# XUNANTUNICH ARCHAEOLOGICAL PROJECT

## 1994 Field Season

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# The Xunantunich Site Core: 1994 Research and Work

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The ongoing research at the ancient Maya center of Xunantunich, located in western Belize, proceeded at a rapid pace during the 1994 field season. The Xunantunich Archaeological Project (XAP) is clearly defined as having two major foci: 1. a research program to understand the ancient city of Xunantunich and overall to better understand the ancient Maya; and 2. a program of economic and tourist development which is based upon concepts of site management and the preservation and consolidation of the buildings primarily within the site core. This is an exciting combination of both research and touristic development and is based upon the Government of Belize's desire to preserve and better understand the cultural heritage of its past.

Major excavations were conducted within the core areas of the site. In addition, consolidation work on several of the buildings within the core continued during the 1994 field season. Finally, we continued a site-management program with the construction of new tourist facilities at the site center. The important work of the settlement survey continued during the 1994 field season under the direction of Dr. Wendy Ashmore of the University of Pennsylvania.

During the first 2 1/2 field seasons at Xunantunich (1991-1993), we were able to create a preliminary structure for the nature and type of changes and development we identified at Xunantunich. The broad outline of the site's chronology became clear during these early seasons. However, it was during the 1994 field season that we began to examine this initial outline and to amplify and elaborate upon these early ideas. In the first part of this paper, I would like to focus upon the basic ideas we presented more than one years ago - prior to the 1994 field season.

**Overall Site Chronology**

The site chronology has, in many respects, stabilized over the past several field seasons. In terms of ceramics, the project ceramicist, Lisa J. LeCount has been able to more clearly define the assemblages particularly for the final two phases of occupation: Late Classic II (LCII) dated to about AD 700 - 830, and the Terminal Classic dated to about AD 830 - 1,000. Excavations, which located primary deposits of ceramics and other artifacts, in the structures to the east of Plaza AIII, within Structures A-1, A-3, and A-6, and within Group D, all help to delimit the beginning of the major occupation at the site (around AD 700) and the final abandonment of the site (around AD 1,000).

LeCount's ceramic identification of the Terminal Classic is strengthened by the 1994 excavations on the west side of Structure A-6, the Castillo. A colonnaded building was identified as marking the final construction phase on this west edge of the medial side terrace (see Robin this volume). Columns are not common in the southern lowlands of the Maya. In fact, they probably relate to a Terminal Classic or Early Postclassic development within the northern lowlands. The Puuc style columns on Structure 20 probably date to about AD 1,000 or even as late as AD 1,100.

It is clear from LeCount's work (see article this volume) that there are data to indicate an earlier occupation on this hilltop prior to LCII times. In fact, the Middle Preclassic period shows strong evidence of an early occupation. Unfortunately, we have almost no evidence of Middle Preclassic *in situ* deposits. We hypothesize that a small village was occupied on this hilltop during this early period and then used for construction fill during the massive architectural construction programs of the Late and Terminal Classic.

However, this hilltop was apparently not the primary focal point for the Middle Preclassic occupation for we have found massive construction dating to this early time period in several locations in this western part of the valley. The two main areas of monumental construction during the Middle Preclassic are focused upon Actuncan (see McGovern this volume and the 1993 Xunantunich report) and Group E (see Robin et. al. this volume). Actuncan is located about 1 1/2 kilometers to the north of the Xunantunich center and shows clear evidence of monumental Middle Preclassic construction including plaster, pyramidal-facade masks.

During the 1994 field season, we were able to examine, clear, and conduct preliminary test excavations in a cluster of monumental buildings about 1/2 kilometer due east of the site center. Group E is situated on the land of the Valdez family of Succotz who graciously permitted us to conduct our initial survey and excavations this past year. The monumental architecture of Group E consists of two fairly large pyramids roughly facing each other along an east-west axis and a monumental flat-topped platform (termed the 'party platform' due to its size) located just to the north-east of the pyramids. Ashmore (this volume) has begun to examine the distribution of Middle Preclassic material within this western part of the valley in the identification of a pattern of architectural forms and construction.

**Late Classic II and Terminal Classic: Growth and Change at Xunantunich**

The relatively short 300-400 year occupation at Xunantunich overlaps with a period of rapid depopulation and change throughout the southern lowlands often termed the 'great collapse.' It appears as though this site is one of the few (Lamanai is another) ancient Maya cities to have survived the 'great collapse' and continued to be occupied and utilized as a central political and administrative locus. One of the ways to try and understand the collapse is to examine the changes within Xunantunich during this time period. These changes provide us with a survival system for the ruling family and centralized political structure at this site during this period of political, social, and economic crisis and, perhaps, chaos.

Plazas AI and AII

Plaza AI remains a central focal point for ritual and social gatherings throughout the late occupation of the site. Early speculation that the Plazas AI and AII were originally one large open plaza area seem to be confirmed with the recent excavations of Structure A-1. An important part of this argument is the recent discovery of a third ballcourt for Xunantunich located on the west side of the central group and consisting

of Structures A-17 and A-22 (See Jamison and Wolff this volume). This north-south ballcourt clearly predates the construction of Structure A-1.

The excavation of a massive trench through the middle of Structure A-1 was initiated in 1993 and terminated during the 1994 field season. Although the trench did not reach sterile soil or bedrock, it is unlikely that a large building could have predated this Structure A-1 construction. Smaller features such as tombs, caches or even a very low platform may have been missed but it is clear that a major building did not exist prior to the construction of the substructure for A-1 which is dated to approximately AD 700.

The identification of this third ballcourt was based upon T. Jamison's insistence that the shape of the west side of Structure A-1 was unusual and may be indicative of an adjoining building. Today, the identification of a ballcourt is clear from the excavations of Structures 17 and 22 and the excavation within the center of the playing alley. The interesting feature, as described in detail by Jamison and Wolff (this volume), is that Structure A-1 was built on top of the east side of Structure 22.

Ballcourts clearly mark ritual, and possibly sacred, space. At the same time, the alley-way marks a transition from one area to another. I would therefore argue that this ballcourt, prior to the construction of Structure A1, jutted out almost into the middle of a large open plaza extending from the Castillo on the south to the raised Plaza AIII to the north. This ballcourt may have symbolically divided this open plaza into two areas - one to the north, perhaps more restricted and for the ruling family living in Plaza AIII, and one to the south, more open and fed by access points to the east and west (see Keller this volume). The construction of Structure A-1 creates a physical manifestation of this north/south division and formalizes the nature of access of use. These two areas are finally almost completely cut-off with the construction of Motmot wall which runs from the southeast corner of Structure A-1 to the edge of Structure A-3 to the east. It creates a final block within this alleyway between Structure A-1 and Structures A-2 and A-3. A similar wall on the west side is not necessary as the ballcourt continues to act as a symbolic block marking the transition from the southern open Plaza AI to the northern restricted AII.

The Castillo and the South Group

At the present time, we have not penetrated deeply into the substructure of the Castillo to be able to create even a preliminary construction history of this building. However, the surface features still give us some idea of the form and functional changes of this building. Apparently, at one time (perhaps during LCII) a central outset staircase on the north side of the Castillo was matched by one on the south side which led into the South Group. Previous research (1992) clearly indicates that this South Group was primarily occupied during LCII times and was then abandoned during the final occupation of the Terminal Classic.

