absorption of oxygen and water turn the burnt limestone back in to calcium carbonate” (Abrams 2001:403). First, the limestone had to be quarried in blocks by human porters to the location of the kiln, as well as the wood to build the kiln. Then the limestone is burned in a large wood kiln. The dehydrated limestone is then mixed with water and sand, or loam depending on what is available, to create mortar. “Production average of traditional Maya kilns, need ten loads of wet freshly cut wood (50% moisture) and two loads of limestone to produce a single load of quicklime” (Shreiner 2002:17).

In his 2002 dissertation, *Traditional Maya Lime Production: Environmental and Cultural Implications of a Native American Technology*, Thomas Shreiner describes how he had 12 open-air traditional wood limekilns built by local Maya men in Mexico and Guatemala. He observed and documented the process and the different recipes used in different regions. Shreiner notes that the making of mortar is a ritual process. From the construction of the wood kiln using only freshly cut trees, the master (*calero*), who must abstain from any sexual activity prior to the event, must show respect to the kiln. Once the kiln is finished, he gathers the ingredients for the burning ritual, which includes honey, maize, red chili, salt and a strand of his hair, and waits until midnight to begin the burning process. These ingredients vary since there are more than 50 documented recipes in the Maya area.

In Mexico and Guatemala, the presence of women is strictly forbidden during the burning process; the Maya believe that the kiln has feminine qualities and is giving birth to the processed limestone, and women might hinder this process. Other aspects that are related to this ritual are fertility, purity,

protection against evil and death, heat, menstrual blood, the numbers 9 and 4, the cross, and the control of natural forces such as wind, rain, and thunder.

Being a *calero* was and still is very respected by the Maya since making plaster is a long and complicated process. The many rituals and ingredients are meant to produce a very white and durable mortar/plaster that was to be used in temples, houses, and other structures. Though the same process was likely employed to make mortar at Yalbac, different ingredients, some more expensive than others, and that made with varying amounts of labor, produced different mortars.

Yalbac

The 2007 season Valley of Peace Archeology (VOPA) project goals at Yalbac consisted of assessing the type of labor invested at temples and other structure types. Realizing that limestone is widely available in the Maya lowlands and is the main source for the construction of Maya buildings, we decided to focus on the type of limestone used and the quality of mortar found at each structure in Yalbac.

Plaza 1 is a restricted plaza that includes the royal acropolis (Str. 1A); there are no temples located on this plaza, only range structures with vaulted ceilings (Strs. 1B, 1C, 1D) (see Figure 1.2). Plaza 2, the least restricted plaza, has three pyramid temples surrounding it (Strs. 2A, 2E, 2F), a ball court (Strs. 2B, 2C) that is attached to the front of Temple 2A, and a range structure (Str. 2D). Temple 2A is the tallest of the six temples at c. 16 m in height. Plaza 3, which is semi-restricted, has three temples surrounding it, Strs. 3A, 3B, and 3D. Structures 3A and 3D are the only temples with wings on the north and south sides. Other smaller structures are also located on Plaza 3 (Strs. 3C, 3E, and 3F).

Like many archaeological sites, Yalbac has suffered its share of looting. There are at least 29 looter's trenches (LT). With the exception of Temple 2A, all the major structures have at least one LT. Our goal was to collect construction information and use the existing looter's trenches for our analysis, especially since they exposed walls, floors, doors, benches, vaulted ceilings, and different construction events.

Methods

Mortar samples were taken from all structures at Yalbac with the exception of Temple 2A (it does not have a LT). Eighteen of the 29 LTs were selected based on structure type (temple, range structure, ballcourt, and acropolis) and amount of exposed architecture. Once the LT was selected, its number and structure was noted. One sidewall was then cleared of debris or backfill. Profiles from previous years were used to select sample loci. Any artifacts found in walls or in looter's debris noted and/or collected. Photographs were taken of selected trenches. A total of 60 mortar samples were taken, averaging four samples per trench.

Using a trowel, exposed soil was removed from the selected location until a pristine mortar sample was exposed. We did our best to distinguish mortar from crumbling/weathering limestone. A sample was then collected with a trowel and placed in a 2 x 3" re-sealable plastic bag, which was labeled with the date, sample number, structure, LT number, and a brief description of the location. Samples loci were also drawn on the profiles. Once samples were dried, notes were taken describing consistency, color and hardness or softness of mortar, and type and size of stones (hard, soft, cut or faced).

Trench exposure type was also noted and classified into three types: tunnel trench, exposed trench, and a trench with an overhang (natural or architectural). Tunnel trenches were usually some of the largest trenches found at Yalbac, and also preserved the architecture the best (Figure 2.1). An exposed trench completely exposes architecture (Figure 2.2). Trenches with natural (e.g., roots) or architectural overhangs were usually trenches that had some degree of protection from the elements (Figures 2.3 and 2.4). The effects of exposure were also taken into account; for example, if mold caused by rain was visible on the walls, if sunlight hit the exposed architecture, or the apparent lack of climatic effects (e.g., tunnel trench). Root activity was also noted since Yalbac is completely covered in vegetation; the roots of trees typically protruded through the architecture. If roots were horizontal, it indicates that the mortar was compact and/or that larger stones were used; if roots were vertical, it indicates a looser mortar or fill.

Insect or animal disturbance was also noted since insects' nests are found within the mortar; snakes and bats were also found in the three of the tunnel trenches (LTs 1, 7, and 9).



Figure 2.1 Tunnel trench



Figure 2.2 Exposed trench



Figure 2.3 Natural overhang



Figure 2.4 Architectural overhang

We also collected two samples from the Yalbac Creek for comparative purposes. One was of soil/loam taken from the bottom of the creek, and the other was of cobbles and pebbles from the edge.

Analysis and Results

Collected samples were taken to the lab and classified by color using Munsell classifications. Two tables were then generated, one of the samples and their Munsell color, and the other on LT attributes (Tables 2.1 and 2.2). Trench profiles were analyzed along with photographs and notes based on structure type and location (which plaza). Samples were then divided according to temple and were analyzed according to plaza in order to determine patterns and variability in color and consistency.

Table 2.1 LT features

LT#	Structure	Type	Effects of weath	Root Activity	Insect Disturbance	Hard stone	Artifacts
6	1D	tunnel	mild/overhang	large horizontal root	yes	10%	none
28	1D	exposed	severe	5 trees	yes	30%	basal flange sherd
8	3D	exposed	severe	3 trees	yes	50-60%	several sherds & flak
29	3A	oval shaped	mild/overhang	4 small tree	yes	15%	none
25	3A	semi-circular	mild/overhang	3 trees	yes	10%	none
9	3B	long tunnel	none	5 trees	yes/snake skin	plastered hard tell	several sherds & hun bone
7	3A	tunnel	mild	minor/top	yes/bats	plastered hard tell	none
17	1A	long/narrow	mild	1 tree	yes	60%	several sherds
21	2F	yes/long	severe	yes	yes	30%	none
16	2E	exposed	severe	3 trees	yes	20%	orange rim sherd
10	2D	narrow	severe	1 large tree	yes	20%	none
12	1A-2B	tunnel like	mild/overhang	minor	yes	10%	none
14	1A-1b-	tunnel	mild/overhang	2 trees	yes	10%	none
13	1A-1	tunnel	severe	2 trees	yes	30%	none
2	1A	tunnel like	mild/overhang	minor/top	yes	15%	none
1	1A-1a-	massive tunn	mild/overhang	minor	yes/bats	plastered hard tell	none
3	1A-1a-	semi/tunnel	mild/overhang	minor	yes	15%	none
18	2C	narrow	severe	minor	yes	25%	none

Table 2.2 LT Attributes

Sample	LT #	Structure	Munsell Colo	Location	Description
1	6	1D, Range	10YR 8/1	East wall	Fill mortar, loose
2	6	1D	10YR 8/1	East wall	Floor (thick)
3	6	1D	7.5YR 6/2	East wall	Loose ballast/fill, w/ cobbles & pebbles with loam
4	6	1D	10YR 8/2	West wall	Floor;
5	6	1D	10YR 7/2	West wall	Loose ballast/fill; fewer cobbles and pebbles
6	6	1D	5YR 8/1	North wall	Fill mortar; loose, crumbly
7	28	1D	5YR 8/2	West wall	Wall mortar; compact
8	28	1D	10YR 8/2	West wall	Fill mortar; looser
9	28	1D	10YR 7/2	West wall	Wall mortar; looser
10	28	1D	10YR 7/2	West wall	Fill mortar; loose
11	28	1D	10YR 7/2	West wall	Fill mortar; looser, but less powdery than #10
12	28	1D	10YR 7/3	West wall	Wall mortar; loose; sherd under rock-VA straight-sided bowl
13	8	3D, Temple	7.5YR 7/2	North wall	Fill mortar; compact similar to LT 1; 2 volcanic ash body sherds collected
14a	8	3D	10YR 7/1	North wall	Fill mortar/crumbling ls & soil w/ small pebbles
14b	8	3D	5YR 6/1	North wall	Fill mortar/crumbling ls & soil w/ small pebbles
15	8	3D	7.5 8/2	North wall	Fill mortar
16	29	3A, Temple	10YR 6/2	West wall	Fill mortar; perhaps some mixture w/ soil
17	29	3A, Temple	2.5Y 6/2	West wall	Fill mortar
18a	25	3A	7.5YR 7/4	South wall	Fill mortar w/ yellow limestone; could consist of dry core; thus, possible mixture of soil and crumbling ls

18b	25	3A	10YR 6/2	South wall	Fill mortar w/ yellow limestone; cobbles and pebbles
19	9	3B, Temple	7.5YR 6/2	South wall	Fill mortar; loose with pebbles; 2 encrusted red-slipped sherds noted
20	9	3B	10YR 7/2	South wall	Fill mortar; LC VA plate
21	9	3B	10YR 8/2	South wall	crumbling ls—for comparative purposes
22	7	3A, Temple	5YR 7/2	North wall	Fill mortar w/ small pebbles or plaster chunks; yellow and white ls rocks
23	11	2F, Temple	10YR 7/2	West wall	Fill mortar; w/ small pebbles
24	17	1A, Acropolis	10YR 6/1	South wall	Fill mortar; loose w/ cobbles & pebbles
25	17	1A	10YR 6/2	South wall	Fill mortar; loose w/ cobbles & pebbles
26	17	1A	10YR 6/2	South wall	Retaining wall mortar; loose w/ pebbles
27	21	2F, Temple	10YR 6/2	North wall	Possible wall mortar v. crumbling ls; tightly packed
28	21	2F	10YR 6/2	North wall	Fill mortar; loose w/ small pebbles or plaster chunks
29	21	2F	10YR 6/2	North wall	Possible wall mortar; tightly packed
30	21	2F	10YR 7/1	North wall	Fill mortar; loose
31	16	2E, Temple	10YR 7/1	North wall	Fill mortar; loose, fine orange sherd noted
32	16	2E	10YR 8/2	North wall	Fill mortar; less loose, fine grained
33	10	2D, Range	10YR 7/1	West wall	Fill mortar; loose w/ pebbles
34	10	2D	10YR 6/2	West wall	Fill mortar under floor; loose w/ pebbles
35	10	2D	5YR 8/1	West wall	Floor; compact
36	12	1A-2b	2.5Y 7/2	North wall	Fill mortar between 2 floors
37	12	1A-2b	10YR 7/2	South wall	Fill mortar; more compact than #36 w some pebbles
38	12	1A-2b	2.5Y 7/2	South wall	Fill mortar; loose w/ lots of pebbles or plaster chunks
39	12	1A-2b	10YR 8/2	South wall	Floor; very compact
45	12	1A-2b	10YR 8/2	South wall	Floor; very compact
40	14	1A-1b-II	10YR 7/2	North face	Wall mortar; tightly packed; loose
41	14	1A-1b-II	10YR 8/1	East wall	Fill mortar inside tunnel; compact
42	13	1A-1b-I	2.5YR 8/2	East wall	Wall mortar; loose
43	13	1A-1b-I	10YR 7/3	East wall	Fill mortar; loose, mud bees
44	13	1A-1b-I	10YR 8/1	East wall	Floor; compact
46	2	1A-1a-I	10YR 6/2	South wall	Doorjamb wall mortar; loose
47	2	1A-1a-I	10YR 8/1	South wall	Wall mortar; more compact w/ ls or plaster chunks
48	2	1A-1a-I	10YR 7/1	South wall	Fill mortar; loose
49	2	1A-1a-I	10YR 7/3	West wall	Wall mortar; compact
50	2	1A-1a-I	10YR 8/1	North wall	Bench surface/plaster; compact
51	1	1A-1a-II	10YR 7/2	South wall, Room 1	Vaulted ceiling mortar; loose w/ small pebbles or ls chunks
52	1	1A-1a-II	10YR 7/3	South wall, Room 1	Wall plaster; loose
53	1	1A-1a-II	10YR 8/2	East wall, Room 2	Wall plaster; compact
54	1	1A-1a-II	7.5R 3/6	East wall, Room 2	Red painted wall plaster
55	1	1A-1a-II	10YR 8/2	East wall, Room 2	Wall mortar; loose w/ small pebbles or plaster chunks
56	1	1A-1a-II	10YR 8/1	South wall, Room 2	Room fill mortar; loose; similar to wall mortar
57	3	1A-1a-II	10YR 7/2	West face	Wall mortar; loose, mud bees
58	18	2C, Ballcourt	7.5R 6/2	North wall	Fill mortar; loose w/ chunks, ~mixture loam with crumbling ls

The majority of sherds collected from sidewalls over the years date to the Late Classic (Table 2.3). This is not a surprising fact given that looters typically started from the top of structures (though not always).

Table 2.3 Ceramic dates from LTs

Cat #	Unit	Level	Description	Ceramic dates
177	LT 1 Str. 1A	surface	-	San Felipe Brown bowl sherd; San Antonio Golden Brown bowl sherd; Vaquero Creek Red: VCV dish sherd; 100 B.C. A.D. 250
127	LT 2 Str. 1A	surface	-	Martins Incised bowl sherd; Dolphin Head bowl sherd; A.D. 700-900;
182	LT 4 Str. 1A	surface	-	Mountain Pine Red dish sherd, A.D. 700-900
170	LT 12 Str. 1A-2b	surface	-	Vaca Falls Red bowl sherd; Cayo Unslipped jar sherd; A.D. 800-900
178	LT 13 Str. 1A	surface	-	Garbutt Creek Red bowl sherd, A.D. 700-900
657	LT 14 Str. 1A	.45 m below pt. 1	Below cut stone wall	early facet SL, A.D. 700-800; ~Dolphin Head Red
653	LT 17 Str. 1A	LT backdirt	Backdirt	late facet JC, 600-300 B.C.; Tecomate ~Joventud Red
661	LT 17 Str. 1A	.88 m above flagged nail	In mortar between upper cobble fill and boulder fill	early facet SL/TR, A.D. 590-800; Dolphin Head Red (as well as Middle Preclassic sherd)
183	LT 17 Str. 1A	surface	-	Dolphin Head Red bowl sherds (2), A.D. 700-800
829	LT 17 Str. 1A	Clean-up	Clean-up	LC turnip jar sherd, LC red-slipped VA bowl rim
763	LT 28, Str. 1D	Area 1, upper	Fill	LC VA body sherd
764	LT 28, Str. 1D	Area 2, mid-upper	Fill	5 body sherds?
766	LT 28, Str. 1D	Area 3, mid-lower	Fill	Preclassic bulge bowl, slipped both sides
765	LT 28 Str. 1D	Area 4, lower	Fill	2 body sherds, 1 w/ VA-Ls temper
767	LT 28 Str. 1D	Clean-up	Clean-up	LC VA bowl w/ interior red slip, impressed incurving bowl; EC flange w/ white underslip, z-angle
831	LT 28 Str. 1D	#12	Clean-up	LC VA straight-sided bowl
788	LT 6 Str. 1D	Clean-up	Clean-up	LC annular base, VA sherd with 2 lacing holes, VA flared jar rim
789	LT 6 Str. 1D	Bulk	Near plaster floor	LC VA impressed body sherd, narrow orifice jar; Preclassic bulge bowl
790	LT 6 Str. 1D	Area A (north wall)	Loose fill-below plaster ballast	LC painted polychrome flaring vase/bowl, annular base; EC flange, polychrome sherd; Preclassic nubbin, bulge bowl; other lid
785	LT 10 Str. 2D	Clean-up	Clean-up	LC VA shallow plate, flared bowl w/ interior red slip, flange bowl large annular base, regular annular base w/ red slip
179	LT 16 upper Str. 2E	surface	-	Mountain Pine Red dish sherd, A.D. 700-900
180	LT 16 lower Str. 2E	surface	-	Cayo Unslipped jar sherd, A.D. 700-900
828	Str. 2E LT 16	Clean-up	Clean-up	LC plate sherd, jar neck
699	LT 21, Str. 2F	Backdirt		LC bowls, plates (ashy/calcite); figurine fragment-head, ~God
716	LT 21, Str. 2F	Level 1	Bottom of LT wall	LC bowl/plate similar to backdirt sherds
717	LT 21, Str. 2F	Level 6	Structure summit	Roaring Creek Red (slightly flaring bowl, slipped on interior) (p. 241); Spanish Lookout late facet, A.D. 800-900; ~waxy slip, bowl has thin, uniform walls and slightly thickened rim
705	LT 11, Str. 2F	Backdirt		Zibal unslipped (p. 223), Tiger Run, A.D. 600-700 (relatively restricted jar neck, precursor to Cayo unslipped)
715	LT 11, Str. 2F	Level 2	Upper portion of LT wall	White Cliff Striated jar (p. 221), late Tiger Run, A.D. 650-750
136	LT 7 Str. 3A	surface	-	Macal Orange Red jar sherd (100 B.C.-A.D. 250); Quacco Cree dish sherd, A.D. 650-750
696	LT 7 Str. 3A	Level 5	Clay and boulder fill	Really ashy sherd, but w/ really black core
698	LT 7 Str. 3A	Level 15	Earliest construction phase (on top of bedrock)	Flor Creme: Variety Unspecified, BC, 300-100 B.C. (pp. 93-94) chamfering; paste of most sherds more gray; forms right, past off (should be more orangey); most sherds Paso Caballo/Preclassic (waxy)
706	LT 25, Str. 3A	Backdirt		LC bowl (TC because of horizontal rim), ~Mount Mahoney Black Spanish lookout late facet, A.D. 800-900; ~Postclassic bowl—Paxcaman red (pp., 294, 296, Fig. 192k), New Town late facet A.D. 1150 or later
684	LT 29, Str. 3A	Backdirt		Balanza Black, Hermitage, A.D. 300-600; shallow ring base, LC calcite/ash paste
404	LT 9 Str. 3B	surface	-	Roaring Creek Red bowl sherds (6), A.D. 800-900
676	LT 9 Str. 3B	backdirt		Varies; EC basal flange, LC plates, Quacco (Mount Hope, 100 B.C.-A.D. 100), ~TC jar (squared lip and horizontal rim; p. 11: lots of narrow-neck jar rims (~TC, except usually not slipped) these rims)—or could be Tiger Run drum base (Sotero Red—brown or Macal orange-red; Deprecio Incised—late JC—600-300 B.C. (p. 83)
707	LT 9 Str. 3B	101/02	topsoil	Other possible cache vessel might be Sierra Red (Paso Caballo Ware; Mount Hope, ~Quacco, p. 112); may have curated portion of vessel if the rest of assemblage dates later (heirloom); thick rim, waxy slip; some subjected to burning
711	LT 9 Str. 3B	Cache/burial	Top vessel of lip-to-	Rubber Camp Brown: Rubber Camp Variety (pp. 233-4, Fig.

