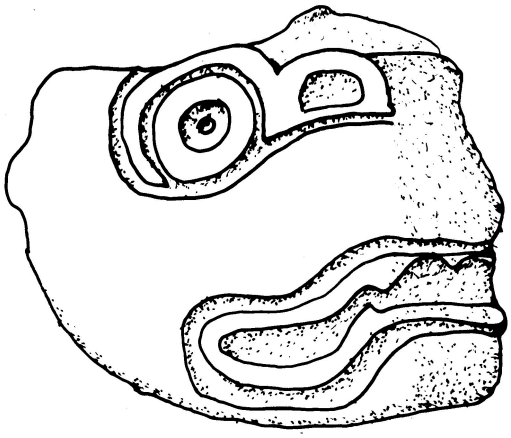
Final Report

of

Proyecto Arqueológico Yo'okop's

2002 Field Season:

Excavations and Continued Mapping



edited by Justine M. Shaw

with contributions by
Sandra Bever, Annie Hanks, Tara Holman, Dave Johnstone, Maya Kashak, Christopher Lloyd, Veronica Miranda, and Justine M. Shaw

College of the Redwoods
Eureka, CA

Table of Contents

Acknowledgements iii

List of Figures and Tables viii

Introduction
(J. Shaw) 1

Methods
(J. Shaw) 5

Residential Mapping in the Site Center
(D. Johnstone) 7

Vaulted Structures in Yo'okop's Peripheral Zone
(M. Kashak) 12

Locality and Observations of Group C and *Sacbe* 2
(C. Lloyd) 21

Operation 6: Structure S3E1-5
(J. Shaw) 28

Operations 7 and 8
(D. Johnstone) 64

Operation 9
(M. Kashak) 72

The Ceramics of Yo'okop: 2002 Field Season
(D. Johnstone) 77

Yo'okop 2000-2002 Non-Ceramic Artifacts
(A. Hanks) 109

Settlement and Affiliation Shifts at Yo'okop
(J. Shaw) 116

A Comparative Study of Ancient Maya Housing to that of the Contemporary Maya
(T. Holman and V. Miranda) 120

(continued)

Ethnographic Chapter: Saban, Quintana Roo, 2002 Field Season
(S. Bever) 124

Discussion and Conclusions
(D. Johnstone) 137

References Cited 139

Acknowledgements

The 2002 field season was funded by the Antiqua Foundation. Our 2001 research was made possible by a grant from the Selz Foundation. The 2000 season was funded by the H. John Heinz III Fund of the Heinz Family Foundation (reference number H1305) and the Foundation for the Advancement of Mesoamerican Studies Inc. (FAMSI project number 99016). Without these funds, our research would not have been possible.

Additionally, the members of Project would like to thank Hugh and Dianne Johnstone and Tom and Mary Lou Shaw for years of unflagging support as we worked toward our goal of running our own research project. Our family and friends have been incredibly patient and supportive. We also would like to thank our colleagues from the United States, Canada, and Mexico, including INAH-QR and INAH-Nacional for helping us to continue with our third season of research.

Finally, and most importantly, we would like to thank the people of Saban and Huay Max who graciously allow us to live and work in their *ejido* during our summers. In addition to the crew members we were able to hire (following pages), we received countless archaeological (and survival) tips and assistance from individuals throughout the *ejido*.

Yo'okop 2002 Field Crew

Week 1
Miguel Moo Kauil
Bernado Poot Poot
Idelfonso Uc Poot
Epifanio Cab Chuc
Marcelino Itza Mazun
Pablo Poot Poot
Alfonso Moo Uc
Juan Moo Uc
Ermilo Coho Chan
Santiago Chimal May

Week 2
Fanicario Nahuat Tuyub
Nemecio May Tuyub
Cayosotelo Tuz Poot
Santos Poot Cocóm
Guadalupe Cab Chuc
Alfredo Chuc Poot
Jorge Andres Poot Poot
Severo May Canul
Pedro Cánche May
Maximiliano Kauil Chán
Manuel Jesús Cánche Chimal

Week 3
Leodegario Moo Moo
Pedro Celestino Canché Chimal
Mariano Hao Canché
Floro Kauil Chan
Sebastian Hao Canché
Celestino Chan Pech
Laciano Canché Itzá
Narciso Chan Kauil
Jose Luis Cab Perera
Pablo Poot Poot
Rufino Moo Moo

Week 4
Cesar Kauil Chan
Severiano Pat Mayay
Anjelino Dzul Tuz
Alfonso Perera Cab
Mercedes Toz Poot
Zacarias Balam Moó
Pascual Kauil Aké
Justo Arjona Chan
Jacinto Chan Chi
Gregorio Moó Moó
Edilfonzo Uc Poot

Week 5
Miguel Móo Kauil
Mario Chuc Kú
Gonzalo Canche Puc
Paulino Moo Poot
Zerafin Tuz Poot
Marcial Chuc Poot
Lucio Móo Móo
Julio Coyoc Cupul
Modesto Tullub Dzib
Casiano Poot Bé
Victor Chán Cab

Week 6
Esteban Ake Chan
Jose Alfredo Chan Nahuat
Adelberto Poot Moo
Andres Moo Pat
Bernardo Poot Poot
Juan Bautista Poot Dzib
Aurelio Canché Canché
Jorje Alfredo Cab Pererra
Santiago Chi Camal
Elias Nahuat Tujub
Santo Tomas Poot Chuc
Felipe Moo Arjona
Gregorio Poot Poot
Juan Bautista Cocom Poot
Teodoro Ake Mahay

Yo'okop 2002 Field Crew
continued

Week 7
Jermán Arjona Chán
Ansunción Poot Poot
Felipe Hau Chán
Rufina Poot Poot
Alfredo Kauil Chi
Macedonio Uc Chán
Daniel Chimal Tuz
José Luis Mayay Cahum
Eulogio Poot Cánche
Gonzalo Cano Uc
Marcelino Itza Mazon
Juan Bautista Cocom Poot
Gregorio Poot Poot
Nestor Móo Arjona
Teodoro Aké Mayay
Andres Chan Cab

Week 8
Eustaguio Pat Tún
Cerbulo Cocóm Poot
Pedro Melecio Kauil Poot
Remigio Kauil Poot
Federico Kauil Cox
Francisco Kauil Aké
Demetrio Tullub May
Santiago Hún Coyoc
Pedro Poot Cohóo
Gaspar Chimal
Juan Móo
Marcial Chán Cab
Lauro Chán Móo
Teodoro Aké Mayay
Andres Chán Cab

2002 Laboratory Workers

Group 1
Christina Can Moo
Herendi Aujandra Cajun Chi
Claudia Ester Secondino Tun
Magdalena Poot Poot

Group 2
Norma Dzib Balam
Estela Tuz Kauil
Deysi Nahuat Chuc
Beatrice Tux Tun

2002 College of the Redwoods Students

Ben Goger
Annie Hanks
Tara Holman
Maya Kashak
Chris Lloyd
Sue McIntyre
Veronica Miranda

2002 Laundry Workers

Week 1
Isabela Chán Dzib
Estela Valle Cánte
Anastacia Cocóm Caamal
Octavianu Poot Kauil

Week 2
Ansunciona Caamal Cocom
Reynalda Kauil Moo
Maria Isablea Kauil Poot
Mercedez Hoil Moó
Paulina Chimal Chimal
Lucia Kauil Hoil
Catalikna Kauil Chúm
Rosa Chi Cupul
María Julia Kauil Chúm

Week 3
Rosaoru Moó Fuentes
Erculana Moó Poot
Sofia Jao Cánche
Erminia Jao Cánche
Deysi Polanco Moó
Valvina Poot Chán
Lucia Tún Itza
Luisa Choc Chán
Silvina Tullub Tún

Week 4
Silvia Moó Valle
Paulina Valle Cánte
Gregoria Pat Poot
Carmén Caamal Choc
María Moó Cocom
Vasilia Coyoc Pech
Isidra Poot Poot
Narcisa Poot Moó
Paustina Choc Poot
Irene Caamal Choc

Week 5
Isaura Cajóm Chán
Amalia Tún Briceño
Catalina Tún Tún
Estela Kauil Chán
Rufina Chimal Chimal
Domitila Móo Dzul
Juanita Moó Dzul
Julia Arjona Cán
Nicolasa Koyoc Copol
Escosia Chuc Moó

Week 6
Paulina Kauil Chan
Rosario Chán Chán
Bartola Chán Moó
Estela Chán Chán
Humberta Chán Chán
Nicolasa Cán Mayuy
Fortunata Chán Moó
Valvina Chán Moó

Week 7
Martina Puc Kauil
Lidia Kauil Puc
Marcelina Moó Dzul
Leona Chán Moó
Luciana Uc Chán
Erasma Moó Poot

Week 8
Nemecia Choc Kauil
Emeteria Moó Dzul
Humberta Poot Cocóm
Anserma Poot Poot
María Poot Poot

Week 9
Eulogia Poot Caamal
Juanita Poot Caamal
Sebastianu Canul Nóh
Emeteria Choc Poot

List of Figures and Tables

Figure 1) Topographic Map of Yo'okop (following 2002 season) 2
Figure 2) Location of Yo'okop 3
Figure 3) Residential Survey, Western Portion 8
Key for Figures 3 and 4 9
Figure 4) Residential Survey, Eastern Portion 10
Figure 5) Location of Vaulted Structure in Yo'okop's Periphery 13
Table 1) Characteristics of Yo'okop's Peripheral Vaulted Structures 14
Figure 6) Typical Vaulted Structure Layout, Structure S1W3-2 Example 15
Figure 7) Yo'okop's Group A 16
Figure 8) Yo'okop's Group B 17
Figure 9) *Sacbe* 2 and Group C 22
Figure 10) *Sacbe* 2, Subterranean Vault Entrance 24
Figure 11) Subterranean Vault Bisecting *Sacbe* 2 25
Figure 12) *Sacbe* 2 and the Group C Acropolis 26
Figure 13) Location of Structure S3E1-5 29
Figure 14) Structure S3E1-5 Southern and Western Exterior Wall Profiles 31
Figure 15) Structure S3E1-5 Northern and Eastern Exterior Wall Profiles 32
Figure 16) Structure S3E1-5 Interior Wall Profiles, North (top), West (middle), and South (bottom) 33
Figure 17) Structure S3E1-5 Plan of Excavation Lots 34
Figure 18) Northern Profile of Operation 6a 35
Figure 19) Southern (left) and Western (right) Profiles of Operation 6a 36
Figure 20) Structure S3E1-5 Plan of Cut Stones Visible at Level 1 and 2 Interface 38
Figure 21) Plan of Plaza Floor Fragments to the West of Structure S3E1-5 39
Figure 22) Operation 6a, Levels 4-8, Lot 1 Profile 40
Figure 23) Operation 6b Western Profile 42
Figure 24) Operation 6b, Level 1, Lot 1 43
Figure 25) Operation 6b, Plan of the Interface of Levels 2 and 3 44
Figure 26) Structure S3E1-5 Collapse Including Vault Debris 47
Figure 27) Tenoned Serpent Head from Structure S3E1-5 Collapse 48
Figure 28) Structure S3E1-5 Plan 49
Figure 29) Operation 6d, Level 1, Lots 2 and 4 51
Figure 30) Structure S3E1-5's Floor 2 in Operation 6d Lots 2 and 4 53
Figure 31) Structure S3E1-5's Floor 3 in Operation 6d Lots 2 and 4 54
Figure 32) Structure S3E1-5 Plan of Cache Pit Following Excavation 56
Figure 33) Operation 6e Profile 57
Figure 34) Structure S3E1-5 After Excavation and Consolidation 58
Figure 35) Topographic Map of Structure S3E1-5 60
Figure 36) Perspective View of Structure S3E1-5 61

List of Figures
continued

Figure 37)	Group D, Location of Operation 7	65
Figure 38)	Plan of Operation 7	66
Figure 39)	Group B, Location of Operation 8	68
Figure 40)	West and North Profiles of Operation 8	69
Figure 41)	Group A, Location of Operation 9	73
Figure 42)	Operation 9, Northern and Eastern Profiles	74
Figure 43)	Operation 9, Southern and Western Profiles	75
Figure 44)	Dzudzuquil Creme to Buff, Tumben Incised	78
Figure 45)	Sierra Red, Laguna Verde	79
Figure 46)	Xanaba Red, Tituc Orange Polychrome var. Tituc	80
Figure 47)	Sacalaca Striated, Saxche Orange Polychrome, Juleki Creme Polychrome, Chantuori Black on Orange	81
Figure 48)	Yokat Striated	83
Figure 49)	Chen Mul Modeled, Yacman Striated	84
Table 2)	Yo'okop's 2002 Ceramic Analyses	85
Table 3)	Non-ceramic Artifacts from the 2000-2002 Field Seasons	110
Figure 50)	Projectile Points and Blades from Yo'okop	111
Figure 51)	Bipolar Cores from Yo'okop	112
Figure 52)	Flakes from Yo'okop	113
Figure 53)	Ground and Modeled Artifacts from Yo'okop	115
Figure 54)	Contemporary Maya *Solar*	121
Figure 55)	Ancient Maya Platform, Structure N4W2-2	122
Table 4)	A Description of the Sample Population	128
Table 5)	Summary of Economic Survey Questions	132
Table 6)	Survey Questions Regarding People's Perceptions of Proyecto Arqueológico Yo'okop	135

NOTE: Copies of the 2000, 2001, and 2002 reports, photographs, illustrations, and information are currently available at the Yo'okop web site:

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

Introduction

Justine M. Shaw, Ph.D.

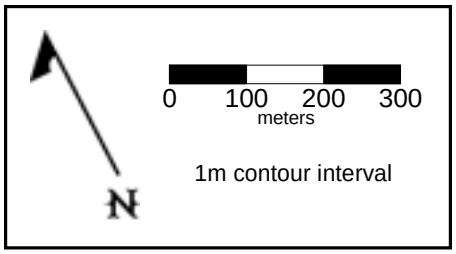
Research at Yo'okop during the 2002 field season continued the process of mapping the site core and excavating plaza test pits in order to increase the ceramic sample and refine our understanding of the site's settlement dynamics (Figure 1). A substantial portion of the season was also devoted to the Project's first excavation and consolidation of a structure (Structure S3E1-5), as well as a number of independent student research projects. Cultural anthropologist Sandra Bever also joined our team, with the aim of better understanding the needs and wants of Saban and Huay Max in order to improve our cooperative relationship with the modern communities.

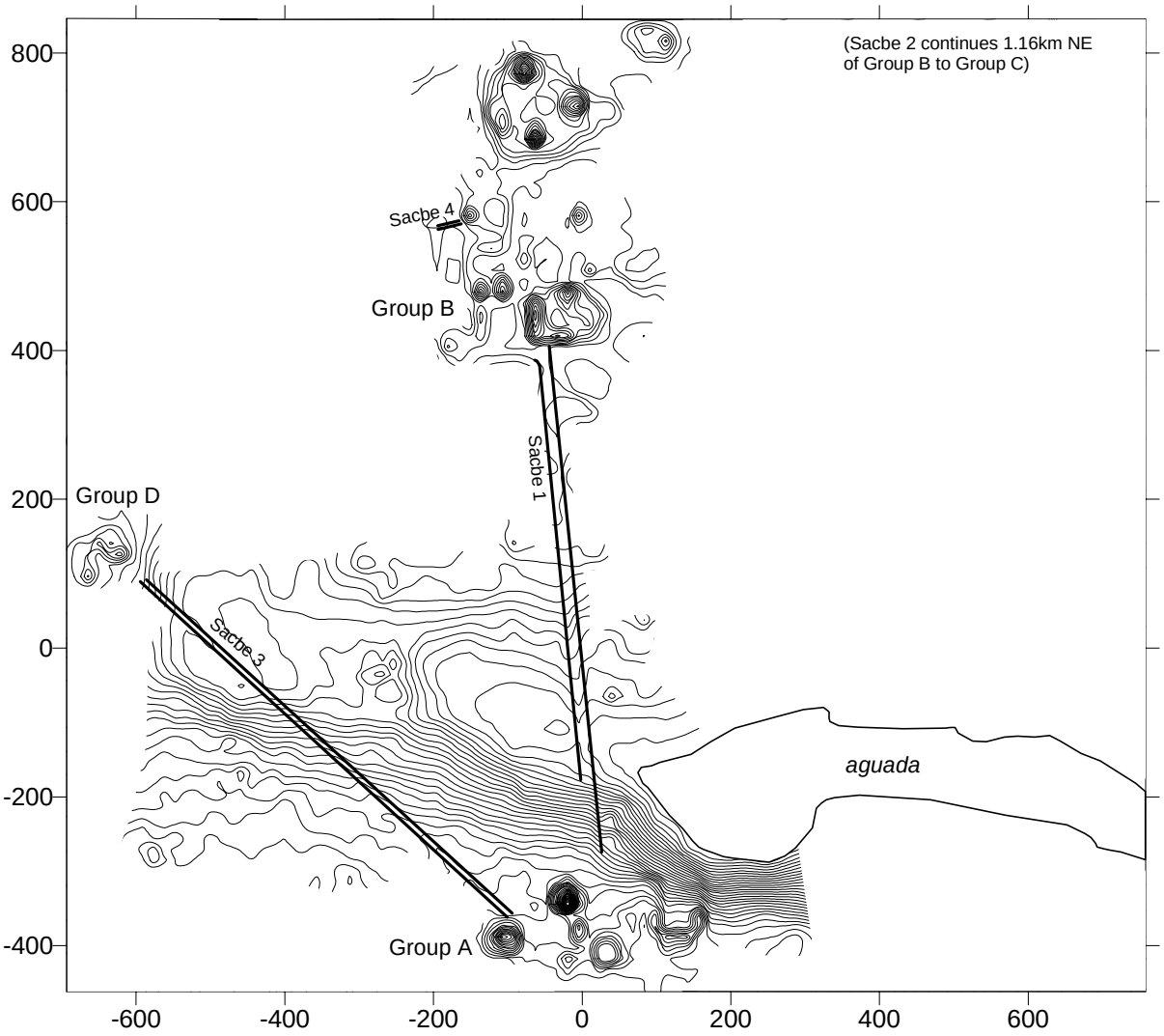
In addition to increasing our knowledge of Yo'okop's culture history, we continued to test hypotheses related to climate change, water management, warfare, and political events. As in the past (Shaw 2000 and 2001a), it was hypothesized that Yo'okop, with only one water source, should be particularly sensitive to any drought episodes, such as the one detected about A.D. 900 in nearby Lake Chichancanab (Hodell *et al.* 1995) (Figure 2). It was predicted that Yo'okop's response to this desiccation might include the construction and/ or intensification of water management features, shifts in ritual and ideology, and/ or a decrease in the site's relative population.

Researchers also continued to assess the site's affiliations through architectural styles evidenced in surface remains and excavations, as well as through ceramics from excavated contexts. Survey near Group B was also able to add to the numerous fortifications already known from Yo'okop. While no new epigraphic remains were located in 2002, we have continued to try to better our understanding of existing materials. It was hypothesized that Yo'okop may have served as a "frontier site," whose changing political affiliations should be reflected in changing ceramic and architectural styles, as well as in the threat of conflict seen through fortifications (and/ or the delivery of such threats seen in terminations). It was also hoped that any events associated with political upheaval might contain "signature ceramics" (Johnstone 2001a) indicating the identity of the protagonist(s).

As our understanding of the site's shifting settlement patterns has increased, these hypotheses have been increasingly related to marked transformations in the site's settlement. One of the most noticeable shifts occurs between the Late Classic and Terminal Classic at Yo'okop. We believe that during the Terminal Classic, *Sacbeob* 1 and 3 were built, while Group A received relatively less emphasis than Groups D and B. Initially, these shifts were read strictly as a demographic contraction in response to drought. However, based upon our current knowledge, these changes appear to be more of a response to external political transformations. Terminal Classic Yo'okop thus represents the site's reorientation from the south, as important

Figure 1. Topographic Map of Yo'okop
(following 2002 season)





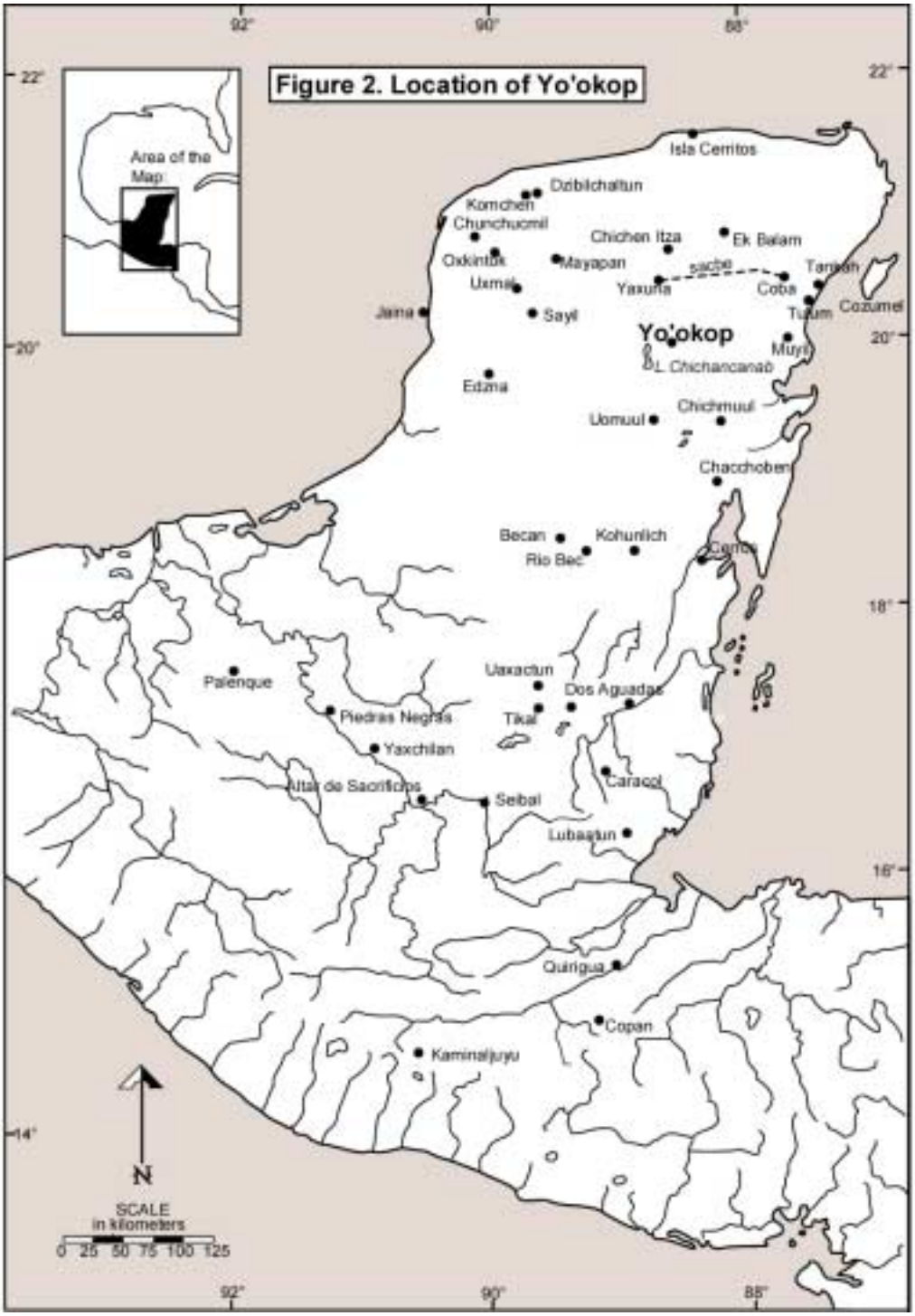


Figure 2. Location of Yo'okop
Area of the Map
92°
90°
88°
22°
20°
18°
16°
14°
Isla Cerritos
Dzibilchaltun
Komchen
Chunchucmil
Chichen Itza
Ek Balam
Oxkintok
Mayapan
sacbe
Tancah
Uxmal
Yaxuna
Coba
Cozumel
Tulum
Jaina
Sayil
Yo'okop
Muyil
L. Chichancanab
Edzna
Chichmuul
Uomuul
Chacchoben
Becan
Kohunlich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

sites in the region failed, to the north, where new leaders emerged. Thus, Yo'okop did not collapse in the Terminal Classic; instead, it flourished with a relatively large population into the Postclassic by adopting new internal political strategies and new economic and political partners to the north.

In future seasons, we will seek to improve our understanding of this transformation. Late Classic and Terminal Classic termination events imply the changes may not have been entirely of Yo'okop's free will. We hope to date the site's fortifications in order to determine the degree to which they may relate to this period. Also, we hope that locating additional terminations may allow us to identify the region, or even the site(s) that attacked Yo'okop.

At the same time, we continue to believe that Yo'okop, with only its *aguada*, could not have proceeded into the Terminal Classic without adjustments in light of the climate changes known to have taken place. This season, vegetation covering the eastern half of the *aguada* was burned when a *milpa* fire got out of control. Upon casual inspection, this exposure revealed a linear feature containing some cut stones near the north-central edge of the *aguada*. The feature is currently covered by water unless the water level is near the annual low mark. In the future, we would like to more systematically search the *aguada* for more features and attempt to date any such features through excavations.

In spite of the number of questions that we continuously generate, we feel that our 2002 season was very successful. We were not only able to complete all of the tasks detailed in our initial proposal for the season; we also feel that we're beginning to gain insights into the complexities of Yo'okop's long history as a city in a dynamic region.

Methods

Justine M. Shaw, Ph.D.

Research in 2002 included mapping a portion of the residential zone, test pits in plaza surfaces, the excavation of one structure, and a number of projects carried out by students. Mapping concentrated on the recording of a zone between *Sacbeob* 1 and 3, as well as to the west and southwest of *Sacbe* 3 (Figure 1). Three off-mound test excavations were conducted in the plazas of Groups A, B, and D. Additionally, Structure S3E1-5, a probable sweatbath near the *aguada*, was excavated and consolidated.

A laser transit (Topcon GTS-213) with a data collector, operated by the principal investigators and College of the Redwoods students, recorded the finer details of the features 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 *brechas* to allow zones to be searched, and helped look for features.

In 2002, mapping began in *milpas* near *Sacbe* 3. Recording proceeded to the east, then in a generally northward direction, to complete the zone between the two roadways. Once outside the agricultural fields, a network of N-S and E-W *brechas* was cut every 100m in order to allow topography and features to be recorded, as well as to provide access to uncleared zones so that they too could be searched.

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 generated daily to allow ground-truthing. 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. As in previous seasons, maps of the site 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 or 2002.

Instead, three test pits were excavated in 2002. Each was 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 2x2m. However, due to time restrictions, Operations 7

and 9 were limited to 1x2m units. All pits were excavated in natural levels, with materials separated according to the operation/ level/ lot system. 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 present as each excavation was conducted. All test pits were backfilled upon completion of the excavating and recording process.

Structure S3E1-5 was excavated using the same basic methods as the test pits. Five suboperations were used to designate different locales in and around the structure; suboperations were further divided into natural levels and lots to provide greater horizontal and vertical control. All materials were removed in 2.5 gallon buckets and screened through 1cm mesh. Following the excavation, the walls and bench surfaces of the structure were consolidated.

Ceramic finds from the excavations were washed and marked with the operation, level, and lot, while lithics were not scrubbed under water so that residue analyses might be done in the future. 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.

Several student projects also contributed significantly to the season. Some of these projects are presented here, while others will be presented at a later date on the Project web page (http://online.redwoods.cc.ca.us/yookop/). Christopher Lloyd used a GPS to record the route of *Sacbe* 2, as well as the position of Group C. He also created a pace and compass map of the Group. In 2003, more detailed mapping is envisioned for this portion of the site. Ben Goger provided the first assessment the soils, creating a map of the location of soil types within the site core using local informants' knowledge. Annie Hanks carried out detailed drawings and made descriptions of non-ceramic finds from 2001 and 2002. Veronica Miranda and Tara Holman mapped a modern solar in Saban using the total station, which they compared to archaeological examples from Yo'okop and other sites. Sue McIntyre, a student affairs specialist, assessed student involvement in the research using student surveys and personal observations in order to assist Shaw and Johnstone in tailoring future student involvement with the Project.

Finally, the 2002 season included a program of complementary cultural research in Saban, led by Sandra Bever. Bever and her assistants, Veronica Miranda and Manuel Alejandro Pérez, administered surveys to local *ejiditarios* in the pueblos of Saban and Huay Max in an effort to gather data on the communities and assess attitudes towards the Project. Surveys were administered to individuals who had worked for the Project in some capacity and local officials, as well as a sample of individuals who had not yet been employed by the Project. It is hoped that this program will continue in future seasons as a means to assist the Project's cooperative relationship with the *ejido*.

Residential Mapping in the Site Center

Dave Johnstone, Ph.D.

During the 2002 field season, one of the primary labor efforts was invested in the mapping of the residential portion of the site. To this point, mapping had been focused on the major architectural groups that contained the monumental architecture and royal residences. With the exception of a few residences close to *sacbeob* linking these major groups (Johnstone 2001b), little was known about how the majority of the population at Yo'okop lived.

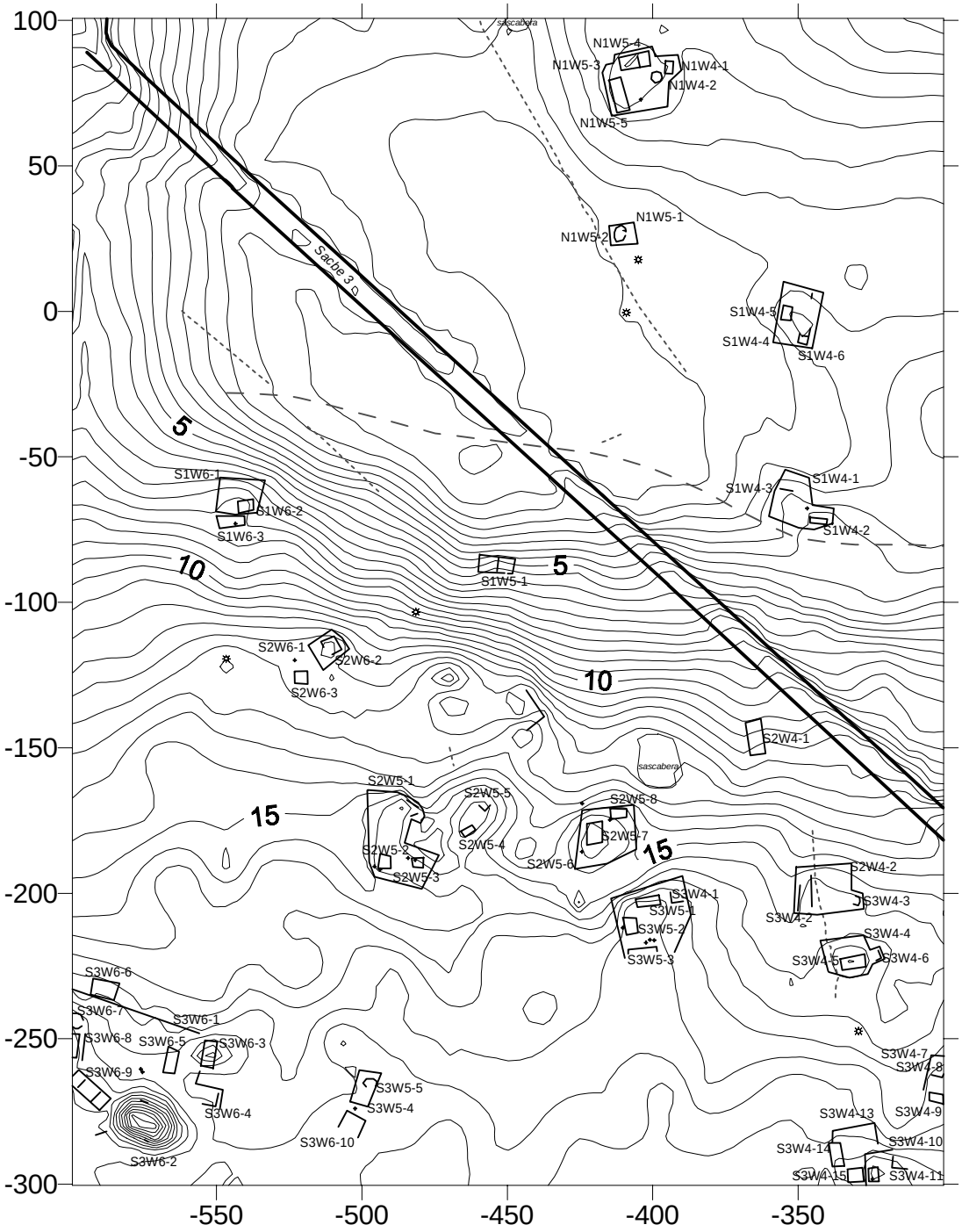
The zone between *Sacbe* 1 and *Sacbe* 3 was selected for mapping this field season. This zone was covered by secondary forest and high grass, resulting in poor structural visibility. This zone was mapped using a 100 m x 100 m grid. Along this grid, the workers from Saban cleared a 4 m wide *brecha*, a pathway with a clear line of sight. Men spaced at 5 m intervals then searched each grid unit. Any architectural elements encountered were then cleared, and a line of sight cut to the nearest grid intersection. In addition, the clearing of a portion of the site southwest of *Sacbe* 3 for use as a *milpa* (field) permitted excellent visibility of a substantial area of the site. Both the inter-*sacbe* zone and the cleared *milpa* were mapped with a Topcon GTS-213 total station transit.

A total area of 217,500 m^2 was mapped during the 2002 season (Figures 3 and 4). This area contained 122 structures, including 27 platforms, two terraces, 88 foundation braces, five vaulted structures, two rainwater wells, or *chultunes*, and five *chich*, or dry-stone, mounds. Several colonial field walls, or *albarradas* were also recorded.

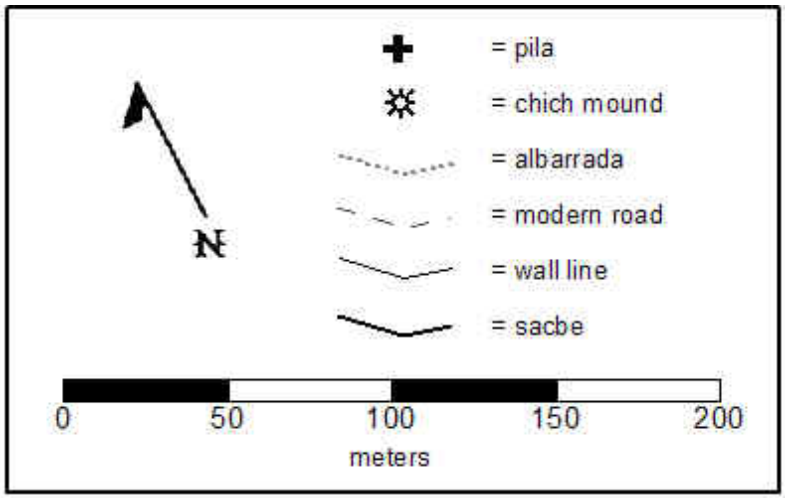
There is a wide range of variability within the residences, both in terms of size, numbers of rooms, shapes, and construction materials. The vast majority are simple foundation braces that supported perishable superstructures of pole and thatch. The smallest of these may represent corncribs rather than residences, while others may have been kitchens. There is a good correlation between structure size and construction materials. The structures that are largest in area tend to have also been constructed entirely of stone, including the roof. These vaulted buildings are also therefore the most massive and easy to identify (see "Vaulted Structures in Yo'okop's Peripheral Zone" this volume).

Spatially, the residences are not evenly distributed across the area mapped. Between Group A and the modern road, there are few residences. The steep slope of this area makes construction difficult without first preparing an artificial terrace or platform. Such a construction is substantially more costly in term of materials and labor than structures built on flatter ground. The second areas with fewer than expected residences are the areas of lowest contours. These areas are associated with the deepest, richest, wettest soils at Yo'okop. The reservation of these prime agricultural areas for uses other than residential creates a somewhat inverted use of space at Yo'okop. Instead of the central area being the most densely settled, with

Figure 3. Residential Survey, Western Portion



Key for Figure 3. Residential Survey, Western Portion



Key for Figure 4. Residential Survey, Eastern Portion

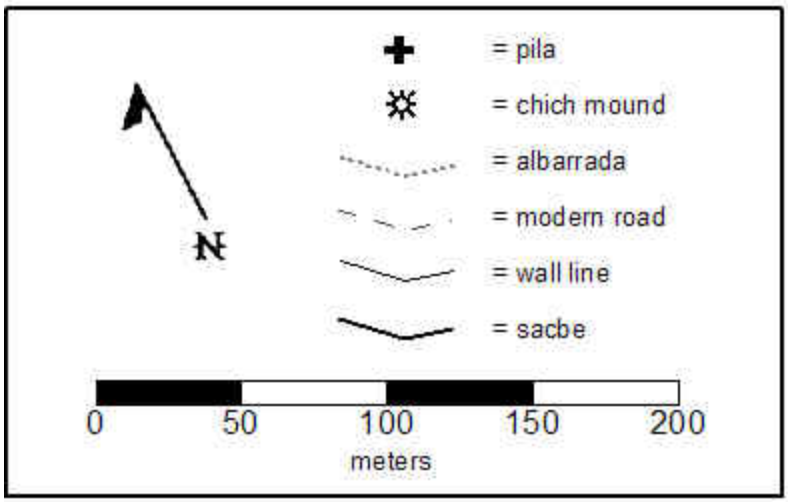
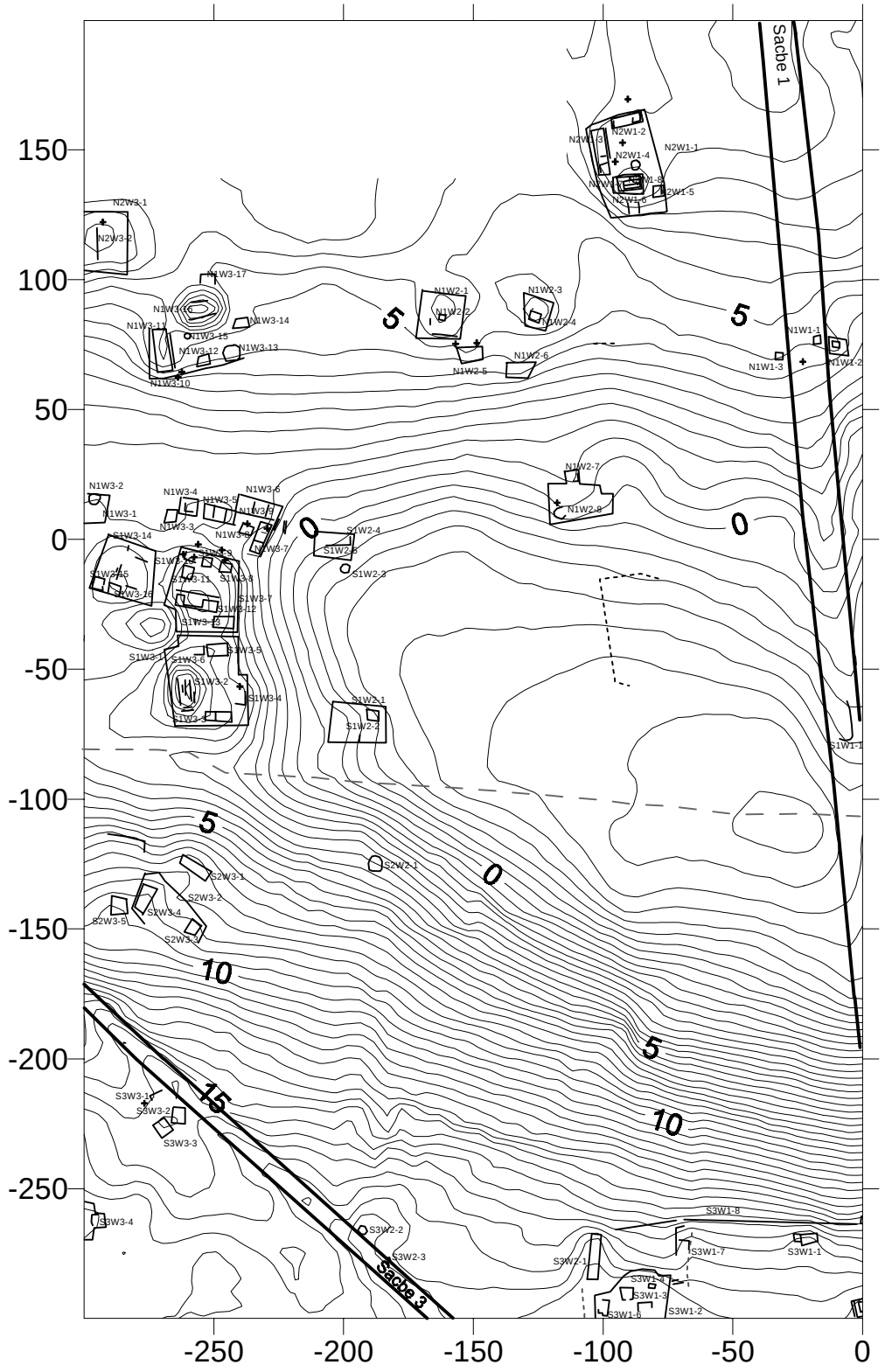


Figure 4. Residential Survey, Eastern Portion



density decreasing with distance from the center, Yo'okop seems to be a true "Garden City" (Smyth and Dore 1994:49) along the lines of Sayil, where prime agricultural land is reserved exclusively for that purpose. Residences are frequently built on raised areas, or stone outcrops. The largest of these are frequently in direct association with the area's prime agricultural soils; including those associated with *rejolladas*, or sinkholes.

Vaulted Structures in Yo'okop's Peripheral Zone

Maya Kashak

As the survey and mapping crew for the 2002 field season edged its way north, a larger picture of "sub-urban" Yo'okop began to emerge. While surveying the area between and surrounding the major *sacbeob,* researchers encountered a number of non-monumental structures, some in more compact clusters than others. The region surveyed stretched from approximately 300 m south of the site datum to approximately 100 m north and 500 m west of the site datum and included further mapping of *Sacbe* 3 (Figure 1). The structures encountered during the mapping included small mounds, large residence platforms and vaulted structures.

A total of six previously uncovered vaulted structures were encountered during the 2002 survey; three between *Sacbe* 1 and *Sacbe* 3, and three to the southwest of *Sacbe* 3 (Figure 5). These vaulted structures are of particular interest in that they are located outside of the major plaza groups and yet are still relatively larger buildings. Also, in terms of their location on the site, they represent much more energy expenditure (Kurjack 1974) than their surrounding residence mounds. These six previously uncovered structures are similar to other peripheral vaulted buildings at Yo'okop in architectural style, size, and proximity to other vaulted buildings and to major plaza groups. It is believed that the function of these peripheral vaulted structures was as elite residences, which controlled specific resources at the site, such as access to *sacbeob*, use of *box luum* land for agriculture, and/or as ritual buildings (Table 1).

The orientation of all 15 vaulted structures described here does not seem to follow any particular pattern, but rather depends on each building's situation on the site and its relationship to surrounding architecture. All of the structures are associated with a platform or terrace, even if only modest in size. Based on observation of architectural style, it was determined that 11 of the structures date to the Terminal Classic, Structure N9E2-1 dates to the Late Classic, and Structures N1E1-1, S3E1-6, and N1W3-16 are of undetermined style (Johnstone personal communication). The floor plans of the vaulted structures in this survey are similar to one another in that they are typically the largest of the buildings on the platforms they occupy. The vaulted structures are generally flanked on one or both sides by smaller, less significant mounds, and are oriented towards the center of the platform (Figure 6). As Carmean states, "...the presence of vaulted stone architecture in the Maya area has long been regarded as defining elite status" (1991:157). If these vaulted structures acted as elite residences, it is likely that each of the buildings as the focal point of its entire platform (Kurjack 1974). The clusters of smaller mounds surrounding the larger vaulted buildings are believed to have served as either food preparation areas, based on the presence of numerous *pila*; as residence mounds once housing perishable superstructures, seen in the multi-roomed foundation braces near Structures N2W1-1, S3W6-2, S1W3-2, and N1W3-16; or as corn cribs, based on the modest size and close proximity of apsidal structures to the main vaulted buildings. Additionally, all except for two of the vaulted structures are within at most 100 m from the nearest vaulted building. The two "solitary" vaulted structures lie outside of Group B and to the northwest of Group A (Figures 7 and 8).