This abandonment of the South Group and all of the architecture within the southern part of the site changes the role of the Castillo within the core. Up until the end

of LCII times, assuming that all of the architecture is built and being used at this time, the Castillo is the center of the site and perhaps the primary focal point. With the abandonment of the South Group, the Castillo becomes the southern edge of the site and all activity is focused into a very small and defined Plaza AI.

The 1994 excavations on the Castillo reveal an extremely complex building with massive constructions of platforms, pyramids and superstructures which are then covered over and rebuilt in the ongoing construction program for this monumental building. It is quite possible that the Castillo was always in some stage of construction or change during its entire 300-400 year life-span.

The earliest construction on the Castillo consists of a well-preserved range structure defined by Quetzal wall on the south side (see Robin this volume). Robin has also defined two later major phases of construction including the construction of Structure A-20 as mentioned above. These later construction phases which cover over the Quetzal range structure and extend the Castillo's medial terrace to the west further define and demarcate Plaza AI and block access to the now abandoned architecture to the south. A similar extension of the medial terrace is evident from surface features on the east side of the Castillo. Also on this east side is a small mound in the corresponding position of Structure A-20. Future excavations will test these constructions.

During the 1994 field season, the new sections of the A-6-2nd friezes were excavated. On the west side, the lower 1/4 of the new frieze was excavated revealing all of the preserved section of this sculptural ornament. On the east side, the central mask, never before seen, was excavated, drawn and recorded. All of the plaster friezes were consolidated (with the help of conservators Haydee Orea and Carolina Castellanos from INAH in Mexico) and then reburied. Virginia Fields (this volume) continues an analysis of the iconography of these friezes. It is clear that the recent excavation of the west side of the A-6-2nd has provided us with a picture of the Xunantunich rulers placing themselves within the sky as the creators and maintainers of the world.

With the survival through the collapse at Xunantunich, the site center becomes more constricted and restricted. The Castillo and its east and west wings block all movement from Plaza AI to the South Group. In addition, Structure A-1, Motmot wall, and Ballcourt #3 restrict access to Plaza AII. This restriction, in fact, separates the ruling family, living in the buildings of Plaza AIII, from the general population. The separation of social groups at Xunantunich is becoming wider and more clearly defined. This may be the result of the growing weakness of Xunantunich's ruling family and its attempt to maintain some internal focus and power.

Group D and Sacbe I

Excavations at Group D continue to identify this group as an outlying elite residential complex (Braswell this volume). It is clear from the existence of at least two plain stelae and a large pyramidal family shrine that this family is great importance at Xunantunich, perhaps of second rank to the ruling family of Group A. In fact, Sacbe I

creates a direct link between this D group, emanating from an area west of Structure D-7, and Group A with access located between Structure A-4 and A-6 (Keller this volume).

This sacbe is dated to the beginning of LCII and therefore the families of Group D and Group A create an important linkage early in the primary history of the site. The Structure D7 with its orientation and form seems to emphasize the continuation of this tie even into the Terminal Classic.

## The 1995 Excavation Program

The work planned for 1995 will predominantly focus upon structures located within the Plaza 1 area of the site. The Castillo (Structure A-6) remains the primary point of interest and work.

### The Castillo

We plan on two primary excavation teams working on the Castillo during the 1995 field season. The first team will continue the work of previous years and will attempt to complete the proposed excavations on the west side of the Castillo. Probably the most important building that needs to be examined is Structure 20. This building was identified during the 1994 field season with a series of columns. The dating of these columns and therefore the building is very important in an attempt to identify an end-point for occupation at Xunantunich. This first team's primary work will be to complete the excavation of Structure 20.

Following completion of this task, there are two additional areas of proposed excavation. First, we will conduct some preliminary excavations on the corresponding east terrace below the exposed frieze. It will be important to understand the nature of the Castillo's form and whether Structure 20 is matched by a similar building on the east side. Second, we will begin to focus upon the Castillo's southern side - specifically attempting to define the southern staircase and access to this monumental building from the south. This will consist, primarily, of architectural clearing. Once clearing of small areas (to define the architecture) has been completed, decisions will be made about whether to excavate more architecture which would lead to consolidation of these exposed buildings.

The second team on the Castillo will begin an entirely new program. This will focus upon an attempt to identify early occupation of Xunantunich under the Castillo. The only possible avenue of approach is through a series of tunnels. We will therefore initiate these tunnels, both from the north and south sides of the Castillo, and will penetrate the outer skin of this building and begin the exploration of the early phases of construction. The tunnels, on both the north and south sides, will be initiated at ground level and then at a slightly higher point - about mid-way up the side of the Castillo.

The basic concept of tunnels is a very simple and basic one for it attempts to gain as much information as possible about the construction history of the Castillo while minimizing the damage and destruction due to excavations. At the present time, we are unsure about the nature of the fill within the structure. Our previous excavations clearly

indicate that some of the fill is very solid and will be very conducive for our excavations. Other sections of fill are much looser and will not allow for tunneling. We will therefore begin these operations cautiously and carefully and proceed in an attempt to gain as much information as possible while at the same time safe-guarding the building and crew.

**Structure A-3**

In 1994, we initiated excavations along the base of Structure A-3. We will continue the excavation of this building, gradually working our way up the front and sides of the building in order to define its nature and form. One of the perplexing questions for Xunantunich's center is the nature of the three buildings all lined-up along the east side of the main plaza (Structure A-2, 3, and 4). Our excavations will both examine the outer portions of this building as well as attempt to probe the construction history of the structure. Structure A-3 is also slated for consolidation and preservation for tourists.

**Additional work within the Xunantunich Center**

1. A team of excavators will continue the process of defining the ancient sacbe which connects Group A with Group D. In order to fully understand the nature of this roadway, we will continue the clearing operation and also initiate some excavations within neighboring small buildings.

2. Group B will also be the focus of some secondary excavations, if time and money permit. We will attempt to define an ancient cache and midden area, initially located by J. Eric Thompson but also found during our test-excavation program in 1991. Important ceramic information will be recovered during these excavations.

3. Finally, we will extend our test-excavation program over other portions of the central area of the site. We want to develop and maintain a tight chronological control over all of the buildings and changes within the site center.

## Architectural Consolidation

The architectural consolidation work within the center of the site will continue as a major part of the tourist development program for the 1995 Xunantunich season. In 1995, we will complete the consolidation and presentation of Structure A-1. This building will have a major impact on the way tourists view the site as it is located exactly in the middle of the main plaza and has a spectacular view of the Castillo.

With the completion of Structure A-1, the consolidation crews will begin to converge upon the Castillo. Work will focus on three primary areas. First, we will initiate the consolidation of the excavated areas on the west side of the Castillo. This consolidation work will take several years and will provide a new area of interpretation for the tourists in the near future. This work will also provide a base for the future replication of the new frieze.

Second, work will continue on the main structures of the Castillo. We are attempting to keep the rainwater from infiltrating into the core of the building, thereby causing the cracks and destabilizing the structure. Therefore, work will continue on the roof and floor areas to seal cracks and weak areas.