710	LT 9 Str. 3B	Cache/burial	Bottom vessel of lip-to-lip	143I; Spanish Lookout (imported?)
830	LT 9 Str. 3B	Clean-up	-	LC VA plate
133	LT 8 Str. 3D	surface	-	Roaring Creek Red bowl sherd, A.D. 800-900
827	LT 8 upper Str. 3D	#13	-	VA body sherds

Plaza 1

Samples analyzed from Plaza 1 were retrieved from the acropolis, Structure 1A: 1A-1a-1, 1A-1a-II, 1A-1b-I, 1A-1b-II, 1A-2b, and 1D and looter's trenches 1, 2, 3, 6, 12, 13, 14, 17 and 28 (Figure 2.5).

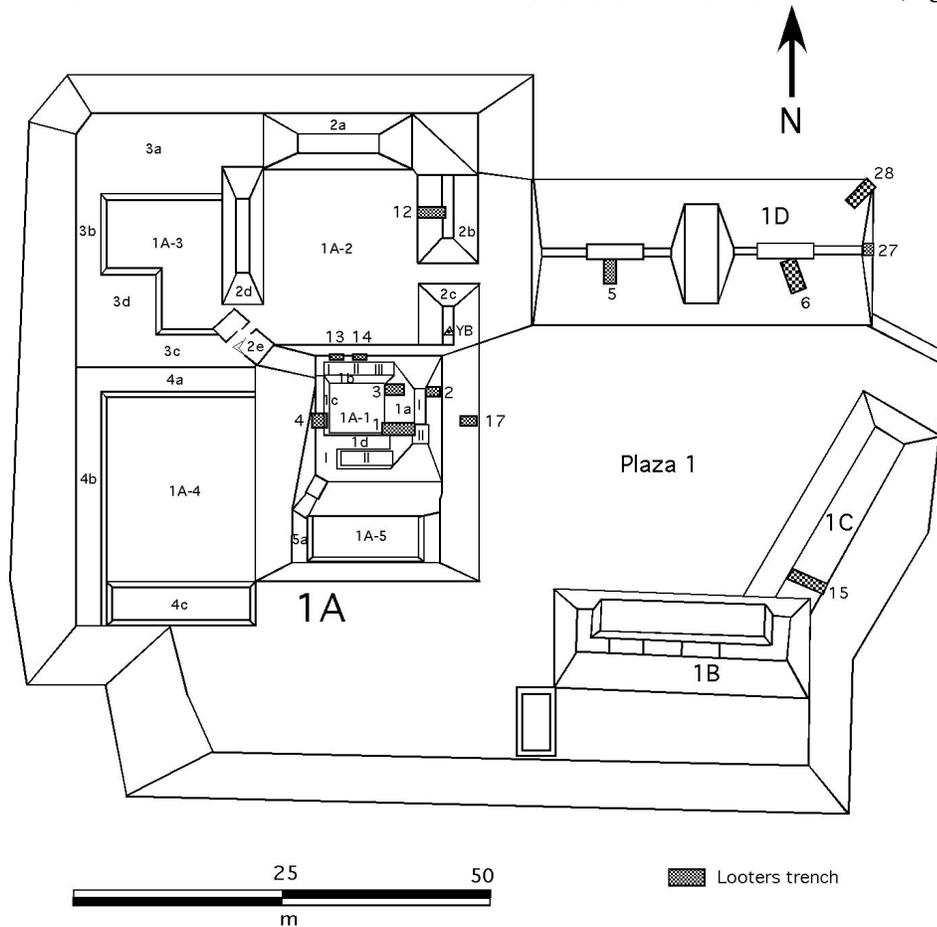


Figure 2.5 Close-up of Str. 1A, the acropolis

Structures 1A, 1A-1a-1, 1A-1a-II, 1A-1b-I, 1A-1b-II and 1A-2b

Structure 1A is located in the eastern side of Plaza 1. It is the largest structure at Yalbac (Hooper 2004:73) with a height of more than 20 m, 21 buildings and five sunken courtyards, Structure 1A is definitely the most complex structure. Seven of its eight looter's trenches were chosen for sample retrieval (LTs 1, 2, 3, 12, 13, 14, and 17).

LT 1 (Str. 1A-1a-II) is a large tunnel trench that exposes three distinct rooms (Figure 2.6). Room 1 includes a wall made of small relatively soft limestone, and a collapsed vaulted ceiling made with larger soft limestone. This room suffers only minor root and insect disturbance, perhaps due to the height of the structure and the protection offered by the tunnel trench (see Table 2.1). Room 1 only exposes two walls made with small soft stone it is completely unprotected and is exposed to sun and rain. Room 2 exposed a vaulted ceiling with smaller, softer stones that is partially plastered with remnants of red paint. A total of six samples were retrieved from the walls and ceilings of Rooms 1 and 2, as well as a small

sample of the red paint (Munsell 7.5R 3/6). Mortar samples ranged in color from 10YR 7/2 to 10YR 8/2 (see Table 2.2). Consistency ranged from compact mortar in Room 2, to a looser sample with small pebbles in Room 1. This difference is perhaps due to the fact that Room 2 was more protected than Room 1.

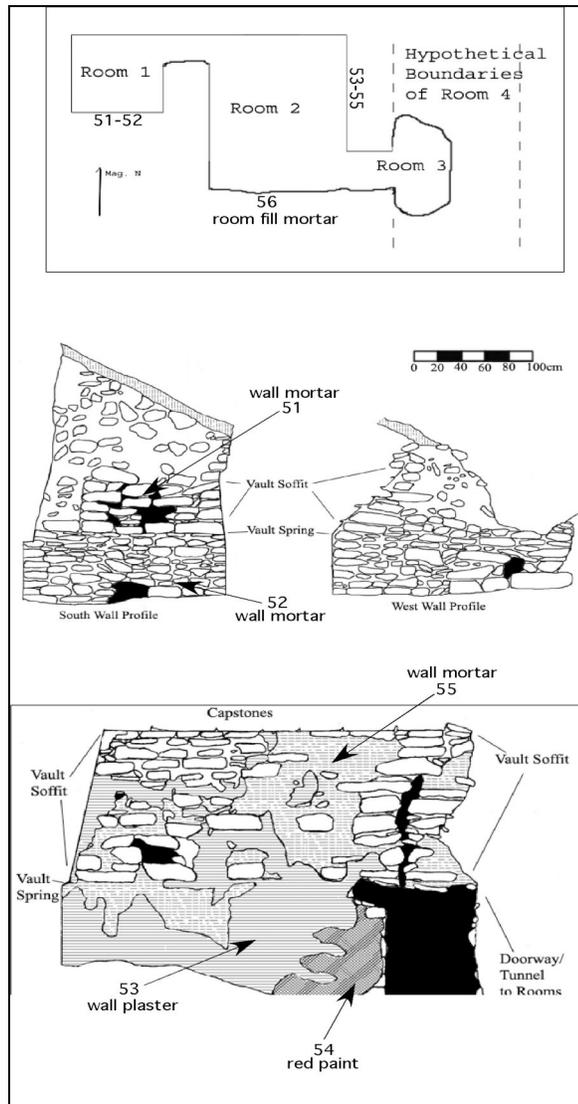


Figure 2.6 LT 1, Str. 1A

LT 2 (Str. 1A-1a-I) is a tunnel trench with an exposed bench (which had been covered prior to 2007 with plastic and soil to protect it), two exposed walls, and a doorjamb at the entrance. The walls were made with soft stone (hard stone is only seen in the LT debris) and are protected by the architectural and root overhang. Some vertical root activity is seen at the top of the trench. A total of five samples were collected from locations including the doorjamb, two walls and the bench exposed in the sidewall, with colors ranging from 10YR 6/2 to 10YR 8/1 (Figure 2.7). Samples were loose with pebbles, minor root fragments, and noticeably affected by insect disturbance. The sample taken from the bench was very white (10YR 8/1) and compact. Two burnt stones were noted in the south wall.

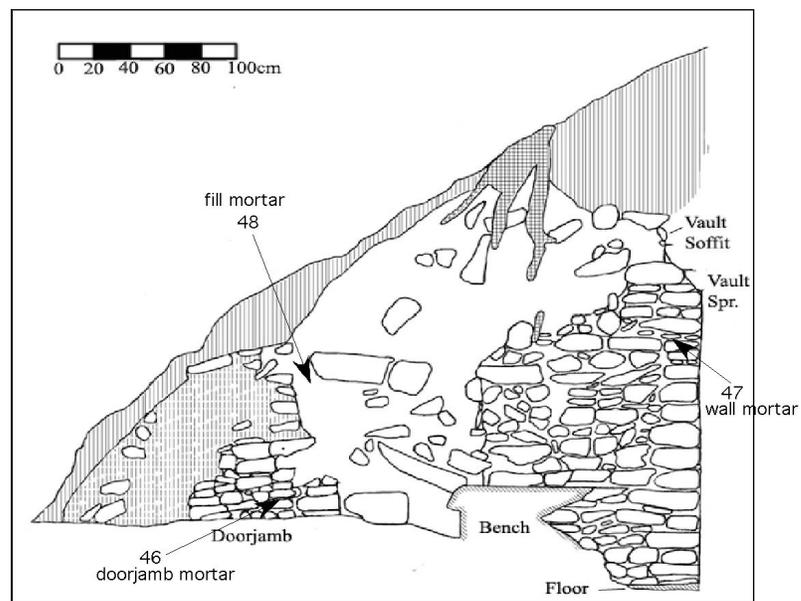
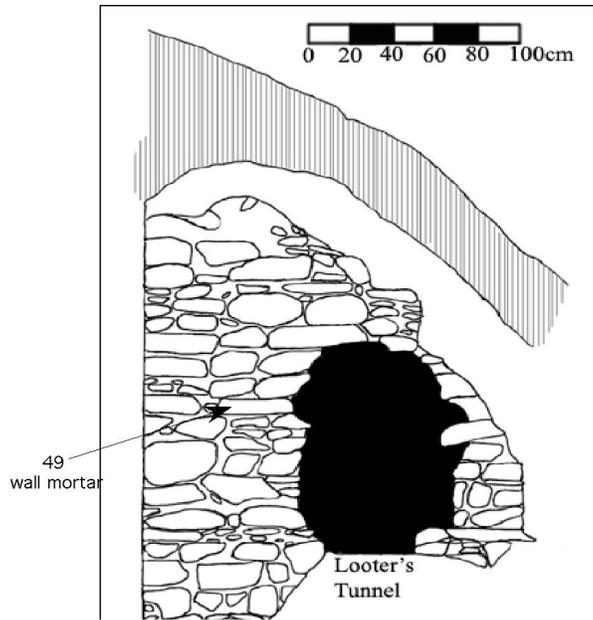


Figure 2.7 LT 2, Str. 1A-1a-I. Sample #50 was taken from the north wall, not shown here. The top profile is the west wall; the bottom one the south wall.

LT 3 (Str. 1A-1a-I) is a semi-tunnel trench with an exposed vaulted ceiling with soft weathered stone and noticeable insect disturbance. Only one sample was retrieved, which was very loose and greatly affected by bee nesting (Figure 2.8).

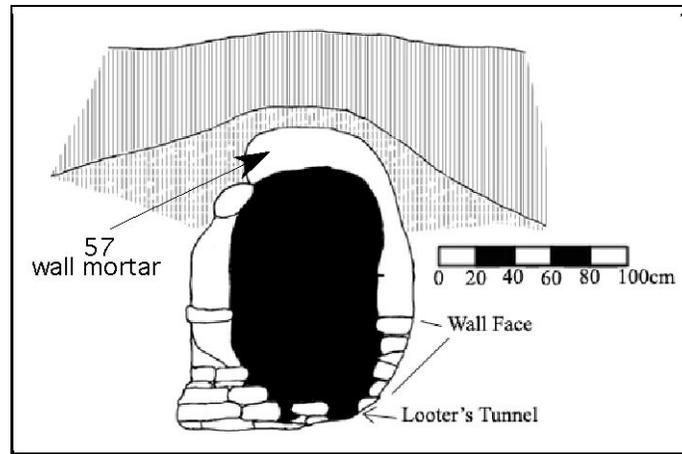


Figure 2.8 LT 3, Str. 1A-1a-I. West face.

LT 12 (Str. 1A-2b) is a narrow tunnel trench that exposed several plastered steps and two walls. A thin capstone found on the floor indicates that the trench once had a vaulted ceiling. There is little root activity and exposure to the elements is limited due to the narrowness of the trench; however, some mold still appears on the north wall. A noticeable amount of insect disturbance was noted. Five samples were collected: two very white and tightly packed from the floor (10YR 8/2); and three quite loose with small pebbles from the walls (Figure 2.9).

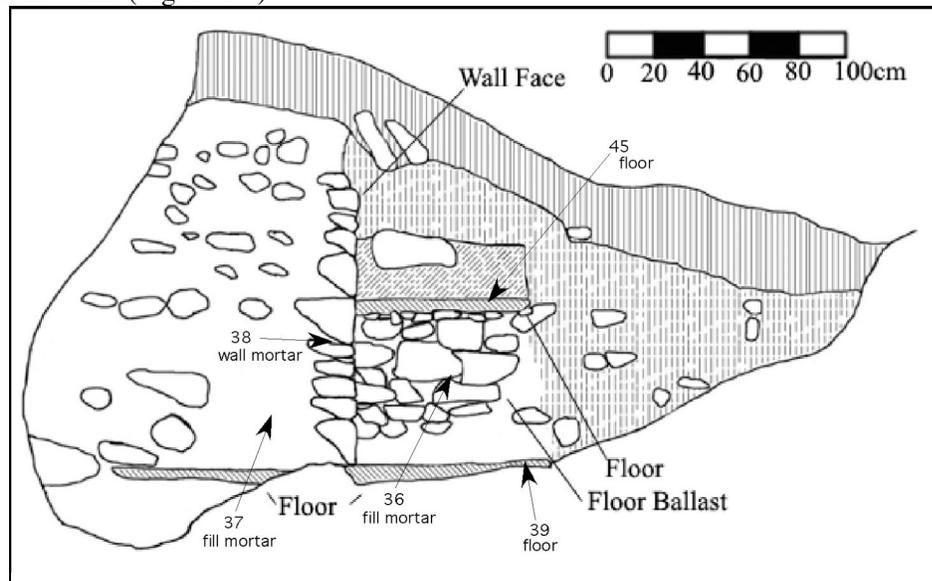


Figure 2.9 LT 12 Str. 1A-2b. South wall.

LT 13 (Str. 1A-1b-II) is an exposed trench that has been backfilled for preservation purposes. The exposed architecture appears to be mortared soft stone (hard stone is only seen in backfill and LT debris), that has been greatly affected by the elements (mold); root activity is visible in the west wall. A high concentration of mud bees impacted the trench. Three samples were taken (Figure 2.10): two from the walls were very loose, perhaps due to the bees; the floor sample was very white and compact.

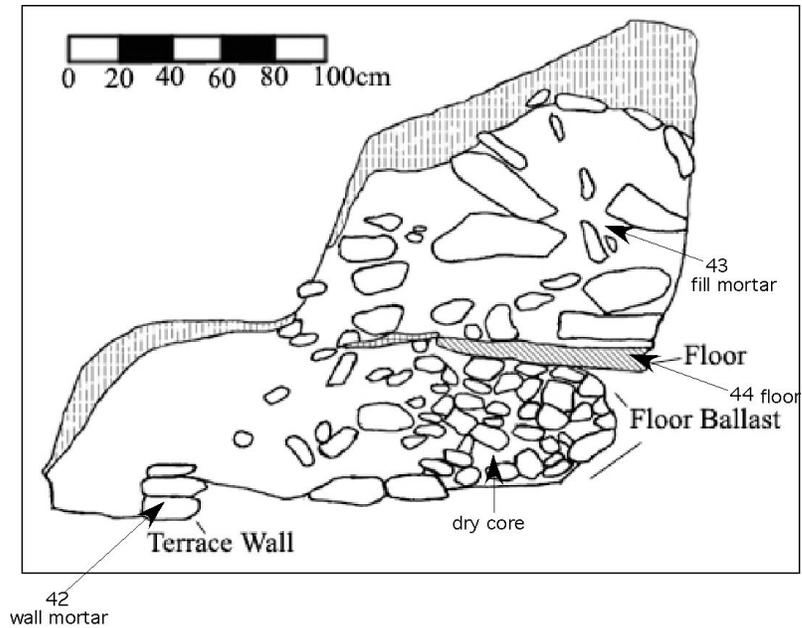


Figure 2.10 LT 13, Str. 1A-1b-II. East wall.

LT 14 (Str. 1A-1b-II) is a tunnel trench, the entrance of which has a wall with faced stones neatly laid with mortar. Some root activity is seen at the top of the trench, as well as some insect disturbance. The effects of the weather (mold) are visible at the entrance of the tunnel. Samples were difficult to collect since the mortar was so compact. Two samples were retrieved: one from the entrance, which was loose with a Munsell color of 10YR 7/2; and one from the inside of the trench on the east side 90 cm in and 60 cm up from the surface (white, 10YR 8/1, and compact) (Figure 2.11).

