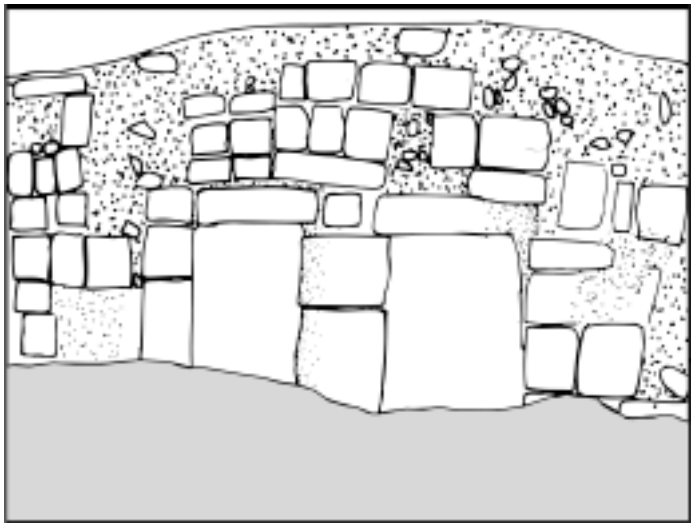
Final Report

of

The Selz Foundation's
Proyecto Arqueológico Yo'okop

2001 Field Season:

Excavations and Continued Mapping



edited by Justine M. Shaw

with contributions by
Dave Johnstone, Maya Kashak, Ruth Krochock, Travis Nygard, and Linnea Wren

College of the Redwoods
Eureka, CA

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Yo'okop 2001 Field Crew

Week One
Marcelino Itza Mazum
Aluino Poot Poot
Leopoldo Canche Canche
Nemecio Moo Cien
Gregorio Poot Poot
Jose Guadalupe Poot Canche
Jesus May Canche
Marcial Uc Batun
Juanquilimaco Poot Dzib
Arnolfo Chan Poot
Lorenso Kauil Arsona
Rufino Xool Koyol

Week Two
Bernardo Poot Poot
Margarito Kauil Ake
Valerio Cahum Chuc
Pascual May Dzul
Clementino Chan Moo
Lorencia Foyoc Pech
Grabiel Balam Moo
Albanciano Poot Poot
Eustaquio Pat Poot
Bernardo Kauil Poot
Juan Alberto Moo Anjona
Benito Uc Chan

Week Three
Idelfonso Uc Poot
Alvaro Canche Canche
Justo Pastor May Uicab
Modesto Chan Poot
Antonio Chan Moo
German Poot Canche
Marcelino Cocom Chan
Bernardo Chan
Alejandro Cupul Perez
Feliciano Poot Kawil
Juan Noh Moo
Jose Lucio Poot Kawil

Week Four
Juan Moo Uc
Jose Ejidio Can Canche
David Moo Uc
Juventino Kauil Chi
Marcos Diaz May
Juan Bautista Balam Moo
Manuel Canche Chimal
Maria Filomena Poot Poot
Floro Ake Maay
Jeybacio Poot Kauil
Juan de Mata Can Kauil
Pedro Pablo Moo Chan

Week Five
Aurelio Canche Canche
German Poot Dzul
Odifloro Poot Poot
Arsenio Pool Pat
Lazaro Uc Poot
Ponciano Cocom Chum
Teodoro Canche Puc
Gonzalo Puc Kauil
Virgilio Kauil Arjona
Artemio Poot Poot
Jose Alfredo Xooc Herrera
Bonifacio Moo Balam

Week Six
Miguel Moo Kauil
Benito Pech Kanul
Santiago Diaz May
Pascual Tun Chimal
Demetrio Dzul Moo
Geronimo Poot Chan
Antonio Moo Poot
Silverio Tun Chimal
Mauro Tuyub Tuz
Ignacio Dzib Poot
Jacinto Dzib Poot
Cesar Ake Majay

Yo’okop 2001 Field Crew
continued

Week Seven
Roberto Canche Chimal
Luciano Tamay Moo
Olegario Canche Itza
Benito Tuz Poot
Venancio Kauil Chan
Hilario Chi Canul
Alfonso Moo Uc
Jacinta Canche Sansores
Maria Isabel May Uicab
Florencio Hau Hau
Pablo Poot Poot
Marciano Poot Balam

2001 Laboratory Workers

Mirian Yamily Moo Kauil
Liberato Itza Poot
Elmi Marlene Moo Fuentes
Lincey Sujely Moo Kauil
Lucy Marbella Fuentes Lopez

2001 College of the Redwoods Students

Orion Harris
Maya Kashak
Joanna McCarthy

2001 Laundry Workers

Week One
Virginia Chan Poot
Elvia Chi Canul
Silveria May Dzib

Week Two
Maria Guadalupe Caamal Chimal
Bernardina Kauil Pech
Jacinta May Canul

Week Three
Lorenza Coyoc Pech
Susana Moo
Maria Isabel May Uicub
Lidia Kauil Puc

Week Four
Felipa Mex Canul
Maria Nemencia Chuc Kauil
Teotila Moo Balam
Martina Poc Kauil

Week Five
Jacinta Canche Sansores
Maria Lucila Ke Noh
Silvia Valle Moo
Aurdia Tollob Maq

Week Six
Cutberta Tuz Poot
Maria de la Luz Canul Uc
Victoriana Chi Canul
Rosario Chan Chan

Week Seven
Claudia Chan Kauil
Tomasa Poot Poot
Refugia Uc Batun
Bartola Chan Moo

Week Eight
Angelina Kawil Poot
Paulina Kawil Poot
Manuela Chan Pech
Felipa Kawil Chan

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NOTE: Copies of the 2000 and 2001 reports, photographs, illustrations, and information are currently available at the Yo'okop web site:

http://online.redwoods.cc.ca.us/yookop/

Introduction to the Site

Location

The Maya site of Yo'okop, also known as Okop or La Aguada (Figure 1), is located in the contact period province of Cochuah (Roys 1965), approximately 12 kilometers southeast of the modern pueblo of Sabán (Figure 2) at 88^0 24' E and 19^0 57' N, in west-central Quintana Roo. The site lies in the center of a large archaeologically uninvestigated region between those areas surveyed by Sanders (1960) and Harrison (1973 and 1981).

Physiographic Characterization

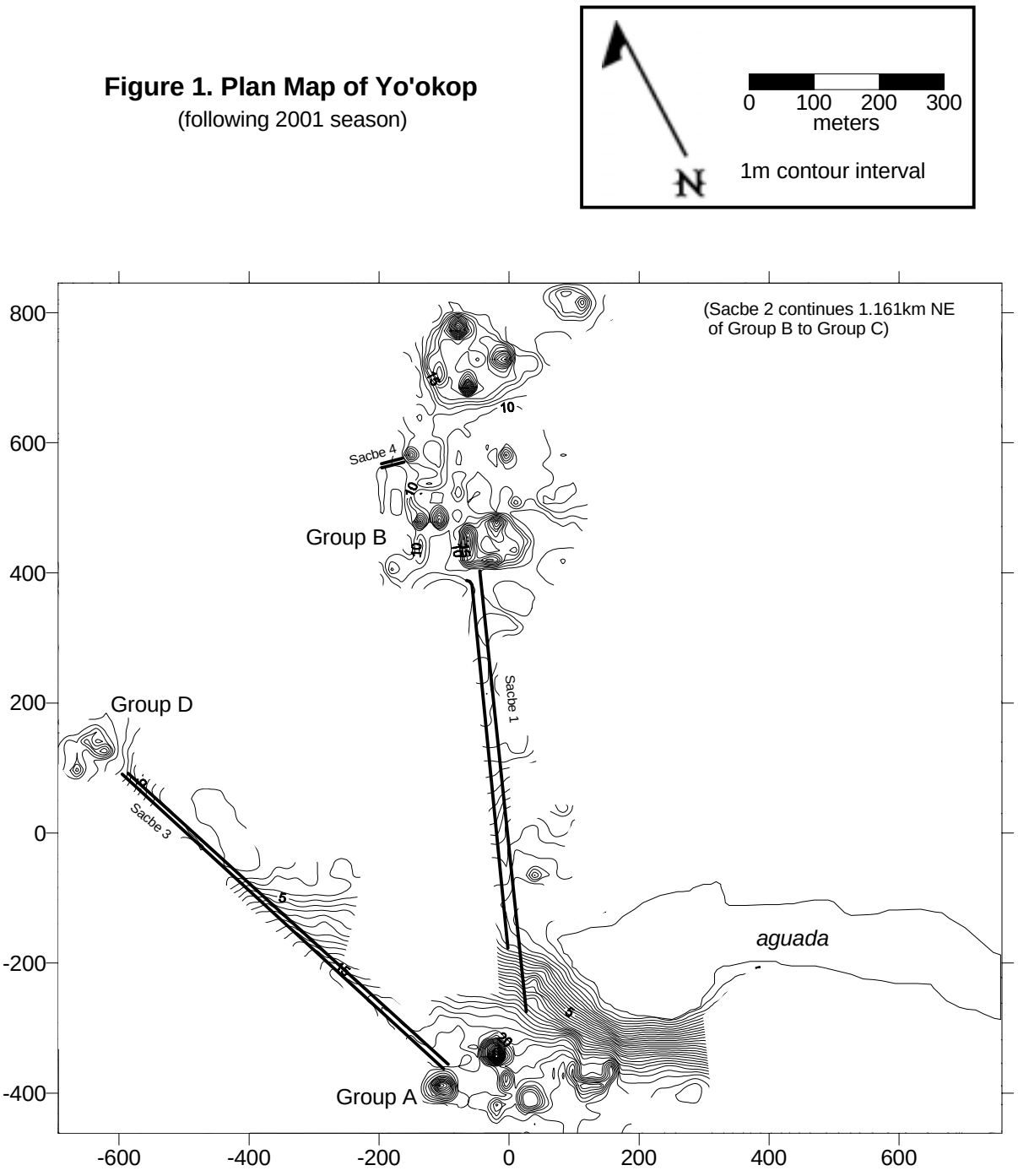
While the Yucatán peninsula is often referred to as a single region, it is characterized by a remarkable diversity of geological, climatic, floral, and faunal features. Physiographically, the peninsula has been defined by Shattuck (1933) as the area north of a line extending from the mouth of the Gulf of Honduras to the western limit of the Laguna de Términos in the state of Campeche (Robles R. 1958) or between 21º 30' and 18º N latitude and 86º 25' and 91º 40' W longitude (Figure 2).

The Yucatán peninsula is a flat, low-lying Cenozoic marine limestone platform that projects northward into the Caribbean Sea and Gulf of Mexico. The northern portion of the peninsula is a pitted karst plain (West 1964). With the exception of the Puuc hills, or the *Sierrita de Ticul*, rising to 130 meters above sea level in the west, the terrain in the north is flat (Covich 1970; Ward and Wilson 1985).

The North also has a number of unique geological features. *Aguadas*, intermittent or permanent ponds, are present throughout the northern plain (West 1964); one is located near Group A at Yo'okop (Figure 1). These features are both culturally and naturally created, and are frequently stone and clay lined when of human origin (Dahlin 1986; Shattuck 1933). Constructed *aguadas* were, and are, frequently placed in and around *rejolladas* (sinkholes without water) (Siemens 1979). Some *aguadas* are created naturally as *cenotes* (sinkholes with water) filled with sediment and organic debris (Tamayo and West 1964). No *cenotes* are present at Yo'okop; the closest *cenote* is approximately 15 kilometers from the site near the modern pueblo of X-Cabil. Additionally, underground cavities at Yo'okop and other sites have been excavated for centuries to obtain *sascab*, a nearly pure carbonate material for construction (E. Wilson 1980).

As might be expected, soils within the peninsula are highly variable according to the topography, rainfall, age of the soil, organisms within and on top of the soil, parent material, and organic materials (Dunning 1991). In the North, this soil cover is extremely thin with little to no transition zone; bedrock comprises up to 50% of the surface (Ringle 1985; E. Wilson 1980). Soils of the state of Yucatán, northern Campeche, and northern Quintana Roo are generally described as Laterization-process soils, while those to the south are Rendzina (southern Quintana Roo and southeastern Campeche) and Glei (southwest Campeche and Tabasco) soils

Figure 1. Plan Map of Yo'okop
(following 2001 season)



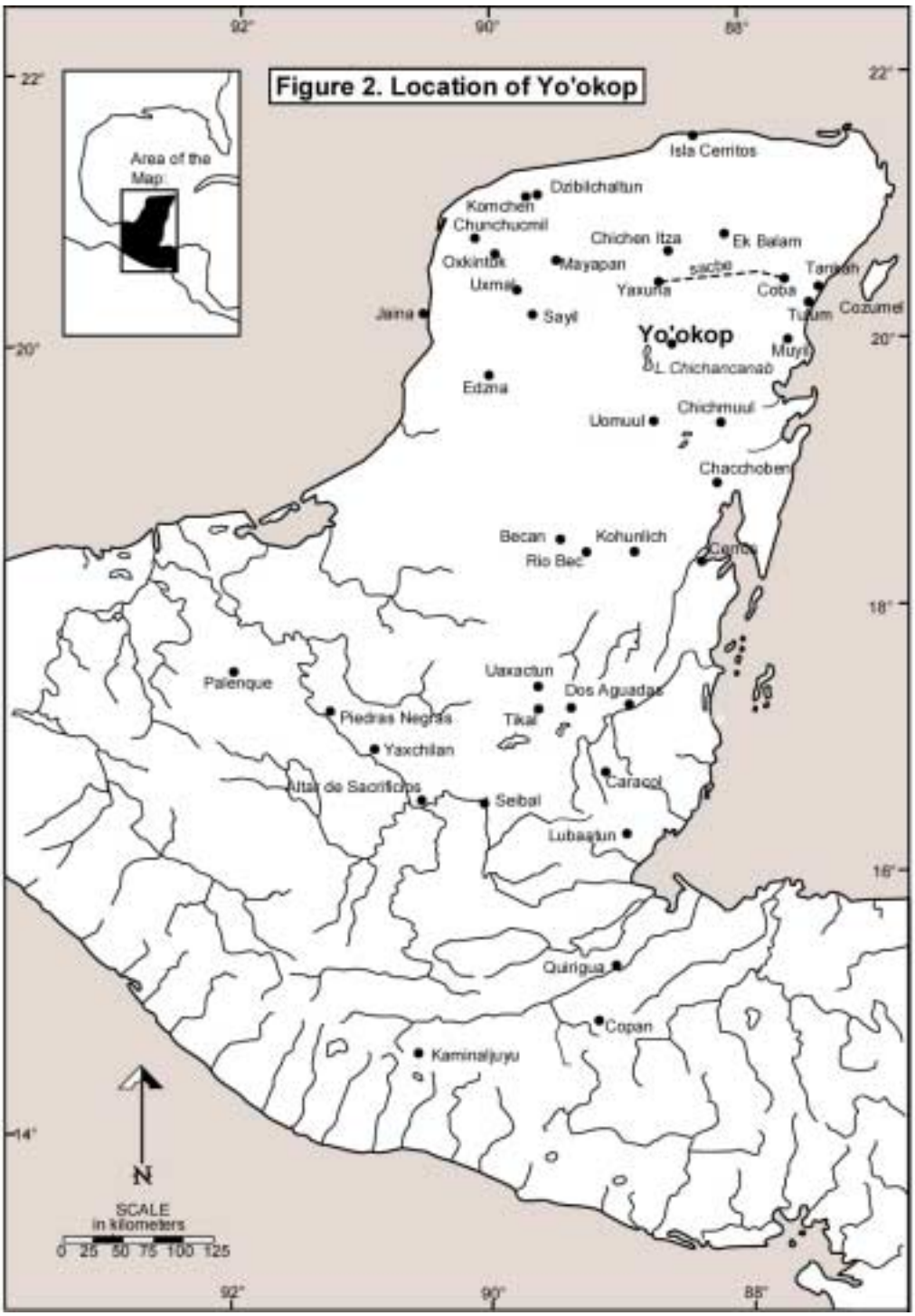


Figure 2. Location of Yo'okop
Area of the Map
92°
90°
88°
22°
20°
18°
16°
14°
Isla Cerritos
Dzibilchaltun
Komchen
Chunchucmil
Chichen Itza
Ek Balam
Oxkintok
Mayapan
sacbe
Tancah
Uxmal
Yaxuna
Coba
Tulum
Cozumel
Jaina
Sayil
Yo'okop
L. Chichancanab
Muyil
Edzna
Chichmuul
Uomuul
Chacchoben
Becan
Kohunlich
Rio Bec
Palenque
Uaxactun
Dos Aguadas
Tikal
Piedras Negras
Yaxchilan
Altar de Sacrificios
Seibal
Caracol
Lubaantun
Quirigua
Copan
Kaminaljuyu
N
SCALE
in kilometers
0 25 50 75 100 125

(Stevens 1964). The laterization found in the north occurs as conditions of fluctuating groundwater levels result in reduction of iron and loss of silica (Limbrey 1975).

Modern climatic variations in the Yucatán are generally moderate, although the northeastern corner of the peninsula does lie on a hurricane track through which passes nearly every storm impacting the northern Caribbean coast (Contreras Arias 1958; Ward and Wilson 1976). This brings damaging storms to the Yo'okop area once or twice each decade. The northern part of the peninsula possesses a Tropical Monsoon (Am) climate, with very heavy rainfall only in the summer, while the southern portion is designated Tropical Rainy (Af) with at least 60 millimeters of rainfall in the driest month (E. Wilson 1980).

Previous Research at Yo'okop

While no concentrated program of research had taken place at the site of Yo'okop prior to the 2000 season, several archaeologists have made extended visits to the area. The first to report the site, as "Okop" or "La Aguada," were Mason and Spinden (Mason 1927). Then, in 1954, Stromsvik and Pollock (Stromsvik *et al.* 1955) visited the site. Concentrating on the northern group (Group B), they noted the existence of three good-sized pyramids ranging from 9-15 meters in height. Additionally, they extracted the remains of a *stela* from a ramon tree and noted the existence of a southern group (Group A) joined to the northern mounds by a *sacbe*. Although Stromsvik and Pollock noted that the largest structure in Group A had re-used Terminal Classic Puuc style elements, they estimated, based upon the style of various *stelae*, that the major period of construction at Yo'okop was the Late Classic. No ceramics were recovered at this time.

In 1966, Jack Walker and Reginald Wilson made a brief visit to the structures closest to the *aguada*, in Group A. Pilot Bill Clapp then located Groups A, B, and C, *Sacbeob* 1 and 2, and three *stelae* (*Stelae* 1, 2, and 3) in 1969. This spurred Walker and Wilson to return in 1972 to make basic renderings of the main groups and take measurements of important structures and features. Although they conducted no excavations, their work provides the most extensive description of the site yet published (R. Wilson 1974). A correlation between Wilson's (1974) structure numbers and those assigned by the current project are presented in Table 1.

In 1998, INAH conducted basic reconnaissance and surface collections at Yo'okop. Shaw and Johnstone also visited the site this year, after preliminary meetings with INAH Quintana Roo and then the leaders of Sabán, in order to take photographs and assess the logistics of conducting research at the site.

Table 1
Correlation Between Wilson's (1974) Structure Numbers and Current Structure Numbers

Wilson's System	Current System
Group A Structure 1	S4W1-1
Group A Structure 2	S4W2-1
Group A Structure 3	S4E2-9
Group A Structure 4	S4E2-1
Group A Structure 5	S4E1-5
Group A Structure 6	?part of S4E2-1
Group A Structure 7	S5E1-1 and all structures around plaza to east
Group A Structure 8	S5W1-1
Group A Structure 9	S4W1-2
Group B Structure 1	N5W1-3
Group B Structure 2	N5W1-2
Group B Structure 3	N5W1-7
Group B Structure 4	N5W1-6
Group B Structure 5	N5E1-2
Group B Structure 6	N5W2-1
Group B Structure 7	N5W2-6
Group B Structure 8	N5W2-7
Group B Structure 9	N6W2-1
Group B Structure 10	N6W2-2
Group B Structure 11	N6W1-1
Group B Structure 12	N6W1-2
Group B Structure 13	N6W2-3
Group B Structure 14	N6W2-5
Group B Structure 15	N6W2-6
Group B Structure 16	N6W2-9
Group B Structure 17	N7W1-1
Group B Structure 18	N6W1-4
Group B Structure 19	N6W1-5
Group B Structure 20	N6W1-6
Group B Structure 21	N6W1-13
Group B Structure 22	N8W1-4
Group B Structure 23	N7W1-9
Group B Structure 24	N8W2-1
Group B Structure 25	N8W1-2
Group B Structure 26	N8W2-2
Group B Structure 27	not mapped

Additionally, Arq. Luis Alberto Martos López (1997) has worked at the historic *Fortín de Yo'okop*, a Caste War installation between the pueblo of Sabán and the Maya site of Yo'okop.

In 2000, Shaw and Johnstone (Shaw *et al.* 2000) conducted the first formal season of research at Yo'okop. Group A, *Sacbe* 1, and the southern portion of Group B were mapped with a total station, while the *aguada*, Group D, and *Sacbe* 3 were recorded using a GPS and sketch maps. Surface collections were also carried out in selected locations in the mapped zone.

Research Hypotheses

Archaeological research at Yo'okop during the 2000 and 2001 field seasons revolved around two sets of hypotheses. The first proposes that, owing to the scarcity of water at the site, the elite may have sought to control this resource through both ritual and technological means. This control may have shifted, or intensified, during a period of severe drought documented in regional climatic sequences (Hodell *et al.* 1995). As this drought appears to coincide with the Southern Maya collapse, it is believed that a better understanding of Yo'okop may have much larger implications for Mayanists interested in explaining the Southern collapse. The second hypothesis suggests that as a frontier site, Yo'okop may have been a strategically contested location in the struggle for political hegemony. It predicts that Yo'okop's affiliations may have shifted through time; these shifts should be reflected in changing architectural, ceramic, and epigraphic styles.

Evaluating the relative correlation between Yo'okop's occupation and climate change involves the use of a local climatic sequence from Lake Chichancanab (Figure 2) (Hodell *et al.* 1995), located just 20 kilometers from Yo'okop. This sequence, using $^{18}O/ ^{16}O$ ratios, documents the region's climate through most of the Holocene. These data, much more detailed than previous explorations of the lake's record (Covich 1970; Covich and Stuiver 1974), demonstrate unambiguous evidence for climatic drying between A.D. 800 and 1000. This evidence is consistent with data from Punta Laguna, located approximately 20 kilometers north of Cobá (Curtis *et al.* 1996), Cenote San José Chulchacá, in northwestern Yucatán (Leyden *et al.* 1996; Whitmore *et al.* 1996), Lake Cobá and Lake Sayaucil (Leyden *et al.* 1998; Whitmore *et al.* 1996), and Lake Miragoane, Haiti (Hodell *et al.* 1991). If this episode, the driest of the past 8,000 years, is at least partially responsible for the decline of the Classic Maya in the central lowlands (Lowe 1985; Gill 1995 and 2000; Shaw in press), then climatic downturns detected in the local Lake Chichancanab sediment cores should be accompanied by some changes at Yo'okop.

It is believed that since Yo'okop has only one water source, an *aguada* not in direct contact with the water table, site occupation will be particularly sensitive to any abnormally dry episodes. Unlike many other northern sites, Yo'okop lacks *cenotes*, which provide access to the freshwater lens floating over a thicker layer of salt water (Dahlin 1983) and no ancient wells have been located the site. While one *chultun* was found at Yo'okop in 2001, these features do not appear to have been prevalent at the site. However, its *aguada* functions much like a *chultun*. In the Puuc zone, *chultunes* serve to capture and store potable water (Becquelin and Michelet 1994). Even if well maintained (Faust 1998), *aguadas* require regular local rainfall to refill. *Cenotes,* relying on the freshwater table within the limestone substrate, have a much larger water supply from which to draw. Therefore, any markedly dry periods would impact not just Yo'okop's inhabitants' ability to grow crops, but could go so far as to make potable water scarce or unavailable.

It was predicted that the impact of such water scarcity should appear at Yo'okop through investments in water capture and storage and/ or as a decrease in occupation size. Researchers began to evaluate the first expected signal of water scarcity at Yo'okop, increased investment in water capture and storage, during the first two seasons. Mapping portions of the site core (Figure 3), including the area surrounding the *aguada*, demonstrated that monumental constructions may have served to re-direct and capture water for storage. However, a 2001 test pit failed to find any constructed lining to assist water retention in one such depression. As site mapping continues, the Project will to continue to look for engineered landscapes aimed at water capture, including both depressions that are part of monumental groups and smaller features away from major architecture, such as check dams or walls to contain raised beds (Beach 1998).

Scarborough's (1993 and 1994) work at Kinal and La Milpa demonstrates the prevalence of such subtle features at other Maya sites. The careful management of water storage features permitted long-term occupations in areas that lacked permanent natural sources of water, such as at Tikal (Scarborough 1998). Although such features may have been an integral part of site planning from early in Yo'okop's occupational sequence, it was predicted that any marked changes in the evaporation/ precipitation ratio, like that seen from about A.D. 800-1000, should be met with increased investment in these features. In the future, we would like to test-pit detected water management features in hopes of obtaining ceramics, or even C-14 samples, that might produce an estimated date for their construction.

Future excavations will also be aimed at exploring if, and when, the *aguada* was modified by humans (*e.g.* Faust 1998; Shattuck 1933). The *aguada* may have been enlarged by quarrying it for the construction of the adjacent Group A, which contains the site's tallest structure. Folan and others (1983:455) have proposed that the lakes at Cobá may have originated as quarries, becoming lakes after excavations struck the water table. The feature may have also been lined or used as a base from which to sink deeper wells during extremely dry periods. Test pitting or trenching the *aguada* is clearly critical to the testing of this hypothesis, but the time investment needed for such a technically demanding excavation is beyond that available during the first few seasons of the project.

Another signal of water scarcity is anticipated to be a marked decrease in the site-wide relative population size. Although some population might concentrate at Yo'okop's *aguada* for potable water during drought times, it would be impossible to grow enough food to sustain a sizeable population without a more extensive system of water provision with multiple water outlets. Therefore, the overall population of the site should drop during any extended dry period; even if the *aguada* was modified to the extent that it was able to store sufficient drinking water, prolonged crop failures would likely bring about a marked population decrease. Due to the Project's initial focus on mapping major architectural groups, we can only begin to make very preliminary statements about the relative population of Yo'okop during any given time period.

Particularly dry conditions might also be reflected in a range of other social responses. One might expect the leaders of Yo'okop, as political and religious heads (Freidel and Suhler 1995), to have responded to drought with an increase in, or elaboration of, ritual activities and investments. Even if population decreased, more monumental constructions or modifications might have accompanied this prolonged threat. In the future, when excavations can be carried out to explore and date large architecture, this consequence may be evaluated. Additionally, or alternately, innovations in religious practice, such as the borrowing of deities or concepts, may have taken place as leaders feverishly attempted to appease the being(s) responsible for drought. It is hoped that Wren, Nygard, and Krochock's studies of existing and future epigraphic materials can assist in the exploration of this issue (see "Epigraphy"). In 2002, an excavation is planned for a small Terminal Classic structure immediately adjacent to the *aguada*; because of the structure's proximity to the water source, it is believed that it may have had a water-related function.

The degree to which Yo'okop was affected by a regional drought, and local responses to the drought may have larger implications for Mayanists. While Maya researchers have long been fascinated with the question of what caused many Southern Maya sites to be abandoned at the end of the Late Classic period, much recent research (Curtis *et al.* 1996; Folan *et al.* 1983; Gill 2000; Gunn and Adams 1981; Gunn and Folan 1995; Messenger 1990) has focused on climate-related explanations for the Maya collapse. Researchers have begun to weave together the differential survival records of Northern and Southern sites and newly available climatic sequences for the region to formulate hypotheses about the cause of the collapse.

Curtis and others (1996) point out that a period of extreme aridity between A.D. 800-900 does coincide with the Southern collapse. They believe that, although the North is drier, the South would have been more severely affected by any decrease in rainfall because the South has a water table much farther below the ground surface and a greater dependence on surface water reservoirs. Northern sites would have continued access to water through most *cenotes* and several lakes (Chichancanab, Cobá, Punta Laguna, San Jose Chulchacá, Sayaucil, and Yalahau). While these centralized water sources would not have supplied the agricultural needs of the hinterland, they would have permitted immediately adjacent populations to be maintained during dry periods.

Gunn, Adams, and Folan and others (Folan *et al.* 1983; Gunn and Adams 1981; Gunn and Folan 1995) have stated that the collapse may have been caused by 9th century climate shifts "that failed to provide sufficient moisture for needed horticultural production" (Folan *et al.* 1983: 467) as globally colder temperatures reduced rainfall in the Maya area. At the same time, this made the Northern coast more desirable for salt production. Coastal salt production was also aided by receding global sea levels through the 9th century that remained low until the 16th century.

Messenger (1990) introduces a new interpretation of climatic data, based on Sanchez and Kutzbach's (1974) study of weather during the 1960s. Between A.D. 800-1000, climate became unstable and a global warming trend began (Messenger 1990:36), which Messenger believes actually increased rainfall by about 10% in much of the northern and north-central Maya area (modern Belize, the northern Peten of Guatemala, and the states of Yucatán, Quintana Roo, and Campeche). At this same time, Messenger proposes that parts of highland Chiapas and Guatemala would have received approximately 10% less precipitation. This may have upset regional interdependence as the "have-nots" in dry regions crossed a critical threshold enabling them to support increasingly large populations and participate in the regional economy and politics in ways never before possible. A minor increase, or even a slight decrease, in the "haves" (Southern Lowlands) area would not have made such an impact.

Shaw has recently brought a new element into these climate-related explanations for the collapse: deforestation leading to anthropogenic climate change (Shaw in press). Studies of modern deforestation (Ghuman and Lal 1987a and 1987b; Laurance 1998; Shukla *et al.* 1990; Walker *et al.* 1995) have shown that when trees are removed, the local climate becomes warmer and drier. The removal of forest from large expanses of land, and the maintenance of short vegetation and/ or bare earth raises temperatures and decreases evapotranspiration. The high populations documented for many Maya sites (*e.g*. Culbert *et al.* 1990; Haviland 1969), use of swidden agriculture, and reliance upon wood as a fuel in lime production and daily cooking, would have meant that many Maya site cores and supporting zones would have been largely free of trees. This deforestation is well documented in pollen profiles (Binford *et al.* 1987; Curtis *et al.* 1998; Rice 1996). While there is evidence for a general drying trend during Late to Terminal Classic times, Shaw argues that, because of culturally-induced microclimatic changes, differences in agricultural techniques (*i.e*. short vs. long fallow length and water conserving vs. water channeling), and the availability of alternative subsistence strategies (such as fishing or salt production) some sites suffered more than others. Future excavations (planned for 2003 or 2004) in the *aguada* itself will allow Yo'okop's microclimate to be better detailed.

In addition to providing a record of local human response to drought, this research can give an idea as to the degree to which the local microclimate mirrored a drought detected in studies elsewhere in the region. If the microclimate appears to have differed, future research, including pollen profiles, will investigate whether Yo'okop was relatively more or less deforested in comparison to various Northern and Southern samples. It is hoped that, as more analogous data are collected from other locales, a more sophisticated picture of the relationship between human action and environmental consequence may be established. For Mayanists, and anthropologists working in other areas, this would mean that any models invoking climate change as a significant factor in any chain of events must be more complex.

We began to evaluate this first set of hypotheses during the first two seasons of research through the comparison of relative ceramic frequencies from each time period. Analyzed according to the Type-Variety system (Smith, Willey, and Gifford 1960), the total number of identified sherds from each time period can be compared. It was predicted that if the Terminal Classic (A.D. 750/800-1000) was so dry that water for agriculture, or even drinking, was scarce, sherd counts should decrease during this period. Additionally, the relative number of constructions that appear to date to each time period (based upon architectural style) could be judged. According to data from the first season, it appeared that, relative to many other sites in the North, Yo'okop did not fare well in the Terminal Classic. When compared to other periods of occupation at the site, there was very little Terminal Classic construction in Yo'okop's Group A. However, the continued presence of Terminal Classic sherds in surface collections and Yo'okop's Postclassic resurgence did indicate that the site survived.

In 2001, with the mapping of Group B, many more Terminal Classic structures and features were revealed and sherds from this period were present in all five test pits. Now, rather than a site-wide Terminal Classic decline, it appears that only the locus of construction activity shifted during this period. Locating settlement farther away from the *aguada* during a dry period initially seems illogical. However, this shift may have freed up more *aguada*-area land for cultivation requiring pot irrigation. Additionally, *aguada*-area lands are among the lowest at the site, and would have allowed crops to be planted closer to the water table. Alternately, the lack of an obvious Terminal Classic in Group A may indeed indicate that the site's total population size contracted or that efforts were invested in building *Sacbe* 1 and other features dating to this period. As more excavations are conducted, we hope to gain a better understanding about the demographic tempo and settlement changes at the site through time.

A second set of hypotheses that began to be evaluated during these first seasons concerns Yo'okop's political affiliations, which are most clearly expressed in the epigraphic record. The nature of Maya political entities has been the subject of debate for a number of years. While some (Adams 1986; Marcus 1976) argue for larger "regional states" on the basis of the presence of "foreign" emblem glyphs at sites some distance from their city of origin, others (Mathews 1991) reject a hierarchical relationship between sites, resulting in a greater number of political units of correspondingly smaller area. Subsequent decipherments have suggested hierarchical relationships between "possessed" lords and sites. This has led to the hypothesis that many Maya cities were organized into "superstates" on the basis of marriage and alliance networks that persisted for many centuries (Martin and Grube 1995).

At Yo'okop, the epigraphic record is fragmentary and in the initial stages of study (see "Epigraphy"). Those glyphs that have been deciphered date to the Early Classic (A.D. 300-600) and show a strong relationship between Yo'okop and the Peten region. One glyph block depicts the term *K'awil*, incorporated by some Maya kings as part of their names. A second glyph block denotes the title *Kalomte*, or

Chakte associated with rulers at Southern Lowland sites such as Tikal, Calakmul and Copan (Stuart *et al.* 1989; Harrison 1999:79; Wagner n.d.). Another glyph block refers to Calakmul's Ruler 17 (Martin 1997:861), also known as "Sky Witness." While these glyphs imply a relationship to the Southern Lowlands, particularly Calakmul, they do not denote the nature of that relationship. The *Kalomte* title is superior to that of *Ahaw* or lord, and signifies a larger political entity than the city (Harrison 1999; Stuart *et al.* 1989). Given the relative size of Yo'okop and the existence of Tikal and Calakmul, it is unlikely that Yo'okop is the dominant site in the relationship.