Third, finally, we will continue consolidation work on the east side of the Castillo, finishing the work on the frieze and finishing the tourist viewing platform.

## Tourist Infrastructural Development - 1995

Two major tasks and several secondary ones are planned for the 1995 season.

First, we will finally destroy the old hut located within the center of Plaza 1. Although it has been in the plaza for many years and is well recognized by tourists, it lessens the presentation of the site. Another sitting area has already been constructed to the west of the Castillo. In addition, we will also begin construction of a second pavilion within the parking area, near the front of the site. With the completion of this pavilion, we will be able to restrict food from the site. Tourists will be requested to eat within this new pavilion, outside the site, and then enter the site. This will minimize a major problem at the site of garbage and of a proliferation of small animals.

The second major program for this 1995 season will be to construct a full-scale bodega situated behind the present bodega and Stela House. This bodega will be built to store properly all the archaeological material that we have and will recover from Xunantunich. This will allow proper use of this material in the future without having to move these collections over-and-over.

Additional tourist development work will focus on completing the first stage of the sign presentations which was initiated in 1994. Also, a final set of signs will be placed within the Stelae House.

We will also, in collaboration with the Department of Archaeology, begin the process of creating the new entrance to the site - to be located about 1/2 mile down the road. We will only initiate preliminary work during this 1995 season and then continue to move forward in 1996.

# Settlement Archaeology At Xunantunich, Belize, Central America

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Within Belize, the greatest thanks must go to all of our workers who are a major part of the team as we continue to uncover the history of Xunantunich. All the people of the Village of Succotz continue to support us and our work. Specifically, we would like to thank the Village Council Chair, David Magaña. Many people gave us permission to walk on, survey on or excavate on their land and we thank all of them. In particular, the Valdez family was gracious enough to give us permission to conduct a preliminary survey and test excavations on their land which surrounds the core of Xunantunich. We also want to thank Margaret and Rudy Juan for their hospitality and unceasing helpfulness as they solve new and continued problems. Novelos Distributors of San Ignacio helped the project with the loan of a cooler during the field season.

This research comes together with the quality of the graduate students and professional staff. Few archaeological projects have a better crew. Thanks to Tom Jamison (1994 Field Director), Greg Wolff, Cynthia Robin, Delia Cosentino, Jennifer B. Braswell, James O. McGovern, Mike Artemieff, Lady Harrington, Lisa LeCount, Lori Pacheco, Ted Neff, Jason Yaeger, Sam Connell, Chad Gifford, Jenn Ehret, Angie Keller, John Walkey, and Jon VandenBosch. The entire settlement program is in the extremely capable hands of Wendy Ashmore who is also the Co-Director of the project and a close friend.

In 1994, we participated in the JASON Project - an interactive educational program. The students and teachers all helped in the field and we hope that we were able to help many students understand the excitement and importance of archaeology in our society. We would also like to thank the JASON Project for their financial assistance in the purchase of needed computer equipment.

Support for this project comes from the Government of Belize, USAID, the UCLA Faculty Senate, the UCLA Institute of Archaeology, and numerous private donors. Ray Scippa of Continental Airlines continues to help the project. The Getty Conservation Institute is an important partner in the project. Also, the advise of Rudy Larios V and Reuben Penados is always vital in the consolidation work and research of the major architecture. Let me also mention our longtime foreman, Florentin Penados, who is an important part of the XAP team.

**Background**

Settlement archaeology at Xunantunich, Belize, examines the nature of occupation in the vicinity of that ridgetop civic center, and tests current models of the organization and integration of Classic Maya society. Because Xunantunich endured--even thrived--during the Classic Maya collapse of the ninth century A.D. (Leventhal 1993), coordinated study of both the center and the settlement in its hinterland provides a valuable opportunity to examine models of organization and integration at a time when nearby areas experienced turbulent political, economic and demographic upheaval (e.g., Culbert 1973, 1991; Demarest and Freidel 1994). Such coordinated study is the foundation for the Xunantunich Archaeological Project (XAP), directed jointly since 1992 by Richard M. Leventhal (UCLA) and Wendy Ashmore (Pennsylvania). Xunantunich Settlement Survey (XSS) is our shorthand for the settlement research integral to XAP.

Xunantunich itself was the last of a series of relatively small prehispanic capitals in this part of the upper Belize river valley (e.g., Leventhal et al. 1992; Ashmore and Leventhal 1993; cf. Willey, Bullard, Glass, and Gifford 1965), from the earliest times of political differentiation, in the Late Preclassic (ca. 300 BC-AD 250; Fig. 1), through the ninth-century Terminal Classic collapse. (The Postclassic period is best known locally from Tipu, whose prehispanic occupation as a whole is less widely appreciated than is its continuing occupation in Colonial times [e.g. Graham 1987].) A rich cumulative history of archaeological research in this region has documented shifts in paramount status among Cahal Pech (e.g., Awe 1993; Ball 1993), Buenavista del Cayo (e.g., Ball and Taschek 1991), Actuncan (e.g., McGovern 1993) and Xunantunich (Leventhal 1992, 1993; see Figs. 2, 3). During Classic times, the region as a whole may have been subordinate to state-level authority based at Naranjo or Tikal (e.g., Ashmore and Leventhal 1993; Ball and Taschek 1991; Marcus 1993). Current models of Classic Maya life suggest that society in any but the largest, densest cities (e.g., Tikal, Caracol) was relatively *loosely* integrated along social, political and economic dimensions (e.g., Marcus 1993; McAnany 1993). From the foregoing models and the extant regional data base, we predicted (Ashmore 1993) that the local populace of the upper Belize valley was probably minimally affected by the cited shifts in regional paramount, and that perhaps such implied resilience was a factor in persistence of occupation through the time of the Classic collapse (see also Fry 1990; Pendergast 1986).

Specifically, we've sought through XSS to investigate the distribution of occupation across the landscape, and how the nature and integration of occupants varied through time and space. To do so requires archaeological survey and test-excavation to document the traces of human settlement and sort them on chronological, sociopolitical, and economic dimensions; geomorphological survey and test-excavation to document changes in the alluvial settings so prominent in the region; and clearing excavations to provide details and further tests concerning social, political, and economic standing of those who occupied the sites attested

through the archaeological survey. XSS research funded by the National Science Foundation allows implementation of survey and excavation over two seasons (1994-95) of combined archaeological and geomorphological research (Ashmore 1993). As a self-contained contribution, these two seasons' work are significant for assessing the propositions outlined briefly above, as well as the general models from which they derive. In addition, they provide firm foundation for two further seasons (1996-97)--yet to be funded--expanding the sample of extensive clearing excavations within sites documented in 1994-95 (Ibid.). Fuller background information is provided in the original NSF proposal (Ashmore 1993); more detailed reporting of 1994 research and results is available in the season report (Leventhal and Ashmore 1994), especially the chapters on the settlement survey (Ashmore, Connell, Ehret, Gifford, Neff, and VandenBosch, this volume) and excavations at San Lorenzo (Yaeger, this volume).