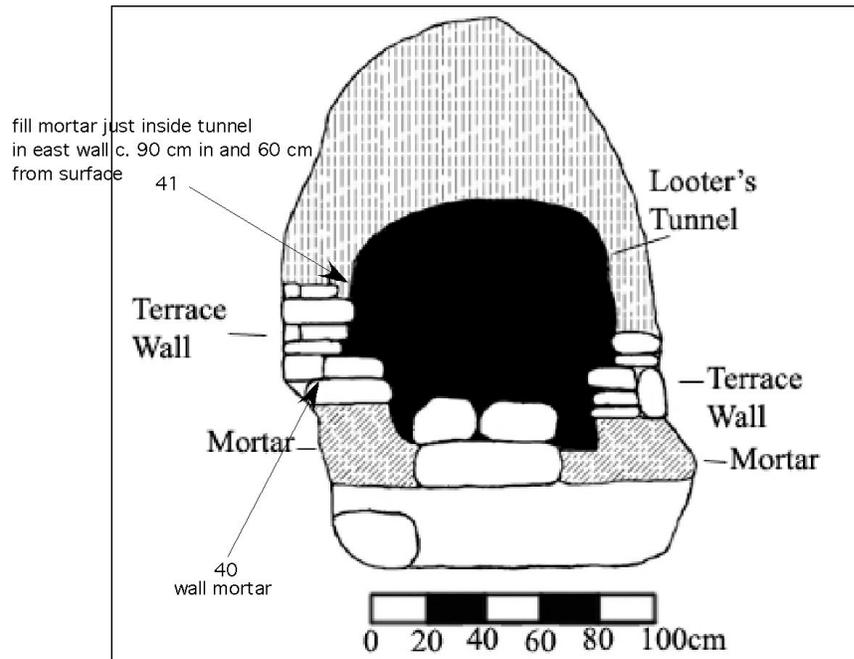


Figure 2.11 LT 14, Str. 1A-1b-II. North face.

LT 17 (Str. 1A) is a narrow exposed trench with a partial root overhang located at the base of the acropolis on its east side. Part of the trench had been backfilled for preservation purposes. The trench exposed a retaining wall made of large uncut boulders, above which was fill consisting of pebbles and cobbles (pink and yellow) with mortar. Small plaster-encrusted sherds were found within the mortar (annular base, 3 jar necks, Late Classic turnip jar sherd, Late Classic red-slipped volcanic ash bowl rim). There was a noticeable amount of stone types, with large hard stones predominating. Three samples were collected (Figure 2.12). Two of the samples, taken from the cobble and pebble layer, were loose and had a much greyer color (10YR 6/1) than any other mortar taken in Plaza 1. The third sample, taken from the retaining wall, was much like the previous two.

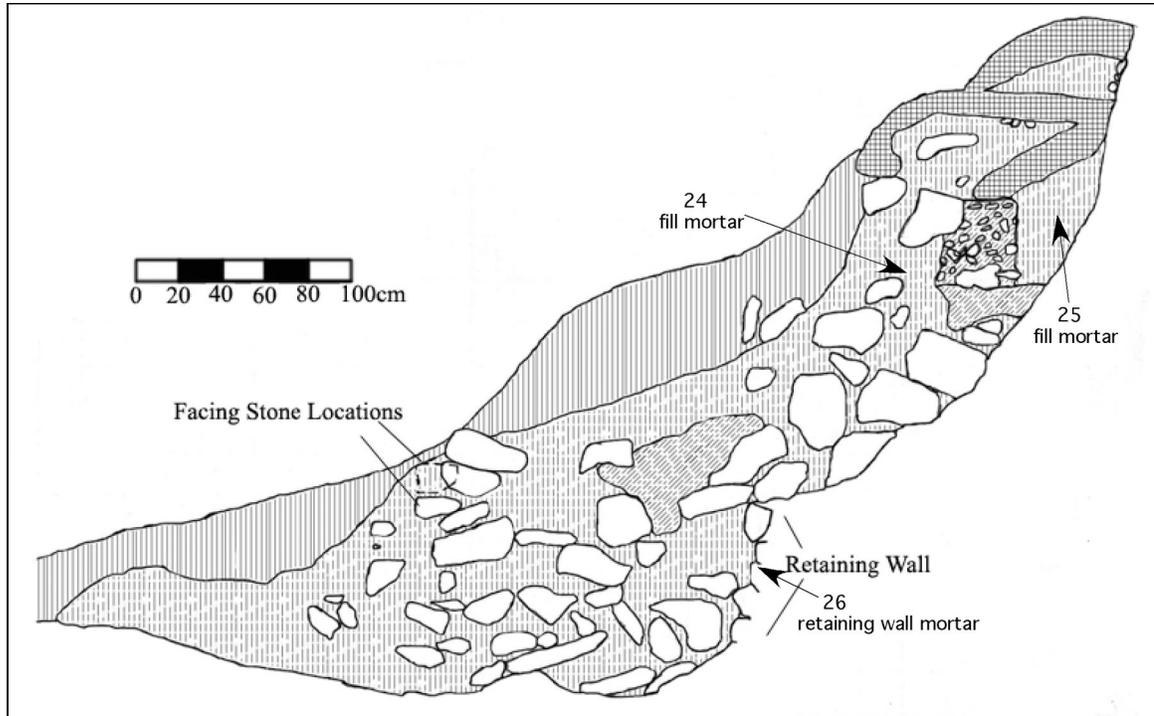


Figure 2.12 LT 17, Str. 1A. South wall.

Structure 1D

Structure 1D is a range structure located on the north side of Plaza 1 with four looter's trenches (LTs 5, 6, 27, and 28). Samples were collected from LT 6 and 28 since they exposed the most architecture. The other two LTs are quite shallow and do not expose much architecture.

LT 6 is a tunnel trench with a massive root overhang. It consists of "stone blocks, thick, hard and smooth plaster floors, sandy plaster mortar, and substantial standing walls" (Lucero 2006:5). The opening and inside of the tunnel are plastered and very white, and appear to be constructed with predominantly soft stone. Six samples were collected from the walls and floors (Figure 2.13). Samples were relatively loose with small pebbles with colors ranging from 7.5YR 6/2 to 10YR 8/2.

LT 28 is an open trench located on the back or northeast corner of Structure 1D and "reveals four terraces with relatively loose sandy plaster mortar and a cut stone façade, some of which is plastered" (Lucero 2006:6). Shaped and unshaped boulders were noted in the trench. LT 28 is extremely affected by sun and rain (mold) since it is completely exposed; thus, it is not surprising that its mortar is looser than that found in LT 6. Some root (60% of which are horizontal) and insect disturbance were also noted. A total of six samples were taken from this trench, all notably looser than samples from LT 6 (possibly due to the exposure of the trench), but with an overall similar color (10YR 7/2, 10YR 8/2) (Figure 2.14).

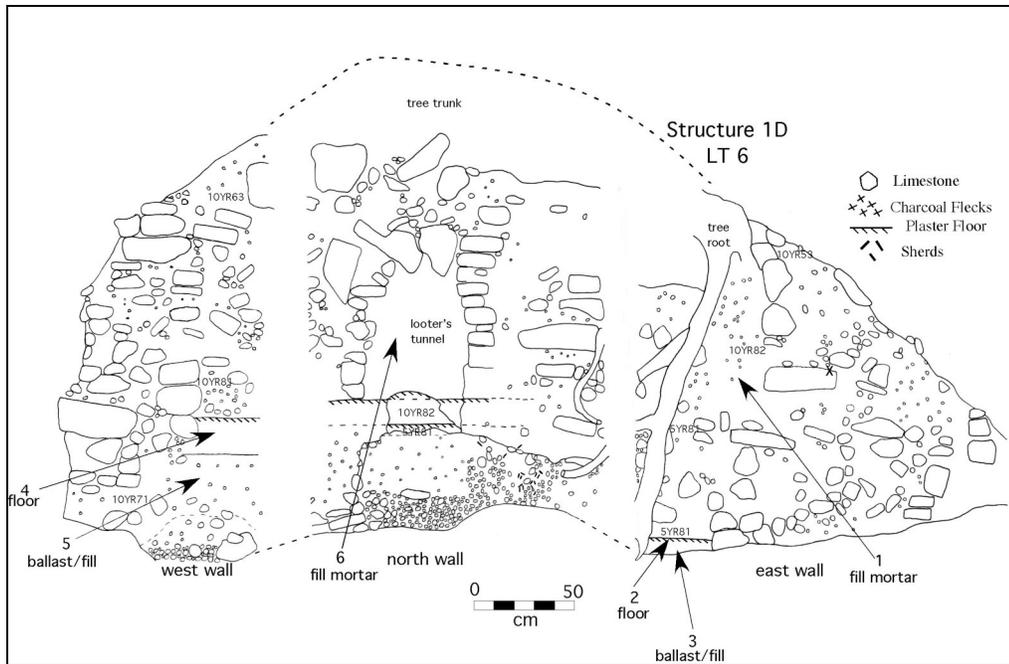


Figure 2.13 LT 6, Str. 1D. West, north, and east walls.

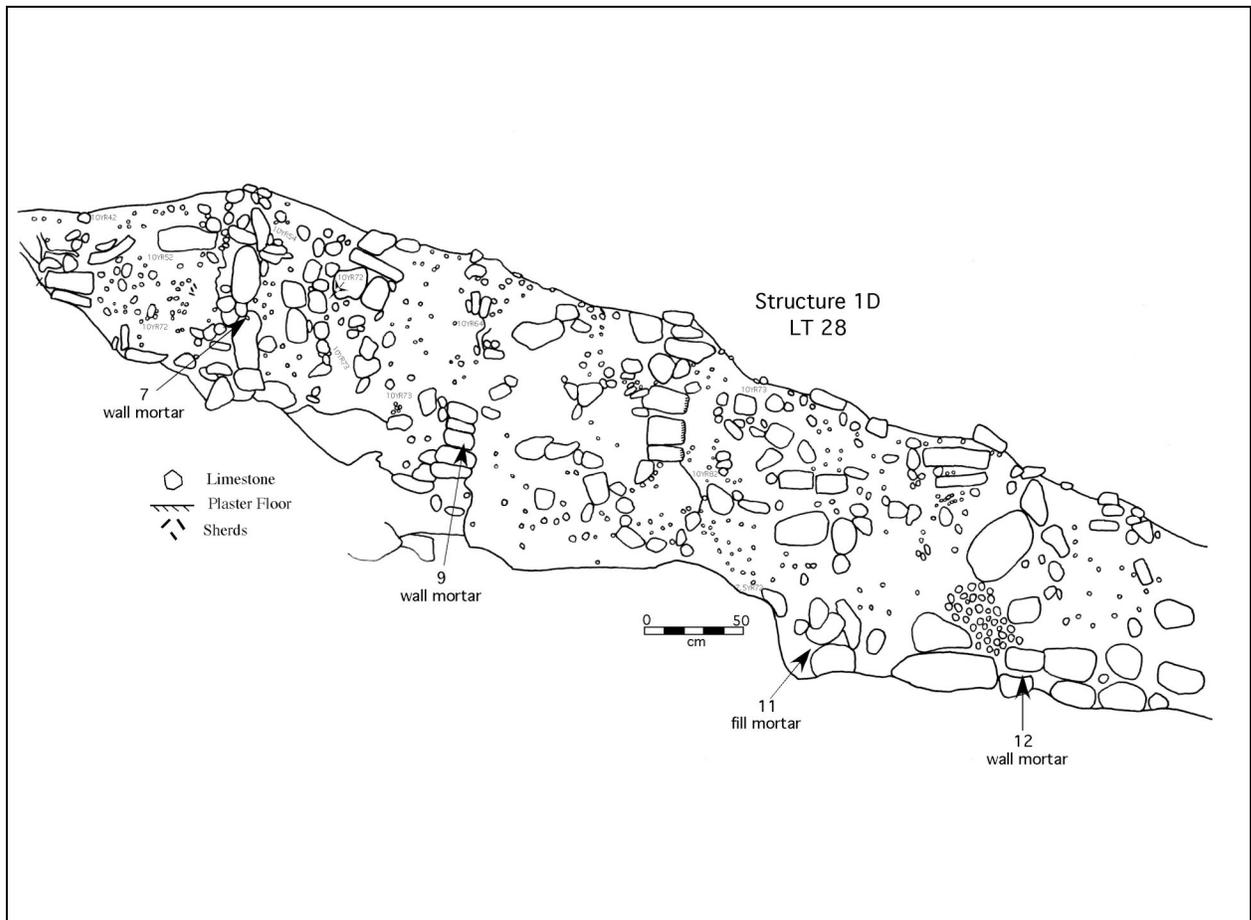


Figure 2.14 LT 28, Str. 1D. West wall.

Plaza 1 samples were made with a consistently higher quality of mortar. With the exception of samples from LT 17 and 28, all samples were a distinctly whiter mortar than the ones collected from Plazas 2 and 3. Usually samples that were taken from LTs that were affected by exposure or insect disturbance were relatively loose, whereas those taken from tunnel trenches or trenches with a slight overhang were whiter and noticeably more compact. Plaza 1 undoubtedly displays the most complex architecture at Yalbac with its various rooms, plastered walls, vaulted ceilings and remnants of red paint in LT 1, plastered steps in LT 12, wall with mortared faced stones at LT 14, and the bench and door jamb at LT 2. All seem to have been constructed with cut and/or faced limestone that was plastered with a high quality mortar. Structure 1D is more affected by root activity than Structure 1A. Dry core and mortared pebbles and cobbles were only found at LT 17, which were possibly brought from the creek.

Plaza 2

Plaza 2 is the most accessible plaza at Yalbac and is surrounded by three temples (Strs. 2A, 2F and 2E), one range structure (Str. 2D), and a ball court (Strs. 2B and 2C) (see Figure 1.2). Plaza 2 samples were collected from Structures 2C, 2D, 2E, and 2F (LTs 10, 11, 16, 18, and 21).

Structure 2C, LT 18

Structure 2C is the eastern structure of the only ball court at Yalbac and the only one with LTs (LTs 18, 19, and 20); its counterpart is Structure 2B, which is attached to Str. 2A. We focused our efforts on LT 18 because it exposed the most architecture. This structure appears to be made predominantly with a dry core of large stones and pebbles and hardly any mortar (Baron 2005). LT 18 is located on the southeast corner of Structure 2C; it is a narrow trench with some architectural overhang. The trench is noticeably affected by weathering (mold) and insect disturbance. Only one sample was retrieved from LT18 since it was difficult to locate any mortar, if it there is any (Figure 2.15). The sample was very loose and grey (7.5YR 6/2) with small pebbles, perhaps a mixture of loam and crumbling limestone.

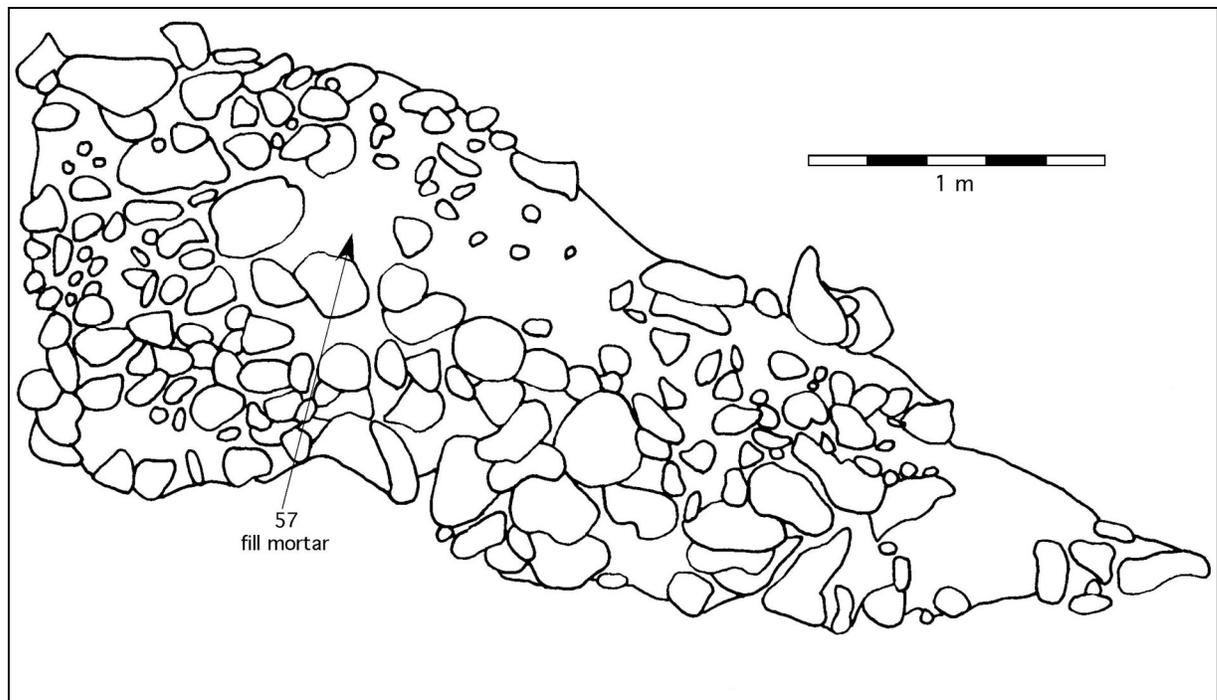


Figure 2.15 LT 18, Str. 2C. North wall.

Structure 2D, LT 10

Structure 2D is a range structure located on the north side of Plaza 2. It has only one looter's trench (LT 10), on its southeast corner. LT 10 is a narrow trench with a natural (root) overhang; it has been noticeably affected by rain since mold is present. The trench exposed plastered walls and parts of a floor 5.5 cm thick in the north wall. The west wall appears to have been constructed with cobbles and plaster, while the north wall is made of larger soft stone. Three samples were collected from LT 10, one from the wall fill and one from the fill/ballast from under the floor (Figure 2.16). The fill samples were loose with pebbles and possible loam (10YR 6/2), and the floor sample was very white (5YR 8/1) and compact.