It is hoped that some sense of the political affiliations of Yo'okop, as expressed through ceramic and architectural styles, can be better assessed as our sample size is increased through excavations. This will be done by continuing to note the appearance of diagnostic architectural elements (*i.e.* Early Classic Izamal-style blocks) and ceramics, which appear at high frequencies at the site. While 2000 surface collections, focused on Group A, indicated the general pattern of a large Late Formative and Early Classic presence, the 2001 test pits also brought to light substantial Middle Formative, Late Classic and Terminal Classic occupations. Postclassic materials are also prevalent throughout the site, although generally as minor modifications atop Classic structures. However, in many cases, excavations would be required to find architecture that is intact enough to be give stylistic insights beyond the basic time period. Such excavations are certainly required to recover ceramic materials from sealed contexts.

Architectural and ceramic distributions noted in the archaeological record are believed to represent cultural or political units with possible affiliations to macrostates. Recent research (*e.g.* Andrews and Robles 1985) has shown that Maya warfare and alliance systems extended over large distances. A "Peten Corridor" (Harrison 1981:284-5) of sites built in the architectural style of the Peten extended from the Southern Lowlands north towards Cobá. Schele and Mathews (1998) suggest that by the Late Classic, Cobá was part of a confederacy led by Calakmul. This confederacy may have impacted Yo'okop at the same time of Caracol's defeat of Tikal, in A.D. 562 (Martin and Grube 2000:17; Martin and Grube 1995; Schele and Freidel 1990). As there are signs of the two major Central Lowlands alliance leaders (Calakmul and Tikal) at Yo'okop, and there is clear evidence of fortifications at the site (Figure 4), the concept of Yo'okop as a frontier town between competing alliances, seems probable at this point.

If Cobá, independently or as part of the Calakmul alliance, dominated the region of Yo’okop during much of the Late Classic, as Andrews and Robles (Andrews and Robles 1985; Robles and Andrews 1986) suggest, then it is expected that the ceramics, epigraphic materials, and architecture would follow that of Cobá (*i.e.* Eastern Cehpech ceramics and Peten-style architecture). Alternately, if Yo’okop managed to resist the imperial aspirations of Cobá and other sites and remained independent, then local, or possibly hybrid, architectural (*e.g.* E.W. Andrews 1979; G.F. Andrews 1985) and ceramic styles are predicted with written materials relating to both zones.

In 2000, only limited surface collections were conducted at Yo'okop, providing out-of-context ceramics in poor condition. Based upon the surface collections, ceramically, Yo'okop's many Early Classic trade wares appear to have come from the Southern Lowlands, suggesting an established link to the south. Because Cobá also tends to be affiliated more with the Southern Lowlands than other northern sites, the pattern of distribution might help to support the notion that Yo'okop was an outpost of Cobá. However, the 2000 collections did not produce any clear ties to Cobá. For example, the Batres ceramic group, common at Cobá during the Late Classic (Robles 1990), was entirely absent from the surface sample. Ceramics from the 2001 test pits indicate that Batres Group ceramics are very infrequent at Yo'okop. In 2000, it was observed that the "Castillo" (Group A's Structure S4W1-1) possessed rounded corners, like Cobá's recently excavated Xaybe (personal observation). Yo'okop's ballcourt, recorded in 2001, likewise shares the dimensions of Cobá's courts. However, Group A's Structure S5E1-1 (Figure 5), resembles Tikal's South Acropolis (Carr and Hazard 1961). An alternative hypothesis is that Yo'okop functioned as a frontier town between competing political and economic spheres. This might result in a blending of traditions and styles. Given what is presently known of Yo'okop, it does appear that both Northern and Southern powers influenced the site, whether alternately vying for control of the region or shaping styles in a more indirect, distant manner.

Present knowledge places Yo'okop between the Puuc, Central Yucatán, and Peten architectural styles (Figure 2), each associated with different regional ceramic spheres (Fry 1987; Robles 1990). Regional architectural styles are relatively easily distinguished, at least for the Early Classic, Terminal Classic and Postclassic periods. In the North, the Early Classic is distinguished by its large "Izamal style" blocks that frequently formed the stairs of structures from this period (E.W. Andrews 1942:20; Taube 1995). The Late Classic Peten style consists in part of plain, load bearing walls of roughly quarried stone, slab corbelled vaults, and plain battered terraces with rounded corners. This style has been noted at Cobá (Thompson *et al.* 1932:108), and in the "Peten Corridor" (Harrison 1982:120-121). The contemporaneous Puuc style is composed of core-veneer masonry, including the vault stones, with plain substructures (Pollock 1980). Dating to the same time, the Central Yucatán style (Potter 1977) includes corbelled vaults whose stones have either rounded or beveled faces, walls composed of a combination of semi-load-bearing and cut veneer stone, and terraces with recessed panels. Veneer stones are present at Yo'okop, reused in Group A's Structure S4W-1, and in portions of Group B, but no intact Terminal Classic vaulted structures were noted.

Ceramically, the Northern Yucatán is dominated in the Terminal Classic by slate wares belonging to the Sotuta, Eastern Cehpech, and Western Cehpech spheres (Bey *et al.* 1992; Johnstone 1998). These wares have been reported from southern Quintana Roo (Fry 1987), though in lower frequencies. Ceramics typical of each of these spheres are present at Yo'okop, but the characteristic varieties of Eastern Cepech are most common. Comparison with other assemblages from earlier periods is limited by small or absent collections from other sites.

When more excavations are conducted, the discovery of early *in situ* architecture and ceramics will enable researchers to make better determinations about the regions with which Yo'okop was affiliated during the first part of its occupation. Research during 2002, and in following seasons, will seek to meticulously document numerous conquest-related contexts (*i.e.* areas with evidence of burning, collapsed vaults, smashed ceramic vessels, and/ or cut floors) around important structures in the site center (Freidel and Suhler 1995; Inomata 1997), and to document and date additional fortifications. It is hoped that this will then allow investigators to distinguish superficially similar events, such as natural decay accompanied by refuse accumulation and the purposeful destruction and desecration of key locales.

Methods

Mapping and limited test excavations were the foci of the 2001 field season at Yo'okop. This work concentrated on completing the recording of Group B and went on to map Group D and *Sacbe* 3 (Figure 1). Five off-mound test excavations were conducted in the plazas of Groups A, B, and D. The 2002 field season will continue the mapping of the site center, recoding the residential zone between *Sacbeob* 1 and 3, as well as further territory around Group B, to include a portion of *Sacbe* 2. Whenever possible, transects and nearby *milpas* will also be used to enlarge the map. Further test pitting and a small-structure excavation are also proposed for the following season.

A laser transit (Topcon GTS-213) with a data collector, operated by Shaw, Johnstone, and College of the Redwoods students, recorded the finer details of the structures and natural terrain in the mapped zones. This mapping was possible because of the assistance of a crew of assistants from the *ejido* of Saban (pueblos of Saban and Huay Max). These assistants cleared all features to be mapped, cut intervening *brechas* to allow zones to be searched, and helped look for features.

In 2001, mapping began in the southern portion of Group B, where work had ceased in 2000. Recording proceeded in a generally northward direction, to complete the core of Group B. While sizable constructions were observed outside the boundaries of the mapped zone, mapping ceased where the density of such structures markedly decreased in order to allow all of the Group's largest architecture to be recorded. After the core of Group B had been mapped, work proceeded from Group A to Group D, along the course of *Sacbe* 3. The most densely constructed portion of Group D was similarly recorded.

Data on each point (recorded as coordinates N, E, and Z relative to the site datum, as well as with a descriptive code and notes) were saved on the data collector and then downloaded onto a laptop computer each night. Data were e-mailed home each weekend to ensure their safety. Using Surfer (version 7.0), maps were printed at least each week to allow ground-truthing and permit structure naming. This strategy permitted a formal map of the documented region to be prepared and given to INAH-QR at the time the field season was completed. The maps are presented topographically, as well as with foundation braces and other walls, in order to most accurately represent the appearance of any features. A contour interval of 50 centimeters is used on most of the maps (see individual maps for scale) to clearly distinguish small mounds.

Surface collections have been used on a number of projects (*e.g.* Killion et al 1989; Kurjack 1974; A. Smith 1972; Thomas 1981; Willey *et al.* 1965) and were employed on a limited basis in 2000. However, because of the restricted quantities of surface materials present in many areas of Yo'okop and the extremely poor condition of collected ceramics, this strategy was not employed in 2001.

Instead, five test pits were excavated in 2001. Each placed in a separate plaza of one of the main groups, with the aim of obtaining ceramics from sealed contexts. These ceramics were needed in order to better understand the general occupational sequence of Yo'okop, as well as to date individual plaza flooring episodes. Additionally, the excavations were aimed to obtain artifacts begin to explore the political and economic affiliations of the site. Each of the test pits was originally planned to measure 2x2 meters. However, due to architectural restrictions, Operation 4 was limited to a 1x2 meter unit. Time constraints at the conclusion of the season kept Operation 5 to a 1x1 meter size. All pits were excavated in natural levels, with materials separated according to the operation/ level/ lot system. Operation 3 was halted after sterile, red *chac luum* fill was encountered, while all other operations continued to bedrock (*laja*). All fill was removed using small hand picks and trowels, transferred to buckets, and then screened using 1cm mesh. Shaw or Johnstone, assisted by two to three students and/or local crew members, were continually present as each excavation was conducted.

The Project utilized digital photography, color and black-and-white print photographs, color slides, plan and profile maps, and extensive note-taking, to record remains visible on the surface and in excavations. Linnea Wren and Travis Nygard documented all epigraphic materials at the site using digital and print photographs, as well as detailed drawings.

General Site Layout

According to our present knowledge, the site of Yo'okop consists of four major architectural groups (Groups A, B, C, and D) linked by three *sacbeob* (Figure 1). These four groups have significantly larger architecture (up to 28 meters in height) at substantially higher densities than the remainder of the site. Between the major groups, moderate-sized mounds (five to six meters in height), platforms, *rejolladas*, and small residential structures are scattered. These lower-density, inter-group zones are believed to be where the majority of Yo'okop's population resided.

Group A is the southernmost monumental component of the site. It is linked by the 718-meter *Sacbe* 1, which runs from the north-central edge of Group A north to south-central Group B. Group B is further connected to Group C by *Sacbe* 2, which extends 1,161 meters to the northeast. *Sacbe* 3 connects Group D to the northwestern part of Group A. Several informants reported a further connection between Groups D and B, although no such roadway has been located. The monumental structures in Groups A and B, as well as some intervening constructions, share an alignment of 25 degrees east of magnetic north. *Sacbe* 1, however, aims 20 degrees east of magnetic north and the structures in Group D do not share a particular common orientation.

The majority of the site is situated on essentially flat terrain, although Group A sits atop a sharp natural rise. The only water source on or near the site known to archaeologists and local inhabitants is an *aguada* immediately to the east of Group A. A modern dirt road between Saban and Dzoyola cuts through *Sacbeob* 1 and 3, running E-W, 100 meters north of Group A. Only footpaths connect the modern road to other portions of the site.

Other ruins are reported in the region, including one cluster of significant mounds near the modern pueblo of X-Cabil (which surround a *cenote*) and a second site a few kilometers southwest of Group A. The latter site was visited in 1998 by Shaw and Johnstone and was observed to have substantial quantities of Late Formative sherds present on the surface. No water source is reported for the site. An *ejido* resident making *milpa* at this (?)Formative site collected a bark-beater in excellent condition, which was photographed by Johnstone. While these loci are considered to be separate sites for reasons of distance alone, the relationship between these adjacent communities and Yo'okop is not known.

To the best of our knowledge, Yo'okop was by far the largest site in the region. We plan to continue to document and explore both the major architectural groups and intervening settlement zones in future seasons. Additionally, a more systematic regional inventory is envisioned.

Group A

Accurately recording the surface remains of Group A constituted the bulk of the 2000 field season at Yo'okop. The northern edge of the group is approximately 100 meters south of the modern road between Saban and Dzoyola. While this accessibility made it an attractive initial focus for our work, it also has exposed the group to more looting than is evident in other groups. Approximately eight *huacero* holes were present in the vicinity, although a focus on plazas has prevented architecture from being severely impacted by most of the pits.

Group A (Figures 3 and 4) measures roughly 400 (E-W) by 200 (N-S) meters and rises to between 18 and 46 meters above the site datum. The majority of the structures in Group A are oriented 25 degrees east of north. Containing some of the larger monumental architecture at the site and located to the west-southwest of the *aguada*, Group A was apparently an important locus during most, if not all, of Yo'okop's occupation. Based upon architectural style (see "Architecture" section), many of Group A's structures (such as S4W1-2) appear to have been built during the Early Classic, although substantial Late Classic constructions and modifications are also evident. Little Terminal Classic construction is evidenced in the Group. The area seems to have experienced a Postclassic resurgence. Although Formative ceramics are present at the site (see "Ceramic Analyses"), constructions dating to this time in the Group are either buried or architecturally indistinct.

Unlike the majority of sites in the north, Yo'okop's Group A displays a very formal architectural layout around plazas (Pollock 1965). While some of these plazas are large public spaces (such as the plaza east of S4W1-1 at the terminus of *Sacbe* 1), others are more private with restricted access (for example, the plaza north of S4E2-1). The eastern portion of the Group includes many such private plazas, surrounded by substantial range structures. Constructions that would have had perishable superstructures are located primarily around the periphery of Group A. Some of these smaller buildings are associated with *albarradas*.

As Group A was mapped in 2000, details on individual structures are provided in the 2000 field season report (Shaw *et al.* 2000) and will not be repeated here.

Figure 3: Yo'okop's Group A Topographic Map

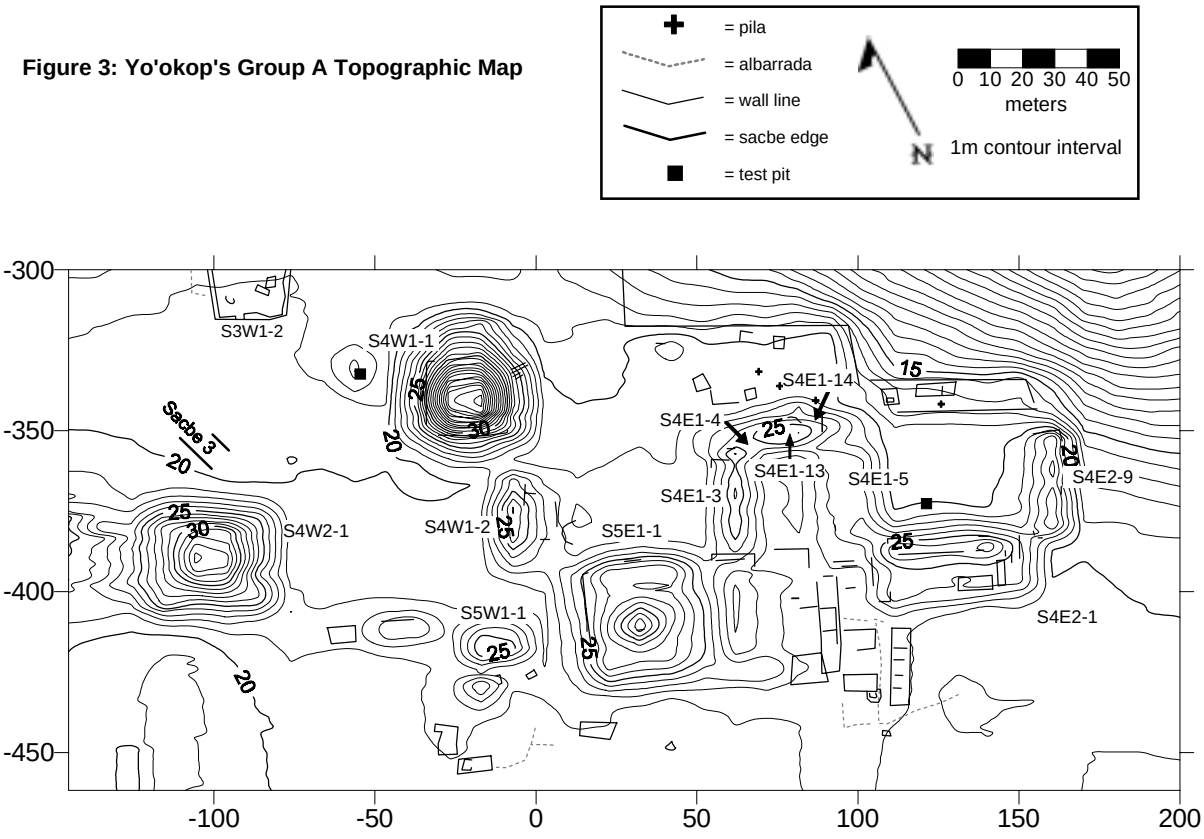
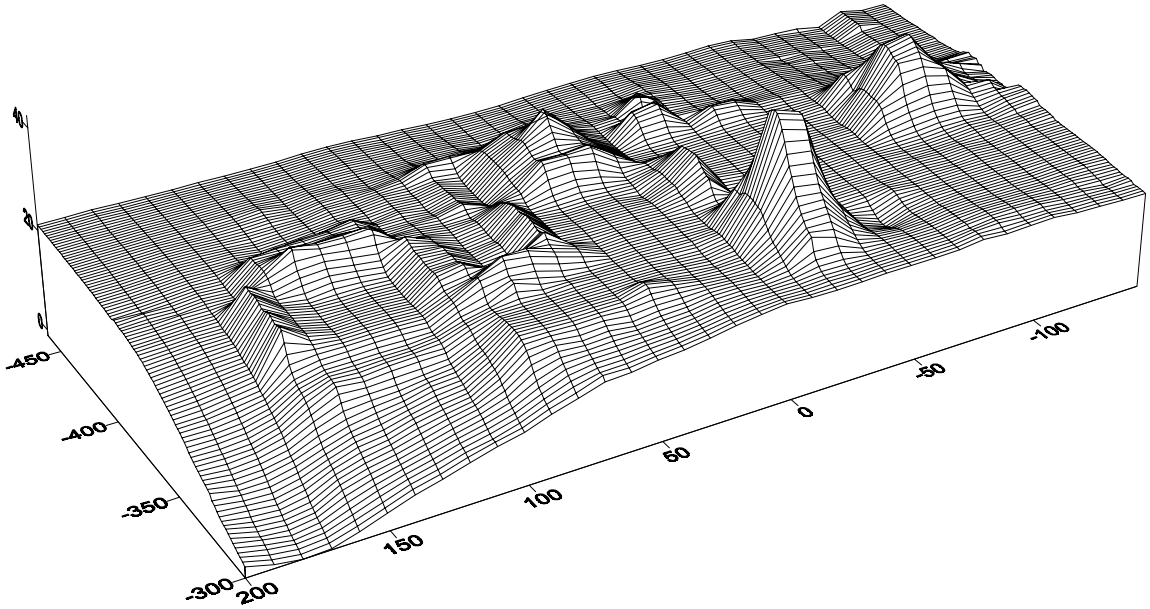


Figure 4: Group A Perspective View



Group B

Location and Prior Research

Group B is located approximately 718m north of Group A; *Sacbe* 1 connects the two Groups. *Sacbe* 2 provides a link from Group B to Group C (Figure 1). The largest of the three groups thus far mapped, Group B (Figures 5 and 6) contains substantial pyramidal and range buildings, as well as two acropoli, a ballcourt, and three *stelae*. The Group is surrounded by scattered substantial constructions that have not yet been mapped.

In 2000 (Shaw *et al.* 2000), Group B's southern acropolis (Structure N5W1-1) was recorded, as were the adjacent plaza and fortifications immediately to the west. These efforts revealed numerous Classic and Postclassic constructions on the southern acropolis, including Structure N5W1-3, a 55x20x21m range structure, and Structure N5W1-6, a 20.5m tall pyramidal structure. In 2001, Operation 2 was placed on this acropolis plaza (see "Operations 1 and 2") to explore the occupational sequence of the acropolis. Other notable features documented in Group B during the first season were a complex of *albarradas*, a stepped parapet, and an L-shaped protected entry that ringed the plaza to the west of Structure N5W1-1. Efforts in 2001 completed the mapping of the core of Group B.

Residential Platforms

Work in 2001 began to the west of the fortified Structure N5W2-1/ N4W1-5 plaza, with a complex of smaller residential constructions on the Structure N5W2-2 platform. This arrangement included one larger, elevated residence (Structure N5W2-3) that overlooked five smaller-scale constructions. This complex, scattered with eight *pilas* (*metates*), appears to mimic some historic and modern Maya *solares*, which include houses for family heads with smaller dwellings for adult children and their spouses, as well as separate special-purpose structures (Smyth 1991).

A similar arrangement was seen on the Structure N6E1-2 platform, which lies to the northeast of Group B's southern acropolis, on the eastern edge of the zone recorded in 2001. This residential platform, also replete with *pilas*, included a somewhat larger, elevated southern building (Structure N6E1-3), accompanied by four smaller foundation braces. An *albarrada* was placed along much of the western top edge of the platform.

On the northeast edge of the area mapped around Group B, the Structure N9E1-1 platform again imitates this arrangement. Although Structures N9E1-2, N9E1-3, and N9E2-1 are all larger-than-average residences, the latter structure dominates the complex. Smaller foundation braces, that may have served as kitchens, pens, or storage areas are scattered across the platform's raised plaza zone. *Pilas* accompany these buildings.

A final residence platform example lies inside Group B proper. Directly east of *Sacbe* 4 and Structure N6W2-9, the Structure N6W2-4 platform is dominated by

Figure 5.
Yo'okop's Group B Topographic Map

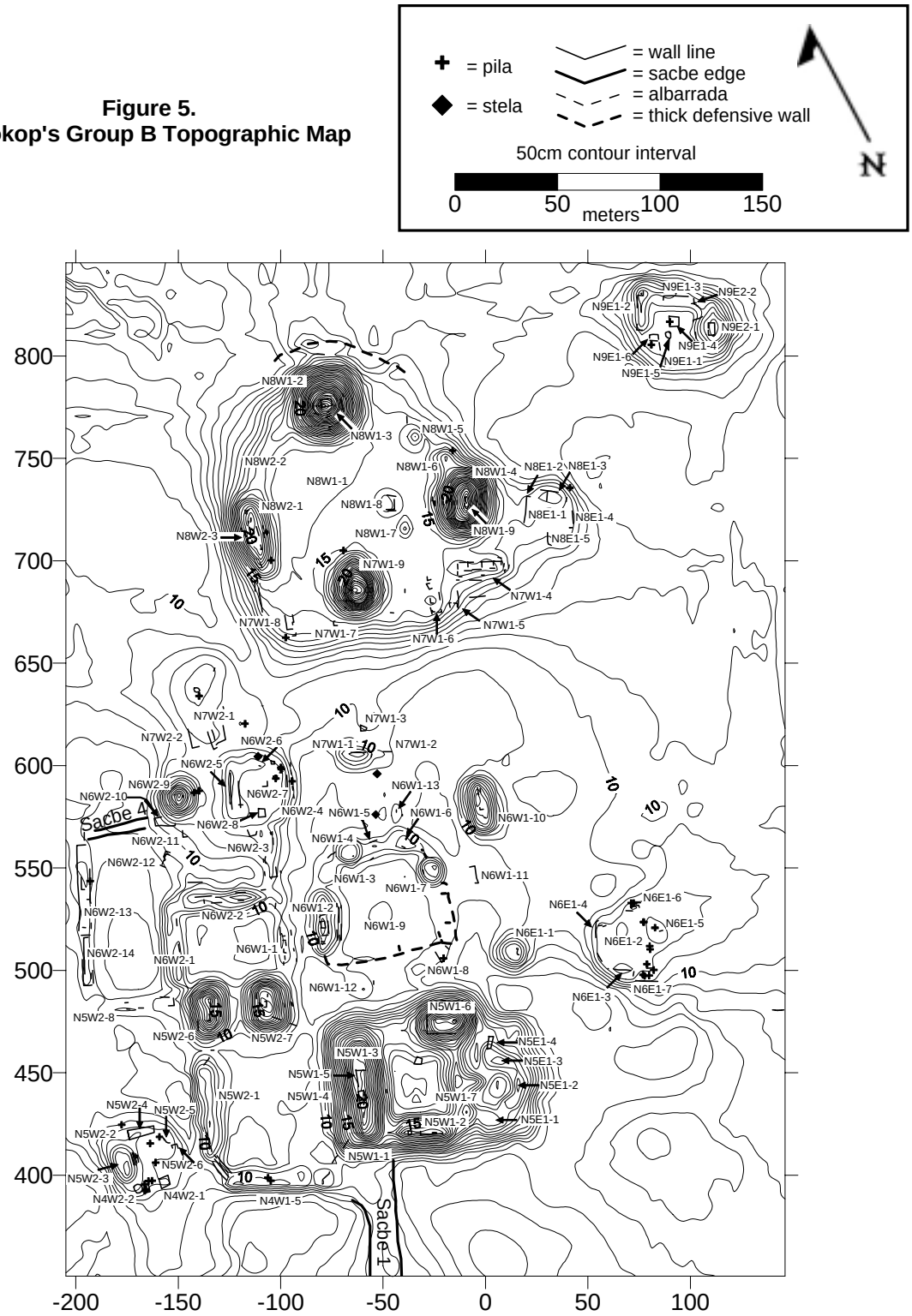
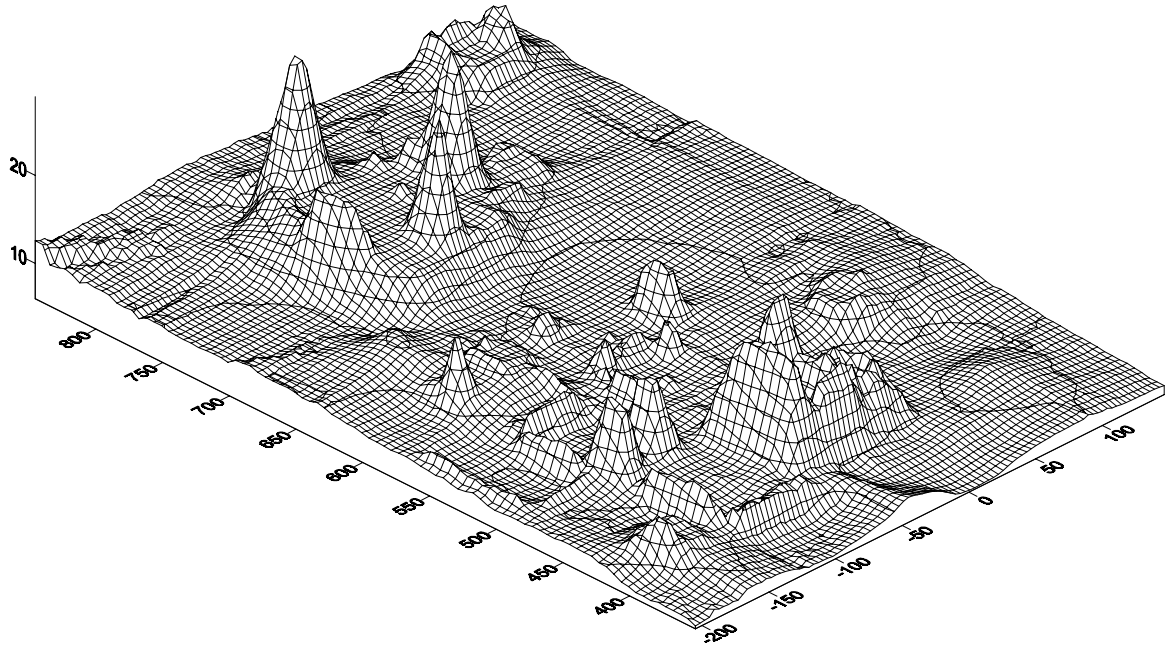


Figure 6. Yo'okop's Group B Perspective



the Structure N6W2-5 range building, with scattered *pilas* and foundation braces covering the remainder of the platform.

As other mapping at the site has not extended away from the monumental architectural groups and into the residential zone, it cannot be said for certain if this pattern (one dominant structure with scattered *pilas* and foundation braces on a platform) is typical of residential architecture at Yo'okop or whether the combination is a zone-specific, time-specific, and/ or class-specific phenomenon. As the examples observed in 2001 are all in or around Group B, it may be that the arrangement is characteristic of elites of lower-to-medium importance. None of the complexes were positioned directly adjacent to monumental architecture or atop acropoli.

The Ballcourt

The identity of Group B's ballcourt (Structures N5W2-6 and N5W2-7 to the northwest of the southern acropolis) was confirmed in 2001 by the location of a partial ballcourt ring (Figure 7). The ring was discovered mid-slope in the center of the east side of Structure N5W2-6, the construction forming the western side of the ballcourt.

The two ballcourt structures, while parallel and of relatively equal dimensions, are unusually short and tall (30x25x17m) for ballcourt constructions. Although somewhat obscured by collapse, the playing alley also appears to be rather narrow (about 5-6m wide). No end zones are demarcated architecturally. The ballcourt's dimensions are similar to Coba's two recently reconstructed ballcourts (personal observation).

The western structure, N5W2-6, has a small Postclassic shrine on its northern top. The eastern Structure N5W2-7 likewise has a shrine and has a set of stairs located on its east-central slope. An *albarrada* descends Structure N5W2-7's southeast corner, helping to seal off the fortified plaza to the south. Interestingly, Reginald Wilson (personal communication) reports seeing a stone yoke in Group B during his 1972 visit to the site (R. Wilson 1974). This yoke has not been located in the course of this Project's research.

Group B's Northern Acropolis: Structure N8W1-1

The larger of Group B's two acropoli, the northern acropolis (Structure N8W1-1), mimics the basic arrangement of the southern acropolis on a larger scale. The largest range structure in the arrangement lies on the western side of the acropolis. (In the case of the northern acropolis, Structure N8W2-1 is the only range structure.) The three other primary constructions on the northern acropolis, Structures N8W1-2, N7W1-9, and N8W1-4, are pyramidal buildings. Smaller foundation braces are scattered across the acropolis. Postclassic buildings top all four Classic constructions. The three pyramids each had a freestanding Postclassic temple, with Structures N8W1-3 and N8W1-9 (Figures 8a and 8b) being in the best condition. All three Postclassic additions included a set of narrow stairs.

Figure 7. Photograph of Yo'okop's Partial Ballcourt Ring

Figures 8a and 8b. Photographs of Structures N8W1-3 (top) and N8W1-9 (bottom)

Structures N8W1-4 and N7W1-9 had Postclassic stairs on their western slopes, while Structure N8W1-2's ran down the southern face. The heights of the three pyramids vary from 26.5 to 30m above the acropolis, while the range structure (N8W2-1) reaches about 20m. A number of smaller structures are positioned around the edge of the acropolis, between the four largest buildings.

***Sacbeob* in Group B**

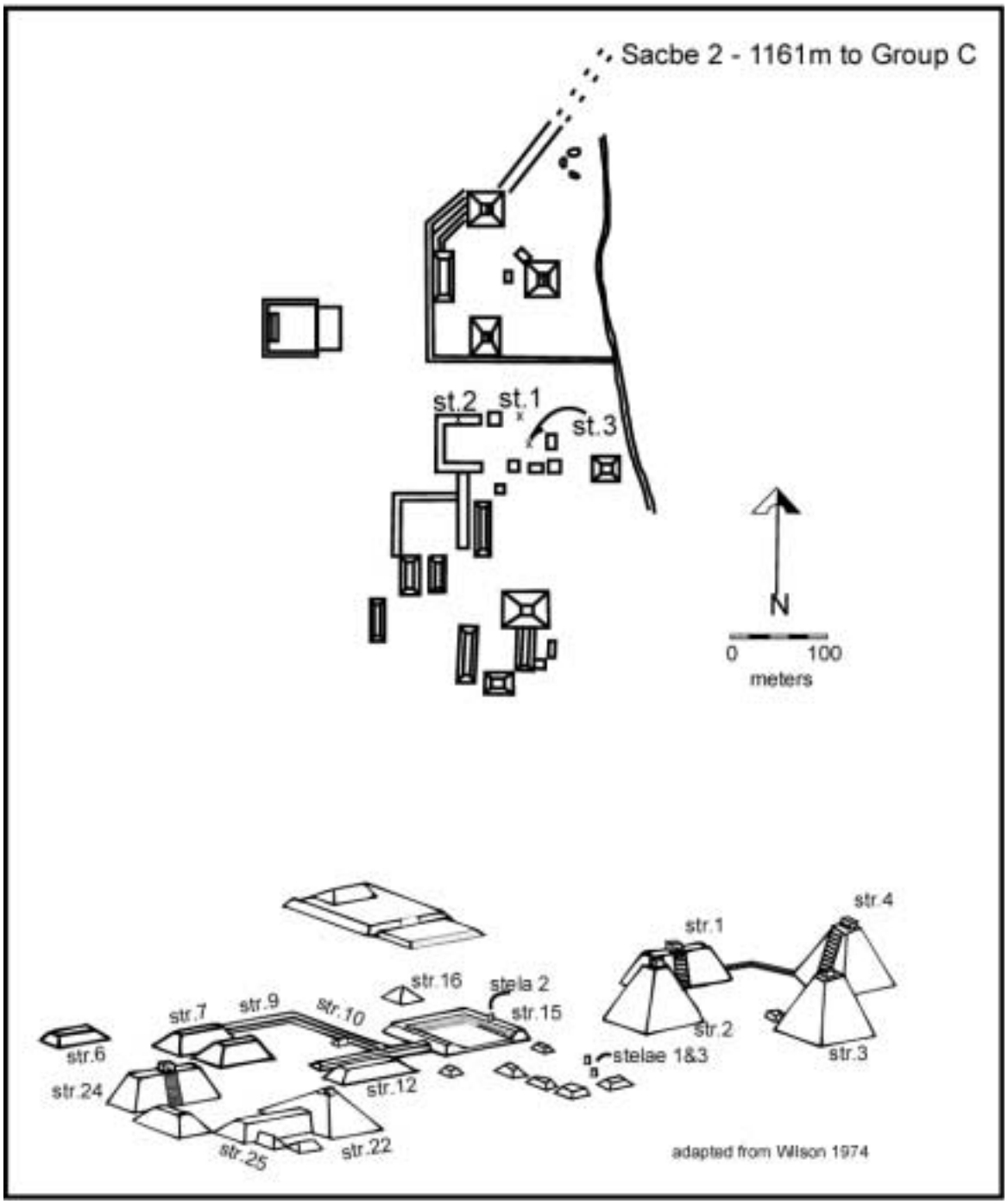
Sacbe 1's northern terminus at Group B was test pitted in 2001's Operation 1 (see "Operations 1 and 2" for details). The entire roadway and its immediate surroundings were fully mapped in 2000.