Figure 5. Location of Vaulted Structures in Yo'okop's Periphery

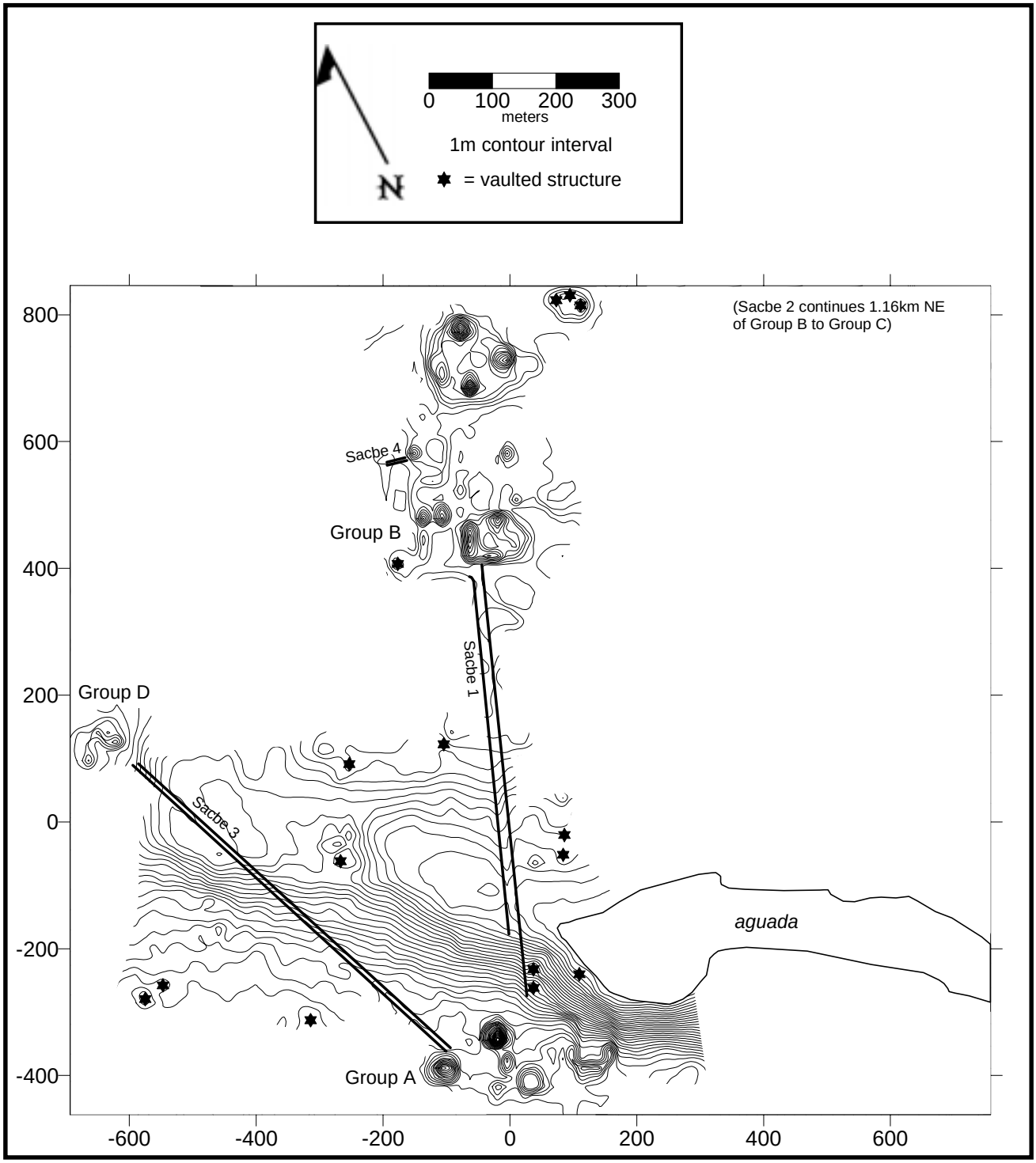


Table 1. Characteristics of Yo'okop's Peripheral Vaulted Structures

Structure	Area of Platform	Number of Associated Structures	Nearby Resources	Time Period
N9E2-1	10m x 6m	5	*Sacbe* 2, Group B	Late Classic
N9E1-3	10m x 6m	5	*Sacbe* 2, Group B	Terminal Classic
N9E1-2	11m x 8m	5	*Sacbe* 2, Group B	Terminal Classic
N5W2-3	15m x 12m	0	Group B	Terminal Classic
S3E1-3	15m x 12m	1	*Sacbe* 1, *aguada*	Terminal Calssic
S3E1-6	16m x 12m	1	*Sacbe* 1, *aguada*	undetermined
S3E1-5	7m x 9m	0	*aguada*	Terminal Classic
N1E1-1	15m x 18m	1	*Sacbe* 1, *rejollada*	undetermined
S1E1-1	15m x 17m	1	*Sacbe* 1, *rejollada*	Terminal Classic
N2W1-1	16m x 8m	5	*Sacbe* 1, *milpa* zone	Terminal Classic
S1W3-2	20m x 15m	4	*milpa* zone	Terminal Classic
N1W3-16	30m x 20m	5	*milpa* zone	undetermined
S3W6-2	20m x 15m	4	*Sacbe* 3	Terminal Classic
S3W6-3	8m x 7m	4	*Sacbe* 3	Terminal Classic
S4W4-1	12m x 8m	3	*Sacbe* 3, *rejollada*	Terminal Classic

Figure 6. Typical Vaulted Structure Layout, Structure S1W3-2 Example

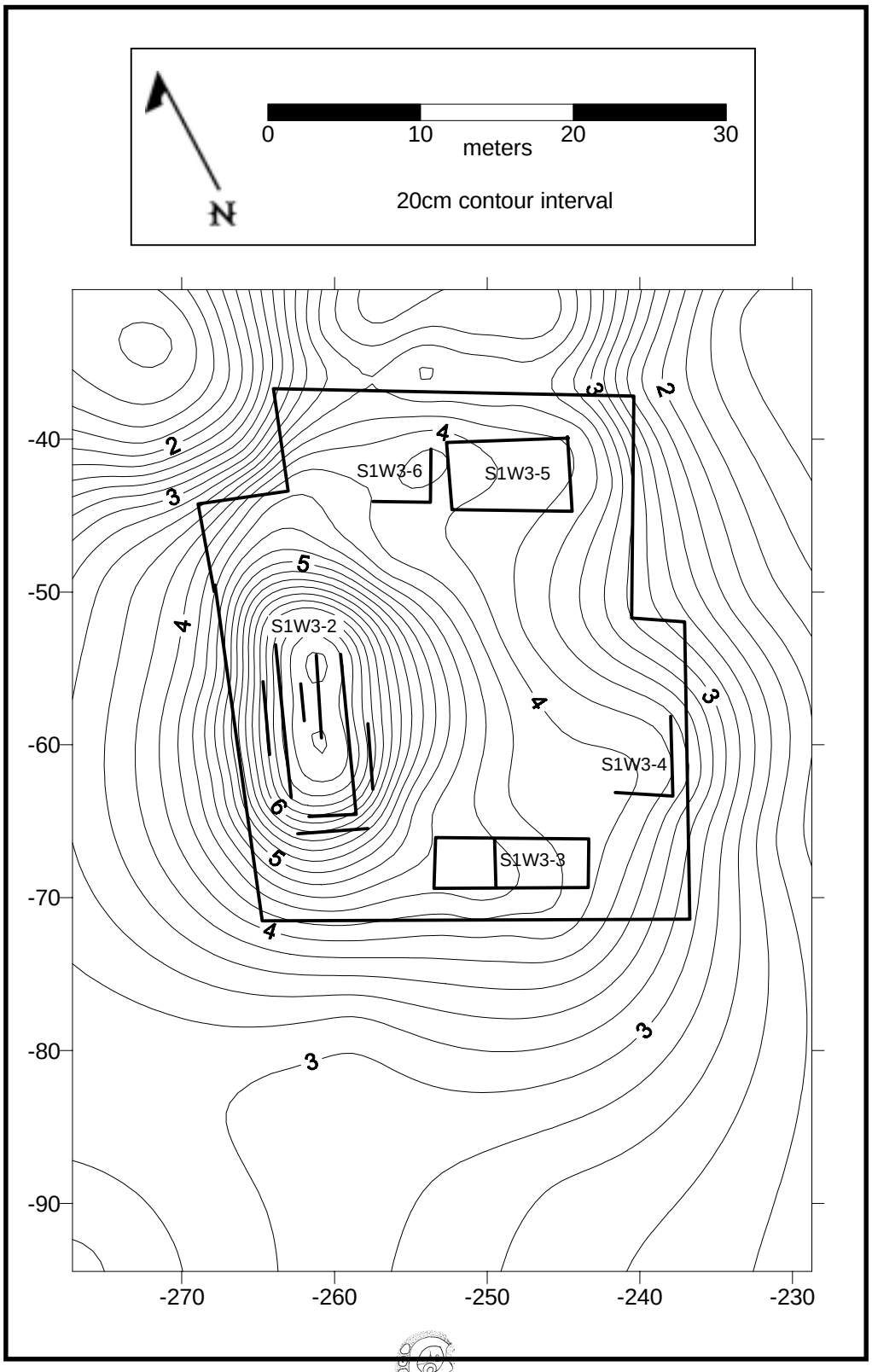


Figure 7. Yo'okop's Group A

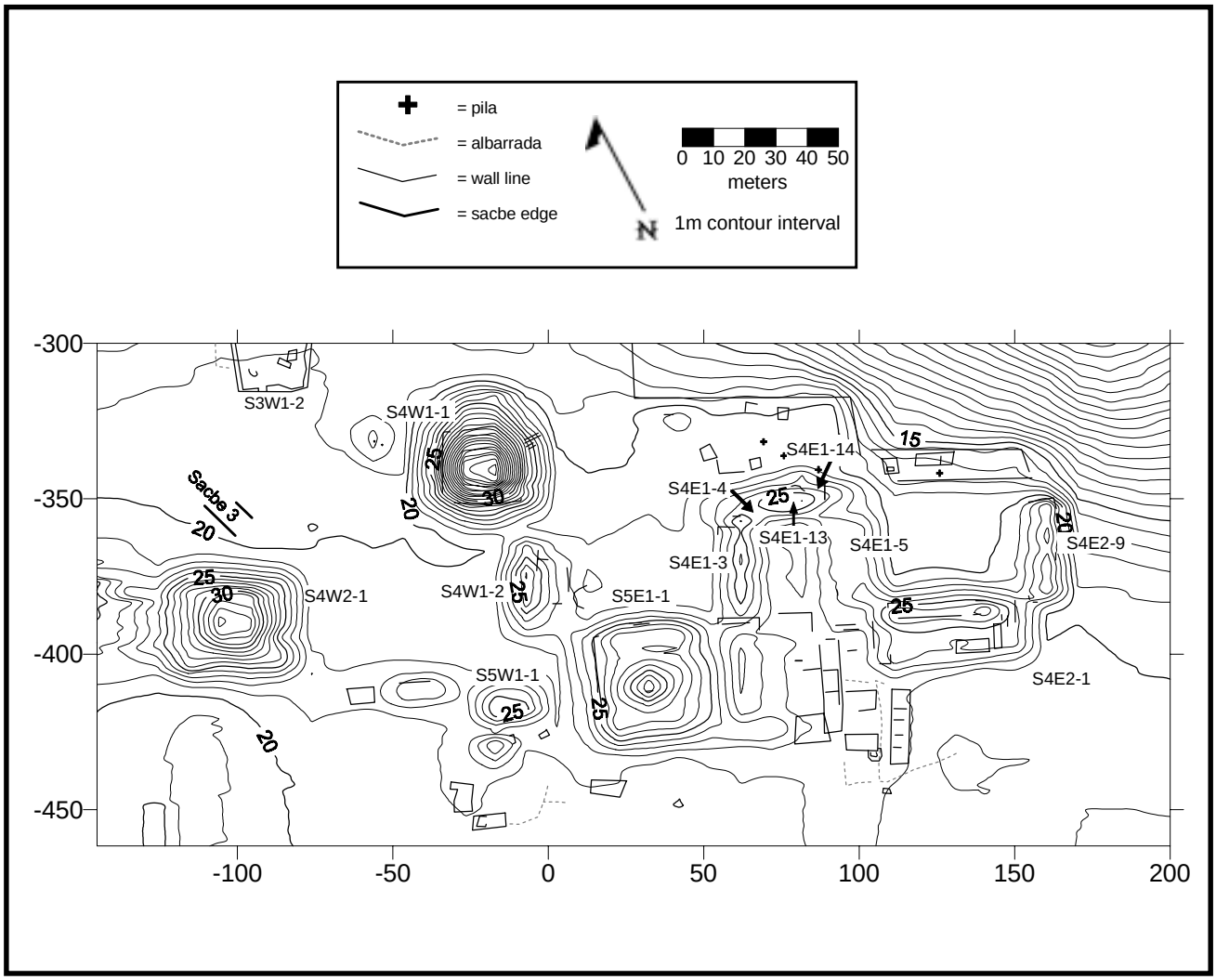
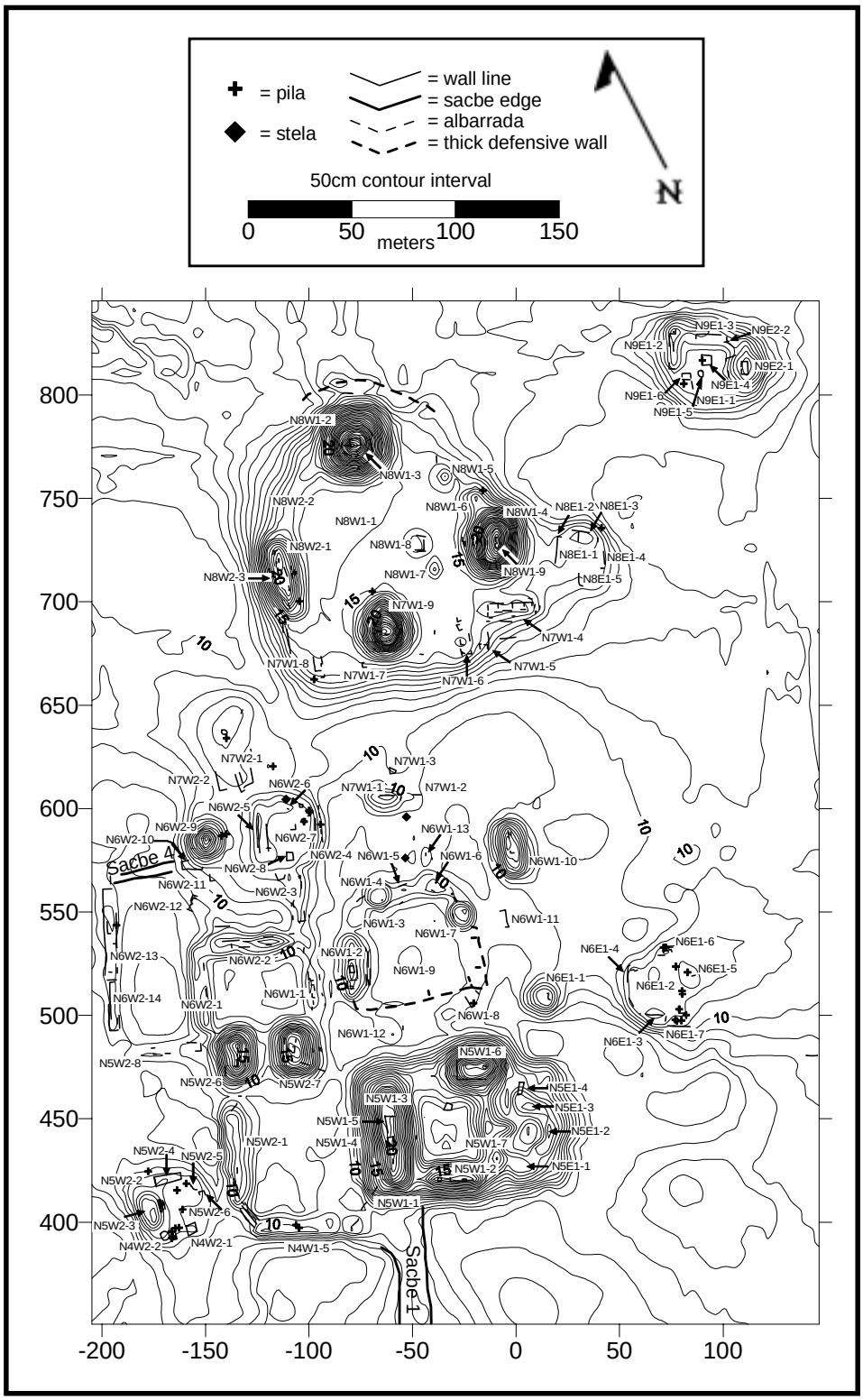


Figure 8. Yo'okop's Group B



Of the 15 vaulted structures described here, four are clustered around Group B. Three of these four occupy the same platform in the northeastern corner of the plaza group (Structures N9E2-1, N9E1-3, N9E1-2). The fourth occupies the southwest corner of Group B (Structure N5W2-3). The size of the vaults ranges from approximately 10m x 6m to 15m x 12m with heights varying between 2 m to 3 m of collapse. The three northeastern vaulted buildings, sharing a single platform, represent the only groupings of this kind on the site uncovered thus far. Also significant in this platforms' location is that *Sacbe* 2, connecting Group C to Group B, ends to the northwest of this platform (see "Locality and Observations of Group C and *Sacbe* 2" this volume). This could explain the distinct nature of the large platform, with three vaulted structures, as a show of wealth or authority over Group B. The southwestern building (Structure N5W2-3) is the largest of the Group B peripheral vaulted buildings and is distinct in that it is a solitary vaulted structure.

Vaulted structures on the fringes on Group A are located to the north of the main plaza area. These structures have particularly advantageous locations with Structures S3E1-3 and S3E1-6 located at the southern end of *Sacbe* 1, and Structure S3E1-5 residing adjacent to the *aguada*, the only known source of water at Yo'okop. It was determined after excavation of the structure (see "Operation 6: Structure S3E1-5" this volume) that Structure S3E1-5 functioned as a sweatbath; however the functions of the buildings flanking the east side of *Sacbe* 1 are still unknown. Their almost direct contact with *Sacbe* 1 suggests some control over the causeway, and could mark an entrance into one of the most dramatic of the plaza groups. Also, the buildings' close proximity to the sweatbath indicates their possible function in ritual. The two vaulted structures nearest the *sacbe* are also associated with a terrace that stretches 9 m to the north and 6 m to the west. These three buildings range in size from 7m x 9m to 16m x 12m.

Located to the northeast of Group A are vaulted Structures S1E1-1 and N1E1-1. These buildings are approximately 300m north of Group A and 70-75m west of *Sacbe* 1. The northern most of the two buildings is 15m x 18m in size and the southern building measures 15m x 17m. Both are associated with a terrace foundation brace. Their locality could be an indication of elite control of access to the *sacbe* or of the nearby *rejollada,* a quarry used to extract *sascab*, approximately 20m east of the southern structure.

Three other vaulted structures also occupy advantageous locations at Yo'okop. These structures are situated between *Sacbe* 1 and *Sacbe* 3. The northernmost vaulted building in this section is Structure N2W1-1, residing on a large platform approximately 70 m east of *Sacbe* 1 and 300 m south of Group B. Interestingly, this building lies almost the same distance from *Sacbe* 1 and a main plaza group as the previous two buildings described. This structure shares a platform with numerous structures including a three-room rectangular foundation brace, a two-room foundation brace, a small apsidal structure, and a small, connected rectangular structure to the west. There are also numerous *pilas* (*metates*) and a round altar stone on the platform suggesting a wealthy occupation. This is the only altar that has been located thus far in a residential zone. This cluster would have had easy access to *Sacbe* 1 and the nearby productive *milpa* zone.

The two additional vaulted structures in this section are larger than any others described here. Structure S2W3-2 measures approximately 20m x 15m with Structure N1W3-16 measuring approximately 30m x 20m. Both are located on large platforms surrounded by smaller structures and are in close proximity to a significant natural depression, approximately 200 m^2, consisting of dark, *box luum* soil, appropriate conditions for agriculture. This area is the most architecturally dense of all the peripheral vaulted structure clusters. This could be explained by the fact that this cluster is the closest to a productive agricultural zone and could represent an elite control over the resource. Structure S2W3-2 is particularly noted in that its surrounding architecture is very complex. The adjoining northern platform houses numerous multi-roomed foundation braces and exhibits a stairway leading down (west) into the *milpa* zone.

Finally, located south of *Sacbe* 3 are three more peripheral vaulted structures. Similar to the layout of the northern Group B cluster, two of these buildings, Structures S3W6-2 and S3W6-3, occupy the same platform and measure 20m x 15m and 8m x 7m, respectively. These two are surrounded by smaller mounds, which presumably housed perishable superstructures. The large mound is located near present-day *milpas,* but the surrounding terrain shows a shallower soil. The third vaulted building in this area (Structure S4W4-1) is approximately 100 m west of *Sacbe* 3 and 200 m northwest of Group A. It is surrounded by smaller platform mounds and is not in close proximity to any other vaulted structures.

The architectural style expressed in the peripheral vaulted buildings at Yo'okop can be characterized as Puuc, similar to that seen at Uxmal, Dzibilchaltun, and Sayil, with "walls built of well cut and dressed veneer stones laid in regular courses and smooth faced vault stones tenoned into the hearting of the upper walls" (G. Andrews 1975). The weight-bearing core of these buildings is concrete and stone, but with some slight differences, however. None of the peripheral vaulted structures exhibit any "boot shaped stone" (Johnstone personal communication), which would be expected with core veneer vaulted architecture. This distinct characteristic could be explained as a site-specific style or simply a favored modification in the construction of vaulted buildings at the time. It could also be interpreted as a mixing of what Kurjack terms "Early Period" and "Pure Florescent" styles; the former characterized by graduated limestone slabs forming a vault, and the latter distinguished by a concrete and veneer core with "boot shaped" facing stones (1974:63). This mixing of architectural types is exhibited at Dzibilchaltun in fourteen structures termed "Transitional" (Kurjack 1974:63-67).

The vaulted structures in Yo'okop's peripheral zone share other characteristics with Dzibilchaltun as well. The clusters in which most of the peripheral vaulted structures are found are similar to those found at Dzibilchaltun in that all of the structures are found on platforms, usually accompanied by smaller mounds, and are immediately surrounded by areas of empty space (areas without substantial ruins). This separation of these vaulted buildings from the major plaza groups further emphasizes their occupants' rank and status in the community. The removed location of these clusters also creates closer relations with those residing on or near the predominant vaulted structure. As Kurjack states, "[The] empty space around these clusters formed

a physical barrier enhancing interaction within the architectural group and impeding it with persons outside the group" (1974:80). This close interaction within the specific clusters further supports the belief that the vaulted architecture in these areas served as an elite power over their relative resources.

Furthermore, the direct contact of most of the peripheral vaulted structures with a specific resource, *i.e.* access to *sacbeob,* agricultural land*, rejolladas*, or the *aguada,* indicates a constant flow of outsiders visiting the area. This may account for the complex nature of the vaulted architecture as a show of the wealth found in that particular area of the site. At Sayil, Carmean has observed a similar phenomena by which the elite control of a specific resource lead to elite control over the members of the surrounding communities. With the "ability to control human labor, wealthy households could produce a proportionally greater amount of agricultural surplus," use that surplus to sustain additional construction workers and produce elaborate architecture, or "public displays of social status" (Carmean 1991:155).

Though the true function of these peripheral vaulted structures may not be able to be determined until they are excavated, the particular locations and surrounding architecture is evidence of some elite control or occupation in peripheral zones. The distinct removal of these clusters from the major plaza groups can be interpreted as a micro-communities of sorts with an emphasis on a particular resource(s). Hopefully, future work on the site will provide definitive information regarding the function and occupation of these peripheral communities.

Locality and Observations of Group C and *Sacbe* 2

Christopher Lloyd

Methods

During the summer of 2002, the first assessment of *Sacbe* 2 and Group C took place. The materials used to determine the locality of Group C and *Sacbe* 2 were a global positioning satellite (GPS) receiver and compass. Two local Maya workers from the *ejido* of Saban, Cesar Kauil Chan and Alfonso Pererra Cab, equipped with machetes for clearing opposing vegetation served as assistants.

Sacbe 2's location was established through traversing the feature on its raised surface, until it could no longer be discerned from the surrounding topography. The vast majority of the *sacbe* is covered with thick vegetation with scarce intermittent clearings. GPS waypoints were obtained through holding the GPS receiver at rest, at waist height, on the northwestern side of the *sacbe*. The base of the acropolis was recorded along with the summit. Sketches, photographs, and descriptions of the acropolis and subterranean vault bisecting *Sacbe* 2 were taken to help in the accurate portrayal of the structures. *Sacbe* and acropolis measurements were estimated through calculating average stride and counting the number of strides across the structures surface.

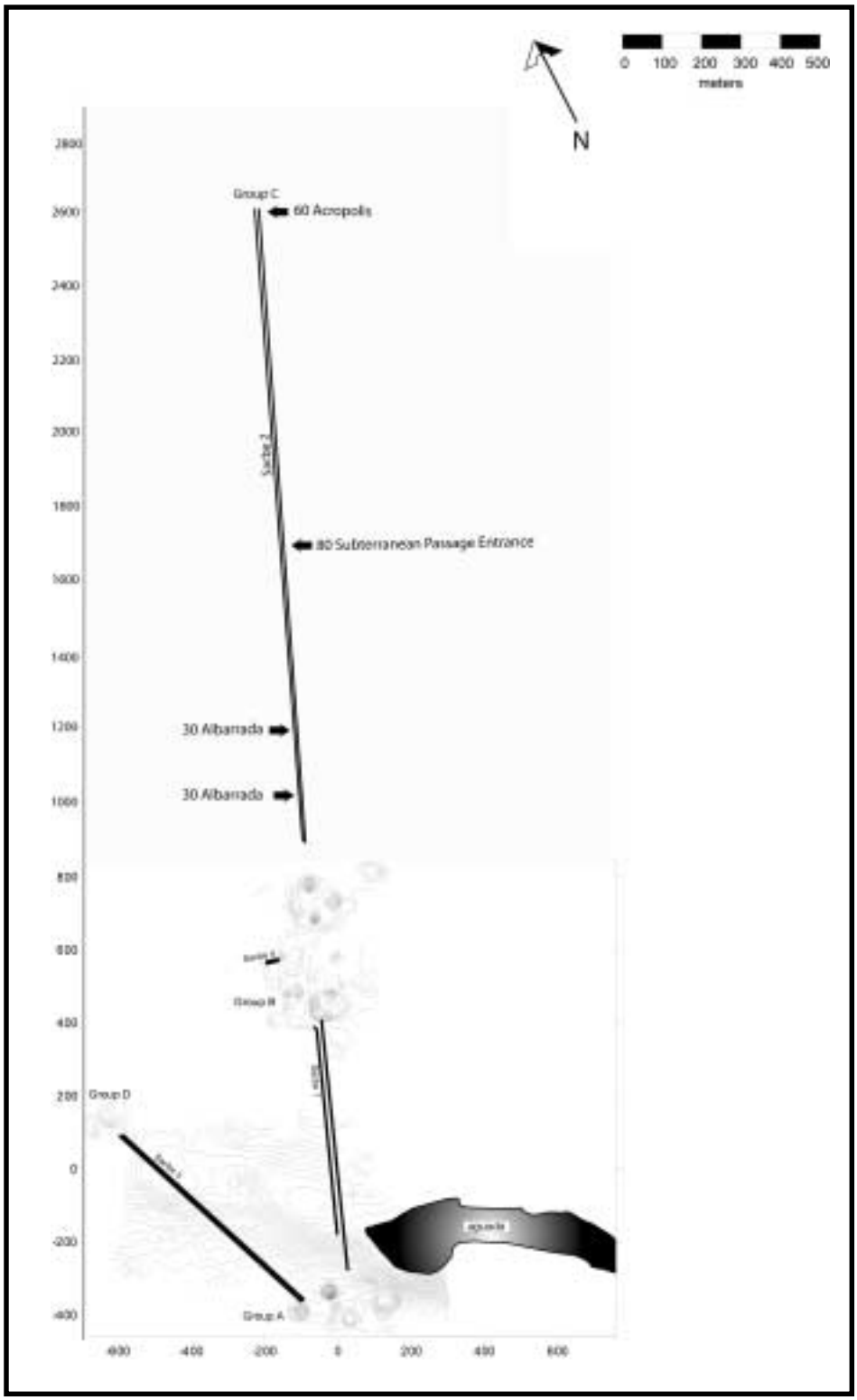
Description

Sacbe 2 begins outside Group B's fortifications, found to the north of the North Acropolis (Structure N8W1-1) and extends northeast at an average angle of 22.7 degrees east of magnetic north and terminates 1 km from the subterranean vault at an acropolis 14 m in height (Figure 9). *Sacbe* 2 extends 639 m past Wilson's initial estimate of 1,161 m, estimated from his 1974 flyover. Wilson describes Group C as consisting of a solitary acropolis 14 m in height (Wilson 1974). Several hours of reconnaissance failed to locate any additional structures or significant features in Group C. Behind the acropolis in Group C is a meandering trail that was followed for a short time, with no success in finding anything. The path is probably used to gain access to *milpa* land.

The *sacbe* was continually traversed in order to discern features and establish the trajectory of the roadway. At times its ramshackle appearance seems to appear as nothing more than randomly strewn rocks. On occasion, it was necessary to extrapolate the path based on average bearing. Traveling to the northeast, Alfonso and Cesar were quick to point out many *sascaberas* that untrained eyes easily missed in the thicket of lush Yucatan vegetation. *Sascaberas* are manmade depressions several meters deep in the earth, from which the pure carbonate material *sascab* is extracted. It was then crushed, compacted, and used on the surface of *sacbeob* and in other features. Most of the *sascaberas* appear to be along the northwestern side of *Sacbe* 2.

An *albarrada* (low-lying wall constructed without mortar) was located to the northeast of Group B, about 600 m southwest of the subterranean vault that bisects *Sacbe* 2. The *sacbe* stones are askew for a good 10 m, scavenged for the construction

Figure 9. *Sacbe 2* and Group C



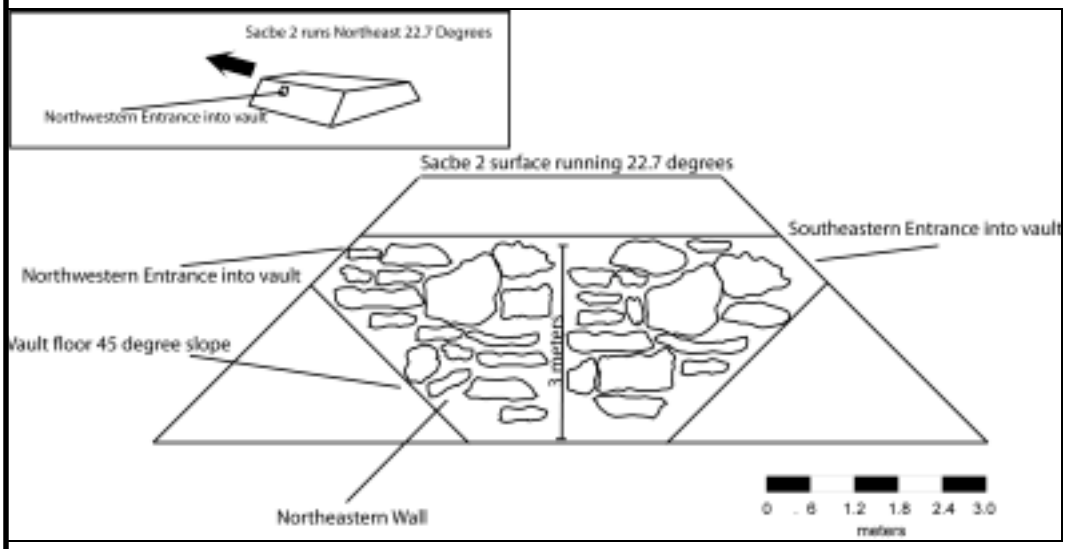
of an *albarrada*. This specific *albarrada* probably dates to colonial occupation, since it upsets a major piece of Classic architecture.

At 600 m northeast of the *albarrada*, a vaulted passage bisecting *Sacbe* 2 was discovered. There are two entrances opposite of each other, one located on the northwestern side and the other on the southeastern side of the *sacbe.* Both appear to be trapezoidal in appearance and are located 1 m beneath the surface of the roadway. The northwestern entrance to the vault is 10 cm across at the top, 20 cm along the bottom, and 1 m in height, creating a small entrance. The southeastern entrance is a little larger although it follows the same trapezoidal construction as the northwestern entrance (Figure 10).

The entrance to the vault opening from the base of the *sacbe* measures 6.6 m. The center of the passage is the lowest point within the subterranean vault, estimated at 3 m. From the center of the passage the floor slopes upward at 45 degrees to the east and west meeting with the small entrances described above. The ramped floors of the vault seem well compacted and were probably created from debris accumulating over the years until the angle of the slope permitted no other large debris from entering. At the lowest point within the vaulted subterranean passage sit several large rocks. The rocks are not *in situ*, and the surrounding walls, with the exception of the entrances into the passage, are complete. These large rocks are probably debris as well; their appearance looks unmodified in turn they probably weren't used for architecture. The passage resembles a upside-down trapezoid with the shortest segment facing down.

The internal structure of the passage is constructed of a vaulted ceiling that steps down in five courses and meets with a supporting wall. In between the northeastern and southwestern courses, at the highest point in the ceiling are large flat capstones. The stones that construct the vaulted ceiling have all been shaped into large rectangles. Roughly shaped stones line the interior side of the wall (Figure 11). When looking straight at the interior vault walls, the lateral sides of the stones look unmodified and are aligned in rough courses. Rubble and cement help to hold and fill-in between the large cobbles. The facades of the interior vault walls are without traces of stucco or plaster. The architectural features observed seem consistent with the early Puuc Oxkintok construction style. The traits that distinguish the Oxkintok from latter Puuc construction styles are: the base molding is simple or non-existent, walls are built of rough block masonry, vaults are of rough slabs most often stepped, and the upper facades are sloped and/ or without moldings. The vaulted, stepped construction, lack of ornamental features and rough construction technique are the diagnostic features of this subterranean vault (Andrews 1942: 257, 260, 262; Pollock 1980: 584). "Stepped vaults are generally considered to be an early architectural trait in the Maya Lowlands. During the Late Classic, such passageways are quite widespread in the northern lowlands, and appear at Group B of Coba, and at the Puuc sites of Uxmal and Chuncatzim, Kabah, Uxmal, Yaxche, Chacbolai, Xcalumkin, Cacabxnuc, Ichmac, Sisila, and Halal" (Taube 1995: 35). Whether the subterranean vault is a feature built as a part of the *sacbe,* or an older piece of architecture that was incorporated into the construction of the road*,* is currently unknown.

Figure 10. *Sacbe* 2, Subterranean Vault Entrance



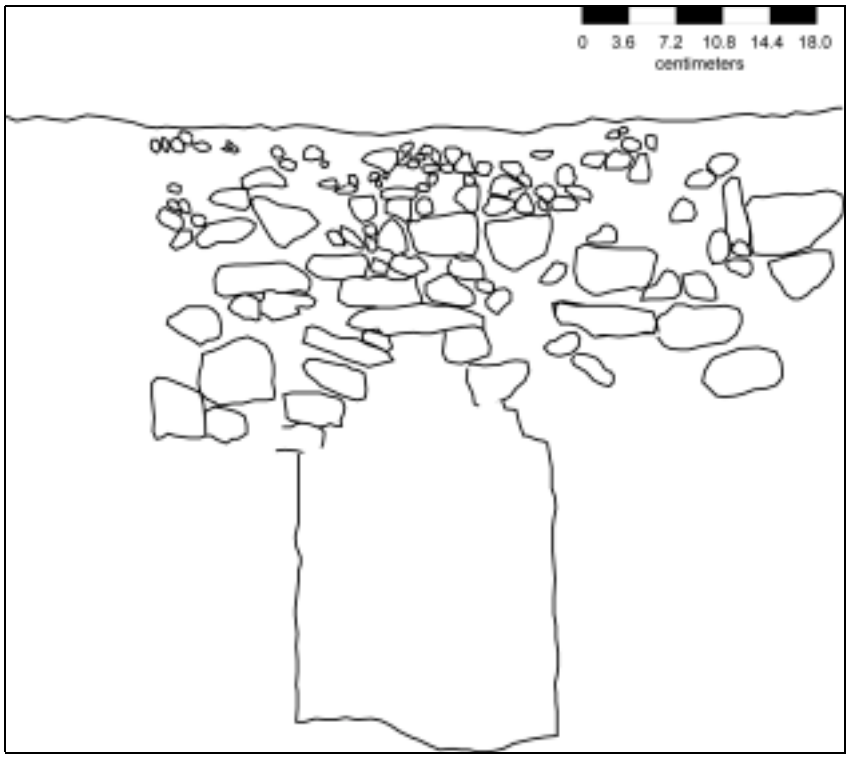
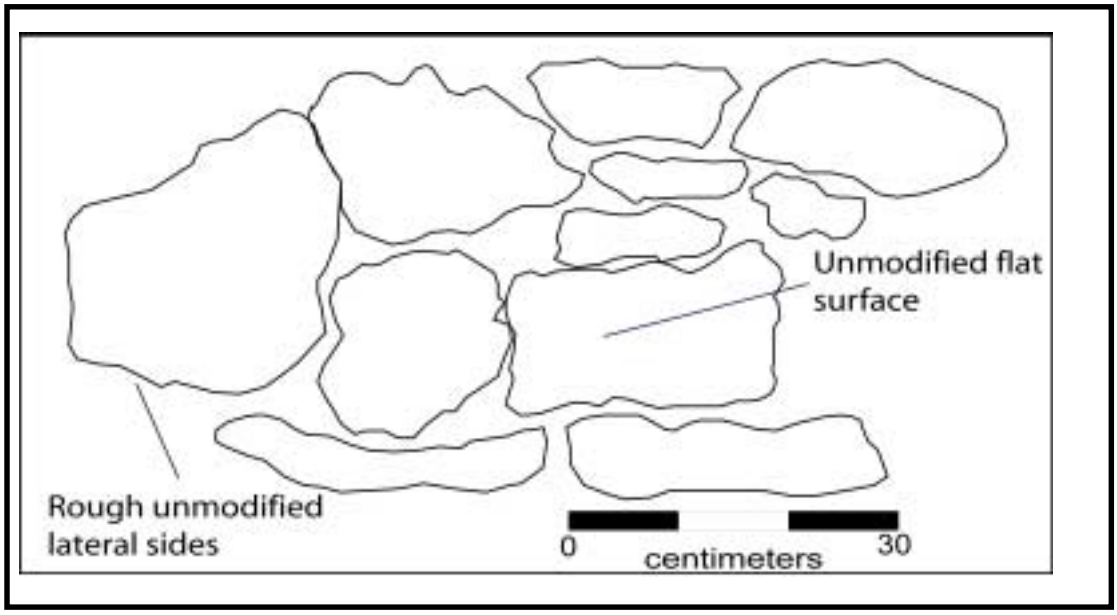


Figure 11. Subterranean Vault Bisecting *Sacbe* 2

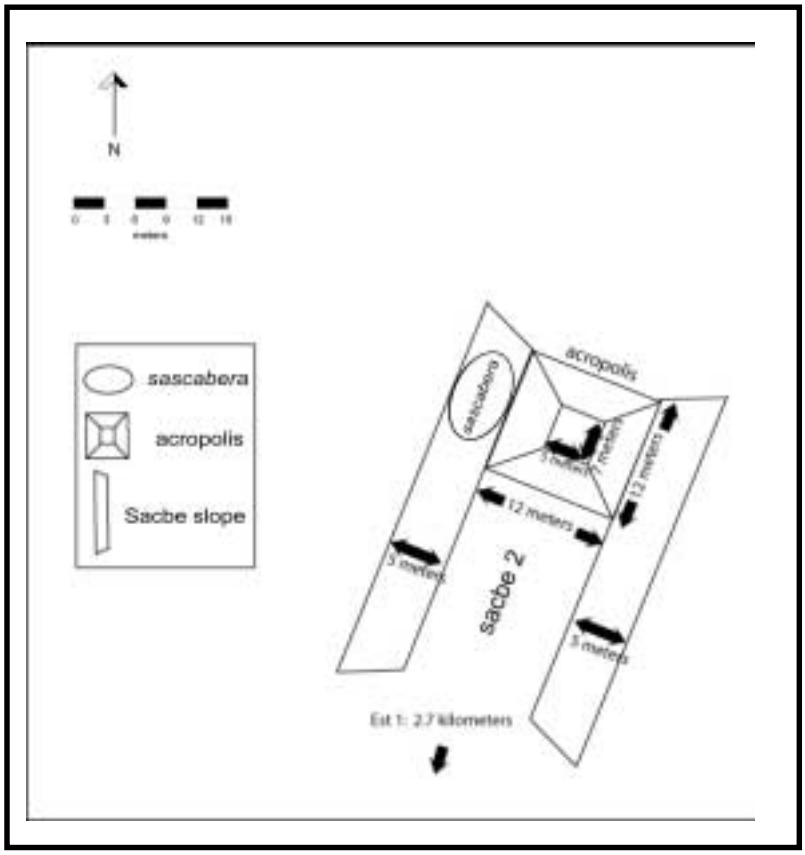


As the survey of *Sacbe* 2 proceed northeast from the subterranean passage along the *sacbe's* surface, additional *sascaberas* slowly appeared from behind the fronds and leaves soaked with the morning dew of the lowland jungle. Most of the *sascaberas* sit to the northwest of *Sacbe* 2. Around some of the large *sascaberas* are large deposits of limestone bedrock; limestone is what composes the majority of the Yucatan Peninsula. Since there are no other nearby structures other than the *sacbe* and acropolis, the *sascaberas* were in all likelihood established to pave the surface of the *sacbe*, unless the *sascab* was transported to other parts of the site. Regular maintenance of the *sacbe* probably required a large supply of *sascab*.

One km northeast of the vaulted passageway that bisects *Sacbe* 2 is a substantial acropolis, forming the base of Group C (Figure 12). The acropolis is covered with thick vegetation, as is most of the *sacbe*. The majority of the brush is comprised of small, thorny trees that hinder quick movements, although they are still small enough to be cleared with a *machete*. The *sacbe* runs directly into the acropolis without any significant change in size or elevation. The width of the *sacbe* from the northwestern side to the southeastern side measures 12 m, the same as the southwestern side of the acropolis. On the northwestern side of the acropolis lies a large *sascabera*, deeper than any other nearby point. This large *sascabera* can be attributed to the construction of the acropolis, which probably required a large sum of *sascab* to plaster the entire surface. The southwestern side of the acropolis is covered with many cut stones that are not *in situ*. This side is significantly gentler in slope than the northeastern side. The frequency of cut stones and the gentle slope of the northeastern side suggest stairs may have once been constructed there. Trees and other rooted vegetation may be partially responsible for the degradation of the acropolis. The summit of the acropolis from west to east measures 3 m and

from north to south 4 m. The summit is collapsing inward; with a cinder-cone type, concave appearance to the northeast, perhaps a sign of looting, or the collapse of internal architecture. The northwestern and southwestern slopes of the platform on which the acropolis sits measure 5 m in height. The acropolis appears to be approximately 14 m in height. No features indicative of a superstructure are present at the apex of the acropolis. Very few cut stones remain *in situ*; the catalyst of such destruction was probably vegetation growth.

Figure 12. *Sacbe* 2 and the Group C Acropolis



Hypothesis

The primary catalysts for the construction of *sacbeob* were political, religious, and functional pressures. It has been proposed that *sacbeob* served as boundaries, separating the regional state from the urban area. These boundaries may have also been used as buffer zones against direct political threats. *Sacbeob* were also an efficient means of traversing between two localities. Most *sacbeob* are linear in design, creating an efficient, direct path between two points. Direct efficient paths would have benefited anyone wanting to get from one point to another in the shortest amount of time and effort, such as merchants, pilgrims, and residents. *Sacbeob* also helped to mitigate constraints dictated by the local environment, such as allowing passage through areas obstructed by thorny, dense vegetation, water logged locals, and may have even been used as dikes, to direct the flow of water. *Sacbeob* may have been used to convey solidarity between two regions and political control as well as for cosmological functions of the Maya universe and for connecting the "life force" between the Underworld, the human world, and the Overworld (Freidel *et al.* 1993). "[*S*]*acbeob* were frequently joined to important temple and palace architecture… making them part of large complex ritual stations" (Shaw 2001b: 266).

Group C consists of a solitary acropolis connected to the rest of Yo'okop by *Sacbe* 2. *Sacbe* 2 and the acropolis are directly in line with an elite residence in the northwestern portion of Group B. Could it be that the acropolis within Group C is a mortuary pyramid for the king whose residence is in line with these structures? Construction styles and techniques in the northern portion of Group B have been associated with Classic construction styles. The stepped vault that bisects *Sacbe* 2 follows the Oxkintok-type construction techniques. Oxkintok was occupied throughout Classic times (Pollock 1980: 587). Assuming the vault that bisects *Sacbe* 2 is a feature of the roadway and not an earlier construction, it is possible to place the construction of *Sacbe* 2 no earlier than the Oxkintok period. It is a feasible assumption that *Sacbe* 2 was constructed around the time the large primary pyramidal structures in the northern portion of Group B were constructed.

Sacbe 2 may have served a variety of functions such as boundary definition between the urban area of Yo'okop and the regional state, such boundary use is seen at Cobá (Bolles 1997). It has been suggested that at El Mirador and Cobá *sacbeob* were used as dikes. Could this explain portions of *Sacbe* 2 and the subterranean vault observed, could the subterranean vault have acted as a spillway? Most likely the vault that bisects *Sacbe* 2 acted as a portal connecting parts of Yo'okop that sit to the northeast of the 2 and to the northwest. Since the width of the subterranean vault is only a few meters wide the path was probably a simple foot path connecting the two regions.

At this point, Group C appears to consist only of a single acropolis and large mound. Subsequent field seasons will more accurately map *Sacbe* 2 and Group C using a total station transit. It is hoped that more extensive clearing, detailed observations, and eventually excavations will provide insights into when and why it became necessary to connect this extreme northeastern zone with the site core.

Operation 6: Structure S3E1-5

Justine M. Shaw, Ph.D.

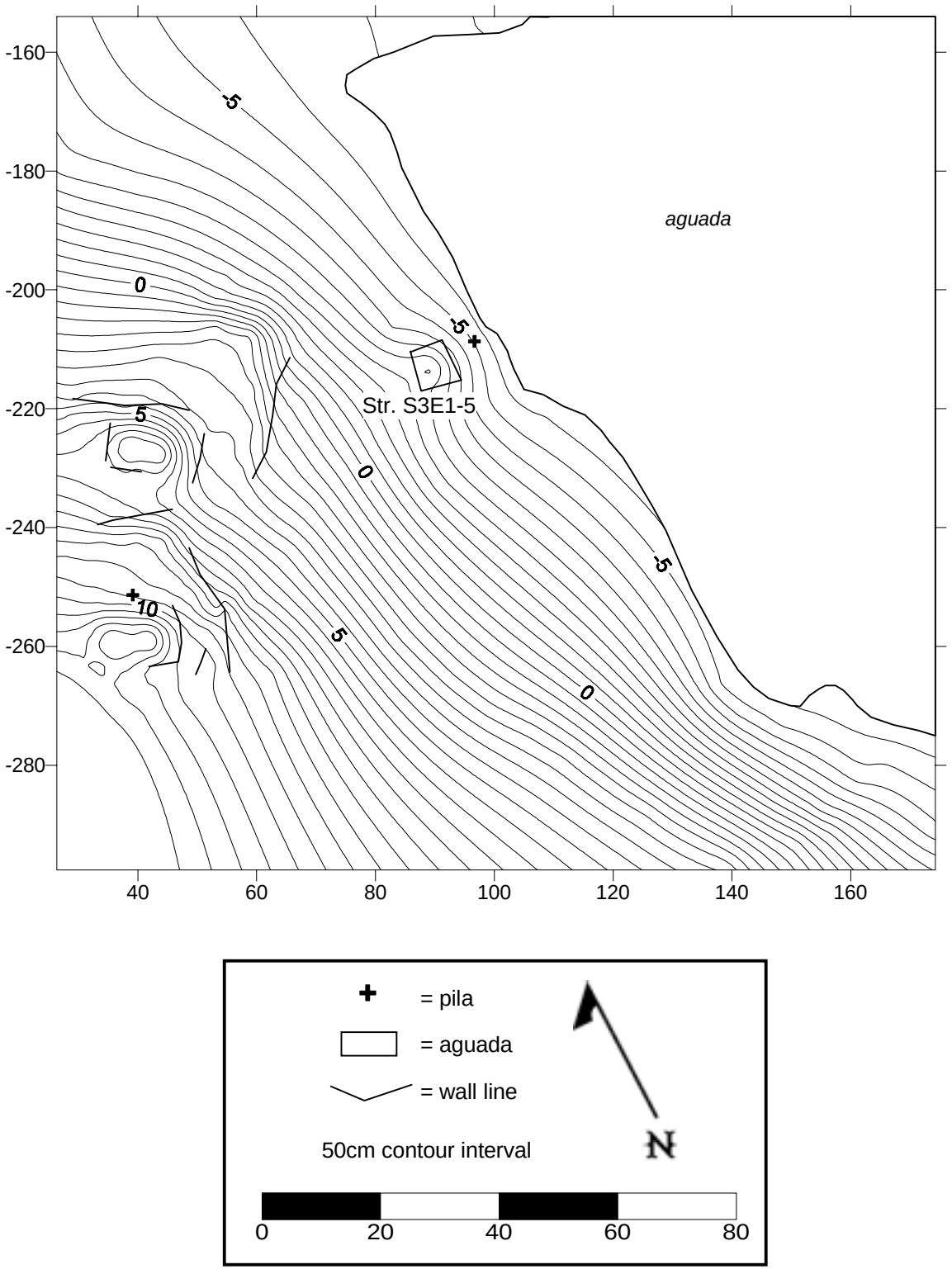
In 2002, *Proyecto Arqueológico Yo'okop* conducted its first operation within a structure. Structure S3E1-5, located next to the site's *aguada,* was excavated and consolidated in an effort to test project hypotheses concerning settlement pattern shifts, climate change, and the Maya collapse. The small building is the only clearly Terminal Classic construction located in or around Group A. Prior to excavation, the mound stood approximately a meter tall and covered 8m^2 of an area at the edge of the *aguada* (Figure 13).