**Research Design**

Investigation of ancient settlement in the upper Belize area has received significant attention from diverse scholars (e.g., Awe 1993; Ball and Taschek 1991; Ford 1985; Ford and Fedick 1992; Graham, Jones, and Kautz 1985; Healy 1990; Willey et al. 1965). Collectively, however, the research projects have followed widely divergent research designs and sampling strategies, such that each has made valuable contributions to the whole, but detailed comparison across data sets is difficult. As outlined in the original proposal to NSF (Ashmore 1993), the XSS research design has drawn heavily from the strengths of these and other projects. The resultant two-year design can be summarized as involving:

(1) Systematic archaeological reconnaissance, mapping, surface collection, and shovel-test pitting along 4 transects (T/A1-4), illustrated in Figure 3 (a fifth and complementary transect, linking Chaa Creek and San Lorenzo, follows comparable methodology but is funded separately; Connell, this volume). T/A1, 2, and 3 are each 400 m wide; T/A4 is modified to quadrat form because of the proximity of the international border between Belize and Guatemala, less than a kilometer from the center of Xunantunich. T/A1 runs SE from Xunantunich to Dos Chombitos, 8.5 km distant and traversing increasingly broken terrain. T/A2 extends 5 km north from Xunantunich, along the outskirts of Actuncan, to Callar Creek, over much gentler terrain roughly paralleling the Mopan river. T/A3 links Dos Chombitos with Tipu and Chaa Creek, along a 4km stretch of the Macal river, whose often sheer cliff edges contrast with the gentler borders of the Mopan.

(2) Systematic geomorphological survey and test excavation along both the Mopan and Macal rivers. Surface and subsurface tests in 5 transects perpendicular to each river (T/G1-10) document changes in the local alluvial landscape, especially evolving human use of alluvial soils (e.g., Muhs, Kautz, and MacKinnon 1985) and how changing hydrology and landforms have affected preservation and detection of archaeological remains (e.g., Holley, Dalan, Woods, and Watters n.d.).

(3) Expanding clearing excavation in San Lorenzo, a site tentatively identified as an elite residential cluster (Chase 1992; Yaeger , this volume), to amplify understanding of the families and communities deemed most likely to have been affected by the political, social, and economic shifts cited above (Ashmore 1993). This program complements and follows sampling broadly similar to excavations at Xunantunich Group D (Braswell 1992, 1993, this volume), on the margins of the civic center.

**Research Goals, Methods, and Results in 1994**

In 1994, XSS had three specific goals: (1) archaeological survey and shovel-test pitting along transects TA1 and TA2; (2) beginning geomorphological survey along the Mopan river; and (3) expanding clearing excavations of the elite homestead cluster known locally as San Lorenzo. Because of setbacks in securing an appropriate geomorphologist, that program of survey was deferred until 1995. The other two programs met or exceeded specific goals for 1994, and provide a firm base for completion in the coming season. Design and results of these two 1994 programs are summarized briefly below.

Archaeological Survey: Building from pilot work in 1992-93 (VandenBosch and Gifford in Ashmore et al. , this volume; see also Yaeger 1992; Yaeger and Connell 1993 [hereafter, Y&C]), XSS staff (a) completed nearly the entire length of T/A1, (b) began T/A2, and (c) surveyed terrain directly north and east of the Xunantunich archaeological preserve. The latter was not expressly part of the original XSS design, but took opportunistic advantage of newly accessible lands in an interpretively crucial zone. Field staff and methods were comparable in all three settings, except that (c) was a block survey rather than a transect, and because of time constraints, coverage was somewhat less intensive (Neff in Ashmore et al., this volume).

(a) Working along a transect alignment of N113°45'E established in 1993, the survey team on T/A1 extended perpendicular survey lines (*picados*) 200 m to either side of the main *brecha*, or centerline, at 20 m intervals. Crews noted the extent and nature of vegetation, using an ordinal scale developed in 1993 (Y&C); other such scales and terminology were standardized in 1994 (Neff, op. cit.).

In open areas, the brecha and picados were orienting lines; in overgrown areas, the lines were often also the only easily visible terrain, although even relatively densely covered inter-picado areas were examined at least cursorily by machete-wielding surveyors. All surface remains were noted, and architectural remains were mapped by compass and tape. Sites were designated in a running series, T/A1-1 being the first site recorded along that transect. Sites extending beyond the limits of the transect were recorded in their entirety, a "gap" of 25m being considered sufficient to define the "edge" of a site. Crews also recorded some sites visible beyond the transect, or reported by local residents; these were designated as "O/A1" sites, meaning sites near but beyond ("Off") T/A1. Surface collections were taken, if available, emphasizing chronologically diagnostic ceramics. Shovel

tests amplified surface collections, with variable degrees of success (Ehret in Ashmore et al. , this volume). Soil samples were taken at 100 m intervals along the transect centerline, and opportunistically (as pilot sampling) in association with (presumably agricultural) terracing. A Total Station was used to plot centerline, picados, sites, soil samples, and topography. Topographic display was accomplished using SURFER; architectural sites were rendered individually using Generic-CADD6.1. Using the latter program, sites and topography were combined into overall settlement maps linked to the grid established for XAP (see Figs. 4-6). Descriptions were registered on standardized forms, from which data were entered into a PARADOX database (Neff, op. cit.).

Documentation of T/A1 reached the site of Dos Chombitos; less than .5 km remains to be reconnoitered and recorded before reaching the banks of the Macal river (Figs. 3, 4). After recording Dos Chombitos, however, survey efforts were diverted to record newly accessible land adjoining the Xunantunich archaeological preserve, including the northwesternmost portion of T/A1 (between the Mopan and the preserve), as well as the southern origin of T/A2, and a block of land along the northern and eastern margins of the preserve, through which the modern road to Xunantunich passes. Sites in the latter block were designated as either O/A1- or O/A2-, depending on whether they were respectively south or north of that access road.

Survey documented 173 discrete sites along T/A1 and another 18 were designated as O/A1 sites. Although settlement is broadly continuous along this transect, mounds and mound groups form tighter aggregates near the Chan site cluster (O/A1-3, -4, and -5) and Dos Chombitos (T/A1-161 and adjoining sites; see Fig. 7), as well as near Xunantunich itself. Visual inspection suggests the detection of village- or town-like entities, whose focal points were the sites named above, likely the residential compounds of local social, ritual, economic and/or political leaders. Preliminary statistical analyses support this inference, summarized graphically in Figure 8 (VandenBosch, op. cit.; arcs on this figure indicate breaks in a stem-leaf plot of distances of individual platforms from Xunantunich Str. A-1). Although terrain is increasingly rugged as one moves eastward along the transect, correlation between topography and settlement cannot yet be specified precisely.