On Wilson's (1974) sketch map of the Group, *Sacbe* 2 left the northern edge of the northern acropolis (Figure 9). Work in 2000 seemed to contract this positioning, when a raised extension was seen to leave the Group to the east. However, in 2001, it was discovered that this eastern extension of the acropolis was actually a residential platform (Structure N8E1-1), rather than a roadway. *Sacbe* 2, running east-northeast to Group C, does not end in the core of Group B. The road instead was observed to run several hundred meters to the north of the Group through a zone not yet mapped. In 2002, mapping efforts will attempt to locate and record the terminus of *Sacbe* 2.

Sacbe 4 was discovered and mapped in 2001. This 30m roadway formed the northern perimeter of a plaza group composed of Structures N6W2-13, N6W2-14, and N5W2-8. Based upon the portions of Yo'okop recorded thus far, *Sacbe* 4 is unusual in several respects. The first is that, while no natural features appear to have interfered with the *Sacbe*'s path, it does not run at an angle consistent with the rest of the plaza (it is not at a 90 degree angle to the western structures) or with the orientation (25 degrees east of magnetic north) shared by most structures in the Groups. Instead, its angle is designed to connect the northern end of Structure N6W2-13 with a platform extending from Structure N6W2-9, indicating that the short *sacbe* was added after the two structures, or antecedents in the same locations, were constructed.

Sacbe 4 is also interesting in that it appears to have been constructed in at least two sections. Approximately halfway along its length, two walls running perpendicular to the roadway's sidewalls, spaced approximately 15cm apart, cross the width of the *sacbe*. These may represent a construction pause, followed by the completion of the road at a later time. Alternately, they may indicate that *Sacbe* 4 was constructed by two or more work parties, perhaps the inhabitants of the two groups being linked. A possible third extension of *Sacbe* 4 lies at its eastern terminus. Thin, well-spaced lines of rocks extend ~1.5m from the point at which roadway fill ends. These sidewalls corner and continue towards what would be the center of the road. However, each heads inward at a slightly different angle, so that the two lines do not meet. No fill was placed in this portion of the road. This feature may be an unfinished addition started at some later date. While the roadway does

Figure 9 . Sketch Map of Group B by Reginald Wilson



abut a platform on its western end, the eastern terminus does not reach Structure N6W2-10.

Fortifications

The 2000 season ended with the recording of a series of connected fortification features along the southwestern portion of Group B. Additional fortifications were discovered in Group B in 2001. Besides locating an *albarrada* on Structure N5W2-7 that helped to further enclose the fortified plaza west of the Structure N5W1-1 southern acropolis, two new walled zones were located.

One new set of Group B fortifications was recorded to the north of the southern acropolis. This plaza is enclosed by a series of *albarradas* and low walls that would have supported perishable palisades. Interestingly, walls extend inward from the low palisade base in four locations. All of the structures in the plaza area (Structures N6W1-2, N6W1-3, N6W1-4, N6W1-5, N6W1-6, and N6W1-7), except for the round platform Structure N6W1-9, formed a part of the fortification system surrounding the plaza. As with the more southern fortifications found in 2000, the *albarradas* and palisade base are relatively late in the site's occupational sequence, since they run over buildings, but do not appear to have been dismantled.

A final substantial fortification was constructed north of the Structure N8W1-1 northern acropolis. Curving just north of Structure N8W1-2, a substantial wall limits access to the acropolis. However, the ends of the wall do not meet any other constructions in a manner that would provide a sealed barrier. This indicates that the feature was never completed and/ or that other portions were constructed of perishable materials.

All three fortifications help to close off specific zones in Group B but, combined or considered separately, they leave significant portions of the Group vulnerable. The fortifications are located in the core of the Group, but aren't specifically focused on monumental constructions. This may be related to who directed the construction of the fortifications. Alternative explanations may be that the height and scale of the monumental constructions provided sufficient protection on their own to repel assailants, or that the size of the monumental buildings made the fortification of such structures prohibitive for reasons of limited time or resources.

Group C

Due to time and personnel constraints, we were not able to explore Group C during the 2000 or 2001 field seasons. However, information from Wilson (1974) and local crew members allows us to prevent a brief summary of the Group here. Group C is the most distant part of the site of Yo'okop that is physically connected to more central groups by a *sacbe*. *Sacbe* 2 begins to the north of Group B's core, running northeastward to Group C. While its terminus in Group B has not been recorded, according to Wilson (1974), it continues for 1,661 meters until it reaches Group C. Numerous *sascaberas* are reported along the sides of the roadways. Clapp's aerial observations (*ibid*. 1974: 12) indicate that a several individual pyramids exist along the roadway.

Group C itself purportedly consists of only one pyramid. Both Wilson and our local informants deny the existence of other monumental architecture in the zone. This structure is approximately 14 meters high and of a "square-type." It is located at the northeastern terminus of *Sacbe* 2.

Future plans for the Project include the mapping of Group C. Although excavations would also help to answer many questions about the Group, logistical difficulties oblige us to first concentrate such efforts on the more accessible portions of the site. No roads or footpaths currently extend to Group C.

Group D

Location and Prior Research

Project members first located Group D in 2000. At this time, a sketch map was produced of the primary structures in the Group and the area's location was recorded using a GPS. In 2001, *Sacbe* 3 and Group D were more accurately mapped using a total station (Figures 1 and 10). Additionally, one test pit was excavated in a Group D plaza (see "Operations 3-5").

Group D is located approximately 670m northwest of Group A; *Sacbe* 3 connects the two areas. A road to Group B is believed by local residents to exist, although such a link was not found in 2001. The smallest of the three groups thus far mapped, Group D consists of approximately 19 structures in a $100m^2$ zone. None of these structures rises more than six meters in height. The Group does not share the 25 degrees east of north angle common to the rest of Yo'okop. No common orientation is shared by the Group, although the plaza formed by the Group's two largest range structures points approximately 30 degrees west of north.

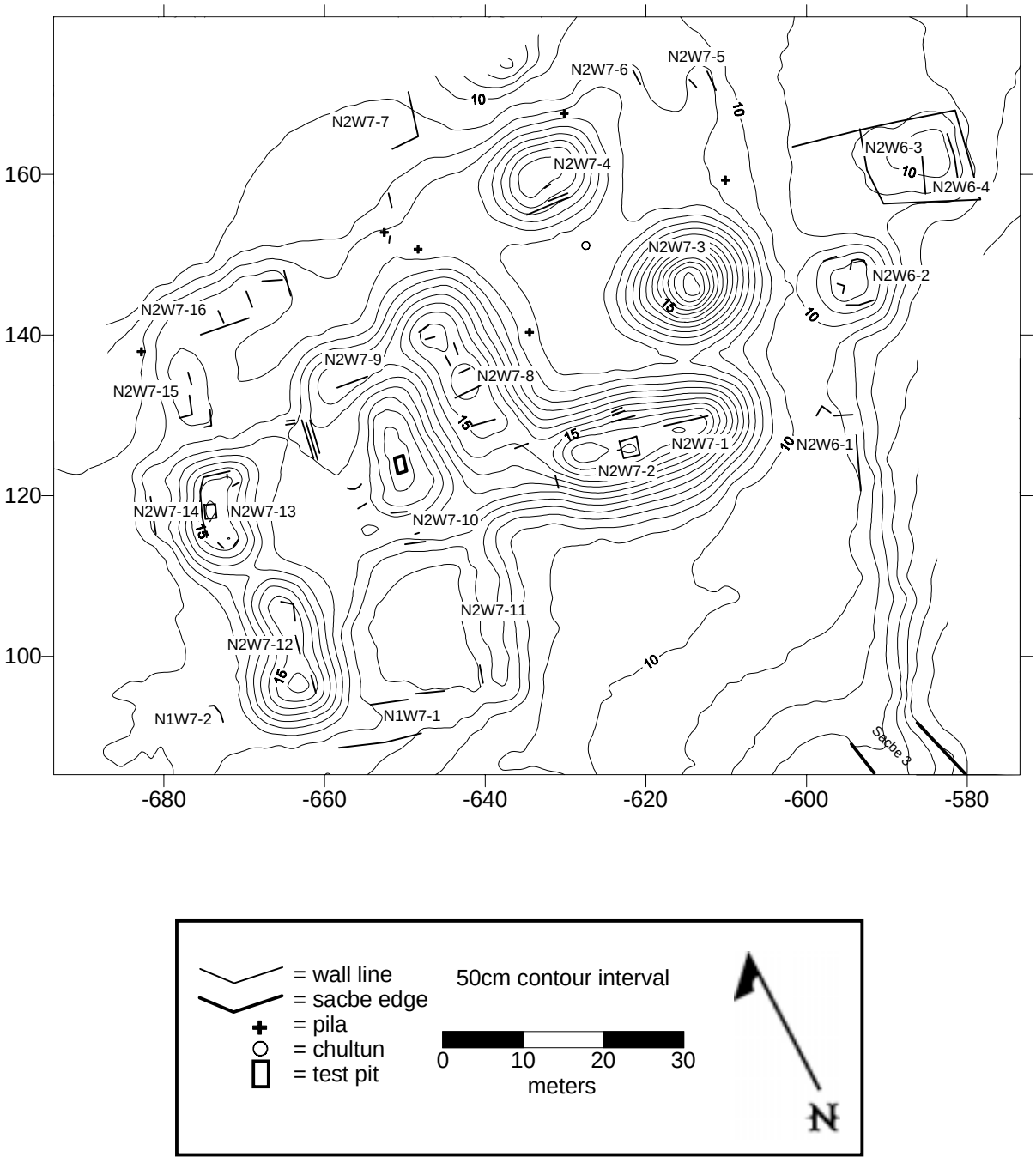
Group Layout

The southern portion of Group D rests on a constructed platform. This platform actually acts as a terrace, raising the lower southern portion of the Group and disappearing on the higher northern extreme. The edge of this platform is currently marked by clear wall lines at points along its eastern side, northeastern corner (around Structures N2W6-3 and N2W6-4), northern edge, and western edge (west of Structure N2W7-13). Foundation braces lacking substantial substructures ring the principal structures in Group D, marking the edge of the Group where it is otherwise not obvious. Several small *sascaberas* were located immediately to the north of the mapped zone.

Structure N2W7-3 is the highest building in Group D. The roughly circular pyramidal structure currently is about 20m in diameter. It rises at a steep angle to reach 6m in height. At present, the relatively small top supports a few remnants of some type of superstructure. The only *chultun* thus far located at Yo'okop was found in the plaza to the northwest of the tall mound. Immediately to the south and west of Structure N2W7-3 are two connected range structures, Structures N2W7-1 and N2W7-8. The two form an angle of approximately 105 degrees. This angle, and the failure of the entire Group to conform to the 25 degree east of north orientation, is unusual for the site.

The rest of the Group similarly lacks the planning that characterize Groups A and B. The connected plaza to the west of Structure N2W7-8, and its surrounding structures, were built at an angle unique unto themselves, not shared by the Group's larger structures, or the remainder of the site. Structures N2W7-11, N1W7-1, and N2W7-12 also form a distinctively angled plaza. Several small Postclassic shrines cap the structures of Group D; three were found on Structure N2W7-13, one was located on the top of Structure N2W7-12, and one on Structure N2W7-1.

Figure 10. Yo'okop's Group D Topographic Map



Discussion

Thus, although small, Group D is interesting because it is unlike the other Groups at Yo'okop in a number of ways. While it is connected by a *sacbe* to the rest of the site, the Group fails to conform to what appears to have been a very standard orientation. Based on mapping efforts thus far, it seems that nearly all monumental constructions, and many non-elite buildings, were careful to align both substructures and superstructures to Yo'okop's 25 degrees east of north orientation. No constructions in Group D appear to have attempted to follow this norm. Additionally, the site lacks the large-scale structures that are known to characterize the other three groups. For these reasons, it was thought that the Group might have been laid out and built substantially earlier than Groups A, B, and C. This hypothesis was not borne out in the area tested in 2001 (see "Operations 3-5"). Instead, the reverse may be the case. The 25 degree east of north angle may be an early preference that was not continued in later constructions at Yo'okop.

Another possible explanation for Group D's anomalous orientation and arrangement might be that the Group was occupied for a special purpose or by a special-status contingent. These ideas are supported by the fact that the only *chultun* thus far located at Yo'okop was found in Group D. While this water storage feature may have simply been more necessary in an area far from the *aguada*, its rareness may also indicate that the occupants in the zone imported their adaptation from elsewhere (*i.e.* the Puuc zone) and/ or had a need for stored water that differed from other inhabitants of the site. Operation 3 did not produce ceramics or other artifacts in sufficient quantities to allow comparisons to the rest of the site; more excavations are also needed to better characterize what ceramic types and frequencies might be expected for a "typical" area of Yo'okop.

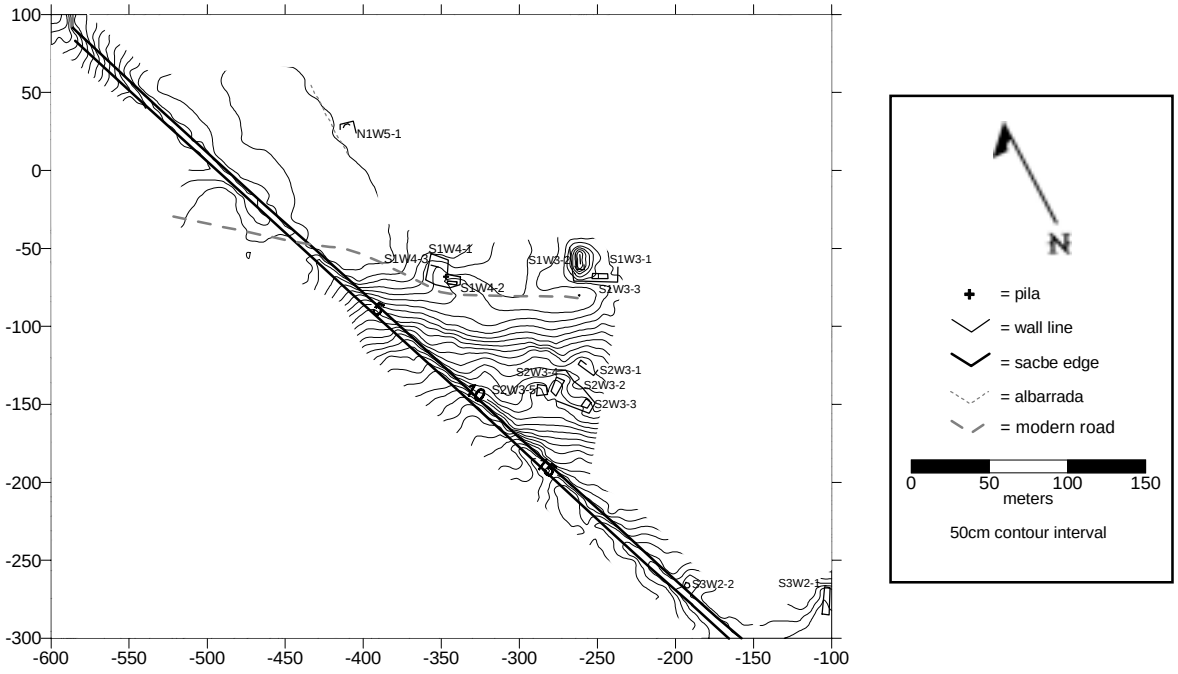
Sacbe 3

Sacbe 3 is the third longest known raised road at Yo'okop. It runs 690 meters north-northwest to south-southeast, connecting groups A and D (Figure 11). This roadway, at 7.1 meters wide, is somewhat narrower than *Sacbe* 1. As it runs tangential to the slope, its eastern side is higher than its western side. This height varies from 10 cm to 2 meters. The height varies with topography, in an attempt to maintain an even grade. Twelve meters southwest of Structure S3W2-2, a set of outset stairs gives access to and egress from the *Sacbe* prior to its termination in Group A. These stairs are positioned at a break in slope that marks the beginning of Group A. At present, the construction period of this road is not known, though it was noted that it was built over a residential platform, suggesting a later rather than an earlier construction period.

The *Sacbe* faces are constructed of coarsely-shaped stones set in a marl mortar. The lower courses are composed of large, thick stones set vertically, while upper courses are composed of smaller tabular stones set horizontally. Between the finished faces is a core of dry-laid graded fill, becoming progressively smaller towards the top. The upper surface is covered by a layer of gravel *chich*, that acts as a bed for a marl and plaster paved surface. This surface is largely eroded, though small traces remain.

While the cleared *brecha* paralleling the *Sacbe* was not wide enough to expose nearby residential foundation braces and platforms, *Sacbe* 3 passes through a portion of the site presently being used for *milpa* and orchard. These areas were mapped during the course of mapping *Sacbe* 3, and 16 new features were recorded. Six platforms, seven rectangular and two apsidal foundation braces, and one tandem vaulted building were located in the portion of the site between the major concentrations of architecture at Groups A and D. This information, combined with the residences recorded near *Sacbe* 1 (Shaw *et al.* 1990), suggest continuous, though less concentrated occupation of the areas located between the major architectural groups at Yo'okop. If additional stairs lie under collapse debris, then it is possible that the *sacbeob* served adjacent residential groups in addition to interconnecting the major architectural groups located at their termini.

Figure 11. Sacbe 3 and Vicinity



Operations 1 and 2

Operation 1

Operation 1 was a 2x2 m test pit located at the north end of *Sacbe* 1, where it broadened out to form a plaza area to the south of Group B's Central Acropolis (Structure N5W1-1; Figure 5). The location was chosen to provide a ceramic sample to date the construction period of the plaza, and of the *Sacbe*. The modern non-cultural ground level adjacent to the sacbe suggested that we could expect the excavation to reach a depth of about one meter. This estimate proved to be only one-third of the eventual depth of the test pit (Figure 12).

Level one proceeded to a depth of 34 cm below surface, and consisted of a humic zone of decayed organic material and the occasional rough stone of cobble size. The sherds recovered were poorly preserved, with almost half being unidentified. The identifiable sherds consisted of Late and Terminal Classic types (Table 3).

Level two consisted of a badly fragmented plaster floor and its gravel fill. This construction corresponds to the amplification of the northern part of the *Sacbe* to form an entry plaza. This level only yielded a single sherd, a Terminal Classic Muna sherd.

Three to six cm below floor 1 was a second plaster surface (floor 2). With the exception of three root penetrations, this floor was continuous across the unit. Three partially overlapping plaster patches in the floor represent portions of the surface that had been repaired in antiquity. Level three consisted of this floor, and the one meter of dry core fill that were laid down during the construction of *Sacbe* 1. The recovered sherds show a mixed lot. As a plaster floor sealed this, there is no possibility of intrusive ceramic material. The latest sherds then date this lot to the Terminal Classic period.

Level four consists of gravel-enriched *chac luum* overlying bedrock. The bedrock here is highest along the north end of the unit, dipping steeply to the south. Its near vertical face consisted of soft *sascab*. This level was artificially divided into three vertical lots. The upper meter contained two 40-50 cm deep postholes and a concentration of thermally altered rock (Figure 13). The recovered ceramics were a mixed lot of Late Formative and Early Classic. The middle lot contained Middle and Late Formative ceramics, and the lower lot was primarily Middle Formative, with some Late Formative.

Operation 1 yielded two floors with sealed ceramic lots. These suggested a Terminal Classic construction date for both *Sacbe* 1 and its amplification into an entrance plaza. There were no construction deposits at this location prior to this time, though the presence of possible postholes in the upper portion of lot 4 may indicate an Early Classic perishable structure. The recovery of Middle Formative sherds from the bottom of this operation yielded the first evidence for the occupation of Yo'okop at this early date.

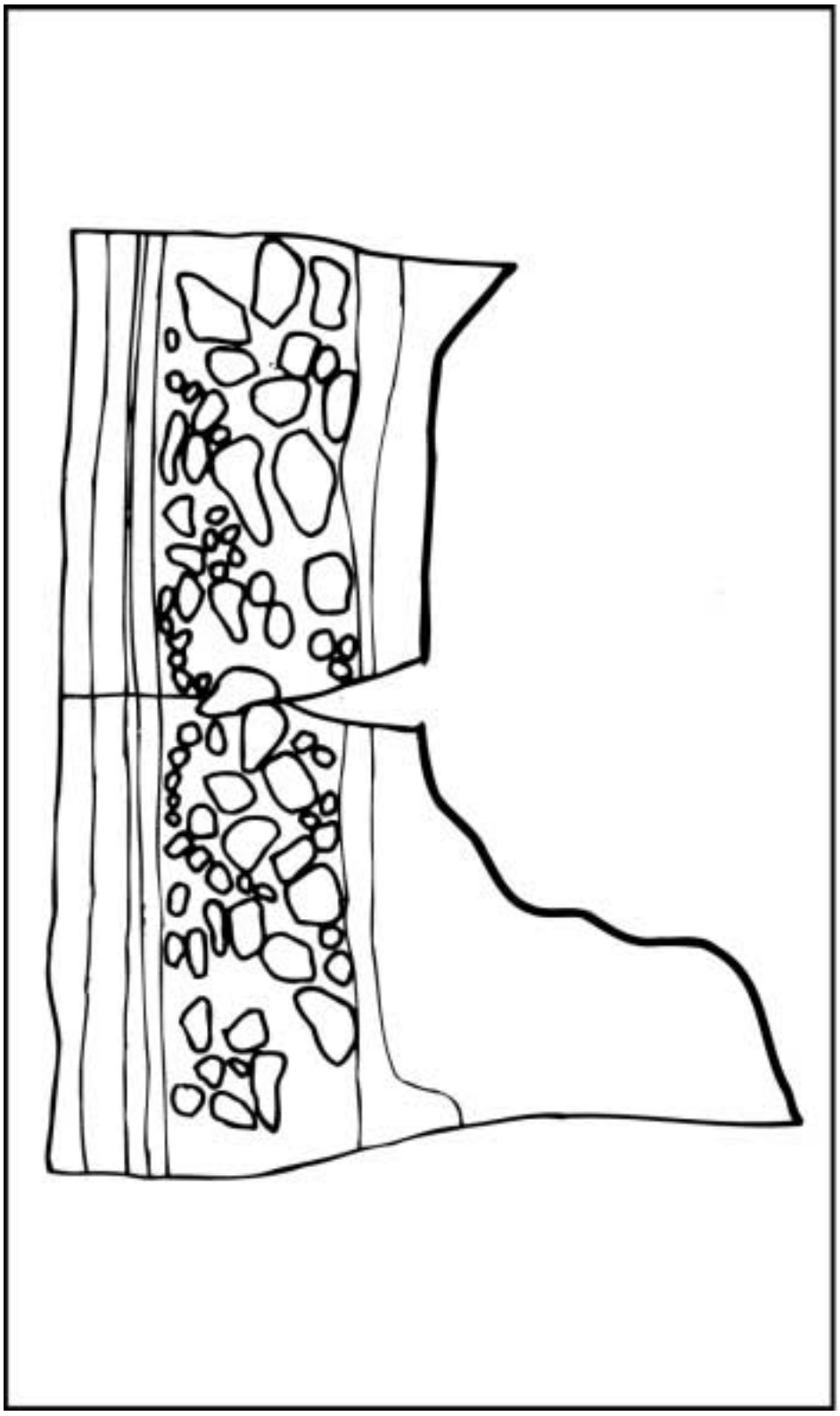
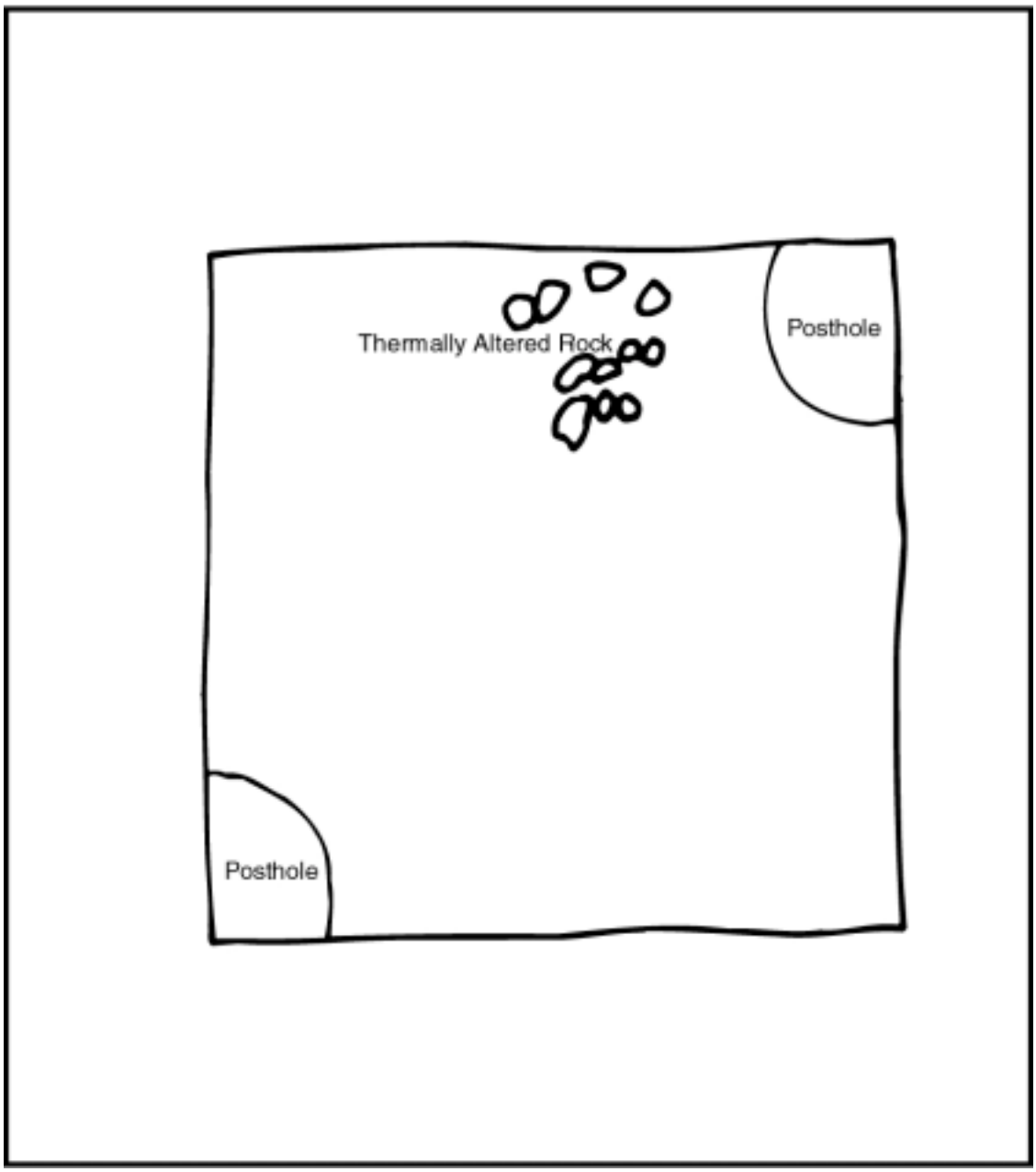


Figure 12. Operation 1 West and North Profiles

Figure 13. Operation 1 Level 4 Plan



Operation 2

Operation 2 was a 2x2 meter pit located in the main plaza of Group B's Central Acropolis (Structure N5W1-1). This unit was placed here to document the construction history of this imposing edifice. It was hoped that the plaza location would provide a series of plaster floors that would result in sealed ceramic lots and would enable good chronological control when assessing the ceramic history of Yo'okop. Given the raised nature of the acropolis, we were expecting a test pit in excess of two meters in depth (Figure 14).

Level 1 consisted of post-construction building collapse and natural soil buildup that occurred subsequent to the site's abandonment. This was removed in two lots. Lot 1 comprised the organic material, while lot 2 was a mixture of stucco melt, dressed stones, and the occasional fragment of red painted plaster that lay over a fractured floor damaged by root action. The ceramics from these two lots was different in type as well as in character. Lot 1 produced weathered Terminal Classic sherds, while lot 2 yielded large well-preserved sherds from the Late Classic period.

Level 2 consisted of a typical plaza floor construction sequence of rock constituents decreasing in size from boulders to cobbles and gravel, and topped by wet-laid *sascab* and plaster. This level ranged in thickness from 5 cm over the northern half of the unit to 20 cm in the southern half, where it was laid over floor 2. The ceramics from this level suggest a Late Classic construction date for floor 1.

Floor 2 was in a much better state of preservation than floor 1. It did not cover the entire unit however, as it ended at, and lipped onto, a line of faced stones running east west, and fronting a core of cobbles and boulders packed with mud. This structure (N5W1-1 sub 1; Figure 15) was originally at least 20 cm in height. The lack of any plaster or subfloor ballast on its upper surface suggests that this platform was truncated prior to its being covered by a later plaza floor (floor 1). Interestingly, later constructions displayed the same orientation as sub 1. Level 3 consisted of the sealed dry core fill underlying floor 2 (lot 2), and the unsealed construction fill associated with Structure N5W1-1 sub 1 (lots 1, 3, and 4). The ceramic content of these lots was essentially the same: Late Classic with earlier material included. At a depth of 1.7 to 1.8 meters, the fill changed. The clean white limestone in a loose grey *sascab* matrix gave way to a dirty pink limestone with a compact brown clay matrix. As no floor was noted at this transition, only the lots were changed (lot 5). Lot five probably represents a different source for both stone and soil. Included in this lot were a number of fragments of burned stucco floor fragments found throughout the deposit without preference as to orientation. This lot continued to a depth of three meters where it ended in a layer of brown marl.

The next four lots of level 3 (lots 6-9) represented not plaza floor fill, but a termination deposit associated with the destruction and burial of an earlier platform (N5W1-1 sub 2). These lots contained few ceramics, but were all pure samples dating to the Late Formative. The upper portion of this deposit was a wet laid pinkish-brown marl with gravel and small cobble sized inclusions. Under the marl

Figure 14. Operation 2 West and North Profiles

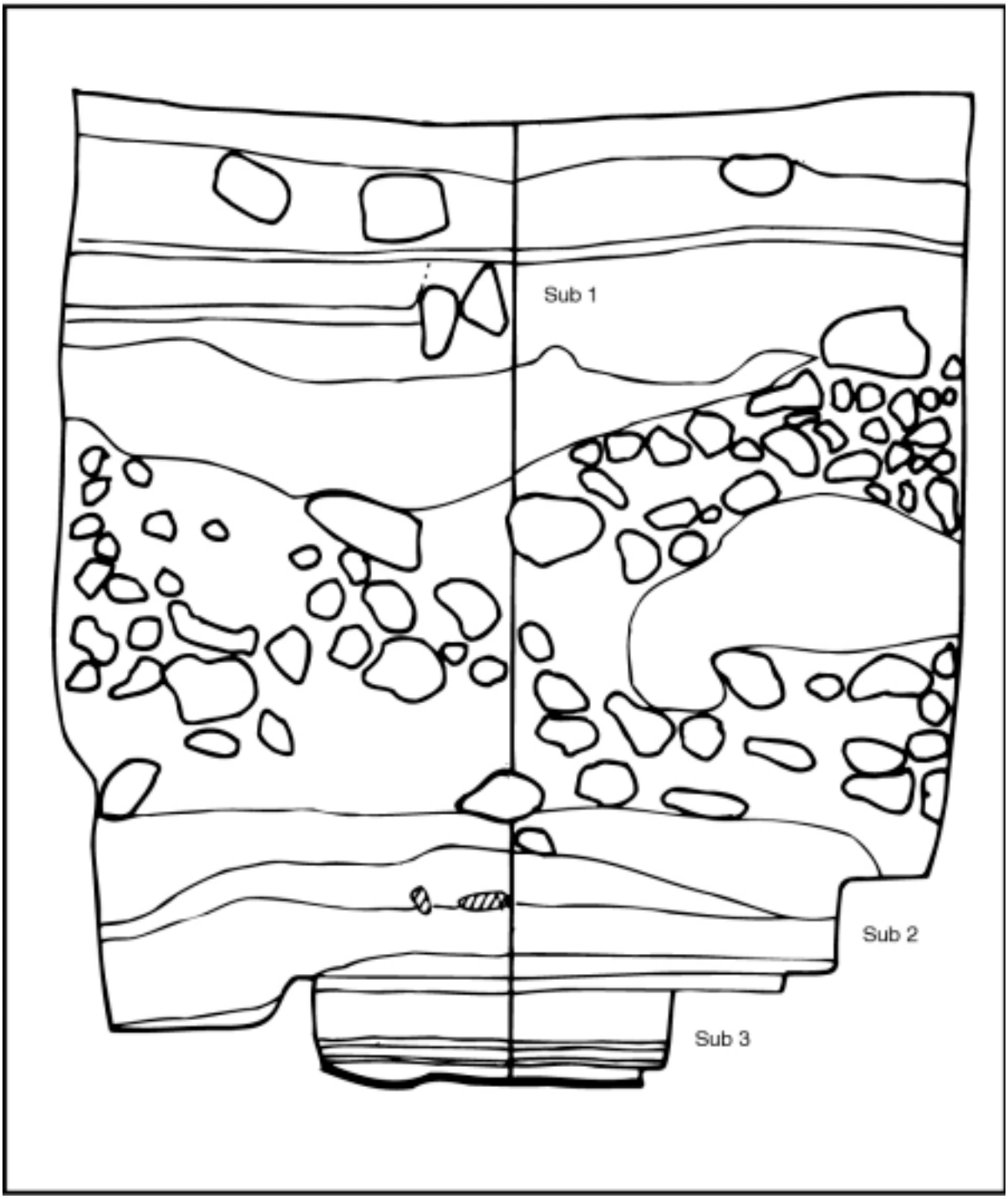
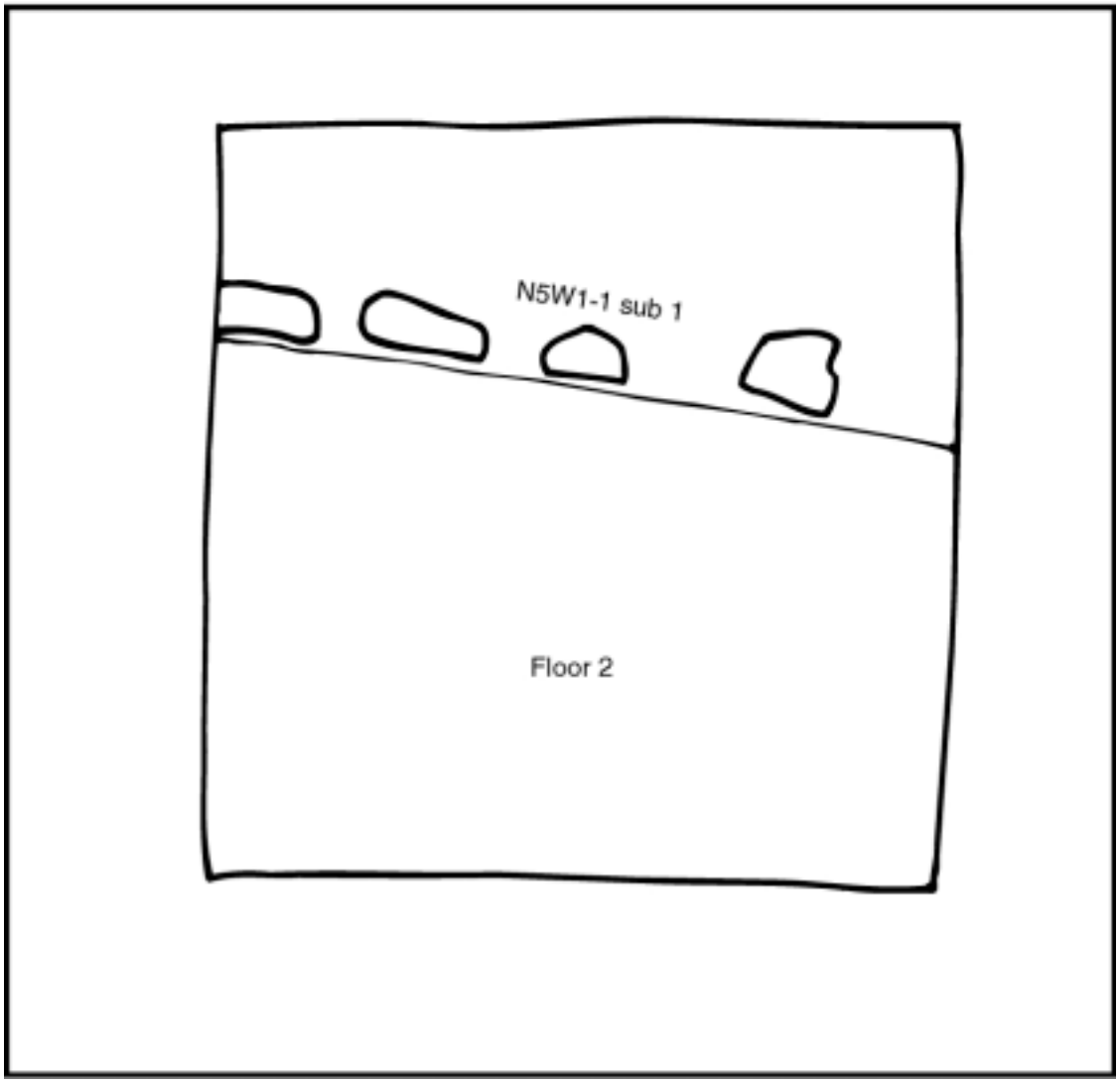


Figure 15. Operation 2 Structure N5W1-1 sub 1 Plan



was a layer of wet-laid white *sascab* (lot 7) containing large pieces of randomly oriented and inverted white plaster floor. These floor fragments were unpainted, and had at least three coats of finished plaster. Approximately 70% of lot 8 was composed of loose pieces of burnt daub, with the rest composed of gravel and soot covered stones. The daub was originally the outer coating of a wooden walled superstructure. Impressions of pole and or cross laths are preserved, including bark detail. A few pieces of daub show a well burned final layer of rough plaster 1 cm in thickness. Some of the ceramics from this lot also display evidence of burning. Lot 9 consisted of a deposit of powdery ash, soot, and the occasional scorched rock. A composite carbon sample of charcoal flakes was recovered from this lot.