During the 2000 season, guided by informants, Shaw and Johnstone had located the modern regular flood line on trees around the *aguada*, present as a discoloration on the bark of trees. These marks indicated that recent seasonal inundations regularly raise the level of the *aguada* by about 68cm. This flood stage, which can be quite prolonged in an *aguada* that does not drain into another body of water, thus covers part of the base of Structure S3E1-5. No similar constructions have been detected in surface surveys of the entire shore.

Based upon its setting, it was predicted that Structure S3E1-5 was either in use when the climate was significantly drier or had a specific water-related function, such as a dock or water-related ceremonial structure. If, following excavation, the structure did not appear to have had a function directly associated with water and/ or it contains features that would have been damaged by regular water incursions (plastered floors or stucco architectural elements), then it might be assumed that, when constructed, the water level was significantly lower. This would indicate that the climatic downturn detected in climate studies (Brenner *et al.* 2001; Curtis *et al.* 2001; Hodell *et al.* 1995 and 2001) affected Yo'okop, and was a regional phenomenon. If the structure did appear to have been designed to withstand, or take advantage of, water levels that were closer to modern levels, then it would appear that the past climate was not uniform, with some areas receiving more rainfall than others.

It was hoped that data from Structure S3E1-5 would not only serve as a simple indicator of local climate, but also had the potential to provide insights into human responses to drought conditions. If domestic in nature, the structure could have provided details that could be compared to domestic structures occupied under "normal" conditions. It was also predicted that ceremonial activities, in a domestic or specialized religious structure, might also differ markedly from pre- and post-drought practices. Presumably, ceremonial activities in a drought-occupied structure near the *aguada* would be more water-oriented than similar structures from other locations and periods. Alternately, it was believed that the structure might have administrative functions, designed to regulate the use of what may have become one of the site's most precious resources, water.

Figure 13. Location of Structure S3E1-5



Initial Observations

Prior to the start of Operation 6, several stones were noted along the edge of the *aguada*, immediately to the east of Structure S3E1-5. When cleaned, the cut stones formed a line rimming the edge of the water. The line could not be readily followed for more than a few meters due to the thick vegetation and debris currently covering the edge. Following four successive days of afternoon rain, the stones were covered by five cm of water. The *aguada* has not been cleaned in recent history, and is therefore filled with slope wash. Therefore, it was hypothesized that, like the adjacent structure, the stones may have been laid during a period drier than the present. Unfortunately, there was not sufficient time to extend a operation to include the stones; such an excavation might have yielded artifacts providing some temporal estimate for the feature's construction.

Initially, the location of Structure S3E1-5 could only be estimated based upon a partial wall line, soon revealed to be the central portion of the building's west wall. No other intact wall lines were observed. The center of the structure was marked by a large *ramon* tree, which had extended its roots throughout the entire structure. Additional smaller *guano* palms and *pich* trees were scattered across the structure, concentrated on the wall lines.

Operation 6a

Operation 6a was initiated to follow the intact western wall line and eventually locate, define, and reveal the exterior walls of Structure S3E1-5. Once the corners of the western wall were located, excavations proceeded along the northern and southern walls. The eastern wall, which proved to be the most poorly preserved, was cleared last. This process revealed the structure's only entrance, a doorway that directly faces the *aguada*. Between one and six courses of wall stones perched on plinth stones remained *in situ* (Figures 14, 15, and 16). The plinth was two courses high on the lower, eastern, end of the structure and one course high in the remainder of the structure. The plinth extended from one to five cm beyond the base of the wall stones. The exterior face of the walls consisted of Terminal Classic veneer stones with a few more crudely shaped stones interspersed. Few chinking stones were observed. On the western wall, small patches of red painted plaster remained. The entire structure sloped at an angle of four degrees towards the *aguada*. No effort was made to create a level platform prior to the structure's construction.

In all 15 of the suboperation's lots (Figures 17, 18, and 19), Level 1 consisted of a very dark gray (7.5YR 3/1), rich organic fill that blanketed the structural collapse. Sherds in the deposit included a mix of materials from the Late Formative through the Terminal Classic (Table 2), probably the result of slope wash, as well as more localized activity. Two Postclassic notched chert arrow points and several chert flakes were located near the western wall.

At a depth of approximately 30cm, a silty, light gray (2.5Y 7/1 to 2.5Y 7/2) matrix began. This second level underlay the uppermost collapse, although

Figure 14. Structure S3E1-5 Southern and Western Exterior Wall Profiles

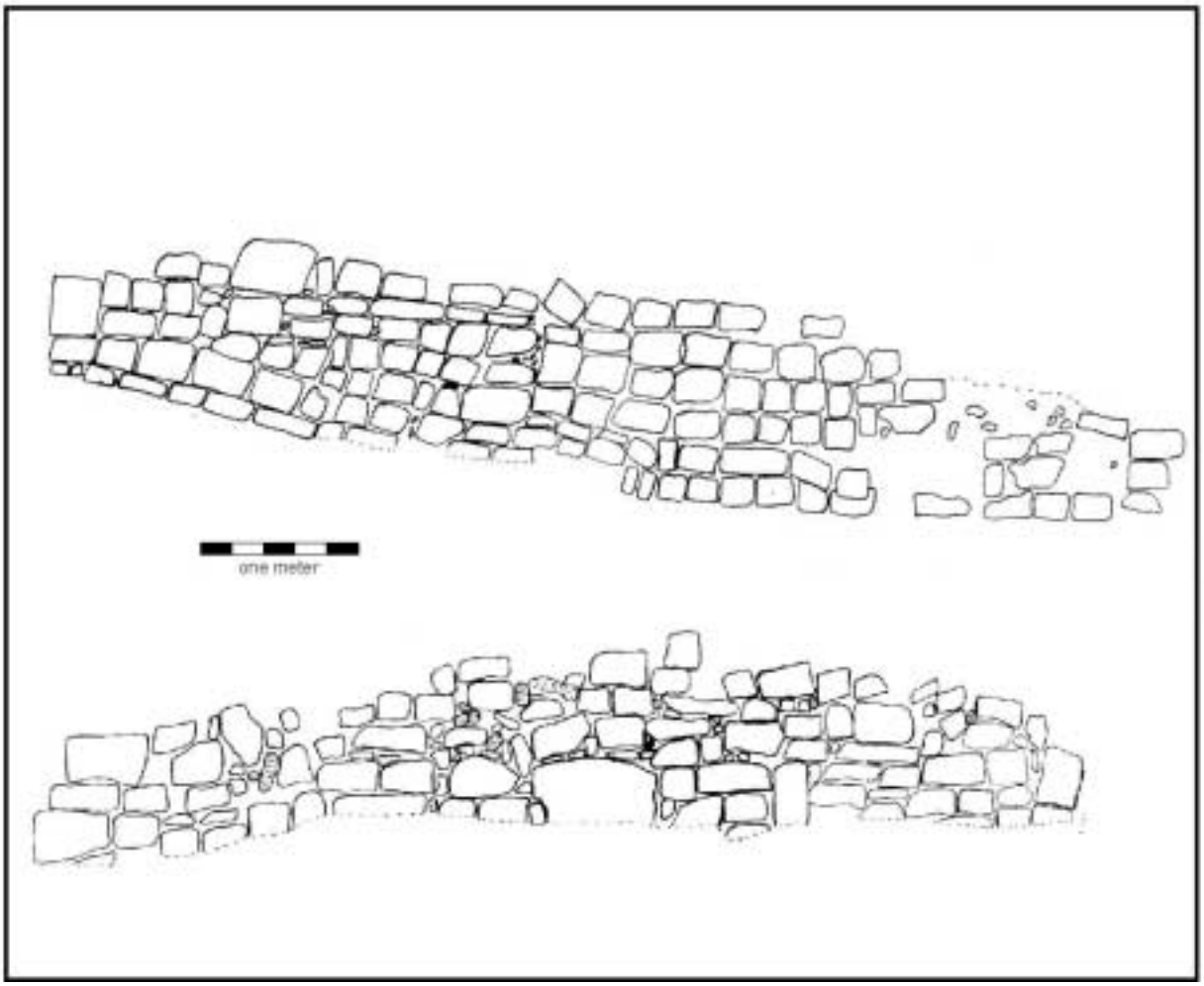


Figure 15. Structure S3E1-5 Northern and Eastern Exterior Wall Profiles

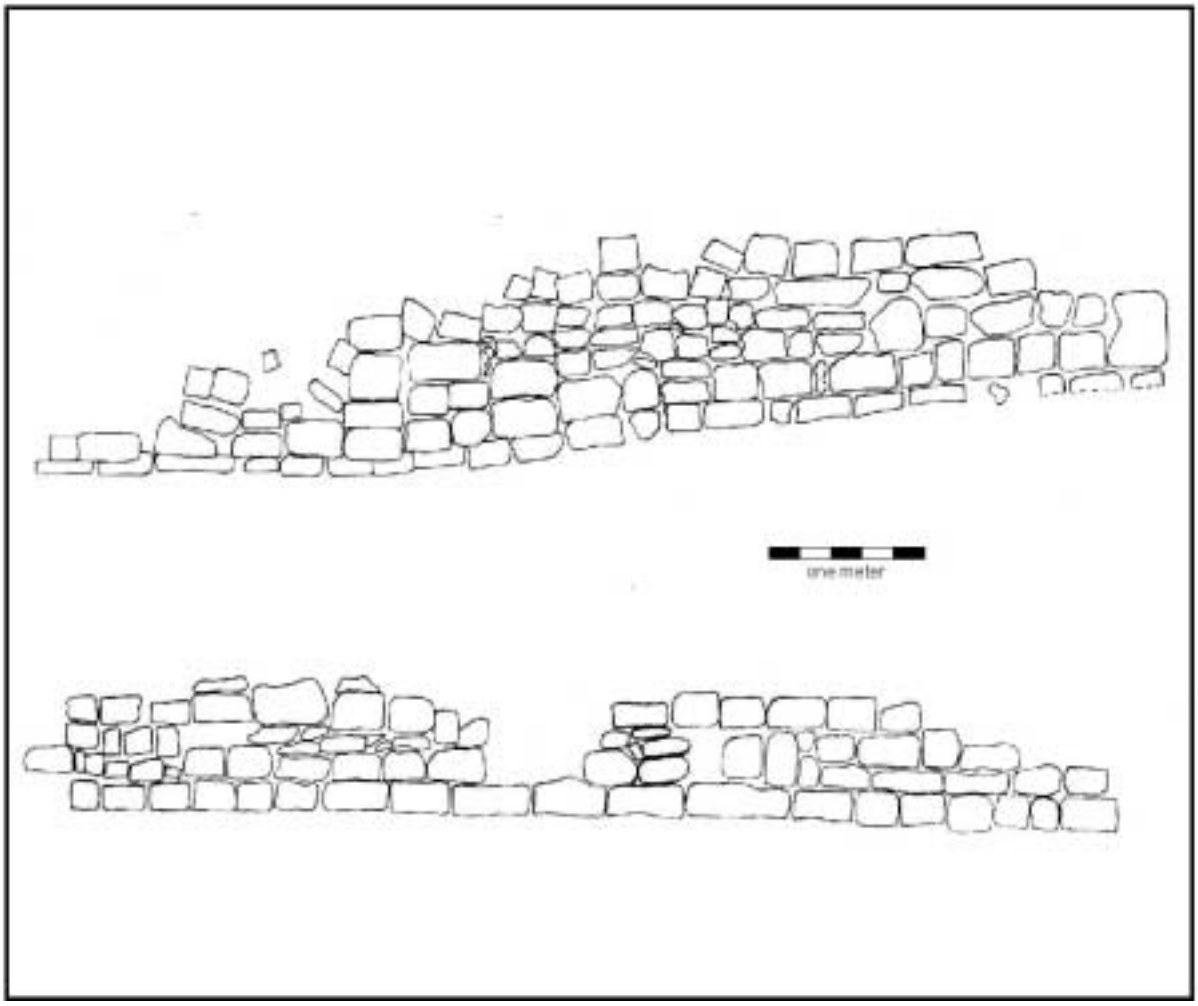


Figure 16. Structure S3E1-5 Interior Wall Profiles, North (top), West (middle), and South (bottom)

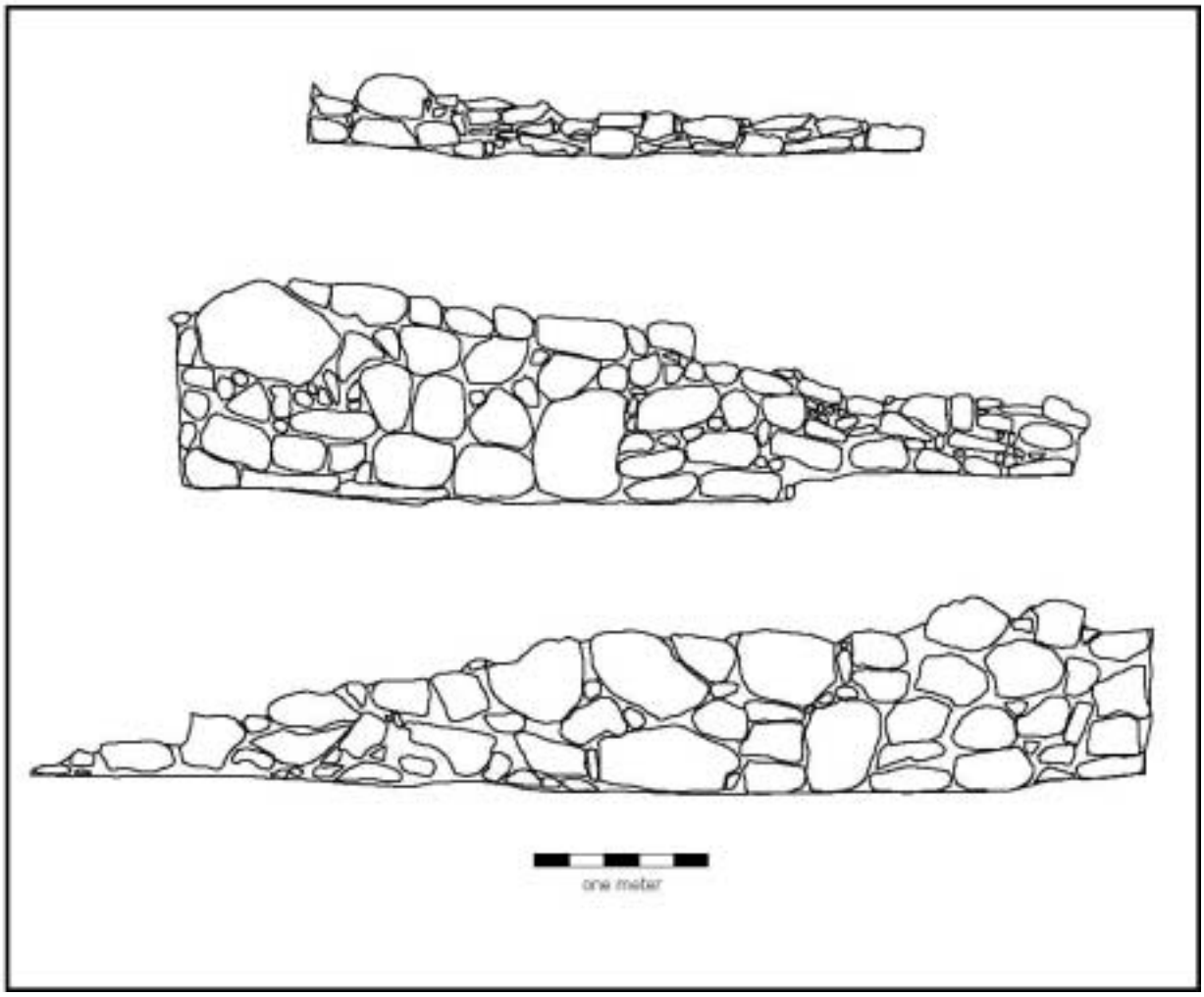


Figure 17. Structure S3E1-5 Plan of Excavation Lots

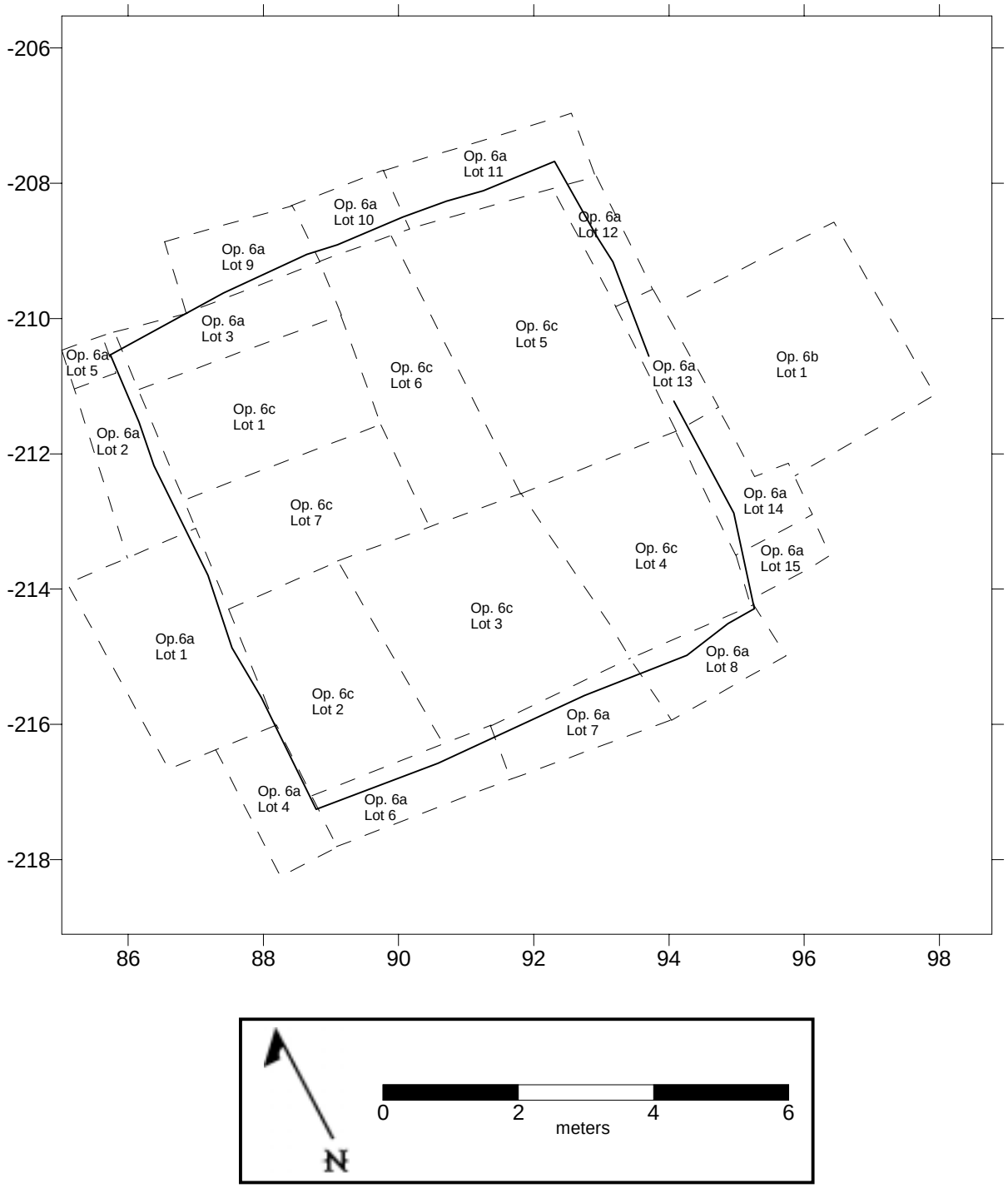


Figure 18. Northern Profile of Operation 6a

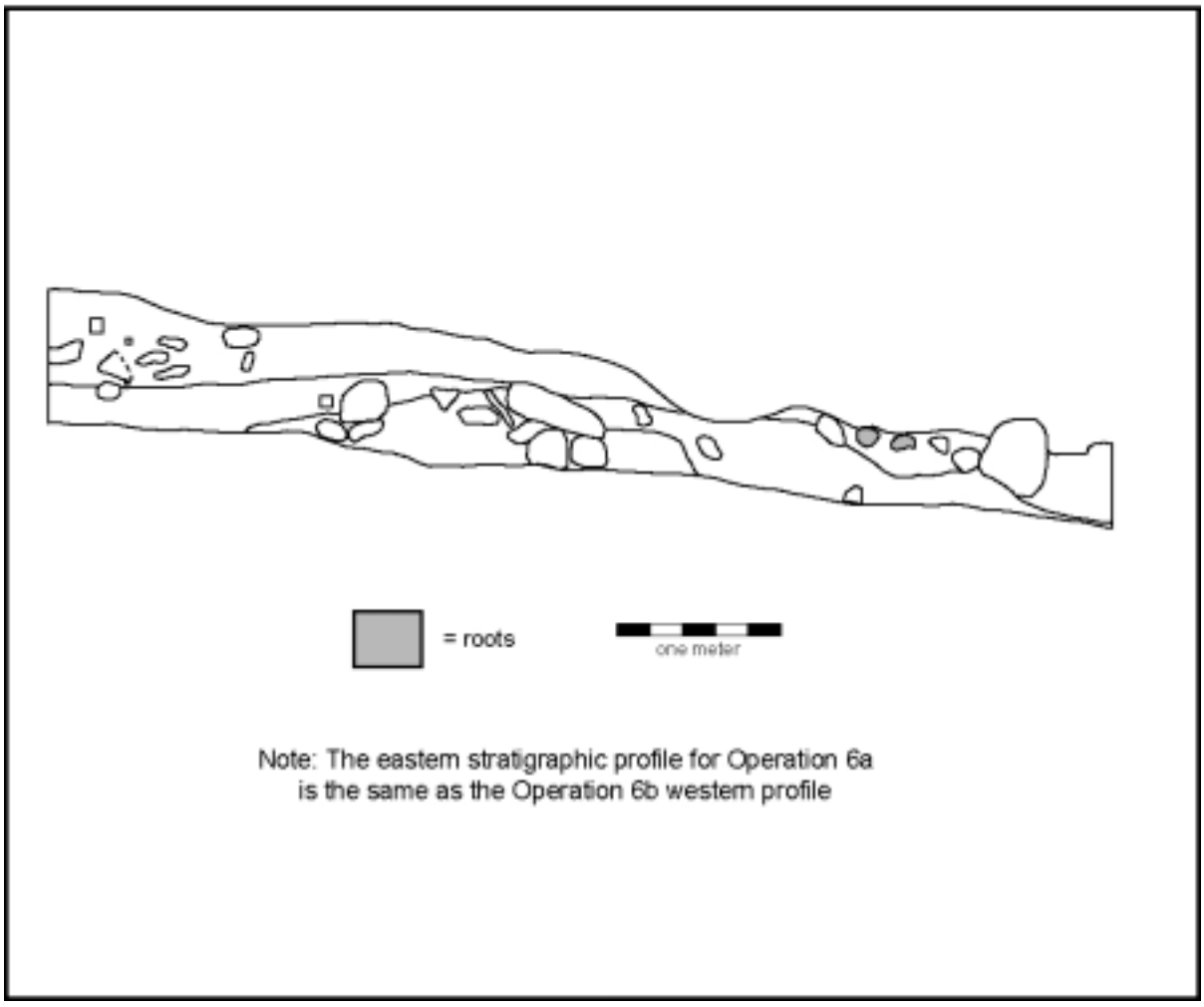
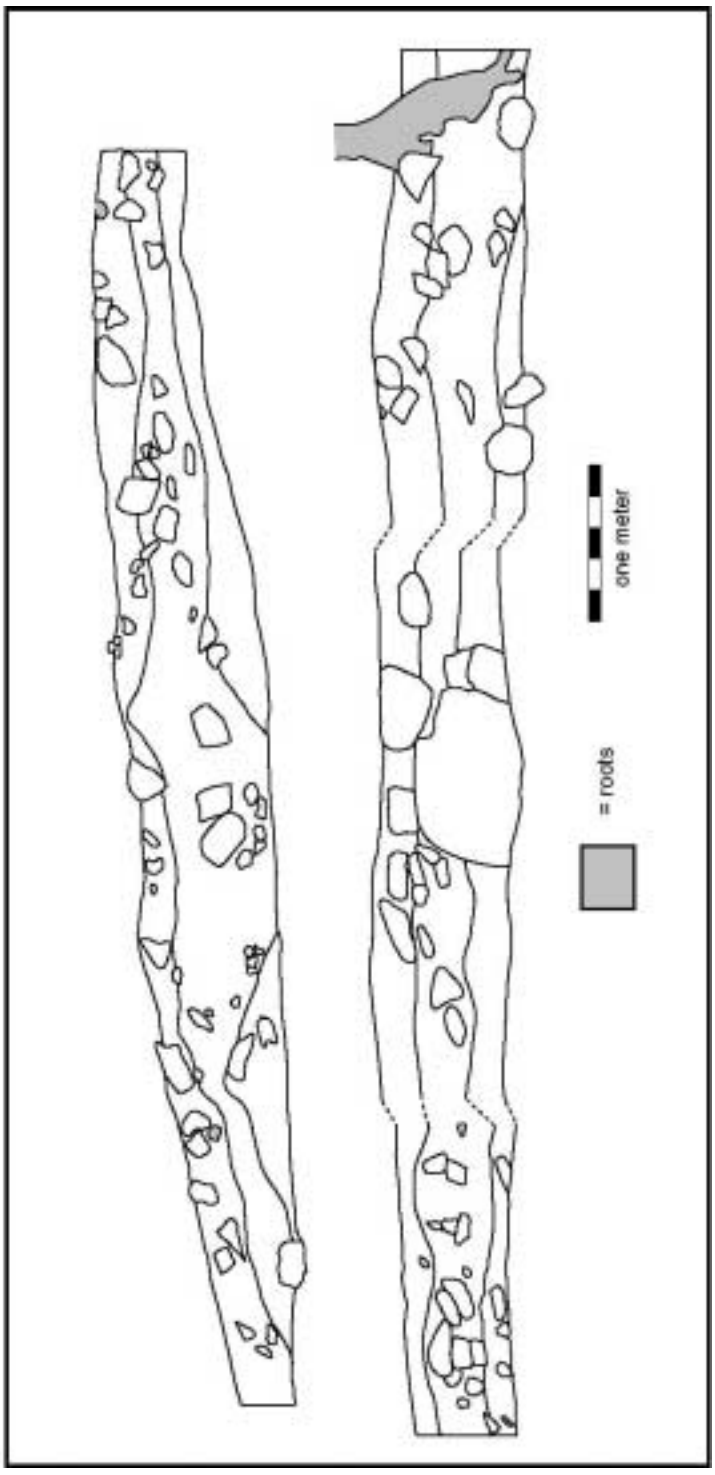


Figure 19. Southern (left) and Western (right) Profiles of Operation 6a



structural debris extended throughout the deposit. As the color graded from light to relatively dark as distance from the structure's wall and/or collapse fragments increased (Figure 20), the stucco and cement from the structure were believed to be responsible for the light coloration. Inclusions consisted of small plaster chunks and cobbles. Few sherds were present; those identifiable dated to no later than the Terminal Classic (see "The Ceramics of Yo'okop: 2002 Field Season" this volume).

In Lots 1, 2, 4, and 6 (Figure 17), a brownish *chac luum* (10YR 5/3 to 10 YR 4/3) formed Level 3. This deposit, dating to the Late to Terminal Classic with some Postclassic admixture, appeared to have been created as material washed down the natural slope rising to the west of the structure. While not rich in sherds in comparison to other excavations at the site, it contained more ceramics than all the other deposits in Operation 6a combined. The materials were banked against the structure prior to its collapse, as no architectural debris extended into or through the level. The deposition may have taken place during a time when Structure S3E1-5 was still in use, but not well maintained. The 30cm thick layer rested directly upon a fragmentary plaza floor in portions of Lots 1 and 4 (Figure 21). While the *chac luum* deposit wrapped around the southwest corner of the structure, it did not extend to the northwest corner. Instead, the northwest corner (Lot 5) contained a distinct gray to grayish brown (10YR 5/1 to 10YR 5/2) sediment.

Elsewhere (northern, eastern, and southern exterior zones), a purer deposit of stucco and cement (10YR 6/2 gray to 10YR 5/1 light brownish gray) from the collapse formed the third level. Cut stones from the walls, as well as unshaped cobbles and larger stones, continued through this ~50cm thick, hard deposit that reached to the depth of the base of the plinth stones. Scattered through portions of the deposit, particularly to the east, were flecks of charcoal and burned cobbles. This same deposit continued through the western portion of Operation 6b (east of the structure) and in operation 6d (under the bench top flagstones). The few sherds in these lots dated to the Late to Terminal Classic.

A 50 x 50cm unit was initiated along the southern border of Operation 6a, Lot 1 with the goal of obtaining a sealed ceramic deposit from under a section of intact plaza floor to the west of Structure S3E1-5. The floor proved to be quite thin; its one to two cm of plaster and *sascab* was laid over small cobbles (Figure 22). Directly under these stones, just 6cm below the first floor's surface, a second floor surface was revealed. As Floor 2 extended to the east, towards the building's western wall, the unit was extended eastward to form a 50 x 76cm unit in order to better explore the relationship between the plaza surface(s) and the structure. Floor 2 proved to intact to within 10 cm of the western wall. A deposit of *chac luum* (10YR 4/4 dark yellowish-brown) filled the gap between floor and wall. This *chac luum* continued downward until the structure's plinth was encountered. It appears to have been slope wash that had banked against the wall. During the process of laying Floor 2, the sediment was removed from the zone east of the plinth, but not from above the plinth itself. Directly adjacent to the structure, the plaza surface (Floor 2) was laid on *chac luum* itself, accounting for its poor preservation. After all the *sascab* and cobbles under Floor 2 were removed, a third floor was encountered 29cm

Figure 20. Structure S3E1-5 Plan of Cut Stones Visible at Level 1 and 2 Interface

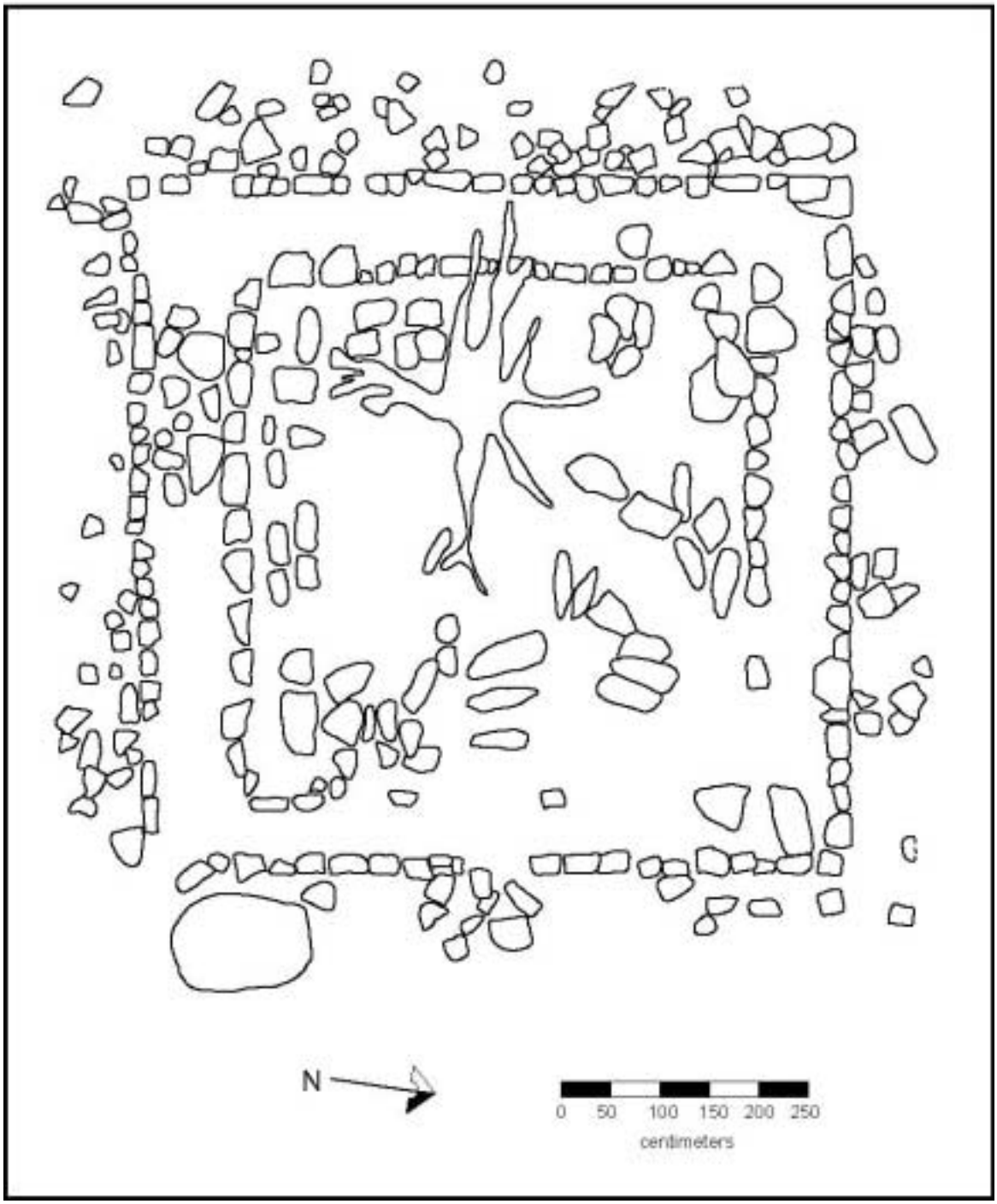


Figure 21. Plan of Plaza Floor Fragments to the West of Structure S3E1-5

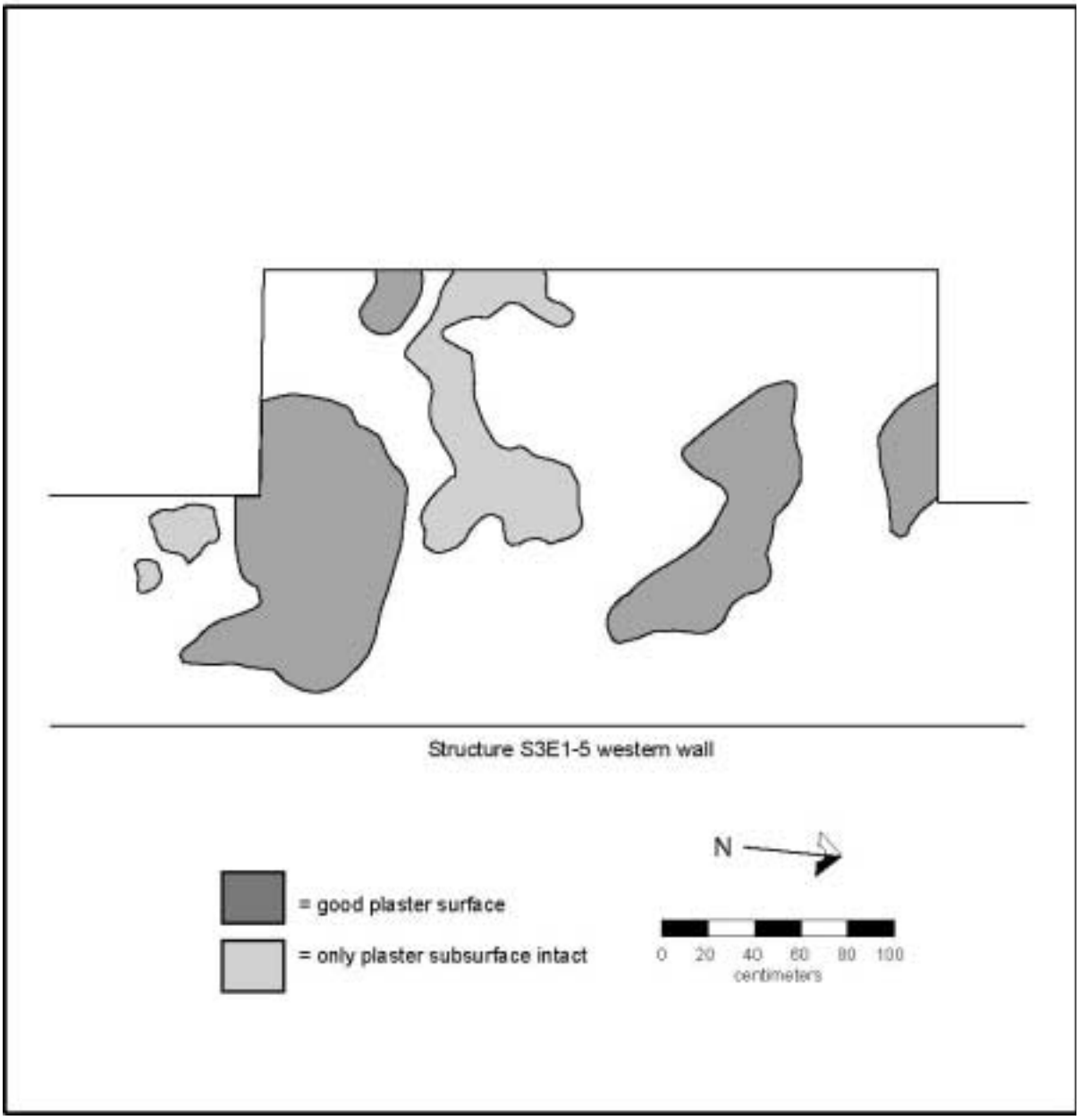
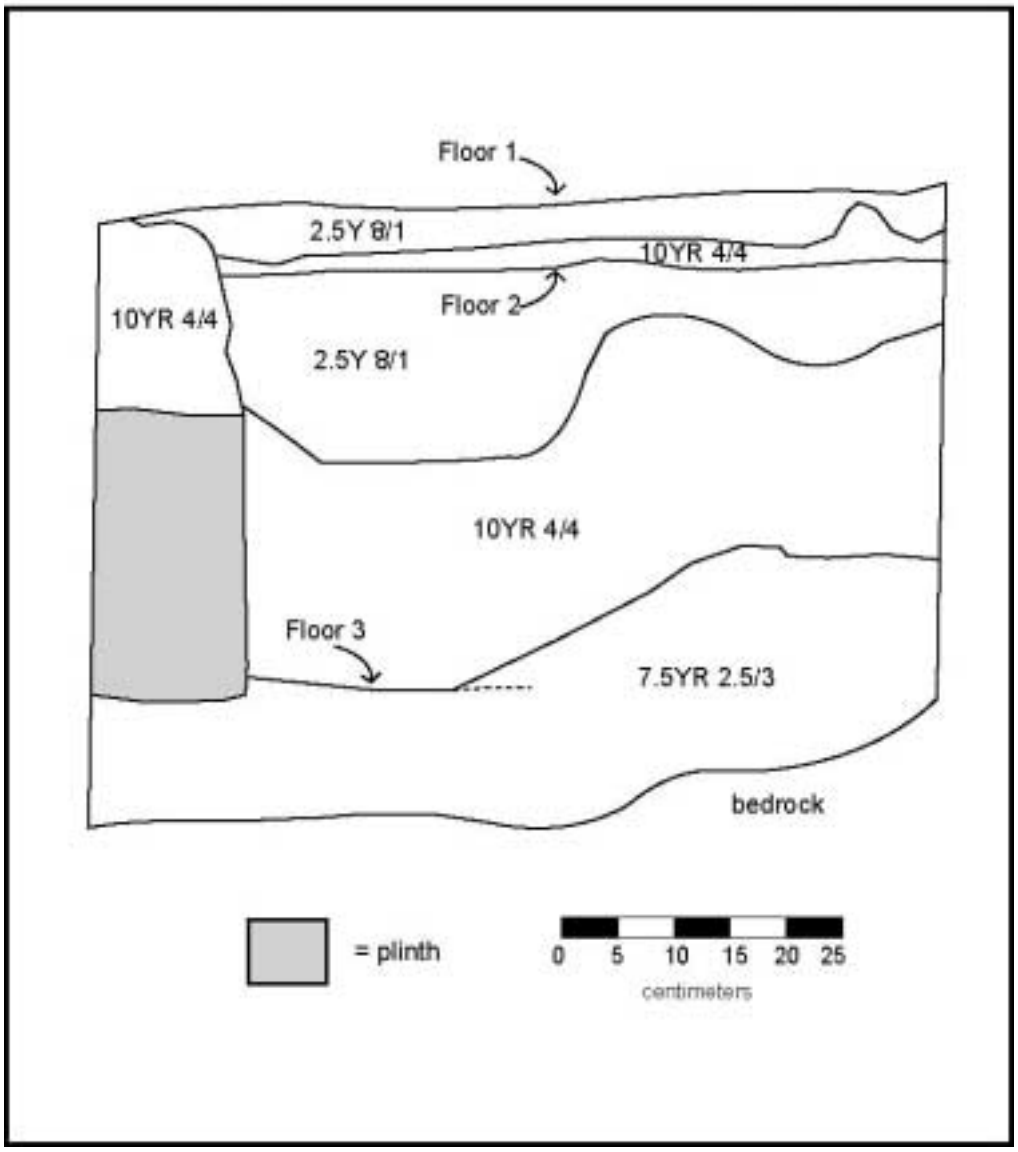


Figure 22. Operation 6a, Levels 4-8, Lot 1 Profile



below the level of the first plaza floor. The condition of Floor 3 deteriorated as distance from the wall increased. However, it was still evident that the surface of Floor 3 lapped onto the single course of plinth stones. Thus, although the outer walls are built of primarily Terminal Classic cut stones, three different plaza surfaces postdate the building's construction, indicating that Structure S3E1-5 remained an important locus for some time. Under Floor 3, a 7-12cm thick dark *chac luum* matrix (7.5YR 2.5/3 very dark brown) mixed with small gravel pieces and rootlets covered bedrock. Unfortunately, only five sherds were located in the four levels under the plaza surface; these provide a provisional Terminal Classic date for the plaza flooring episodes.

Operation 6b

Operation 6b was started at the same time that Operation 6a was defining the western wall of the structure. This second suboperation was located in a zone thought to be well outside the walls of the building (although it later proved to be within 50cm of the eastern wall – Figure 17). Its purpose was to attempt to locate a plaza or other feature that might help to clarify the relationship between the *aguada* and the structure. Additionally, as surface structural collapse extended into the 3x3m unit (Figure 20), it was hoped that a unit in this zone could help to clarify the manner in which the building fell.

The first natural level (Operation 6b, Level 1, Lot 1) consisted of a very dark gray (7.5YR 3/1) matrix rich in roots, leaves, and other organic materials (Figure 23). The matrix was removed around the first set of collapse debris, which had not fallen in any contiguous sections (Figure 24). This debris was concentrated in the northern third of the unit. While few identifiable sherds were found, a number of turtle carapace fragments were scattered throughout the level.

At a depth of approximately 80cm, a lighter second level was uncovered. This level initially consisted of white (2.5Y 8/1) marl deposit contained dark gray (2.5Y 4/1) inclusions, as well as charcoal flecks and numerous *guano* roots. At first, it was believed that the change might represent a decayed plaza floor. However, further excavation demonstrated that the deposit contained collapse debris and was draped across the slope between structure and *aguada*. Rather than representing a plaza floor, the deposit consisted of cut and uncut stones from the adjacent structure, as well as the stucco and cement that had once adhered to their exteriors. When the majority of the stones were removed, the level became a purer white to light gray (2.5Y 8/1 to 2.5Y 7/1) marl in the north-central and northeastern portion of the 3x3 (Figure 25). A limited number of sherds dated the deposit to the Late Classic.