A preliminary site typology defines 7 formal categories, distinguished by number of mounds, formality of arrangement, presence/absence of a "focal" structure, presence/absence of a supporting platform, and maximum mound height (Ehret in Ashmore et al., this volume). As might be expected, within the overall XSS sample of 242 sites, isolated low mounds (type I; n=68) and informal groups (type II; n=79) far outnumber formal patio groups on platforms (type VI, with mound(s) 2-5m high; n=8; type VII, with mound(s) >5m high; n=2). Since most of these sites were probably residential in function, the distribution allows provisional modeling of ancient social hierarchies, particularly for the Late Classic (Ehret, op. cit.). Dos Chombitos, one of the two type VII sites, included a causeway, one of two documented outside the limits of the Xunantunich archaeological preserve (see

below; causeways within the preserve are described by Keller , this volume). Two sites with unusually large platforms (Xunantunich Group E and O/A2-1) may represent a ritual and/or civic center of Middle Preclassic age, 750-1000m east and downhill from Xunantunich Str. A-1 (Robin et al. , this volume; Ehret, op. cit.). The latter are discussed further below.

Initial chronological analysis assigns 46% of dated sites solely to the Late Classic; another 41% of dated sites yielded materials from more than one period, including at least some portion of the Late Classic (Ehret, op. cit.; for XAP periodization generally see LeCount 1992). The overall temporal distribution of XSS pottery is strongly bimodal, emphasizing occupation in the Middle Preclassic and Late Classic periods. Terminal Classic ceramics have been recovered in only 29 sites, most clustering around type VI and VII sites (Ehret, op. cit.), as if population were contracting into smaller and/or more tightly focused communities. This shift is reminiscent of Terminal Classic developments within the Xunantunich core, where allotment of and access to public space contracts markedly to emphasize activities at Strs. A-6 and A-1 and in the plaza between them (e.g., Leventhal et al. 1993: 12).

"Benque Viejo" (i.e., Xunantunich) is often cited as the northern edge of a zone of abundant terracing extending southward into the Maya Mountains (e.g., Ower 1927; Turner 1974; cf. Fedick 1994), but until now, the local distribution of specific terrace forms has lacked systematic examination. Terracing covers approximately 12% of T/A1, usually in "sets" of two or more individual terraces (C. Gifford, in Ashmore et al. , this volume). Not all are necessarily subsistence features; soil analyses are pending, and excavation tests are yet to be conducted. Of the 131 terrace sets (TS) surveyed, 53% (n=61) are found on "gentle" slopes (10-18°). Four provisional TS types have been defined, and collectively suggest intriguing variability in ancient land tenure and use (C. Gifford, op. cit.). The smallest TS (type 1; roughly 13% of the sets) are plausibly garden areas, having no more than 2 small terraces in a set and being closely associated with probable habitation sites. Sets of type 2 (18%) are larger in size and number, arranged haphazardly, and again, probably pertain to household compounds. Both of these types suggest household-level land management. In contrast, types 3 (21%) and 4 (37%) hint at landholding and management by larger corporate groups, whether controlled communally or by a central authority. Both types are characterized by relatively large terraces that are uniformly parallel and evenly spaced. The two types differ in that type 3 terraces are somewhat smaller than type 4, and include single, small mounds that likely represent field houses; type 4 TS are more extensive in area, more elaborate in construction and lack field houses (e.g., Fig. 9; C. Gifford, op. cit.). Approximately 11% of the TS of T/A1 were of mixed form, not easily assignable to these working types. As a whole the XSS terraces contrast markedly with the scale, elaboration, and near regimentation of Caracol terracing (e.g., Chase and Chase 1987, 1990; Healy et al. 1983)--surely reflecting contrasts in political and economic centralization in the two locales.

Ceramics recovered from terraced areas range in age from Middle Preclassic through Terminal Classic times (Ehret, op. cit.), but samples are meagre and we suspect terrace construction actually began no earlier than the Late Classic, as is true elsewhere in the Maya area (e.g., Dunning and Beach 1994; Turner 1974). Soil chemistry analyses from terrace and transect contexts (see above) suggest marked variability in the overall sample, but distributional patterns are still under study (William I. Woods, personal communication, December 1994).

(b and c) Survey along T/A2 reached a point approximately 1.3km north of Xunantunich Str. A-1 or about 1km north of the preserve limits. The centerline of this transect has an alignment of N3°59'E. Twelve discrete sites were recorded along T/A2, and another 39 are designated as O/A2, all of these within the block survey north of the Xunantunich access road, cited earlier (see Fig. 6).

Although T/A2 survey has just begun, striking contrasts with T/A1 are already evident. We were already well aware that the settings were distinct: after steep descent immediately north of the site core (and still within the archaeological preserve), terrain is much flatter than on T/A1. Landforms in this portion of the Mopan drainage are generally far less rugged than are those nearer the Macal. Perhaps not surprisingly, we have encountered no terracing thus far in T/A2; other kinds of settlement remains are generally small and dispersed.

The most dramatic discoveries related to T/A2 to date are largely off the transect proper, and may define foci of local settlement in Middle or Late Preclassic times. The monumental platform and paired pyramids east of the Xunantunich site core were mentioned earlier. Approximately 475 m north of Str. A-1, traces of a causeway or *sacbe* were encountered, and traced northward for nearly 450m; if the alignment is extended, it points to the core of Actuncan. Although ceramics from causeway probes are strongly Preclassic (Ehret, op. cit.), that age is a *terminus post quem:* we cannot confidently assign the construction to this period. Nevertheless, because fairly abundant (but redeposited) Middle Preclassic material has been found within the Xunantunich site core, and because the Preclassic saw Actuncan emerge as one of the earliest political centers in the region (Leventhal 1992; Ashmore 1993; McGovern 1992), we are more than a little intrigued. Settlement elsewhere in the region is widespread by this period (e.g., Cahal Pech; Awe 1992), and the Middle Preclassic is one peak of the strongly bimodal chronology suggested by XSS shovel tests and surface collections (Ehret, op. cit.). It may indeed be the case that the causeway and monumental constructions cited above are the most prominent remnants of the Preclassic settlement landscape in our study area.

An additional observation is tantalizingly consistent with such an interpretation (Ashmore 1994). That is, Xunantunich Group E and the Callar Creek site are each dominated by a pair of monumental pyramidal platforms (each ≥10m high). These are reminiscent of the somewhat smaller Floral Park site described by Willey, Bullard, Glass, and Gifford (1965: 310 and their Figs. 178a, 179). All three sites are located on relatively high ground, overlooking the Mopan/Belize river, at

some remove from the river. The relation of this distinctive site form to larger settlement contexts remains obscure, for lack of chronological as well as other data. We tend to assume Maya settlement patterns in this part of the lowlands reflect most strongly a Late (or Terminal) Classic occupation; from this perspective, the locations of Group E and Callar Creek are particularly enigmatic. Pondering the potentially Middle Preclassic age of Group E, however, led to recognition that both these sites might be considered more productively in relation to *Actuncan*, from which they are virtually equidistant (compare Figure 3 with the locational description for Group E, above; Group E appears on Fig. 6, due east of Str. A-6, at the "notch" in the survey perimeter). We eagerly anticipate continuing investigation on T/A2 in 1995, along the edge of Actuncan and terminating in Callar Creek.