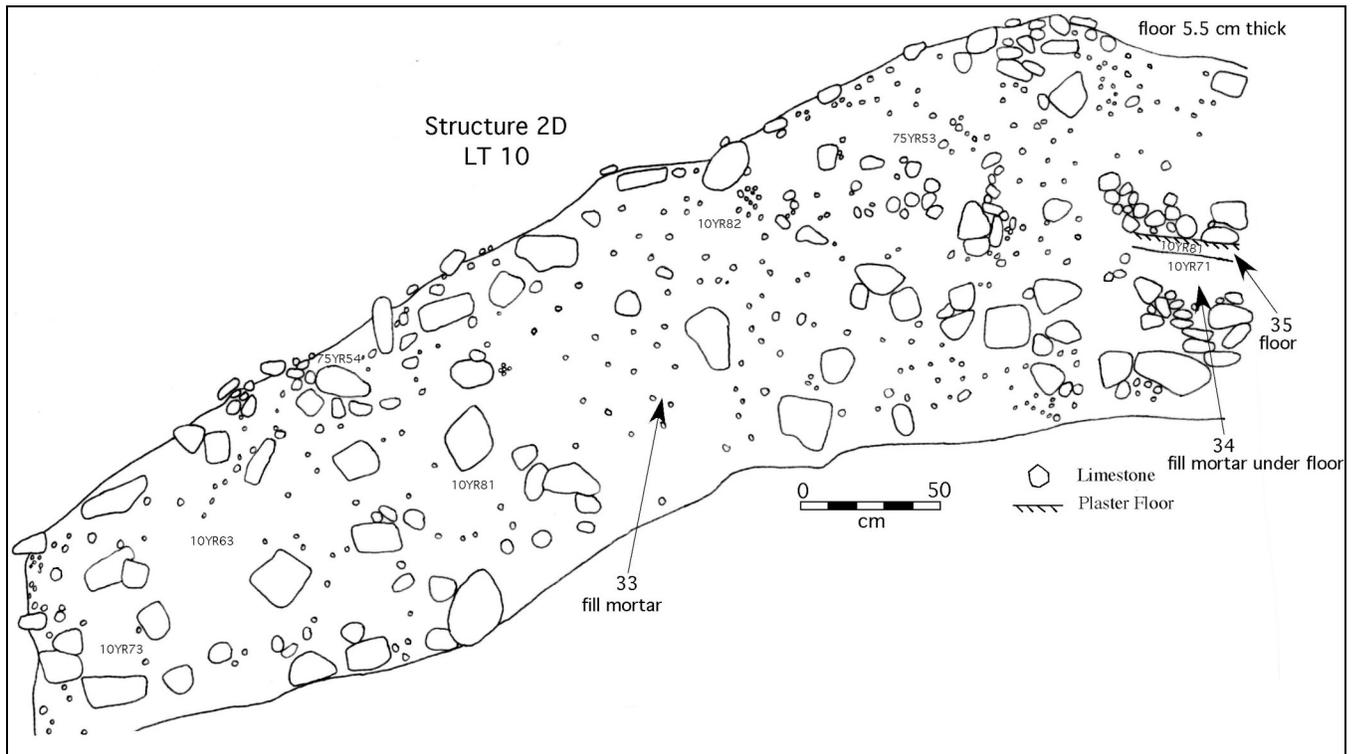


Figure 2.16 LT 10, Str. 2D. West wall.

Structure 2E, LT 16

Temple 2E is located on the east side of Plaza 2 (Lucero 2005). LT 16 is located on the top west side facing the plaza. The trench has a large root overhang; the protected architecture is very white, while the rest of the trench is covered in mold. A few arranged stones indicate a possible floor made of mostly yellowish and white soft limestone (10YR 7/1, 10YR 8/2). The north wall is made of cut stone facades, shaped on all four sides. Two samples were collected from LT 16, which were consistent in color with plaza 1 samples, fine grained and no pebbles (Figure 2.17). An orange sherd was noted in the fill. From the debris we recovered a red-brick rock that appears to be basalt (very hard and porous).

We were curious if looters had expanded LT 16 since it had been profiled in 2002 towards the summit (east) (see Lucero 2003, 2005); either that or there has been additional collapse on the east wall under the overhang towards the center of the temple summit. We noted a possible plaster floor and ballast.

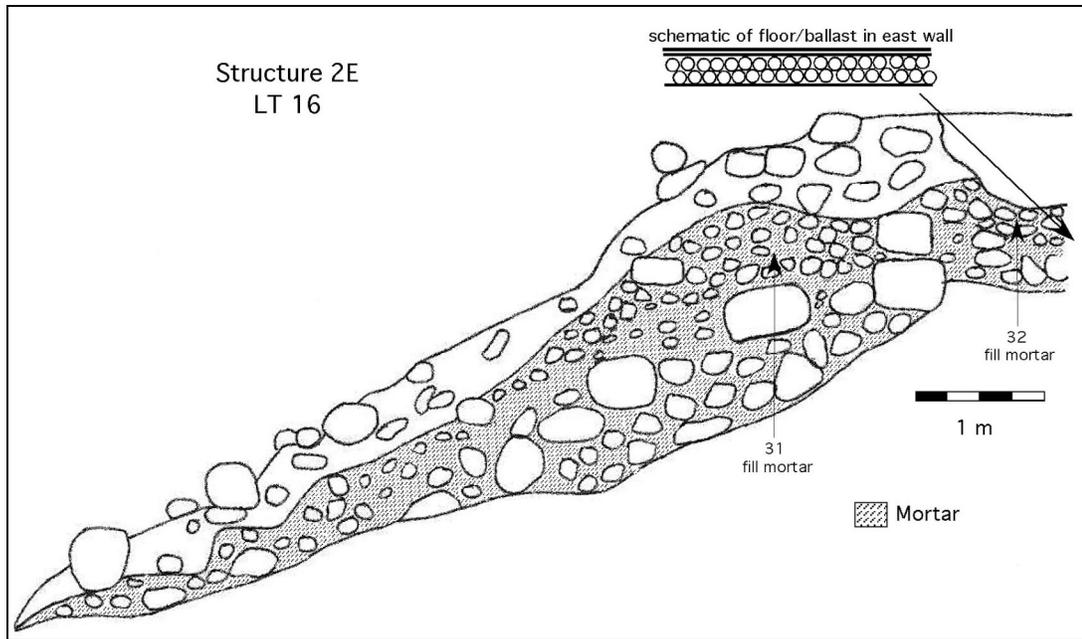


Figure 2.17 LT 16, Str. 2E. North wall.

Structure 2F, LT 11 and 21

Temple 2F is on the southeast corner of Plaza 2 and has two LTs (11 and 21) (Lucero 2005). LT 11 is a narrow trench with an architectural and natural overhang and is located on the south side of the temple. The trench exposed a wall on the west side with faced boulders of green, yellow and orange limestone, and appears to represent one construction event. Mud bees impacted the trench. The one sample collected from LT 11 was loose and brittle with small pebbles (Figure 2.18). Upon closer inspection, it appears that what had previously been labeled clay loam mortar (Lucero 2003) instead likely is a mixture of crumbling limestone and soil.

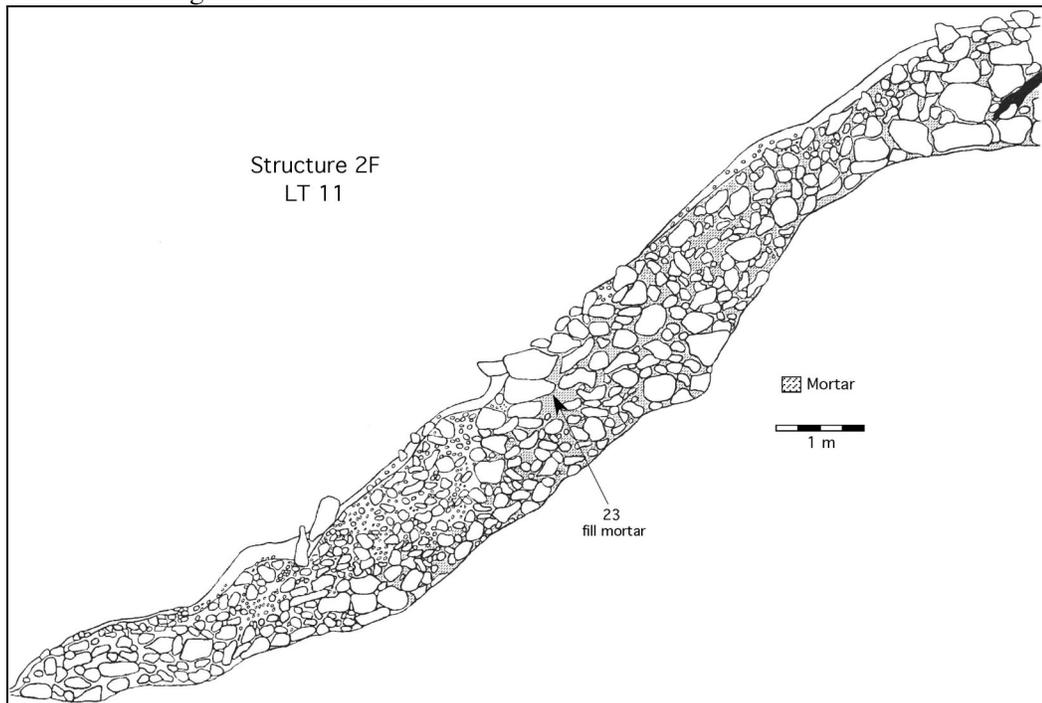


Figure 2.18 LT 11, Str. 2F. West wall.

LT 21 is a massive exposed trench located on the west side of the temple facing Plaza 2. The trench is noticeably affected by water and insect disturbance; minor root activity was also noted. At least three distinct terrace walls are exposed on the north wall of the trench consisting of boulders and faced stones. The four samples retrieved from LT 21 were consistently loose with pebbles and colors ranging from 10YR 6/2 to 10YR 7/2 (Figure 2.19). The outer wall of the upper most terrace consists of a tightly stacked row of large faced boulders—perhaps even without mortar.

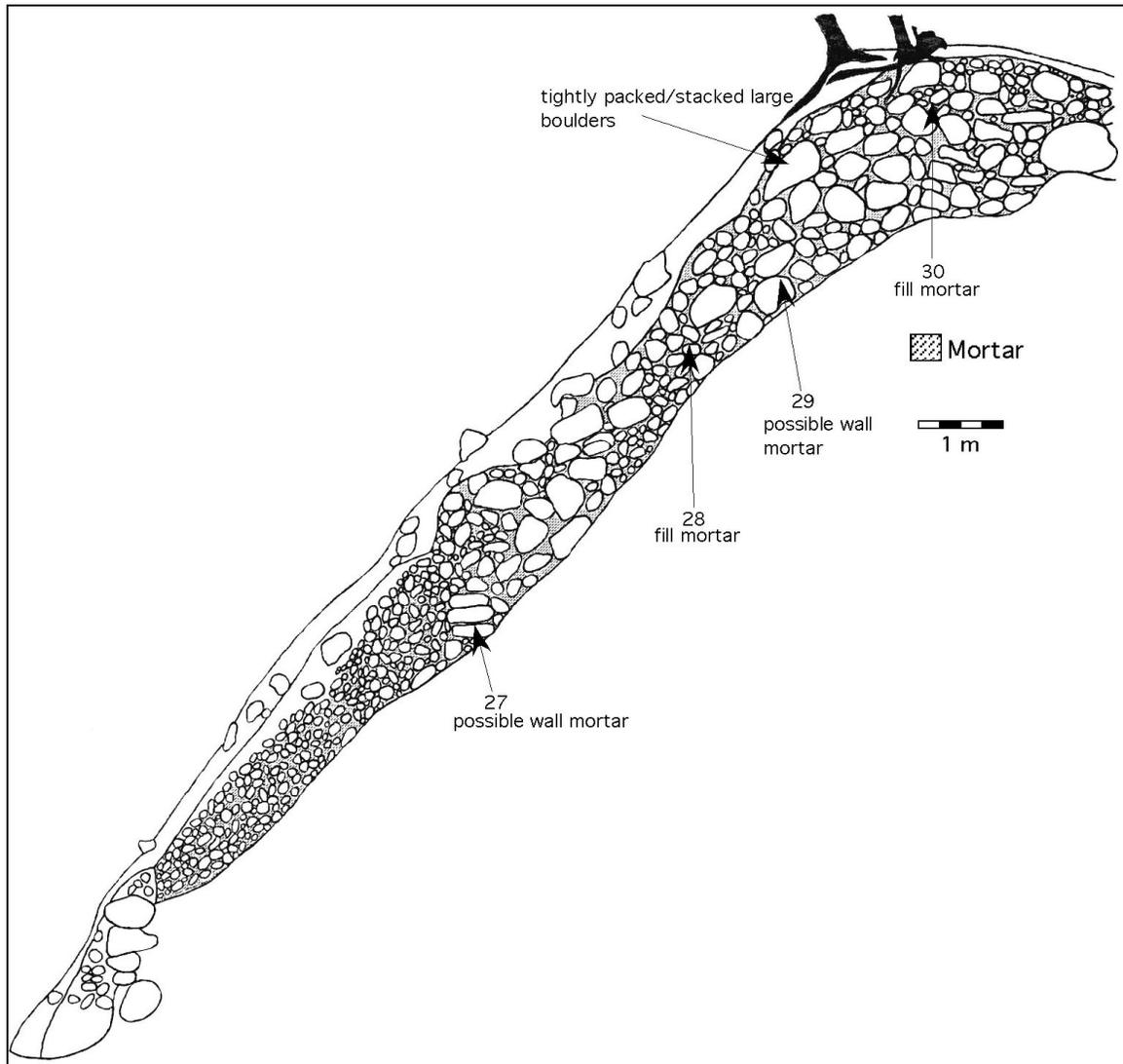


Figure 2.19 LT 21, Str. 2F. North wall.

Plaza 2 samples yielded the lowest quality mortar at Yalbac. Though at first I assumed that climate and insect disturbance had affected the quality of mortar, I realized that the low quality of mortar was consistent in all four structures. Mortar was extremely loose with pebbles in an off-gray color. The lowest quality sample was retrieved at the ball court, Structure 2C, which had a predominantly dry core fill. The highest quality sample was retrieved from Structure 2E since the mortar was whiter and more compact. The trenches found in Plaza 2 exposed some architecture, such as walls and floors. Larger boulders than the ones found at Plaza 1 were more often used when constructing temples at this plaza, both uncut and faced.

Plaza 3

Plaza 3 is a semi-restricted plaza surrounded by two large winged temples (Strs. 3A and 3D), a smaller pyramid temple (Str. 3B), and three small rectangular structures (Strs. 3C, 3E, and 3F). Samples from Plaza 3 were collected from Structures 3A, 3B, and 3D (LTs 7, 8, 9, 25, 26, and 29).

Structure 3A, LT 7, 25 and 29

Str. 3A is temple with wings on its north and south sides located to the west side of Plaza 3 with three looter's trenches (7, 25, and 29). "It measures 45 x 25 m in size, and is taller in the back, measuring 12 m, and shorter on its eastward facing front side, measuring 11 m" (Andrade 2005:43).

LT 7 is a tunnel trench located on the back or west side of Temple 3A. Its entrance is completely mortared; dry core is seen on the inside of the tunnel in earlier construction phases. Even though the walls have been protected, mud bees have invaded the trench and left their mark. Their effects were evident in the one sample taken from the north wall from the Late Classic construction phase (see Andrade 2005:Figure 3.5, area 18); mortar was grey (5YR 7/2) and loose with small pebbles (Figure 2.20). We did note the presence of pinkish, yellowish, and white limestone rocks in the fill.

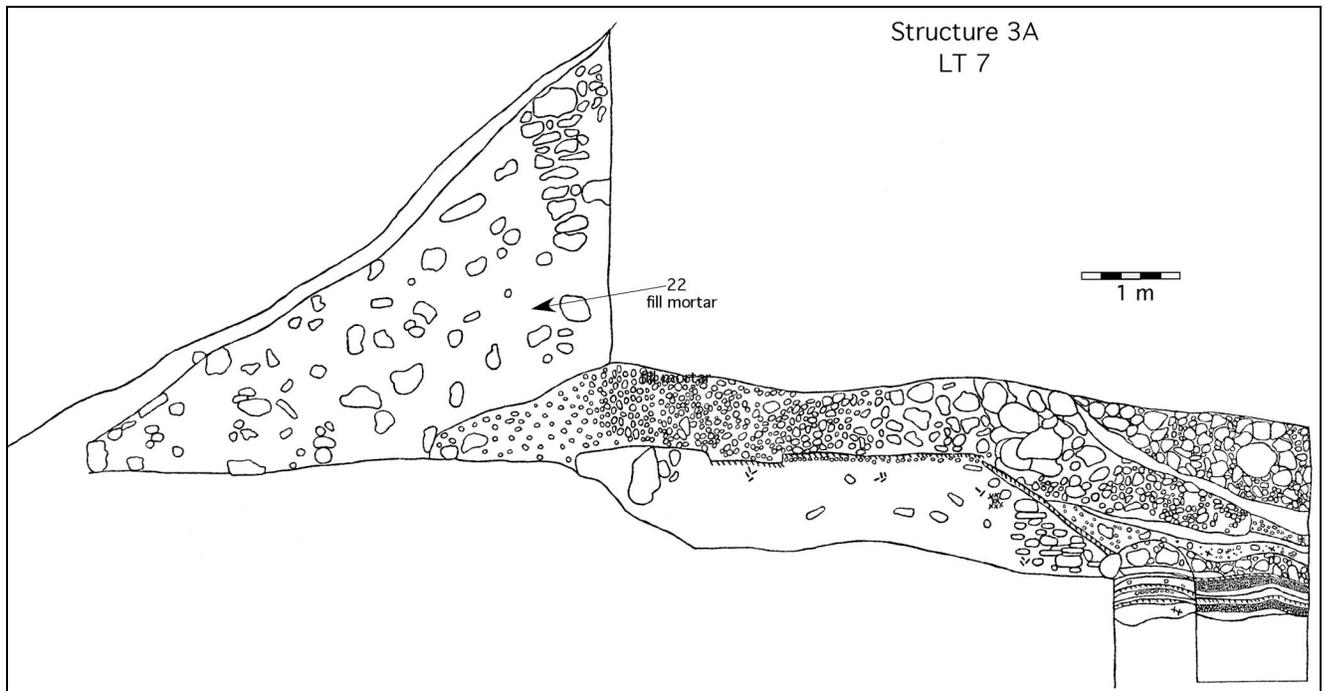


Figure 2.20 LT 7, Str. 3A. North wall.