A third level (Operation 6b, Level 3, Lot 1) sloped down from under the marl deposit. This gray clay (2.5Y 6/1), beginning at about 90cm below the surface, is believed to represent a former *aguada* bottom. The deposit was apparently formed at a time that was relatively wetter than the present and/ or when the basin was maintained and therefore held more water. This period must have been prior to when the cut stones currently observed around the *aguada*'s edge were laid, as the

Figure 23. Operation 6b Western Profile

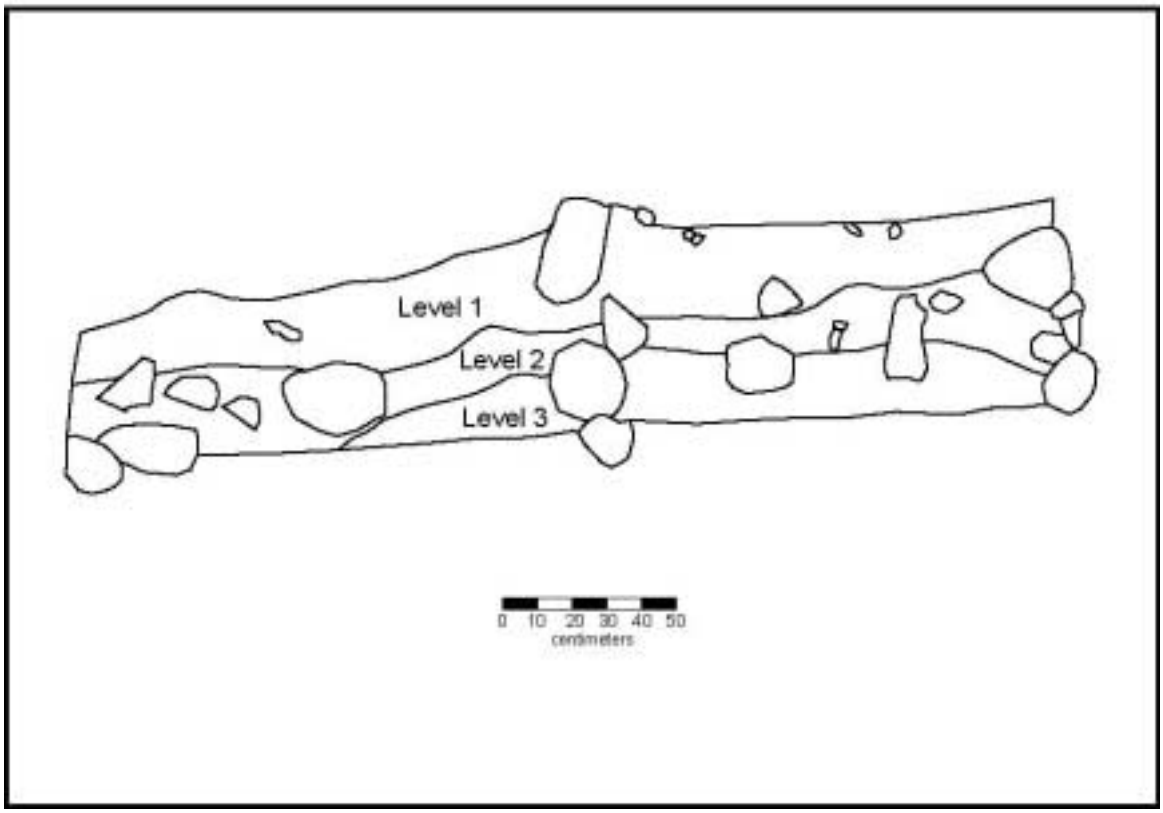


Figure 24. Operation 6b, Level 1, Lot 1

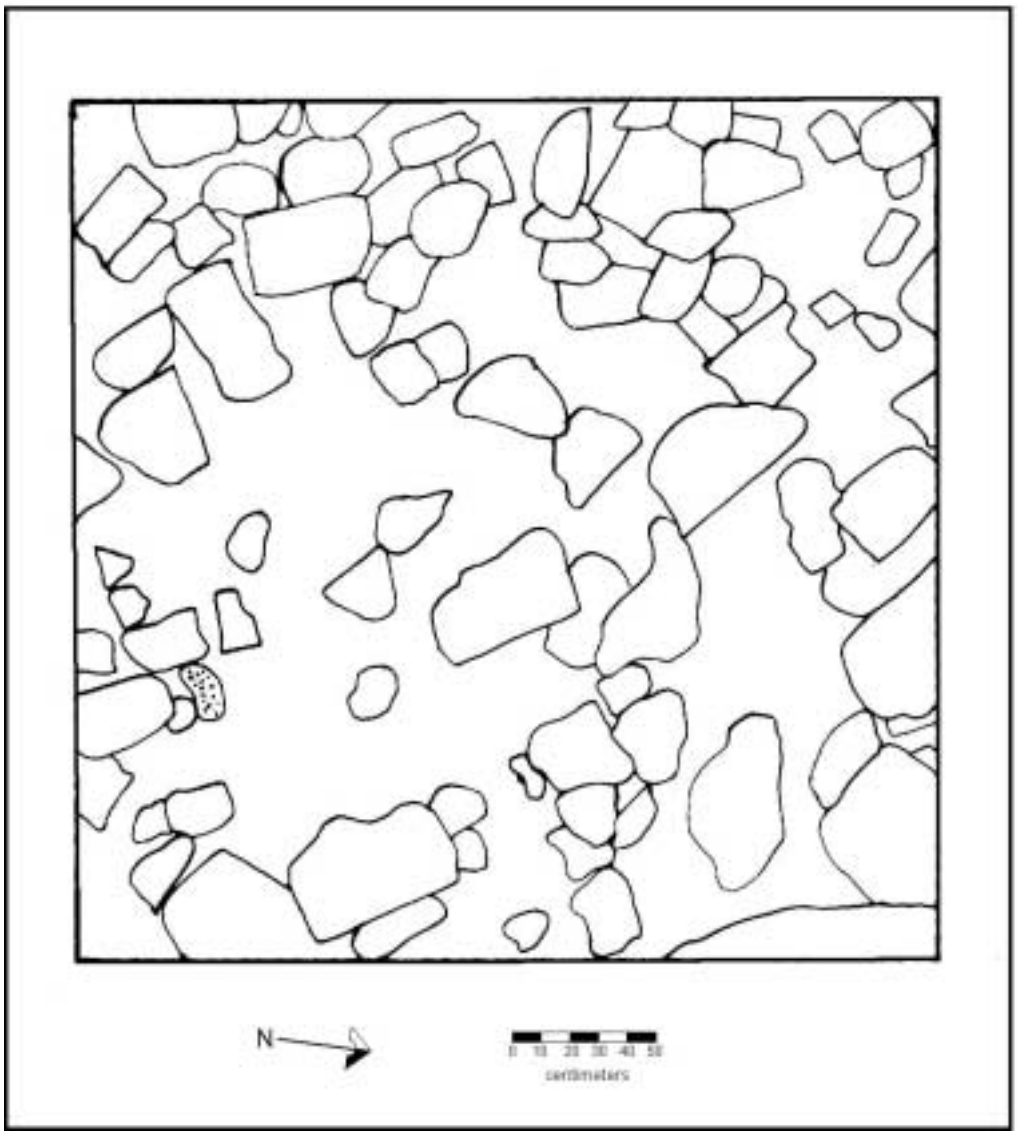
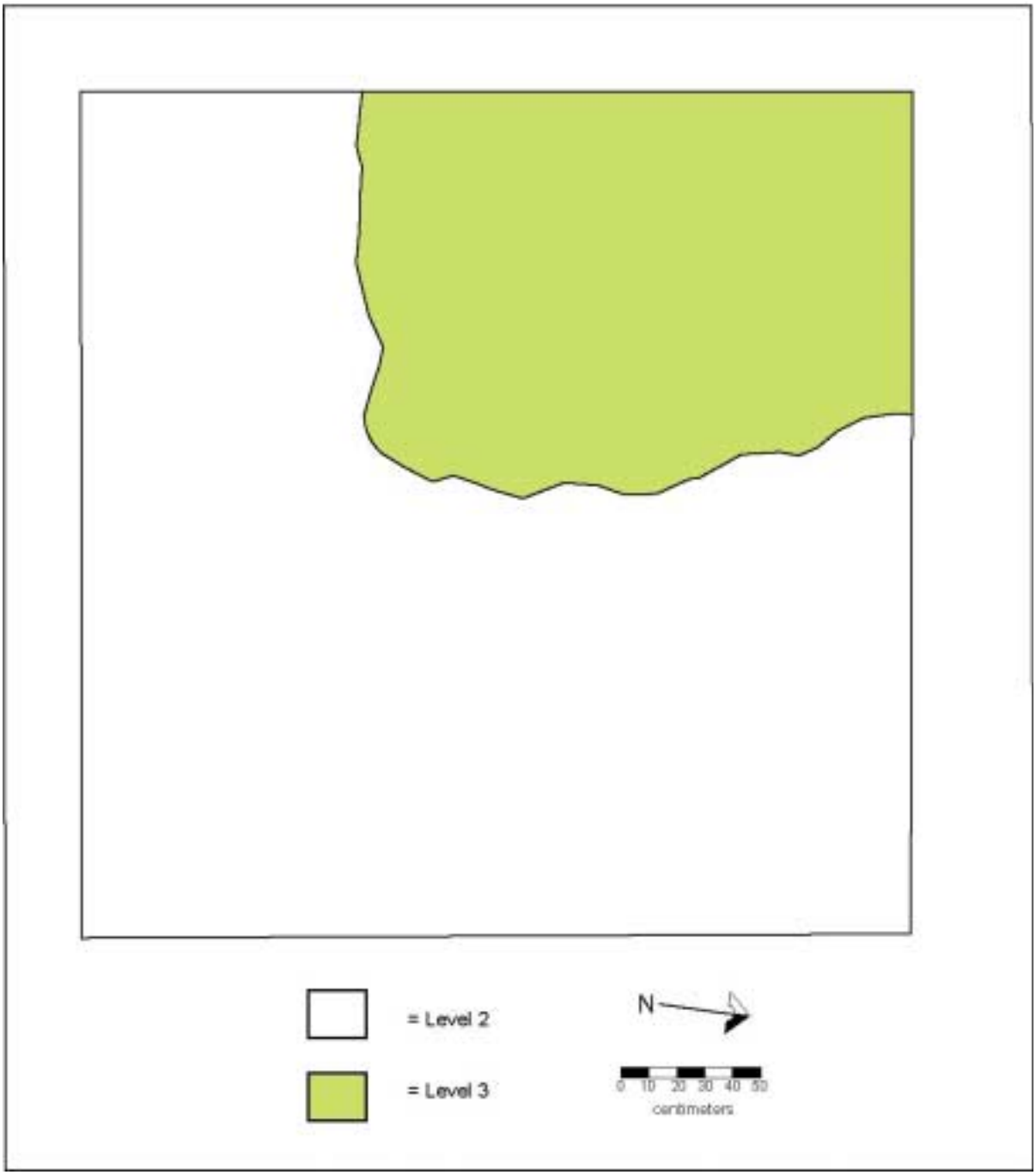


Figure 25. Operation 6b, Plan of the Interface of Levels 2 and 3



gray clay did not cover them even though it attained a higher elevation than some of the stones. Although the deposit was sterile, a few uncut, flat stones were scattered near Level 3's upper surface. These may have served as stepping-stones during wetter seasons after the water had retreated from its level at the time of the deposit's formation. As the clay deposit was followed westward, it was found to underlie the white marl (Level 2). Operation 6b was halted at a depth of 97cm below the surface when the level was sterile of cultural material.

Thus, operation 6b revealed a sequence of *aguada* intrusion during a relatively wet period, and/ or a period of more intense *aguada* management, followed by a relatively permanent retreat of the water's edge. Later, cut stones were laid to rim the water feature. Although it is not known when the stones were put down, presumably they were laid prior to the time when Structure S3E1-5 collapsed. As no other structures appear to be present in the vicinity, it seems reasonable to hypothesize that they are contemporaneous with the building's use. At a time when the gray clay was still the primary surface deposit to the east of the structure, a substantial portion of the structure's east wall collapsed to the east. The wall did not fall as an intact entity; instead, the collapse was scattered throughout the unit, concentrated towards the western edge of the unit. Cement and stucco melted through the collapse to form a hard marl deposit. Burned wood flecks and rocks scattered throughout the marl, but absent elsewhere in the unit, indicate that there may have been some sort of fire associated with the structure during its construction process (stucco production), use life, or abandonment. The paucity of artifacts, including ceramics, is not consistent with violent terminations documented elsewhere (Freidel *et al.* 1998; Garber *et al*. 1998), and evidence from suboperation 6c suggests that both construction processes and the structure's function may have more to do with the charcoal in this locale. Eventually, organic debris covered the majority of the building's remains.

Operation 6c

Once the four walls were well defined, material from inside Structure S3E1-5 was removed in Operation 6c. Lots were divided within the suboperation to permit excavations to take place at the same time that workers continued to remove the large tree and its roots from the structure's center (Figure 17).

The first three levels of the suboperation, formed after the structure's collapse, were identical to those in Operation 6a. Structural collapse was visible above and through the brown organic first layer. The removal of this debris allowed the inside face of many sections of the walls to be seen. The inside face of the walls did not contain Terminal Classic cut stones. Instead, they were formed of more crudely shaped, irregular blocks that were more typical of the Late Classic. This combination indicates that the structure may have been built at the Late to Terminal Classic transition and/or that the relative cost of finely cut stones dictated that they only be used on the more visible outer face. The northern, western, and southern walls averaged 1.15m thick, while in the eastern wall the distance between the inner and outer faces was only 75cm. The cores of the walls proved to be filled with unshaped cobbles.

At approximately 20-30cm below the sloped surface, the silty, gray Level 2 began. Although the second layer was quite thick in the center of the structure (~50cm), it thinned towards the inner wall faces, particularly towards the eastern edge of the structure. As in the exterior units, Level 2 was composed of collapse debris with melted cement and stucco. However, instead of containing only wall debris, the interior contained many vault stones that had fallen inward, nearly vertically. The interior faces of the vault stones were not cut at an angle; instead, the vault would have been stepped or thickly plastered. Due to the size of the structure (roughly $8m^2$), it was anticipated that there would have been two interior rooms, forming a tandem vaulted building. Surprisingly, no such plan was revealed. Instead, as the sediment was removed from around the vault stones, a square vault was exposed (Figure 26). Vault stones paralleled each of the four walls, with load-bearing walls on each of the four sides. A similar vault is present at Dzibilchaltun, in the Temple of the Seven Dolls (Andrews and Andrews 1980). A tenoned serpent head was found in the rubble of the south-central portion of the interior structure collapse (Figure 27).

As in the exterior, Level 3 consisted of a stucco and cement deposit. Thickest in the center of the structure (~40cm), it disappeared entirely in the northwest corner along the walls. Like in Operations 6a and 6b, flecks of charcoal and occasional small burned rocks were included in the matrix. When the far eastern lots reached a depth of approximately one m below the surface, contiguous, flat planes of Terminal Classic veneer stones with fragments of plaster coating were revealed. Directly west of the doorway was a 64cm gap in the sets of stone. It was initially believed that these features would be two separate benches limited to the zone directly inside the doorway that were divided by a walkway providing access to the remainder of the interior. As excavations moved westward, both the benches continued, eventually forming a 53m tall, contiguous U-shape sloping downward towards a 3.26m long walkway that did not widen beyond the entrance (Figure 28). Level 3 materials, including vault stones extended to the floor of the walkway. This floor was degraded at the entrance, but was intact from 1-1.3m inward to the west bench. However, the surface was in poor condition, having been cracked, burned, and gradually melted away from the interior faces of the benches. This melting revealed a second plaster surface directly under the most recent surfacing episode that was not separated by subfloor fill of any kind. Operation 6e further explored the relationship between flooring episodes and the benches.

In the western end of the structure, a unique dark gray deposit was discovered under Level 3, lying directly upon the bench surface. This 20-50cm thick layer, constituting Level 4 in Lots 1, 2, 3, 6, and 7, contained a number of Late and Terminal Classic sherds, including large burned segments of polychrome (Juleki Cream and Chantori Black on Orange) bowls that could be refitted. The Juleki sherds contained several glyphs, including part of the primary standard sequence.

Figure 26. Structure S3E1-5 Collapse Including Vault Debris

Figure 27. Tenoned Serpent Head from Structure S3E1-5 Collapse

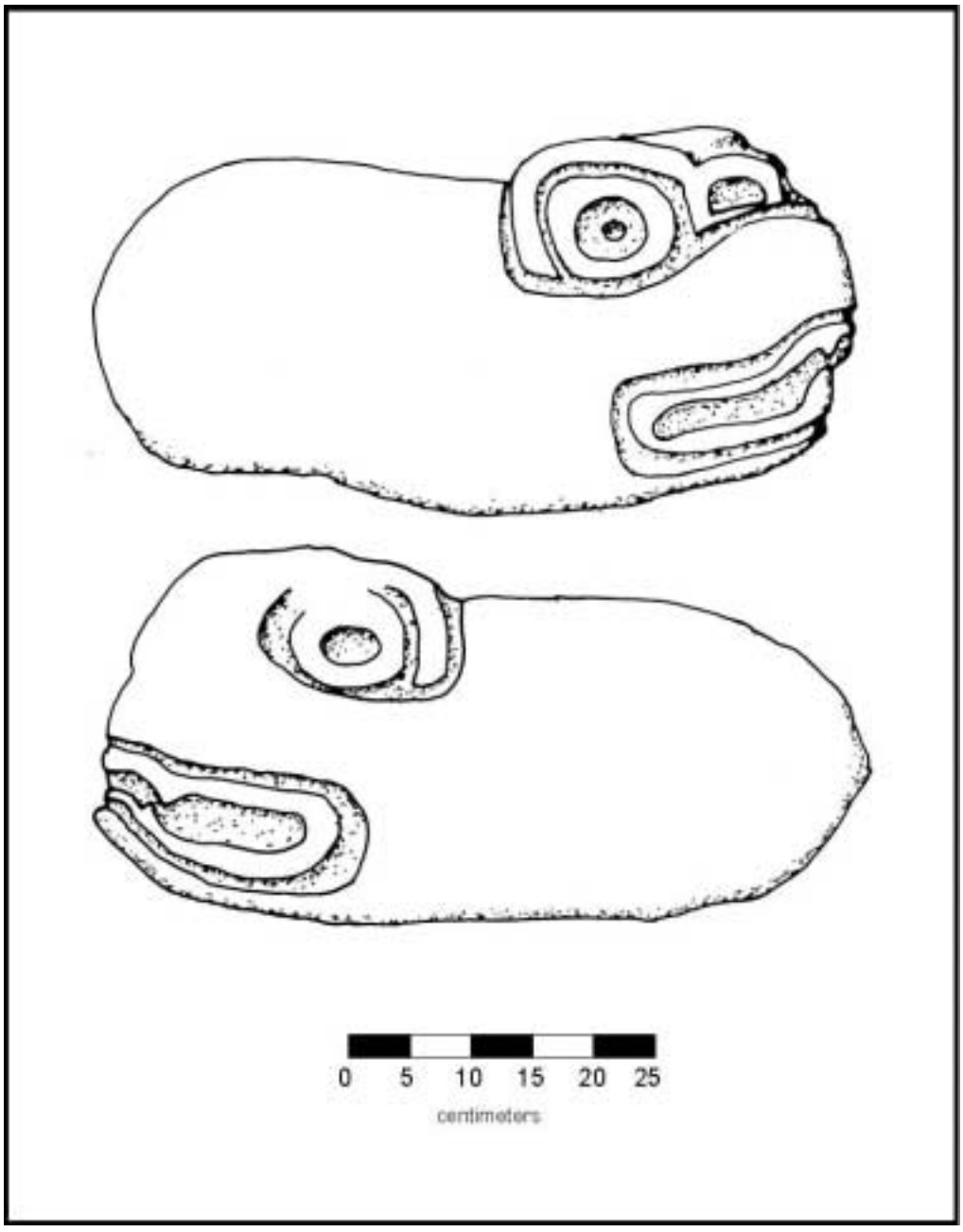
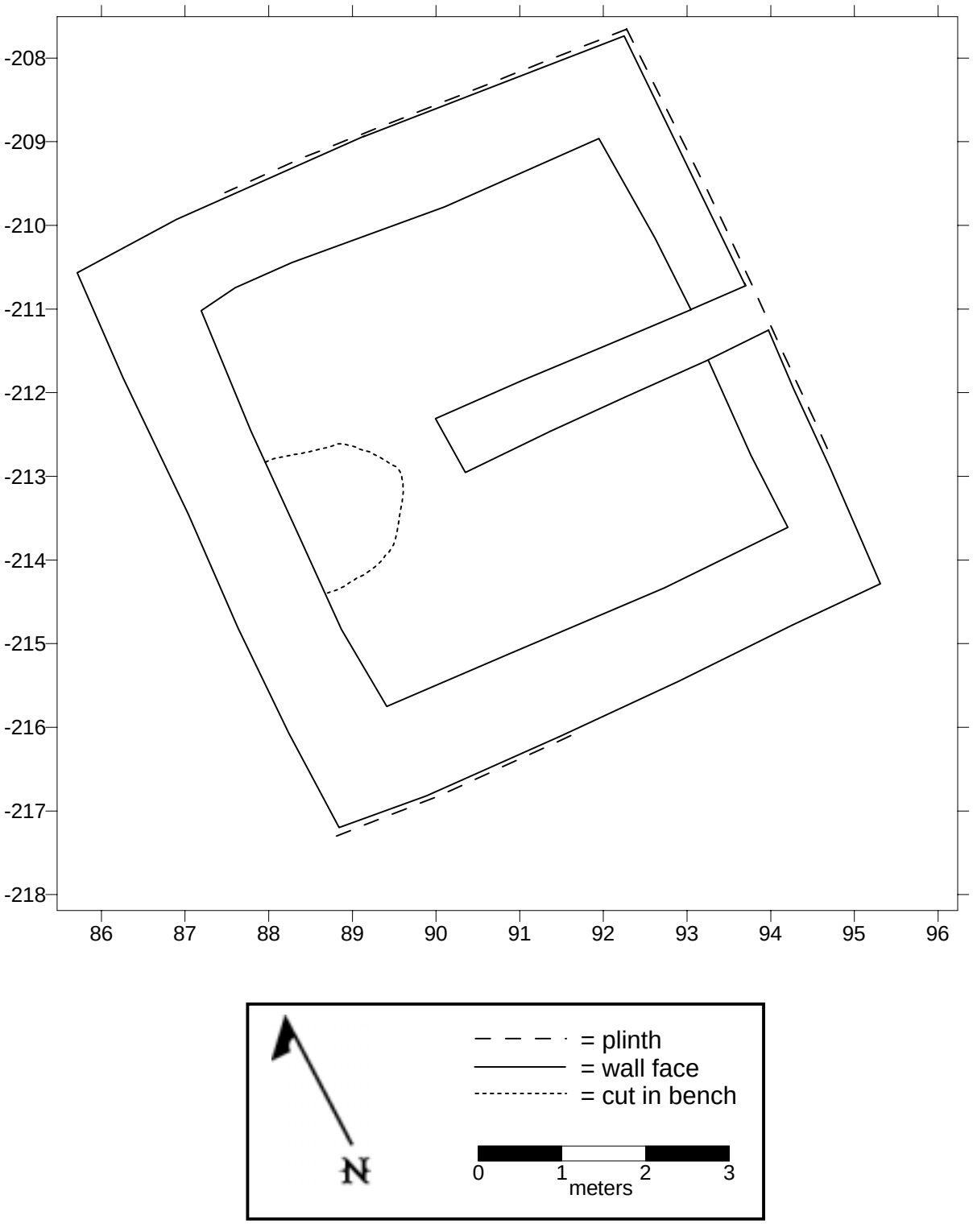


Figure 28. Structure S3E1-5 Plan



While it was originally thought that the deposit was the result of sporadic structural use during the process of abandonment, it soon proved to be something entirely different. As excavations on the bench surface proceeded southward from the northwest corner, burned bench surface stones and eventually a substantial gap in the bench surface was revealed. The contents of the rear center bench were looted in antiquity as part of a violent event. Operation 6d, Lots 2-6 explored the deposits created by this event and helped to further clarify stages in the bench construction and modification.

Operation 6d

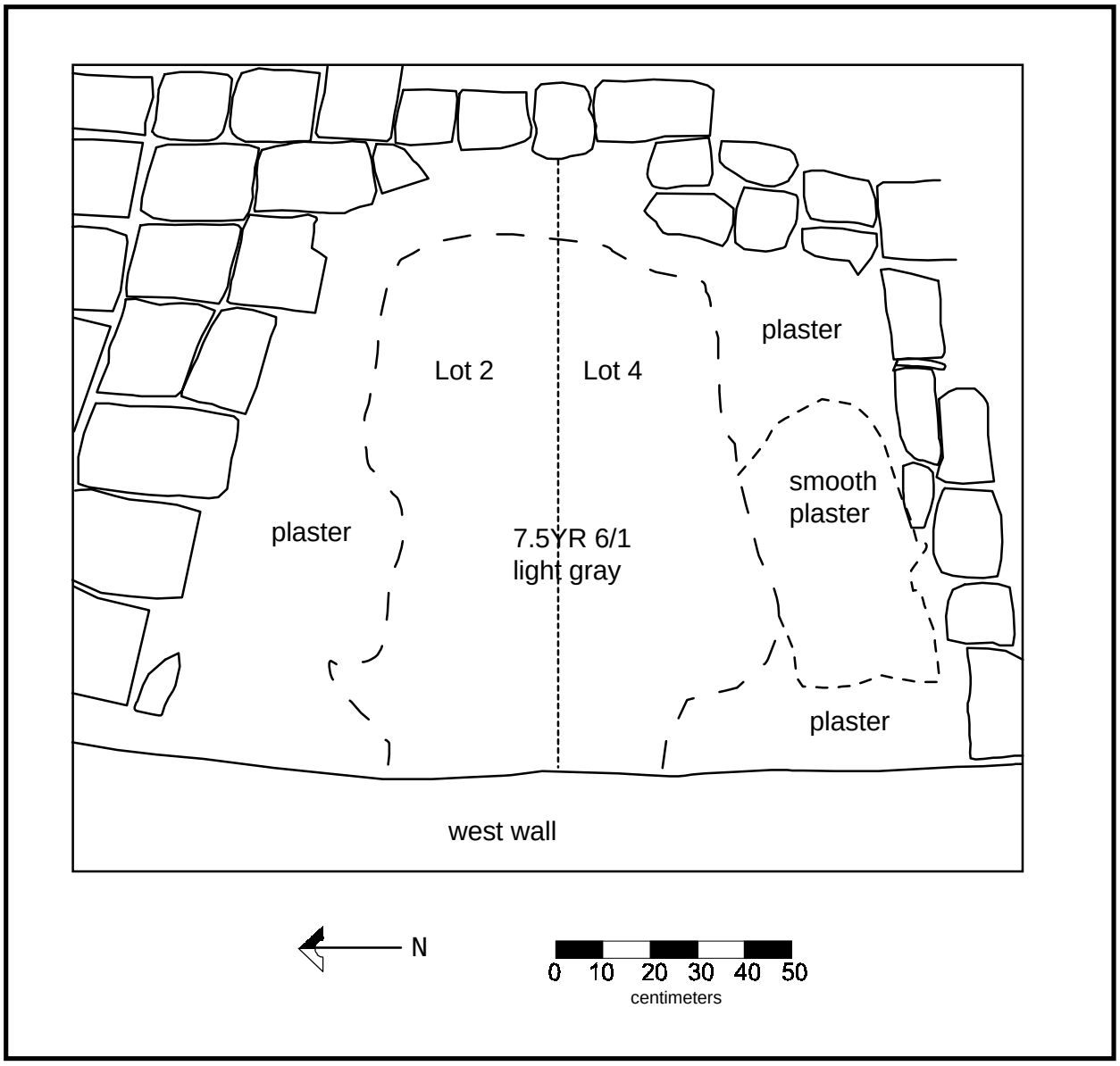
Operation 6d contained material from within Structure S3E1-5's benches. Level 1, Lot 1 was initiated under a 82x59cm stone in the bench near the building's doorway, to the south of the entrance passageway in the far eastern portion of the structure. The excavation was intended to obtain sealed ceramic deposits from within the structure that might help to clarify its construction date. At a depth of 23-27cm below the top of the bench, the southern 13cm (Level 2) became a pale yellow plaster (2.5Y 8/2), while the northern portion continued to consist of a very pale brown (10YR 7/3) marl (Level 1). Level 1 was similar to the marl deposit encountered in Operations 6a and 6b, containing small carbon particles and burned rocks. This sealed deposit indicated that the burned pieces seen elsewhere in the deposit resulted from a process that took place where the materials were obtained and/ or processed, such as during stucco production, rather than after they were included in the structure. Once Level 1 was removed, the unit was expanded to a full one m N-S to better explore Level 2.

The second level of Lot 1 was found to contain only dry core fill covered by plaster, with no ceramics of any kind. As the roughly finished plaster was at the same height as the next-to-last course of bench stones, the plaster surface appeared to represent the original bench surface. This idea was borne out in the remainder of the suboperation. Unfortunately, only two sherds were recovered from both levels of the lot.

Operation 6d, Lots 2-6 explored the material filling the cut in the west-central portion of the bench. This roughly circular area lacked flagstones and was capped by the same dark gray deposit that had covered the western portion of the benches. Flagstones burned by a fire that had emanated from the hole surrounded the cut. Stones on the inner face of the western wall above the cut were severely spalled and blackened. As the missing flagstones were not found elsewhere in the structure, it was anticipated that the hole might contain these stones, as well as fragments of what the bench had contained prior to the destruction.

The northern half of the cut was excavated as Operation 6d, Lots 2 and 3 Level 1, Lot 2 represented an unsealed extension of the dark gray deposit found on top of the surrounding bench area (Figure 29). It contained Late and Terminal Classic sherds that could be refit with pieces found on the bench surface. Level 1, Lot 3 was a much browner (10YR 6/4 light yellowish brown to 10YR 4/4

Figure 29. Operation 6d, Level 1, Lots 2 and 4



dark yellowish brown) deposit in the NE corner (32x34cm) of the cut that began just below the height of the flagstone surface and extended for 27cm. Level 1, Lot 2 continued under it. When Lots 2 and 3 were removed, a line of stones was revealed to the north. Their depth was consistent with that of the course of bench stones under bench surface flagstones and their angle formed a western extension of the north bench. At this point in the excavation, it could not be determined if they continued to the western wall, as a smooth plaster surface curved from them around to cover a cobble and marl deposit to the east of the western wall face. The curved surface proved to be roughly perpendicular to a flat, burned plaster floor that was discovered at 43cm below bench level. A small cut extended through the floor surface in the NW corner and the gray deposit filled this cut. Directly south of the flagstones closest to the northern edge of the unit, a smooth plaster surface cap was found. This cap had apparently been cut when the pit was violated. Where the smooth cap surface was absent, subsurface marl from the cap proved to ring the entire cut. Interestingly, it was only about three centimeters below the flagstone surface; therefore, no flagstones could have covered the area when the cap presumably sealed the zone. None of the missing flagstones were found in the pit either.

In order to reveal more of the plaster surfaces, Level 1, Lot 4 was removed in the southern half of the unit. It contained ceramics similar to those found on the bench surface, including a piece of Juleki Cream with glyphs that appears to be from different vessel in the same set as the example from atop the flagstone bench. A larger expanse of the same smooth plaster cap surface remained to the south of the cut and the curving plaster perpendicular “wall” inside the structure's true eastern wall continued, as did the floor surface (Figure 30). Marl and cobbles formed the southern boundary of the lot (to be removed in Lot 5).

Operation 6d, Level 2, Lot 2 removed the gray deposit that extended downward where the floor had been cut. The sealed Terminal Classic subfloor deposit was Level 2, Lot 3. Directly under the burnt floor surface were irregular cobbles mixed in a light gray (2.5Y 7/1) silty *sascab* matrix.

At 54cm below the bench surface, a second plaster floor was uncovered across the entire pit. Operation 6d, Level 3, Lot 2 probed this floor to discover that, while it lapped against the base of the north bench extension, its subfloor ran under the northern bench. Based upon this, it is believed to correspond to Structure S3E1-5’s Floor 3 found in Operation 6e. The first plaster surface, partially cut in its NW corner, corresponds to the structure's Floor 2, while this second surface was Floor 3 (Figure 31). Under the subfloor, 94cm below the bench surface, a *chac luum* (10YR 3/2 very dark grayish brown) layer was visible. This final deposit was not excavated due to time constraints.

A final lot, Operation 6d, Level 1, Lot 5, removed a portion of the southern plaster and marl deposit in order to determine if the southern bench also extended through the unit and to explore the relationship between the bench and the inner western wall. When the material was removed, the lower courses of the south bench face were exposed through the unit, as they had in the north. Interestingly,

Figure 30. StructureS3E1-5's Floor 2 in Operation 6d Lots 2 and 4

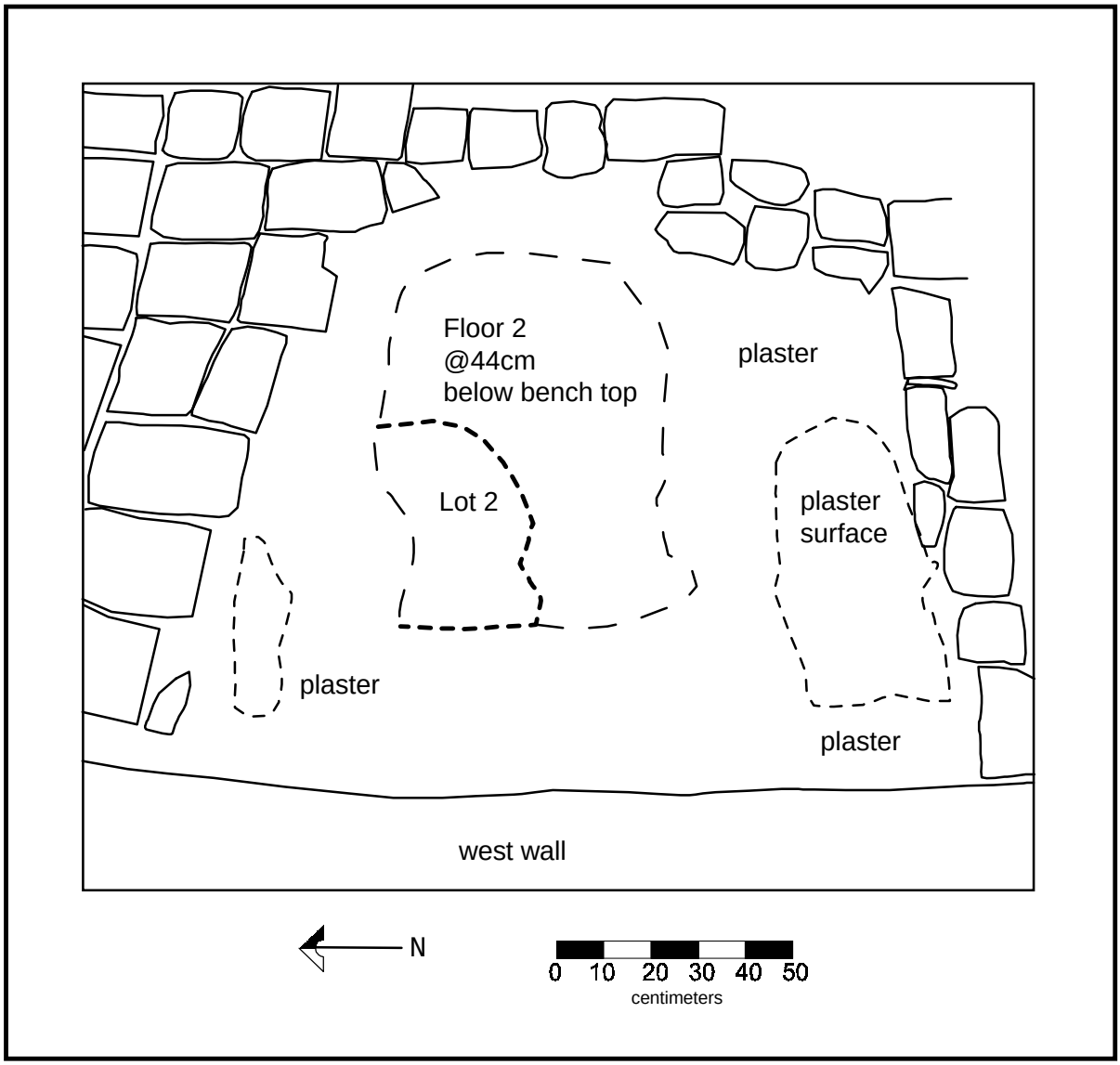
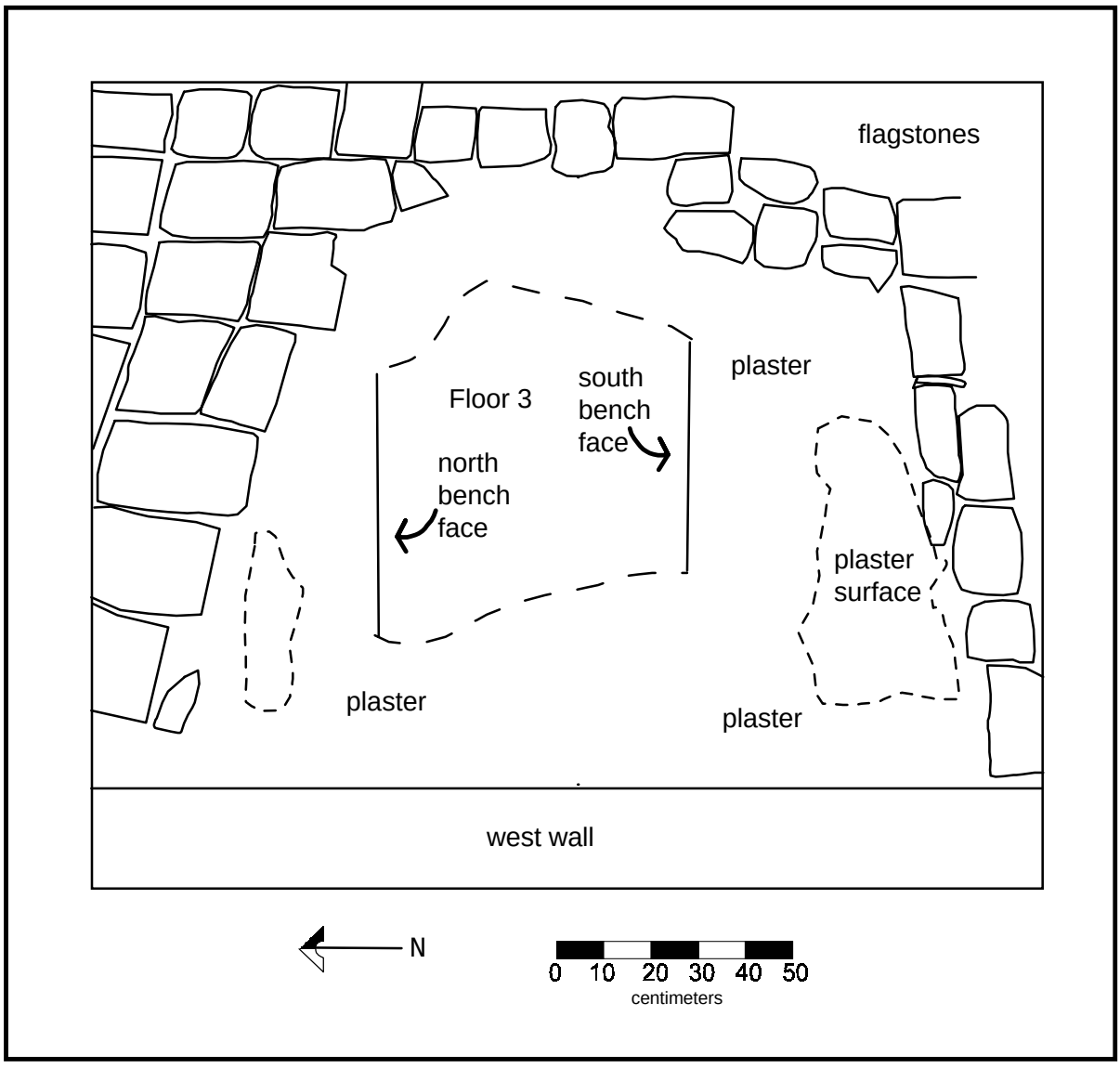


Figure 31. StructureS3E1-5's Floor 3 in Operation 6d Lots 2 and 4



exposing the top edge of the facing stones also revealed very little wear in contrast to the rounded edges of the stones along the corridor. A box was formed by the western curved surface, the north and south bench sidewalls, a marl and cobble deposit to the east, and the plaster floor (Figure 32). This was presumably the area in which a dedicatory cache had been kept prior to its desecration in antiquity.

Operation 6e

Operation 6e was a 50x50cm unit in the western end of the entrance passage (Figure 33). The unit was positioned where the surface floor was intact in order to obtain a sealed ceramic deposit. When Floor 1 was cut, it was clear that the burning evident was strictly a surface phenomenon; only the very surface was discolored. This observation, as well as the excellent condition of the bench stones lining the corridor, indicates that the burning that discolored the floor must have resulted from a low-intensity fire(s) substantially different from the burning associated with the violated cache box in the bench.

Four to five cm below the surface of Floor 1, a second floor was revealed. Only marl separated the two episodes. Floor 2 was also burnt, although its discoloration was uneven within the small unit. The northern zone appeared to be more burned than the southern, where the plaster was only yellowed. Where blackened, the discoloration again only touched the surface. The second floor was much more carefully constructed than the first. Seven cm of plaster covered a subfloor of cobbles and a very dark grayish brown (10YR 3/2) matrix. This third layer yielded one (Yaxcaba Striated) sherd, the first of the suboperation.

At 23cm below the surface of the first floor, Floor 3 was encountered. While a 3cm thick marl deposit was present, no smooth surface remained on the floor. Under this floor, Level 4, Lot 1 was a very dark gray (10YR 3/1) *chac luum* with reddish inclusions that appeared to have been the ground surface prior to the construction of the structure. Excavations stopped at a depth of 40cm below the surface of Floor 1 due to time constraints. The few ceramics from this deposit date to the Terminal Classic.

A small 10x9cm extension was made above the NE corner of the unit in order to determine the relationship between the floors and benches. All three were found to lap against the northern bench edge, while the fourth level went under the benches. Floor 3 was therefore the original flooring episode, followed by a significant resurfacing with Floor 2, and eventually by a new coat of plaster as Floor 1.

Summary of Structure S3E1-5

Based upon the five suboperations, a relative sequence of events may be determined for Structure S3E1-5 (Figure 34). Prior to the building's construction, no activity was evidenced in the immediate area. The remainder of the *aguada* rim similarly was ignored as a building site. Cultural debris pre-dating the structure consists only of slope wash materials. Near the beginning of the Terminal

Figure 32. Structure S3E1-5 Plan of Cache Pit Following Excavation

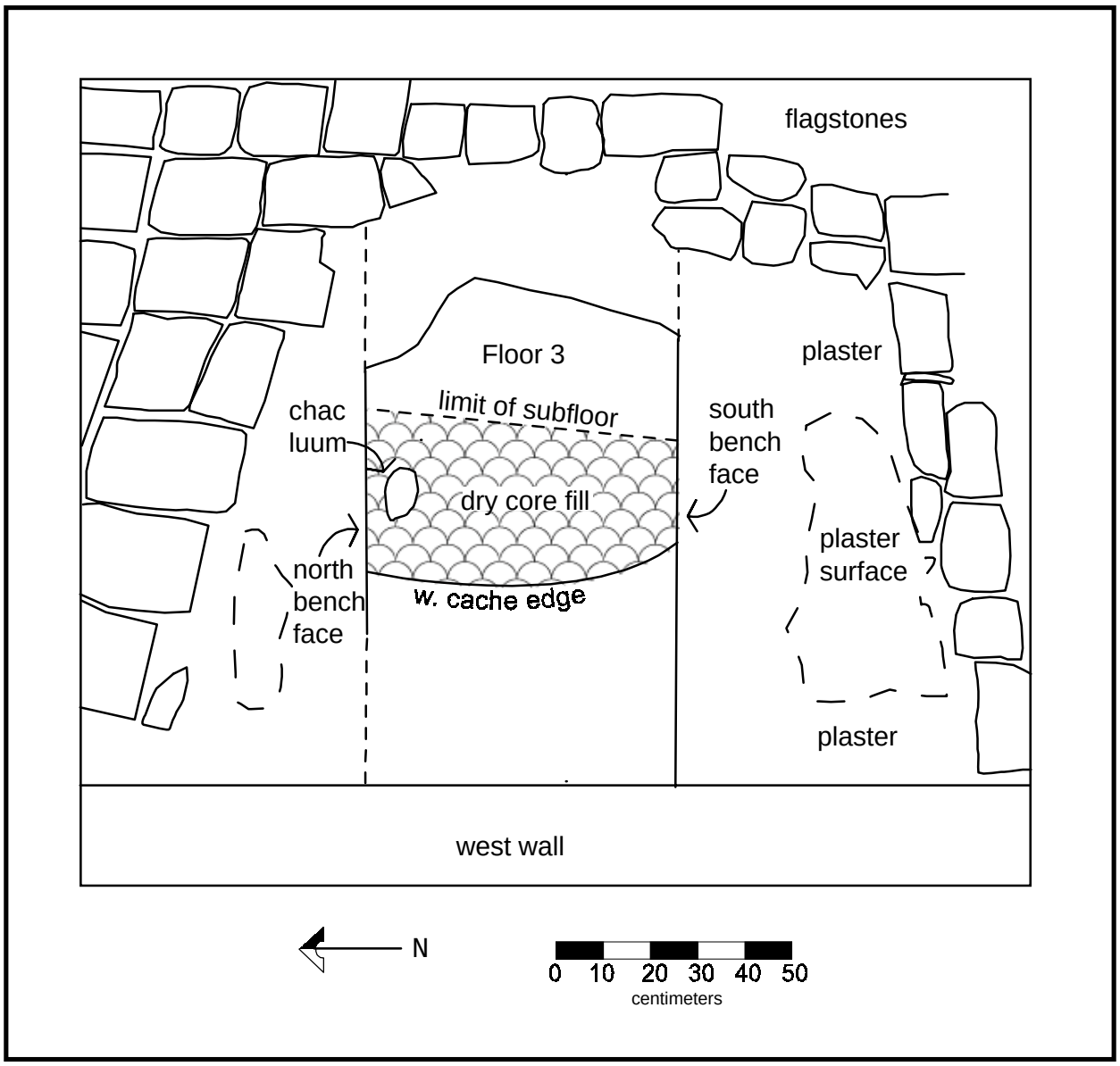


Figure 33. Operation 6e Profile

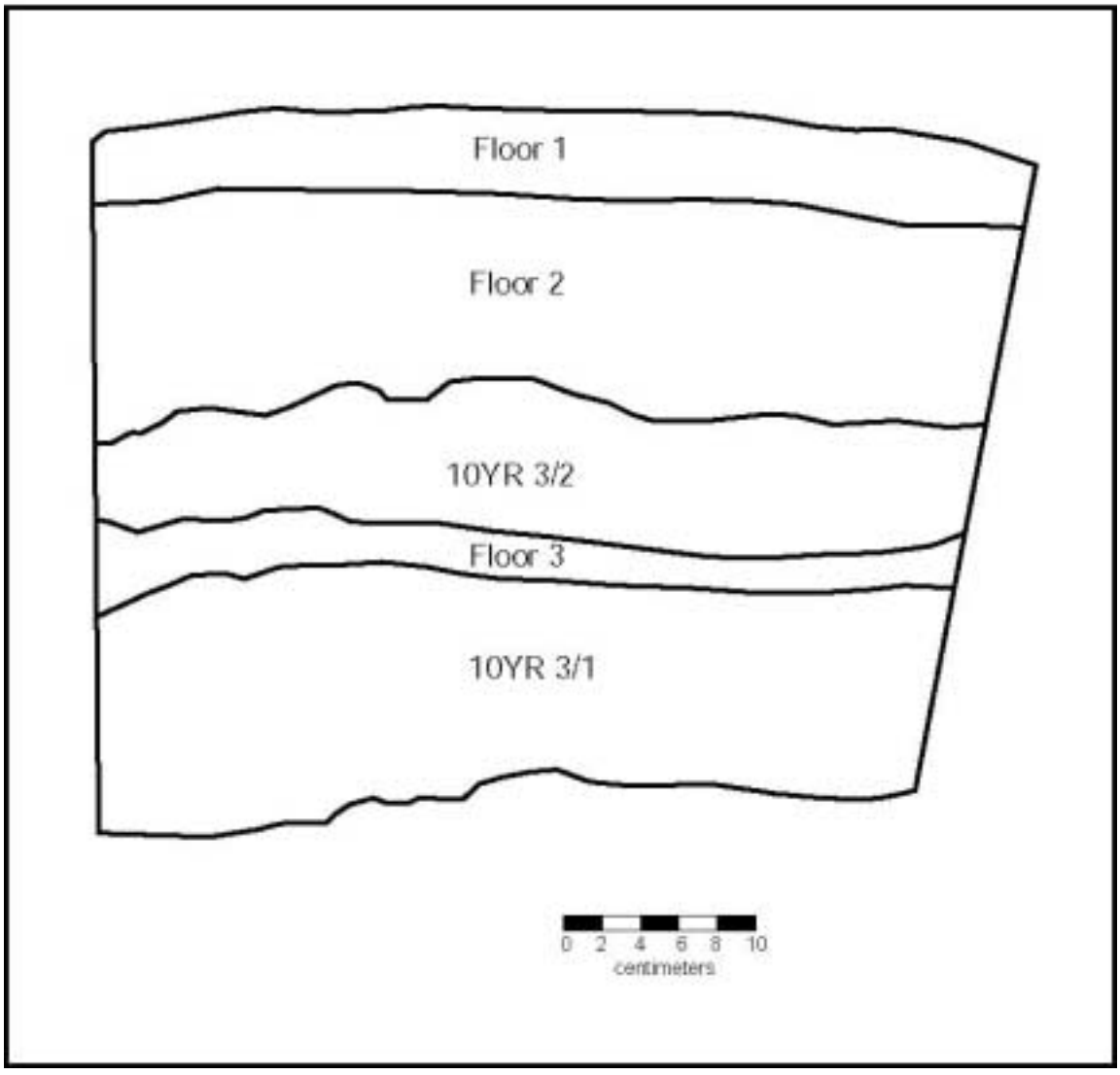


Figure 34. Structure S3E1-5 After Excavation and Consolidation

Classic, Structure S3E1-5 was built with stout walls to support a square vault over a single large room. Terminal Classic veneer stones formed the outer face of the walls, while the interior was treated with roughly shaped stones more common in the Late Classic. The exterior was coated with a thin coat of plaster and painted red; at least one serpent head may have decorated the structure. At this time, or perhaps later in the building's history, a plaza surface was laid down around the structure, lapping against the plinth stones. This may have been the time when a rim of stones was put around the *aguada* immediately to the east of the structure.