**Excavations at San Lorenzo**

Investigation of this settlement cluster began in preceding XAP field seasons, with initial survey (Yaeger 1992) and excavations (Chase 1992, 1993). The complex occupies a series of alluvial terraces along the east bank of the Mopan river, nearly directly opposite Actuncan (Figs. 3, 10). It is plausibly interpreted as remains of a distinct village or other corporate community (Yaeger, this volume). During the two seasons funded by NSF, the aim is to provide a model for the differentiation and integration of households in this community, with a focus on the Terminal Classic period. Goals targeted for 1994 were (a) development of a typology for constituent mounds and groups within the complex, and (b) extensive clearing in three of the resultant types (Ibid.). Except as otherwise noted, the following summary is based on Yaeger's report (this volume; see also Braswell, Keller and Yaeger 1994).

(a) As in the overall XSS typology, the principal bases for classification are number of mounds in a group, and presence/absence of a recognizable patio space. The criterion for defining group boundaries is the same 25m "gap" used in XSS at large. Three types partition the nine recognized mound groups; 14 additional isolated mounds comprise the fourth type. All groups and isolated mounds are numbered consecutively, with the prefix "SL-." The largest and most complex of the groups (SL-13) was probably the focus of the settlement, and Ashmore equates it with Ehret's XSS type V or VI.

(b) Excavations focused on SL-22, SL-24, and SL-31 (Fig. 10), each of which had produced Terminal Classic pottery in Chase's (1993) earlier tests. Lesser attention was given to SL-20 and SL-25; the lack of Terminal Classic materials in these new locations ended investigation there.

SL-22 is a patio group with four structures atop a platform (Yaeger, this volume). In preceding seasons, excavation here had yielded well preserved architectural remains and relatively abundant primary deposits of Terminal Classic refuse (Chase 1993). Extensive stripping in 1994 allowed clearer definition of architectural form, and functional differentiation of activities at or adjacent to the various structures. All mounds of this group are platforms or substructures faced with limestone, although material form and construction style was quite variable.

The northern mound, Str. 1 had a central outset stairway on its patio (south) side, and pieces of fired daub suggest it supported a perishable superstructure. Discrete refuse strata along the north edge of the structure suggests sequent occupations in the Late Classic (II) and Terminal Classic; the adjacent facing of the substructure was outset slightly, at exactly the sand level separating the LCII and TC deposits. The large facing blocks above the this level contrast with slab masonry below; taken together the evidence is consistent with inferences of variable construction style *or* sequent construction *or both*. Associated TC ceramics were dominated by relatively elaborate Belize Red serving vessels, especially oven-foot tripod dishes and barrel-shaped vessels. Grinding stones and faunal remains were nearbly absent, as were storage jars. Combined evidence suggests a focus for ritual meals and related activities.

Str. 2, on the east, is the largest of the group, and has the highest quality masonry, with larger blocks than in adjacent structures. Like Str. 1, it had a patio-side outset stair (but more elaborate here), and likely bore a superstructure. Burnt plaster and daub found in 1993 suggest the latter was built of perishable materials (Chase 1993), but shallow summit probes encountered three courses of a possible cobble wall. Exposure was insufficient to establish further the nature of this wall. Str. 2 also had an outset lower portion on the side (east) opposite the patio, and again the combined stratigraphic, artifactual and masonry-style evidence is consistent with inference of either stylistic variation and/or sequent construction. Artifact analyses here are still in progress.

Str. 3, on the south, was a multi-level platform and clearly evinced sequent construction--as well as considerable variability in construction style. It bore a vaulted masonry superstructure with what appears to be a bench (only the edge was exposed in 1994). Two ritual deposits were encountered. A subfloor cache within the superstructure was disinterred in antiquity. The other feature awaits further investigation; clearly burning took place at the base of the northern wall of the superstructure, but ambiguous evidence of a crypt extending under the wall could not be explored in 1994. The artifact assemblage from this structure included ground stone, faunal remains, and a diversity of pottery and lithics consistent with a "typical" domestic assemblage (see LeCount 1993).

Str. 4 is appended to the west side of Str. 3. Partial clearing of this low platform yielded a posthole and some fired daub, suggesting a perishable superstructure, perhaps an open-walled shelter. Utilitarian pottery forms, well-used lithics, groundstone, and abundant charcoal and faunal material jointly suggest a kitchen or related function.

SL-24 consists of two structures joined at a right angle. Excavation revealed a formal, plastered patio to their southeast. Fired daub suggests the presence of perishable construction on Str. 2, the west flank of the patio. The artifact assemblage

is consistent with the range of household activities. Both LCII and TC occupations seem evident; further excavation is planned here for 1995.

SL-31 is an isolated mound, whose excavation thus far has furnished evidence of up to five construction spans. The earliest is most likedly LCI in date, although traces of earlier pottery are scattered in fill. Cobbles are the prevalent construction material; fired daub attests to a perishable superstructure, and artifacts suggest a domstic function.

**Discussion**

The combined results of these XSS programs supply broad outlines of an evolving social, political and economic landscape. As noted earlier, the original proposal to NSF posited that ancient Maya society and its organizational structure were generally loosely constructed, and that intensely studied urban centers like Tikal, Copan or Caracol most likely anchored one end of a continuum of organizational integration. The social, economic and political structures at a place like Xunantunich were likely to have been much less tightly bound, with population outside the immediate center linked more closely to local leadership and corporate groups. This loose tethering should have made the hinterland populace much more resilient in the face of changes at the top of the hierarchy. Although any periods of such change should serve as good windows to the dynamics of integration or dissolution, the period of the Classic Maya collapse should provide a particularly apt view. It is precisely that span in which Xunantunich, as a civic center, reached its peak development (Leventhal 1992, 1993). Results of the first of our two NSF-funded years in the Xunantunich peripheries are consonant with such a model of resilience, although they are not yet sufficient to constitute a true test (see also Braswell, Keller, and Yaeger 1994 for explorations of Xunantunich area integration).

The transect data provide a controlled sample of settlement traces, and our growing familiarity with the survey area as whole supports the contention that the sample is broadly representative. XSS data have suggested spatial delimitation of plausible ancient communities, most relatively small, but some likely of long standing. The site typology provides a working model for hierarchical differentiation and integration among settlement units, albeit one begging further testing, particularly with respect to more refined chronological and functional analyses. That is, we recognize that the landscape observed is a palimpsest of occupations; we have begun to tease apart particlar spans within the sequence, and specific roles within the set. Excavations at San Lorenzo contribute significantly, in themselves and as comparison base, toward fleshing out the still skeletal picture. We *may* even have begun documenting political centralization in the Xunantunich locale as early as the Middle Preclassic.

Thus far, evidence *is* consistent with our earlier surmise, of relatively dispersed clusters of settlement, as opposed to the pronounced nucleation and density of Maya cityscapes at Tikal, Caracol, or Copan. The landscape was

substantially modified, for direct habitation and for subsistence needs, but not to the levels of the cities just named. Abundant and diverse terracing of hillslopes argues both for intensification of food production, most likely in the Late Classic, and for variable systems of land tenure and management. The latter inference is compatible with the working model of loose vertical integration, with political and economic authority vested at lower, less inclusive levels of the regional organizational hierarchy.