LT 25 is located at the summit on the east side of Temple 3A facing Plaza 3. It is an open semi-circular trench with insect disturbance that is somewhat protected by a natural and architectural overhang. The trench exposed three terraces "composed of medium size cobbles and plaster fill with facade stones faced on all four sides" (Andrade 2005:44). Only a few hard limestone boulders are noted—nothing like at LT 29. Mostly a soft porous limestone and some dry core fill are visible in the trench. Two samples were collected; one was a sample of weathered yellow (7.5YR 7/4) limestone and the other was the actual mortar (Figure 2.21). The yellow was likely weathering limestone since we noticed yellow limestone boulders in the fill (c. 50%), especially concentrated towards the west (i.e., summit). The presence of the large boulders also explains the horizontal root growth. The mortar sample was loose and gray (10YR 6/2) with cobbles and pebbles.

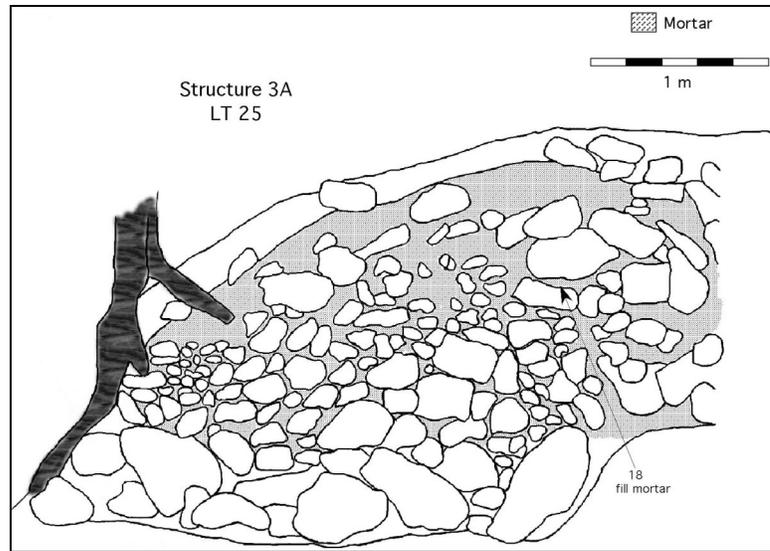


Figure 2.21 LT 29, Str. 3A. South wall.

LT 29 is a long exposed trench, the top of which largely has been covered with plaster and dirt prior to the 2007 season for preservation purposes. It is located in the south side of the temple. Minor root activity was noted, as well as some insect disturbance. “The trench exposes strata of sorted cobbles and boulders, with and without mortar. The ones without mortar are made of cobbles and small boulders. The mortared portion is plaster with gravel” (Andrade 2005:45). Two samples were collected, which consisted of a loose gray (2.5Y 6/2) mixture of mortar, loam and pebbles (Figure 2.22). Even though much of the upper portion of LT 29 was covered, based on what was visible, there seems to be fewer yellow limestone boulders when compare to LT 25.

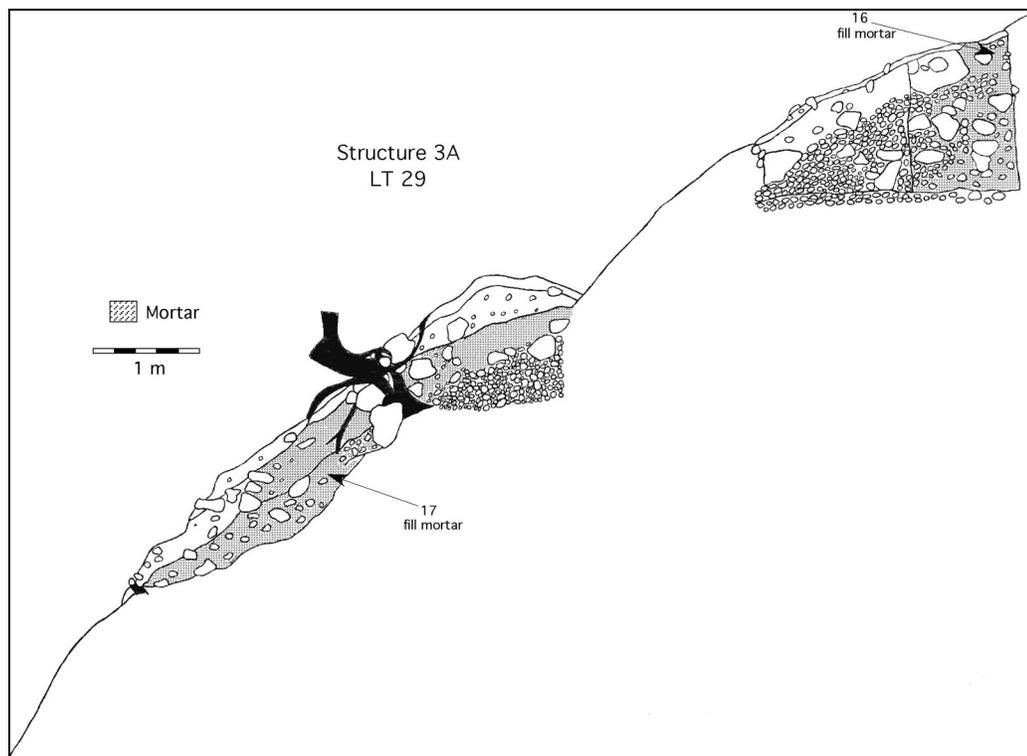


Figure 2.22 LT 29, Str. 3A. West wall.

Structure 3B LT 9

Temple 3B, the smallest temple at Yalbac, is located on the north side of Plaza 3. The temple has one looter's trench (LT 9) that cuts through the entire structure. The LT exposed mostly mortared fills, but does include phases built with large faced boulders without mortar (which had previously been defined as mortared in 2004; see Lucero 2005) (Figure 2.23). "The looter's missed part of a Late Classic burial immediately underneath the summit façade on the eastern side" (Lucero 2005:7). A noticeable amount of root activity was noted, as well as snake and insect disturbance. Hard limestone was noted in looter's debris. While collecting the three samples, pottery sherds and human bone fragments were noted on the trench floor, possibly from the burial found in 2004. Samples were gray (7.5YR 6/2) and loose with pebbles. Two plaster encrusted red-slipped sherds were noted, and one plaster encrusted Late Classic volcanic ash plate sherd was collected.

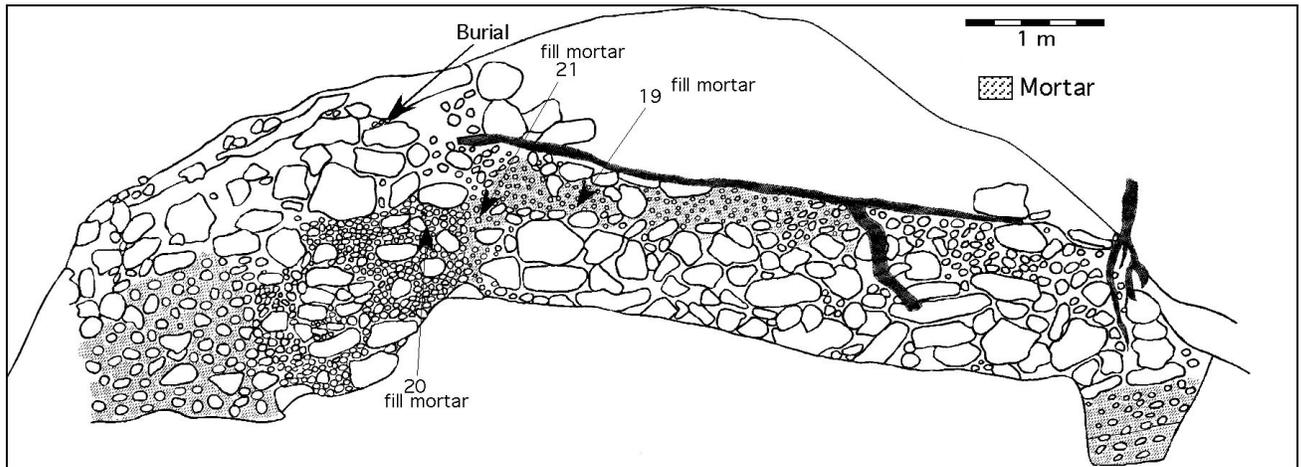


Figure 2.23 LT 9, Str. 3B. South wall.

Temple 3D, LT 8

Temple 3D is the largest temple on Plaza 3 and is located to the east side of Plaza 3. Its wings, one on the north side and one on the south side, likely house tombs (Lucero 2005). The temple has two LTs (8 and 26) and samples were collected from LT 8; LT 26 is really just an extension of LT 8 to the east.

LT 8 is a long exposed trench running down the front center of the temple facing Plaza 3. The trench largely has been backfilled for preservation purposes. Its exposed nature, as well as the presence of lots of roots and insect disturbance, has contributed to its instability. As a result, one of the stones drawn on the 2002 profile have since fallen out of the wall. One outcome, however, was that the north wall now reveals dry core (cobbles and pebbles) fill in Levels II and IV, which had previously been labeled as mortared fill (Lucero 2003). What we had likely seen before as mortar was a mixture of weathered limestone and soil.

This trench exposed four terraces, which appear to have dry core and mortared fills with faced stones and cobbles and pebbles. In the lower part of the trench, limestone and river stone were noted. A great variation of stone types also was noted. "Looters disturbed a substantial tomb based on the artifacts strewn about, including a human skull fragments, a complete unmodified clam shell, a slate disc, obsidian, a marine shell disc and numerous sherds" (Lucero 2005:10). Three samples were collected (Figure 2.24), two of which were hard and compact (7.5YR 8/2), while the other was looser with small pebbles (5YR 6/1). Several volcanic ash body sherds and flakes were noted, noticeably more so than in any other LT; either they were used for fill or represent looter's debris. Out of the collapse debris we pulled out a pink-colored limestone (10R 6/6) that we do not think is dolomite.

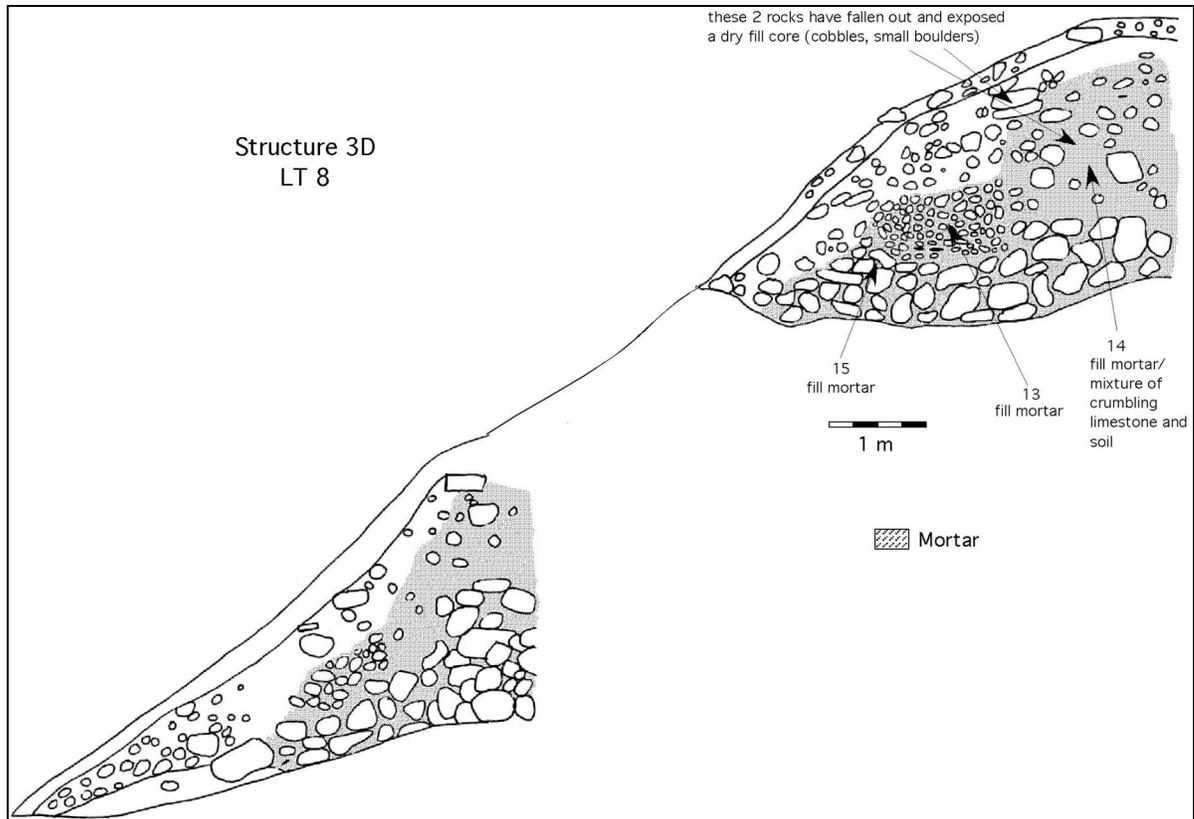


Figure 2.24 LT 8, Str. 3D. North wall.

The quality of mortar collected at Plaza 3 was predominantly a grey loam with pebbles. This might be due to climate and insect disturbance, or that the mortar was made of clay loam and pebbles. Or it is possible that some phases were actually made with a dry core fill, which were contaminated with soil and crumbling limestone. The mortar that is found is of a better quality than that at Plaza 2, though it did not compare to the mortar found at Plaza 1. The temples of Plaza 3 are smaller than the structures found at Plaza 1. Other than their size, temples at Plaza 3 show more variation in the type of stone used. Harder limestone of various colors, as well as river stone and cobbles and pebbles plastered with gravel where found.

Discussion and Concluding Remarks

Structures at Yalbac show noticeable variation in their location, construction patterns and mortar quality, which makes it difficult to assume that all temples and structures were used for the same purpose or were sponsored by the same group of elites. Plaza 1, the most restricted plaza, was likely constructed by and for royalty. The benches, vaulted ceilings and painted walls are all characteristics of a royal building program. The mortar was consistent in color and quality; the construction patterns, though from different construction periods, demonstrated more durable mortar and plaster. The high quality of mortar shows that the labor involved required skill and labor. These structures and the ceremonies that took place at Plaza 1 were meant for an exclusive audience of elites and royals, but not necessarily for commoners.

Both royalty and commoners used Plaza 2, the least restricted plaza. This plaza contains the only ball court, suggesting that elites used games and rituals to integrate commoners. The relatively low quality of mortar and the large temples indicate public architecture. Though labor and some wealth were invested in the construction of these buildings, they do not compare to the architecture and mortar found at the acropolis. Some variation is found among the structures in Plaza 2. The ballcourt was almost

entirely made of dry core fill, which requires less materials and labor, but is more difficult to contain and is thus relatively unstable (Schele and Mathews 1998:30). Structures 2D and 2F show similarities in their construction patterns and in the color and consistency of their mortar, suggesting that the same group of people constructed them. Temple 2E's mortar, in contrast, is much whiter and of a higher quality. Since Temple 2A has not been looted and we could not collect samples, we can only surmise that it was built similarly to other Plaza 2 temples.

Plaza 3 temples vary from Plaza 2 temples. Plaza 3 is semi-restricted and has winged temples; perhaps nobles and/or royals used this plaza for the veneration of their dead. The distinct patterns of limestone and mortar demonstrate different builders more so than the others. Although the mortar was of a high quality, it still does not compare to the acropolis, which suggests that non-royal elites sponsored Plaza 3 temples. Further, and unlike at Plaza 2, temples at Plaza 3 are more uniform in their construction patterns, though made with more varied stones. They all have a combination of boulders, varied limestone, faced stones, and cobbles and pebbles with superior mortar.

Preliminary results suggest that royals built Plaza 1 buildings for restricted use. Plaza 3 temples were sponsored by a group of nobles, but commoners probably had access to them. Plaza 2 temples and structures were probably sponsored by different groups of elites, and since they likely were for public use, less labor was expended in their construction.

These preliminary results provide a better understanding of temple construction at Yalbac, and the method can be used to assess temple variability at other Maya centers. The lack of iconography at Yalbac requires that we explore different kinds of evidence to reveal the roles and dynamics temples played in Classic Maya society. Although this small-scale project provided detailed information on temple attributes, further analysis is still needed to fully understand the variability and construction patterns at Yalbac. The fact that the site is completely covered in vegetation creates a barrier when assessing architecture style. Although looter's trenches allow us to analyze the site without further disturbing it, perhaps small test pits in strategic locations would yield a more complete profile of each temple. Therefore much can still be done to broaden the understanding of Maya architecture at secondary sites, and future fieldwork and research will hopefully help to answer unanswered questions.

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Chapter 3
Over the Bajo and Through the Pools:
The 2007 Settlement Survey Transect from Yalbac to the Cara Blanca Pools

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This report is a summary of the archaeological survey portion of the 2007 Valley of Peace archaeology project (VOPA). We have spent the previous three field seasons creating a 400-meter-wide survey transect beginning at the site core of Yalbac and running northeast to the Cara Blanca pools. This season, our focus turned to the extension of the transect east across the pools, finally terminating at a swampy area east of Pool 6 (Figure 3.1). The transect is now complete. This report will present the accumulated survey and excavation data from the 2007 VOPA settlement survey, and the questions that will be answered using this dataset.

The core questions that inform the settlement survey are as follows:

1. How does the string of 22 pools relate to the ancient Maya center of Yalbac (6 km distant) socio-politically, and is this illustrated in terms of water management and ritual?
2. What factors did the Maya use when choosing certain pools for settlement over others?
3. Has the importance of locating settlement near pools changed over time?

The data presented below will be used as the core of my dissertation research.

Research strategy

The settlement survey ran from late-May until the end of June, 2007. The survey was undertaken by small crews consisting of three or four crew members, all supervised by myself as field director. The focus of this year's survey was the continuation of the transect between the Yalbac site core and Pool 7 which was begun in 2004, and the construction of a transect that crossed the pools in an easterly direction, terminating at Pool 6 (see Figure 3.1). Earlier versions of the survey project called for the transect to continue on from the pools and ultimately terminate at the site of Saturday Creek, but this was deemed unfeasible because of the preponderance of swamp conditions between Saturday Creek and the pools.