Within the structure, two separate parallel benches running the entire length of the interior, separated by a narrow walkway, were built with a substantial dry core fill base. In addition to providing seating and/ or sleeping space, these would have provided further buttressing the walls holding up the unusual vault. The floor of the walkway was treated with marl and then a plaster surface (Floor 3) that lay directly upon *chac luum*. The surface of the benches was smooth plaster that covered marl, then dry core fill. Cut stones formed the face of the benches. Such an interior arrangement may have been intended to symbolize a ballcourt or cleft.

At a later time, a second floor (Floor 2) was laid down the walkway, using a more robust subfloor sequence than the first. This may be the same time that the exterior plaza area received a second floor. Following the second internal flooring episode, substantial modifications were made within the building. The walkway was blocked off 2.2m from the western wall, using stones consistent with the north and south bench faces. This created a separate box at the end of the entrance passage. In order to provide support for the new end wall and flagstones capping the area, while maintaining an open cache box, marl and cobble deposits were laid directly behind the new end wall and directly inside the western interior wall. These eastern and western support walls were coated with plaster to create smooth, curved surfaces connecting what had been the western ends of the northern and southern benches. Early, Late, and Terminal Classic ceramic vessels (or at least fragments), and potentially other materials, were placed in the cache chamber. No fill directly touched the cache, as rodent gnaw marks covered one of the sherds found in the deposit. A capstone would have probably roofed the small box. No such stone was found near the chamber, but at least two potential large stones were located directly adjacent to the base of the southern exterior wall of the structure. Following the placement of the cache, fill was added above the original bench surface in order to provide a means to evenly seat flagstones, as well as to potentially add a slope to the benches. Based upon the limited amount of the first bench surface revealed, the original bench surface does not appear to have been as sloped as the final flagstone top. Flagstones were laid across the entire, now U-shaped, bench surface, which tilted markedly towards the aisle (Figures 35 and 36). Based upon the differential wear of the top edges of the facing stones in the corridor versus those covered in the cache box, the renovation episode probably took place relatively early in the structure's use history. Floor 1, which did not continue into the cache box, may have been added at the time the U-shaped form was created. The renovations may be associated with the most recent plaza flooring episode.

Figure 35. Topographic Map of Structure S3E1-5

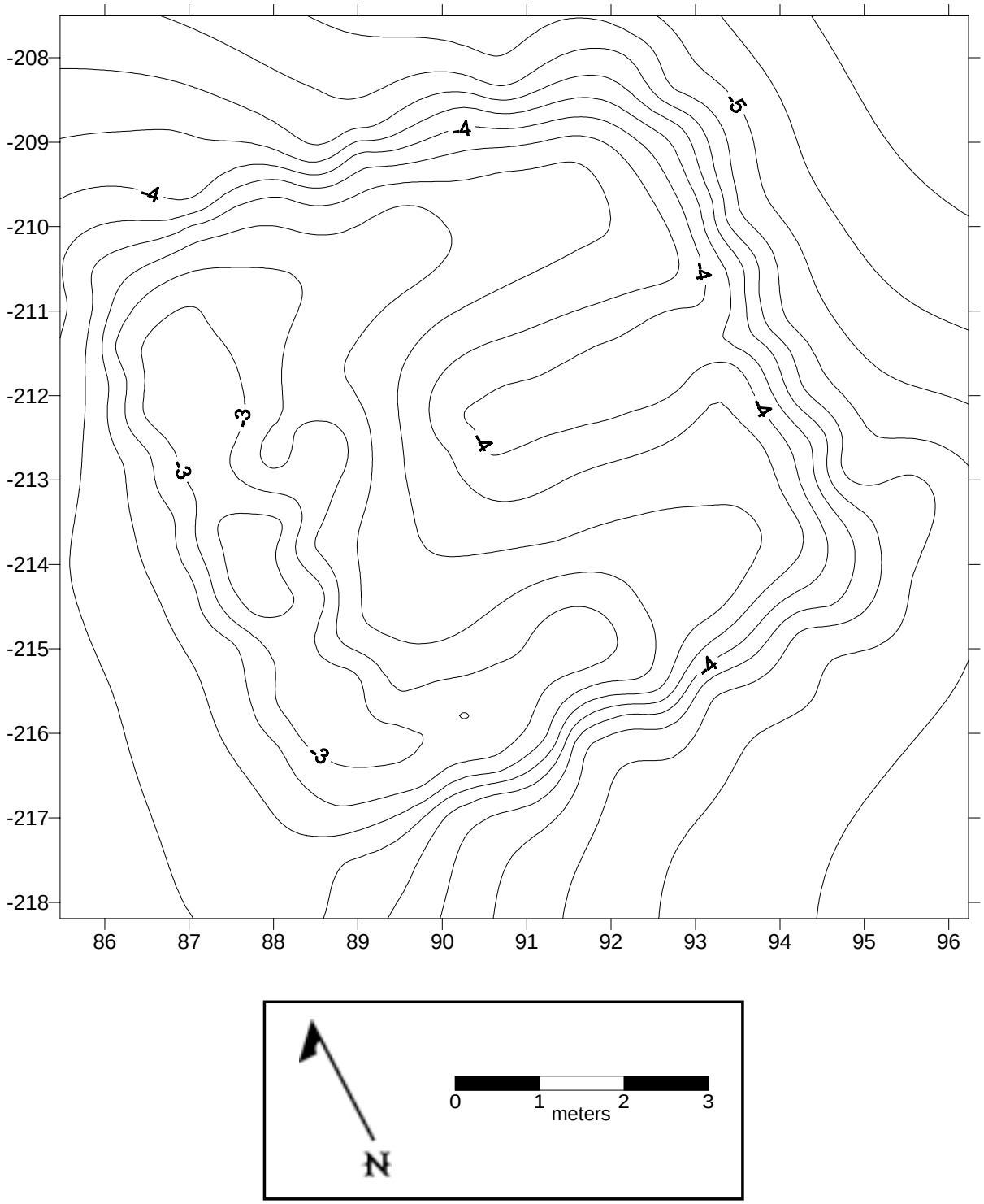
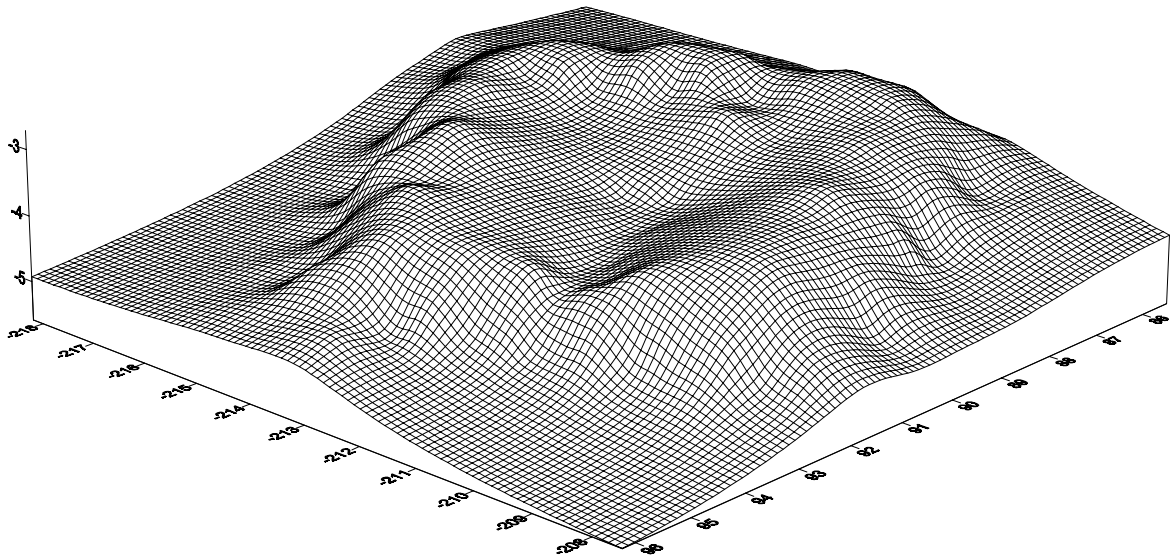


Figure 36. Perspective View of Structure S3E1-5



At a later time, the cache box was re-entered. The flagstones that had covered the area were removed. After the cache was accessed, a smooth plaster surface capped the cache area. Although the flagstones were not replaced, the structure and the cache appear to have been treated reverentially during the event.

The next incident in the structure's life was an entirely different process. The cap of the cache pit was cut and a fire was set that permanently discolored the surrounding flagstones and spalled off fragments from the western interior wall. Materials were ripped out of the cache box, with fragments smashed across the flagstone bench top. The gaping hole was never repaired. This may be the same time that the tenoned snake head was defaced. No other fires were set and no additional termination activities were detected in other portions of the structure. However, the vault may have been pulled down at this time, as vault collapse directly overlay the cache termination debris to the west and the bench surfaces to the east. Whether or not the vault was intentionally brought down, it did fall as a unit, rather than stone-by-stone. Such a violent termination event likely accompanied a major shift in power, with an invading external force and/ or abrupt internal political transformation (Freidel *et al.* 1998). Unfortunately, no distinct "signature ceramics" (Johnstone 2001a) accompanied the event to provide clues to the identity of the protagonists.

Prior to the termination and collapse of the structure, there are no definitive data regarding Structure S3E1-5's function. The paucity of sherds and other artifacts in and around the structure, as well as the interior plan, appears to negate a purely domestic use. Indeed, the areas where floor trash might have been swept around the sides of the structure (Killion 1992) were almost sherd-free, as was the zone in front of the door where smaller broken artifacts might have been trampled into the surface. The building's location near the *aguada*, and the effort made to rim the water only near the building, indicate a water-related function. Such a function is bolstered by the sloped benches, which would have easily shed water. The light burning on Floors 1 and 2 of the corridor provides an additional clue that fire, or at least heated materials, factored into its use. Although no firebox was discovered, it seems reasonable to hypothesize that the structure served as a sweatbath or steambath. As such, location near the *aguada* would have provided a ready water supply that could be poured over heated rocks brought into the building. Water (and sweat) would run off the benches into the walkway.

With its lower central passage and benches, Structure S3E1-5 is similar to the sweatbath Structure P-7 reported from Piedras Negras (Proskouriakoff 1963), as well as Structure 9 at Cerén (McGee 2002; Sheets 1992:98). However, it lacks a firebox like that seen in examples from Cerén (Sheets 1992), Chichén Itzá (Ruppert 1935 and 1952), Cuello (Hammond and Bauer 2001), Dzibilchaltún (Andrews and Andrews 1980), Piedras Negras (Satterthwaite 1952) and other sites. In this way, it resembles Yaxuná's Structure 6F-12 which relied upon water poured over heated rocks resting on the floor (Johnstone 1994). Three large flat slabs found outside the walls of Structure S3E1-5 may have functioned like the benches outside the sweatbath at Cerén, which were perhaps used for waiting to use the structure and/ or cooling down after bathing (McGee 2002; Sheets 1992). Sweatbaths are reported

to have been used throughout the Maya area at the time of the Conquest as an important part of personal hygiene, used for medicinal, ritual, and sanitary purposes, often accompanied by medicinal waters (Orellana 1987). At Yo'okop, as at Cerén (Sheets 1992) and other locales, there is a direct association between water source and sweatbath. Symbolically, sweatbaths, or *pibna*, are also linked to caves and "licentious activity" (Houston 1996: 142).

It is not known whether the sweatbath would have been used only by elites, or if it was a more public facility. However, the amount of resources that went into erecting and maintaining such a substantial cut stone structure and the apparently rich dedicatory cache indicate that it was probably, at the very least, an elite-sponsored building project. Built at a time when water was scarce, the ability to control and utilize water in such a manner may have provided an additional factor that separated elites from commoners. Structure S3E1-5 would then represent the process of making what had been a readily available common good, water, and transforming its control and excessive use into an elite status marker. If the sweatbath's use was not limited to elites, then the ability of the builders to provide such a facility during a dry period would have communicated the strength and aptitude of the leadership (Davis-Salazar 2001; Scarborough 1991) at a time when many southern sites were struggling or had been abandoned.

Operations 7 and 8

Dave Johnstone, Ph.D.

Operation 7

Operation 7 was designed to investigate a potential *chultun*, located in the center of the main plaza of Group D. Clearing for the mapping of the Group had exposed a circular feature 90 cm in diameter composed of cut veneer stones laid end to end (Figures 37 and 38). Several stones from the eastern potion of the feature had been displaced, though apparently not very far as four veneer stones matching those still remaining were located less than a meter from the feature. A circular hole 45 cm in diameter was located in the center of the feature, and penetrated to a depth of 75 cm. The material filling the bottom of the hole was a fine brown sandy sediment, high in organic content, and likely the result of having been washed in from the surface.

The location, size, and ring of cut stones surrounding the mouth of the hole suggested that this feature might be a *chultun*, or dry well designed to capture and store rain water. Such features are rare in this portion of the Yucatan, and the presence of one at Yo'okop might be an indicator that the drought evidenced at nearby Lake Chichancanab (Hodell *et al.* 1995 and 2001) was also felt at Yo'okop. Operation 7 was designed to excavated this feature, determine if it was indeed a *chultun*, and recover a ceramic sample that would enable the dating of the feature.

Level 1, Lot 1 consisted of the loose rock and soil from in and below the central hole. This lot only extended to a depth of 1 m, as it became apparent that with the exception of the fine surface sediment 10 cm in thickness, the excavated material consisted exclusively of loose dry cobbles with many voids. Such a fill is characteristic dry core fill used in the construction of plaza floors. Encountering a block larger in diameter than the opening in the center of the feature further supported this interpretation. The excavation was terminated at a depth of 1 m. The ceramics from Lot 1 were primarily Terminal Classic, with two Postclassic sherds recovered from the fine surface sediment.

Having determined that the feature was not a *chultun*, there remained the need to try and identify what type of feature it may have been, and when it was constructed. To this end, a second 1 x 2 x 0.15 m lot was excavated on the west side of the feature to further expose it and to investigate the relationship of the feature to a possible plaza floor. Only a single course of stones comprised the feature. All of the cut stones were resting on the same surface, suggesting that they had been laid down at the same time. A preserved plaza floor was not encountered. However, the recovery of a small plaster fragment and the exposure of the beginnings of a *chich* (gravel and cobble) layer suggest that such a floor may have existed at one time. The ceramics from Level 1, Lot 2 were exclusively Terminal Classic.

While Operation 7 did not turn out to be the kind of feature that was expected, it did shed some light on the occupational history of Group D. The sub-floor

Figure 37. Group D, Location of Operation 7

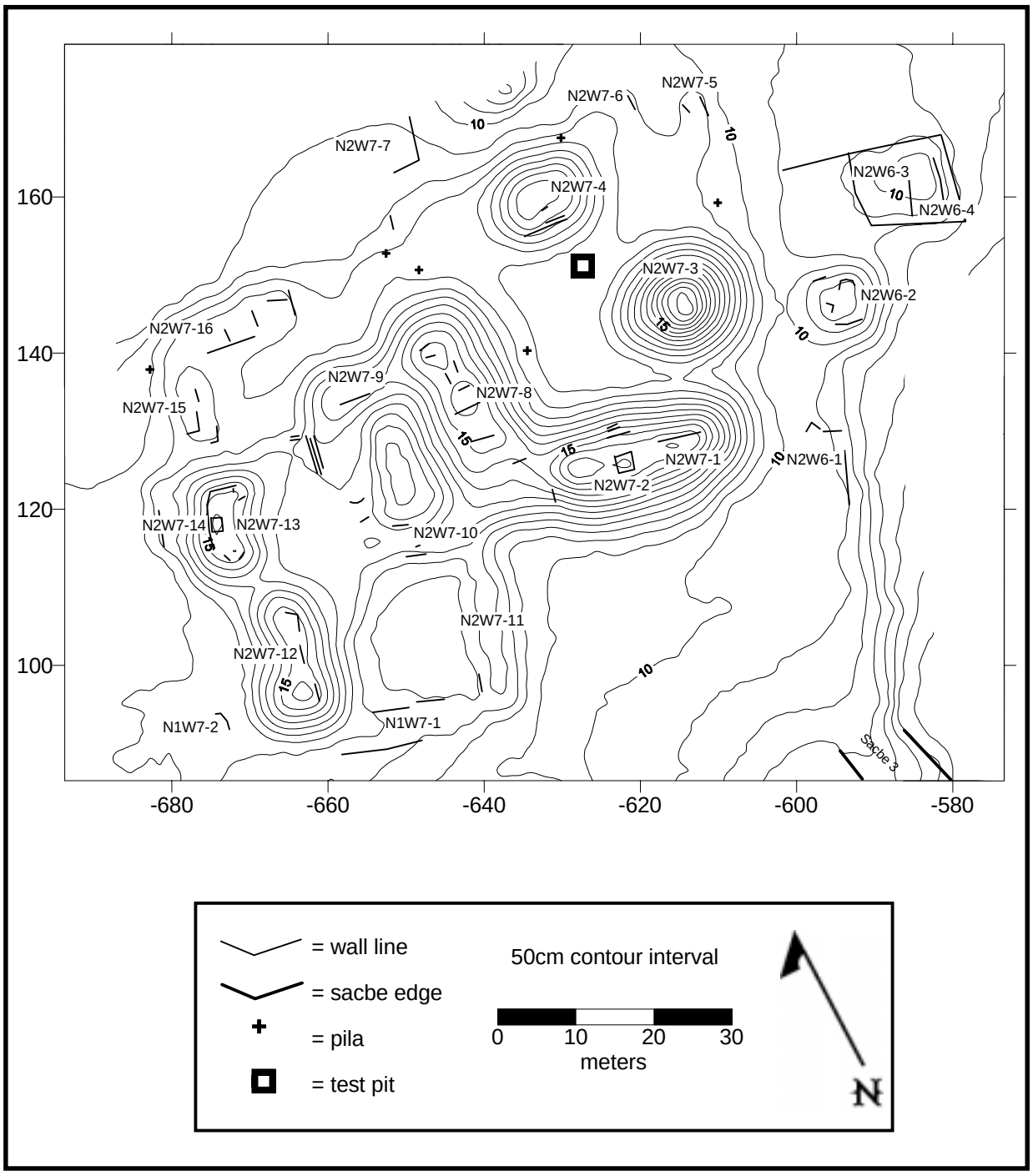
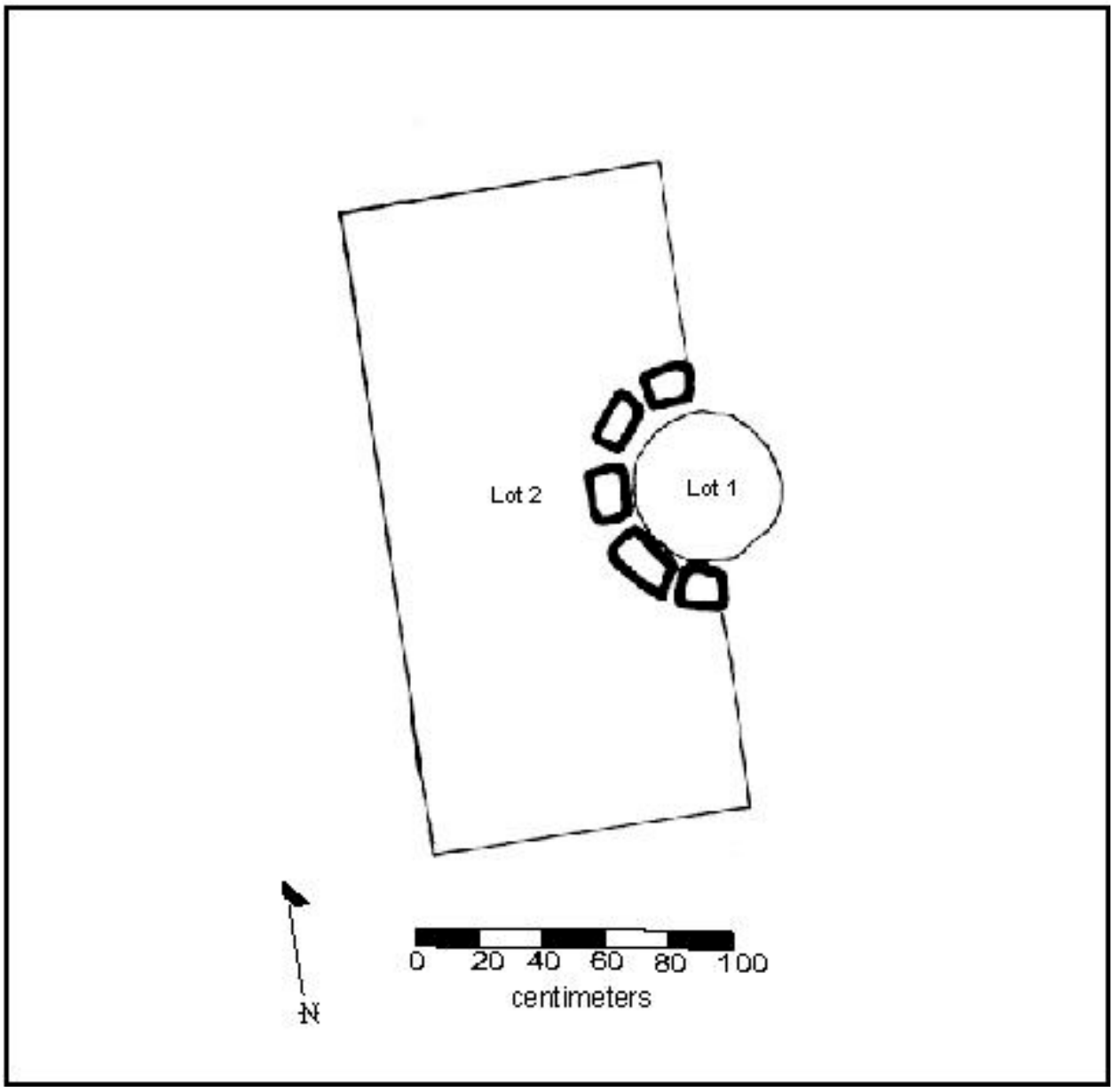


Figure 38. Plan of Operation 7



ceramics suggests that the last plaza floor was raised in the Terminal Classic period. This is consistent with the core veneer architectural style seen in the larger mounds of Group D that support Postclassic shrines. The circular feature was constructed on top of this plaza surface, though such a surface might have been in disrepair by that point. Small, short circular features have not been noted elsewhere in Quintana Roo. Perhaps this feature originally functioned as a masonry altar situated in front of the central axis of Structure N2W7-4. The dislodged eastern rocks of the feature and the unfinished edges of the central hole suggest that the penetration was not integral to the original feature. At some point between the Terminal Classic and the present, this feature was damaged by a hole cut though the feature and the plaza surface below it. It was not possible to determine if this destruction occurred in antiquity or is the result of more recent looting.

Operation 8

Operation 8 was a 2 x 2 m test pit located in Group B's North Acropolis at the foot of Structure N8W1-3 (Figures 39 and 40). Its main purpose was to provide a construction sequence for this important monumental locality. Excavations in the Central Acropolis (Johnstone 2001c) suggested that that locality had experienced a construction hiatus throughout the Early Classic. Operation 8 was designed to test if this applied also to the North Acropolis and, by extension, Group B as a whole. In addition, it was hoped that the relative proximity to the Postclassic shrine Structure N8W1-3 might provide a ceramic sample from this poorly represented period. As plazas required periodic resurfacing, they also provide good locations for recovering sealed ceramic lots, useful in the fine definition of site chronology.

Level 1, Lot 1 consisted of a mix of post occupational debris and natural soil build up. This level dated to the Postclassic, and contained a large number of ceramics, mostly Chen Mul *incensario* fragments. These were concentrated in the northwest quadrant of the unit, immediately above a poorly preserved plaza floor.

Floor 1 was a plastered surface set over a bed of marl. The bulk of this 32 cm thick floor consisted of irregular cobbles and the occasional piece of reused cut stone, including two Terminal Classic veneer stones. While Terminal Classic sherds constituted the majority of the ceramics from this level, the presence of Postclassic unslipped ware indicates that Floor 1 was a Postclassic construction.

Below Floor 1 was a second plastered floor (Floor 2). This plaza surface was much better preserved, and provided a sealed sub-floor ceramic lot. A 30 x 50 cm portion of the floor extending into the south profile was scorched. This burning was not sufficiently hot to crack or spall the plaster. Part of the reason for its better state of preservation was that the plaster was much thicker, and there was a well-developed *chich* sub-floor. Level 3 comprised the material below Floor 2. Surprisingly, the ceramics from this level were neither Terminal nor Late Classic in date, but instead were Early Classic.

A third plaster floor (Floor 3) lay just 10 cm below Floor 2. This floor was less well preserved in that there was some cracking and weathering of the plastered surface. Like the previous floor, Floor 3 displayed evidence of burning, including

Figure 39. Group B, Location of Operation 8

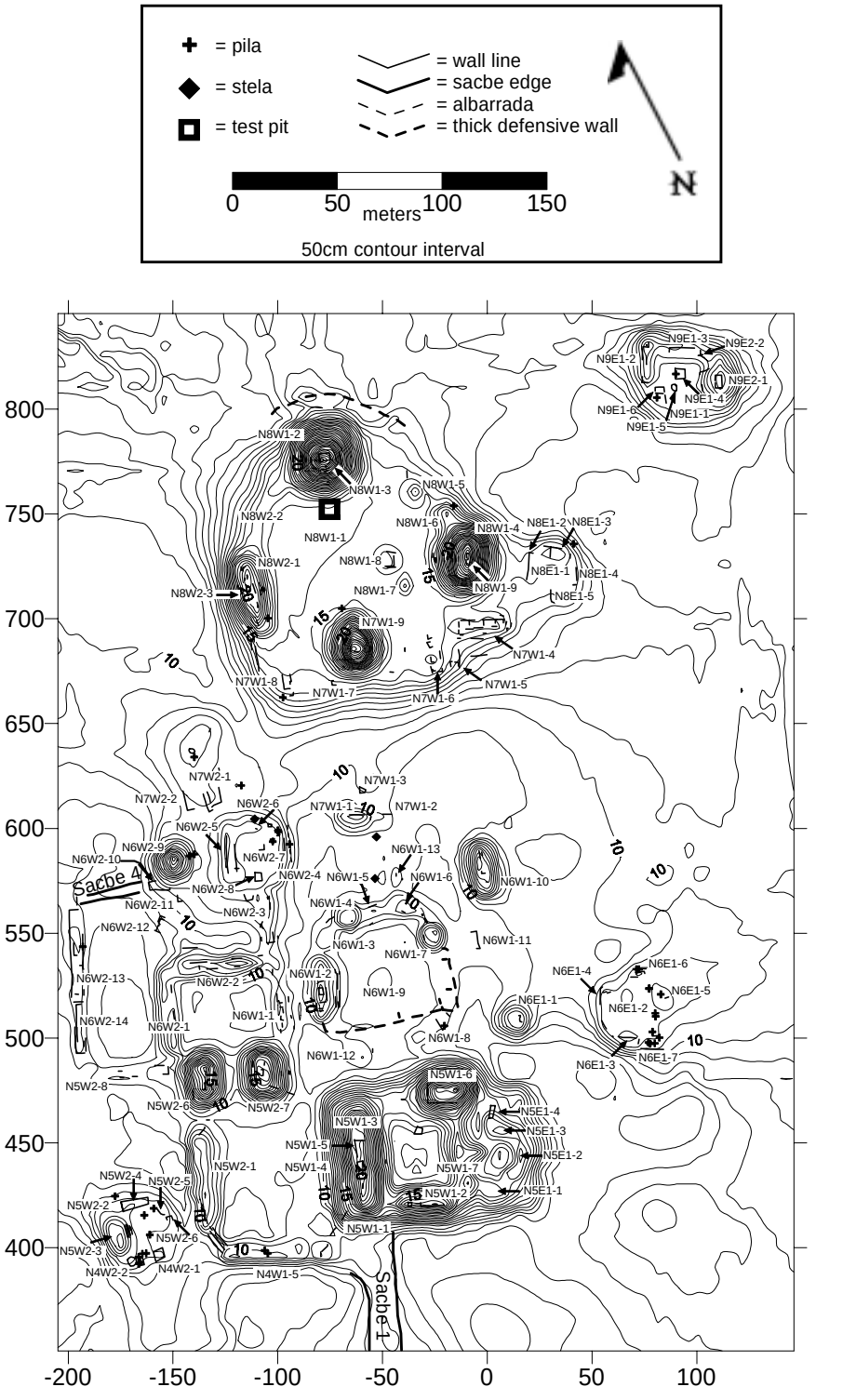
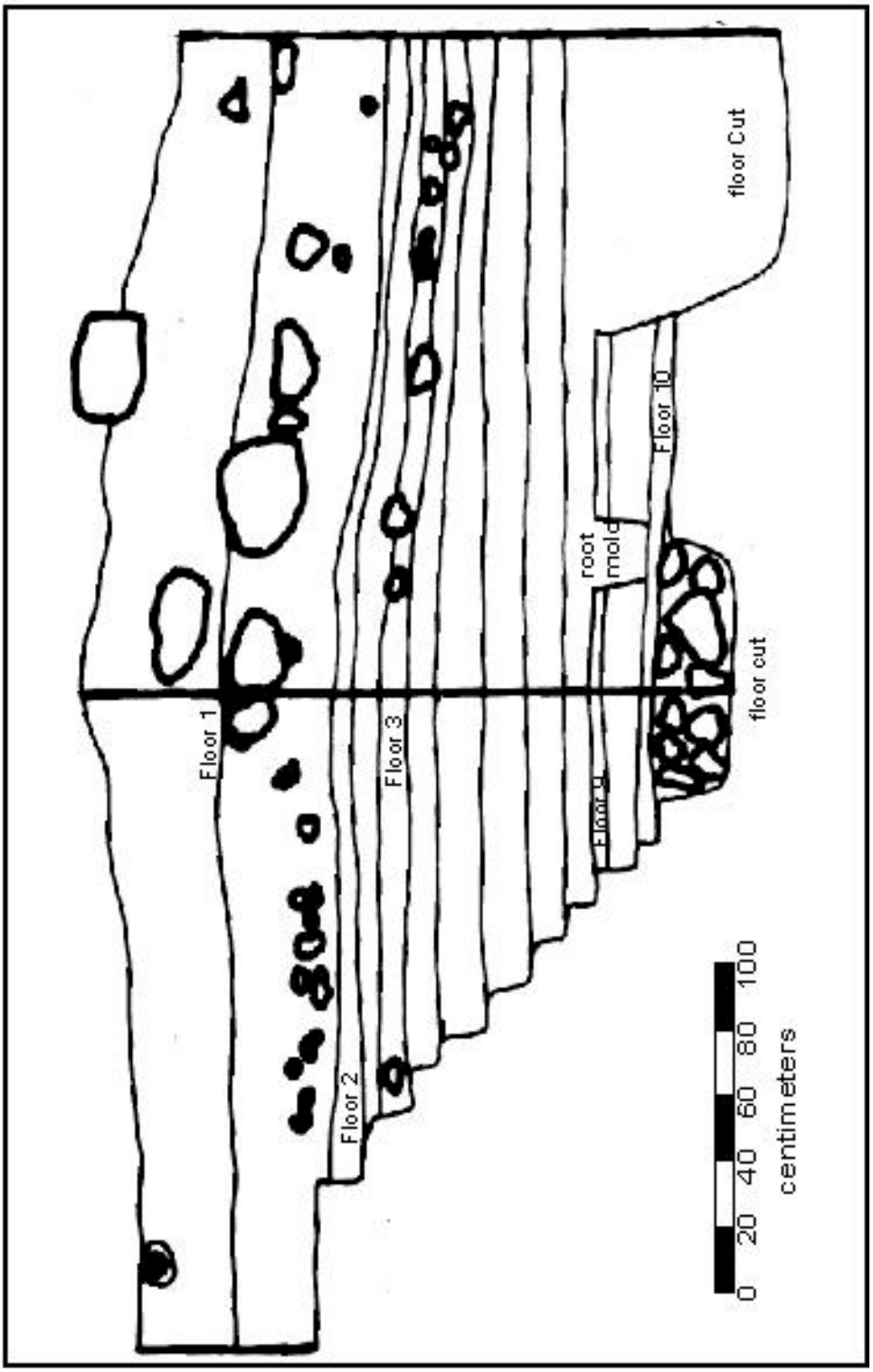


Figure 40. West and North Profiles of Operation 8



discoloration of the plaster to a depth of 1 cm below the plaster surface. Interestingly, this burnt portion of the floor was directly below the burnt patch on Floor 2. The ceramics from below this floor (Level 4, Lot 1) were also Early Classic in date.

Floor 3 rested directly on another prepared surface (Floor 4). Unlike the floors to this point, this one did not have a plastered surface. Instead, the surface was composed of a wet laid, compacted pinkish marl. This thin floor contained a nearly pure Early Classic lot.

Level 6 was excavated below Floor 5. Like Floor 4, this floor was thin and lacked a plastered surface. However, the pinkish marl was notable for its hard durability. Floor 5 contained a pure Late Formative ceramic lot.

Floor 6 was surfaced by a fragmentary plaster floor. This floor had two discrete matrixes, resulting in the material being excavated in two lots. The upper matrix (Level 7, Lot 1) was a mixture of packed mud and *chac luum*, while the lower (Level 7, Lot 2) was composed of a mixture of gravel and *sascab*. Together, these lots made for a floor only 8-10 cm thick. A small ceramic sample from Level 7 suggested a Late Formative date for the construction of this floor.

Floor 7 was a surfaced in hard packed *sascab*. Though it lacked a plaster surface, it did possess a *chich* sub-floor. These materials resulted in a 12 cm thick floor with few sherds. The ceramics recovered dated to the Late Formative.

Level 9 proceeded through Floor 8. This floor was surfaced in a cap of packed *chac luum* mud over a thin bed of *chich*. Ceramics from this level were much more frequent, and dated to the Late Formative.

Floor 9 was a well-preserved plastered surface, except where burned, deliberately cut, or penetrated by a root. Since only a portion of the floor is sealed, Level 10 was removed in two lots. Lot 1 consisted of the unsealed material filling the penetration of the northeast corner of the unit. This material consisted of loose brown silt with few stones. Lot 2 was the sealed, incredibly durable, 3-5 cm thick plaster and *chich* floor. While the ceramics from both lots dated to the Late Formative, those from the floor penetration were larger and more frequent.

The final floor to be excavated in Operation 8 was Floor 10. This 10 cm thick floor consisted of polished plaster over the usual floor sequence of packed *sascab* on *chich*. Like Floor 9, Floor 10 displayed a burnt patch in the north central portion of the unit. This floor was also cut in the northeast corner of the unit by the same feature that truncated Floor 9. The removal of this floor revealed another floor (Floor 11). The small ceramic sample from this floor indicates a Late Formative date for its construction.

Owing to time constraints, Floor 11 was not excavated. The removal of the overlying Floor 10 demonstrated that this floor too had been truncated by the same pit feature that cut Floors 9 and 10. Additionally, Floor 11 had been cut in the northwest corner of the unit, with the resulting void being filled with loose angular cobble-sized rocks. The exposure of this second pit following the removal of Floor 10 allowed a rush of cold air to escape. This suggests that the filled pit feature may be rather extensive.

In some respects, Operation 8 produced anticipated results, while it was surprising in others. It was expected that a plaza test pit located in a raised acropolis would produce a series of flooring events. Given our experience with Operations 1 and 2, we did not anticipate the abundance of floors that were ultimately identified. This frequent resurfacing provides excellent chronological subdivision of the ceramic column, even within occupational phases. A minimum of five flooring episodes occurred during the Late Formative, resulting in the raising of the surface of the North Acropolis 50 cm. Three floors were laid down in the Early Classic, adding another 40 cm to the height of the North Acropolis. A final two floors were built in the Postclassic, raising the North Acropolis another 40 cm.

Six of the floors were plastered. All of the plastered surfaces had some kind of post-construction modification; either burning, cutting, or both. Since this type of activity seems to immediately precede the floors burial by a later plaza floor, this suggests that these may be termination activities. Owing to the extremely small scale of Operation 8, it is impossible to say if these activities were reverential of desecratory in nature. Similar burning activities were also noted in Operation 2 (Johnstone 2001c: 44). The continued burning in this locality over a long period of time suggests that the burning might have been associated with activities on, or in front of, Structure N8W1-3. If this were the case, it would imply multiple construction periods for this imposing pyramid.

Operation 8 did not produce evidence for an occupational hiatus during the Early Classic. The three plaza floors suggest a robust occupation of this locality during this period. The North Acropolis did experience a construction hiatus, but this occurred during the Late and Terminal Classic periods. These results indicate that while Group B was continuously occupied, the focus of construction activities changed through time from the North Acropolis to the Central Acropolis and back again. A similar shift in construction foci has been noted for Seibal (Sabloff 1973).

Operation 9

Maya Kashak

During previous field seasons at Yo‘okop, surface collections in 2000, and excavations in 2001, produced cultural remains from the Middle Formative through the Postclassic. However, of those time periods, ceramics from the Early Classic are the most underrepresented. In order to recover remains from this period, Operation 9 was placed at the base of the east side of Structure S4W1-2 in Group A (Figure 41), a structure exhibiting Early Classic architecture in its Izamal-style megalithic stair. The research objective for this operation was to uncover plaza floors and a sealed Early Classic lot(s).

Operation 9 was a 2X1m test pit located at the base of the east side of Structure S4W1-2 in Group A. The location and size of the excavation were designed to increase the possibility of uncovering Early Classic occupational remains. Operation 9 was excavated using natural levels and all materials removed were screened using a 1cm mesh. Excavators used standard trowels, hand picks and brushes (see “Methods” this volume). A pit datum was established on the south side of the pit.

Operation 9, Level 1, Lot 1 (Figures 42 and 43) was composed of a dark organic soil and contained many ceramics dating to the Terminal Classic and Postclassic. At 19cm below the surface what appeared to be a step was uncovered on the western side of the pit. After further excavation and brushing, it was confirmed to be a step that reached 66cm eastward into the pit on the southern profile and 53cm in on the northern edge. The only additional materials in Level 1, Lot 1 were small to medium sized rocks, presumably from the collapse of the structure, and roots. As the excavation worked down below the top of the step, flakes of degraded stucco began to appear on the western face of the step. A plaza floor was uncovered throughout the entire unit at 42cm below the surface and began Level 2, Lot 1. This level produced the most ceramics with 139 sherds recovered. Of the numerous types recovered from this level, the latest group of sherds dated to the Postclassic (see “The Ceramics of Yo’okop: 2002 Field Season” this volume).

The materials recovered from Level 2, Lot 1, or below the first discovered plaza floor, were determined to all be in association with the step. The plaza floor consisted of standard dry core fill and stucco. A fewer number of ceramics were found in this level, as compared with Level 1, with small- to medium-sized rocks (5-10cm) and roots making an appearance. The base of the step was found at 49cm below surface level. Dry core fill began to appear in the south east corner at 50cm below ground level.

Level 2, Lot 1 was taken down to 58cm below the surface where a second floor (Floor 2) was encountered in the western half of the unit. In the eastern portion of the unit, the second floor was degraded beyond recognition. In Level 2, Chancenote Striated sherds, dating to the Late Formative, were recovered. However, there was representation from the Early Classic with Xanaba Red and the

Figure 41. Group A, Location of Operation 9

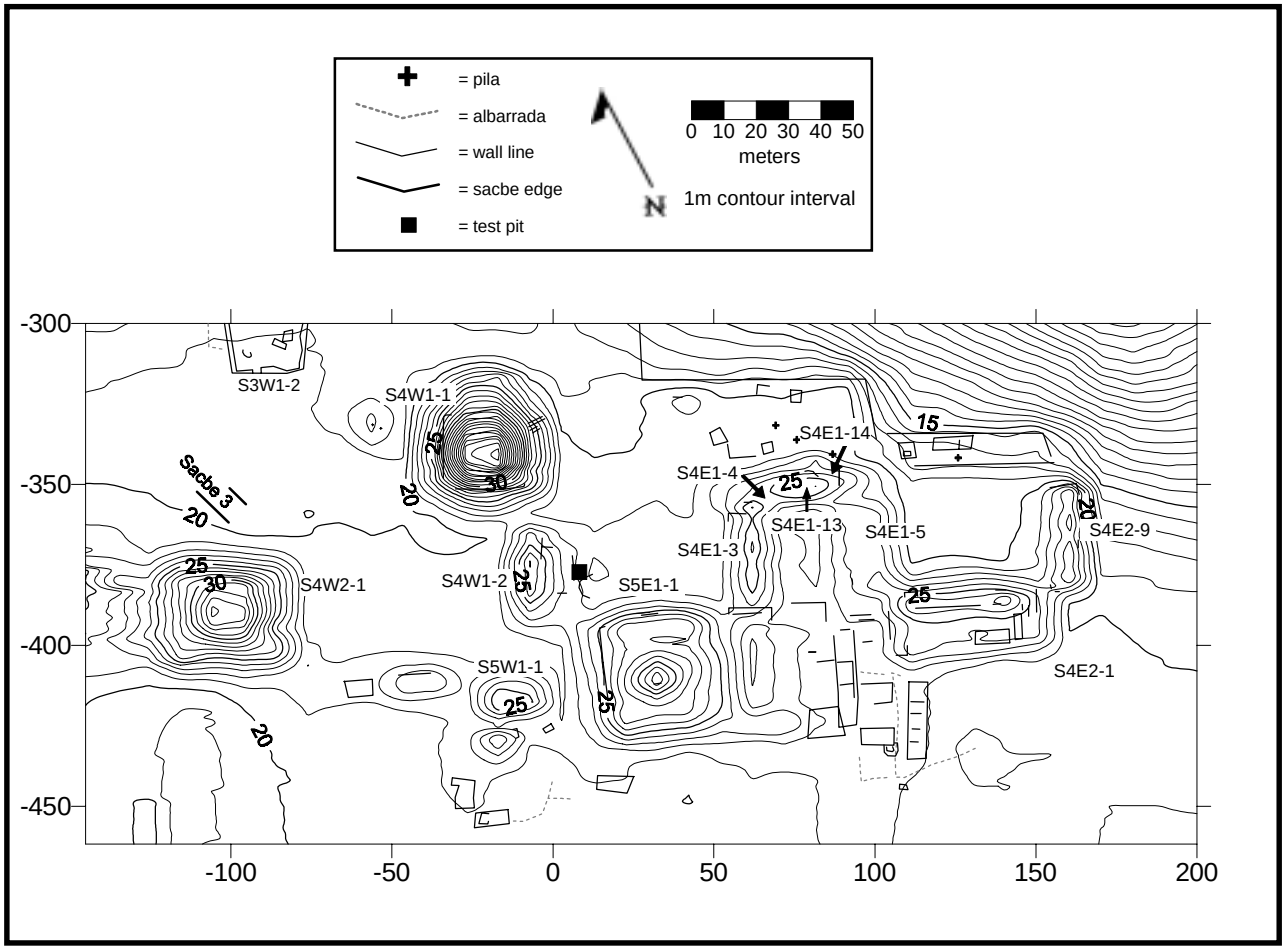


Figure 42. Operation 9, Northern and Eastern Profiles

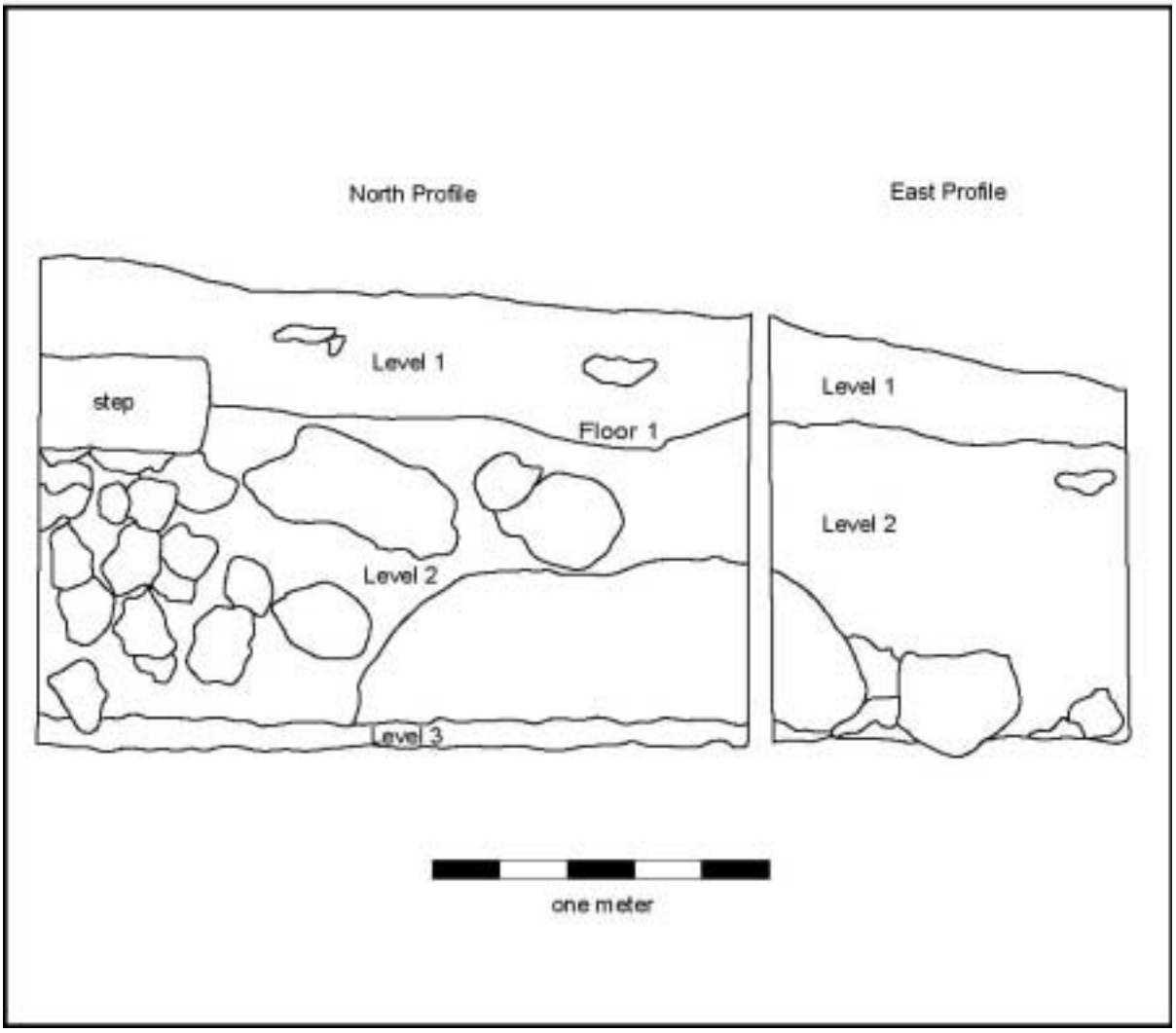
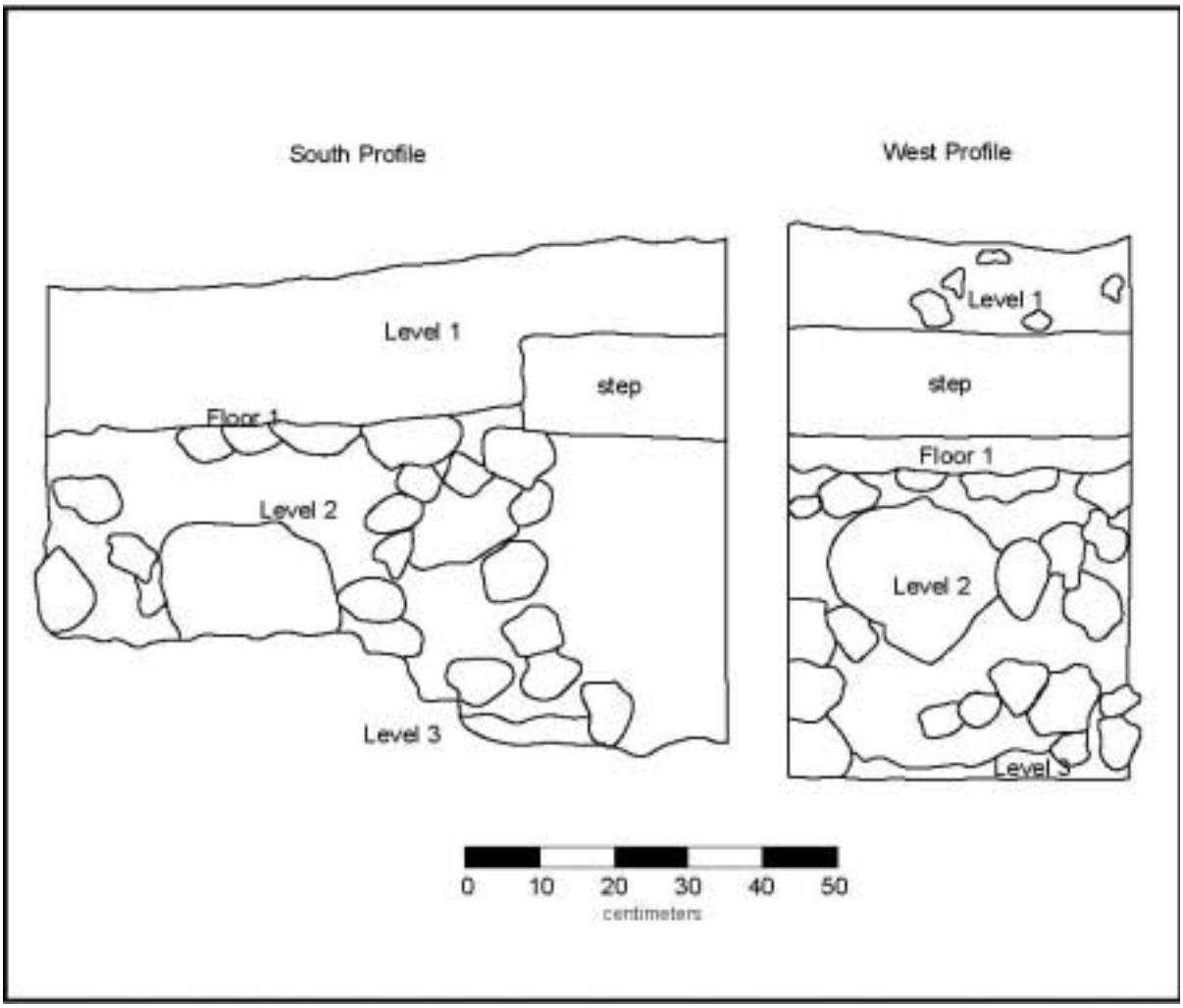


Figure 43. Operation 9, Southern and Western Profiles



Terminal Classic with ceramic types Yokat Striated and Muna Slate (see “The Ceramics of Yo’okop: 2002 Field Season” this volume).