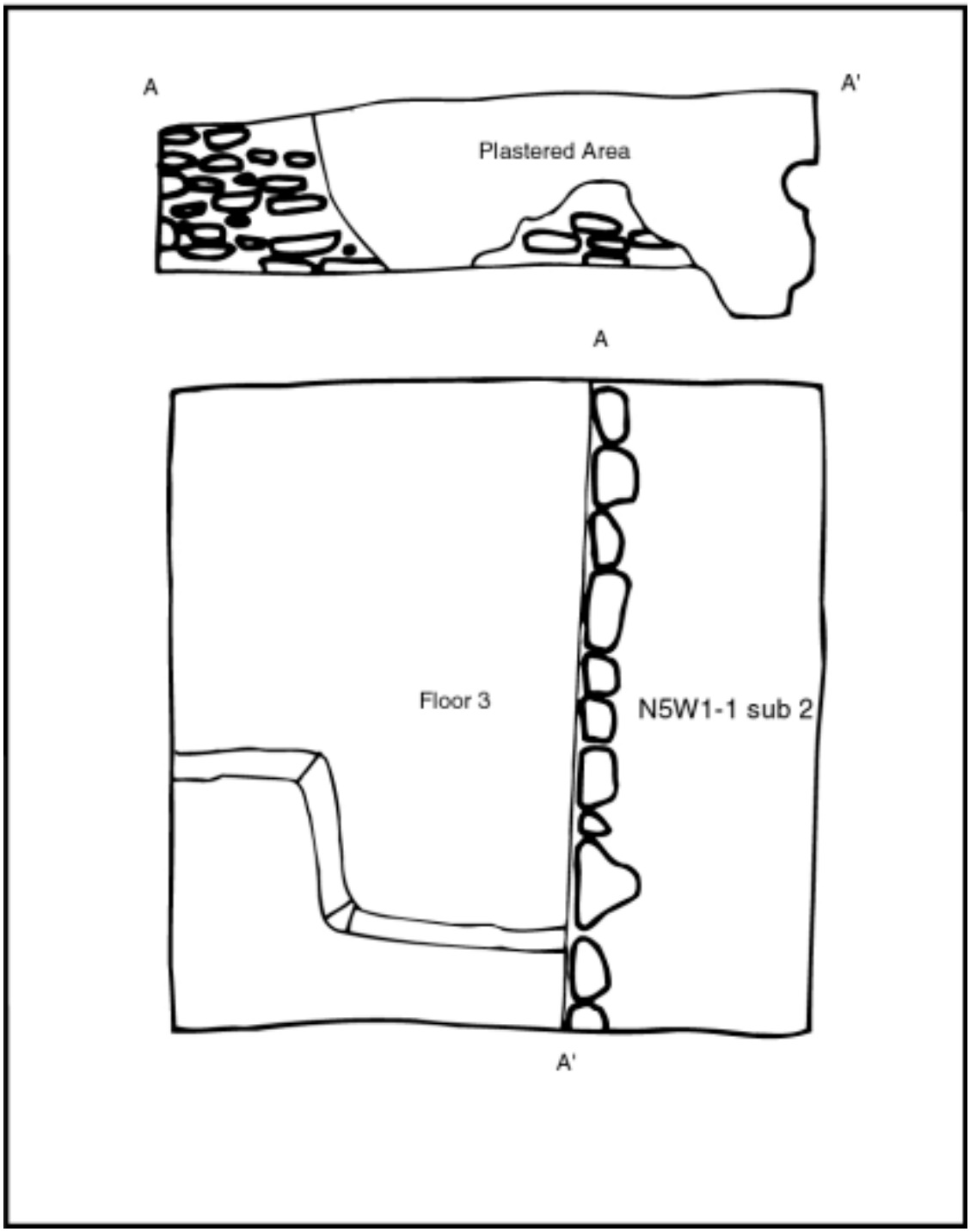
Floor 3 was a well-preserved molded plaster floor associated with, and lipping up onto, Structure N5W1-1 sub 2, a 70-cm tall platform oriented north south. The platform was constructed of coarsely shaped, thin tabular limestone blocks set into a mud mortar and faced with a coat of plaster. Soot concentrations on Floor 3 correspond with portions of platform face that are missing the plaster coat. Like Structure N5W1-1 sub 1, this platform was missing a finished upper surface, and was likewise probably truncated. The floor itself was multi-leveled, and stepped down 22 cm to the south (Figure 16). Level 4 was a 1 x 0.9 m excavation through Floor 3. The floor consisted of 4 cm of hard plaster. The eastern portion of the floor rested directly on top of a third buried platform (Structure N5W1-1 sub 3), while the western portion was a 40 cm deep deposit of size graded dry core fill, overlying a thin deposit of ash that covered Floor 4. The few recovered ceramics suggest a Late Formative date for the construction of floor 3 and Structure N5W1-1 sub 2.

Floor 4 was a thin, poorly preserved floor that butted up against Structure N5W1-1 sub 3. A 50 x 80 cm excavation was placed in Floor 4. Level 4 consisted of 1-2 cm of plaster over 2-3 cm of gravel. Like floor 3, this floor rested directly on a thin deposit of ash that covered floor 5. Recovered ceramics suggest a Late Formative date for this floor.

Floor 5 was a well-preserved floor that lipped up onto N5W1-1 sub 3. This platform is 30 cm in height running north to south. Sub 3 was also likely a platform front. It was constructed of roughly shaped 40 x 60 cm blocks set vertically and covered in three coats of stucco. Level 6 was a 50 x 50 cm excavation through Floor 5. This floor consisted of a 1cm thick, hard well-polished plaster surface lying on a 4-5 cm deposit of pinkish *sascab* with white inclusions. This *sascab* surface also covers the upper surface of sub 3, though it was not there covered with plaster. Floor 5 was constructed directly over bare bedrock. Unfortunately, no ceramics were recovered from this level.

The primary goal of Operation 2 was to establish a construction history for Group B's Central Acropolis. From the beginning during the Late Formative, this locality was of two masonry platforms associated with plaster floors. The absence of any constructions dating to the Early Classic may indicate that focus of major architectural efforts may have shifted to another part of the site during this time. The evidence from this location suggests that the major construction of the Central

Figure 16. Operation 2, Structure N5W1-1 sub 2
Profile (upper) and Plan (lower)



Acropolis was primary accomplished during the Late Classic, where the plaza floor was raised some 2.4 meters in a single construction effort, capped by a platform, and later remodeled during the same period. The lack of Postclassic material and the association of Terminal Classic sherds with collapse debris may indicate that this plaza either passed into disuse, or was destroyed during the Terminal Classic.

An unexpected bonus to this operation was the documentation of some of the termination activity associated with the remodeling or burial of structures. In all cases, fire seems to have been a necessary element. This may have taken the form of small smoking for subs 1 and 3, or more substantial burning for sub 2. All of the buried structures had their plastered upper surfaces removed prior to their being covered. The best sequence for termination activity comes from sub 2. The burning associated with this structure occurred both in front of the platform resulting in both spalling of the plaster face and the deposition of ash and soot on the floor fronting the platform. This ash was then covered by the unconsumed remnants of a perishable superstructure that were swept off the platform surface. A deposit of wet-laid *sascab* containing the unburned remains of the platform surface then covered this burned material. Finally, all of the termination deposits and some of sub 2 itself were buried in a layer of wet-laid marl that sealed off this locality.

Operations 3-5

Operation 3

In 2000, it was noted that Yo'okop's *aguada*, located to the east of Group A (Figure 1), provides the site's only significant water source. For this reason, it was hypothesized that Yo'okop's inhabitants would have made efforts to construct additional water catchment and storage features wherever possible. A likely locale for such a feature was thought to be a depression to the northwest of Group A's Structure S4W1-1, also known as the "Castillo" (Figure 3). This zone would have received rainwater from adjacent elevated structures and plazas. If the depression had been used for water storage, it was expected that it might have been lined with rocks, clay, plaster, and/ or other foreign materials designed to enhance the ability of the depression to hold water.

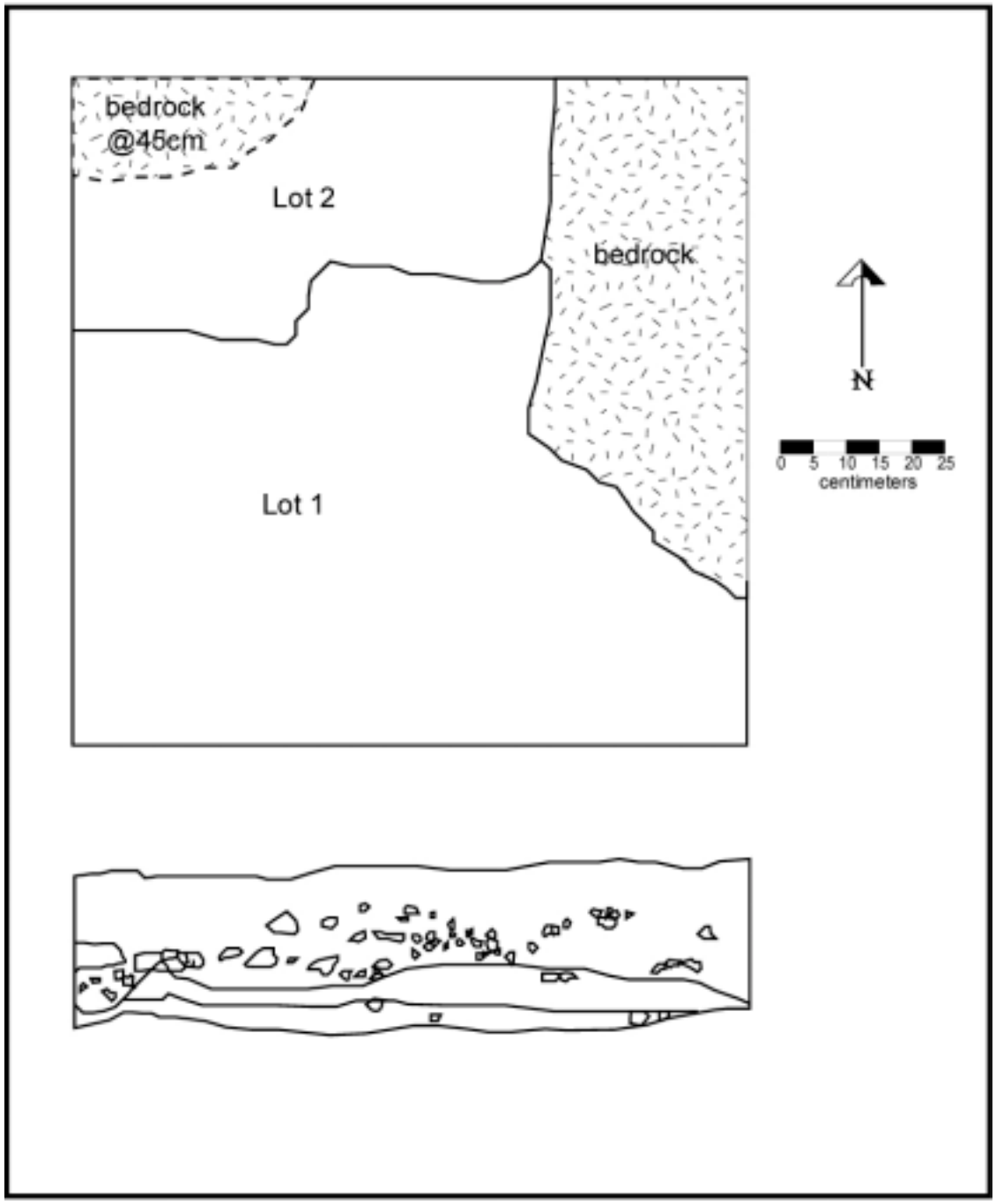
Operation 3 was a 2x2m test pit located in this depression (Figure 17a and b). The excavation was designed to test the hypothesis that the feature would have been lined to enhance water retention. Additionally, as with other test pits, it was hoped that the operation would increase the artifactual sample from the site. The operation was conducted using natural levels, designed to remove each occupation and feature separately. All materials were screened using ¼" mesh, using small hand picks, trowels, and brushes. A pit datum was used to control elevation and locations.

Operation 3, level 1, lot 1 was composed of a rich, black (5YR 2.5/1) organic fill. Ceramics, in poor condition from long exposure, were located immediately upon the surface. Small-medium (<10cm) rocks, roots, scattered red spots (decayed roots), and burned wood pieces were found near the surface in the level. Ceramics, primarily dating from the Late to Terminal Classic (Table 3), tended to be concentrated around the eastern and western edge of the pit, which contained more slope wash. Cobbles and boulders increased with depth. These rocks were not part of any *in situ* construction; instead, they appeared to be collapse from the nearby structures and plaza floor. At 17cm below the surface, bedrock appeared in the eastern part of the unit.

Level 2, lot 1 began at between 15 and 28cm below the ground surface. This dusky red to very dusky red (10R 3/3 to 10R 2.5/2) fill contained primarily Terminal Classic ceramics (although the vast majority were unidentifiable). Ceramics increased markedly at the start of the level (in comparison to level 1, lot 1), then sharply decreased at about 35cm below the surface. Bedrock increased through the level, extending to the south and west. It is believed that the denser concentration of ceramics at the start of the level may have represented an occupation surface, while level 1, lot 1 was slopewash containing materials from the surrounding structures.

The next deposit, level 3, lot 1, began at 35cm below the surface. This rocky red (10R 4/6) fill extended over much of the unit. However a thin lens of distinctly-colored red sediment (2.5YR 2.5/1) was separated as lot 2. This second lot

Figures 16a and 16b. Operation 3, Level 3, Lots 1 and 2 (@39cm below surface) and Operation 3 South Profile



expanded to cover nearly all of the northern half of the unit at 39cm in depth (Figure 17a), then disappeared by 43cm. After this depth, all of the material was level 3, lot 1. This *chac luum* became sterile, although it contained numerous scattered pebbles and cobbles. Bedrock also emerged in the northwest corner of the unit. Due to time constraints, the increasing presence of bedrock, and the sterility of the fill, the operation was terminated at an average of 48cm below the surface.

Operation 3 thus produced no clear evidence of any lining designed to hold water. While rocks were present, they appeared to have been either collapse or scattered as natural inclusions in sterile red fill. No evidence of any plaster or clay lining was seen. Ceramics indicate that activity in the area may have begun by at least the Late Formative and continued through the Terminal Classic. The majority of the identifiable ceramics dated to the Late to Terminal Classic. However, extremely poor preservation meant that the vast majority of the sherds were unidentifiable. The obsidian blade fragments and a shell inlay piece (Table 2) found in the pit may be related to ritual activities on Structure S4W1-1 or to domestic functions in the nearby residences.

Operation 4

Group D (see “Group D”), a relatively small group in terms of area and architectural scale, is connected to Group A by *Sacbe* 3 (Figure 1). The significant construction effort required to connect the two groups indicates that both must have been important loci for the site at some point in time. Group A’s significance is evident in its extent and in the monumental nature of its structures. Group D, though, is less visually dominant. Therefore, it was hypothesized that its importance may have been established early in the site’s history and/ or it represented a faction that was important, yet unable to marshal enough resources to expand the Group at the same rate and scale as Groups A and B. The former hypothesis was tested in 2001 in Operation 4.

Operation 4 (Figures 18 and 19), a 1x2m test pit in the plaza to the west of Structure N2W7-8 (Figure 9), was designed to obtain ceramics in an effort to date construction activities in the Group. The operation, conducted using the same procedures as Operation 3, was begun as a 1x1m unit, due to spatial constraints in the narrow courtyard; a 2x2m pit would have impacted architecture lining the plaza. The late start date of the operation also made the smaller unit an attractive choice.

Operation 4, level 1, lot 1 began with a dark reddish-brown (5YR 3/2), loose, dry fill. The lot was rich in Terminal Classic ceramics, and also contained chert and chalcedony flakes and floor chunks. One of the chunks was incised with a straight line and two chunks were painted red. The scattered gravel to cobbles in the lot indicated that it may have actually been the remains of the latest plaza floor.

At ~20cm below the surface, level 2, lot 1 began with a whiter fill, more clearly the remains of a decayed plaster floor. The dark grayish-brown (10YR 4/2) lot contained *sascab* chunks over a classic floor sequence of gravel to cobbles to

Figure 18. Operation 4 Plan at Bedrock

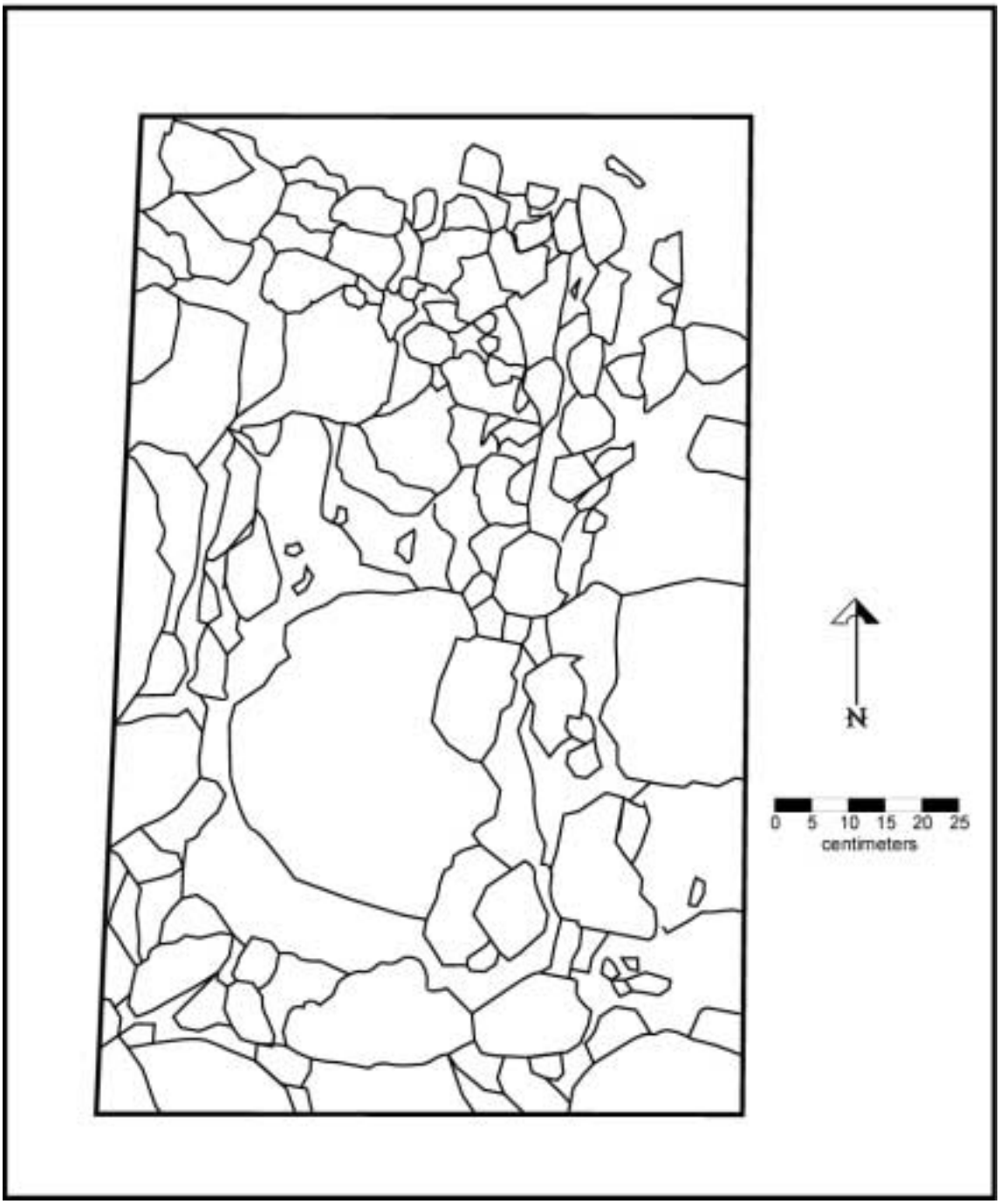


Figure 19. Operation 4 North and West Profiles

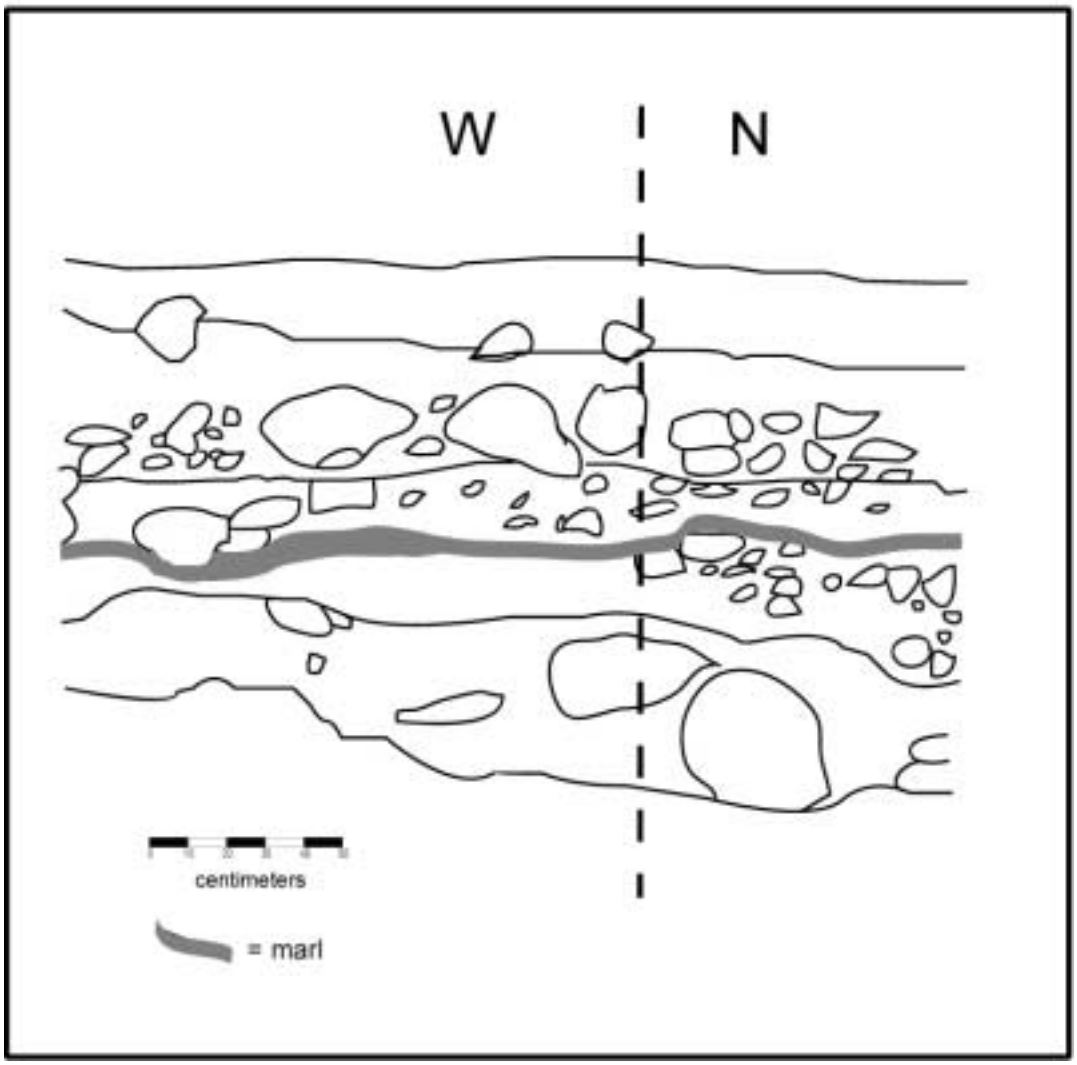


Table 2
Yo'okop 2001 Lithics

Op/ Lev/ Lot	Description
1/1/1	limestone flake proximal
1/4/1	limestone flake complete
1/4/1	limestone flake proximal
1/4/1	limestone flake proximal
1/4/1	banded chert bipolar core
1/4/1	white chert flake
2/3/5	limestone flake proximal
3/1/1	orange chert bipolar core
3/1/1	2 pieces milky gray obsidian blade, proximal end
3/2/1	brown (Belize) chert bipolar core
3/3/1	milky gray obsidian blade fragment
4/1/1	gray chert bipolar core
4/1/1	pink chert flake, distal end
4/1/1	white chert bipolar core
4/1/2	white chert bipolar core
4/1/2	white chert bipolar core
4/1/2	white chert bipolar core fragment
4/1/2	dark brown chert flake
4/1/2	peach chalcedony flake
4/1/3	white chert bipolar core
4/2/2	clear gray obsidian blade fragment w/ use retouch
4/4/1	milky gray obsidian blade fragment w/ use retouch

boulders. Very few artifacts were found in this dry core fill. Ceramics present date the fill to the Late Classic.

Under the subfloor, level 3, lot 1 was pink to pinkish-gray (7.5YR 8/3 to 7.5YR 6/2). At 50cm below the surface, the deposit appeared to be the remains of another decayed plaza floor. While no smooth floor remained, intact solid white marl (10YR 7/2) formed an undulating surface that allows the ceramics from the lot to be considered a sealed lot. The subfloor sequence contained few ceramics, however, and the lot can only provisionally be dated to the Late Classic.

At 90cm below the surface, the constrained nature of the 1x1m unit caused the addition of a 1x1 extension to the south, creating a 1x2m excavation. Finds from this extension were separated as lot 2 (Operation 4, level 1, lot 2; Operation 4, level 2, lot 2; and Operation 4, level 3, lot 2). The features and artifacts found in this extension were very similar to those found in the first lots (Tables 2 and 3). When the entire 1x2m test pit reached a depth of 90cm, Operation 4, level 3, lot 3 was begun. The lot included materials from 90-93cm in depth from the entire 1x2.

Operation 4, level 4, lot 1 began at 93cm, under the subfloor. This *chac luum* (5YR 3/3 dark reddish-brown fill) was dry and powdery. Late Formative to Late Classic sherds were concentrated on what appeared to have been an occupation surface at the start of the level, but few were located within the level. A limited number of cobbles were found in the fill. Bedrock emerged at approximately one meter below the surface, beginning in the east-central portion of the unit and gradually expanding. The operation was concluded as the bedrock spread to cover remaining portions of the pit by 1.37m below the surface.

Operation 4 thus revealed two to three plaza floors to the west of Structure N2W7-8. It contained ceramics dating from the Late Formative through the Terminal Classic, with floor constructions appearing to date to relatively late in the site's sequence. The numerous small chert flakes, obsidian, and sherds indicate that the plaza may have been used as a private work area. As none of the surrounding architecture has been excavated, however, the temporal relationship between the plaza sequences and adjacent constructions is unknown. In comparison to the earliest lots from Operations 1 and 2 (Middle Formative), the plaza sequences are relatively late. Therefore, based upon Operation 4, it seems unlikely that temporal precedent was the key factor that made Group D worthy of *Sacbe* 3. Instead, future seasons will explore the functions of Group D and the relationship between Group D and the remainder of the site. Excavations are also needed to firmly date *Sacbe* 3, which may help to narrow down the apogee of Group D's importance.

Operation 5

The eastern portion of Group A is distinguished by a large number of range structures arranged around formal plazas. The largest of these range structures, S4E2-1, faces northward, looking across a large plaza towards the *aguada* (Figure 3). This prominent position, and the structure's size, led to the hypothesis that it was

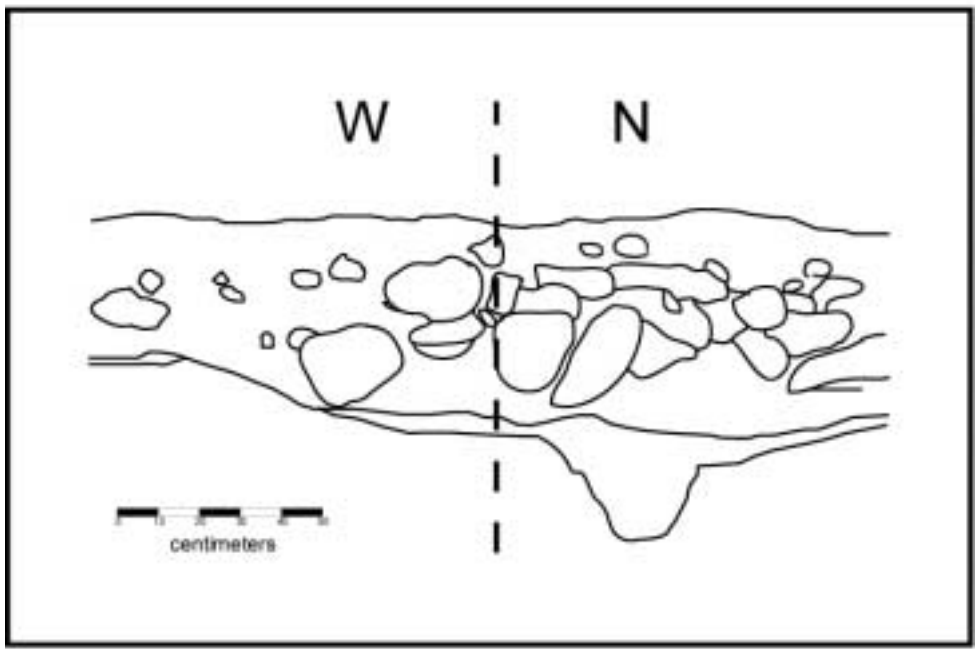
the residence for a very elite individual, such as a king. While it was not possible to test this hypothesis without structural excavations, a test pit was placed in the plaza immediately north of Structure S4E2-1 in an attempt to date activity in the area. Conducted at the end of the season, Operation 5 (Figures 20a and 20b) was a 1x1m unit excavated using the same procedures as Operations 3 and 4.