What is reported herein is largely the direct result of the field season itself. Post-season analyses are still pending, prominently the soils analyses in consultation with Dr. William I. Woods (SIU-Edwardsville) and flotation and paleobotanical analyses by Dr. David Lentz (New York Botanical Garden). The systematic and opportunistic samples of local soils have already been subject to chemical analysis, and Woods notes pronounced variatiability; the spatial distribution of variability is still being assessed. With regard to botanical work, Lentz collaborated in initiating the XAP flotation program, and will analyze finds from both XSS and other contexts. SL-22 Str. 4, in particular, appeared to be rich in carbonized plant material.

**Plans For 1995**

The second and concluding season of this NSF-funded research will continue and expand the programs already outlined, to achieve the goals described in the proposal (Ashmore 1993). T/A1 was likely the most difficult of the transects envisioned, because of the nature of terrain and ground cover. We anticipate completion of the remaining survey in the time allotted. Stratified test-pit sampling will begin in earnest in 1995, to allow more detailed chronological and functional characterization of the sites encountered in survey. Excavations at San Lorenzo will continue such characterization, at a greater level of detail, for this particular Terminal Classic community. And the geomorphological survey is slated to begin.

We envision another two years' field research on Xunantunich settlement in 1996-97, primarily via Ph.D. dissertations by current graduate student members of XSS staff. Diverse research plans are already in various stages of development--from more detailed study of the more complex sites in the sample, to examination of those at the other end of the scale, and analysis of land management strategies and human ecology in the Xunantunich region. These will provide further tests of the ideas outlined in the 1993 proposal, and will have their firm foundation in the research funded by the current award. More important, however, we believe the data and interpretations that are a consequence of this 1994-95 funded research will be a strong contribution in themselves, to understanding ancient society in the Maya lowlands and elsewhere.

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| PERIOD | | TIME | BARTON RAMIE* | BENQUE VIEJO** |
|---|---|---|---|---|
| POST CLASSIC | Late | 1400, 1300, 1200 | New Town | |
| | Early | 1100, 1000 | | |
| | Terminal | 900 | | |
| CLASSIC | Late | 800 | Spanish Lookout | BV IV |
| | | | | BV IIIb |
| | | 700 | Tiger Run | BV IIIa |
| | Early | 600, 500, 400 | Hermitage | BV II |
| PRECLASSIC | Proto-Classic | 300, 200, 100 | Floral Park | |
| | | A.D./B.C. | Mount Hope | BV Ib |
| | Late | 100, 200, 300 | Barton Creek | |
| | Middle | 400, 500, 600, 700, 800, 900, 1000 | Jenny Creek | BV Ia |

* J. Gifford 1976
** J. E. S. Thompson 1940

Figure 1. Ceramic sequences for the Belize river valley. From LeCount 1992.

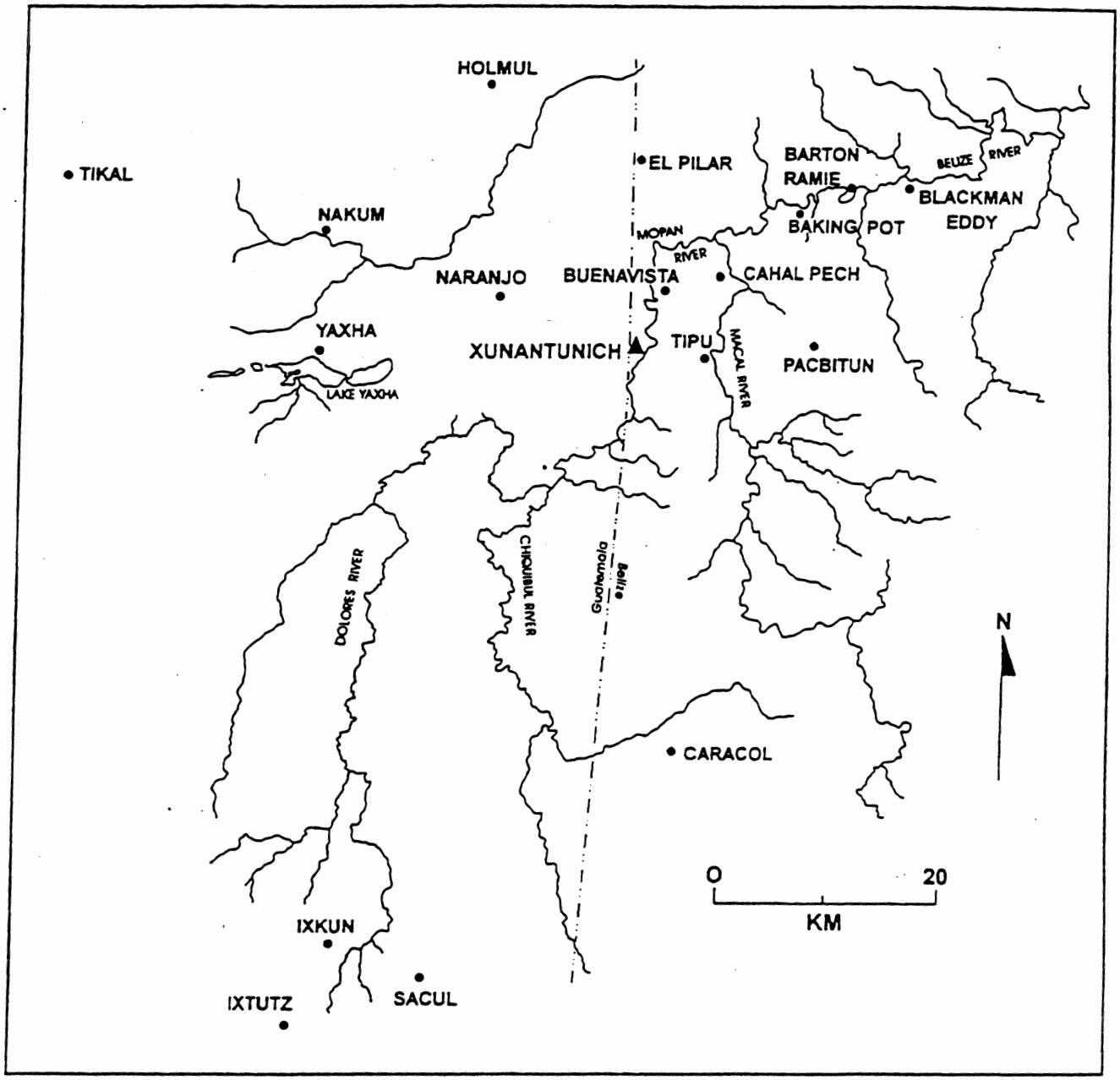


Figure 2. Upper Belize river drainage and adjacent areas, showing sites mentioned in text. From Yaeger and Connell 1993.