Operation 9, Level 3, Lot 1 was started at 58cm below the surface and consisted of massive dry core fill, large rocks and few roots. As removal of the large rocks (>25cm) became more difficult, in terms of safety and in keeping profiles intact, the excavation area was reduced in size. Level 3, Lot 1 was taken down to 137cm below surface where an area of *chac luum* was encountered. Excavation continued under the *chac luum* in an attempt to increase the ceramic yield and possibly uncover a third floor. As the unit became deeper, the boulders used as dry core fill became increasingly unsafe to remove and Operation 9 was terminated at a depth of approximately 140cm below ground level.

With the appearance of Terminal Classic sherds in Level 2, the sealed floor lot, this date was assigned to the level and therefore undermined the researchers attempts at a sealed Early Classic lot(s). The presence of these different periods indicates either a mixing of the levels due to human error, or a mixing during construction. Given that it is difficult to acquire sterile fill for construction (Shaw personal communication), the latter is probably the most suitable explanation for the mixed types. Future excavations will serve to increase the amount of Early Classic cultural remains and give researchers a clearer understanding of this time period at Yo‘okop.

The Ceramics of Yo'okop: 2002 Field Season

Dave Johnstone, Ph.D.

The ceramics from the 2002 field season (Table 2) came from two contexts: plaza floor excavations (Operations 7-9) and the clearing and consolidation of an entire structure (Operation 6). Normally, one would expect the plaza excavations to yield a long ceramic sequence while the structural excavations would generate ceramics from a shorter span, coincident with its construction and use. Only Operation 8 conformed to expectations, with a series of sealed lots running from the Late Formative to the Postclassic. The other plaza excavations were either mixed, or of short duration. Operation 6 yielded sherds spanning a wide period of time, largely due to a thick accumulation of slope wash on its west side.

The ceramic goals for this season were to recover a larger sample of Postclassic sherds, and to identify sealed contexts containing Early Classic materials in an effort to subdivide that period. Operations 8 and 9 were placed to optimize the chances of recovering Postclassic and Early Classic materials owing to the presence of nearby structures, which could be dated to these periods on architectural grounds. Sealed lots were recovered from the Late Formative, Early Classic, Terminal Classic, and Postclassic periods.

The 2002 excavations did not proceed deep enough in the North Acropolis to encounter pure Middle Formative lots. The few sherds recovered from this period (Figure 44) were from secondary contexts. Thus, little new information can be added to what we know for the Izamna complex. The recovery of a larger ceramic sample from this period should therefore be a priority for future research at the site.

Large numbers of Late Formative Pahuatun complex (Figure 45) were recovered from sealed lots in Operation 8. The sequence of floors allows the subdivision of this period into early and late facets. The latter sees the introduction of Repasto Black on Red, and Xanaba Red to a complex dominated by the Sierra ceramic group.

While the expected sealed Early Classic lot from Operation 9 was not realized, three Early Classic sealed floor lots from Operation 8 were recovered. These lots were unexpected, as the Central Acropolis of Group B did not display evidence of either construction, or occupation, for this period. The absence of later types such as Maxcanu Buff, Hunabchen Red, and Tituc Orange Polychrome Bandas variety from these lots suggest the possibility that these floors were constructed in the early half of the Early Classic. While these types are present elsewhere at Yo'okop, the absence of sealed lots containing these types prohibits the separation of these later types into a Middle Classic ceramic complex at this time (Figure 46).

No sealed Late Classic lots were encountered during excavation this season. Many sherds of the Chac complex were recovered from secondary context in Operations 6 and 7 (Figure 47). Of interest is the relatively high number of Saxche Orange Polychrome sherds. This suggests that Yo'okop was engaged in strong

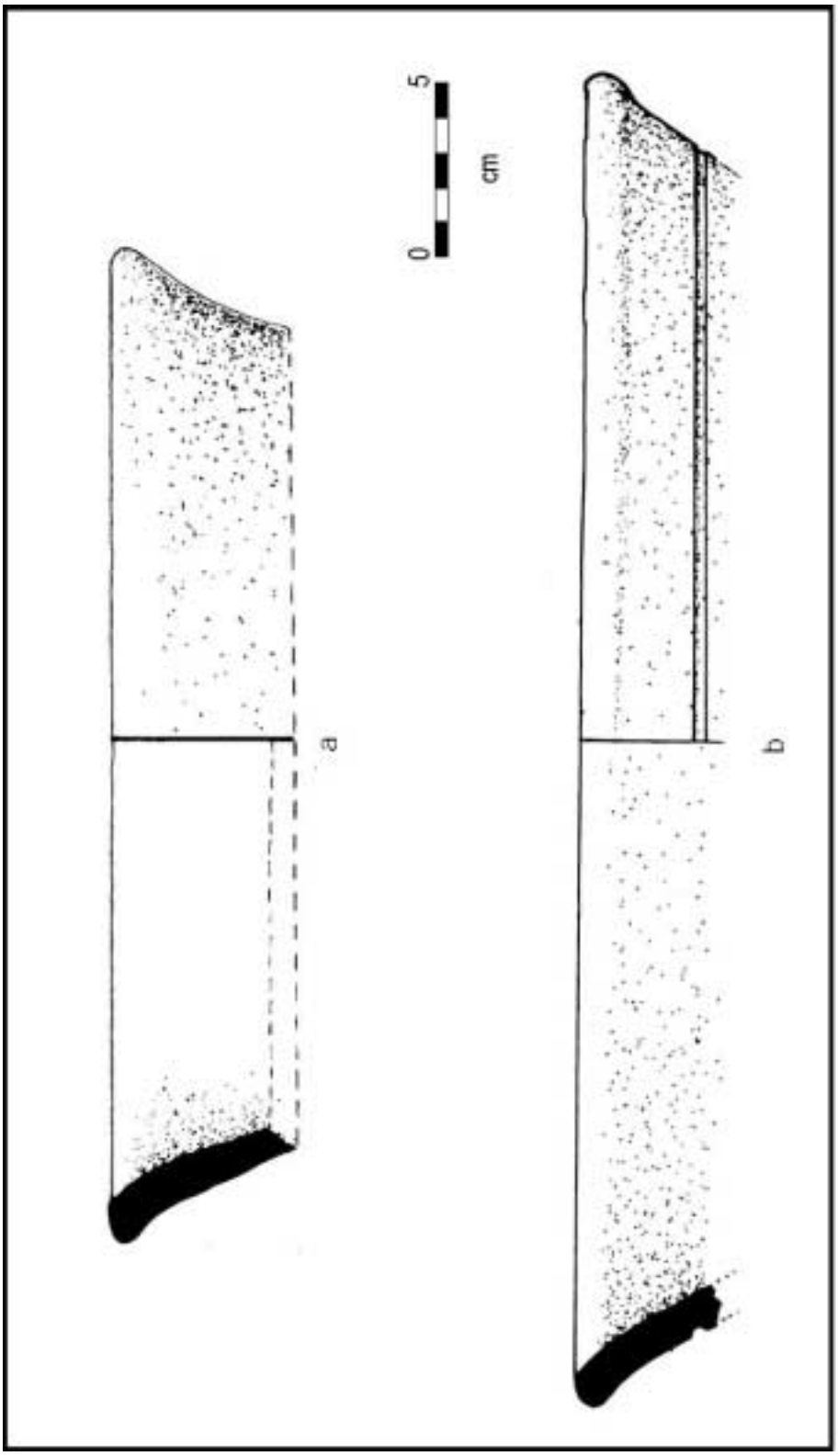
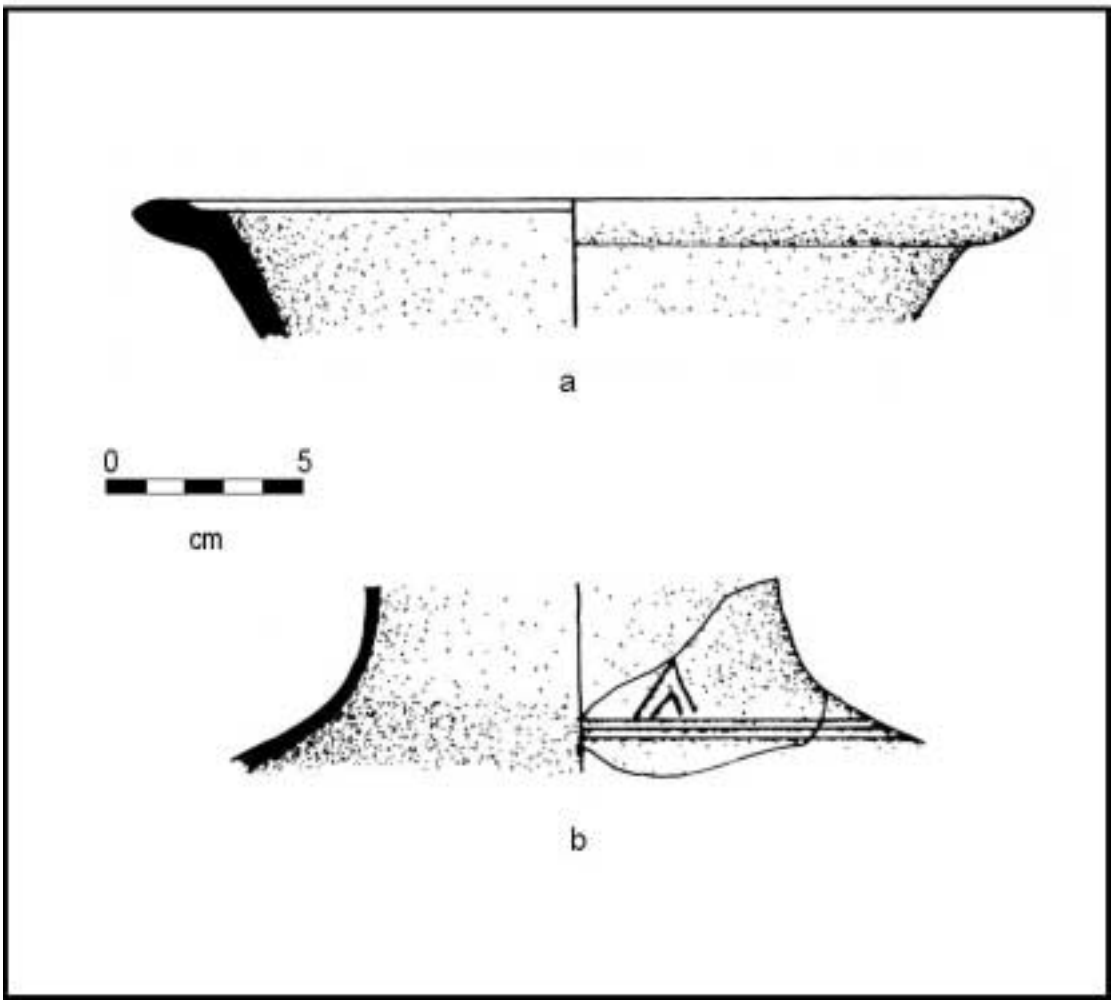


Figure 44. a) Dzudzuquill Creme to Buff, b) Tumben Incised

Figure 45. a) Sierra Red, b) Laguna Verde



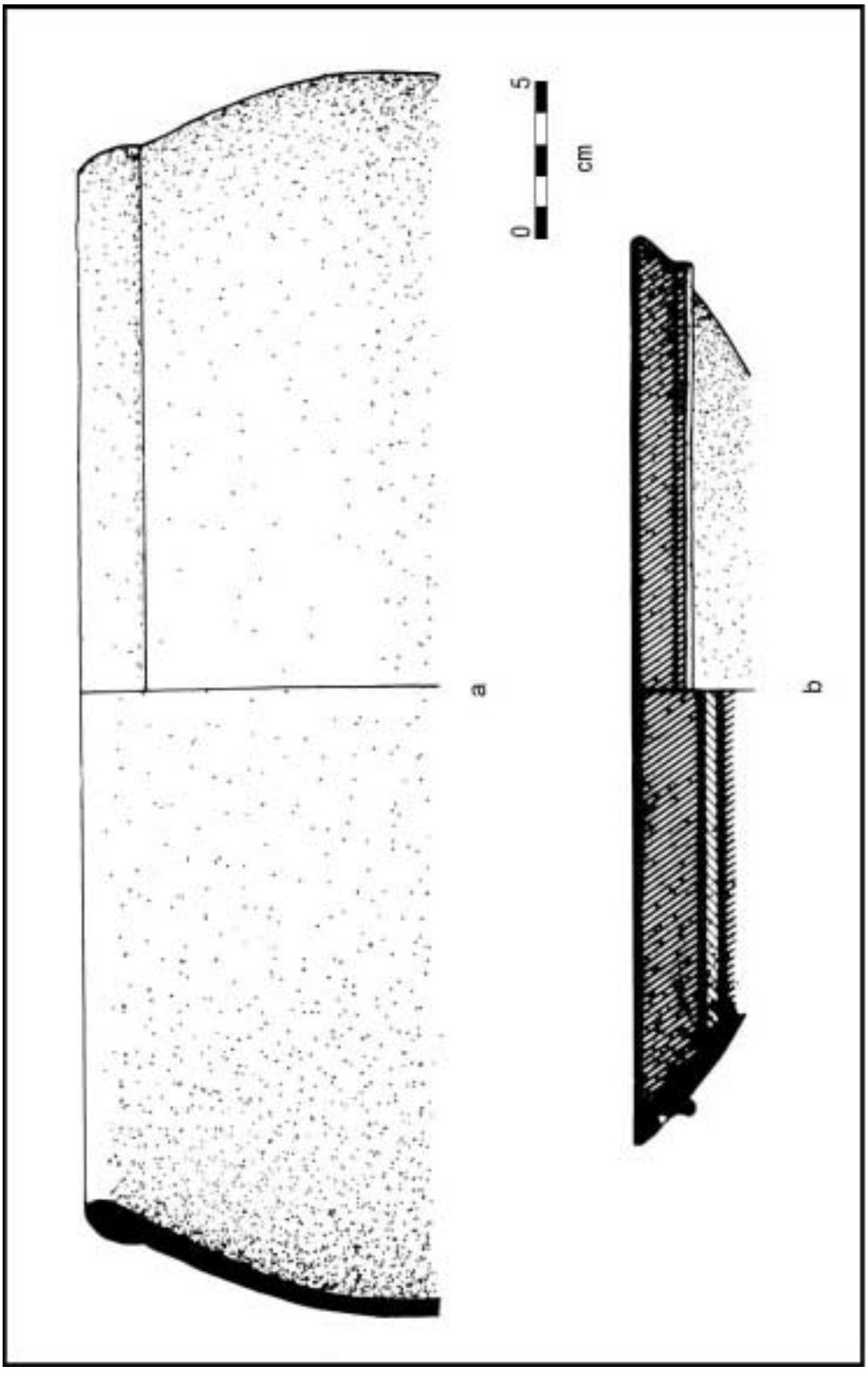
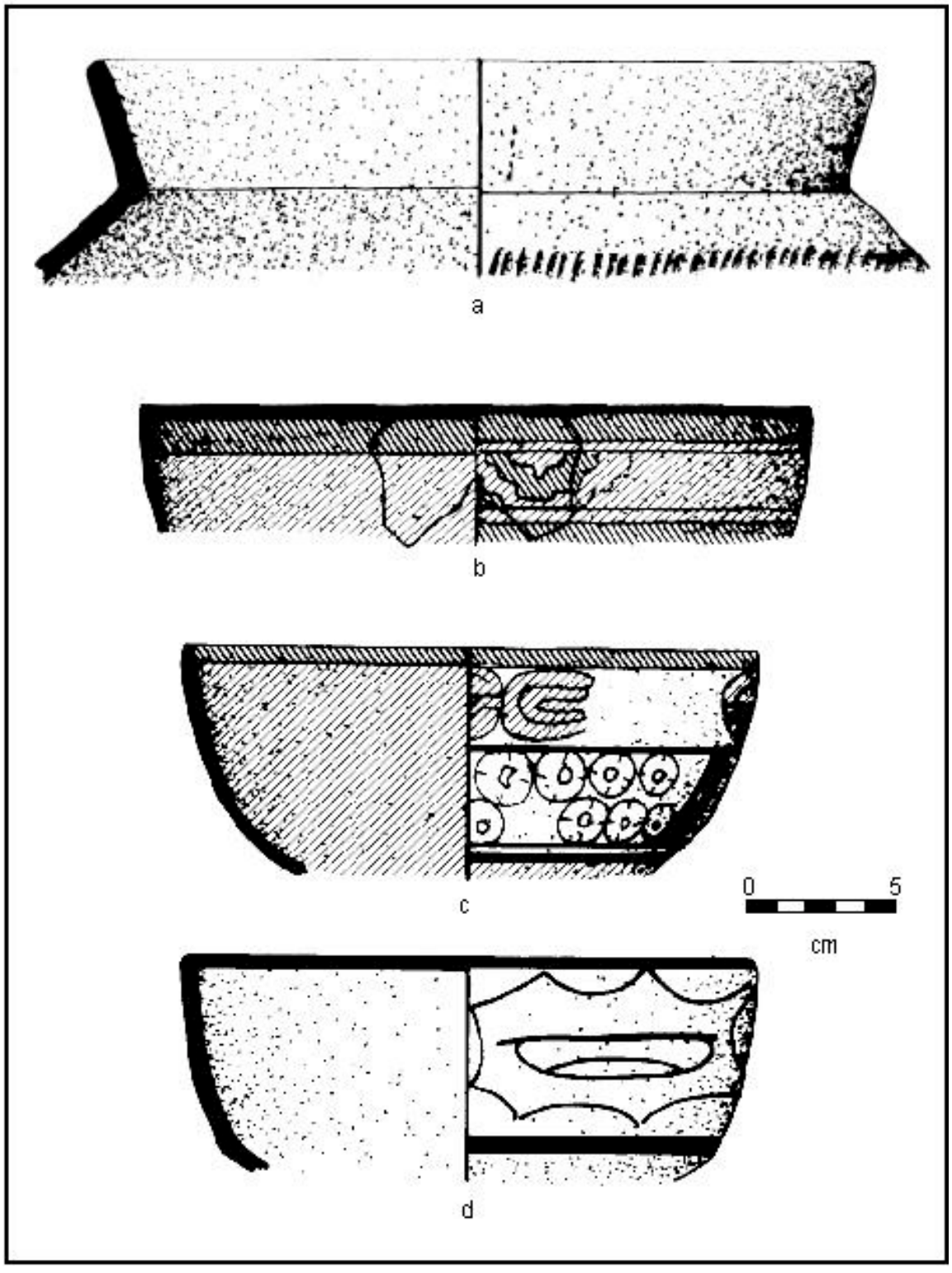


Figure 46. a) Xanaba Red, b) Tituc Orange Polychrome var. Tituc

Figure 47. a)Sacalaca Striated, b) Saxche Orange Polychrome, c) Juleki Creme Polychrome, d) Chantuori Black on Orange



trade with the Peten during the Late Classic. Only coastal sites in Quintana Roo such as Tancah (Ball 1982) and Xelha (Canche 1992) show higher relative frequencies, and then only marginally higher.

The Terminal Classic Balam Kin ceramic complex (Figure 48) was well represented by both surface and sealed contexts in Operations 6 and 7. Again this season, there is a near total absence of Sotuta sphere sherds typically associated with Chichen Itzá. Instead, there is the abundance of Puuc Slate Wares associated with Chum Unslipped wares that constitute the Cehpech ceramic sphere. The Terminal Classic thus marks a reorientation in Yo'okop's trade from the south to the north, as Thin Slate ware takes the place of Peten Polychromes as a ceramic trade ware.

While a large sample of Postclassic Kauil complex sherds were recovered, especially from Operation 8, this sample did little to shed light on the nature of the occupation of Yo'okop during this period. The most common type by far is Chen Mul Modeled (Figure 49). The majority of those Chen Mul fragments recovered during this season can be attributed to a single incense burner. This is not entirely surprising, given Operation 8's location at the foot of a pyramid supporting a Postclassic summit shrine. However, it does underscore the lack of ceramic understanding of this period and the need to continue targeting this period as a research focus.

While the 2002 excavations did yield a number of sherds from the target periods, namely the Early Classic and Postclassic, the number, kinds, and contexts of those sherds recovered prohibited the ceramic research goals to be attained. The Early Classic remains a long time period without demonstrable facets to subdivide it, while the Postclassic sample is a skewed one that is functionally incomplete.

Figure 48. a) Yokat Striated

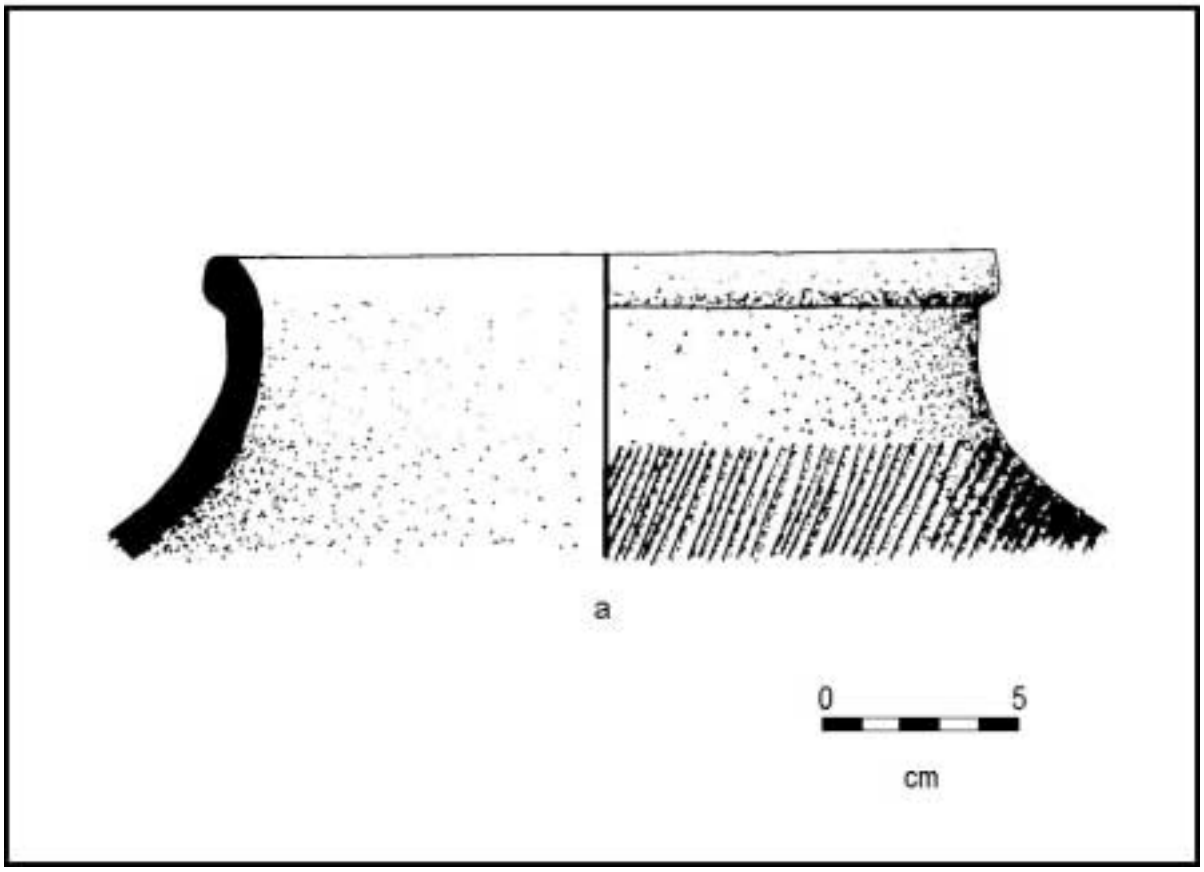


Figure 49. a) Chen Mul Modeled, b) Yacman Striated

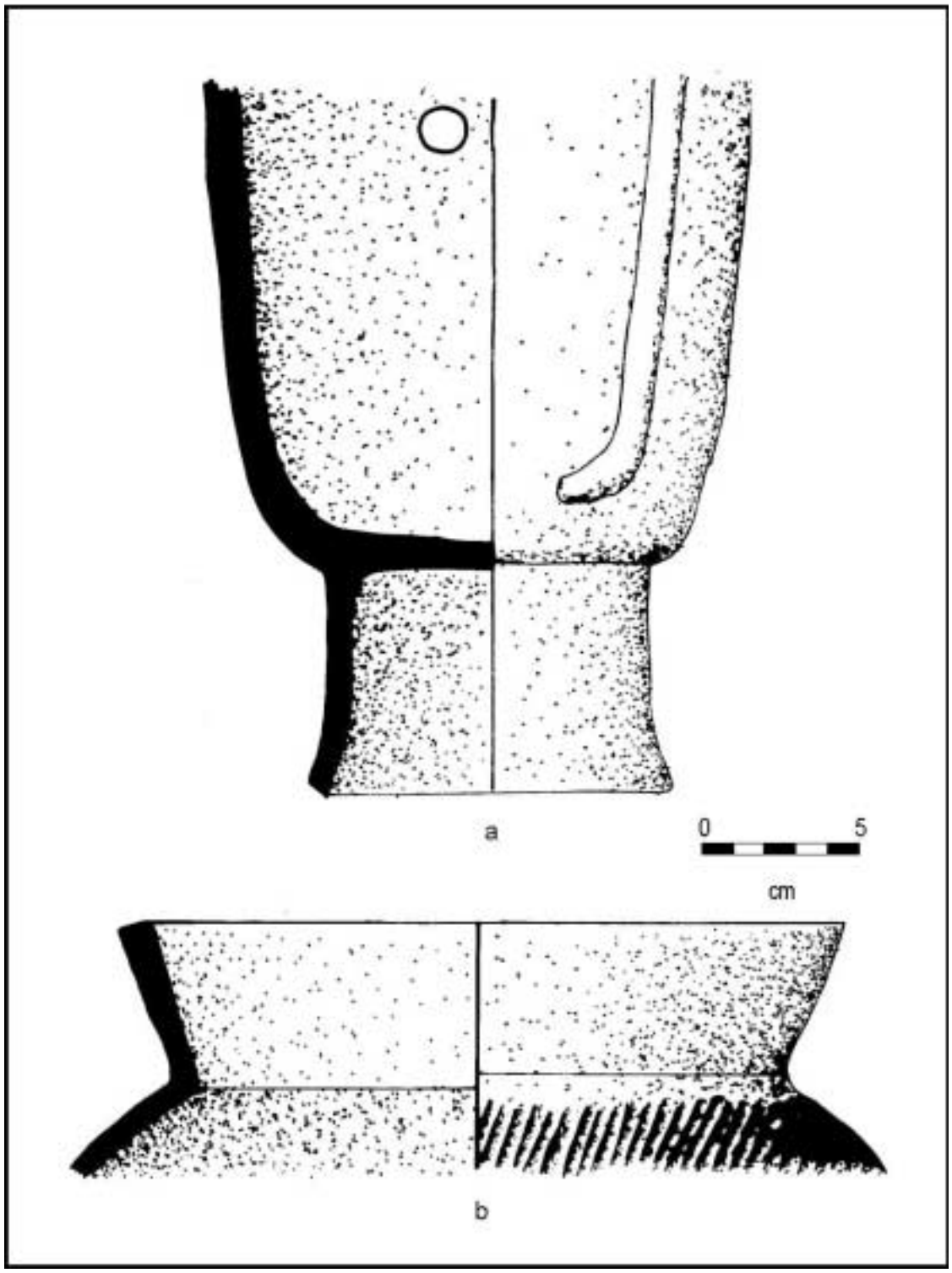


Table 2. Yo'okop 2002 Ceramic Analyses

	6a/1/1	6a/1/2	6a/1/3	6a/1/4	6a/1/6	6a/1/7	6a/1/8
Achiotes Unslipped							
Chunhinta Black v. Ucu							
Nacolal Incised							
Joventud Red							
Desvario Chamfered							
Guitarra Incised							
Dzudzuquil Cream to Buff							
Tumben Incised							
Tipikal Red on Striated							
Chancenote Unslipped	12	5		1			
Tancah Unslipped							
Xanaba Red (LF)				8			
Dzalpach Composite							
Sierra Red	4	1					
Laguna Verde Incised							
Ciego Composite							
Lagartos Punctate							
Repasto Black on Red							
Flor Cream							
Mateo Red on Cream							
Polvero Black							
Saban Unslipped							
Yaxcaba Striated	2			1			
Xanaba Red	11	6					
Caucel Trickel on Red							
Tituc Orange Polychrome v. Tituc							
Balanza Black							
Lucha Incised							
Aguila Orange							
Dos Arroyos Orange Polychrome		2					
Cetelac Fiber Tempered							
Elote Impressed							
Yalchak Striated							
Maxcanu Buff							
Hunabchen Red							
Kanachen Black							
Tituc Orange Polychrome v. Bandas							

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6a/1/1	6a/1/2	6a/1/3	6a/1/4	6a/1/6	6a/1/7	6a/1/8	6a/1/9
Dos Caras Striated	1							
Sacalaca Striated	1							
Encanto Striated v. Sacna	3			1				
Arena Red	9			1		1		
Batres Red								
Lakin Impressed		1						
Muna Slate (LC)	3							
Sacalum Black on Slate (LC)				2				
Saxche Orange Polychrome	2			1				
Juleki Cream Polychrome								
Chantori Black on Orange								
Sayan Red on Cream								
Chum Unslipped								
Yokat Striated	23	4		6	7	1		2
Muna Slate	2			1				
Sacalum Black on Slate								
Tekit Incised								
Tekit Incised v. Dzib								
Teabo Red								
Ticul Thin Slate								
Balantun Black on Slate								
Navula Unslipped								
Yacman Striated								
Chen Mul Modeled								
Mama Red								
Unidentified	278	16	8	47	4			1
Total sherds	322	21	8	59	11	2	0	3

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6a/1/11	6a/1/12	6a/1/13	6a/1/14	6a/1/15	6a/2/1	6a/2/3	6a/2/4
Achiotes Unslipped								
Chunhinta Black v. Ucu								
Nacolal Incised								
Joventud Red								
Desvario Chamfered								
Guitarra Incised								
Dzudzuquil Cream to Buff								
Tumben Incised								
Tipikal Red on Striated								
Chancenote Unslipped							1	
Tancah Unslipped								
Xanaba Red (LF)								
Dzalpach Composite								
Sierra Red	1	1				1	1	
Laguna Verde Incised								
Ciego Composite								
Lagartos Punctate								
Repasto Black on Red								
Flor Cream								
Mateo Red on Cream								
Polvero Black								
Saban Unslipped								
Yaxcaba Striated						1		
Xanaba Red						6	10	2
Caucel Trickel on Red								
Tituc Orange Polychrome v. Tituc								
Balanza Black								
Lucha Incised								
Aguila Orange								
Dos Arroyos Orange Polychrome						1		1
Cetelac Fiber Tempered								
Elote Impressed								
Yalchak Striated								
Maxcanu Buff							1	
Hunabchen Red								
Kanachen Black								
Tituc Orange Polychrome v. Bandas								

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6a/1/11	6a/1/12	6a/1/13	6a/1/14	6a/1/15	6a/2/1	6a/2/3	6a/2/4
Dos Caras Striated								
Sacalaca Striated								
Encanto Striated v. Sacna								
Arena Red						1		1
Batres Red								
Lakin Impressed								
Muna Slate (LC)								
Sacalum Black on Slate (LC)								
Saxche Orange Polychrome						2	1	
Juleki Cream Polychrome								
Chantori Black on Orange								
Sayan Red on Cream								
Chum Unslipped						2		
Yokat Striated				1	1	11	8	2
Muna Slate				1		2	2	1
Sacalum Black on Slate						1		
Tekit Incised								
Tekit Incised v. Dzib								
Teabo Red								
Ticul Thin Slate							1	
Balantun Black on Slate								
Navula Unslipped								
Yacman Striated								
Chen Mul Modeled								
Mama Red								
Unidentified	1		2			27	21	35
Total sherds	1	0	2	2	1	46	33	39

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6a/2/5	6a/2/6	6a/2/7	6a/2/8	6a/2/9	6a/2/10	6a/2/11	6a/2/12
Achiotes Unslipped								
Chunhinta Black v. Ucu								
Nacolal Incised								
Joventud Red								
Desvario Chamfered								
Guitarra Incised								
Dzudzuquil Cream to Buff								
Tumben Incised								
Tipikal Red on Striated								
Chancenote Unslipped			1					
Tancah Unslipped								
Xanaba Red (LF)		2						
Dzalpach Composite								
Sierra Red		2						
Laguna Verde Incised	1							
Ciego Composite								
Lagartos Punctate								
Repasto Black on Red								
Flor Cream								
Mateo Red on Cream								
Polvero Black								
Saban Unslipped								
Yaxcaba Striated								
Xanaba Red	1		4		1			
Caucel Trickel on Red			1					
Tituc Orange Polychrome v. Tituc								
Balanza Black								
Lucha Incised								
Aguila Orange								
Dos Arroyos Orange Polychrome			1					
Cetelac Fiber Tempered								
Elote Impressed								
Yalchak Striated								
Maxcanu Buff								
Hunabchen Red								
Kanachen Black								
Tituc Orange Polychrome v. Bandas								

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6a/2/5	6a/2/6	6a/2/7	6a/2/8	6a/2/9	6a/2/10	6a/2/11	6a/2/12
Dos Caras Striated								
Sacalaca Striated								
Encanto Striated v. Sacna								
Arena Red			1					
Batres Red								
Lakin Impressed								
Muna Slate (LC)			3					
Sacalum Black on Slate (LC)								
Saxche Orange Polychrome			1				1	
Juleki Cream Polychrome								
Chantori Black on Orange								
Sayan Red on Cream								
Chum Unslipped		3						
Yokat Striated		1	5					
Muna Slate	1							
Sacalum Black on Slate								
Tekit Incised								
Tekit Incised v. Dzib								
Teabo Red								
Ticul Thin Slate								
Balantun Black on Slate								
Navula Unslipped								
Yacman Striated								
Chen Mul Modeled				1				
Mama Red								
Unidentified	7	11	8	1			2	
Total sherds	8	15	18	2	0	0	3	0

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6a/2/14	6a/2/15	6a/3/1	6a/3/2	6a/3/4	6a/3/6	6a/3/8	6a/3/9
Achiotes Unslipped								
Chunhinta Black v. Ucu			2					
Nacolal Incised								
Joventud Red								
Desvario Chamfered								
Guitarra Incised								
Dzudzuquil Cream to Buff								
Tumben Incised								
Tipikal Red on Striated								
Chancenote Unslipped			24	10		1	1	1
Tancah Unslipped								
Xanaba Red (LF)								
Dzalpach Composite								
Sierra Red			11		2			
Laguna Verde Incised								
Ciego Composite			2					
Lagartos Punctate								
Repasto Black on Red								
Flor Cream								
Mateo Red on Cream								
Polvero Black								
Saban Unslipped								
Yaxcaba Striated			3	2				
Xanaba Red			117	33	4		1	2
Caucel Trickel on Red			11	4				
Tituc Orange Polychrome v. Tituc								
Balanza Black				1				
Lucha Incised								
Aguila Orange			1	1				
Dos Arroyos Orange Polychrome			6	1			1	1
Cetelac Fiber Tempered								
Elote Impressed								
Yalchak Striated								
Maxcanu Buff							1	
Hunabchen Red								
Kanachen Black								
Tituc Orange Polychrome v. Bandas			1					

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6a/2/14	6a/2/15	6a/3/1	6a/3/2	6a/3/4	6a/3/6	6a/3/8	6a/3/9
Dos Caras Striated			4			2		
Sacalaca Striated						21		
Encanto Striated v. Sacna			6	2				
Arena Red			3	3	1	1		
Batres Red								
Lakin Impressed								
Muna Slate (LC)				7	1	5		
Sacalum Black on Slate (LC)						1		2
Saxche Orange Polychrome			23	5	1		1	
Juleki Cream Polychrome								
Chantori Black on Orange								
Sayan Red on Cream								
Chum Unslipped								
Yokat Striated			85	12				4
Muna Slate			10	7				2
Sacalum Black on Slate			3					
Tekit Incised								
Tekit Incised v. Dzib								
Teabo Red								
Ticul Thin Slate				2				
Balantun Black on Slate								
Navula Unslipped								
Yacman Striated			7	2				
Chen Mul Modeled			4					
Mama Red								
Unidentified			213		11	11	4	17
Total sherds	0	0	358	40	14	41	5	25

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6a/3/10	6a/3/11	6a/3/12	6a/3/13	6a/4/1	6a/4/6	6a/5/1	6a/6/1
Achiotes Unslipped		1						
Chunhinta Black v. Ucu								
Nacolal Incised								
Joventud Red								
Desvario Chamfered								
Guitarra Incised								
Dzudzuquil Cream to Buff								
Tumben Incised								
Tipikal Red on Striated								
Chancenote Unslipped	1					3		
Tancah Unslipped								
Xanaba Red (LF)								
Dzalpach Composite								
Sierra Red								
Laguna Verde Incised								
Ciego Composite								
Lagartos Punctate								
Repasto Black on Red								
Flor Cream								
Mateo Red on Cream								
Polvero Black								
Saban Unslipped								
Yaxcaba Striated	1					1		
Xanaba Red	1					9		
Caucel Trickel on Red	2					1		
Tituc Orange Polychrome v. Tituc								
Balanza Black		1						
Lucha Incised								
Aguila Orange								
Dos Arroyos Orange Polychrome								
Cetelac Fiber Tempered								
Elote Impressed								
Yalchak Striated								
Maxcanu Buff								
Hunabchen Red								
Kanachen Black								
Tituc Orange Polychrome v. Bandas								

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6a/3/10	6a/3/11	6a/3/12	6a/3/13	6a/4/1	6a/4/6	6a/5/1	6a/6/1
Dos Caras Striated								
Sacalaca Striated								
Encanto Striated v. Sacna								
Arena Red								
Batres Red								
Lakin Impressed								
Muna Slate (LC)								
Sacalum Black on Slate (LC)								
Saxche Orange Polychrome			1			1		1
Juleki Cream Polychrome								
Chantori Black on Orange								
Sayan Red on Cream								
Chum Unslipped								
Yokat Striated	6							
Muna Slate								
Sacalum Black on Slate								
Tekit Incised								
Tekit Incised v. Dzib								
Teabo Red								
Ticul Thin Slate								
Balantun Black on Slate								
Navula Unslipped								
Yacman Striated								
Chen Mul Modeled								
Mama Red								
Unidentified	18	2			2	9		
Total sherds	24	2	1	0	2	10	0	1

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6a/7/1	6a/8/1	6b/1/1	6b/2/1	6c/1/1	6c/1/2	6c/1/3	6c/1/7
Achiotes Unslipped								
Chunhinta Black v. Ucu								
Nacolal Incised								
Joventud Red								
Desvario Chamfered								
Guitarra Incised								
Dzudzuquil Cream to Buff								
Tumben Incised								
Tipikal Red on Striated								
Chancenote Unslipped						1		1
Tancah Unslipped								
Xanaba Red (LF)								
Dzalpach Composite								
Sierra Red							1	
Laguna Verde Incised								
Ciego Composite								
Lagartos Punctate								
Repasto Black on Red								
Flor Cream								
Mateo Red on Cream								
Polvero Black								
Saban Unslipped								
Yaxcaba Striated						2		
Xanaba Red			2	6		1	3	
Caucel Trickel on Red				1		1		
Tituc Orange Polychrome v. Tituc								
Balanza Black								
Lucha Incised								
Aguila Orange								
Dos Arroyos Orange Polychrome			1	1				
Cetelac Fiber Tempered								
Elote Impressed								
Yalchak Striated								
Maxcanu Buff								
Hunabchen Red								
Kanachen Black								
Tituc Orange Polychrome v. Bandas								

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6a/7/1	6a/8/1	6b/1/1	6b/2/1	6c/1/1	6c/1/2	6c/1/3	6c/1/7
Dos Caras Striated							2	1
Sacalaca Striated								1
Encanto Striated v. Sacna								
Arena Red		1	4					
Batres Red								
Lakin Impressed								
Muna Slate (LC)								
Sacalum Black on Slate (LC)								
Saxche Orange Polychrome			1	1		2	1	3
Juleki Cream Polychrome								
Chantori Black on Orange								
Sayan Red on Cream								
Chum Unslipped								
Yokat Striated		1	1			3	2	
Muna Slate		1	3				2	
Sacalum Black on Slate								
Tekit Incised								
Tekit Incised v. Dzib								
Teabo Red								
Ticul Thin Slate								
Balantun Black on Slate								
Navula Unslipped								
Yacman Striated								
Chen Mul Modeled							2	2
Mama Red								
Unidentified	1		17	11	1	5	19	2
Total sherds	1	3	26	12	1	10	28	9

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6c/2/3	6c/2/4	6c/2/5	6c/2/6	6c/2/7	6c/3/1	6c/3/2	6c/3/3
Achiotes Unslipped								
Chunhinta Black v. Ucu								
Nacolal Incised								
Joventud Red								
Desvario Chamfered								
Guitarra Incised								
Dzudzuquil Cream to Buff								
Tumben Incised								
Tipikal Red on Striated								
Chancenote Unslipped	1		1					
Tancah Unslipped								
Xanaba Red (LF)								
Dzalpach Composite								
Sierra Red	1							
Laguna Verde Incised								
Ciego Composite								
Lagartos Punctate								
Repasto Black on Red								
Flor Cream								
Mateo Red on Cream								
Polvero Black								
Saban Unslipped								
Yaxcaba Striated			1					1
Xanaba Red		1	2					1
Caucel Trickel on Red							1	
Tituc Orange Polychrome v. Tituc								
Balanza Black								
Lucha Incised								
Aguila Orange								
Dos Arroyos Orange Polychrome								
Cetelac Fiber Tempered								
Elote Impressed								
Yalchak Striated								
Maxcanu Buff						1		
Hunabchen Red								
Kanachen Black								
Tituc Orange Polychrome v. Bandas								

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6c/2/3	6c/2/4	6c/2/5	6c/2/6	6c/2/7	6c/3/1	6c/3/2	6c/3/3
Dos Caras Striated								
Sacalaca Striated								
Encanto Striated v. Sacna								
Arena Red								
Batres Red								
Lakin Impressed								
Muna Slate (LC)				1			1	
Sacalum Black on Slate (LC)								
Saxche Orange Polychrome	1	1						
Juleki Cream Polychrome								
Chantori Black on Orange								
Sayan Red on Cream								
Chum Unslipped								
Yokat Striated	3						1	
Muna Slate						3		
Sacalum Black on Slate						1	1	
Tekit Incised								
Tekit Incised v. Dzib								
Teabo Red								
Ticul Thin Slate								
Balantun Black on Slate								
Navula Unslipped								
Yacman Striated								
Chen Mul Modeled								
Mama Red								
Unidentified	1	3	5	7		3		3
Total sherds	5	4	5	8	0	7	3	3