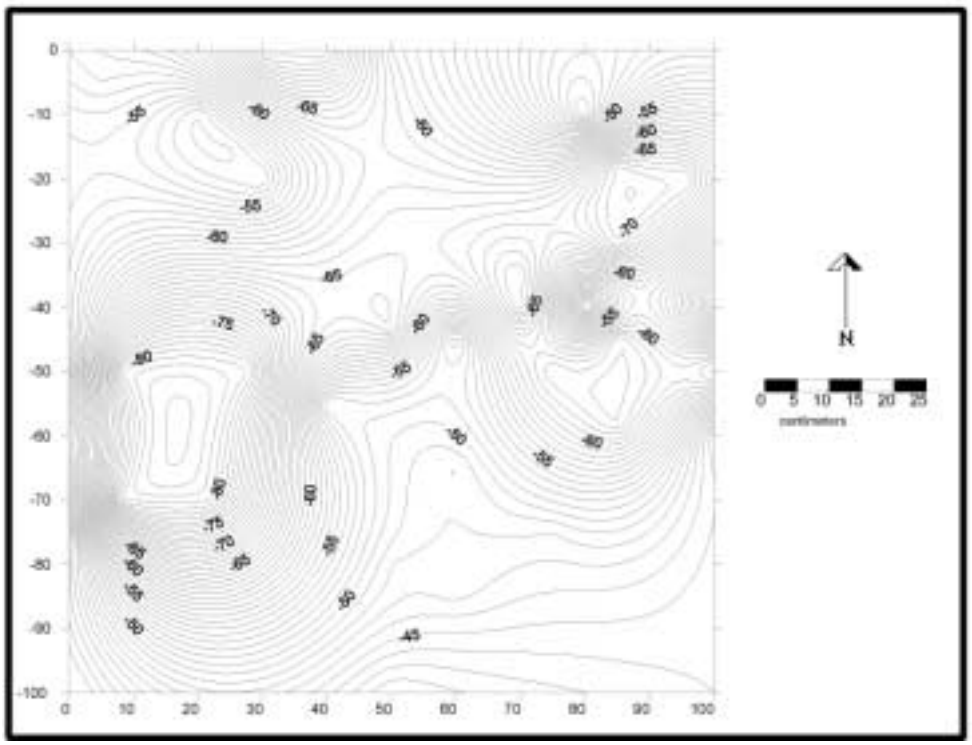
Operation 5, level 1, lot 1 was composed of black (7.5YR 2.5/1) fill with many rocks and a limited number or sherds in very poor condition. Some floor fragments from a thin (<3cm) floor were present, as was a stucco fragment that appeared to be part of an ear flare. It likely was part of a large mask that decorated the façade of one of the surrounding structures. With greater depth, the size of the rock inclusions increased to the size of ~60cm boulders. The level appeared to be the remaining subfloor of a disintegrated plaza surface, with a traditional floor preparation sequence grading from gravel to boulders.

At approximately 50cm below the surface, the fill changed to a dry, loose, dark grayish-brown (10YR 4/2). This deposit continued until bedrock, which lay at between 35 and 80cm below the surface. Very few identifiable ceramics were removed from the entire Operation; the 11 sherds that could be identified from the unit date from the Late Formative through the Terminal Classic (Table 3).

Thus, Operation 5 was disappointing in that it did not markedly increase the artifactual sample, did not contain any sealed lots, and did not provide a firm date for the plaza construction. However, the presence of only a single plaza surface is interesting for what appeared to be a significant locale in the Group. The plaza may have been surfaced as late as the Terminal Classic sherds found in the lots. One explanation for this limited attention is that, if Structure S4E2-1 was a royal residence, the zone may have only received attention during the king's tenure. His successor may have built a new palace, located in another part of the site. Such a practice of relatively frequent building would have significant implications for Yo'okop's settlement patterns. Obviously, multiple structural excavations would be required to even begin to test such a hypothesis.

Figures 20a and 20b. Operation 5 North and West Profiles and Plan at Bedrock





Ceramic Analyses from Five Test Pits

Surface collected ceramic material from the previous season (Shaw *et al*. 2000) suggested a long occupational history ranging from the Late Formative through the Postclassic periods. The presence of these ceramics on the surface resulted in their being subjected to a high degree of thermal and chemical weathering, which inhibited identification. The 2001 field season marked the first opportunity to recover ceramic material from excavated contexts. The larger sample, better preservation, and sampling of buried strata have resulted in the identification of many more types and in the lengthening of the ceramic sequence.

Five stratigraphic test pits measuring 2x2 m were excavated during the 2001 field season. While the placement of the units was not designed primarily to recover large ceramic samples, it was hoped that the three plaza localities would yield multicomponent ceramic columns that would permit the delineation of statigraphically-separated ceramic components. Seven floors were encountered, resulting in a number of sealed contexts. Five of these dated to the Late Classic, while two were constructed in the Late Formative.

A total of 3122 sherds from 30 lots were recovered, with conjoining pieces counted as one (Table 3). Each of these was labeled with unit, level and lot provenience. Analysis was carried out according to the Type-Variety method (Smith, Willey, and Gifford 1960). All ceramics were then stored in Saban pending the assembly of a permanent comparative type collection. Despite the low degree of preservation afforded by the high humidity location of one of the units, seventy percent of the recovered ceramics were identifiable to the level of the type. This represents a 24% increase in identified sherds over those from surface collections. Fifty types and 52 varieties were identified including one previously undescribed striated type containing shell temper. Half of these are types that were not represented in the surface collections; typically those were earlier types.

At present, six ceramic complexes are identifiable. These span, apparently without interruption, the Middle Formative through Postclassic periods. The earliest complex, known as the Itzamna, is represented by all four of the major ceramic groups commonly found in the Northern Lowlands during the Middle Formative. Technically complex, Itzamna ceramics are waxy-slipped, thick-walled monochromes and bichromes with frequent use of preslip incision as decoration (Figure 21). These ceramics were recovered from mixed lots either in soil horizons overlying bedrock, or incorporated into later construction fill. A surprising number of those from Operation 1, level 4, lot 3 displayed post-breakage burning, possibly from ancient surface exposure in a *milpa*.

The Late Formative Pahuatun complex includes 5 groups and 11 types (Figure 22). Large samples were recovered from Operation 1 in both pure and mixed lots associated with a soil horizon buried by later construction fill. In Operation 2, small, pure lots were associated with the construction, modification,

and termination of small basal platforms. These ceramics are primarily waxy slipped monochromes with thin walls.

The Early Classic is represented ceramically by the Ixchel complex (Figures 23 and 24). The majority of the Early Classic ceramic material was recovered mixed with later components. At present, this material spans the period from A.D. 250-550, but in the future, it may be possible to subdivide this material into separate complexes. Imported monochromes and polychromes as well as locally made derivatives are present. One lot may be assigned to this period; a buried surface containing postholes and a possible hearth from Operation 1, and a thick plaza floor from Operation 2.

Late Classic ceramics from the Chac complex are less numerous than Early Classic ceramics, but many more sealed lots can be assigned to this period (Figure 25). Two plaza floors and a platform from Operation 2, a plaza floor from Operation 4, and occupational debris from Operation 3 can be assigned to the Late Classic on the basis of their associated ceramics. Six groups and nine types are present. Imported Peten polychrome ceramics continue to be well represented. Batres group ceramics typical of the region around Coba are only minimally represented. This suggests that Coba was not exerting a strong ceramic influence on Yo'okop during this time. Of interest are two striated types apparently produced along the coast. The first of these, Dos Caras Striated, was established as a minority ware at Coba. One of the principle attributes of this type is a sand temper. The other striated, called Sacalaca Striated, has not been described at other sites in the Northern Lowlands. This type has shell and sand temper and wider striations than Dos Caras.

Terminal Classic sherds of the Balam-Kin complex were represented in every excavation unit (Figures 26 and 27). These ceramics were incorporated into construction fill in plaza surfaces in Operations 1, 4 and 5, as well as road fill for *Sacbe* 1, and in occupational debris in Operation 3. Typologically, this material could be included in the Eastern Cehpech ceramic sphere, with only two Sotuta sphere diagnostics recovered. Five groups and seven types were identified. The majority of these constituted Puuc Unslipped ware. Imported polychrome trade wares disappear from the assemblage, replaced by Puuc Red and Thin Slate wares.

No lots could be assigned to the Postclassic Kauil complex. While some Navula Unslipped and Mama Red sherds were recovered from the surface of Operations 1 and 4, these were incidental to the rest of the lots. The virtual absence of the complex from plaza contexts, and its relative abundance in surface collections from structures that had Postclassic summit shrines suggests that Postclassic construction and occupation was highly localized. Better sampling of these localities will be a priority for future ceramic research.

Table 3. Ceramics from 2001 Excavations at Yo'okop

	(Op/Lev/Lot)					
Type	1/1/1	1/2/1	1/3/1	1/4/1	1/4/2	1/4/3
Achiotes Unslipped					5	8
Chunhinta Black v. Ucu			1	3	7	7
Nacolal Incised			2			3
Joventud Red			2			12
Desvario Chamfered						1
Guitarra Incised			1			1
Dzudzuquil Cream to Buff			3		4	5
Tumben Incised						2
Chancenote Unslipped		1	13	150	20	
Tancah Unslipped			1	47	39	7
Xanaba Red						
Sierra Red	1	2	28	257	95	10
Laguna Verde Incised				3	3	
Ciego Composite				2		
Lagartos Punctate				1		
Repasto Black on Red				1	3	
Flor Cream				9	14	
Mateo Red on Cream				1		
Polvero Black					7	

Table 3. Ceramics from 2001 Excavations at Yo'okop

(continued)

	(Op/Lev/Lot)					
Type	1/1/1	1/2/1	1/3/1	1/4/1	1/4/2	1/4/3
Saban Unslipped			4	13		
Yaxcaba Striated		7	20	82		
Xanaba Red		2	8	19		
Caucel Trickel on Red						
Tituc Orange Polychrome v. Tituc						
Balanza Black		1		4		
Lucha Incised						
Aguila Orange			1	13		
Dos Arroyos Orange Polychrome			5	10		
Cetelac Fiber Tempered	1					
Elote Impressed			1	6		
Maxcanu Buff						
Hunabchen Red						
Kanachen Black						
Tituc Orange Polychrome v. Camichin						
Tituc Orange Polychrome v. Bandas						
Dos Caras Striated						
Sacalaca Striated		7				
Encanto Striated v. Sacna	1	2	1			
Arena Red	7	5	5			
Batres Red			4			
Muna Slate (LC)	2	2	2			
Sacalum Black on Slate (LC)						
Saxche Orange Polychrome		1				
Sayan Red on Cream						
Chum Unslipped			4			
Yokat Striated	2		4	6		
Muna Slate	9		5	5		
Sacalum Black on Slate			3	1		
Teabo Red	1					
Ticul Thin Slate						
Balantun Black on Slate						
Navula Unslipped						
Mama Red	1					
Unidentified	21	24	38	155	29	11
Total Sherds in Lot	48	54	156	788	226	67

Table 3. Ceramics from 2001 Excavations at Yo'okop

(continued)

Type	(Op/Lev/Lot) 2/1/1	2/1/2	2/2/1	2/3/1	2/3/2	2/3/3
Achiotes Unslipped						
Chunhinta Black v. Ucu						
Nacolal Incised						
Joventud Red						
Desvario Chamfered						
Guitarra Incised						
Dzudzuquil Cream to Buff						
Tumben Incised						
Chancenote Unslipped		3	17	2	11	2
Tancah Unslipped			14		10	
Xanaba Red						
Sierra Red	2	8	14	1	25	
Laguna Verde Incised						
Ciego Composite						
Lagartos Punctate						
Repasto Black on Red						
Flor Cream					4	
Mateo Red on Cream						
Polvero Black						

Table 3. Ceramics from 2001 Excavations at Yo'okop
(continued)

Type	2/1/1	2/1/2	2/2/1	2/3/1	2/3/2	2/3/3
Saban Unslipped			12		19	1
Yaxcaba Striated	5	1	36	12	38	
Xanaba Red	2	4	25	12	45	3
Caucel Trickel on Red	1				12	
Tituc Orange Polychrome v. Tituc			2	2	3	1
Balanza Black					1	1
Lucha Incised					1	
Aguila Orange				1	8	2
Dos Arroyos Orange Polychrome	3			2	10	1
Cetelac Fiber Tempered						
Elote Impressed	1				2	
Maxcanu Buff	1	1			1	1
Hunabchen Red					1	1
Kanachen Black					1	
Tituc Orange Polychrome v. Camichin						
Tituc Orange Polychrome v. Bandas				1		
Dos Caras Striated						
Sacalaca Striated						
Encanto Striated v. Sacna		40	7	2		
Arena Red		2	6	4	4	1
Batres Red		1				
Muna Slate (LC)		3	15	2	22	7
Sacalum Black on Slate (LC)					6	1
Saxche Orange Polychrome		3	12			
Sayan Red on Cream				1		
Chum Unslipped					3	
Yokat Striated	1				6	14
Muna Slate	3					
Sacalum Black on Slate	2					
Teabo Red						
Ticul Thin Slate						
Balantun Black on Slate						
Navula Unslipped						
Mama Red						
Unidentified	7		50	13	23	7
Total Sherds in Lot	28	66	210	55	256	43

Table 3. Ceramics from 2001 Excavations at Yo'okop

(continued)

Type	2/3/5	2/3/7	2/3/8	2/3/9	2/4/1	2/5/1
Achiotes Unslipped						
Chunhinta Black v. Ucu	4	1				
Nacolal Incised						
Joventud Red						
Desvario Chamfered	1					
Guitarra Incised						
Dzudzuquil Cream to Buff	1	1	1			
Tumben Incised						
Chancenote Unslipped	15			2		
Tancah Unslipped	30	1				2
Xanaba Red						
Sierra Red	85	9	1	2	2	6
Laguna Verde Incised		3				
Ciego Composite						
Lagartos Punctate						
Repasto Black on Red	2					
Flor Cream	17					
Mateo Red on Cream						
Polvero Black	4		2			

Table 3. Ceramics from 2001 Excavations at Yo'okop

(continued)

Type	2/3/5	2/3/7	2/3/8	2/3/9	2/4/1	2/5/1
Saban Unslipped						
Yaxcaba Striated	7					
Xanaba Red	6					
Caucel Trickel on Red	5					
Tituc Orange Polychrome v. Tituc						
Balanza Black						
Lucha Incised						
Aguila Orange						
Dos Arroyos Orange Polychrome						
Cetelac Fiber Tempered						
Elote Impressed						
Maxcanu Buff						
Hunabchen Red						
Kanachen Black						
Tituc Orange Polychrome v. Camichin						
Tituc Orange Polychrome v. Bandas						
Dos Caras Striated						
Sacalaca Striated						
Encanto Striated v. Sacna						
Arena Red						
Batres Red						
Muna Slate (LC)	6					
Sacalum Black on Slate (LC)						
Saxche Orange Polychrome						
Sayan Red on Cream						
Chum Unslipped						
Yokat Striated						
Muna Slate						
Sacalum Black on Slate						
Teabo Red						
Ticul Thin Slate						
Balantun Black on Slate						
Navula Unslipped						
Mama Red						
Unidentified	30	4	3			
Total Sherds in Lot	213	19	7	4	2	8

Table 3. Ceramics from 2001 Excavations at Yo'okop

(continued)

Type	3/1/1	3/2/1	3/3/1	3/3/2	4/1/1	4/2/1
Achiotes Unslipped						
Chunhinta Black v. Ucu						
Nacolal Incised						
Joventud Red						
Desvario Chamfered						
Guitarra Incised						
Dzudzuquil Cream to Buff						
Tumben Incised						
Chancenote Unslipped	2			1	3	4
Tancah Unslipped	1					
Xanaba Red						
Sierra Red				1		
Laguna Verde Incised						
Ciego Composite						
Lagartos Punctate						
Repasto Black on Red						
Flor Cream						
Mateo Red on Cream						
Polvero Black						

Table 3. Ceramics from 2001 Excavations at Yo'okop

(continued)

Type	3/1/1	3/2/1	3/3/1	3/3/2	4/1/1	4/2/1
Saban Unslipped						
Yaxcaba Striated						10
Xanaba Red		1		2	5	1
Caucel Trickel on Red						5
Tituc Orange Polychrome v. Tituc					1	
Balanza Black					1	
Lucha Incised						
Aguila Orange						
Dos Arroyos Orange Polychrome						1
Cetelac Fiber Tempered						
Elote Impressed						
Maxcanu Buff						
Hunabchen Red						
Kanachen Black						
Tituc Orange Polychrome v. Camichin						
Tituc Orange Polychrome v. Bandas						
Dos Caras Striated					22	
Sacalaca Striated					17	
Encanto Striated v. Sacna	8	7		7	20	6
Arena Red					8	
Batres Red						
Muna Slate (LC)	5	6			11	3
Sacalum Black on Slate (LC)						
Saxche Orange Polychrome					6	2
Sayan Red on Cream						
Chum Unslipped						
Yokat Striated	8				41	
Muna Slate	6	1			19	
Sacalum Black on Slate	2				6	
Teabo Red					12	
Ticul Thin Slate	1				7	
Balantun Black on Slate					2	
Navula Unslipped					11	
Mama Red						
Unidentified	127	123	7	35	121	7
Total Sherds in Lot	160	138	7	46	313	39

Table 3. Ceramics from 2001 Excavations at Yo'okop

(continued)

Type	4/3/1	4/3/2	4/3/3	4/4/1	5/1/1	5/2/1
Achiotes Unslipped						
Chunhinta Black v. Ucu				1		
Nacolal Incised						
Joventud Red						
Desvario Chamfered						
Guitarra Incised						
Dzudzuquil Cream to Buff						
Tumben Incised						
Chancenote Unslipped			1	12	1	
Tancah Unslipped				3		
Xanaba Red				1		
Sierra Red				4	1	
Laguna Verde Incised						
Ciego Composite						
Lagartos Punctate						
Repasto Black on Red						
Flor Cream				1		
Mateo Red on Cream						
Polvero Black				3		

Table 3. Ceramics from 2001 Excavations at Yo'okop

(continued)

Type	4/3/1	4/3/2	4/3/3	4/4/1	5/1/1	5/2/1
Saban Unslipped						
Yaxcaba Striated	2		1			
Xanaba Red	1	2				
Caucel Trickel on Red	3		2			
Tituc Orange Polychrome v. Tituc						
Balanza Black						
Lucha Incised						
Aguila Orange		1				
Dos Arroyos Orange Polychrome	1			1		
Cetelac Fiber Tempered						
Elote Impressed						
Maxcanu Buff					1	1
Hunabchen Red						
Kanachen Black						
Tituc Orange Polychrome v. Camichin						
Tituc Orange Polychrome v. Bandas						
Dos Caras Striated						
Sacalaca Striated						
Encanto Striated v. Sacna		1				
Arena Red			2	3		
Batres Red						
Muna Slate (LC)		2	2	5		
Sacalum Black on Slate (LC)			1			
Saxche Orange Polychrome		1				
Sayan Red on Cream						
Chum Unslipped						
Yokat Striated					1	1
Muna Slate					1	4
Sacalum Black on Slate						
Teabo Red						
Ticul Thin Slate						
Balantun Black on Slate						
Navula Unslipped						
Mama Red						
Unidentified	2	5	7	49	20	18
Total Sherds in Lot	9	12	16	83	25	24

Table 3. Ceramics from 2001 Excavations at Yo'okop

(continued)

Type	Total in All Lots
Achiotes Unslipped	13
Chunhinta Black v. Ucu	24
Nacolal Incised	5
Joventud Red	14
Desvario Chamfered	2
Guitarra Incised	2
Dzudzuquil Cream to Buff	15
Tumben Incised	2
Chancenote Unslipped	260
Tancah Unslipped	155
Xanaba Red	1
Sierra Red	554
Laguna Verde Incised	9
Ciego Composite	2
Lagartos Punctate	1
Repasto Black on Red	6
Flor Cream	45
Mateo Red on Cream	1
Polvero Black	16

Table 3. Ceramics from 2001 Excavations at Yo'okop

(continued)

Type	Total in All Lots
Saban Unslipped	49
Yaxcaba Striated	221
Xanaba Red	138
Caucel Trickel on Red	28
Tituc Orange Polychrome v. Tituc	9
Balanza Black	8
Lucha Incised	1
Aguila Orange	26
Dos Arroyos Orange Polychrome	34
Cetelac Fiber Tempered	1
Elote Impressed	10
Maxcanu Buff	6
Hunabchen Red	2
Kanachen Black	1
Tituc Orange Polychrome v. Camichin	1
Tituc Orange Polychrome v. Bandas	1
Dos Caras Striated	22
Sacalaca Striated	24
Encanto Striated v. Sacna	102
Arena Red	47
Batres Red	5
Muna Slate (LC)	95
Sacalum Black on Slate (LC)	8
Saxche Orange Polychrome	25
Sayan Red on Cream	1
Chum Unslipped	7
Yokat Striated	84
Muna Slate	53
Sacalum Black on Slate	14
Teabo Red	13
Ticul Thin Slate	8
Balantun Black on Slate	2
Navula Unslipped	11
Mama Red	1
Unidentified	936
Total Sherds in all Lots	3122

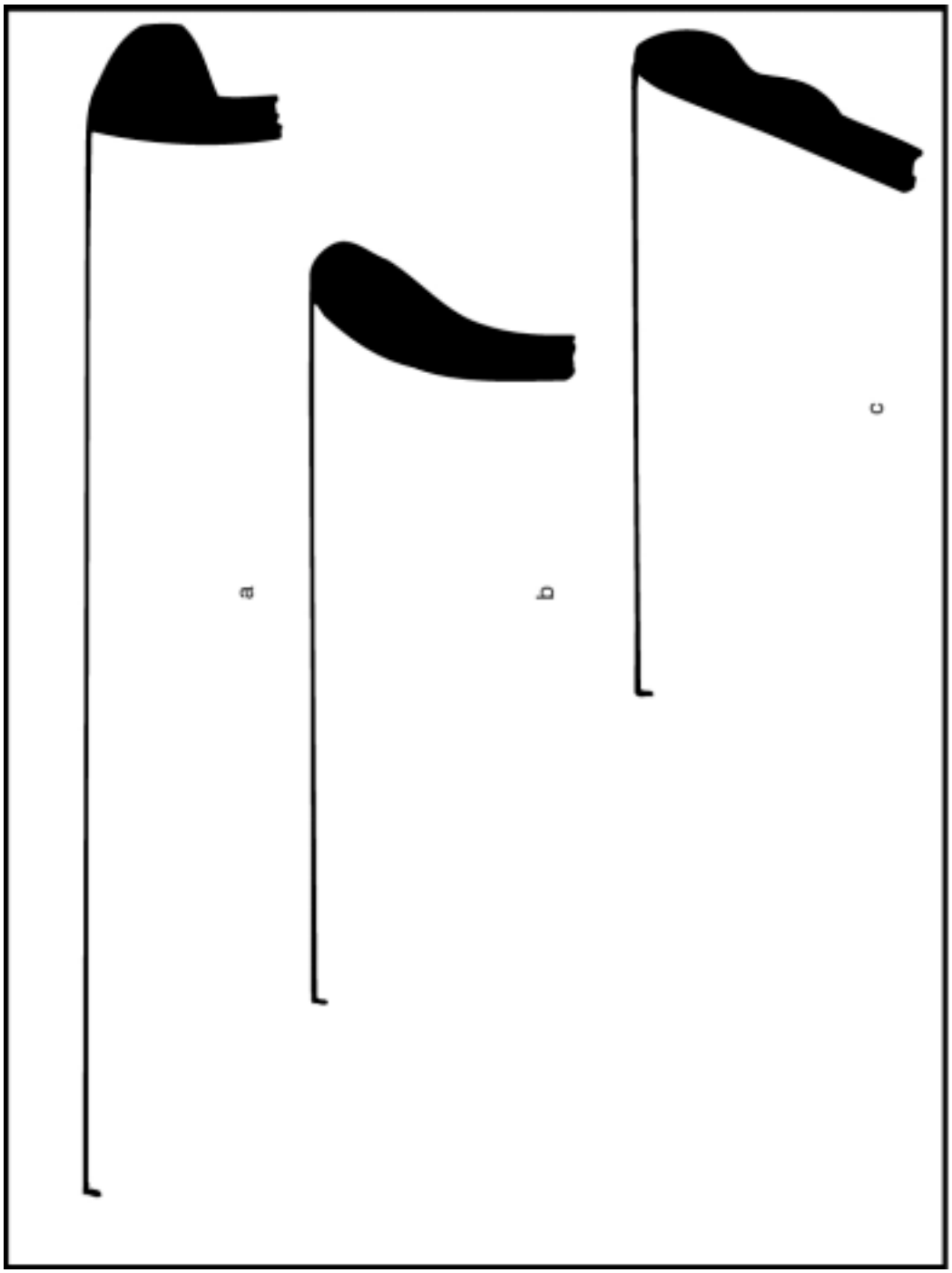


Figure 21. Middle Formative profiles. a and b Dzudzuquil, c Desvario

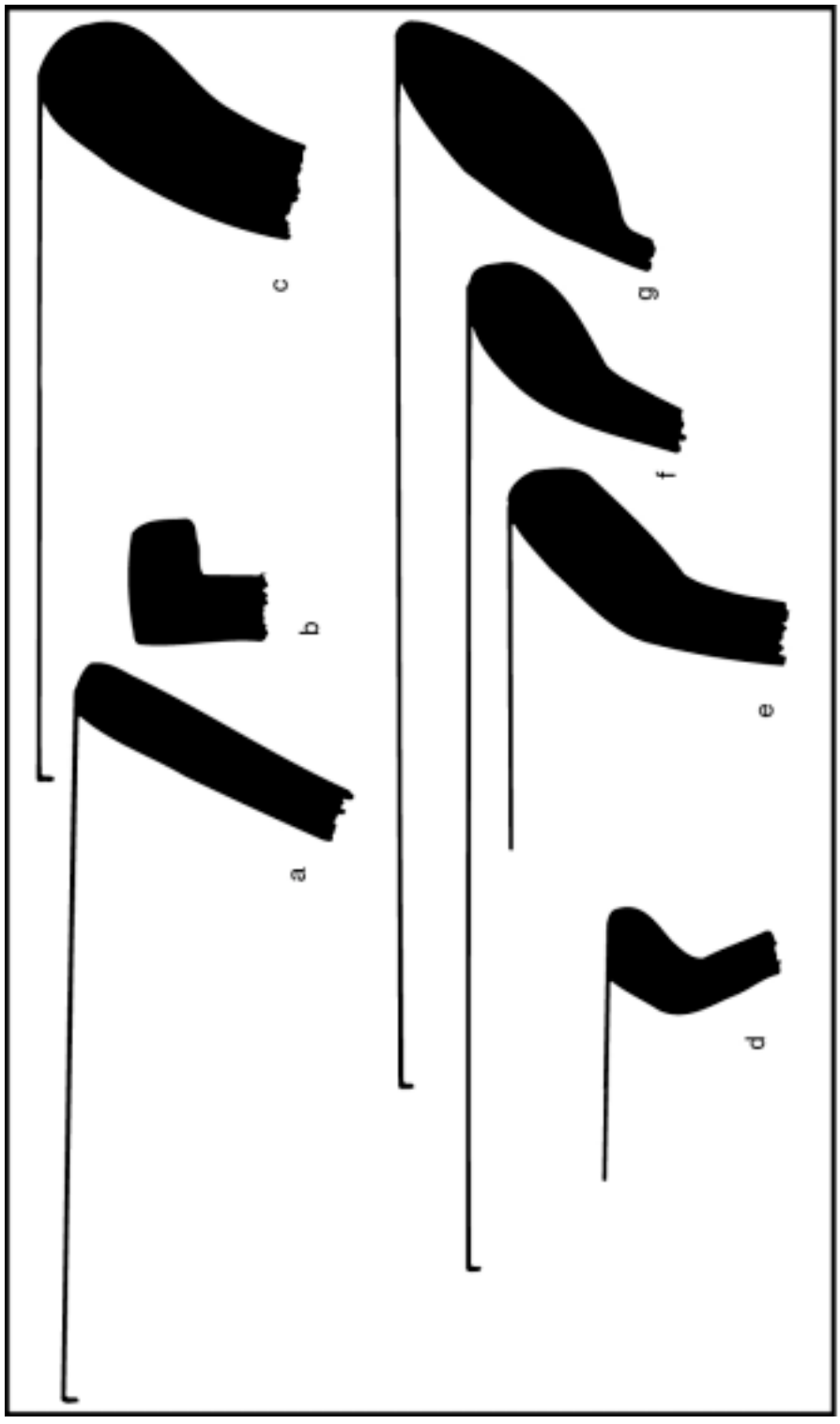


Figure 22. Late Formative. a Tancah Unslipped b and c Chancentote Striated e-f Sierra Red

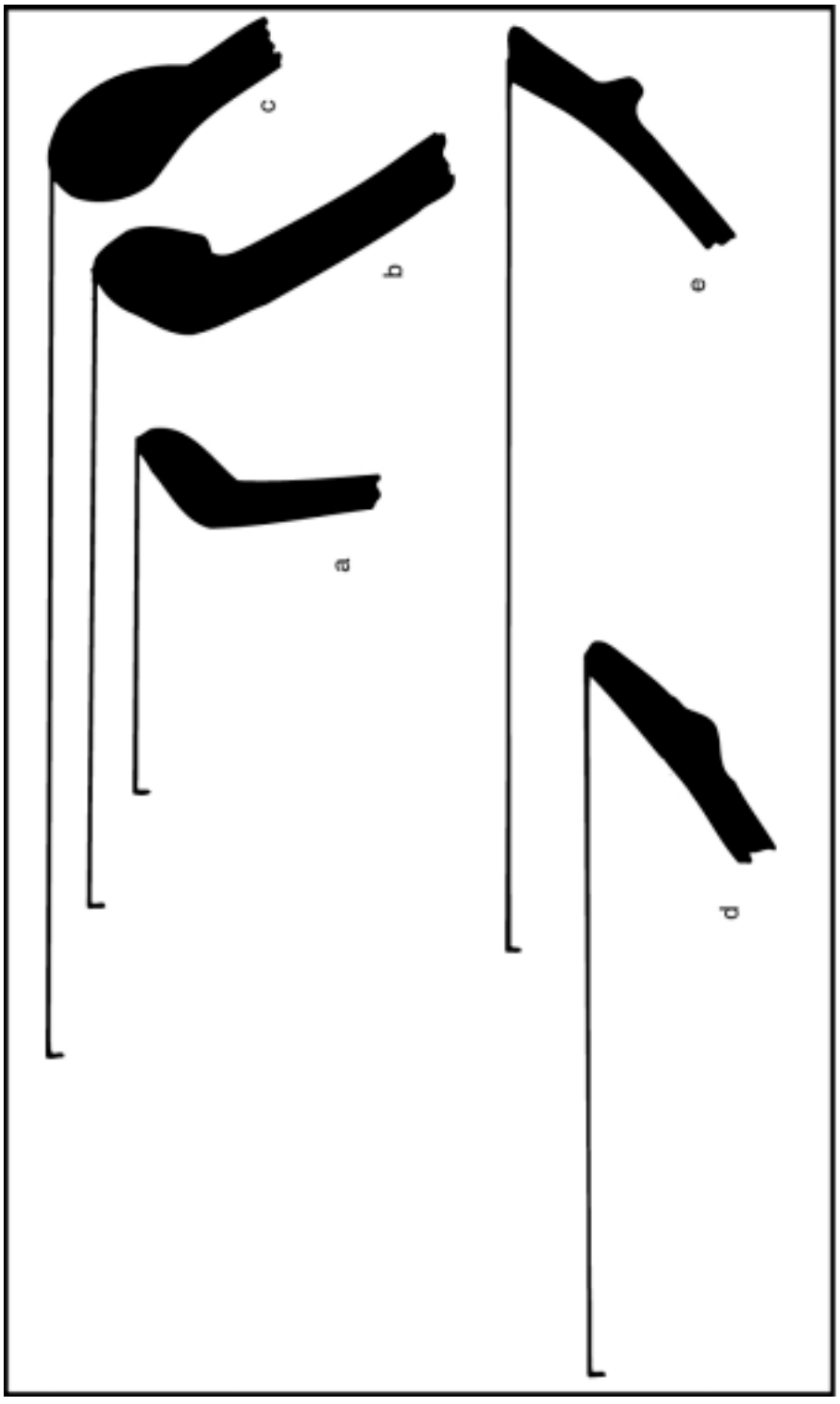


Figure 23. Early Classic.
a-c Xanaba Red. d Maxcanu Buff. e Tituc Orange Polychrome

Figure 24. Early Classic.
a Aguila Orange b-c Dos Arroyos Orange Polychrome d-e Balanza Black