The transect was constructed using a Brunton Compass and tripod in tandem with a Garmin Venture GPS (2005) and/or a Garmin Vista GPS (Kinkella 2007). This combination of technology facilitated the maintenance of a straight baseline using the Brunton, while the GPS units allowed us to record mounds, pools, and mound groups. In accordance with other survey projects in the Belize Valley area (see Ashmore 1996), a width of 400 meters was used, a width that is considered the best compromise between data acquisition and the economical use of time and resources. While the transect between Yalbac and Pool 7 was aligned precisely at 41.5 degrees, the continuation of the transect across the pools followed the natural positions of the pools themselves. Sketch maps were made of all solitary mounds and mound groups encountered using pace and compass techniques (see Appendix on cd). Larger mound groups (e.g., M7 at Pool 7) were mapped using a total station. Ceramic rim sherds were collected whenever they were present on mound surfaces (Table 3.1), and 1 x 1 meter test units were excavated at several groups for the purposes of chronological purposes (see Appendix).

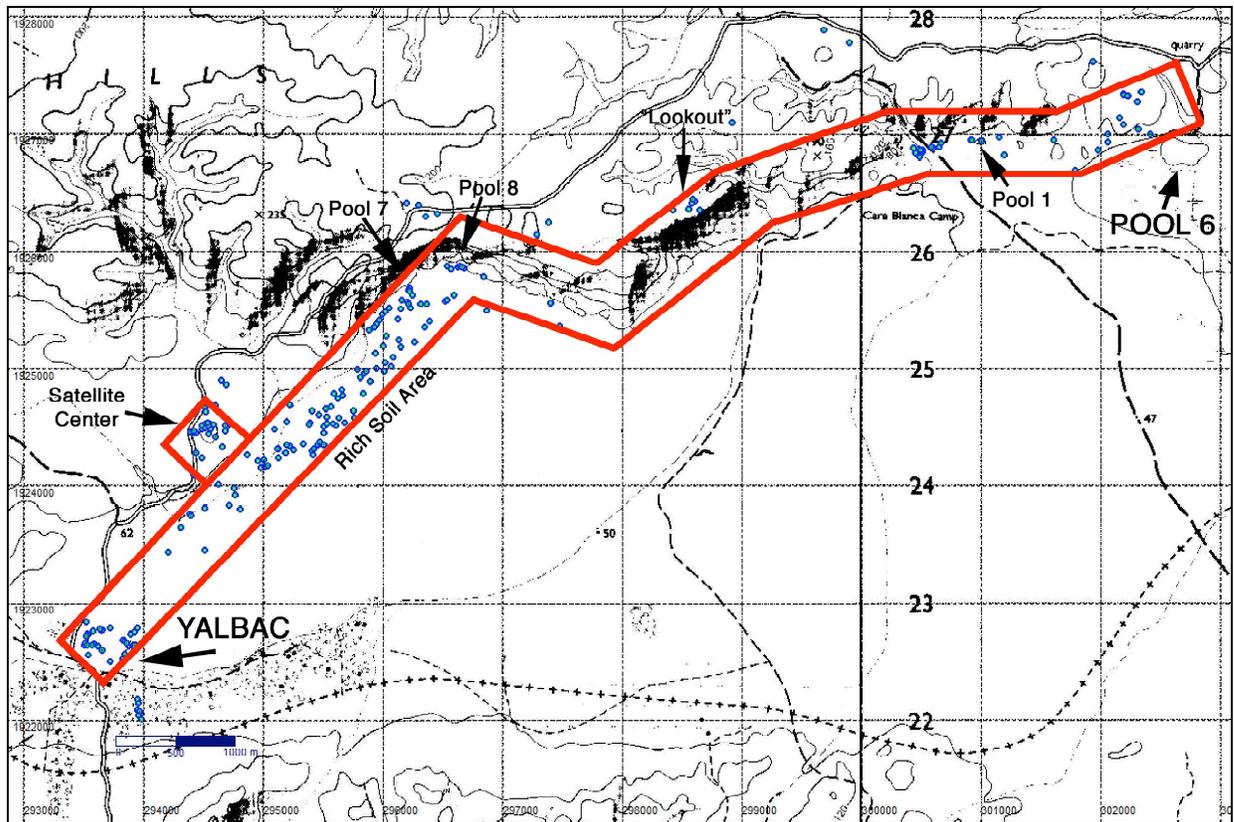


Figure 3.1 The VOPA settlement survey with major mound clusters labeled.

Table 3.1 2007 Provenience Data and Ceramic Dates

Cat#	Site	Unit	Stratum Context	Freq	Description and comments
836	M127	Surface		1	1-5-12 LC everted jar rim
837	M72	Surface		1	1-5-12 LC everted jar rim
838	M78	Surface		1	1-5-11 LC VA bowl rim
839	M112	Surface		1	1-5-11 LC VA bowl rim
840	M91(?)	Dozer cut		2	1-5-11 bowl rims
840	M91(?)	Dozer cut		1	1-5-12 jar rim
841	M109	Surface		1	1-5-11 bowl rim
842	M87	Surface		1	1-5-13 LC VA plate sherd
843	M114	Surface		1	1-5-50 jar neck
844	M74A	Surface		6	1-5-12 LC everted jar rims
844	M74A	Surface		1	1-5-13 LC VA plate rim
844	M74A	Surface		1	1-5-11 bowl rim
845	M74C	Surface		2	1-5-12 LC everted jar rims
845	M74C	Surface		1	1-5-50 jar neck
845	M74C	Surface		3	1-5-11 LC VA bowl rims
846	M107	2 nd terrace fr bottom	Surface	6	1-5-10
847	M97	Tree fall		2	1-5-11 LC VA bowls
848	M104	BC TP	101	2	1-5-10 rims
848	M104	BC TP	101	1	1-20-90 body sherds
848	M104	BC TP	101	1	1-5-15 possible lid
849	M132	Outside cav	Clean-up	1	1-5-12 ~LC jar rim

		entrance			
850	M104	BC TP	102	2	1-20-90, 1-5-50 body, jar neck
850	M104	BC TP	102	1	2-24-90 brown crystal
851	M104	BC TP	105	2	2-10-13 chert cores
851	M104	BC TP	105	1	1-5-11 bowl rim
852	M103	Tree fall	Near large structure	2	1-5-17 basal flanges
852	M103	Tree fall	Near large structure	1	1-5-36 annular base
852	M103	Tree fall	Near large structure	3	1-5-12 jar rims
852	M103	Tree fall	Near large structure	2	1-5-50 jar necks
852	M103	Tree fall	Near large structure	1	1-5-11 bowl rim
853	M135	Surface			1-5-13 ~plate rim
854	M154	Surface		1	1-5-13 LC VA plate rim
855	M129(3)	Surface		1	1-5-13 LC VA plate rim
855	M129(3)	Surface		1	1-5-12 LC everted jar rim
856	Rockshell	Surface		1	1-5-10 rim
857	M132	Cave TP	101	7	1-20-90
857	M132	Cave TP	101	3	1-5-12 LC jar rims
857	M132	Cave TP	101	1	1-5-11 LC bowl rim
858	M159	Tree fall		1	1-5-12 LC jar rim
859	M170	Larger struct	Surface	2	1-5-50 jar necks (1 VA)
860	M6 Pool	LT	Clean-up	1	2-22-90 granite cobble
860	M6 Pool	LT	Clean-up	3	1-5-12 jar rims (2 LC everted)
861	M6 Pool	TP	101	1	2-10-12 biface fragment
861	M6 Pool	TP	101	2	4-20-10 land shell
861	M6 Pool	TP	101	1	2-10-11 chert flake
861	M6 Pool	TP	101	1	1-5-50 jar neck
861	M6 Pool	TP	101	15	1-20-90 body sherds (2 VA slipped, 6 VA)
861	M6 Pool	TP	101	1	2-10-19 white chert blade
862	M112	LT	In context	9	1-5-11 LC VA bowl sherds from same vessel
863	M112	LT	In context	1	1-5-50 jar neck
864	M186	Strs. C and	Bump	3	1-5-13, 1-5-11 (2 LC plate, 1 LC bowl)
865	M124	TP	101	3	1-2-90 body sherds
865	M124	TP	101	1	1-5-17 flange
865	M124	TP	101	1	1-5-12 LC everted jar rim
866	M173	'rivenl'	Surface	1	2-10-11 chert flake
866	M173	'rivenl'	Surface	1	1-5-50 jar neck
866	M173	'rivenl'	Surface	2	1-5-12 jar rims (1 LC everted)
866	M173	'rivenl'	Surface	1	1-5-13 LC plate rim
867	M124	Stela TP	101	13	1-20-90 body sherds
867	M124	Stela TP	101	1	1-5-17 flange
867	M124	Stela TP	101	2	1-5-13 plate (~LC)
867	M124	Stela TP	101	3	1-5-11 (2 sraight-sided bowls) (~LC)
868	M124	Stela TP	102	9	1-20-90 body sherds
868	M124	Stela TP	102	1	1-25-90 diagnostic sherd
868	M124	Stela TP	102	1	1-5-50 jar neck
868	M124	Stela TP	102	1	1-5-37 flat base
868	M124	Stela TP	102	2	1-5-13 plate rims
868	M124	Stela TP	102	2	1-5-12 jar rims

869	M186	Str. A LT	Wall mortar	1	1-5-12 LC everted jar rim
870	M104	Surface	-	1	2-10-12 biface
871	M124	TP	102	2	1-20-90 body sherds
871	M124	TP	102	1	1-5-13 LC plate rim
872	M170	TP	101	-	Burial vessel #1; 1-5-42 LC VA impressed plate—nearly complete
873	M170	TP	101	2	2-10-11 chert flakes
873	M170	TP	101	3	1-20-90 body sherds
874	M170	TP	101	-	Burial vessel #2; 1-5-42; black-on-orange thin-walled vase—nearly complete

Mounds Observed

For 2007, the survey crew was able to document approximately 120 additional mounds and mound groups that were located within the 400-meter-wide transect, bringing the current tally to the vicinity of 170. The mounds ranged in size from less than a meter to approximately 5 meters in height. Each mound or mound group encountered was given an “M” number. The numbers for 2005 begin at M20 and go through M52, and the 2007 numbers begin at M70 and go through M188. The majority of surface ceramics, as well as those found in controlled excavations, date to the Late Classic (A.D. 700-900) (Table 3.1).

The completed settlement map indicates six distinct areas of mound clustering in the following areas:

1. The Yalbac site core.
2. A smaller satellite center near Yalbac (M104).
3. A large patch of rich Class II soil between Yalbac and the pools.
4. A strategic “lookout” area on top of a high ridge (M112).
5. A hilly area north of pool 6 (M124).
6. The area around Pools 1, 7, 8, and 9.

Each of the above mentioned settlement clusters will be summarized below, and the mound descriptions are found in Appendix.

Soils in the VOPA Settlement Survey Area

In the past, we have relied heavily on Fedick’s soil classifications in order to locate settlement (Fedick 1996). On the map below (Figure 3.2), I have replicated his five soil classifications as they relate to the survey area, and have overlain the settlement that was recorded. There is an obvious correlation between good (Class II) soils and the location of settlement, especially in the area between Yalbac and Pool 7. A large percentage of settlement location on the transect can be explained in this manner; the ancient Maya built their homes on good soils. Some of the only contradictions to this overall settlement strategy occur at the pools; I argue that this is because the importance of these pools as a location for ritual goes beyond farming considerations.

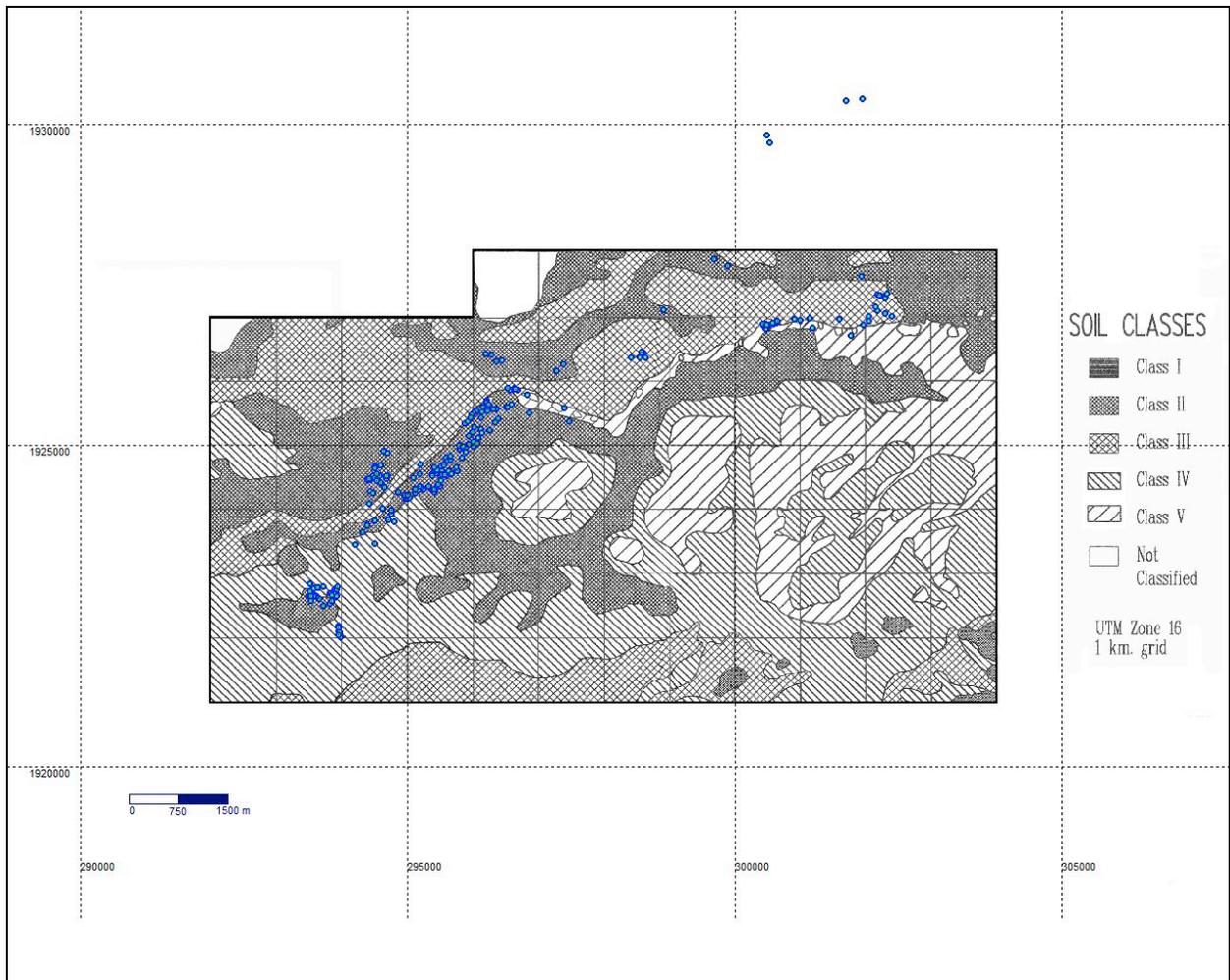


Figure 3.2: Soil classification in the VOPA settlement survey area with recorded settlement.

Area One: The Yalbac Site Core

The Yalbac Site core (Figure 3.3) is the most extensively studied portion of the transect, as the VOPA crew has focused on this site since 2002 (see Lucero 2003, 2004, 2005). The survey results show that the site core location correlates strongly with good class II soils; the absence of good soils to the north of the site correlates with a large “no man’s land” where no settlement was found.

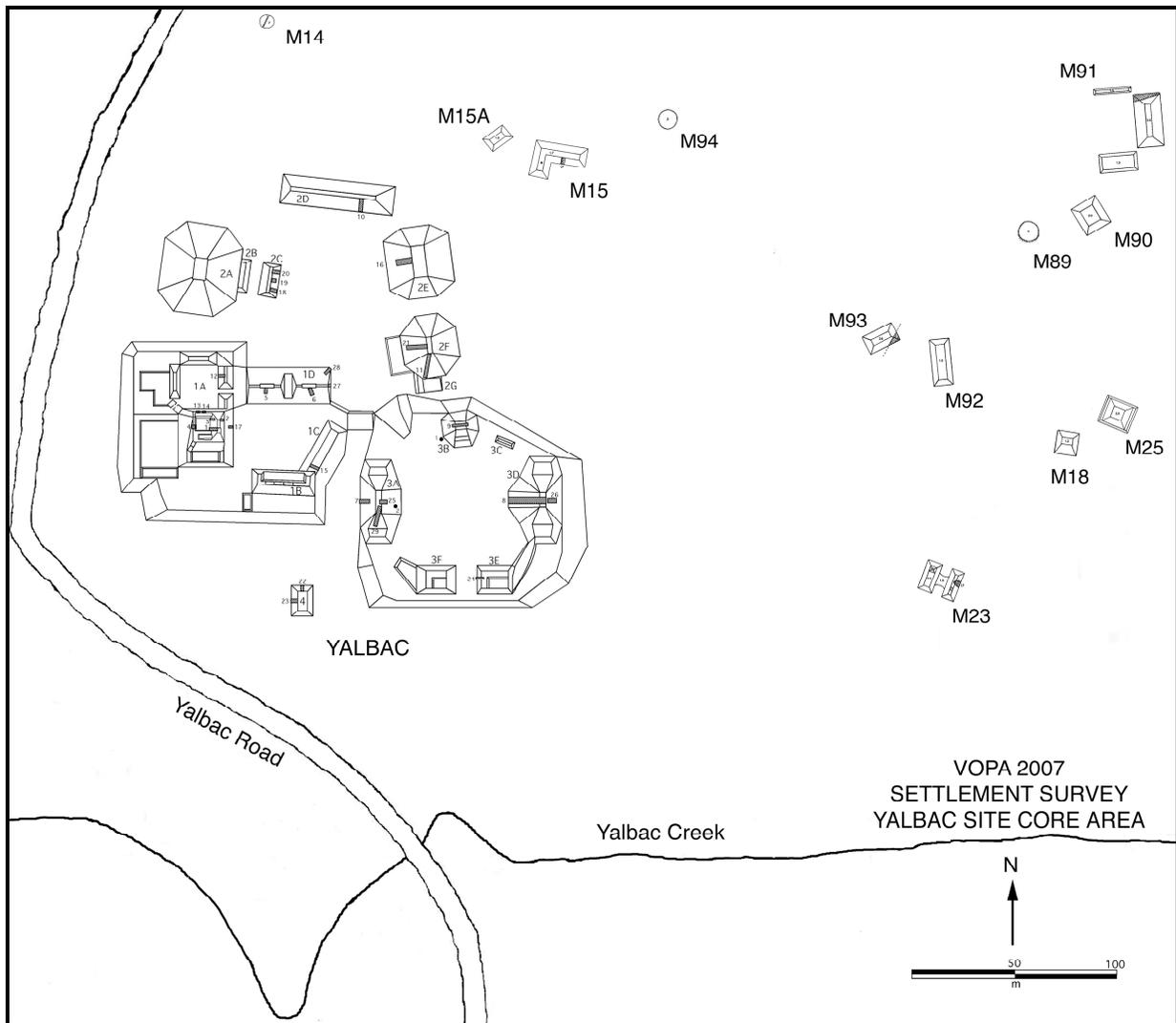


Figure 3.3: The Yalbac site core with associated settlement.