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6c/3/6	6c/3/7	6c/3/8	6c/4/1	6c/4/2	6c/4/3	6c/4/6	6c/4/7
Achiotes Unslipped								
Chunhinta Black v. Ucu								
Nacolal Incised								
Joventud Red								
Desvario Chamfered								
Guitarra Incised								
Dzudzuquil Cream to Buff								
Tumben Incised								
Tipikal Red on Striated								
Chancenote Unslipped					2			1
Tancah Unslipped								
Xanaba Red (LF)								
Dzalpach Composite			2	1				1
Sierra Red	1			1				
Laguna Verde Incised								
Ciego Composite								
Lagartos Punctate								
Repasto Black on Red								
Flor Cream								
Mateo Red on Cream								
Polvero Black								
Saban Unslipped								
Yaxcaba Striated			1		1			
Xanaba Red			2	1	3	3		1
Caucel Trickel on Red	3		1		3			
Tituc Orange Polychrome v. Tituc								
Balanza Black								
Lucha Incised								
Aguila Orange								
Dos Arroyos Orange Polychrome	4			2		1		
Cetelac Fiber Tempered								
Elote Impressed								
Yalchak Striated								
Maxcanu Buff								
Hunabchen Red						1		
Kanachen Black								
Tituc Orange Polychrome v. Bandas								

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6c/3/6	6c/3/7	6c/3/8	6c/4/1	6c/4/2	6c/4/3	6c/4/6	6c/4/7
Dos Caras Striated				3				
Sacalaca Striated				1		1		
Encanto Striated v. Sacna		1						
Arena Red					1			
Batres Red								
Lakin Impressed								
Muna Slate (LC)								
Sacalum Black on Slate (LC)							2	
Saxche Orange Polychrome			1	3				1
Juleki Cream Polychrome				1				
Chantori Black on Orange								1
Sayan Red on Cream								
Chum Unslipped				1				
Yokat Striated	1	14		4	9	4	1	5
Muna Slate				8	1	3		4
Sacalum Black on Slate					4	1		5
Tekit Incised								
Tekit Incised v. Dzib								
Teabo Red								
Ticul Thin Slate				1				
Balantun Black on Slate								
Navula Unslipped								
Yacman Striated								
Chen Mul Modeled								
Mama Red								
Unidentified	2	2		9	11	5		1
Total sherds	3	17	1	31	26	14	3	17

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6c/4/8	6d/1/1	6d/1/2	6d/1/3	6d/1/4	6d/1/6	6d/2/2	6d/2/5
Achiotes Unslipped								
Chunhinta Black v. Ucu								
Nacolal Incised								
Joventud Red								
Desvario Chamfered								
Guitarra Incised								
Dzudzuquil Cream to Buff								
Tumben Incised								
Tipikal Red on Striated								
Chancenote Unslipped								
Tancah Unslipped								
Xanaba Red (LF)	2							
Dzalpach Composite								
Sierra Red	1							
Laguna Verde Incised								
Ciego Composite								
Lagartos Punctate								
Repasto Black on Red								
Flor Cream								
Mateo Red on Cream								
Polvero Black								
Saban Unslipped								
Yaxcaba Striated								
Xanaba Red			4	3			1	1
Caucel Trickel on Red								
Tituc Orange Polychrome v. Tituc								
Balanza Black								
Lucha Incised								
Aguila Orange								
Dos Arroyos Orange Polychrome								
Cetelac Fiber Tempered								
Elote Impressed								
Yalchak Striated			1				2	
Maxcanu Buff				1				
Hunabchen Red								
Kanachen Black								
Tituc Orange Polychrome v. Bandas								

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6c/4/8	6d/1/1	6d/1/2	6d/1/3	6d/1/4	6d/1/6	6d/2/2	6d/2/5
Dos Caras Striated								
Sacalaca Striated								
Encanto Striated v. Sacna								
Arena Red								
Batres Red								
Lakin Impressed								
Muna Slate (LC)								
Sacalum Black on Slate (LC)								
Saxche Orange Polychrome		1	1					
Juleki Cream Polychrome					1			
Chantori Black on Orange			1					
Sayan Red on Cream								
Chum Unslipped	2							
Yokat Striated	3		9				11	1
Muna Slate								
Sacalum Black on Slate								
Tekit Incised								
Tekit Incised v. Dzib								
Teabo Red								
Ticul Thin Slate	1							
Balantun Black on Slate								
Navula Unslipped								
Yacman Striated								
Chen Mul Modeled		1						
Mama Red								
Unidentified			4					
Total sherds	6	2	15	0	1	0	11	1

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6d/2/6	6e/1/1	6e/2/1	6e/3/1	6e/4/1	7/1/1	7/1/2	8/1/1	8/2/1
Achiotes Unslipped									
Chunhinta Black v. Ucu									
Nacolal Incised									
Joventud Red									
Desvario Chamfered									
Guitarra Incised									
Dzudzuquil Cream to Buff									
Tumben Incised									
Tipikal Red on Striated									
Chancenote Unslipped							1	1	3
Tancah Unslipped									
Xanaba Red (LF)								2	
Dzalpach Composite									
Sierra Red						1	2		6
Laguna Verde Incised									
Ciego Composite									
Lagartos Punctate									
Repasto Black on Red									
Flor Cream									
Mateo Red on Cream									
Polvero Black									
Saban Unslipped									
Yaxcaba Striated				1					
Xanaba Red	1				1	1			2
Caucel Trickel on Red									
Tituc Orange Polychrome v. Tituc									
Balanza Black									
Lucha Incised									
Aguila Orange									
Dos Arroyos Orange Polychrome									
Cetelac Fiber Tempered						1			
Elote Impressed									
Yalchak Striated									
Maxcanu Buff									
Hunabchen Red									
Kanachen Black									
Tituc Orange Polychrome v. Bandas									

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	6d/2/6	6e/1/1	6e/2/1	6e/3/1	6e/4/1	7/1/1	7/1/2	8/1/1	8/2/1
Dos Caras Striated							6	4	3
Sacalaca Striated							8	3	7
Encanto Striated v. Sacna							2		
Arena Red								1	3
Batres Red									
Lakin Impressed									
Muna Slate (LC)									
Sacalum Black on Slate (LC)									
Saxche Orange Polychrome							2		1
Juleki Cream Polychrome									
Chantori Black on Orange									
Sayan Red on Cream									
Chum Unslipped									
Yokat Striated					1	2	8	11	18
Muna Slate					6	3	8	38	14
Sacalum Black on Slate									4
Tekit Incised								4	11
Tekit Incised v. Dzib								1	
Teabo Red						1	1	1	1
Ticul Thin Slate							2	3	
Balantun Black on Slate									
Navula Unslipped									
Yacman Striated						1		8	22
Chen Mul Modeled						1		345	25
Mama Red								2	
Unidentified						4	30	2	41
Total sherds	0	0	0	0	7	12	67	423	150

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	8/3/1	8/4/1	8/5/1	8/6/1	8/7/1	8/7/2	8/8/1	8/9/1	8/10/1	8/10/2
Achiotes Unslipped										
Chunhinta Black v. Ucu		1			2	1			1	
Nacolal Incised										
Joventud Red					1			2		
Desvario Chamfered										
Guitarra Incised										
Dzudzuquil Cream to Buff				2	1		13	16		1
Tumben Incised							1			
Tipikal Red on Striated		2								
Chancenote Unslipped	4	5		1	1			1		
Tancah Unslipped										
Xanaba Red (LF)					2					
Dzalpach Composite										
Sierra Red	2	7	1	19		7	12	57	18	2
Laguna Verde Incised								1	2	
Ciego Composite										
Lagartos Punctate										
Repasto Black on Red										
Flor Cream				2	2	3			1	
Mateo Red on Cream										
Polvero Black								2		
Saban Unslipped										
Yaxcaba Striated	6	4	6							
Xanaba Red	5	2	6							
Caucel Trickel on Red										
Tituc Orange Polychrome v. Tituc										
Balanza Black			1							
Lucha Incised										
Aguila Orange		3	1							
Dos Arroyos Orange Polychrome	5	2								
Cetelac Fiber Tempered										
Elote Impressed										
Yalchak Striated										
Maxcanu Buff										
Hunabchen Red										
Kanachen Black										
Tituc Orange Polychrome v. Bandas										

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	8/3/1	8/4/1	8/5/1	8/6/1	8/7/1	8/7/2	8/8/1	8/9/1	8/10/1	8/10/2
Dos Caras Striated										
Sacalaca Striated										
Encanto Striated v. Sacna										
Arena Red										
Batres Red										
Lakin Impressed										
Muna Slate (LC)										
Sacalum Black on Slate (LC)										
Saxche Orange Polychrome										
Juleki Cream Polychrome										
Chantori Black on Orange										
Sayan Red on Cream										
Chum Unslipped										
Yokat Striated										
Muna Slate										
Sacalum Black on Slate										
Tekit Incised										
Tekit Incised v. Dzib										
Teabo Red										
Ticul Thin Slate										
Balantun Black on Slate										
Navula Unslipped										
Yacman Striated										
Chen Mul Modeled										
Mama Red										
Unidentified	7	8	1	6		8	1	11	12	3
Total sherds	7	8	1	6	0	8	1	11	12	3

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	8/11/1	9/1/1	9/2/1	9/3/1	Total
Achiotes Unslipped					01
Chunhinta Black v. Ucu					7
Nacolal Incised					0
Joventud Red					3
Desvario Chamfered					0
Guitarra Incised					0
Dzudzuquil Cream to Buff	3				36
Tumben Incised					1
Tipikal Red on Striated					2
Chancenote Unslipped		3	4		92
Tancah Unslipped					0
Xanaba Red (LF)					16
Dzalpach Composite					0
Sierra Red	11			1	175
Laguna Verde Incised					4
Ciego Composite					2
Lagartos Punctate					0
Repasto Black on Red					0
Flor Cream					8
Mateo Red on Cream					0
Polvero Black					2
Saban Unslipped					0
Yaxcaba Striated		1			35
Xanaba Red			1		262
Caucel Trickel on Red					29
Tituc Orange Polychrome v. Tituc					7
Balanza Black					3
Lucha Incised					0
Aguila Orange					6
Dos Arroyos Orange Polychrome					30
Cetelac Fiber Tempered					1
Elote Impressed					0
Yalchak Striated					3
Maxcanu Buff					4
Hunabchen Red					1
Kanachen Black					0
Tituc Orange Polychrome v. Bandas					1

Table 2. Yo'okop 2002 Ceramic Analyses
(cont)

	8/11/1	9/1/1	9/2/1	9/3/1	Total
Dos Caras Striated		6			32
Sacalaca Striated		12	1		56
Encanto Striated v. Sacna		1			16
Arena Red		2			34
Batres Red					0
Lakin Impressed					1
Muna Slate (LC)					21
Sacalum Black on Slate (LC)		1			8
Saxche Orange Polychrome		2			63
Juleki Cream Polychrome					2
Chantori Black on Orange					2
Sayan Red on Cream					0
Chum Unslipped					8
Yokat Striated		11	1		304
Muna Slate		29	1		153
Sacalum Black on Slate					20
Tekit Incised					15
Tekit Incised v. Dzib					1
Teabo Red					4
Ticul Thin Slate					10
Balantun Black on Slate					0
Navula Unslipped					0
Yacman Striated		8			48
Chen Mul Modeled					381
Mama Red					2
Unidentified	4	55	1		1062
Total sherds	4	127	4	0	2971

Yo'okop 2000-2002 Non-Ceramic Artifacts

Annie Hanks

Most of the non-ceramic artifacts found during the 2002 season (Table 3) were located in or around Structure S3E1-5, adjacent to the *aguada* (see "Operation 6: Structure S3E1-5" this volume). In 2002 and 2001, materials were also recovered from plaza test pits. In general, there is a scarcity of raw materials for lithic tool manufacturing in the region, in particular the prized materials of obsidian and chert. It is believed that the Maya traded for prepared cores from volcanic sources in Guatemala, Mexico and Honduras. Obsidian is a naturally occurring glass produced by volcanic heat and pressure. The closest possible sources of high-quality chert are in Belize (Mitchum 1991). During all three seasons of research there have been few lithics found.

The projectile points (Figure 50) found during the Yo'okop 2002 summer season were sparse, to be exact, two. The points where found in a concentration of slope wash to the west side of Structure S3E1-5. One of the points is complete, while the other has the top broken off of it. Both points display a double side notch characteristic. The projectile points date stylistically to the Postclassic. The fact that they where found in this area indicates that, during the Postclassic, the site was used for more than just religious pilgrimages which are evidenced by Chen Mul *incensarios*. Since the point fragments were found near the *aguada,* it is possible that, just as modern Maya hunt deer and other game around this water source, the Postclassic Maya also may have hunted here. Also of interest to note if the Postclassic Maya were hunting around the *aguada* this may indicate that some vegetation may have been allowed to regrow around the water. The presence of this vegetation is consistent with a smaller and/or less centralized occupation of Yo'okop in the Postclassic. During Classic times, it is unlikely that this vegetation would have been allowed, as it would have permitted more debris to get into the *aguada*. Throughout Yo 'okop's occupation, the *aguada* was the primary source of drinking water, although a few *chultunes* have been located, so it would have been well maintained and heavy traffic of people or animals may have been restricted.

With the exception of one limestone example, all core pieces found at Yo'okop were chert. While limestone is more prevalent locally, chert would have been preferred for its predictability of fracture. The fact that individuals were even (Figure 51) using limestone at some point is a sign of desperation for materials. There were four bipolar core pieces and two core fragments which also indicated a maximum usage from all material available. The facts that the pieces were worked to the last possible nib and were not of high quality relate to not having a close source for material. Although no materials were sourced, obsidian and high-quality chert (Figure 52) are not local. Therefore they were brought in, possibly obtained though down-the-line trade exchange. In future seasons, materials might be sourced so that the economic and political connections between Yo'okop and other sites may be better understood.

Table 3. Non-ceramic Artifacts from the 2000-2002 Field Seasons

Description	Material	Munsell Color	Dimensions (L x W x T in mm)	Year	Context (Op/ Lev/ Lot)
mano	limestone	10YR 7/2	8.1x 8x 7.2	2001	2/3/2
sculptural	stucco	10YR 8/2	7.1x 5.8x 2.7	2001	5/2/2
ground	bone	10YR 8/3	1.8x .07x .05	2001	3/1/1
drilled	shell	10YR 8/1	2.3x 3.1x 3.02	2001	2/3/5
flake	chalcedony	2.5Y 8/4	2.5x 2.1x 07	2002	8/1/1
flake	chert	10YR 8/1	2x 1.1x .02	2002	6b/2/1
flake	limestone	7.5YR 7/6	2.5x 1.7x .03	2001	1/4/1
flake	chert	10YR 8/3	7x 9.7x 2.4	2001	2/3/5
flake	chert	2.5Y 8/3	1.7x 1.x .06	2001	4/1/3
flake	limestone	5YR 7/6	2x 3.1x .04	2001	2/3/5
flake	limestone	5YR 6/8	1.5x 2.2x .04	2001	1/4/4
flake	limestone	10YR 8/2	3.1x 1.5x .04	2001	1/4/1
flake	chert	10YR 8/1	1.7x 2.1x .03	2001	4/1/2
flake	chert	5YR 6/4	1.8x 1.3x .03	2001	1/4/1
flake	limestone	GLEY 1 6/1	2.8x 2.4x .07	2001	1/4/1
flake	chert	10YR 8/1	2.1x 1.5x .05	2001	4/1/1
flake	chalcedony	2.5Y 8/4	25.5x 2.1x .07	2001	4/1/1
flake	limestone	2.5Y 7/6	2.2x 2.1x .03	2001	3/1/1
flake	chert	10YR 8/1	1.8x 1.9x 0.4	2002	6a/3/1
flake	chert	10YR 3/1	2.6x 3.4x .02	2001	4/1/1
flake, retouch	chert	10YR 8/1	3.0x 2.5x .02	2002	6a/1/1
flake, retouch	chalcedony	2.5 Y 8/4	2.4x 4.7x 1.1	2002	6a/1/1
flake, bifacial	chert	10YR 8/1	3.7x 2.2x .03	2002	6a/1/1
bipolar core	chert	10YR 8/1	2.1x 1.6x 1.1	2001	4/4/1
bipolar core	chert	10YR8/1	2.2x 3.6x 1.4	2001	1/4/1
bipolar core	chert	10YR 8/1	2.3x 2.5x 1.2	2001	4/1/2
bipolar core	chert	5YR 5/8	3x 2.2x .08	2001	3/1/1
core fragment	chert	10YR 5/4	3.2x 1.9x 1.5	2001	4/1/1
core fragment	chert	5YR 5/8	2.7x 3.5x1	2002	6/2/3
core	chert	10YR 8/1	1.2x 1.6x .06	2001	4/1/2
core	chert	10YR 8/1	1.2x 1.1x .06	2001	4/1/2
core	chert	10YR 7/6	.09x 1.6x 1	2001	3/2/1
core	limestone	7.5 YR 8/3	2.5x 5x 1.3	2001	1/4/1
blade	obsidian	Gley 1 2.5/N	1.2x 1.8x .02	2001	3/3/1
blade	obsidian	Gley 1 2.5/N	1.5x 1.1x .03	2001	4/2/2
blade	obsidian	Gley 1 2.5/N	2.2x .08x .02	2001	4/1/2
blade	obsidian	Gley 1 2.5/N	1.5x .08x .02	2001	4/1/2
blade	obsidian	Gley 1 2.5/N	2.5x 1.1x .02	2001	3/1/1
point	chert	10YR 4/2	1.5x 1.1x .01	2002	6a/1/1
point	chert	5YR 3/4	1.9x 1x .02	2002	6a/1/1

Figure 50. Projectile Points and Blades from Yo'okop

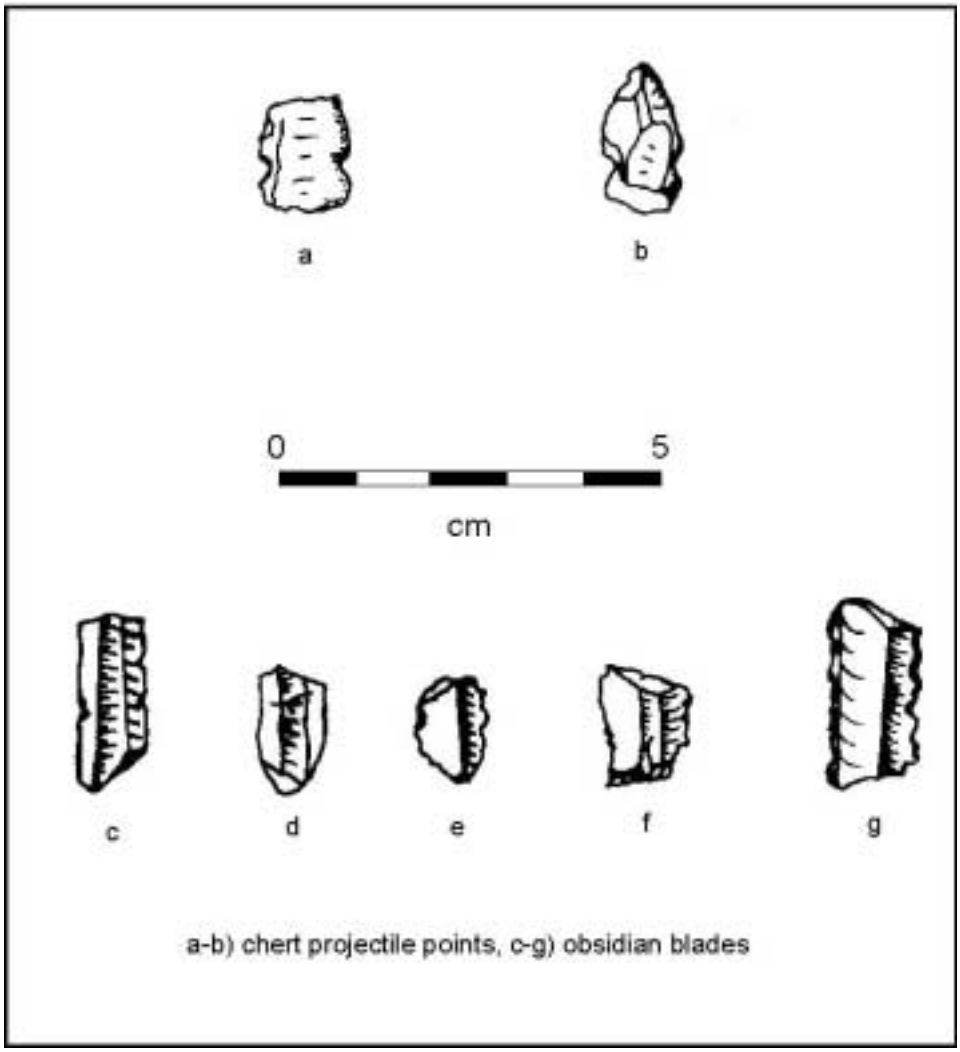


Figure 51. Bipolar Cores from Yo'okop

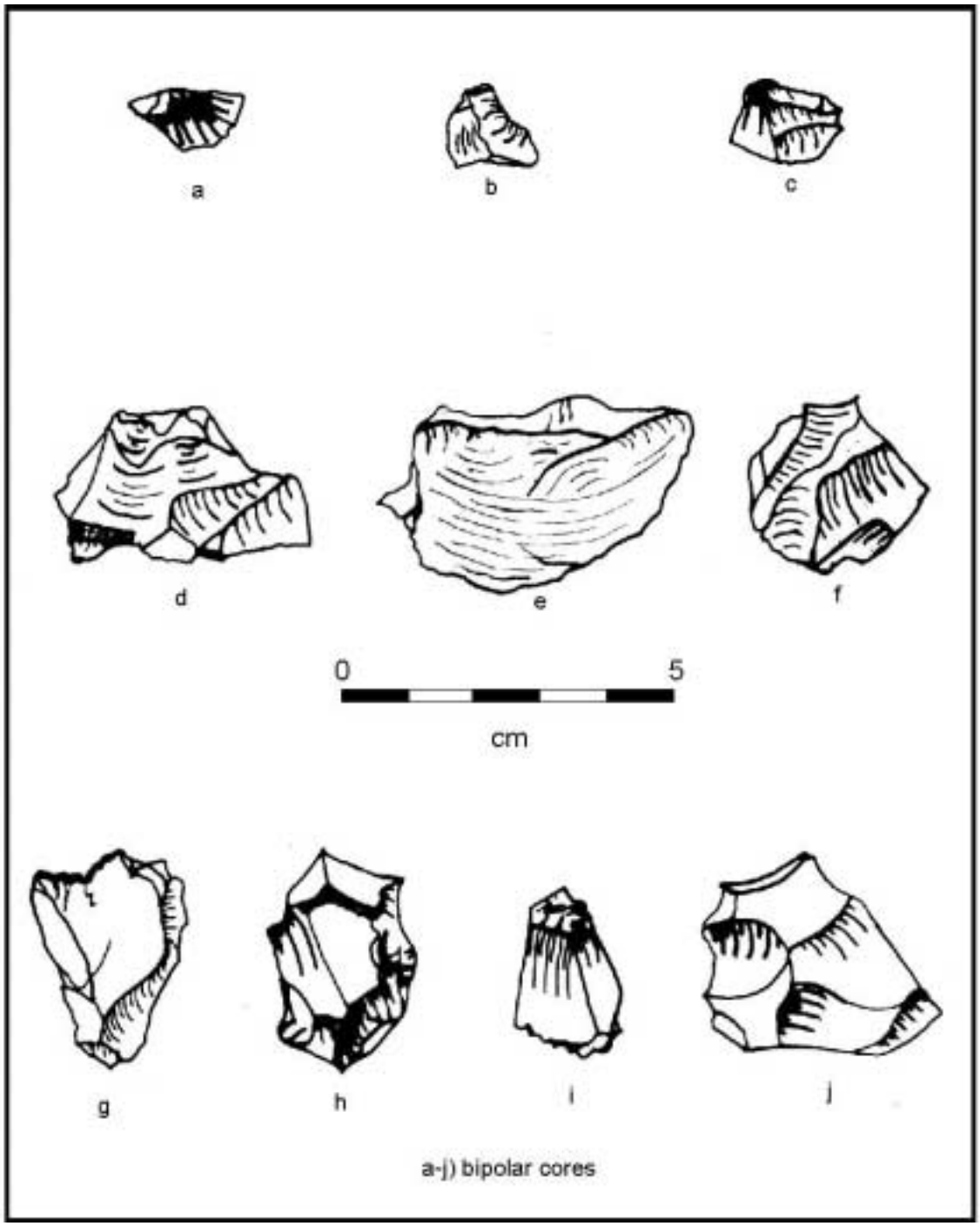
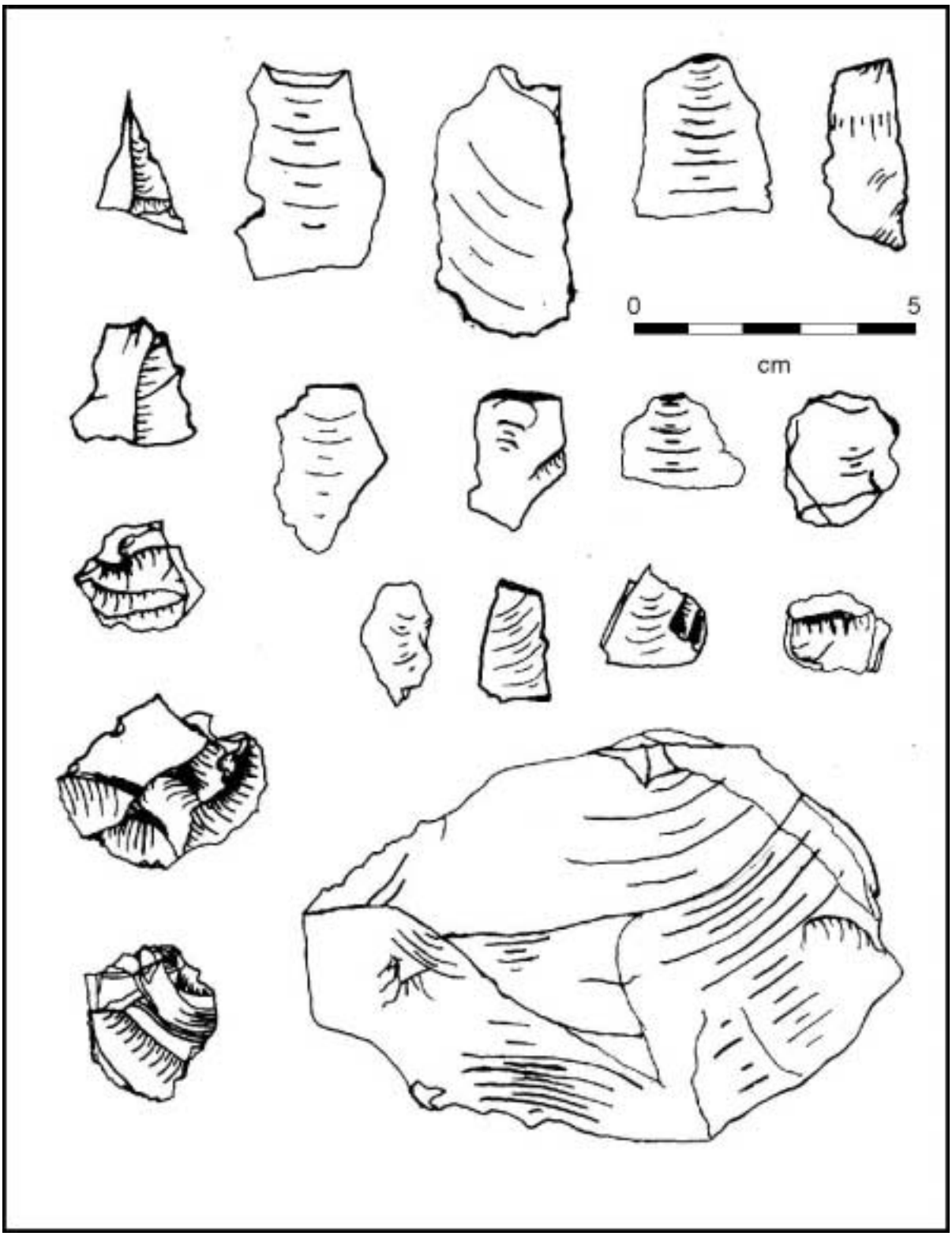


Figure 52. Flakes from Yo'okop

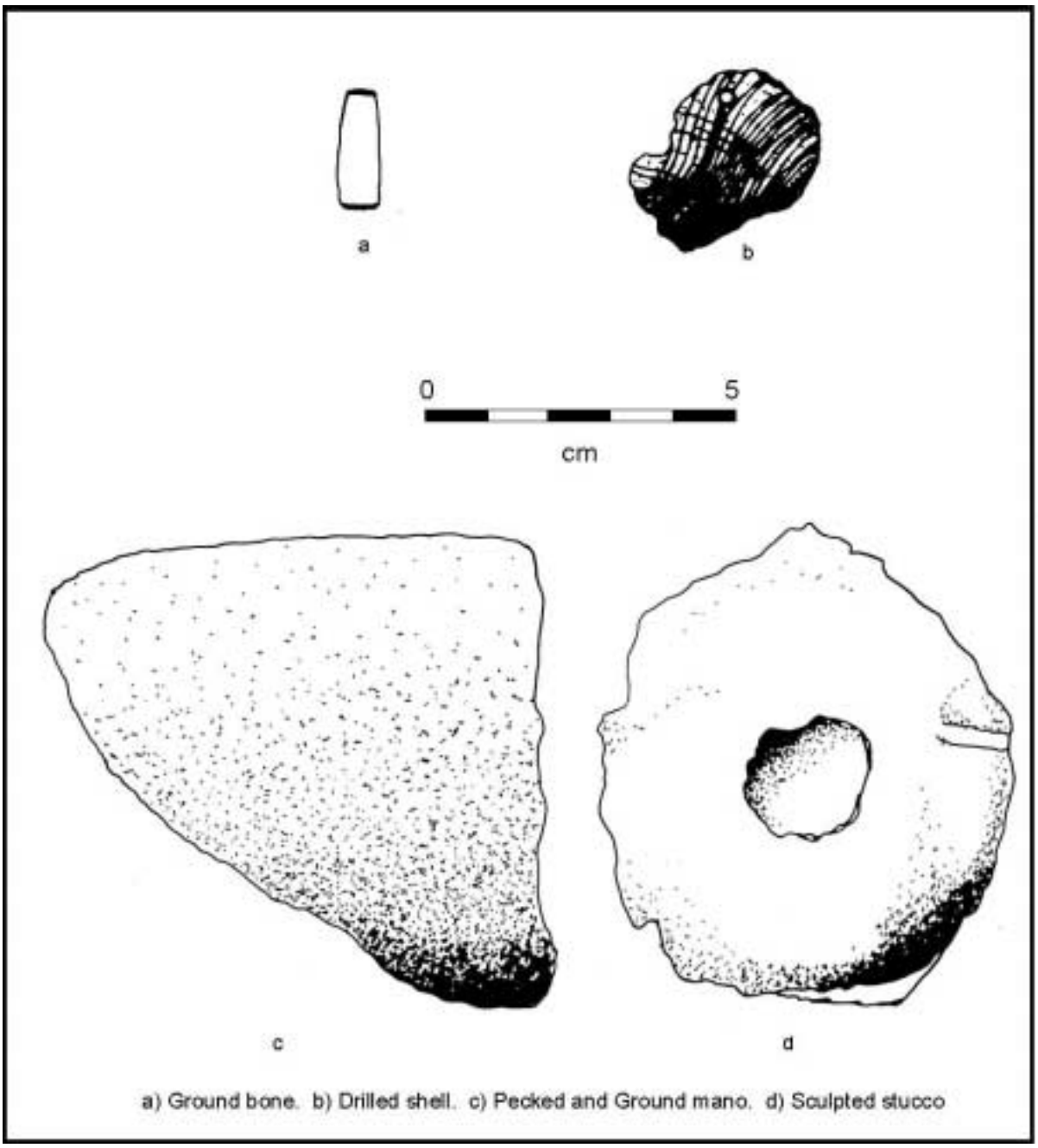


Some other non-ceramic artifacts of interest were found (Figure 53). A round piece of stucco was found in 2001 during the excavation of Operation 5. This piece had a hole in the center of it, and appears to be an ear flare from a more extensive facade. The excavation was located near the base of Structure S4E2-1, a substantial range structure (Figure 41). A *mano* or hand-held grinding stone was found the same year in Operation 2. This type of ground stone would have been used with a *pila* (*metate)*. Ground stone artifacts were used by the inhabitants of the site for a wide variety of tasks, and were often multi-functional tools. The main use is for the processing of plant materials such as maize, but some other uses may have included making temper for ceramics and manufacturing other tools. *Pilas* and *manos* thus are indicators of subsistence strategy. The distributions and concentrations of these materials may indicate changes in task specialization from area to area within the site. For this reason, *pilas* are regularly recorded during the mapping process. The 2001 *mano* was made from limestone and is broken on one side.

Material such as shell and bone were used by the Classic Maya to make ornaments, tools, and ritual objects. Marine shell was often used to make pendants and beads, sometimes incised with naturalistic or abstract designs. Human and animal bone were also decorated for ornamental or ritual use or shaped for utilitarian functions. At Yo'okop a small bone piece was found in Operation 3, near the "Castillo" (Structure S4W1-1). It was found in Operation 3 in 2001. The bone is completely smoothed on all four sides and may have been a part of a larger mosaic item. A modified shell was also recovered from Operation 3; it has a tiny circular drilled hole and may have served as a pendant.

The small number of non-ceramic artifacts are the result of a scarcity of certain materials, as well as the nature of the deposits excavated thus far at Yo'okop. The open plazas would have been kept clean while in use and therefore yielded very few whole artifacts. Sweatbaths generally lack most of the artifactual debris more common to middens and other domestic deposits. In future seasons, as excavations are extended to a greater range of contexts, the quality and quantity of the non-ceramic assemblage from Yo'okop should increase.

Figure 53. Ground and Modeled Artifacts from Yo'okop



a) Ground bone. b) Drilled shell. c) Pecked and Ground mano. d) Sculpted stucco

Settlement and Affiliation Shifts at Yo'okop

Justine M. Shaw, Ph.D.

Based upon three seasons of research at Yo'okop, it is possible to make some statements about the changes in Yo'okop's settlement patterns and general affiliations through time. This assessment is based upon architectural styles observed in the course of three seasons of mapping, ceramics from surface collections in 2000, and artifacts from the eight plaza test pits and one structural excavation that took place in 2001 and 2002. Due to the large scale of the site, and extremely localized, small samples, it must be realized that such an evaluation is very preliminary and may change as further research is conducted.

While some Middle Formative sherds had been observed on the surface, Johnstone's 2001 excavations in Group B (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. Operation 8, in Group B's North Acropolis (Structure N8W1-1) was terminated due to time constraints while still in Late Formative deposits and was therefore unable to determine if the northern part of Group B also was a focus of Middle Formative settlement. Interestingly, none of the excavations in Group A have yielded Middle Formative deposits, although the Group is positioned next to the site's water source. Only three sherds from this time period were found in the slope wash banked against Structure S3E1-5, indicating that Middle Formative use of the zone was light and/ or of a nature that did not produce many ceramics, such as a primarily agricultural focus. Based upon the limited available sample, it can only be said that the Middle Formative ceramic assemblage at Yo'okop appears much more similar to other sites in the Northern Lowlands, rather than the South.

The Late Formative ceramic assemblage most closely resembles other Chicanel sphere sites in the North and South, such as 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 one Late Formative masonry substructure associated with two plaster floors. The layout of this substructure establishes the orientation followed by subsequent constructions in the area through the Late Classic. In 2002, Operation 8 (in Group B's North Acropolis) yielded seven consecutive Late Formative plaza floors, further emphasizing the early importance of Group B. Group A witnessed moderately more activity in the Late Formative based upon simple ceramic counts (Table 2), although no pure Late Formative lots have yet been uncovered in the area.

The Early Classic is still not well understood at Yo'okop. Johnstone (see “The Ceramics of Yo’okop: 2002 Field Season” 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 southern affiliation may have impacted internal politics, establishing Group A as the predominant locus at Yo'okop during the Early Classic. While a strong Early Classic ceramic sample was expected from Group A based on the prevalence of diagnostic architecture in the Group, 2001 test pits (Operations 3 and 5) failed to provide such a sample. Unfortunately, 2002's Operation 9, designed to obtain sealed Early Classic lots, provided few sherds in its two lots; these could not be conclusively dated. Operation 9 did reveal a substantial plaza flooring episode in association with Izamal-style steps; this appeared to have been the first such flooring episode in the central portion of Group A. Group B's Early Classic occupation, based upon surface architectural styles and materials from Operations 1, 2, and 8, was minimal, following substantial architectural investments during the Late Formative. Operation 8 yielded two Early Classic floors indicating that occupation continued in the northern part of the Group, although with less intensity than the Late Formative had seen. Likewise, Group D still does not seem to have contained much, if any, construction at this time, based upon the paucity of Early Classic sherds in Operations 4 and 7 and the lack of surface architecture clearly dating to this period. This may be due to Group D's peripheral location within the site, suggesting a more nucleated architectural focus during the Early Classic.

Although 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 ceramic 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 2.5m raising of the Central Acropolis (Structure N5W1-7 in Group B) also took place during this period following an apparent abandonment of this locality from the Late Formative through 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. Based upon Operations 4 and 7, 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, also found in every excavation unit, reveal a continued, substantial occupation at Yo'okop during the time when many Southern sites collapsed. *Sacbe* 1 was constructed and amplified as it entered Group B, and Groups A, B, and D continued to be occupied and modified. However, the site's settlement pattern may have been significantly altered at this time, possibly as a response to climate change. While initial 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 and 2002 provided a different picture of the site during this period. Based upon our limited test pits, as well as visible surface remains, it now appears that Yo'okop was able to continue strongly through the Terminal Classic. Near the *aguada*, only the Structure S3E1-5, a possible sweatbath, appears to have been constructed and occupied during the Late to Terminal Classic (see "Operation 6: Structure S3E1-5" this volume). However, *Sacbe* 1 was built during this time, as were many structures in Group B. Instead of a near-abandonment coinciding with drought, evidence indicates that the site's settlement pattern may have been significantly reorganized.

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. Mapping in the vicinity of *Sacbeob* 1 and 3 in 2002 revealed that much of the "central" portion of the site was actually lacking in architecture; modern soils in this zone are reported by locals to be excellent for agriculture. Through its entire occupation span, and particularly during the Terminal Classic, Yo'okop's settlement may have resembled that of a "garden city," rather than a dense, Western-style downtown. The lowest portion of the site, which overlaps the zone of desirable soils, 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 Terminal Classic 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 D, and to some degree Group B, became the focus of new constructions, including structures and plazas. The question remains then - why were the inhabitants of Groups B and D 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 Groups B or D, 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. Much of our information related to Yo'okop's affiliations continued to come from non-excavated materials, both epigraphic and architectural. However, the past two seasons did bring the addition of excavated samples from eight 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 surfaces.

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, as well as the desecration of Structure S3E1-5 (see “Operation 6: Structure S3E1-5” this volume) may be a reflection of this political restructuring. Terminal Classic constructions, identifiable on the basis of core-veneer architecture, are largely residences, and are located in between, or adjacent to, earlier constructions. Western Cehpech ceramic types are clearly dominant at this time and Puuc-style architecture is prevalent, indicating the site may have looked to the northwestern 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 until 2002. This season's Operation 8 yielded a Postclassic plaza floor covered by Postclassic occupational debris in Group B's North Acropolis. Operation 7, originally thought to be a round *chultun* entrance, may instead be a Terminal Classic circular shrine looted during the Postclassic. Operation 9 also yielded numerous Yacman sherds (Table 1). Additionally, surface lots from Operation 6 (Structure S3E1-5) produced two Postclassic arrow points and a number of Yacman and Chen Mul ceramics. Based upon the ability, and need, to resurface a plaza floor in Group B, as well as artifacts indicating Postclassic domestic activities, it is hypothesized that the site was able to maintain a sizeable, constant population in spite of its distance from important Postclassic coastal sites, although it may have also served as a significant pilgrimage destination (Harrison 1979).

A Comparative Study of Ancient Maya Housing to that of the Contemporary Maya

Tara Holman and Veronica Miranda

This chapter discusses the similarities among and differences between ancient Maya housing and that of contemporary Maya housing. It focuses on the Maya solar, which is a housing piece of property or lot. This chapter will also touch on the importance of the solar and what can be determined by comparing and contrasting modern Maya housing to that of ancient Maya housing.

Both the modern *solar* and the ancient housing platform in this comparison are located in the Yucatan Peninsula. The modern Maya *solar* is located in the rural town of Saban in Quintana Roo, Mexico. The map of the modern Maya solar was surveyed and created by the authors. It was done with the full permission of the owners of the property. The ancient Maya housing platform (Structure N4W2-2) is located on the archaeological site of Yo'okop, situated approximately 12 km from the pueblo (Figure 2).

As much as there similarities between ancient and contemporary Maya housing there are just as many differences between the two. The time span between the two examples is 2,000 years or more, allowing enough time to pass for a significant amount of cultural change. Today Maya housing has changed in many ways including its structure, geography and internal make up.

In ancient times urban housing was scattered throughout the region, either singly or in small clusters (Wauchope 1938: 4). These *solares or* housing platforms were created to form satellite communities that were linked to the main city by *sacbeob* or roads (Foster 2002:228). The small urban communities usually surrounded natural resources or elite housing structures (Wauchope 1938:4).

In contemporary Maya housing of today *solares* are no longer haphazardly positioned. Due to Spanish and then Mexican influences Maya communities are geographically laid out on a grid system. *Solares* today face out towards streets. When looking at Figure 54, it is clear to see that this *solar* is facing the street.

Most of the roads in the community lead to the center of town, the main plaza (Wauchope 1938: 4). The main plaza is were all forms of communal affairs take place, including religion, politics and social interactions. It is the heart of the community.

On the Yo'okop site, only rock housing platforms and foundation braces were found (Figure 55), leading to the conclusion that the houses themselves were built out of biodegradable materials. Only elite housing and public architecture were vaulted or had stone walls. It is then safe to say from archaeological evidence and research that Maya housing consisted of *bajareque* walls, wooden post walls resting on top of limestone rock foundation braces (Shaw 2001a; Wauchope 1938:67). The roofs of these houses were thatched by either palms or grasses (Wauchope 1938:104).

In ancient times only elites were wealthy enough to own vaulted or rock walled houses. Today many Maya have at least one rock or cinder block structure on their *solar*. In Figure 54 there are two cinder block buildings on the *solar*.

Figure 54. Contemporary Maya *Solar*

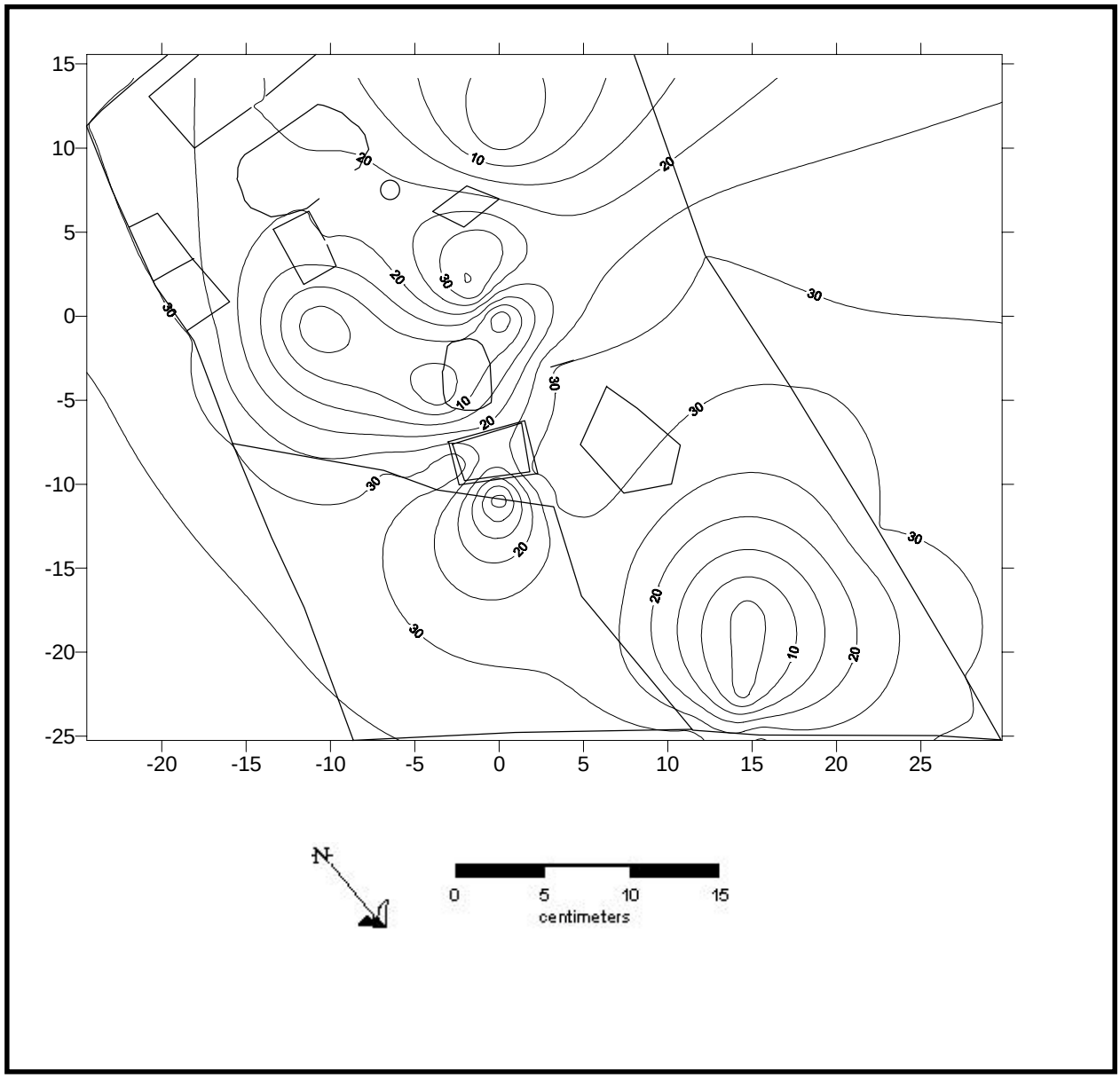
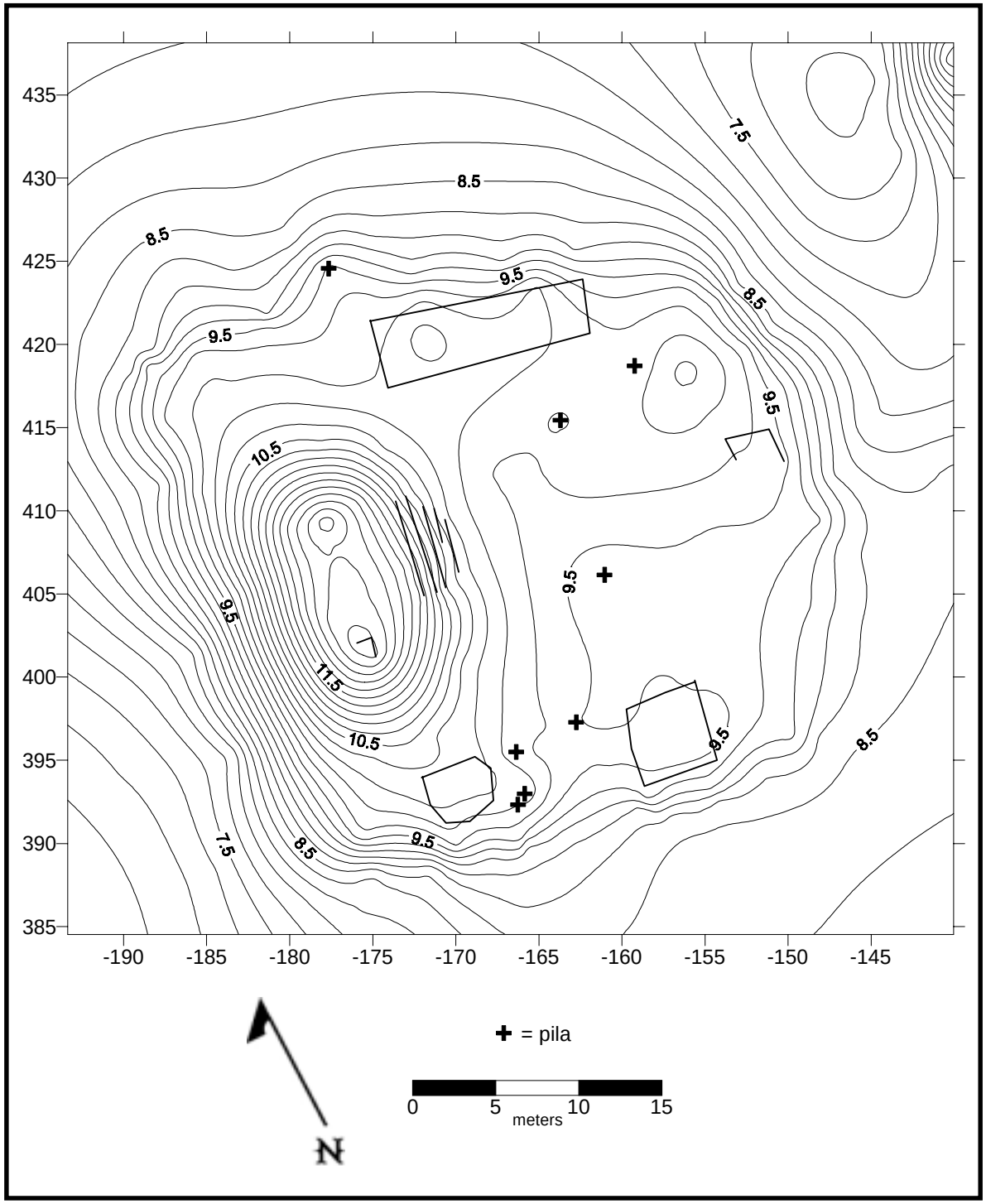


Figure 55. Ancient Maya Platform, Structure N4W2-2



Many of the present day Maya villages have some of the accommodations of the twentieth century. These accommodations are essential for the basic needs of the community, yet they were not present in ancient times. These basic necessities consist of electricity and running water. There is only one water source in each *solar*, located outside. Therefore there is no running water in the buildings. Almost all the Maya houses in Saban have electrical power. The electricity is mainly used to power lighting fixtures.