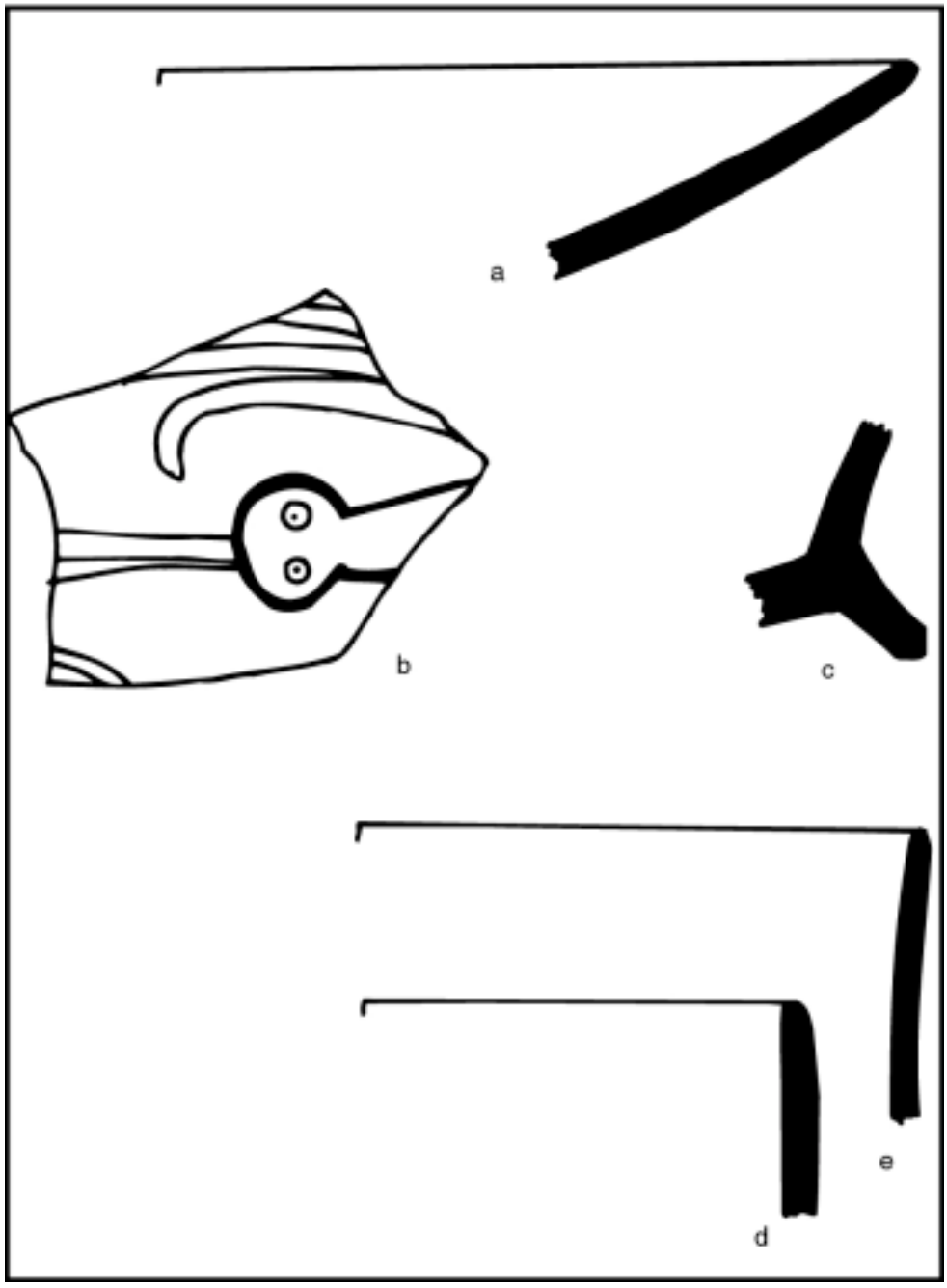
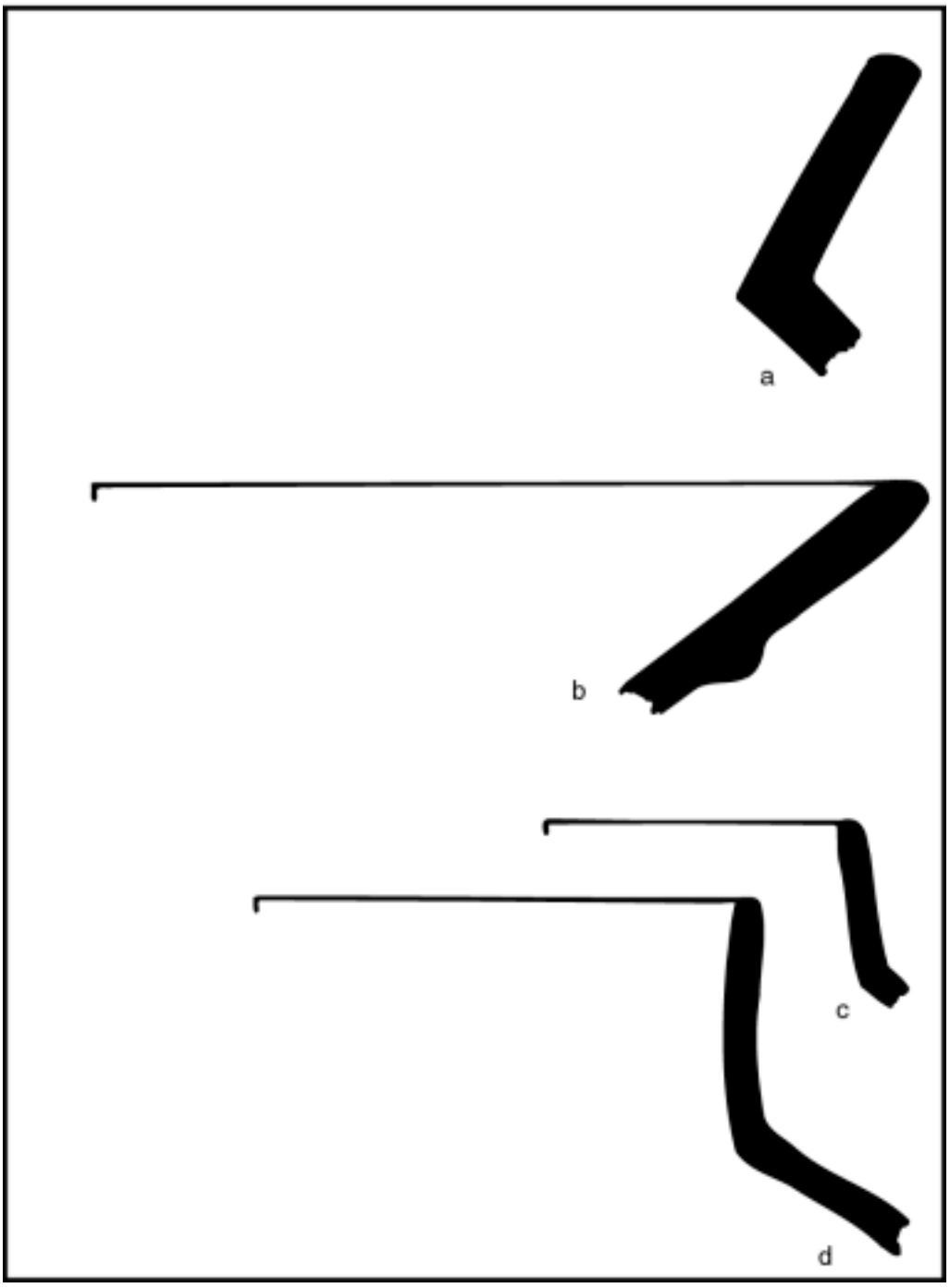


Figure 25. Late Classic.
a Sacalaca Striated b Arena Red c-d Muna Slate



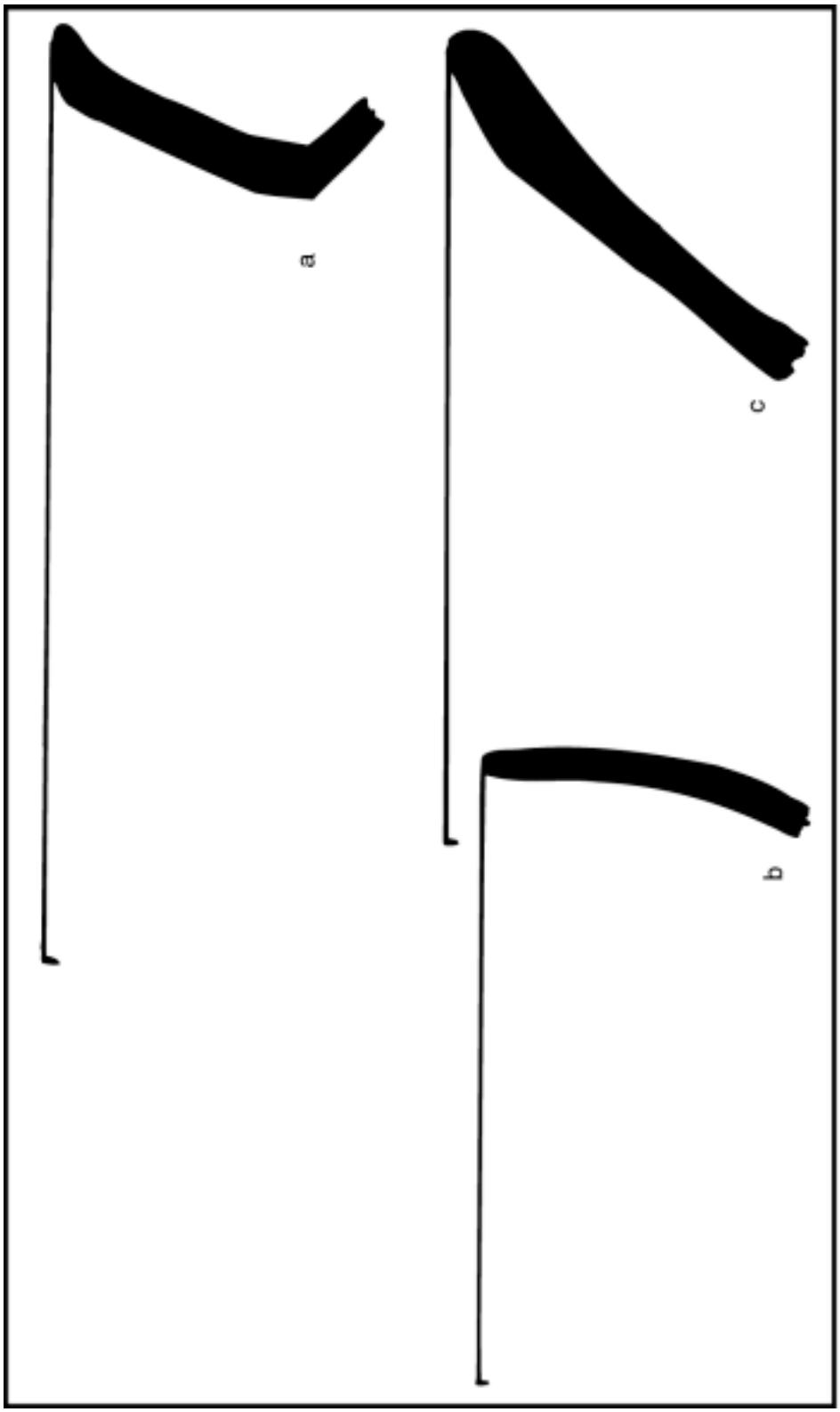


Figure 26. Terminal Classic.
a Yokat Striated b-c Muna Slate

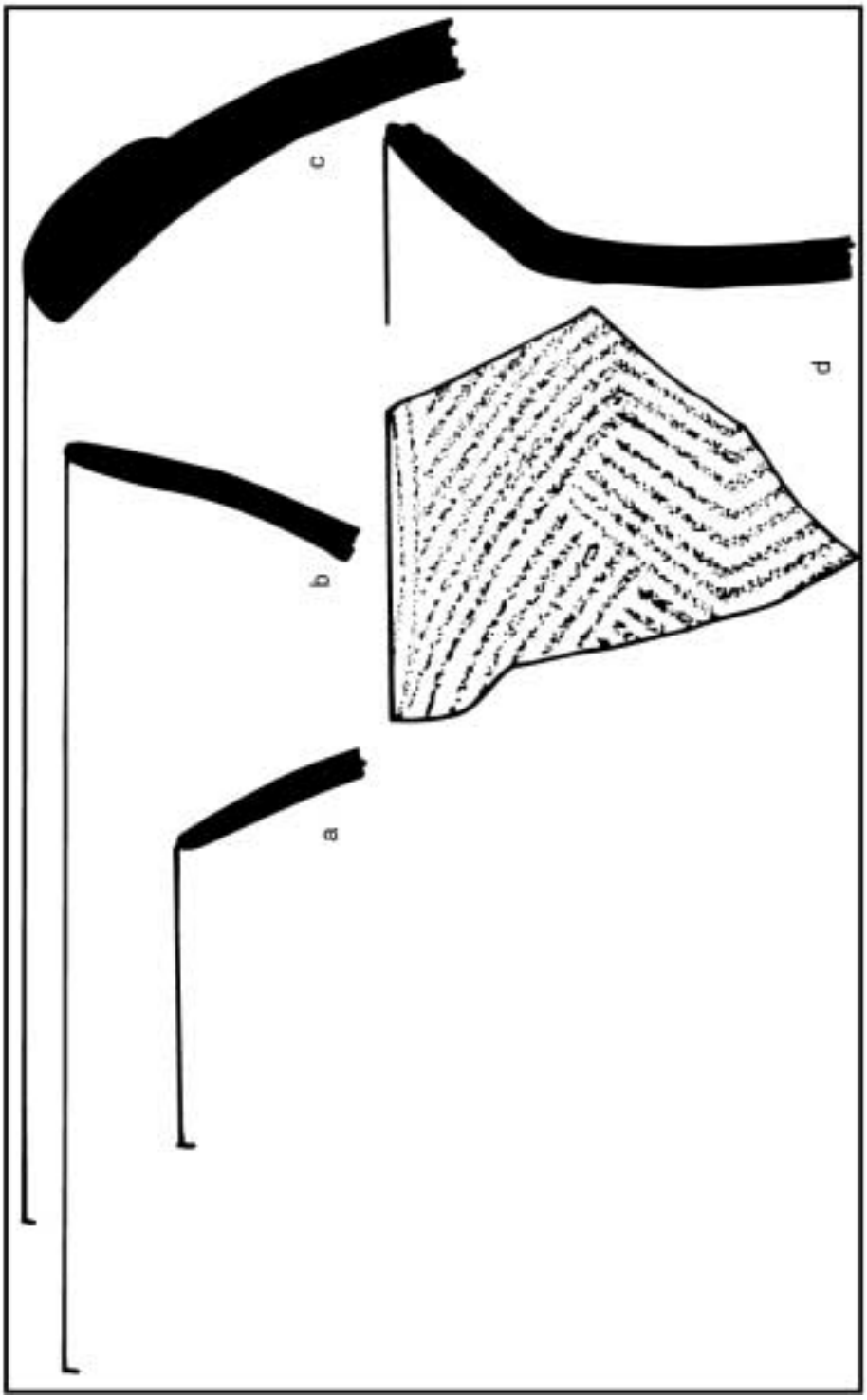


Figure 27. Terminal Classic.
a Tivcul Thin Slate b Teabo Red c Sacalum Black on Slate d Tekit Incised

Late Residential Groups

Six platforms supporting residential structures were selected for description on the basis of shared characteristics. These groups are not similar to the layout of other residential clusters at the site, nor are they found throughout the site. A brief examination of residential groups from other sites in the Maya Lowlands, while showing some general similarities, have not yielded comparable arrangements of residential groupings on platforms.

The late residential clusters at Yo'okop can all be characterized by the same general layout. All of the clusters have a principal mound, which faces an open end, and all are situated on platforms. A number of additional superstructures are inferred from foundation braces (Figure 28). The number of structures on the residence mounds ranges from four to seven and they are arranged in a fairly uniform way, positioned to the right and left of the principal mounds, with all facing an inner courtyard. Five out of the six groups contain a kitchen, assumed by the presence of *pilas*, or deep grinding stones. Of those platforms with a kitchen area, two are located directly in front of the principal mound and two are located to the right. The six residential platforms described range in size from approximately 25m x 35m to 70m x 50m. Four out of the six platforms described are oriented to the east, that is, the principal mounds face east. The smallest of the residence mounds is oriented north, and the largest is oriented south.

The distribution of the residence groups (Figure 29) span the length of Group B, and a single residential platform located outside of near *Sacbe* 3. There are no such residential clusters in Group A or D. David Freidel explains the higher density residence platforms in lowland Maya sites as a means for more social cohesion and interaction. As he notes,

> "Two of the outstanding features of nucleated residences ...appear to be the centralization of production and the establishment of production groups above the family level. It is reasonable to suppose that such centralization allowed fairly direct management of production by the government" (1981:376).

This could explain the high residential density of Group B. The close proximity of the residential groups to Group B is one aspect of the residence patterns of Group B that could possibly be time-specific. The presence of a Late Classic stela in secondary context on one of these groups suggests that they are at least as young as the stela. Diagnostic veneer style architecture has been noted on some of the structures on these platforms. During the Late Formative, Southern Maya Lowland households tended to be close to neighboring households. Starting in the Early Classic, residences became more dispersed throughout sites in the Lowlands. Robert Drennen (1988) notes that as communities expanded and became agriculturally intensive, farmers were residing closer to their fields and thus farther away from the civic centers. The relative clustering of this class of residential

Figure 28. Idealized Late Residential Cluster

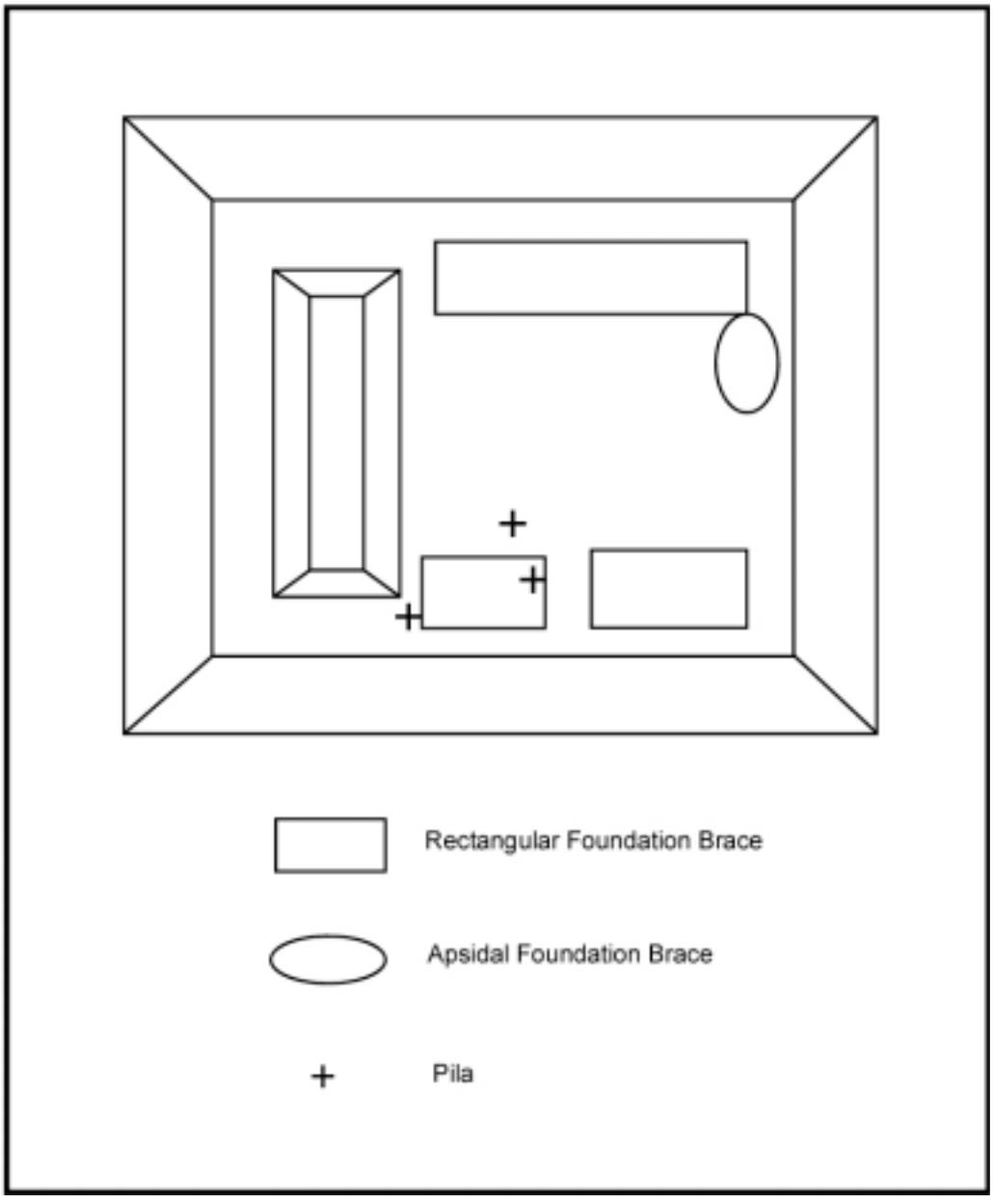
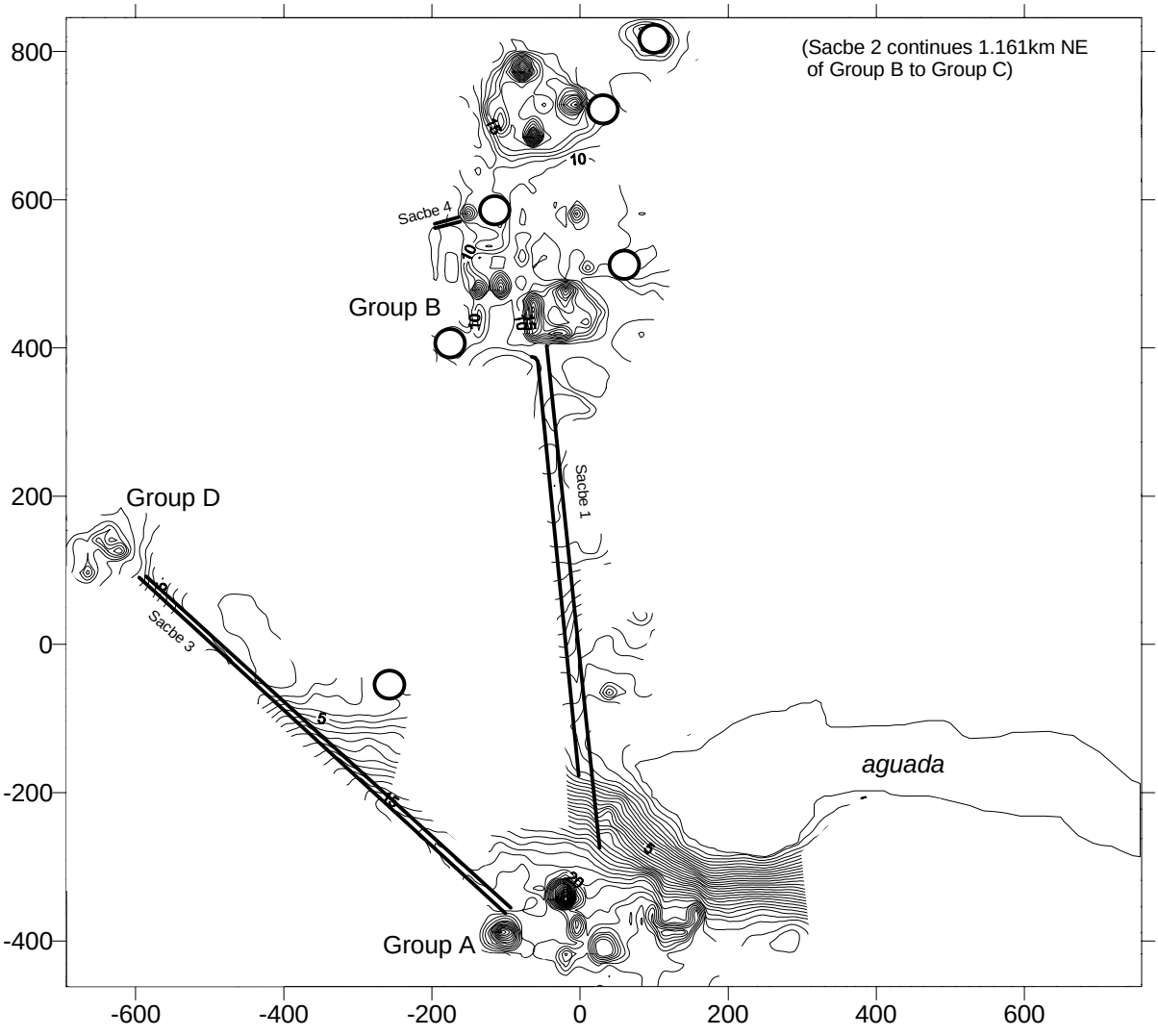


Figure 29. Location of Residential Clusters
(following 2001 season)



arrangement in Group B cannot be explained by the need to be close to fields unless the population is declining in this period, or that fields became concentrated in the site center.

Another possibility could be that these mounds represent the dwellings up the upper-class citizenry and that the lower classes lived in perishable dwellings. The larger, semi-removed mounds could have been an elite residence, as the structures on the northernmost mound are more elaborate compared to the other mounds. The northernmost residence platform is also at a slightly higher elevation than the other mounds and therefore could be considered an elite residence, as higher elevation was more desirable. These larger residence mounds can also be seen at Tikal and Seibal where the residential mounds can span from 47square meters to 112.6 square meters (Tourtellot 1983:37). Tourtellot also notes “ordinary dwelling platforms of similarly large size are common at Southern Lowland sites” (*ibid*:37). Edward Kurjack refers to the two different sizes of residence platforms as “ordinary house mounds” for the smaller mounds (between 15 and 35m) and “*plazuela*” for the larger mounds (between 40 and 60 m). As he notes on reports from sites in the Belize Valley,“ Willey interprets the *plazuelas* as housing for people of a different social status” (Kurjack 1972, p. 28). There are no surface artifacts to suggest a difference in class or status, as *pilas* are seen on all dwelling mounds irrelevant of size or location. The larger of the residence groups are situated around the periphery of the Group B with the two smaller mounds located more towards the plaza centers of the group. The more secluded locations of the periphery platforms may have been significant for the inhabitants of these groups.

Eastern orientation is also another aspect of the residence platforms at Yo’okop. A majority of the residence mounds are oriented east, which is also common at Mayapan. As Tourtellot notes, “The *Relacion de Sotuta* states that ‘houses look toward the east and the north and the south and very seldom or never toward the west’” (1983:39). Interestingly, the smallest of the residential clusters is oriented south and is also a more accessible platform, situated near Group B's North Acropolis. The largest mound, oriented to the south, seems to be looking over the rest of the group from its higher vantage point. This generalization concerning orientation is not true for all Maya sites as can be seen at Seibal and Tikal.

The function of these residence platforms, I speculate, was purely for domestic use. The number of structures on the platform mounds and the presence of numerous *pilas* indicate long time use of the residences. Kurjack notes that the presence of large *metates* on or in front of residence mounds at Dzibilchaltun are a sign of their use for housing. We can characterize the *pilas* on all the residence mounds in the same manner as at Dzibilchaltun.

These *metates* are much too heavy to have been frequently transported from place to place; it is more probable that they now lie where they were last and most often used. Moreover, *metates* from all parts of the site showed sign of wear that could have come only from very extensive use. This indicates that occasional ritual

preparation of food by religious specialists is probably not an explanation for the presence of these *metates*. The presence of metates near a structure, then, may be considered evidence of a domestic function (Kurjack 1974:50).

Furthermore, the size of the platforms and the difference in size and quantity of structures indicate a kin group, as opposed to a nuclear family, settlement. All of the platform mounds contain a principal raised residence that faces the open end. This could be the dwelling of the headman or the head-family. The surrounding buildings, being smaller and facing each other or the center of the mound, were probably the living space of kin or in-laws. Ethnohistorcal and ethnological data about the Maya both lend themselves to this speculation (Kurjack *ibid*:92).

In conclusion, these residential platforms at Yo'okop are unique in that they cluster around only Group B, with the exception of a group near *Sacbe* 3. The mounds do, however, follow certain residence patterns as far as orientation, size, and composition similar to that of Dzibilchaltun and Mayapan as mentioned above. It is the author's contention that kin groups occupied these mounds with the principal mound occupied by a headman. The answer to the question of why there are no mounds in either Groups A or D is purely speculation, but could be due to the time of construction, also noted above. Further excavation of the site and the mounds themselves is necessary to form any conclusion as to the inhabitants and full function of the residence platforms at Yo'okop.

Monuments of Yo'okop

A set of sculptures, hieroglyphic blocks and altars (Figure 30) has been located at Yo'okop. While the number of monuments at Yo'okop is small, the monuments themselves offer significant data related to many aspects of the site. These aspects include the political organization of Yo'okop, the relationship between Yo'okop and other sites in both the southern and northern Maya lowlands, and the interplay between visual images, built architecture and natural ecological resources in the development of ritual life at Yo'okop.

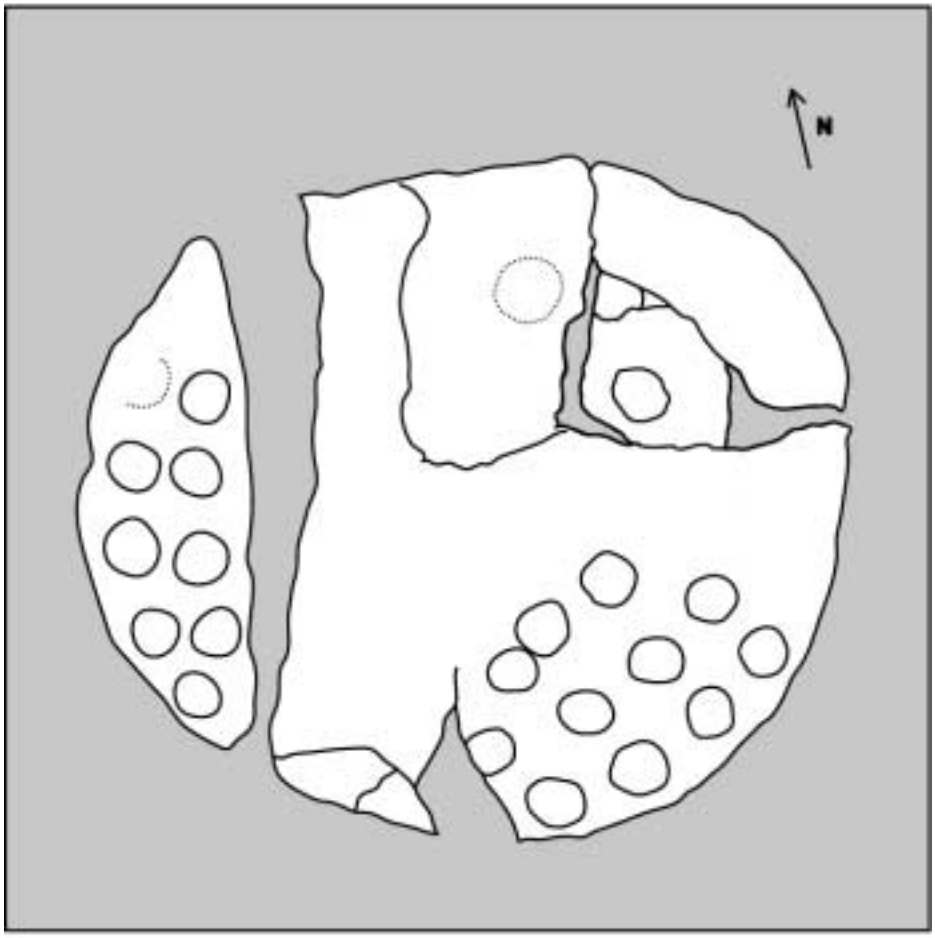
The location and documentation of the monuments at Yo'okop was initiated in 1954 by investigators from the Carnegie Institution of Washington (Stromsvik *et al.* 1955). In February 1954, Gustav Stromsvik and H.E.D. Pollock spent several hours at the site, which was then known as O'kop, or *La Aguada*. In May 1954, Stromsvik, together with Heinrich Berlin, returned to Yo'okop for approximately one week. One *stela,* which was subsequently published, was located and photographed during these visits (Stromsvik *et al.* 1955: Figure 2k).

The location and documentation of additional monuments at Yo'okop was continued between 1969 and 1972 by Bill Clapp and Reginald Wilson (Wilson 1972). In 1969, Clapp, a pilot, visited Yo'okop where he located three *stelae* and other monuments. In 1972, Clapp returned to Yo'okop with Wilson, a physician, in order to survey the site of Yo'okop and to photograph the monuments. In his subsequent publication, Wilson provided descriptions and photographs of the *stelae* and of three hieroglyphic blocks and three altars (1972).

Further investigation of the monuments at Yo'okop was accomplished in 2000 by members of the *Proyecto Arqueologico Yo'okop* (Shaw *et al.* 2000). Dave Johnstone drew most of the monuments and, together with Ruth Krochock, provided an iconographic and epigraphic analysis of the monuments at Yo'okop (Shaw *et al.* 2000:54-66: Figures 21-28).

During the 2001 season, Linnea Wren and Travis Nygard, both of Gustavus Adolphus College in St. Peter, MN, joined the Selz Foundation's *Proyecto Arqueologico Yo'okop*. Wren's and Nygard's purpose was to provide further documentation and analysis of the monuments of the site. The monuments at Yo'okop were documented photographically by using both digital and print cameras, and field sketches were made. Copies of all documents were sent to Krochock who has participated in the analysis of the monuments. Wren and Nygard would like to express their appreciation to Johnstone and Krochock for their generous sharing of documents, information and ideas from their previous study of Yo'okop and to acknowledge that the present analysis is an extension of Johnstone's and Krochock's earlier work. Wren, Nygard and Krochock, the authors of the present report, would further like to express their gratitude to Bill Clapp and, most especially, to Reginald Wilson. When they were contacted twenty-eight years after their work at Yo'okop by the authors, both Clapp and Wilson responded immediately. Wilson forwarded the original negatives of photographs that he made at Yo'okop as well as

Figure 30. Yo'okop's Altar 1



copies of personal memoirs describing his work at the site. The memoirs provide fascinating information about Wilson's collaboration with the residents of the village of Dzoyola during his investigations at Yo'okop, while the photographs, taken almost 30 years before the *Proyecto Arqueologico Yo'okop* photographs, reveal the monuments in somewhat less eroded condition. In the case of *Stela* 2, Wilson's photographs have permitted the authors to reconstruct some details that are no longer visible.

Stelae

Stela 1:

The front side of *Stela* 1 (Figure 31) is carved with a standing human figure. The back side is reported to be plain (Wilson 1972:83).The monument is broken and upper portion of the monument has not been located. The surface of the *stela* is severely eroded and only some areas of the figural design can be reconstructed. A double column of hieroglyphs, now entirely eroded, was evidently inscribed on the upper left side of the *stela*.

Dimensions –

Maximum height 1 meter; width 90 cm.; depth 30 cm.

Discovery, location and associations -

S*tela* 1 is located in a plaza east of Structure N6W2-6 (Figure 5), previously identified as Group B Structure 15 (Wilson 1972:83). *Stela* 1 was first reported by Gustav Stromsvik, H.E.D. Pollock and Heinrich Berlin who found it overgrown by the roots of a ramon tree, extricated it, and published a photograph of it (Stromsvik *et al.* 1955: Figure 2k). The condition of the *stela* was already so severely eroded so that Berlin and Stromsvik considered the glyphs illegible (Stromsvik *et al.* 1955:173). *Stela* 1 was also photographed by Wilson, whose report included a brief description of the relief carving (1972:83). *Stela* 1 was drawn by Johnstone from the photograph published by Stromsvik and others (Shaw *et al.* 2000: Figure 25). The authors have drawn *Stela* 1 from their field sketches and photographs.