No excavations were undertaken in this area, as there are already two mounds in the transect area to the east of the site that we extensively excavated in 2002 (Sites 94E22N-14 and 94E22N-18; see Lucero 2003). The data recovered from these two mounds correlate well with excavations done on other parts of the transect (i.e., dates predominantly to the Late Classic). Previous excavations into the Yalbac site core have shown that settlement existed at this location as early as 300 B.C. The majority of surface ceramics from mounds on the transect date to the Late Classic (c. A.D. 600) indicating that at least they were occupied during this period; the few excavations near the pools yielded Late Classic ceramics as well, indicating that the Maya built near the pools much later than elsewhere.

Besides having good soils, Yalbac would have also attracted settlement because of its connection to rulers and ceremonies. A person living near the site core would certainly have experienced a more intense feeling of belonging and the “power of place” than one living in the hinterlands. The rulers would have provided dynamic water rituals that, if successful, would have drawn residents from other locales (Lucero 2006).

M104: Yalbac’s Satellite Center

Originally documented in 2002 but not studied in depth until this year, M104 is a (very) minor ceremonial center constructed on a small hilltop approximately two kilometers northeast of the Yalbac

core. This is the largest construction recorded on the transect, second only to the Yalbac core area. This site was originally not part of the survey area, but its size and importance convinced me to construct a small transect spur approximately 500 meters long and 400 meters wide that ran west of the main transect in order to connect this site to the main transect (see Figures 3.1, 3.4, 3.5B).

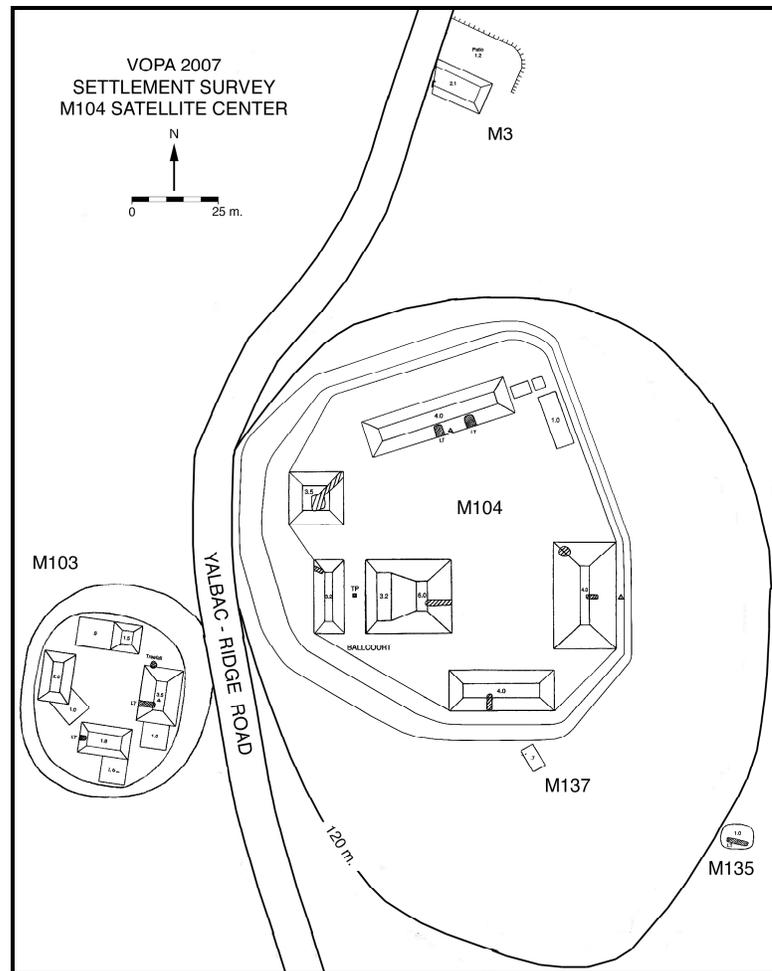


Figure 3.4: The satellite center of M104.

M104 consists of six major structures c. 3-6 meters tall situated around a plaza. It has a ballcourt, and the largest structure at the site also acts as the eastern ballcourt structure. Related to M104 is M103, a plazuela group located west of M104 approximately 50 meters distant (across the road). The mounds of M103 are 1-3.5 meters in height, and it is surmised that this was the residential area for the elites who oversaw M104. To the west of M103 is the termination of the transect spur, delineated on the ground by the steep drop off due west of the M103 mound group. To the north of M104 is M3, a two-meter tall mound directly east of the road (the edge of the structure has been demolished by road construction). Several sherds were collected from the road cut at M3, and a stone ball measuring approximately five cm. in diameter with a groove in it was noted. To the east of the central area of M104, the hilltop area slopes downward to the main transect below, where a relatively flat area of good soils contains a large quantity of ancient farmsteads (see Figures 3.1, 3.5B).

A 1 x 1 m testpit was excavated in the center of the ballcourt at M104 in order to collect sherds for chronological purposes (see Appendix for excavation details). The Preliminary analysis indicates that all sherds date to the Late Classic period. However, we did not reach sterile; although most mounds on the

transect date to the Late Classic, I would surmise here that earlier occupations are hidden below based on the size of this satellite center.

The location of M104 lies on good Class II soils and is located on top of a natural rise. It may have made a local bureaucrat the big fish in a small pond; instead of being lost in the hierarchy at the larger site of Yalbac, the person who oversaw M104 could be the ruler of his own little world. The presence of a good-sized ballcourt at a site of this limited size speaks to the use of ritual as a centralizing mechanism. M104 can be seen simply as a smaller version of Yalbac, and its location 2 kilometers closer to the pools may point to an increased importance of this site for the residents of Pools 7, 8, and 9.

Good Farmland: Settlement Between Yalbac and Pool 7

The largest continuous group of settlement on the transect was recorded in the vicinity north of Yalbac, between the site core and Pool 7 (4.5 kilometers distant). Most of these structures are relatively small, averaging approximately one meter in height. Because of their smaller size and the fact that they are located on good Class II soils, I surmise that this area was largely inhabited by commoner farmers. Here, ritual was not as important in structure placement as the possibility of a good crop yield. Because the structures are so numerous and the area covered is so vast, the map of this area uses points only to denote the location of the structures (Figures 3.5A, 3.5B). If additional information on the structures is needed, the appendix has a complete description and drawing of each mound. Surface sherds were collected from numerous mounds in the vicinity, and in 2005 sherds were collected in situ from M42 (using a convenient bulldozer cut; see Kinkella 2006). Virtually all sherds from these mounds date to the Late Classic period. The “farming” area of the transect runs all the way to the termination of the first leg of the transect at Pools 7 and 8.

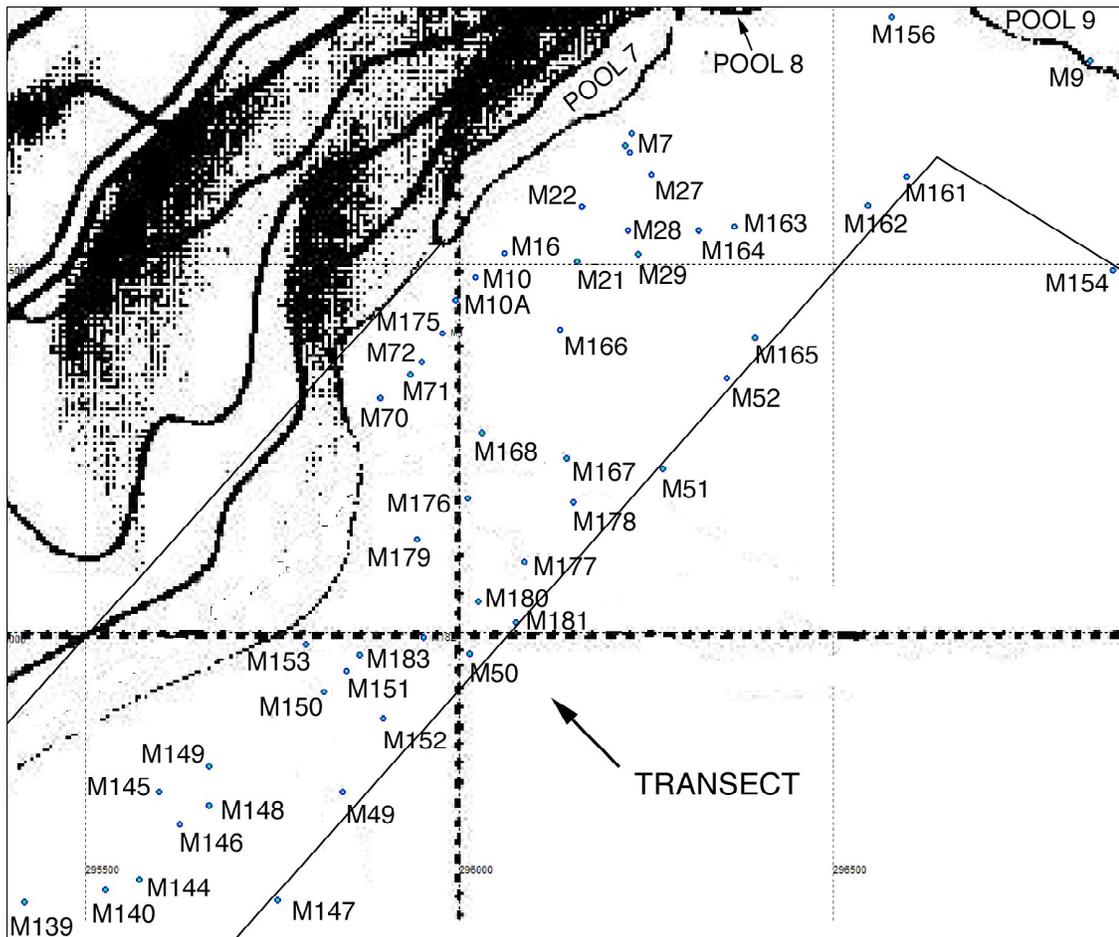


Figure 3.5A: Northern portion of the Yalbac-Pool 7 transect, showing location of all mounds.

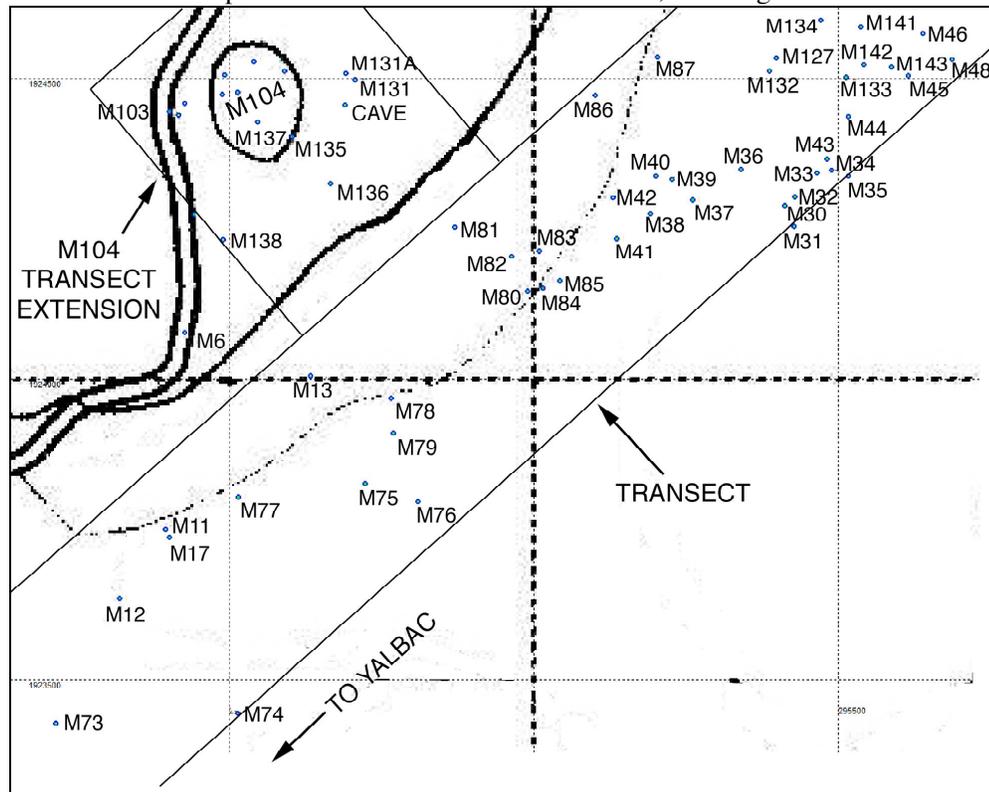


Figure 3.5B: Southern portion of the Yalbac-Pool 7 transect, showing location of all mounds.

We noted in this area that several low structures (e.g., M74) were only found because of fresh logging roads that had been gouged into the jungle. I am sure that there are many “hidden” structures in this area, as the thick jungle growth and gently undulating ground makes any structure under a meter tall very difficult to find.

M112: The “Lookout” on the Ridgetop

At the outset of this survey, I expected that the ridge tops would have a noticeable presence amount of settlement. Several ridge top areas have good soils, and the commanding views and welcome breezes from the Caribbean Sea make this a seemingly premier settlement spot. It seems I was incorrect. We found very little settlement at the tops of the ridges, with only one or two exceptions.

Although the settlement itself is quite small, the M112 vicinity is a site in a unique location (Figure 3.6). Perched on a narrow finger ridge and accessible only from the west (the other three directions are protected by a very steep slope), the solitary M112 group has a spectacular view of the Maya forest to the south. The function of this site is difficult to ascertain. The soils here are Class III, which are not necessarily good enough to warrant a special farming settlement; and with better Class II soils in abundance at the bottom of the ridge, subsistence agriculture does not seem a feasible choice. One structure (M111) does have associated terracing, which was probably an attempt to grow crops, but it is also located by itself away from the main cluster of structures, so does not speak to the overall function of the group as a whole. The southern structure of M112 is a labor intensive construction made of fine cut limestone blocks, with masonry walls and a central room. The quality of this structure speaks to its importance, but what was its function? Was it a spot used by the Maya below as a lookout of some sort? It could also have been a pilgrimage center, as the view is spectacular, and the restricted access may lend itself to a specific path that was taken to get to this site. Now badly looted, we were able to collect sherds

from M112 in several in situ contexts from the walls, which all date to the Late Classic. I was also able to draw a profile of this structure because of the exposed walls due to looting (see Appendix).

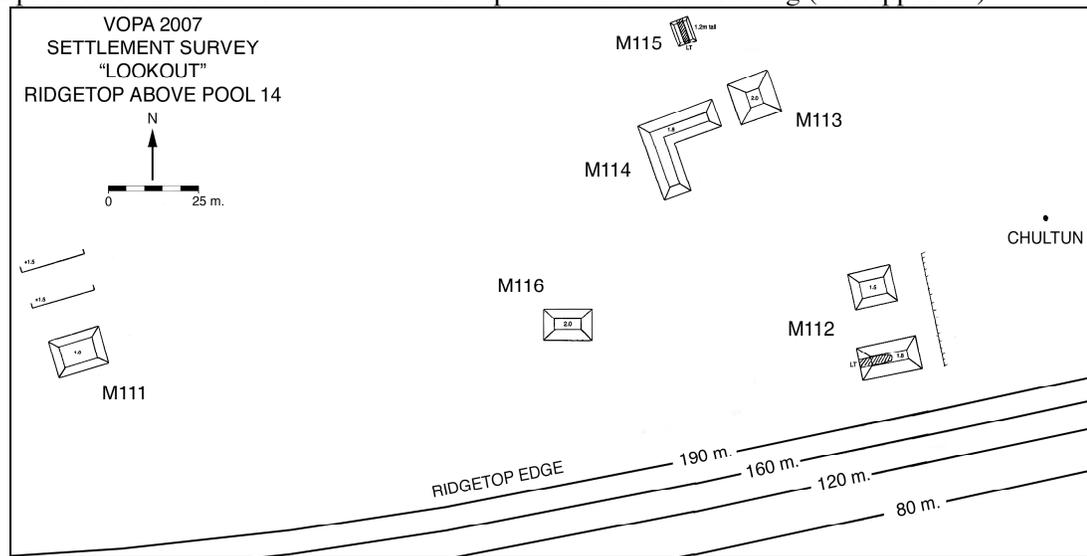


Figure 3.6: The M112 “Lookout” site.

Above Pool 6: The (Very) Minor Center of M124

The eastern termination of the VOPA settlement survey is demarcated by the M124 settlement, because just past this area lies Pool 6, and a vast area of impassible swampland. M124 (and the nearby M123 and M122) is located on a small ridge in an area with severe gully/ridge undulations, in the foothill area approximately 300 meters north of Pool 6 (Figure 3.7). The steep topography in this area probably helped to prevent looting. The main site area has about six structures, from under a meter to approximately three meters in height. It also contains an upright *stela*, with a possible altar directly to the southwest.