Many insightful pieces of information can be gained by understanding some of the similarities and differences between ancient and contemporary Mayan housing. The two seem so similar, but yet they are so dynamic. It has become clear that by looking at the past we can better understand the present.

The authors of this chapter would like to especially thank the owners of the *solar* for their hospitality, generosity and kindness.

Ethnographic Chapter: Saban, Quintana Roo, 2002 Field Season

Sandra Bever, Ph.D.

This chapter introduces the reader to the pueblo of Saban and its people. Data were collected in summer 2002 and included surveys, semi-structured interviews, and many hours of participant observation. Proyecto Arqueológico Yo'okop (henceforth referred to as "the project") relies on the generosity of the people of Saban to be able to work in the community and study their past. We are cognizant that the contemporary Maya are also interested in their ancestors and that they should play a prominent role in deciding how they should benefit from the work conducted at the site. We collected data from people that have worked for the project and some that have not participated in project activities. The aim of this ethnographic component was to grasp a basic level of understanding regarding the organization of the pueblo and its people, their perception of the archaeological project, and their aspirations for the future of the site.

The Research Setting

The community of Saban, Quintana Roo, is located along Highway 295 approximately 85 km south-southwest of the city of Valladolid. Saban pueblo is part of the *ejido* of Saban (for a description of the *ejido* system, see below), as is the adjacent community of Huay Max. It is a rural *ejido* that is removed from any main highway and is therefore isolated in terms of available transportation and services. The limestone-rich land makes slash-and-burn *milpa* agriculture the only viable subsistence strategy in the region and the sub-tropical climate is hot and humid with marked wet and dry seasons. The archaeological site of Yo'okop belongs to Saban *ejido* and is located roughly 12 km from the main square along a rocky and narrow unpaved road.

Saban's population of 3,500 is predominantly Yucatec Maya. Most individuals are fully bilingual and both Yucatec Maya and Spanish are heard around the community in nearly equal proportions. Older residents prefer to speak Yucatec Maya and may not be literate in Spanish, though they are usually able to follow a conversation in Spanish. Children are taught in Spanish at school, and unless their parents choose to raise them in a monolingual environment, they too will acquire both languages.

Saban continues to operate under the *ejido* land system. The *ejido* is a system of communal land ownership established in Mexico in the 1930s to ensure farmland to campesinos (peasant farmers) (Baños 1989). Being born within an *ejido* ensures *ejido* membership. Men who move into an *ejido* are not guaranteed land for *milpa*, and they do not have *ejido* rights, such as being considered for receipt of certain government aid packages. Land acquisition by *ejido* members was not a problem during the first few decades that the *ejido* system was in place (Stavenhagen 1993). However, since the 1970s, and increasingly with each passing year, there is less *ejido* land available for new *ejidatario*s (*ejido* members). By the late 1980s the federal government decided that the communal land system had

reached its practical end and major land reform efforts were implemented to abolish the *ejido* system. A constitutional amendment that concluded the old *ejido* system and allowed for the privatization of *ejido* property was enacted in 1992. The name of the government agency in charge of termination and the program itself is collectively referred to as PROCEDE (Programa de Certificación de Derechos Ejidales)[1]. Despite the legal dissolution of the *ejido* system, a number of communities continue to abide by the *ejido* structure and the federal government has reluctantly allowed for the retention of this traditional land holding system in certain situations.

Saban *ejido* is one such community that has refused participation in PROCEDE and retains the traditional *ejido* structure and organization. This means that *ejido* land—including the archaeological site of Yo'okop—is owned and managed in a corporate manner. In practical terms, this means that all federal assistance programs, state and municipal-supported initiatives, and economic development ventures must equally benefit all *ejido* members. In other words, participation in Yo'okop project activities must be offered to all *ejido* members, and non-*ejido* members are ineligible.

In Saban, there are three classes of people according to their relationship to land. The most privileged, and the class afforded federal recognition are the *ejidatario*s. People that were not born in Saban may be classified as *repobladores*. A *repoblador* can ask the *ejido* for land to make *milpa*, but does not qualify to receive any sort of government aid package aimed at *ejido* members. *Repobladores* may qualify for other types of government aid for farmers, however. A final classification is *avecindado*. This category of individuals has the least amount of access to land for *milpa* or other productive activities and they rarely qualify for any type of federal aid aimed at farmers.

Regardless of a person's classification in the *ejido*, all individuals may own a house plot that is not considered part of the *ejido*. This urban lot is called a *solar* and consists of the family's living quarters plus a large area in the back for productive activities. Many families grow herb gardens and keep small yard animals in their *solar*es. The *solar* usually contains fruit trees that provide food as well as shade. The *solar* is also the place to wash laundry, store corn, and keep firewood. Structures separate from the living quarters, such as the kitchen and the latrine, are also located in the *solar*.

The *ejido* of Saban has two elementary schools, a middle school, and a high school. Each elementary school has a classroom for each grade (K-6th) and a small playground area. The middle school also has a classroom per grade (7th-9th), basketball courts, and a playground. The high school has been in operation for nearly ten years by utilizing the middle school facilities. Federal and state government funding has paid for the construction of a high school building on the outskirts of town. The high school was completed in summer 2002 and includes classrooms, a science laboratory, basketball courts, and administrative offices. A small adult education program is available in Saban (with a classroom located along the main square), but it is poorly attended and is not expected to remain in operation much longer.

Although the adult education office is rarely open, the rest of Saban's main square is a busy place. A central park with large shade trees and benches is surrounded by stores, some homes, and various municipal buildings. The main *ejido* offices (called the *Comisaría*) are located across the park along Saban's main road. Small businesses are located around the main square including several general goods stores, several clothing and shoes stores, a poorly stocked pharmacy, and a small food market. Because all businesses are small and family owned, hours of operation are inconsistent and merchandize varies from day to day. The main items sold are soft drinks (in glass bottles so they must be consumed on site) and snack foods. The sheriff's department, a government clinic, the justice of the peace, the Catholic church, the adult education office, and one elementary school are located along the four main streets surrounding the square.

Interviews with three sheriff's deputies and two department officials indicate that Saban is generally a peaceful community but that over the last five years a growing population has resulted in an increase in the number of reported crimes. Cases of theft and vandalism are notable, especially vandalism at the schools and bicycle thefts. The other main problem facing the community is public drunkenness. Alcohol sales are prohibited in Saban, except during special events. However, there is a strong underground alcohol network and beer consumption is commonplace. The sheriff's department claims that most cases of theft and vandalism are related to alcohol consumption. In addition, cases of domestic violence also tend to escalate with the consumption of alcohol, though officers could not estimate the rate of domestic violence because people tend to consider this a family problem and rarely involve the authorities.

The sheriff's department is also in charge of Saban's only ambulance (the ambulance belongs to the *municipio*, not the clinic). Officers are responsible for transferring patients to the nearby hospital in Jose María Morelos, a larger hospital in Chetumal, or even as far as Mérida where the best facilities and specialists are located. If municipal funds are available the patient may be transferred without cost. If funds are not available, a patient's family is asked to pay for the gasoline. Fortunately, most of Saban's healthcare needs are treated at the local clinic.

The majority of the population qualifies for subsidized healthcare and is not required to pay for any services. A strong pre-natal and infant care program is in place where expectant mothers and children ages 0-5 are immunized, given subsidized foodstuffs, and provided with regular physicals, and dental and vision care. The clinic staff's main goal is prevention of communicable diseases, so the staff spends a considerable amount of time organizing and giving presentations to the community about topics ranging from diarrhea to respiratory diseases, dengue, and other pressing subjects. Monthly talks are given at the clinic grounds under the shade of a cool *palapa*. At other times the clinic staff goes to the schools to give age-appropriate talks to children. The clinic staff also makes sure to visit people that are unable to walk to the clinic or those who fear or mistrust western medical practices. Sabanenses (people of Saban) rely on several herbal healers and midwives that are regularly sought for medical help; the clinic staff believes that their role is to make sure the population knows that the clinic is also available to provide

medical assistance. The traditional healers are generally men and women whose specialization is a part-time endeavor.

The main occupation for men in Saban is *milpa* agriculture. The day-to-day work of the *milpa* varies according to the season, but it involves cutting down the bush, burning the fields, planting, weeding, and harvesting. Men may visit their *milpa* plots daily during the planting season and every other day during the late growing season. Many men must supplement *milpa* work with wages, but local wage labor opportunities are limited. Although there are a number of small businesses in Saban, many men seeking wages migrate south to the coastal city of Felipe Carrillo Puerto, or north to Cancun and surrounding tourist spots. There, men generally find seasonal jobs in the service sector or in construction.

Women care for the home and children and may participate in economic activities that are based at home, such as weaving hammocks. As primary caretakers of the children, women ensure that their children are fed, that they have clean clothes to wear, that they attend school and complete homework assignments, and that they are cared for when ill. Women are responsible for all household chores including cleaning the house, cooking, sweeping the home and the solar, and washing laundry. Furthermore, women are responsible for feeding and watering animals in their *solar*es and they also may be responsible for maintaining an herb garden. Some women work outside the home for wages, but these generally include younger women who are not married or married women who do not yet have children.

Traditional gender roles dictate that men are the main household providers and that they should work outside the home, while women should remain within the confines of their *solares* as much as possible. Today, both boys and girls attend school though many of them may not complete elementary school. If children attain a high school level education they are expected to secure a job upon graduation and offer financial help to their families. However, a woman's main role is that of wife (and by extension mother) and girls know they will most likely quit working once they marry. Educated boys, on the other hand, are expected to work and contribute money to their parents' household until they marry and begin supporting their own household. Marriage may take place soon after completing school as evidenced by the average age at marriage in Saban. According to Saban's municipal clerk, men usually marry at age 18 and women usually marry between the ages of 16 and 21.

The majority of Sabanenses are Catholic, although four different Protestant churches attract a regular following. Seventy-one percent of the 31 households interviewed claimed Catholicism as their religion, while the remaining 29% of households claimed to belong to one of the four Protestant denominations in Saban. Traditional Maya beliefs are held by some people, generally older men and women who regularly practiced in Maya ceremonies as children. Today, the traditional beliefs related to *milpa* agriculture and herbal healing are the most prevalent, though most people have combined traditional practices and rituals with Catholic and Protestant prayers and behaviors.

The Proyecto Arqueológico Yo'okop

A description of the data.

Data were collected by the principal ethnographer (Sandra W. Bever) and two student research assistants (Manuel A. Pérez and Veronica Miranda). Because the goal of this preliminary ethnographic component was to learn how the people perceive the archeological project, we aimed to interview men who have actually worked at the archeological site and women who have washed laundry for the project. However, we also made an effort to include people that have not worked for the project so that we could obtain their perspective as well. A household questionnaire was administered to 31 families. The questionnaire included socio-demographic information as well as questions directly pertaining to the archaeological project. Some of the questions were open-ended and participants were encouraged to provide as much detail as possible. At times the conversations would stray from the pointed questions, but this too was encouraged so that we could gain as much information as possible given our short field season (the ethnographic component was four weeks long). In addition to the semi-structured questionnaires, Bever and Pérez conducted eight special interviews with key community members including a top sheriff's official, the clinic's doctor, two merchants, and the *Comisario* (described below). The remaining data were collected through participant observation. The three investigators spent hours with families, shared meals with them, participated in special family events (such as birthday celebrations), attended school functions, and helped with daily chores (such as making tortillas). Table 4 summarizes some general characteristics of the sample population.

Table 4. A Description of the Sample Population (n=31)

Variable	Percent
Stage in the Developmental Cycle of the Family	19.4 young 48.4 middle 32.3 older
Primary Language Spoken in Household	64.5 Maya 12.9 Spanish 22.6 both
Primary Household Religion	71.0 Catholic 29.0 Protestant
Household Type	77.4 nuclear 22.6 extended

Before discussing the findings it is necessary to describe the types of work the project is able to offer the people of Saban. Both men's and women's work is based on a system of rotation so that all *ejidatario*s who wish to participate in the work are able to do so. As head of all *ejido* issues, the *Comisario* is in charge of creating a list of participants for the weekly work assignments. The archeologists receive the list of workers on Tuesday morning immediately before the workday begins (the workweek is Tuesday through Saturday). For the duration of the 2002 field season the project hired 11 men per week to work at the site and nine women per week to wash the crew's laundry. The men ride to the site with the archaeologists and help clear brush, dig, and screen for artifacts. Each man was paid 500 pesos[2] per week. The women pick up laundry bags on Friday and return the washed clothes on Saturday. Usually, each woman receives three bags of laundry and women are paid 15 pesos per bag. If enough artifacts are recovered the project may hire several older high school-aged children to help wash, sort, and number artifacts. Two groups of local students were hired in summer 2002. The following section includes brief case studies of men and women who participated in project work this field season.

Case studies.

Don Macario[3] Don Macario embodies some of Saban's most needy individuals. At 55 years old, Don Macario has no education and no skills other than farming. He is married, has four sons, and lives in a remote location far from the town center, along a dirt road. Although he has a cement home he does not have electricity and does not have the means to pay for the connection fee. He works in his *milpa* daily and looks for local wage labor opportunities to supplement his income. Don Macario makes between 50-100 pesos weekly weeding and clearing other men's *milpa*s. This income is barely enough to feed his family and he finds that he is constantly in debt if he wants to provide clothing and school supplies for his children.

Don Macario was very pleased to be able to work for the project for one week. The 500 pesos earned represented more than five times his regular weekly income. He found the work arduous and tiresome, but he was grateful for the job and never voiced a complaint. Unfortunately, Don Macario is monolingual (Maya only) and he found it very difficult to understand the archaeologists who communicate with the men in Spanish. He also wishes that he could be hired more than one week given his dire economic status. Overall, Don Macario believes that the project is a good thing for the community because it provides jobs during the summer, a time when food is most scarce in this agricultural community.

Don Alfonso Don Alfonso is one of Saban's retired individuals. At 74, he qualifies for government aid aimed at retired people, but he continues to make *milpa* and is in need of additional income to support himself and his wife. He has two grown daughters that live in nearby cities, but he cannot rely on them to provide him with a steady income. Like Don Macario, Don Alfonso was grateful for the opportunity to work for the project though it was only for one week. Don Alfonso found the work strenuous and exhausting. He said he knew he was not working at

the same pace as his fellow workers but that he tried his best. He also found it hard to understand the archaeologists' directions, but he said there were enough bilingual workers that could translate for him.

Don Alfonso is convinced that the project is an important component in Saban's economy. He says that he would rather work than receive government hand-outs and he believes that most people in Saban would agree with him. He hopes that the project will continue to hire individuals for years to come and that the work is expanded so that more jobs are available for longer periods (beyond the summer season). Don Alfonso wishes that the project could also meet other needs in the community like the need for better roads and better equipment for the schools, but he would be satisfied just knowing that a steady flow of work is offered by the project.

Don Seferino Although Don Seferino is a *repoblador* he worked for the project this summer. Don Seferino, 29, worked in place of his brother, Don Bernardo, who is an *ejidatario* but who runs his own business and does not have the time (or need) to work for the project. It is neither unusual nor difficult for men to find replacements, and the replacements are not required to be members of the *ejido*. Don Seferino is a former migrant who worked in Cancun as a mason's assistant for the past six years. He has two children and one on the way and his wife felt it was time for him to spend more time with his family. Don Seferino is building a home in Saban during his spare time after each workday so he actively pursues any local employment opportunities.

Don Seferino would like to work for the project on a regular basis, although he is aware that his status as a *repoblador* makes this unlikely. With his experience as mason's assistant he believes he has the necessary skills to do consolidation work at the site. In fact, he has worked at Cobá, another archaeological site, and he would like to be employed at Yo'okop for an entire field season. This way he would not have to migrate and he could make enough money to purchase the remaining cement and cement blocks to finish his house. He found the work a bit monotonous, but not difficult. In fact, Don Seferino was disappointed that some interesting architectural features were being uncovered at the end of his workweek because he knew he would not see what his many days of excavating eventually revealed. As a young man who has worked in various cities along the Mexican Caribbean coast, Don Seferino speaks Spanish well and is comfortable with the language skills of the archaeologists.

Doña Benita The work available for women in Saban is limited due to gender ideology constructs and the fact that job opportunities are quite scarce. One type of work that is available and readily accepted is washing laundry. This work can be conducted in the privacy of the *solar* and it does not take a woman away from her many other household chores. In addition, this type of work does not require any new skills and it does not require any language skills. Doña Benita, 36, is a good example of the women who choose to participate in this income-generating activity. She is the mother of five school-aged children and has many school-related expenses. Doña Benita's husband is a migrant and her weekly income fluctuates greatly. In addition, Doña Benita has a 12-year-old daughter who helps her mind the

younger children while she washes, and hangs the laundry once Doña Benita is done.

Like the men described above, Doña Benita was disappointed to have had only one week's worth of employment with the project. She thinks the project would be better if it could hire more people on a regular basis. She does believe, however, that the rotation system in place is fair because she knows there are many families like hers that could use the extra income. Doña Benita speaks Spanish and does not have a difficult time understanding the archaeologists. Her only observation is that the clothes worn by the archaeologists were extremely dirty and muddy and some pieces required a lot of scrubbing.

The economic impact of the project.

Because limited ethnographic data were collected in the four-week period it is impossible to conduct any test of significance that could provide meaningful results. Given the small sample size it is not plausible to make any definitive claims regarding the economic benefits of the project grouped by number of household members, number of income earners, primary spoken language, religion, stage in the developmental cycle of the family, or any of the other variables included in the household survey. Instead, the following qualitative data are included to demonstrate that The Proyecto Arqueológico Yo'okop is considered to provide important economic gains among participating households.

Sixty-one percent of households surveyed indicated that the money earned by working for the project was spent to meet immediate household expenses. This means that the income earned was spent mainly on food or household bills. Only 7% of households said the money earned was for savings or household "extras," such as paying for material to fix a fence or saving for a family celebration. Many respondents commented that the money came at a particularly needy time given that the *milpa*s are too young to supply any food and the corn stored from last year's harvest is nearly finished or altogether consumed. Another observation is that the money earned by working for the project was needed to afford the many school-related expenses associated with the *clausuras escolares* or end-of-school celebrations including graduation and promotion ceremonies. For example, students are required to buy special clothes for the occasion and families and friends may be obligated to buy gifts for the graduates.

Other respondents argued that by working for the project a man could delay or postpone migration at least for one more week. This may be important for men who tend their own *milpa*s and do not have the means to pay for someone else to tend the *milpa* while they migrate. Nearly every respondent also mentioned the benefit of working for wages while living at home. There are no costs related to transportation, food (men take their lunches to the site), lodging, telephone, and other unexpected expenses that usually make migration not cost-effective in the long run.

It is premature to claim that the project is financially benefiting all households in Saban, but it is clear that any wage labor opportunity is welcome in this community. As stated earlier, local wage labor opportunities are scarce and poorly

remunerated and while the men state that the work at the site is physically demanding they also admit that the pay rate is good. Even the households surveyed that have not worked for the project (29%) indicated that the pay rate is attractive; many respondents said the men's pay rate is comparable to what a migrant man may bring home after a week's work. Some economic information is summarized in Table 5 below.

Table 5. Summary of Economic Survey Questions

Question	Percent
Have you ever worked for the project?	29.0 no 71.0 yes
What is the money earned primarily spent on?	6.5 savings/extras 61.3 immediate household expenses
Do you prefer to migrate or work for the project?	6.5 migration 61.3 project-related work 32.3 don't know
What type of work will you do after Yo'okop's field season is over?	48.4 *milpa* work only 12.9 migration 38.7 unsure

Areas of concern.

Although language problems, for the most part, are considered minimal, 55% of respondents believe it is difficult to understand the archaeologists' Spanish. In particular, directions are difficult to understand if the speaker is not able to apply prepositions and if the speaker can only speak in the present tense. Aside from difficulty understanding directions, the only other problem is trying to have a casual conversation regarding the work at the site. Many people wanted to ask what the work was about. Common questions included: What are the overall goals? What do you expect to find? How do you know where to dig? and, Who were the people who lived here? The men wished that the archaeologists had better language skills so that these types of questions could be addressed on a daily basis. However, a number of men pointed out that they need to improve their Spanish skills as well.

Another area of concern is the lack of steady employment in Saban. Every respondent that had worked for the project (71%) was grateful for the opportunity and made a point of mentioning how local wage labor opportunities are infrequent or poorly paid. It is unclear to the people interviewed why the project work lasts only through the summer and why the archaeologists do not come during the dry season

when workdays would be less likely to be interrupted by bad weather. Sabanenses believe that the work at the site would be finished sooner if the project did not stop working after a few months. It would also mean a steady source of income for the *ejido* and this would benefit the entire community.

The main area of concern regarding the presence of the project in the *ejido* of Saban is the political nature of the rotation system. As mentioned earlier, the lists of eligible workers (both men and women) are generated by the *Comisario*. The *Comisario* is an elected official and it is believed that he will try to benefit those who belong to his party before extending opportunities to anyone else. The *Comisario* denies this bias vehemently and argues that despite his best efforts not everyone will be included in the lists because there is simply not enough work for every family in such a large community.

Despite the fact that the community is aware that only the *Comisario* is able to add a name to the lists of workers, many individuals believe that the archaeologists have a say in the creation of the lists. The topic of the lists came up during nearly every interview and each ethnographer was asked, more than a few times, if we could somehow recommend certain individuals they knew to be included in the lists. Some families think that the lists should be generated based on economic need. Others think that the work of the men should be based on skill and experience. The majority of people interviewed (55%) believe the rotation system is fair and should continue. However, 39% of people interviewed responded that they were not sure or did not know if the rotation system was fair. Many people commented that the rotation system is fair for the laundry workers because everyone has the same level of skill and the money earned by the women is not as much as the money earned by men in excavation work.

Another point of contention is the eligibility of workers for all project-related paid work. Members of the *ejido* cast a deciding vote that excluded all non-*ejido* members from being eligible for inclusion in the work lists. The reasoning behind this decision is that the archaeological site belongs to the *ejido* and only *ejido* members should benefit from any income generated there. Non-*ejido* members, in particular *repobladores* who are often the children of *ejido* members, argue that anyone who lives in the *ejido* should benefit from any local wage labor opportunities, including work at Yo'okop. Although the decision to exclude non-*ejido* members was established prior to the arrival of the archaeologists, it is believed by some people that the archaeologists could persuade the *Comisario* to include non-*ejido* members in the work lists.

People's perception of the project.

Sabanenes are genuinely interested in the work that takes place at Yo'okop, although reasons of interest vary. A large portion of people interviewed (84%) said that they are interested in archaeology in general. People voiced their interest to learn more about the work conducted by the archaeologists. They are interested in knowing how it is that archaeologists know what is important, what should be excavated, and how to go about doing the work itself. Sabanenes are also intrigued by the people that once lived at Yo'okop and the kinds of activities that they may

have undertaken. Thirty-six percent of respondents were interested in learning more about their direct ancestors, while 16% were mainly interested in learning the exact age of the site. Another 26% stated that they wanted to learn the overall goals behind the excavation. As one woman put it: "What is all the interest about? What exactly do you hope to find?"

In addition to expressed interest, a number of misconceptions exist regarding the work conducted at Yo'okop. The main misconception is that the archaeologists are out looking for gold and that once they find it they will take it away from Saban without the people knowing about it. A related misconception is that there is some great hidden treasure waiting to be unearthed and that it will be worth a sizeable fortune and make Saban rich. Some people also believe that the archaeologists will take all the artifacts with them back to the United States, although it is public knowledge that all artifacts are stored in Saban and that the project is in full compliance will all federal and state regulations governing archaeological research in Mexico.

Perhaps the greatest misconception is that Yo'okop is going to be the next Chichen Itza—a *zona*, or federally designated archaeological zone—with great tourist potential. Many respondents were unsure why the road leading to the site had not been paved yet considering the number of people that would soon be flocking to visit. Others were baffled as to why the archaeologists have excavated only small structures and have not "cleaned up" the larger pyramids. Surely, the thinking goes, the archaeologists realize that tourists would rather see another "Castillo" than a small platform or a *sacbe*. The belief is that there is a lot of money to be made once Yo'okop is made accessible to tourists.

Despite these misconceptions, many people have a more immediate goal in mind for the project. Though the general wish is for the site to one day become a *zona* and generate millions of pesos per year, most Sabanenses would be happy to know that the archaeological project will be employing people steadily over the next few years. Sixty-eight percent of respondents said they would prefer to work at the site rather than migrate for wages. The same percentage of people wished that more workers were needed each week and that the work lasted longer than the summer field season. However, it is difficult for Sabanenses to divorce "job opportunity" from "tourist potential," and 71% of respondents said that the main benefit of having the project in Saban is the potential to open the site of Yo'okop for tourism. Table 6 summarizes the perceptions of Sabanenses regarding the project.

Table 6. Survey Questions Regarding People's Perceptions of Proyecto Arqueológico Yo'okop

Question	Percent
Is the work rotation system fair?	6.5 no 54.8 yes 38.7 unsure
Are you interested in archaeology?	16.1 no 83.9 yes
What specifically would you like to learn about the site of Yo'okop?	35.5 learn about ancestors 16.1 age of the site 9.7 site's tourism potential 25.8 all of the above 13.0 other/nothing
Is language a problem when working with them the archaeologists?	54.8 yes; I don't understand them 25.8 no; I understand them 6.5 no; others translate for me 12.9 unsure
What long-term benefits do you hope the work at the site will bring to your community?	16.1 site will be cleaned up 3.2 site will open for tourism 41.9 project will offer jobs 29.0 all of the above 9.7 unsure

Project Commendations and Recommendations

The ethnographic component of The Proyecto Arqueológico Yo'okop's 2002 field season was preliminary, yet revealing. The general view that Sabanenses hold regarding the project is that it is the only visible economic development venture available to their community and that it is separate from the government-sponsored subsidies aimed at farmers. The archaeologists in charge of the project are viewed as powerful and wealthy, but they are also respected for their knowledge and genuine concern over Yo'okop's history. Participant observation and informal conversations also illustrate that the archaeologists are increasingly gaining the community's trust. One man explained the level of trust felt by him in this way: "*A los arqueólogos si se les puede creer. Si Don David dice que vuelven el próximo*

año es porque sí vuelven." (You can believe what the archaeologists say. If Don David [Dave Johnstone, Co-Principal Investigator] says they will return next year it means they WILL be back.)

However, 88% of respondents also felt that the archaeologists should increase the number and types of presentations made to the community regarding their investigation. Parents with school-aged children said that it is important for the archeologists to give talks to their children, especially the older children who may have a greater interest in archaeology and who may some day work for the project. Women, in particular, suggested that the archaeologists offer to take more people to Yo'okop to visit the site. Many Sabanenses have never seen the ruins and are intrigued by the location that brings foreigners into their community each summer. In particular, women never venture to that part of the *ejido* because it is surrounded by *milpa*s and only men visit *milpa*s. Others have requested that shorter and more frequent talks be given at the Comisaría, rather than one long, formal presentation at the beginning of the field season. People stated that if more frequent talks are offered they may be able to at least attend one of the presentations. Overall, Sabanenses stated that regular communication sessions between the archaeologists and the people would be welcome.

Another recommendation offered by Sabanenses is to provide workers with basic instruction of archaeological terms and methods. Men who have worked at the site agree that they learn by doing, but would appreciate a little more instruction at the beginning of the workweek. Parents would also like young people to be instructed by the archaeologists at school, although they realize that the project operates during the summer months when schools are not in session. Overall, people are curious about the work the archaeologists conduct, but they do not understand the processes involved and would like more information regarding the work conducted at the site.

The general consensus among Sabanenses is that a longer field season would benefit everyone involved in the project. Sabanenses would be offered extended employment opportunities, the archeologists could learn more, and the site could perhaps be "cleaned up" enough to begin attracting tourists. A longer field season would indeed enhance the trust between the archaeologists and the community and could result in more in-depth archaeological and ethnographic investigations. Understandably, it is not clear to Sabanenses that the archeologists' whims are not the sole determinants of the length and duration of each field season. Government permits, funding constraints, and work obligations in the United States may influence the existence of Proyecto Arqueológico Yo'okop more than the simple desire to continue research in this Yucatec Maya community.

[1]For a complete discussion of the Mexican *ejido* system and its termination see Stavenhagen 1993. For a case study on the termination of the *ejido* system in a Yucatec Maya community see Bever 2002.

[2]In summer 2002 the conversion rate averaged 9 pesos per 1 dollar.

[3]All names in this chapter are pseudonyms to protect our respondents' privacy.

Discussion and Conclusions

Dave Johnstone, Ph.D.

As mapping continues at Yo'okop, we are presented with a more complete picture of the extent, complexity and diversity of the site. With the mapping of a large portion of the residential zone between the major architectural groups, it is apparent that residences are neither evenly, nor randomly, distributed across the landscape. While it was not surprising to note a low structural density on the architecturally challenging slopes at the site, it was a revelation to see the negative relationship between the most productive soils and the location of residences. This reservation of prime soils in the site center is in contrast to central place theory, which suggests zones of increasing structural density as one approaches the city center.

Soils were not the only natural resource to influence residential placement. There is a tendency for larger residential structures to be located near *sascaberas* or *rejolladas*. While it is possible that these depressions are cultural, the result of the mining of raw material used to build the nearby structures, the possibility exists that these construction localities were chosen with regard to preexisting natural features. Such depressions have moister and deeper soil than surrounding areas, and are suitable for growing locally exotic species such as cotton or cacao (Kepecs and Boucher 1996).

Just as vaulted buildings are spatially restricted with respect to certain resources and to each other, so to do they show some temporal patterning. The majority of the vaulted residences in the non-monumental portions of the site appear to date to the Terminal Classic period. While this association might be a result of differential identification (Terminal Classic buildings having distinctive stylistic attributes and are less likely to be buried by later construction than older structures), it is possible that their locations away from the monumental zones represent real economic or political changes during this time. So too might there be some subsistence changes, as noted with the discovery of a stone edging to the *aguada*, as well as linear features within it.

While we had some appreciation of the size of Yo'okop prior to this season, the ground exploration and mapping of *Sacbe* 2 and Group C force us to reconsider our notions about its size and geographic focus. To this point, it has been assumed that the *aguada* was the focus for settlement at Yo'okop. The distance and bearing of *Sacbe* 2 place Group C approximately 2 km away from this water source. Considering this Group as an integral part of the site places Group B closer to the geographic center of the site, and suggests that it might be possible that other natural sources of water were available closer to Group C. The description of a stepped vault running under *Sacbe* 2 suggests the possibility that this *sacbe* substantially predates the other *sacbeob* at Yo'okop. Only further examination and excavation can answer this point; but if this were to prove to be the case, then it would have profound implications on the question of settlement shifts.

A wealth of information pertinent to construction foci has resulted from excavations. Those test pits located in plazas serve two purposes: to provide stratigraphic controls over ceramic chronology, and to document the construction history of important architectural groups throughout the site. Not only do these excavations show different periods of construction activity for the major architectural groups, but also some interesting differences in construction activities within groups. This season's excavations were the first to encounter Postclassic constructions. That these included large expanses such as plazas, implies a much more extensive Postclassic population than would be suggested by the diminutive summit shrines visible on top of larger, earlier constructions.

The 2002 season marked the first opportunity for the Proyecto Arqueológico Yo'okop to engage in horizontal excavations. This type of excavation permits us to examine the use of space on a scale between that of the site and the test pit. Structure S3E1-5 turned out to be far more complex than its size indicated. While the possibility of a special-purpose building was high, given its location and construction period, a sweatbath was not expected, especially given their tendency to be associated with ballcourts (Taladoire 1975). That this building was subjected to termination activities underscores its importance, whether ritual or political. Only excavation of a larger sample of Terminal Classic buildings of all types can begin to answer this question.

Materially, there were substantial differences between the ceramic and non-ceramic artifactual assemblages at Yo'okop. Ceramically, Yo'okop has a rich variety of types, of both local and distant manufacture. The strong presence of Peten polychromes through the Early and Late Classic evidence Yo'okop's importance as a node in a north-south inland trade route. That this route did not carry much in the way of lithic or marine goods might be the reason for the general low quantity, and well used quality of lithics thus far recovered. The collapse of this route in the Terminal Classic and replacement with northern ceramic trade wares is likely related to the overall collapse of the southern Maya centers.

Settlement shifts are not unique to Yo'okop nor are they specific to a particular time period. The changes associated with the Terminal Classic do seem to be organizational changes, rather than simple locational changes. The forces responsible for these changes are potentially varied, and will be the subject of future research at Yo'okop. Such changes have also affected the modern Maya. While colonial influences have resulted in nuclear families instead of extended ones, each family has a wide range of structural types within the territory controlled by a family unit. Thus, modern *solares*, or house lots, provide a useful analogy for interpreting the function and social arrangement of space on ancient housing platforms at Yo'okop.

References Cited

Andrews, E.W.
1942 Yucatan: Architecture. Carnegie Institution of Washington Department of Archaeology No. 41. Washington D.C.

Andrews, E. Wyllys IV and E. Wyllys Andrews V
1980 *Excavations at Dzibilchaltún, Yucatán, Mexico*. Publication 48. Middle American Research Institute, Tulane University, New Orleans.

Andrews, George F.
1975 *Maya Cities: Placemaking and Urbanization*. University of Oklahoma Press: Norman.

Ball, Joeseph W.
1982 The Tancah Ceramic Situation: Cultural and Historical Insights from an Alternative Material Class. In *On the Edge of the Sea: Mural Painting at Tancah-Tulum,* edited by A. Miller, pp. 105-113. Dumbarton Oaks, Washington.

Baños Ramírez, Othón
1989 Yucatán: Ejidos sin Campesinos. Mérida: Ediciones de la Universidad Autónoma de Yucatán.

Bever, Sandra Weinstein
2002 A Socioeconomic Profile of Yucatec Maya Families in Migrating and Non-Migrating Households. *Research in Economic Anthropology*, Vol. 21: 187-220.

Bolles, David
1997 An Analysis of Roads Listed in the Colonial Dictionaries and their Relevance to Pre-Hispanic Linear Features in the Yucatan Peninsula. FAMSI. http://www.famsi.org/.

Brenner, Mark, David Hodell, Jason Curtis, Michael Rosenmeier, Michael Binford, and Mark Abbott
2001 Abrupt Climate Change and Pre-Columbian Cultural Collapse. In *Interhemispheric Climate Linkages*, ed. Vera Markgraf, pp. 87-103. Academic Press, New York.

Canche, Elena
1992 *La Sequencia Ceramica de Xelha, Quintana Roo*. Licencia Thesis, Universidad Autonoma de Yucatan, Merida.

Carmean, K.
1991 Architectural Labor Investment and Social Stratification at Sayil, Yucatan, Mexico. *Latin American Antiquity* 2(2):151-165.

Curtis, Jason, Mark Brenner, and David Hodell
2001 Climate Change in the Circum-Caribbean (Late Pleistocene to Present) and Implications for Regional Biogeography. In *Biogeography of the West Indies: Patterns and Perspectives*, ed. Charles A. Woods and Florence E. Sergile, pp. 35-54. CRC Press, New York.

Davis-Salazar, Karla
2001 Late Classic Maya Water Management at Copán, Honduras. Ph.D. Dissertation, Harvard University, Cambridge.

Foster, Lynn V
2002 *Ancient Mayan World*. Facts on File Inc, New York.

Freidel, David, Linda Schele, and Joy Parker
1993 *Maya Cosmos: Three Thousand Years on the Shaman's Path*. William Morrow, New York.

Freidel, David, Charles Suhler, and Rafael Cobos Palma
1998 Termination Ritual Deposits at Yaxuna. In *The Sowing and the Dawning: Termination, Dedication, and Transformation in the Archaeological and Ethnographic Record of Mesoamerica*, ed. Shirley Boteler Mock, pp. 134-144, Univeristy of New Mexico Press, Albuquerque.

Garber, James, W. David Driver, Lauren Sullivan, and David M. Glassman
1998 Bloody Bowls and Broken Pots: The Life, Death, and Rebirth of a Maya House. In *The Sowing and the Dawning: Termination, Dedication, and Transformation in the Archaeological and Ethnographic Record of Mesoamerica*, ed. Shirley Boteler Mock, pp.124-133, Univeristy of New Mexico Press, Albuquerque.

Hammond, Norman and Jeremy Bauer
2001 A Preclassic Maya Sweatbath at Cuello, Belize. *Antiquity* 75: 683-684.

Harrison, Peter
1979 The Lobil Postclassic Phase in the Southern Interior of the Yucatán Peninsula. In *Maya Archaeology and Ethnohistory*, eds. by N. Hammond and G.R. Willey, pp. 189-207. University of Texas Press, Austin.

1999 *The Lords of Tikal: Rulers of an Ancient Maya City*. Thames and Hudson, London.

Hodell, David, Mark Brenner, Jason Curtis, and Thomas Guilderson
2001 Solar Forcing of Drought Frequency in the Maya Lowlands. *Science* 292: 1367-1370.

Hodell, David, Jason H. Curtis, and Mark Brenner
1995 Possible Role of Climate in the Collapse of the Classic Maya Civilization. *Nature* 375(1):391-394.

Houston, Stephen D.
1996 Symbolic Sweatbaths of the Maya: Architectural Meaning in the Cross Group at Palenque, Mexico. *Latin American Antiquity* 7(2):132-151.

Johnstone, Dave
1994 Excavations Within the Ballcourt Plaza. In *The Selz Foundation Yaxuna Project Final Report of the 1993 Field Season*. pp. 62-69. Southern Methodist University, Dallas.

2001a The Ceramics of Yaxuná, Yucatán. Ph.D. Dissertation, Southern Methodist University, Dallas.

2001b *Sacbe* 3. In *Final Report of the Selz Foundation's Proyecto Arqueologico Yo'okop 2001 Field Season: Excavations and Continued Mapping,* edited by J.M. Shaw. College of the Redwoods, Eureka.

2001c Operations 1-2. In *Final Report of the Selz Foundation's Proyecto Arqueologico Yo'okop 2001 Field Season: Excavations and Continued Mapping,* edited by J.M. Shaw. College of the Redwoods, Eureka.

Kepecs, Susan and Sylviane Boucher
1996 The Prehispanic Cultivation of Rejolladas and Stone Lands: New evidence from Northeast Yucatán. In *The Managed Mosaic: Ancient Maya Agriculture and Resource Use*, edited by S.L. Fedick. University of Utah Press, Salt Lake City.

Killion, Thomas
1992 Residential Ethnoarchaeology and Ancient Site Structure. In *Gardens of Prehistory: The Archaeology of Settlement Agriculture in Greater Mesoamerica*, edited by Thomas Killion. University of Alabama Press, Tuscaloosa.

Killion, Thomas, Jeremy Sabloff, Gair Tourtellot, and Nicholas Dunning
1989 Intensive Surface Collection of Residential Clusters at Terminal Classic Sayil, Yucatan, Mexico. *Journal of Field Archaeology* 16: 273-294.

Kurjack, Edward B.
1974 *Prehistoric Lowland Maya Community and Social Organization: A Case Study at Dzibilchaltún, Yucatan, Mexico.* Middle American Research Institute. Publication 38. Tulane University, New Orleans.

Martin, Simon
1997 The Painted King List: A Commentary on Codex-Style Dynastic Vases in *The Maya Vase Book, a Corpus of Rollout Photographs of Maya Vases by Justin Kerr*, Volume 5, pp. 846-867. Kerr Associates, New York

2001 Una Ventana Al Pasado: Cómo las Inscripciones Mayas Esclarecen la Historia, la Arqueología y el Arte. *Arqueología Mexicana* VIII(48):38-41.

Martin, Simon and Nikolai Grube
1995 Maya Superstates. *Archaeology* 48(6)41-46.

McGee, Brian R.
2002 Structure 9: A Precolumbian Sweat Bath at Cerén. In *Before the Volcano Erupted: The Ancient Cerén Village in Central America*, edited by Payson Sheets, pp. 89-96. University of Texas Press, Austin.

Mitchum, Beverly
1992 Lithic Artifacts from Cerros, Belize: Production, Consumption, and Trade, In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference,* Monographs in World Archaeology No. 1, edited Thomas R. Hester and Harry J. Shafer, pp. 45-53.

Orellana, Sandra L.
1987 *Indian Medicine in Highland Guatemala: The Pre-Hispanic and Colonial Periods*. University of New Mexico Press, Albuquerque.

Pollock, H.E.D.
1980 *The Puuc: An Architectural Survey of the Hill Country of Yucatan and Northern Campeche, Mexico*. Peabody Museum of Archaeology and Ethnology, Harvard University. Cambridge, Massachusetts.

Proskouriakoff, Tatiana
1963 *An Album of Maya Architecture*. University of Oklahoma Press, Norman.

Ruppert, Karl
1935 *The Caracol at Chichén Itzá, Yucatán, Mexico*. Carnegie Institution Publication No. 454, Washington.

1952 *Chichén Itzá: Architectural Notes and Plans*. Carnegie Institution Publication No. 595, Washington.

Sabloff, Jeremy
1973 Continuity and Disruption During the Terminal Late Classic Times at Seibal: Ceramic and Other Evidence, In *The Classic Maya Collapse*, edited by T. Patrick Culbert. University of New Mexico Press, Albuquerque.

Satterthwaite, Lindon
1952 *Piedras Negras Archaeology: Architecture. Part VI: Sweathouses*. University Museum, Philadelphia.

Scarborough, Vernon
1991 Water Management Adaptations in Nonindustrial Complex Societies: An Archaeological Perspective. In *Archaeological Method and Theory*, edited by Michael Schiffer, pp. 101-154. Volume 3. University of Arizona Press, Tucson.

Shaw, Justine M.
2001a *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, Justine Shaw, Linnea Wren, and Travis Nyberg. College of the Redwoods: Eureka, CA.

2001b Maya *Sacbeob:* Form and Function. *Ancient Mesoamerica* 12:261-272.

2000 *Final Report of the 2000 Yo'okop Field Season: Initial Mapping and Surface Collections,* edited by Justine M. Shaw with contributions by Dave Johnstone, Ruth Krochock, and Justine Shaw. College of the Redwoods: Eureka, CA.

Sheets, Payson
1992 *The Ceren Site: A Prehistoric Village Buried by Volcanic Ash in Central America*. Harcourt Brace Jovanovich, Fort Worth, Texas.

Simmons, Michael P.
1974 The Pottery. In *Excavation of an Early Shell Midden on Isla Cancun, Quintana Roo, Mexico*. Middle American Research Institute Publication 31, p. 168-185. Tulane University, New Orleans.

Smith, A. Ledyard
1972 *Excavations at Altar de Sacrificios: Architecture, Settlement, Burials, and Caches.* Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University, volume 62, no. 2. Cambridge

Smyth, Michael P. and Christopher D. Dore
1994 Maya Urbanism. *National Geographic Research and Exploration* 10(1): 38-55.

Stavenhagen, Rodolfo
1993 Democracy, Modernization and Social Change in Mexico. *Renato Rosaldo Lecture Series Monograph*, Vol. 9:1-38. Mexican American Studies and Research Center, The University of Arizona, Tucson.

Taladoire, Eric
1975 Les Bains de vapeur et les systemes d'eau dans leur rapport avec les terrains de jeux de balle, Mexico. *Actas del XLI Congresso Internacional de Americanista* Vol. 1, pp. 262-269. Mexico.

Taube, Karl
1995 *The View from Yalahau: Archaeological Investigations in Northern Quintana Roo, Mexico*. Latin American Studies Program; Field Report Series No. 2. University of California, Riverside.

Thomas, Prentice M., Jr.
1981 *Prehistoric Maya Settlement Patterns at Becan, Campeche, Mexico*. Middle American Research Institute Publication 45. Tulane University, New Orleans.

Wauchope, Robert
1938 *Modern Mayan Houses*. Carnegie Institute of Washington; Washington, D.C.

Willey, Gordon, William R. Bullard, Jr., John Glass, and James C. Gifford
1965 *Prehistoric Maya Settlements in the Belize Valley.* Papers of the Peabody Museum of Archaeology and Ethnology, Vol. 54. Harvard University, Cambridge.

Wilson, Reginald
1974 Okop: Antigua Ciudad Maya de Artesanos. *INAH Boletin* Epoca II:9: 3-14.