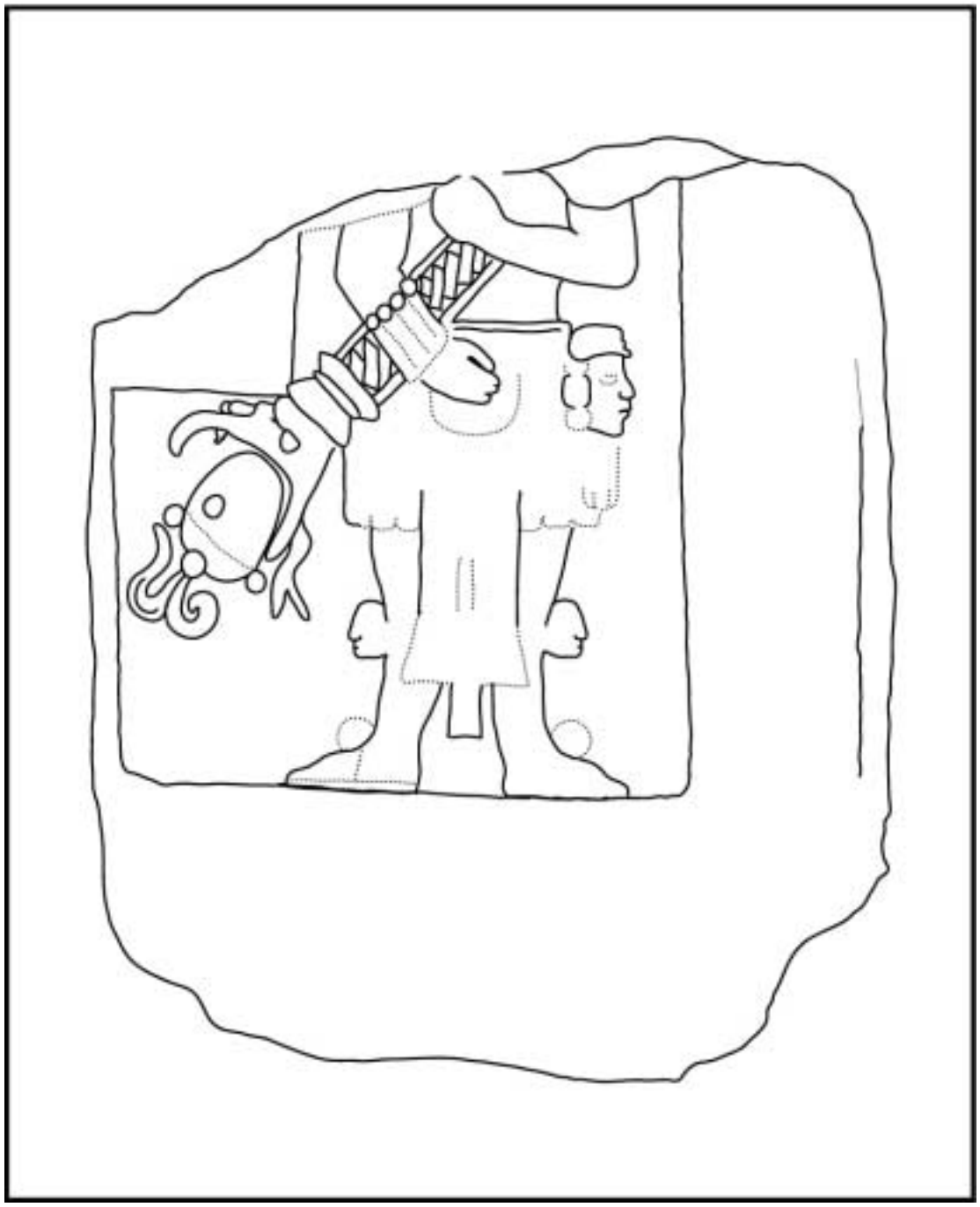
Date -

The sculpture was dated on stylistic grounds by Tatiana Proskouriakoff to the Late Classic period, possibly between 9.9.0.0.0-9.11.0.0.0, that is, A.D. 613-652 (Stromsvik *et al.* 1955:173).

Composition -

A single male figure is shown standing in a frontal pose with his feet pointed outward at an angle of 180 degrees. He holds a double-headed serpent bar at a diagonal slant across his chest. The upper section of the monument on which the shoulders and head of the figure would have been sculpted is missing. The figure holds one arm at a right angle against his chest and extends his other arm across

Figure 31. Yo'okop's Stela 1



his waist. A wristlet, consisting of a cuff bordered by spherical beads, is visible on the figure's extended arm.

The belt encircling the figure's waist is adorned with a set of heads made of stone, possibly jade. One head is clearly visible at the figure's hip. The head represents a youthful male wearing a helmet. The outline of the helmet is similar to the outlines of the jaguar maw helmets worn by the youthful belt-heads on the east side of *Stela* 5 (CPN 47) (Baudez 1994:Figure 62, pp.131-132). Three stone celts, also possibly jade, dangle from the belt-head. The outline of a second head is discernible at the center of the belt. Johnstone and Krochock (Shaw *et al.* 2000:61) have noted that stone heads and celts are a common motif carved on Maya monuments and portable objects from the Early Classic to the Terminal Classic periods.

The figure wears a skirt that appears to have been fringed, possibly with a row of shell tinklers or with a row of beads and cloth. A loincloth, with a pendant running along its center, hangs below the knees. Garters with stone heads, similar to the belt-heads, are worn by the figure below his knees. The figure's sandals may have had looped ties or tassels at the ankles.

The figure holds a double-headed serpent bar across his chest. The double-headed serpent bar is frequently represented on occasions of period endings (Miller and Taube 1993:58-59). The symbolism of the double-headed serpent bar in relation to ancient Maya rulership and cosmology has been discussed by Johnstone and Krochock (Shaw *et al.* 2000:61). On *Stela* 1, the bar is decorated with the mat motif. Woven mats, which were used as the settings for many important ceremonial events, were associated with rulers and lords. The term, *ah pop*, or "He of the Mat," was used by the Maya as a title for their ruling lord, and the mat design was used as a visual symbol for the lord. The inclusion of the mat motif in double-headed serpent bars was a common feature in Maya art of the Southern Lowlands between the Formative and Late Classic periods.

Interpretation -

While sharing many attributes with bars represented in many sites over a long chronological period, the double-headed serpent bar on *Stela* 1 at Yo'okop includes one distinctive iconographic feature. This feature consists of the pendant head that is framed by the maw of the bearded serpent. In its more conventional form, a bar ends in serpent mouths from which emerge deities, including God K, God L, God N, *Chac*, and the Jaguar God of the Underworld. In contrast, the double-headed serpent bar represented in *Stela* 1 at Yo'okop terminates in a serpent mouth from which hangs a foliated *ajaw* head.

The foliated *ajaw* motif is commonly depicted in scenes set in the watery underworld. These connections are evident in polychrome ceramics. Examples of the association between the foliated *ajaw* and the watery underworld include K3091 and K2583. In K3091, the foliated *ajaw* motif alternates with representations of God D, *Itzamnah*, who wears a waterlily and nibbling fish in his headdress (Kerr 2001). In K2583, the foliated *ajaw* motif is attached to a stylized depiction of a conch shell

and a water stack (Kerr 2001).

The foliated *ajaw* motif is also commonly depicted in scenes depicting creation cosmology. An example of the association between the foliated *ajaw* and creation narratives can be seen in K595 (Kerr 2001). In this vessel, the foliated *ajaw* is attached to the head of G1 (Coe 1978:83-87). The narrative appears to be a prototype of the creation story later recorded in the *Popol Vuh* in which the Hero Twins enter the river as fish.

Additionally, the foliated *ajaw* motif is commonly depicted as an attribute of the quality of *ch'ulel*, or "holiness." In the ceramic vessel known as the Pot of the Seven Gods, K2796, the foliated *ajaw* appears in association with three of the seven divinities in the image (Kerr 2001). The text that accompanies the imagery not only names the deities, but also includes the Calendar Round date associated with creation, 4 *Ajaw* 8 *Kumk'u,* and a reference to a creation event. The black background of the vase reflects the darkness that preceded the creation event of raising the sky (Freidel *et al.* 1993:67-69, Figure 2:6).

Finally, the association between the foliated *ajaw* and the ruler as the conduit of supernatural power is suggested by the imagery depicted on vessel K4114 (Kerr 2001). In this image, a kneeling lord holds a serpent bar that terminates at one end in the figure of God K, *K'awil*, a symbol of divine rulership. At the other end, the bar terminates in an open serpent mouth from which emerges an aged god, possibly God L. A foliated *ajaw,* depicted in profile, is perched on top of the deity's head. In *Stela* 1 at Yo'okop, the double-headed serpent bar apparently conflates the motif of the foliated *ajaw* with deity heads that are commonly shown at the terminations of the bar. Thus the double-headed serpent bar connects the figure by whom it is held to the status of rulership, the qualities of divinity and the narratives of the dark, watery realm of the underworld.

Stela 2:

Description -

The monument (Figure 32) consists of horizontal stone. As noted by Johnstone and Krochock, the monument may have been a wall panel or a free-standing *stela* (Shaw *et al.* 2000:61). The front of the monument is carved with a human figure shown kneeling with one leg on the ground and with one arm upraised. The pose is characteristic of Classic period Maya ballplayers. The lower edge of the monument is broken, and the surface of the monument is severely eroded in some areas. Because of erosion, some sections of the sculpted relief cannot be reconstructed. A single column of glyphs, probably 5 in number, is carved on the left edge of the monument. Two columns of eight glyphs are carved on the upper right edge of the monument. The back of the monument is reported to be plain (Wilson 1972:84).

Dimensions -

Maximum height 95 cm; width 96 cm. meter; depth 30 cm.

Figure 32. Yo'okop's Stela 2

Discovery, location and associations -

Stela 2 is located on Structure N6W2-6 (Figure 5), previously identified as Group B, Structure 15 (Wilson 1972:83). *Stela* 2 was discovered by Clapp in 1969. Wilson recorded its location as being on the eastern end of the structure near a small platform, which Wilson suggested had provided the original foundation for the monument (Wilson 1972:82). Structure N6W2-6 was mapped by the Selz Foundation's *Proyecto Arqueologico Yo'okop* in 2001. Wilson also noted the existence of two nearby parallel structures, Structures N5W2-6 and N5W2-7, (previously identified as Group B Structures 7 and 8) and proposed that these formed a possible ballcourt (Wilson 1972:81). These structures, which are located 100 meters south of Structure N6W2-6, were mapped by the Selz Foundation's *Proyecto Arqueologico Yo'okop* in 2001, and their identification as a ballcourt was confirmed by the discovery of a partial ballcourt ring.

Stela 2 was drawn by Johnstone (Shaw *et al.* 2000:Figure 26). The authors have drawn *Stela* 2 from their field sketches and photographs and from photographs provided by Wilson.

Epigraphy -

The glyphic inscriptions and the figural composition on *Stela* 2 are clearly interrelated. The upraised hand and arm of the figure overlaps a portion of the glyphic column on the left edge of the monument. Most of the glyphs are severely eroded and are illegible. However, both columns A and B appear to begin with calendrical dates. The number 8 is included in glyphs A1 and B1.

Date -

No date can be deduced from the inscription. On stylistic and iconographic grounds, a Late Classic date can be assigned to the monument.

Composition -

The male figure is shown in the pose of a ballplayer. As has been noted by Johnstone and Krochock, the figure wears a wide ballplayer's yoke around his waist (Shaw *et al* 2000:61). A large pectoral is suspended across his chest. The wristlet on his upraised arm consists of square plaques attached to a flexible backing. Mosaic wristlets, similar to this example at Yo'okop, are a common feature of the costumes worn by elites in Chichen Itza.

The most prominent element in the figure's costume is a headdress that, as Johnstone and Krochock have recognized, combines a wide browpiece with a full-bodied bird. A broad earflap, attached to the browpiece, covers the ear of the ball-player. Three rows of spherical beads, possibly jade, and at least one row of square plaques, possibly shell, embellish the browpiece. Three narrow animal tails flow downward from the browpiece.

Johnstone and Krochock have noted that the headdress may be a version of the *Xiuhtototl* browpiece depicted in many relief sculptures at Chichen Itza (Shaw *et al.* 2000:61) The incorporation of bird attributes and bodies into headdresses is a

common practice in Maya costumery. The use of a broad turban as the basis of a headdress is a well-known pattern at Copan. On Altar Q at Copan, the lineage founder, *Yax K'uk Mo*, wears a turban headdress that includes a full-figured bird (Baudez 1994:fig.41). In the view of the authors, the headdress on *Stela* 2 at Yo'okop may represent a form in which the Maya turban, already elaborated in some instances with a bird, was further ornamented with beads. Subsequent changes in the placement of the bird from the top to the front of the turban may have resulted in the development of the *Xiuhtototl* browpieces at Chichen Itza. If the headdress on *Stela* 2 is antecedent to later forms at Chichen Itza, a Maya source may be indicated for one of the most characteristic elements in the "Chichen-Toltec" elite costume.

The bird, perched atop the browpiece of the figure depicted in *Stela* 2, exhibits the long, narrow beak of a waterbird, possibly a comerant. As creatures that moved between the supernatural spheres of the sky and the watery underworld, waterbirds evidently were associated by the Maya with the ballgame as it was enacted in the context of creation cosmology. The polychrome vessel K1288 depicts a scene from the *Popol Vuh* in which the Hero Twins play a ballgame in *Xibalba*. Included in the scene is the World Tree in which the *Itzam Ye*, the Principal Bird Deity, is perched. Long beaked waterbirds hover beside the protagonists of the ballgame (Kerr 2001). Vessel K1209 depicts a ballgame scene in which the two participants wear headdresses, each composed of the head of an animal or bird. The bird headdress can be identified as a waterbird both by its long beak and by the fish dangling from it. A waterlily protrudes from the front of the headdress of the second ballplayer (Kerr 2001). These elements are conflated in vessel K6551 in which two panels are carved with similar images consisting of a waterbird holding a fish in its beak and standing upon the Waterlily Monster mask (Kerr 2001).

The body of the bird depicted on the headdress of the ballplayer in *Stela* 2 has an incised design that is largely eroded but that may be a deity mask. Vessels K3536 and K6181 depict waterbirds with breasts reshaped into deity masks (Kerr 2001). These supernatural creatures are located in the watery underworld. In vessel K3536, the location is indicated not only by the fish held in the birds' beaks, but also by the black markings on the deity masks. In vessel K6181, the location is indicated not only by the fish in one bird's talons and by the fish at the other bird's breast, but also by the *ek*, or star, markings on the birds' bodies. Bill Fash has reported that a stone bird with a fish in its beak and a deity head on its breast was excavated from inside one of the ball court structures at Copan (Justin Kerr, personal communication).

Interpretation -

One of the titles used by Maya rulers was *Ah Pitzlawal*, or ballplayer (Freidel *et al.* 1993:338). This title identified rulers with the Hero Twins of the Maya creation narrative. In this narrative, the Hero Twins descended into the Underworld, where they accepted the challenge of the Lords of the Underworld to play a ballgame. The game became a physical enactment of the natural cycle of life, death and resurrection. Through the defeat of the Underworld forces, the Hero Twins effected

the resurrection of their father, the Maize God, who had previously been killed by the Lords of the Underworld and whose bones had been buried under the ballcourt floor. Resurrected from the court of death, the Maize God was empowered to crack open the surface of the earth and to supply its inhabitants with sustenance. The image of the ballplayer wearing a waterbird headdress on *Stela* 2 at Yo'okop relates the Yo'okop ruler or Yo'okop lord to the Hero Twins. The ritual actions conducted by the subject of *Stela* 2 are shown as channeling the supernatural powers of the underworld and upperworld and as guaranteeing abundance in the natural world.

Stela 3:

Description -

The front side of *Stela* 3 (Figure 33) is carved with a standing human figure. The back side is reported to be plain (Wilson 1972:83). The upper portion of the monument is destroyed, and the surface of the carved figure is badly eroded. A single column of 5 glyphs is carved on the left edge and single column of 7 glyphs is carved on the narrow side of the monument. These glyphs are inscribed in cartouches rather than in block form.

Dimensions -

Maximum height 1 meter in present, incomplete state; width 1 meter; depth 25 cm.

Discovery, location and associations -

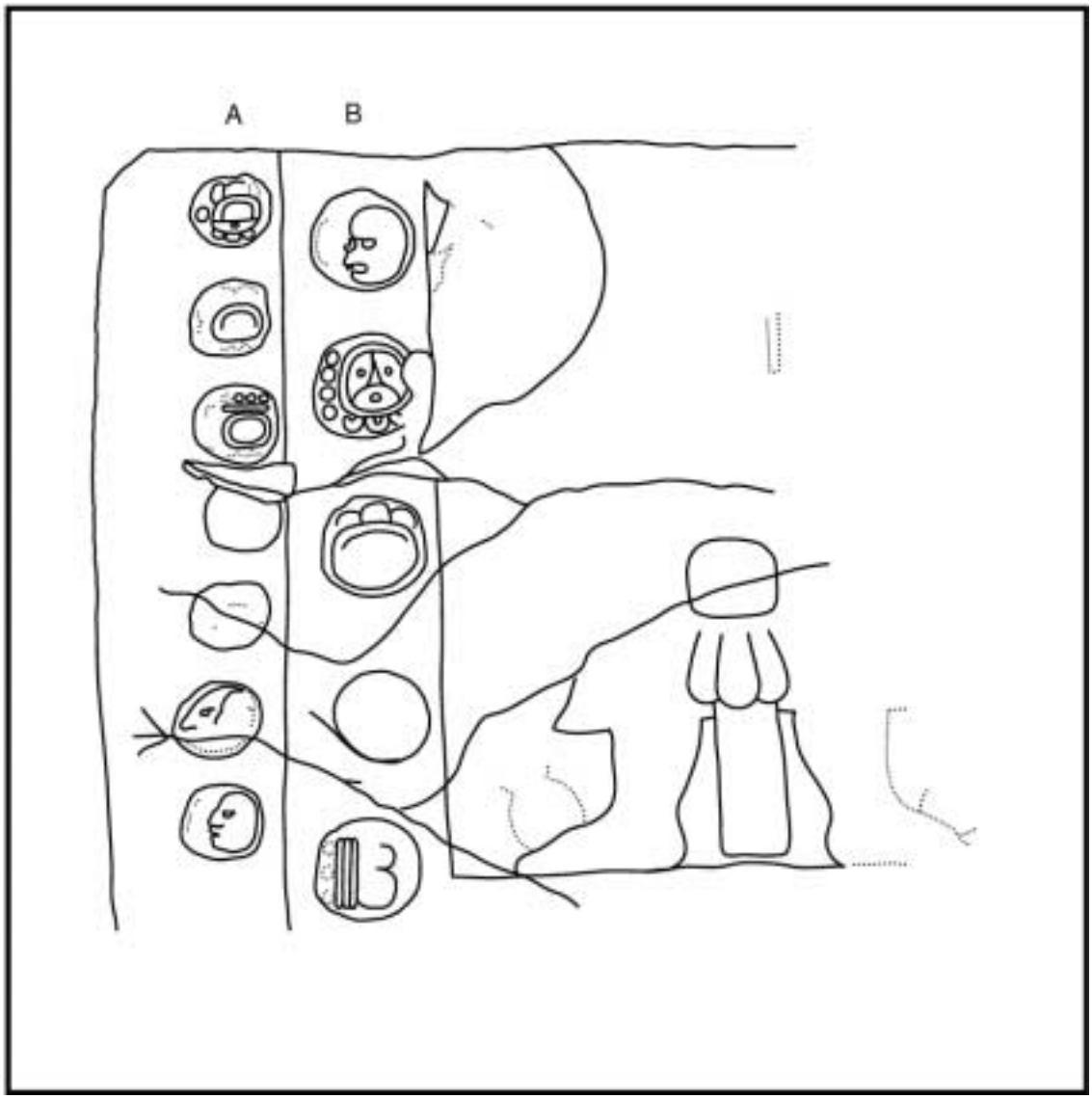
S*tela* 3 is located in a plaza east of Structure N6W2-6 (Figure 5), previously identified as Group B Structure 15 (Wilson 1972:83). *Stela* 3 was discovered by Clapp in 1969 and was reported by Wilson (1972:83). At the time of its discovery by Clapp, the monument was broken into approximately 10 pieces and parts of the monument were missing. *Stela* 3 was drawn by Johnstone (Shaw *et al.* 2000: Figure 27). The authors have drawn *Stela* 3 from their field sketches and photographs.

Epigraphy -

The authors interpret columns A and B as separate texts to be read in single vertical columns rather than in horizontal pairs. The authors suggest that column A may be a title string. A1-2 may record the title 1 *Katun Ajaw*; A3 may record a second title that incorporates the number 9. One such title, *Bolon ti kab,* is found at Chichen Itza. An alternative reading for A3 may be a distance number.

The authors suggest that column B may record calendrical information. Johnstone has proposed that the inscription on *Stela* 3 includes a possible Early Classic long-count date of 9.2.1.8.0 4 A*jaw* 8 *Yax*, or A.D. 476, a proposal about which Krochock has been cautious (Shaw *et al*. 2000: Figure 27). According to Johnstone, the long-count date reads in reverse order when compared to later Classic period monuments. The authors are unable to confirm the presence of a

Figure 33. Yo'okop's Stela 3



long-count date, but do propose the presence of a *tzolkin* date at glyph B2 and a *haab* date at glyph B5. B2 can be identified as 4 *Ajaw* while the number in B5 has been drawn both as 17 (Shaw *et al*. 2000: Figure 27) and as 18 (Figure 33). Glyphs B3-4 may record information in the supplementary series.

Date -

A late Classic period date is proposed by the authors on the basis of stylistic and iconographic attributes.

Composition -

The main figure is standing in a frontal pose. The upper torso, arms, shoulders and head of the figure are no longer visible. The outline of a stone head or mask with three pendants is visible at the figure's waist level. The figure wears a skirt and a loincloth that extends almost to the ground. The figure's feet may be shod in pineapple sandals.

Only one area of upper design is visible. In the extreme upper left hand corner, the partial outline of a fish may be tentatively recognized. Fish form part of the headdress associated with the Water Lily Monster, a symbol of the surface of still water. The headdress of the Water Lily Monster typically includes a water lily pad and a flower from which a fish frequently nibbles.

Classic Maya kings and other lords often wear the head of the Water Lily Monster as their headdresses while they are engaged in period ending rituals. Such rulers are represented in *Stelae* 4, 7 and 8 at Machaquila (Bassie-Sweet 1996: Figures 19-21) and in *Stela* 8 at Seibal. The presence of the fish on *Stela* 3 at Yo'okop suggests that this *stela*, like *Stela* 1, commemorates a period ending event.

In imagery painted on polychrome vessels, the presence of the Water Lily Monster signals a scene of the watery underworld as source of fertility and place of rebirth. In vessel K5073, the head of the Water Lily Monster is bracketed by water stacks (Kerr 2001). In vessel K5941, heads of the Water Lily Monster alternate with images of the Maize God (Kerr 2001). A bearded fish and an ophidian creature are also included in scene.

The head of the Water Lily Monster is worn as a headdress by the male figure depicted on *Stela* II, now at the Kimbell Museum of Art. *Stela* II is considered to be the pair of *Stela* I, now at the Cleveland Museum of Art. Carved in a style similar to the *stelae* at Calakmul and considered to be a royal marital pair, *Stelae* II and I are of unknown provenience but are attributed by some scholars to Calakmul (Marcus 1987: Figures 49-50). Marcus (1987:141-145) notes that, although opinion is divided concerning the provenience of *Stelae* II and I, the Calakmul emblem glyph is inscribed on *Stela* I at B4. While the erosion of the monument at Yo'okop makes iconographic and stylistic comparisons tentative, the figure on *Stela* 3 shares the same heavy proportions, similar pineapple sandals and headdress attributes with the subject depicted on *Stela* II. It is possible that the iconographic parallels between *Stela* 3 and *Stela* II at the Kimbell Museum result from the a shared concern with the management of water resources at Yo'okop and Calakmul. This concern is

evidenced by the shrine constructed at the edge of the *aguada* at Yo'okop and by the excavation of reservoirs at Calakmul. The consistent inclusion of visual motifs related to the watery underworld evidenced in *Stelae* 1, 2 and 3 at Yo'okop demonstrate that the occupants of the site merged their utilization of ecological resources, their construction of sacred landscape and their practice of ritual life.

Carved Blocks

During the 2000 field season, the labels Stone A, Stone B, and Stone C were assigned to three blocks that Wilson and Clapp documented in Group A (Shaw *et al.* 2000:54). After examining the photographs provided by Wilson, it is clear that the three stones documented by Wilson and Clapp are Stones B, C, and D. Therefore, the label "Stone A" is currently unassigned. To prevent further erosion, the sculpture of Yo'okop is now being sheltered under *palapas*. These *palapas* prevent the stone from being subjected to erosion from rain.

Stone B:

Dimensions –

Stone B (Figure 34) is about 40 cm square (Wilson 1972:84).

Discovery, location and associations -

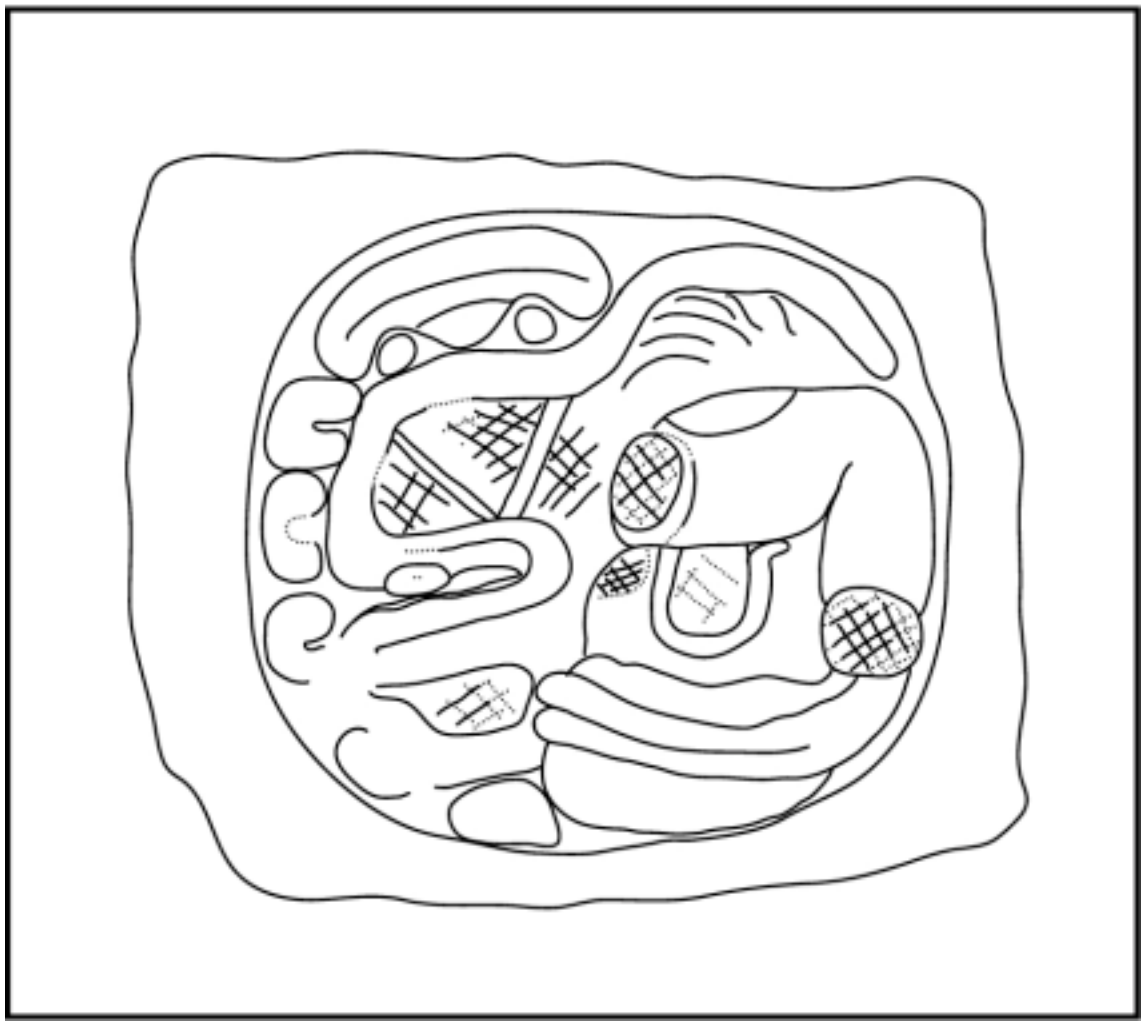
Stone B was documented by Wilson and Clapp between Structures S5W1-1 and S4W1-2 (Figure 3). Inhabitants of the local village informed Wilson and Clapp that the stone was originally part of Structure S5E1-1 (1972:84) (Figure 35). The stone has not yet been rediscovered at Yo'okop, and it may have been moved to a new location.

Description -

Judging from the photographs, Stone B is in good condition, and almost all of the detail is legible. The most prominent element on Stone B is a head in the lower right corner. This head contains patches of cross-hatching that are potentially death spots. A medallion is on the forehead of this head. A second element is the *ek*, or star, sign, located in the upper left corner of the stone. There is a significant amount of cross-hatching on the stone, indicating darkness. Simon Martin has identified the name of Sky Witness, ruler 17 from Calakmul, on this stone. The name Sky Witness is inscribed on other monuments outside the city of Calakmul, including Caracol *Stela* 3, A13; the Palenque Hieroglyphic Stairway, I2-J2; and possibly the Resbalon Hieroglyphic Stairway at CX15-16 (Martin 1997:861).

Sky Witness's name is written differently at sites other than Yo'okop. At Caracol and Palenque, the *k'in* sign, signifying day and the sun, is prominently included. However, at Yo'okop, the *k'in* glyph is replaced with the *ek* sign, signifying a star. In addition, much of the area occupied by the *k'in* sign in Sky Witness's name at Caracol and Palenque is cross-hatched at Yo'okop, indicating darkness, the nocturnal sky and/or the underworld. At Caracol and Palenque, the glyph block is carved without cross-hatching, indicating light, the diurnal sky and /or the

Figure 34. Yo'okop's Stone B



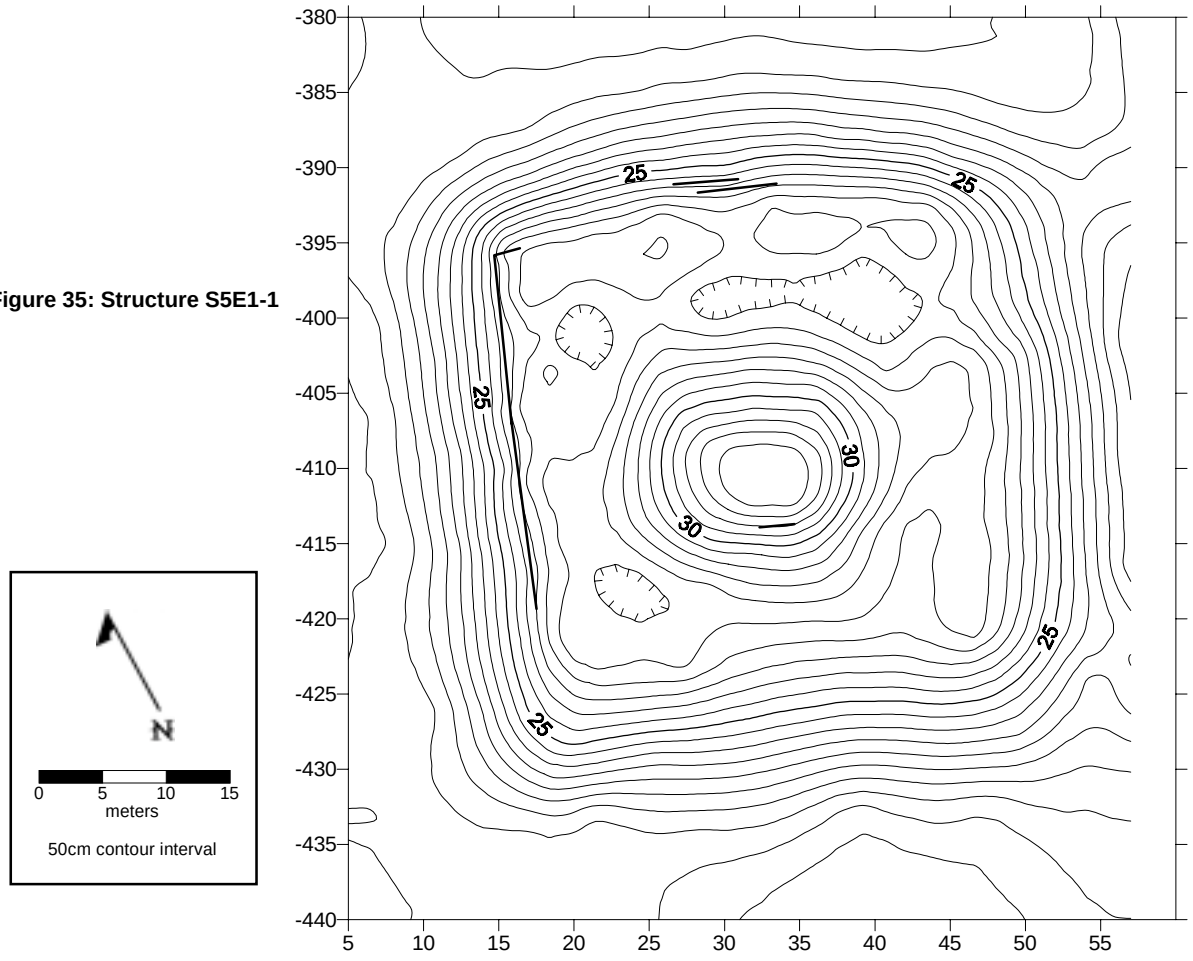


Figure 35: Structure S5E1-1

upperworld. These differentiations indicate a dichotomy in the use of the Sky Witness name, contrasting day and light with night and dark.

Date -

Because Stone B contains the name Sky Witness, it was likely carved during or later than the reign of Sky Witness at Calakmul. Sky Witness may have come into power as early as A.D. 546, and it is known that he reigned from A.D. 561-572. Sky Witness was succeeded by First Axewielder in A.D. 572 (Martin and Grube 2000:102-4). Because the authors propose that this stone is a posthumous reference to Sky Witness (see subsequent section), the stone is tentatively dated after A.D. 572.