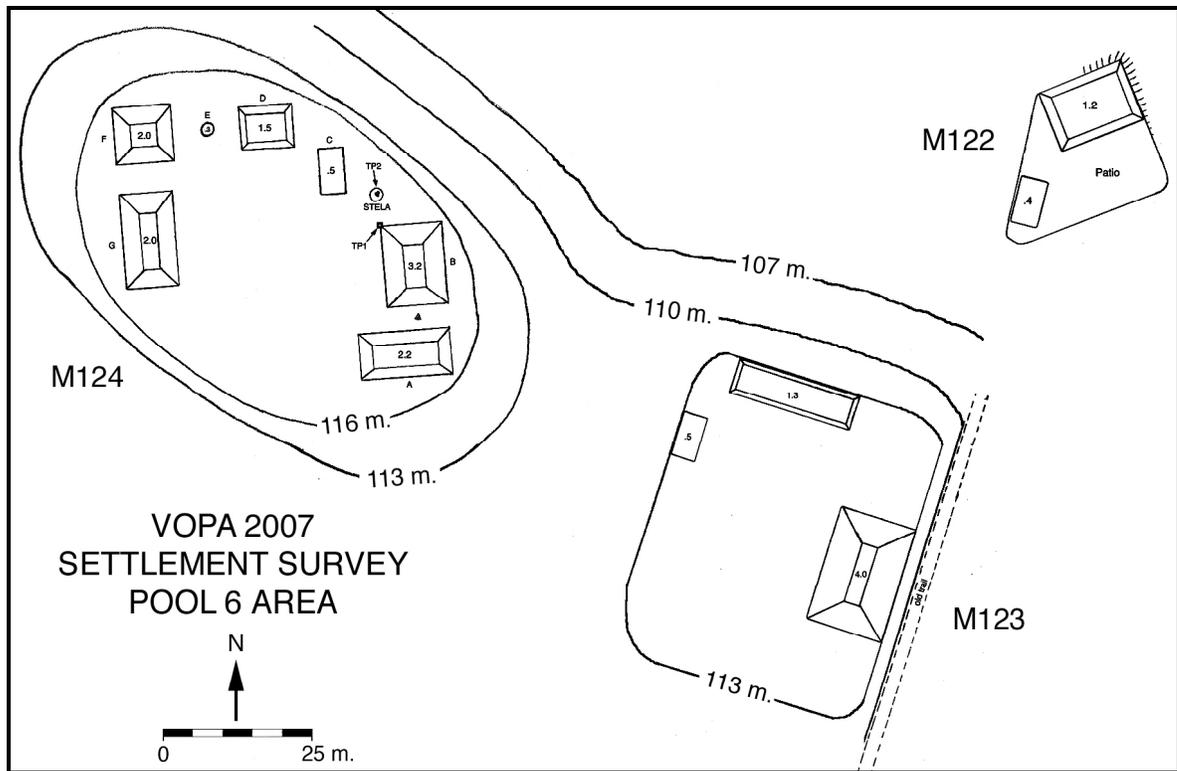


Figure 3.7: M124 in the hilly area north of Pool 6.

A 1 x 1 m test pit was excavated at the northwest corner of the eastern structure of M124 (Structure B) to collect ceramics for chronological purposes. By chance, we found what is most likely the northwest cornerstone of Structure B. We also found several datable sherds, all dating to the Late Classic period. A second, 50 x 50 cm test pit was excavated into the northeast side of the *stela* to collect diagnostic sherds. As with the test pit at Structure B, several Late Classic sherds were recovered. A smooth, cylindrical stone approximately 15 cm in length was recorded at about 35 cm below surface. Sterile was not reached. Several sherds were observed in situ resting on top of the “altar” stone next to the *stela*. For drawings of the excavations, see the appendix.

No ballcourt was found at this site, but an interesting, solitary group (M125) approximately 350 meters northwest of M124 had the general layout of a ballcourt (this is speculation only). The upright *stela* speaks to the possible importance of this site, and its location on Class III soils does not lend credence to subsistence as the sole reason behind its location.

Pool 1: Sacred Pools and Sweathouses

The subject of my original Master’s Thesis work, Pool 1 is located roughly in the center of the string of 22 pools in the Cara Blanca area. There are a group of four structures constructed very close to the pool’s edge, with the largest structure on the west side literally falling into the water (see Kinkella 2000). Excavations were undertaken here in past seasons, and the sherds collected (all Classic period) will be included in the master dataset for the transect sites. The soil in the area is Class V, the worst in the Maya area, and although good Class II soils are less than a kilometer distant, they are seasonally inundated and thus not optimal for farming. The substantial structures located directly on the pool’s edge argue for a ritual component to site location.

Bolstering the argument for ritual at Pool 1 (and nearby Pool 2) is M186, a large, enclosed plaza group of range structures 2-3 meters in height. The westernmost room of M186 is a sweathouse, noted for its curved walls and use of rare, true arch construction in its ceiling (Figure 3.8). The sweathouse is badly looted, but a well-preserved rim sherd was found in the wall fill that dated to the Late Classic. The

construction of something as ritually charged and relatively rare as a sweathouse must speak to a settlement that is more than merely a subsistence farming locale. Also, the sweathouse is located halfway between Pool 1 and Pool 2; while Pool 1 has many structures in its vicinity, Pool 2 seems to have none. It could be that the Maya were leaving Pool 2 “pristine” for a reason. While ritual was undertaken at Pool 1, Pool 2 could have been used simply as a water source, or as a spot for a different type of ritual activity.

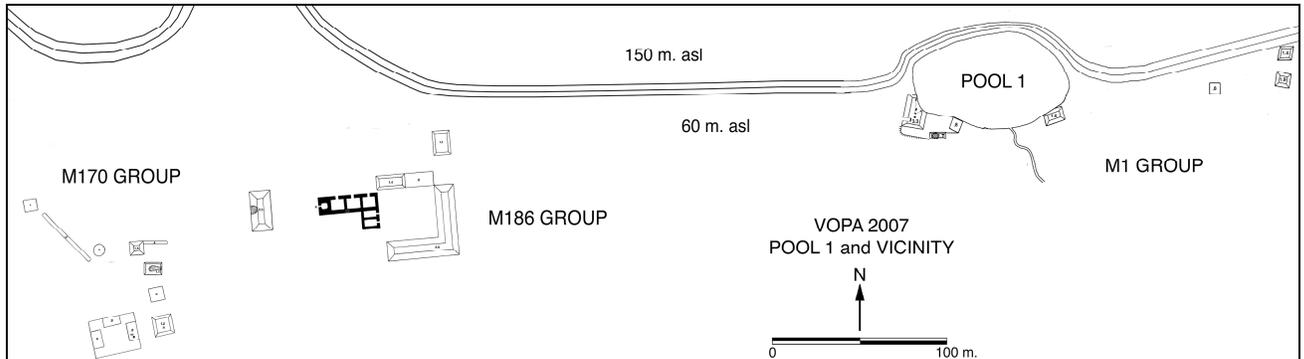


Figure 3.8 The Pool 1 area with M1, M186, and M170 groups.

Directly west of M186 is M170, a group comprised largely of low mounds and small mound groups. We excavated a 1 x 1 m test pit into a portion of M170 in order to collect diagnostic ceramics, but were surprised to find a burial approximately 30 cm below surface. We left the burial in place, but did collect the two broken ceramic vessels (a Belize Red plate and an Achote Black bowl) turned upside down above the skull area (both Late Classic).

While walking between M186 and M1, it was noted that the only suitable pathway between them when the area is inundated is to walk along the edge of the escarpment. Taking this path from M186 deposits the walker directly in front of Structure 1 of M1. Structure 1, besides being constructed directly on the edge of the pool, also seems to act as a barrier to anyone who would want to travel to the north of Pool 1; its placement creates a need to circle the pool to the south, passing all the other structures. There is an outlet stream at the south of Pool 1 that may have been used to regulate water to places south, and there have even been possible canals spotted due south (they may be natural), but the inundated nature of the area leads me to believe that water for farming was not difficult to acquire (this may be more of an issue during the driest days of the dry season).

Overall, the Pool 1 vicinity is an excellent location to explore the remains of Maya water ritual and belief. One could imagine that once a person using the sweathouse was finished, that they would walk the 350 meters to either Pool 1 or Pool 2, and purge themselves in the pure water coming straight from underground. Here, we do not have rulers getting in the way of the ritual process; the practitioner could experience a much closer tie to the natural world.

Pool 7: The Green Water Western Pool

As the westernmost of all the pools, Pool 7 is located where the transect comes up from Yalbac to the southwest, and turns east across the line of pools. Recorded extensively in 2005 and discussed in a previous VOPA report (see Kinkella 2006), the settlement largely consists of two interconnected *plazuela* groups (Figure 3.9).

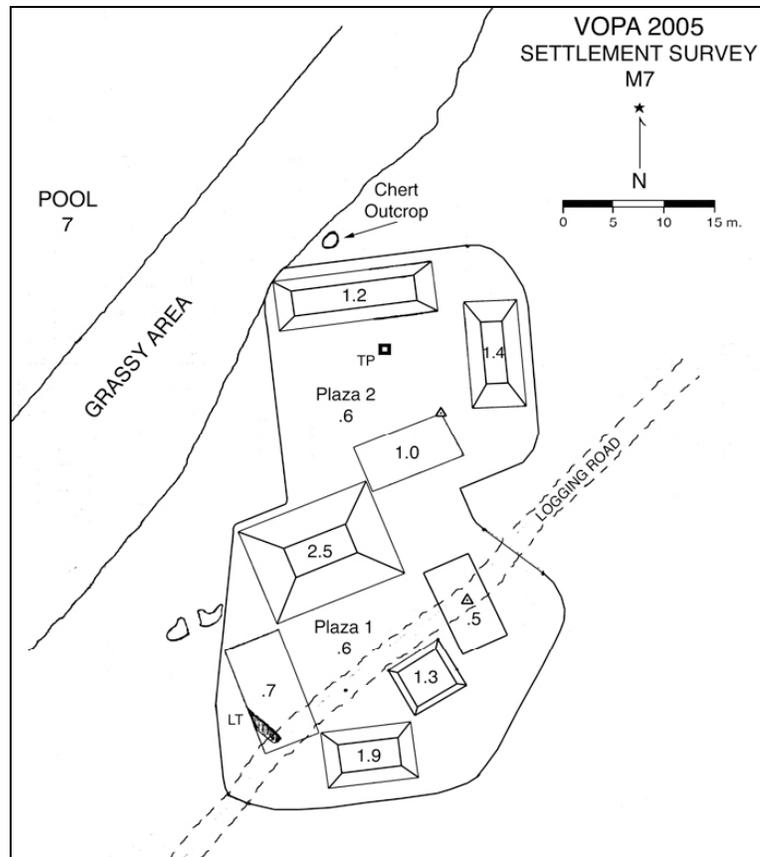


Figure 3.9: Settlement at Pool 7.

This settlement also acts as the northern portion of the good soils area discussed above, which is built on a large patch of Class II soils. Because of the presence of good soil and the fact that Pool 7 is green, shallow, and more of a scarp-foot spring in makeup than a *cenote*-like pool, Pool 7 has more going for it in terms of subsistence farming than most of the other pools. With that said, the settlement here includes several possible ritual aspects, such as a strange pair of large boulders that act as an “entryway” to the pool, and a commanding location immediately above the pool’s edge (although the edge of the pool here is marshy and not as dramatic as the edge of Pool 1). A test pit dug here turned up numerous Late Classic sherds.

Pools 8 and 9: At the Edge of Good Soils

Pools 8 and 9 are east of Pool 7, and are located at the western edge of useable soils. Further east, the soils may be of good quality, but the area is very rocky and soils have largely eroded away. There is a group of small structures (most 1 m tall or under) that is located along the southern edge of Pool 8 (Figure 3.10). This group is separated from the rest of the farming structures to the south by about 300 meters; the group’s separation from the larger community may attest to a special significance of the place. A test pit was dug at M155, but very little was found (no diagnostic sherds were recovered). Also, bedrock was discovered quickly (only 52 cm below surface), further indicating that the structures here did not leave a deep archaeological footprint. Like Pool 7, the structures here may be of limited ritual significance, with the exception of M159. The largest structure in the area (at 1.5 meters tall), M159 is located on a small tongue of land that separates Pools 8 and 9. Its location would make an ideal spot to throw offerings to the pools. While the test pit at M155 did not yield diagnostic sherds, a large treefall on the northeast corner of M159 revealed a Late Classic jar rim.

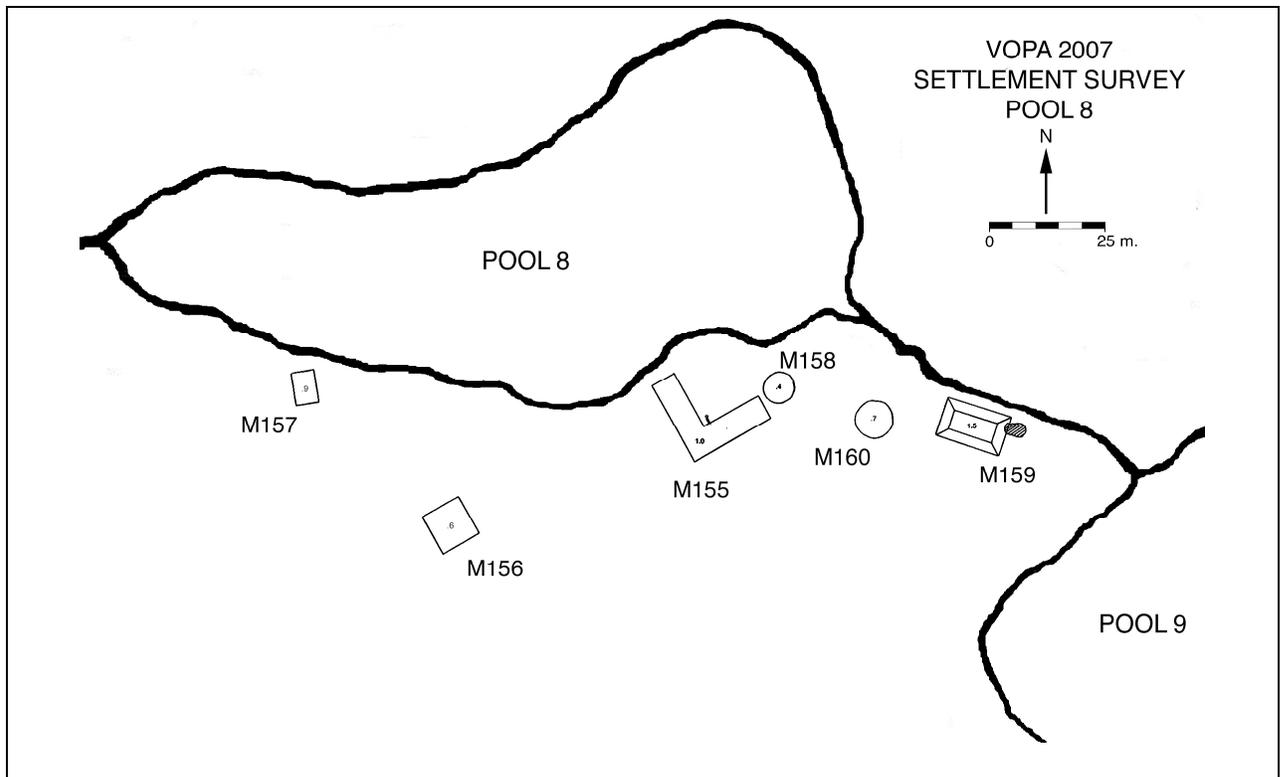


Figure 3.10 Settlement at Pool 8.

On the south side of Pool 9, approximately at the pool's midpoint, there is a single structure labeled M9 (see Appendix). A 1 x 1 m test pit was excavated on its northern edge, within which several Late Classic sherds were recovered. To the east of Pool 9 lay Pools 10 through 14, none of which display any sign of settlement. The soil in this area is very thin, making the ground very rocky and full of broken limestone and cracks. It is in this area east of Pool 9 where several rockshelters and small caves were noted. East of Pool 14 is the Pool 1 group, the most ritually based settlement in the pool area (as discussed above).

Results

The 2007 VOPA settlement survey results have provided us several interesting avenues of inquiry to pursue. First, we can show that there are at least six different zones of settlement, with different factors explaining the location of each. In each of these zones, the settlement patterning observed can be largely explained using the interplay between the two variables of soil quality and ritual importance. For the settlement near the Yalbac core, closeness to a center obviously plays a role in settlement location, as does good soils and ritual importance inasmuch that the site core would be a location of ruler-based performance ritual. M104 is a smaller version of Yalbac. The mounds north of Yalbac that are located on Class II soils are located there based on the good quality soils and little more. The "lookout" site of M112 is difficult to categorize; we can say that good soils are not a factor, and a pilgrimage center function may describe its location. The M124 group north of Pool 6 is also difficult to categorize, with mediocre Class III soils and a *stela*.

Finally, we can see variation between poolside settlement, but most appears to be very ritual based. Good soil alone does not explain the clustering near the pools, as the soil there is not very productive. Instead, the use of the pools as ritual pilgrimage centers may better explain their location. We have also learned that not all the pools were valued the same in terms of ritual. With its structures built directly on the edge, and a Maya sweathouse nearby, Pool 1 (and 2) appear to hold high ritual value. Their value is

bolstered by the dramatic rise of the excarpment directly behind them, creating a natural version of the Maya “water mountain” imagery. Pools 7, 8, and 9 may have less ritual value, as neither their structures nor the geological construction of these pools are as impressive as the Pool 1 (Cara Blanca) area. All of the other pools have no settlement observed, which seems to be a function of rocky topography and relatively unimpressive pools.

Concluding Remarks

The Yalbac/Cara Blanca settlement survey has increased our understanding of the relationship between the pools and the surrounding archaeological communities, and has allowed us to explore the possibilities of the pools as pilgrimage destinations. We have examined the relationship between settlement and soils, as well as settlement and water ritual. The large pyramid temples at the Yalbac site core would have served as a center of ritual performance for the people who lived along the entire transect area. These people, who would have constructed their homes on the good Class II soils of the area, could venture to either Yalbac for public ritual, or to the pools for a more private affair. The Yalbac temples can be seen as built water mountains that would enable rulers to show their mastery over the natural rain cycles that governed the farming year. In contrast, the natural water mountains in the pool area (the ridge above the pools) would have been a place where people could pilgrimage to enjoy a more personal connection to their beliefs, where they could make offerings to their ancestors free of a ruler’s controlling hand.

Acknowledgements

I was very fortunate to have Joanne Baron and Fabiola Silva assist me in the daily work of mapping, excavation and recordation; they made an arduous job both enjoyable and much easier! Clefo Choc was vital for his expert assistance with the difficulties of jungle survey, as were Don Luna and Ernesto. I would also like the attendees of the 2007 Maya Ceramics Conference for their gracious help in sherd identification. Finally, I am extremely grateful to Bob and Nettie Jones for their selfless extension of hospitality throughout the entire field season.

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