Interpretation -

The significance of a potential relationship with Calakmul was discussed in the 2000 Field Report of the *Proyecto Arqueológico Yo'okop*:

> Simon Martin has suggested that the Calakmul sphere of political power may have extended into Quintana Roo and we are anxious to determine if Yo'okop is allied with this great Maya superpower (Drew 1999:221). Martin's evidence for a Calakmul-Yo'okop connection comes from his identification of the name of Ruler 17 from Calakmul carved on a stone block reportedly from Yo'okop [Stone B] (Martin 1997:861). The identification of the name of a Calakmul ruler on a Yo'okop monument would confirm a relationship between the two sites. This could be an extremely important bit of information for it could suggest that Yo'okop was one of Calakmul's allies in the Martin-Grube superpower model (Martin and Grube 1994 and 1995). In this light, Yo'okop may have played a significant role as liaison between sites in Southern Lowlands and the Northern Lowlands or it may have been involved in warfare with Calakmul. (Shaw *et al.* 2000:58)

The reference to Sky Witness at Caracol is believed to describe events that occurred during the lifetime of the Calakmul lord. The reference to Sky Witness at Palenque is thought to date to A.D. 599, 27 years after the end of Sky Witness's reign in A.D.572 (Martin and Grube 2000:104). Comparisons between the written forms of the name Sky Witness at Caracol and Palenque and at Yo'okop stress a dichotomy between day/night and light/dark. Therefore the authors propose that Stone B may be a posthumous reference to Sky Witness significantly later than the reference at Palenque and than Sky Witness's death. The authors suggest that the inclusion of dark cross-hatching in Sky Witness's name and the substitution of *ek* for *k'in* characterize Sky Witness as a ruler of the nocturnal sky and of the underworld sphere. The authors further propose that the purpose of this manipulation was to claim Sky Witness as both a historical and a supernatural lineage founder for the rulers at Yo'okop.

Stone C:

Dimensions -

Stone C (Figure 36) is about 40 cm square (Wilson 1972:84).

Discovery, location and associations -

Stone C was documented by Wilson and Clapp between Structures S5W1-1 and S4W1-2 (Figure 3). Inhabitants of the local village informed Wilson and Clapp that the stone was originally part of Structure S5E1-1 (1972:84). The stone has not yet been rediscovered at Yo'okop, and it may have been moved to a new location.

Description -

Judging from the photographs, Stone C appears to be in good condition, with almost all its detail being legible. Stone C contains the title *kalomte* (Shaw *et al.* 2000:54). There is a substantial amount of cross-hatching on the stone, indicating darkness.

Date -

Stone C is similar to Stone B. Compositionally, the stones both contain cross-hatching. The design on both stones is inscribed in the same style of cartouche. The stones are carved to the same depth. Furthermore, Stone C was found in the same general location as Stone B. Because of these similarities, Stone C was likely carved at the same time as Stone B for the same structure. This stone is therefore tentatively dated after A.D. 572.

Interpretation -

The significance of the *kalomte* title in association with elite status, political office, and warfare has been discussed by Johnstone and Krochock (Shaw *et al.* 2000:54). The cross-hatching on Stone C indicates darkness and implies a connection to the underworld similar to Stone B. Because both Stone C and Stone B contain this cross-hatching, it is probable that the title *kalomte* refers to the name Sky Witness of Stone B. Peter Harrison states that the title *kalomte* is used at Tikal, indicating a ruler whose domain is larger than a single city, similar to the European term "emperor" (1999:79). If *kalomte* is used in a similar way at Yo'okop, it could signify that the deceased ruler Sky Witness was the dynastic lineage head of the Calakmul polity including Yo'okop.

Stone D:

Dimensions -

Stone D (Figure 37) is 52cm wide, 46 cm high, and 39cm deep.

Discovery, location and associations -

Stone D was documented by Wilson and Clapp between Structures S5W1-1 and S4W1-2. Inhabitants of the local village informed Wilson and Clapp that Stone D originally was a part of Structure S5E1-1 (1972:84). The stone was rediscovered

Figure 36. Yo'okop's Stone C

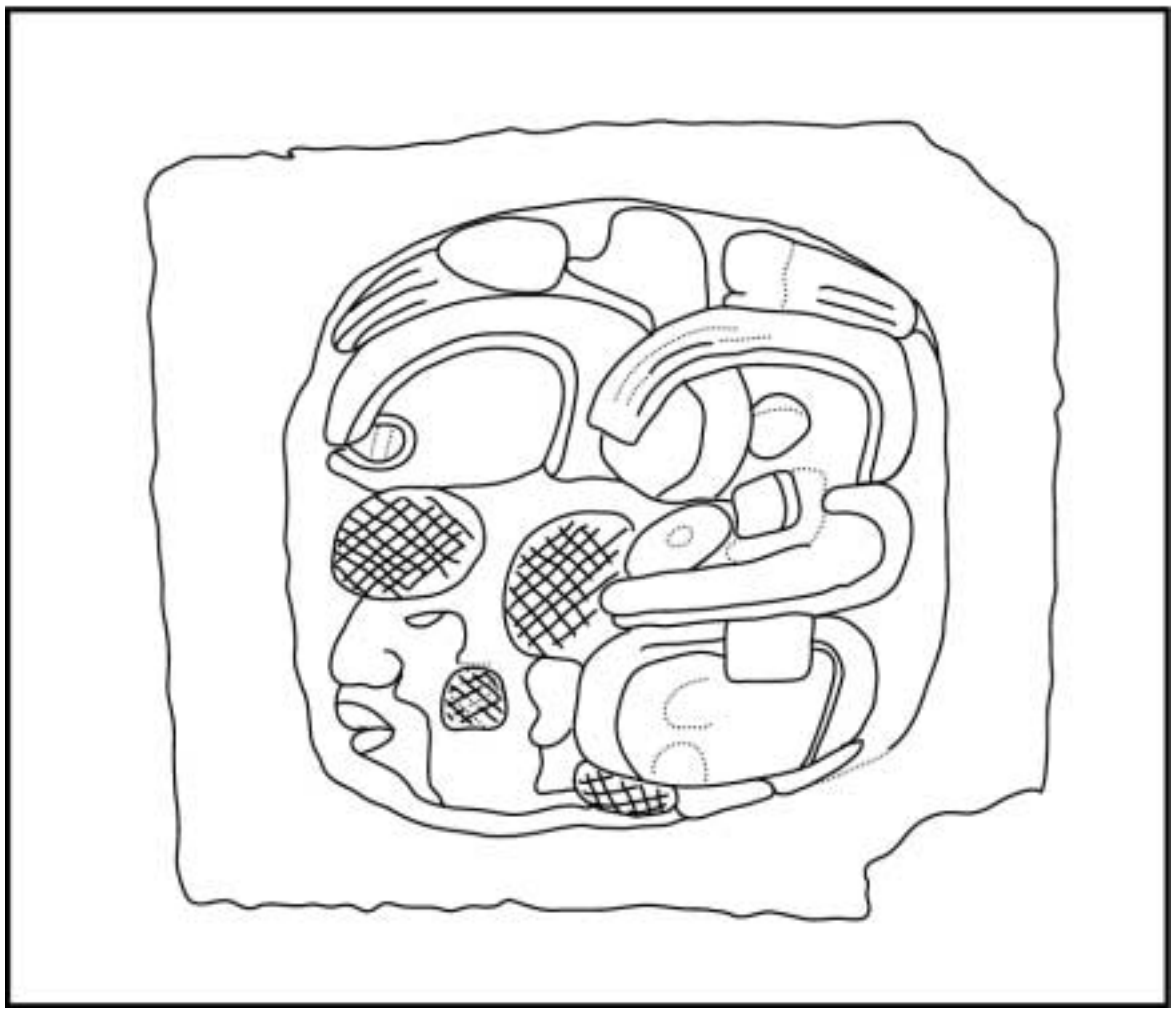
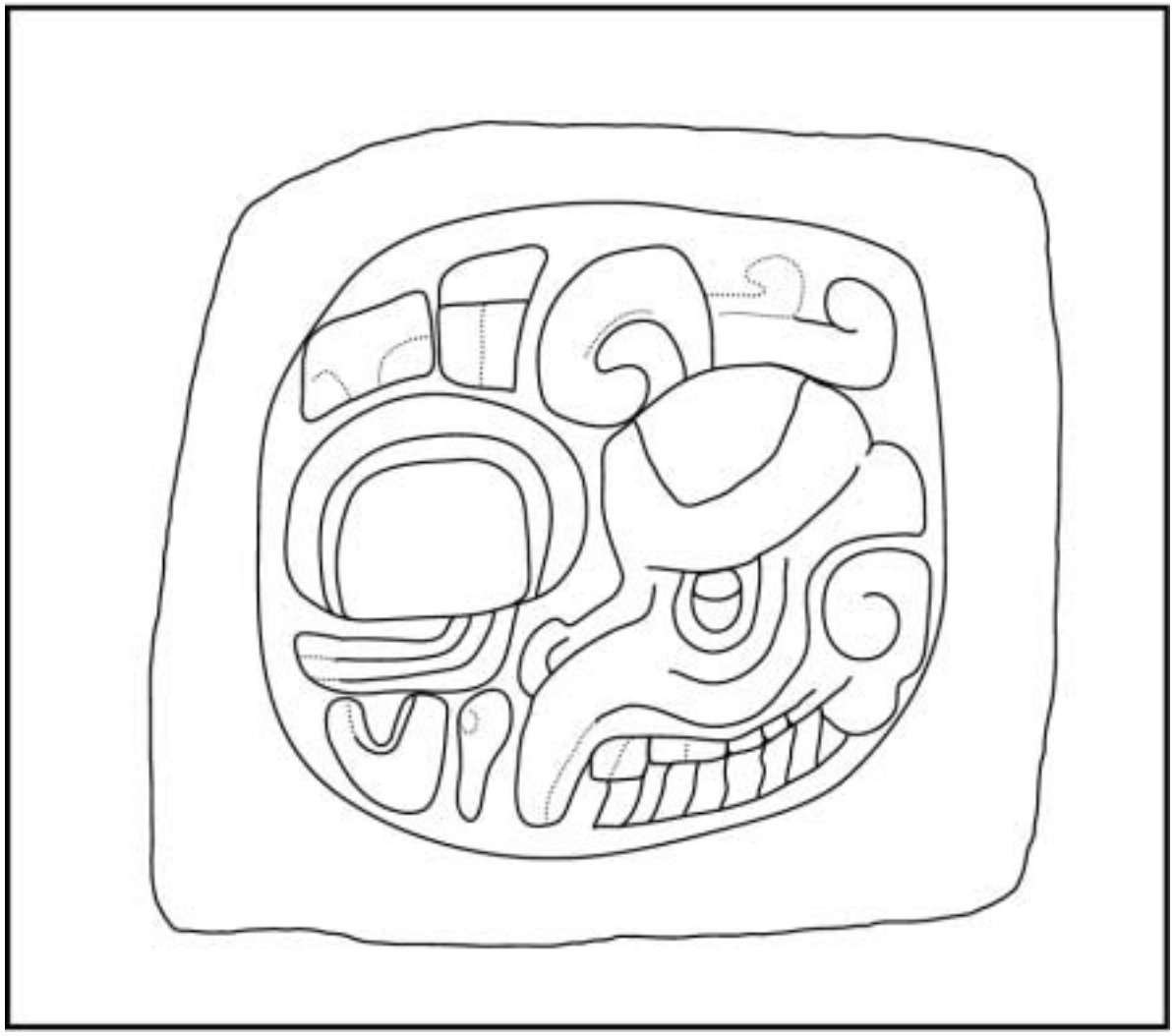


Figure 37. Yo'okop's Stone D



during the 2000 field season (Shaw *et al*. 2000:54). The stone remains where it was found in 2000.

Description –

Johnstone and Krochock have noted that Stone D contains two glyphs. The first glyph is a *tun* sign, possibly referring to a date. The second glyph may be the title or name *K'awiil,* or it may be a head variation of the *tun* glyph (Shaw *et al.* 2000:54).

Date –

Stone D is similar to Stone B. The inscription on the two stones is circumscribed within a similar style of cartouche. The two stones are carved to the same depth. Furthermore, the two stones were found in the same general area. Therefore, Stone D was likely carved at the same time as Stone B for the same structure. Stone D is therefore tentatively dated after A.D. 572.

Stone E:

Dimensions –

Stone E (Figure 38) is 46cm high, 49cm wide, and 42cm deep.

Discovery and Location –

Stone E was discovered during the 2000 field season north of Structure S4E1-13 (Shaw *et al.* 2000:54). The stone remains where it was discovered in 2000. Although found in a different location, it is conceivable that Stone E is from the same structure as Stones B, C, and D. If Stones B, C, and D are from Structure S5E1-1, as Wilson was told by inhabitants of the local village, then Stone E could be from S5E1-1 as well. The distances of the stones from S5E1-1 are comparable, making it more likely that all blocks came from S5E1-1.

Description

Stone E is in very eroded condition. One glyph is legible on the stone. Johnstone has read this glyph as a Venus glyph (Shaw *et al*. 2000:54). An alternative reading is *ek*, or star.

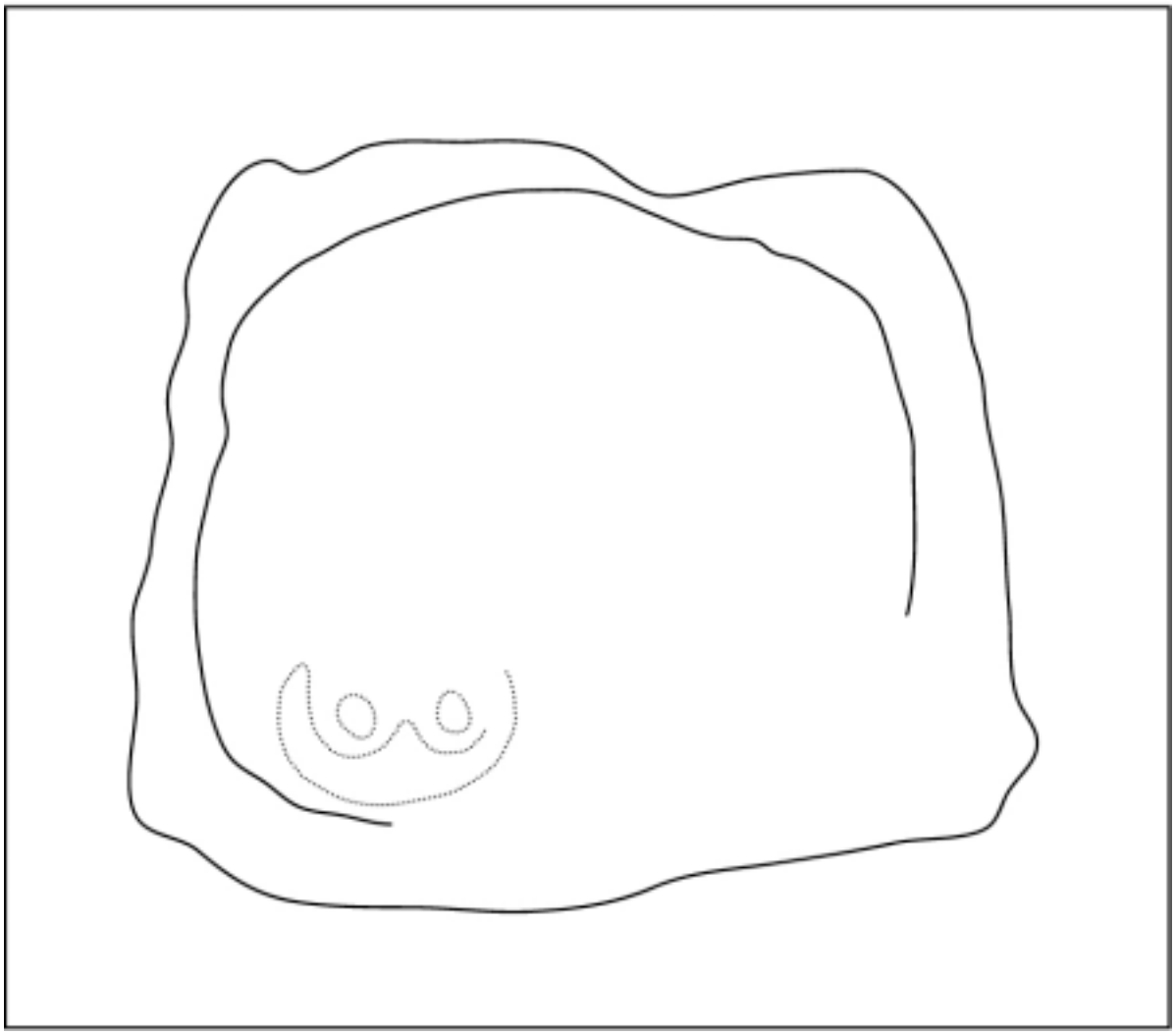
Date –

There is significant reason to correlate Stone E and Stone B chronologically. Both of the stones are about the same size and contain an inscription in a similar style of cartouche. It is conceivable that both Stone E and Stone B are from the same structure. Therefore, Stone E is tentatively dated after A.D. 572.

Interpretation –

The implications of the Venus glyph for warfare at Yo'okop have been examined by Johnstone and Krochock (Shaw *et al.* 2000:54-8). In addition to being

Figure 38. Yo'okop's Stone E



a harbinger of warfare, Venus is associated with the rainy and dry seasons and is linked to the underworld sun (Milbrath 1999:157). The authors find these connections interesting because they are related to water. One area of investigation by the Selz Foundation's *Proyecto Arqueologico Yo'okop* is the climatic variations in water availability and population size at the site. The importance of water management and of the constant supply of water provided by the *aguada* for the continued viability of Yo'okop during the Terminal and Postclassic periods is another area of investigation. If additional carved blocks are discovered, more connections between the political system of the site and the cosmological beliefs about the watery underworld and Venus may be suggested.

Stone F:

Dimensions -

Stone F (Figure 39) is 44cm high, 47cm wide, and 34cm deep.

Discovery, location and associations -

Stone F was discovered during the 2000 field season north of Structure S4E1-13 near Stone E (Shaw *et al.* 2000:54). Stone F remains where it was discovered in 2000. It is conceivable that Stone F, like Stones B, C and D, is from Structure S5E1-1.

Description -

Stone F is very eroded condition. It appears to have contained four glyphs. However, only the upper two are legible today. The glyphs have been described by Johnstone and Krochock. The block in the upper left corner appears to read 8 *k'atun*, and it might be part of a date or distance number. The block in the upper right may contain the phrase *u kahi* meaning "by his doing" or "under the auspices of" (Shaw *et al.* 2000:58).

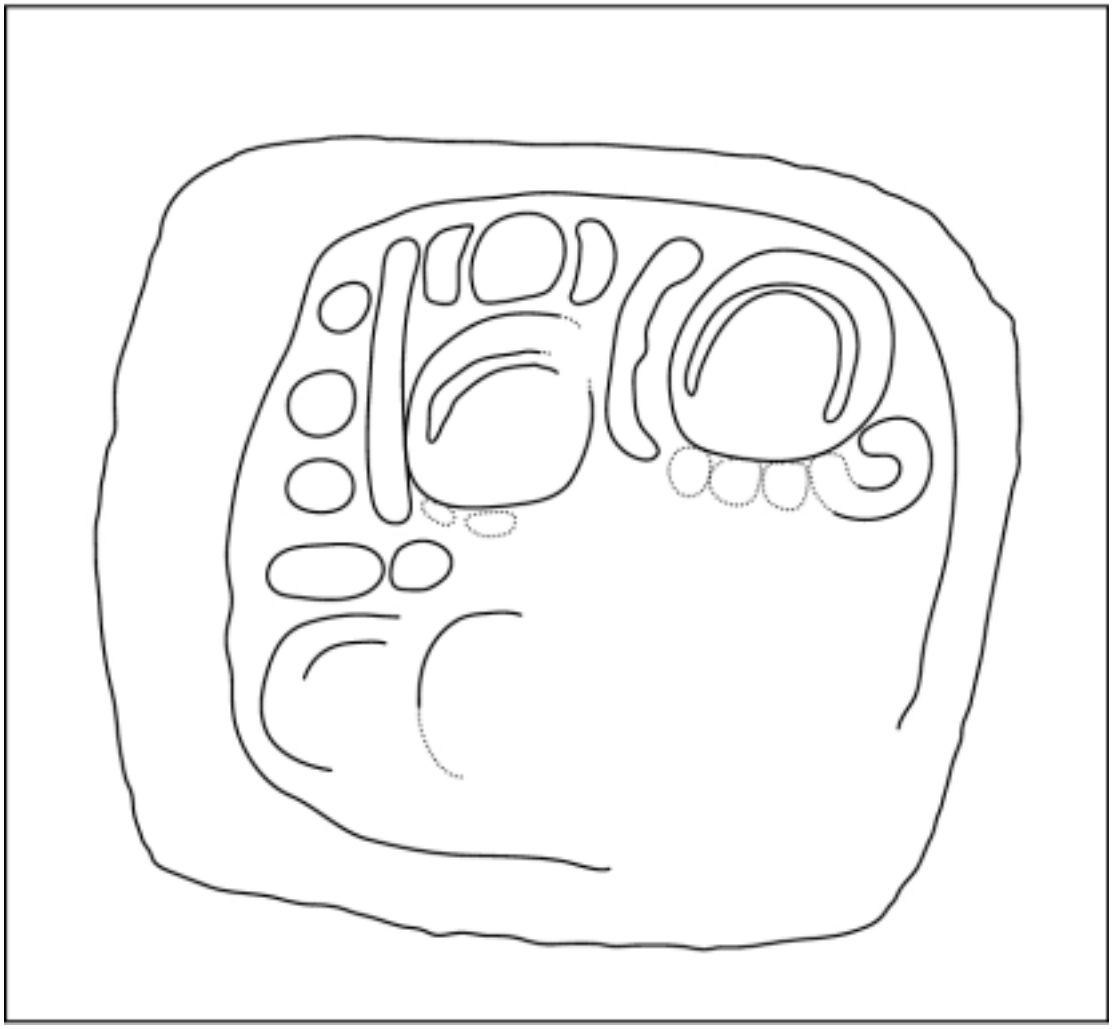
Date -

There is significant reason to correlate Stone F and Stone B chronologically. Both of the stones are approximately the same size and both contain an inscription in a similar style of cartouche. It is conceivable that both Stone E and Stone B are from the same structure. Therefore, Stone E is tentatively dated after A.D. 572.

Interpretation -

The *u kahi* glyph has been discussed by Johnstone and Krochock. The glyph may be significant because it could imply a hierarchical relationship with another Maya site, such as Calakmul (Shaw *et al*. 2000:58). This hierarchical relationship could potentially be referring to a dynasty headed by Sky Witness that controlled Yo'okop.

Figure 39. Yo'okop's Stone F



Discussion of Stones as a Whole:

In light of the previous arguments, it is possible that all of the carved stones are from Structure S5E1-1. First, all of the stones contain similar cartouche styles. Second, all of the stones are of a similar size. Third, all of the stones are apparently carved to a similar depth. Finally, all of the stones were found within a reasonable distance from Structure S5E1-1. If all of the stones are from Structure S5E1-1, their content may help in understanding the function of Structure (Figure 35).

In the 2000 season, it was noted that, "Structure S5E1-1 is an unusual construction, with a square base ringed by higher constructions at the top. Inside this squared ring is a depression, that is similar to a moat in appearance. Rising from the 'moat' is a pyramid" (Shaw *et al.* 2000:24). Members of the project have noted that water may have run off the S5E1-1 pyramid, filling the raised moat. Furthermore, there is a depressed plaza next to structure S5E1-1 that may also have collected water. The authors propose that Structure S5E1-1 and the adjacent plaza may have been a water shrine, significant for religious reasons.

A common element in the inscriptions on the carved stones is a connection to the underworld. Stone B contains the possible posthumous record of the name of Sky Witness marked by death spots in the underworld. Stone C also contains dark elements of cross-hatching that may relate to the underworld. Finally, Stone E contains a potential Venus sign, which may be correlated to the underworld sun. Because the underworld was believed to be under the sea in ancient Mayan mythology, water shrines and underworld iconography have been correlated.

Water shrines involving a sunken courtyard are not uncommon in ancient Maya sites. At Palenque, the great city plaza was known to the site's inhabitants as *Lakam-Nab*, or "Big Sea" and embodied a shimmering sea from which the sacred mountain-pyramids arose. At Group H at Waxaktun a plaza representing the primordial sea was constructed next to a building marked as the cosmic mountain of Mayan mythology (Freidel, Schele and Parker 1993:139-146). The shrine at Yo'okop can be interpreted similarly to the architectural complexes composed of plazas and pyramids at Palenque and Waxaktun. The sunken plaza at Yo'okop literally embodied the underworld sea by trapping water within its raised platforms, and Structure S5E1-1 re-created the large cosmic mountains in the natural and supernatural landscapes. What is extraordinary in Structure S5E1-1 is the presence of two artificial water bodies at two different locations in the same architectural context.

Evidence from contemporary Maya ritual indicates the significance of Structure S5E1-1 as a ritual building that incorporated both high and low water shrines. Among the contemporary Maya of the highlands, water shrines are classified as high and low shrines. High shrines are located on mountain tops, slopes, and ridges, while low shrines are located at the base of mountains (Bassie-Sweet 1996:69). This emphasis on low and high water shrines mirrors the high and low water bodies collected by Structure S5E1-1. In Structure S5E1-1, the sunken plaza may correspond to the low shrines used at the base of mountains in the highlands today. The plaza would have collected water, representing the surface of

the underworld or mythological sea. In Structure S5E1-1, the pyramid-temple would have corresponded to a mountain. At the same time, the raised moat of Structure S5E1-1 would have replicated a high shrine used on a mountain top, slope, or ridge.

Ancient cave rituals evidently focused on underground water sources. Pre-columbian water vessels are found in numerous caves near stalagmites. J.E.S. Thompson has argued that water dripping from cave formations was collected for ceremonial use as “uncontaminated or virgin water” (quoted in Bassie-Sweet 1991:83).

Contemporary cave rituals also focus on underground water sources. One such ritual was documented at Balankanche near Chichen Itza. When Balankanche was excavated, the local ritual expert performed ceremonies in the cave to appease the rain gods. During the ritual, ceremonies alternated between a high location and a low location within the cave. The high location contained a small hill with a dripwater column and many stalactites in the center. These cave formations resembled the *yaxche* tree. The low location contained an elongated lake. Both locations contained ancient pottery vessels, indicating a long history of ceremonial use (Andrews 1970).

Bodies of water used in cave rituals could represent the surface of the underworld or the mythological sea. Yo’okop provides evidence that the natural topography was repeated in ancient ceremonial circuits in which ritual practitioners climbed the mountains and descended to the underworld in order to secure the water resources on which their existence depended. This resource shimmered from the high and low water shrines of Structure S5E1-1 and from the surface of the *aguada*. This resource was revered in the depictions of the lords in their *stelae*. This resource was, perhaps, even guarded by the underworld passage of the lineage founder, Sky Witness, whose darkened vision permitted him to view the waters of the underworld sea and the planets of the night sky.

Discussion and Conclusions

The site of Yo'okop continued to pleasantly surprise us during the second field season of research. Clearing and mapping in the Group B area revealed a fourth *sacbe* and more fortifications, located a ballcourt ring (confirming the identity of Yo'okop's ballcourt), and documented the enormous scale of the Group and its structures. In Group D, a *chultun* was found, as were a number of interesting smaller structures. Excavations in Groups A, B, and D began to provide preliminary dates for the site's occupation, pushing settlement back to at least the Middle Formative. Wren, Nygard, and Krochock were able to better document Yo'okop's epigraphic materials, further refining our understanding of these monuments.

In spite of this progress, hundreds of minor and major questions remain to be investigated as we continue to map and excavate at the site. At present, the Project continues to focus its investigations around two primary sets of hypotheses; we expect related research to continue for many years.

Our first set of problems relate to climate change and its impact on the site's history, particularly during the time of the Classic Maya collapse. While 2000 research, centered on Group A, suggested that there may have been a substantial population decrease during the Terminal Classic, as indicated in the near absence of Terminal Classic remains in the Group, 2001 provided us with a different picture of the site during this period. Based upon our extremely limited test pits, as well as visible surface remains, it now appears that Yo'okop was able to continue strongly through the Terminal Classic. The zone around Group A is lacking in Terminal Classic constructions, but *Sacbe* 1 was built during this time, as were many structures in Group B. Instead of a near-abandonment coinciding drought, evidence indicates that the site's settlement pattern may have been significantly restructured.

This restructuring, emphasizing Groups B and D, away from the *aguada*, may have been designed to allow lands near the *aguada* to have been used for agriculture. This lowest portion of the region would allow some crops to be pot-irrigated and provide plants with more water, as their roots were located closer to the water table. Today, vegetation in the zone (grasses, trees, and shrubs), are all appreciably larger and healthier than examples located away from the *aguada*. Using this land to its maximum may have been required as conditions became increasingly arid.

However, this does not entirely explain the shift; the paved plazas and existing monumental stone architecture in Group A would not have made productive farming zones. Part of the patterning may also result from the fact that *Sacbe* 1, as well as construction projects such as the paving of the plaza in which Operation 5 was placed (to the north of Group A's Structure S4E2-1), would have been quite costly. Rather than abandoning Group A, occupants may have continued to live in the zone, spending their "budget" on building non-structural features. Group B, and to some degree Group D, became the focus of new constructions, including structures and plazas. The question remains then - why were the inhabitants of

Group B apparently able to continue to construct numerous major and minor buildings during the Terminal Classic? If the decrease in Terminal Classic activity in Group A is due to costs, rather than drought, why did the inhabitants of Group A disproportionately bear those costs? The dry Terminal Classic was a time when the *aguada* would have been particularly valuable, yet it seems that the occupants of Group A, not Group B, were the ones needing to link themselves to the rest of the site.

If indeed *sacbeob* and other construction costs were disproportionately paid, this raises interesting questions about the political relationship between the Groups and their inhabitants. It would logically seem that architectural groups located within a kilometer of each other, linked by a roadway and a continuous, dense residential zone would not have been separate political entities, yet an imbalance of power is implied in the differential construction histories. In future seasons, the possibility that different, potentially competing, lineages account for the distinct groups will be investigated. What was originally read as a drought-signature may instead be the result of a shift in the internal politics of the site.

Alternately, or additionally, this shift may relate to external political and economic links, the subject of our second set of hypotheses. Much of our information related to Yo'okop's affiliations continued to come from non-excavated materials, both epigraphic and architectural. However, 2001 did bring the addition of excavated samples from five test pits placed in plaza contexts throughout the site. These provided a significantly larger ceramic sample that was generally in much better condition than sherds collected from the surface in 2000. Additionally, the ceramic lots were from known contexts, some of which were sealed by buried plaza surfaces.

While some Middle Formative sherds had been observed on the surface, Johnstone's excavations in Group A (Operations 1 and 2) provided a much more robust ceramic sample for this time period. Operation 1 produced a nearly pure Middle Formative lot at its bottom, while the second unit contained a few scattered sherds from the time period prior to bedrock. No Middle Formative features were discovered in the units. Based upon the limited available sample, it can only be said that the Middle Formative assemblage at Yo'okop appears similar to other sites in the Northern Lowlands, rather than the South.

The Late Formative ceramic assemblage most closely resembles that of the Cancun area (Simmons 1974). While the first operation contained only scattered Late Formative sherds, Operation 2, in Group B's Central Acropolis, yielded two Late Formative masonry structures associated with plaster floors. As orientation of Yo'okop's major surface architecture follows the orientation of both the substructures in Operation 2, it is likely that the basic layout and orientation of the site was established during the Late Formative.

The Early Classic is still not well understood at Yo'okop. Johnstone (this volume) believes that a larger sample from more excavated contexts may allow the further temporal division of this period. Observations of architecture at the site indicate that Group A had a sizeable Early Classic occupation, with numerous

Izamal-style steps present on structures that were further modified in later periods. A possible Early Classic date of A.D. 476 on *Stela* 3, a *kalomte* glyph block (associated with Tikal - Harrison 1999), and a glyph block making reference to Calakmul's Ruler 17 ("Sky Witness"), known to have been in power in A.D. 572 (Martin 1997:861; Martin 2001: 39), indicate that the site was an important place during this period. This Southern emphasis may be related to the powerful alliances led by Tikal and Calakmul that existed at this time (Martin and Grube 1995). It may be that this new orientation may have impacted internal politics, establishing Group A as the predominant locus at Yo'okop during the Early Classic. Group B's Early Classic occupation, based upon surface architectural styles and materials from Operations 1 and 2, was minimal, following a substantial architectural investment during the Late Formative. Likewise, Group D does not seem to have contained much construction at this time, based upon the paucity of Early Classic sherds in Operation 4 and the lack of surface architecture clearly dating to this period. While a strong Early Classic ceramic sample was expected from Group A, neither test pit provided such a sample. This may be due to their peripheral location within the Group, suggesting a more nucleated architectural focus during the Early Classic.

While Late Classic ceramics are more numerous than Early Classic examples in excavations conducted to date, no clear affiliations are present. However, the paucity of Batres group ceramics from excavated contexts, mirrored in the 2000 surface collections, indicates that Cobá was not exerting a strong influence on Yo'okop during this period. Within the site, Late Classic floors were detected in Operations 2 and 4, and sherds dating to this period were found in all units. The 2.5 meter raising of Group B's Central Acropolis during this period following an apparent abandonment of this locality during the Early Classic. The truncation and covering of Structure N5W1-1 sub 1 made the main plaza of the Central Acropolis into a more open space. It appears that Group D may have been established as late as the Late Classic, which would imply that *Sacbe* 3 was constructed no earlier than this period; its construction may have been part of the Terminal Classic building program that resulted in *Sacbe* 1.

Terminal Classic ceramics, found in every excavation unit, reveal a continued, substantial occupation at Yo'okop following the Southern collapse. *Sacbe* 1 was constructed and amplified as it entered Group B, and Groups A, B, and D continued to be occupied and modified. However, as discussed, the site's settlement pattern may have been significantly altered at this time, possibly as a response to climate change. Hypothetically, this reorganization may also be, at least in part, a response to the fact that the Southern-dominated alliances were no longer in existence. If factions within the site had depended upon a Southern entity(ies) to support and/ or legitimize their power, the downfall of these powers may have led to significant political restructuring and reorientation at Yo'okop. The possible destruction or collapse of Late Classic structures in the Central Acropolis and the absence of Terminal Classic construction at this locality may be a reflection of this political restructuring. Such Terminal Classic constructions, identifiable on the basis of core-veneer architecture, are largely residences, and are located in between, or adjacent

to, earlier constructions. Eastern Cehpech ceramics are clearly dominant at this time, indicating the site may have looked to the northeastern-north central part of the peninsula for economic and political ties.

While numerous Postclassic summit shrines and other constructions, including a possible Postclassic accession structure in Group A (Structure S4W2-1) imply a sizeable occupation for this final period of Yo'okop's occupation, no ceramic lots could be assigned to the Postclassic. Instead, the absence of sherds dating to this period from plaza contexts indicates a highly localized focus of construction and occupation during this period. As we come to better understand the Postclassic at Yo'okop, it will be interesting to explore if the site was able to maintain a sizeable, constant population in spite of its distance from important Postclassic coastal sites, or if it instead served as a significant pilgrimage destination, occupied by a relatively small permanent population.

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