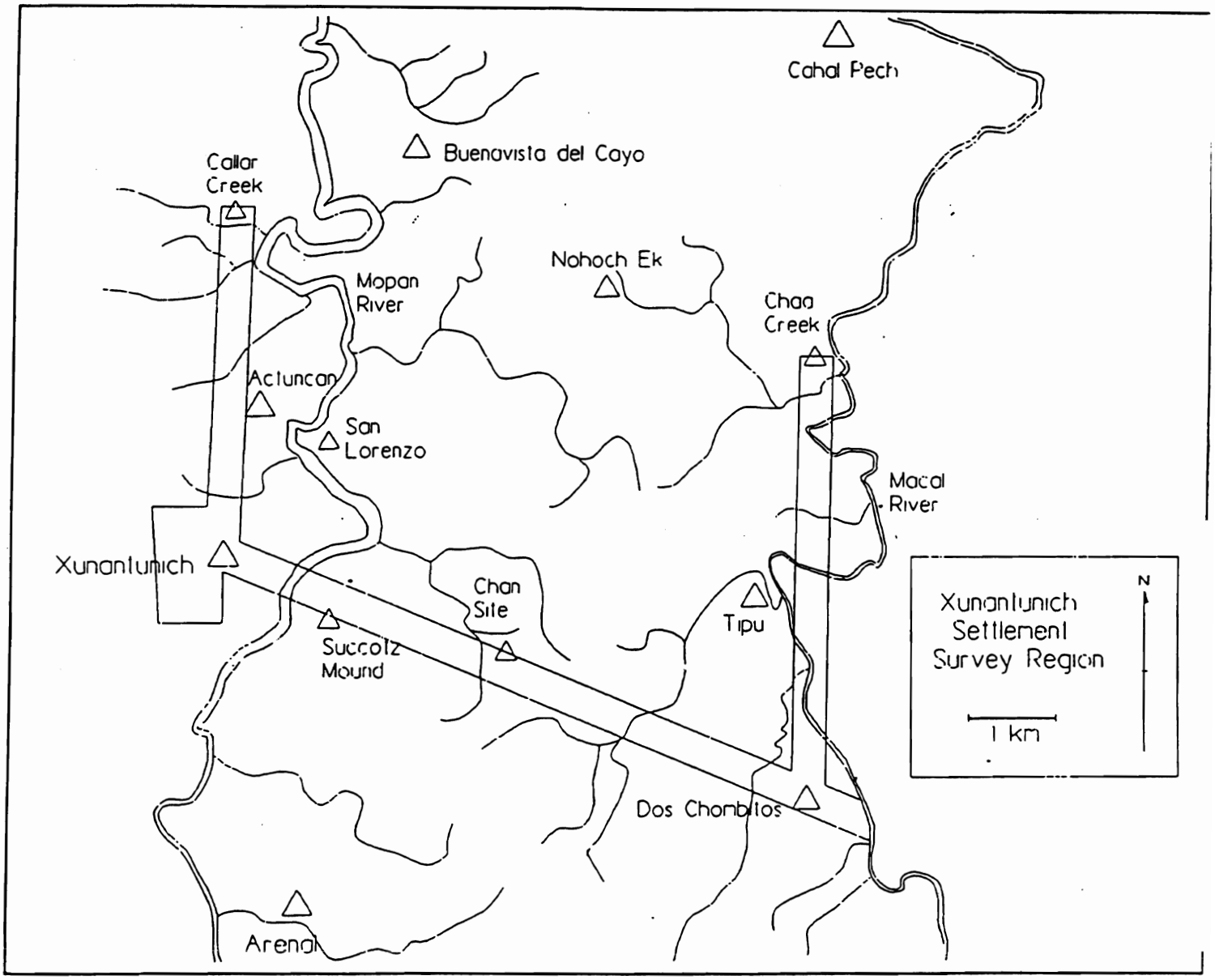


Figure 3. Xunantunich Settlement Survey transects and known sites. From Yaeger and Connell 1993.

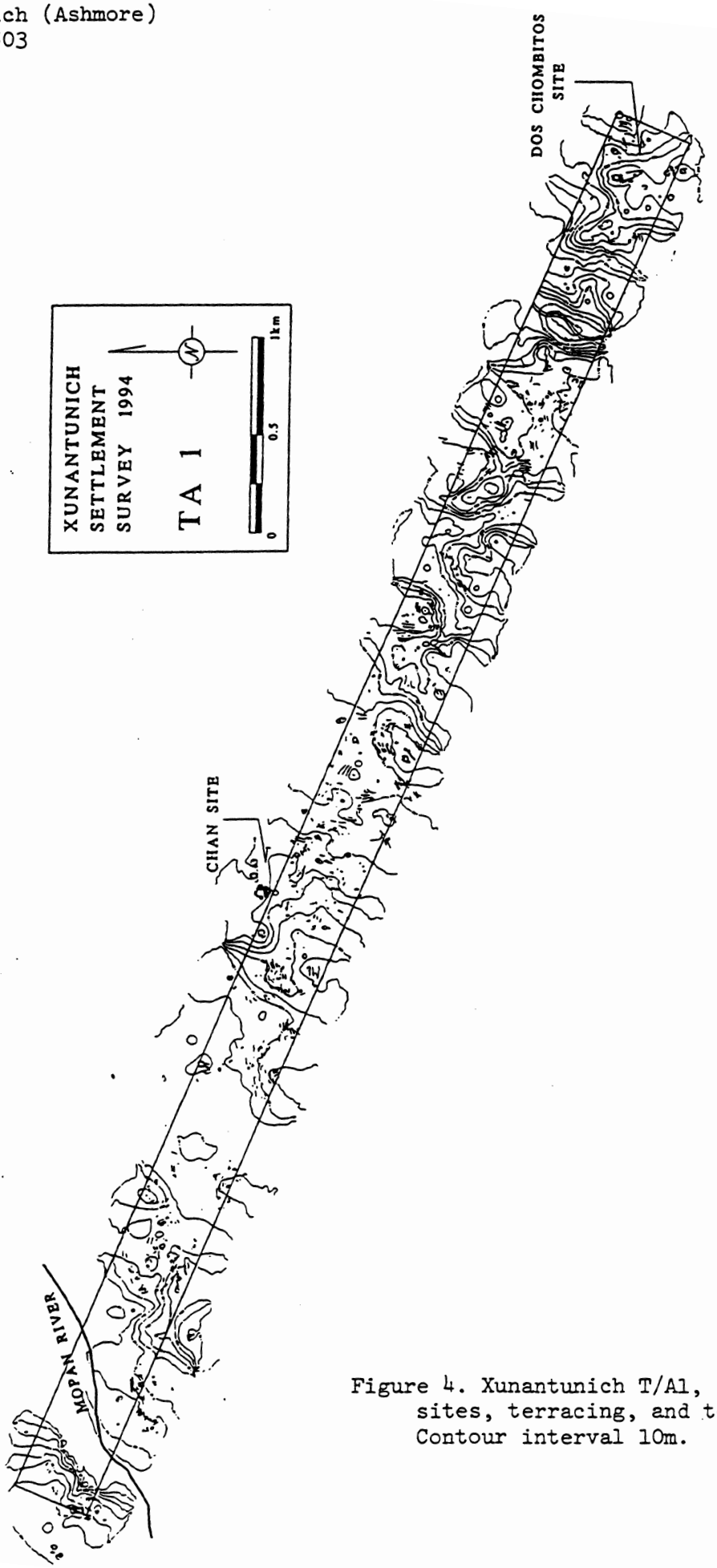


Figure 4. Xunantunich T/A1, showing sites, terracing, and topography. Contour interval 10m.

Xunantunich (Ashmore)
SBR-9321503

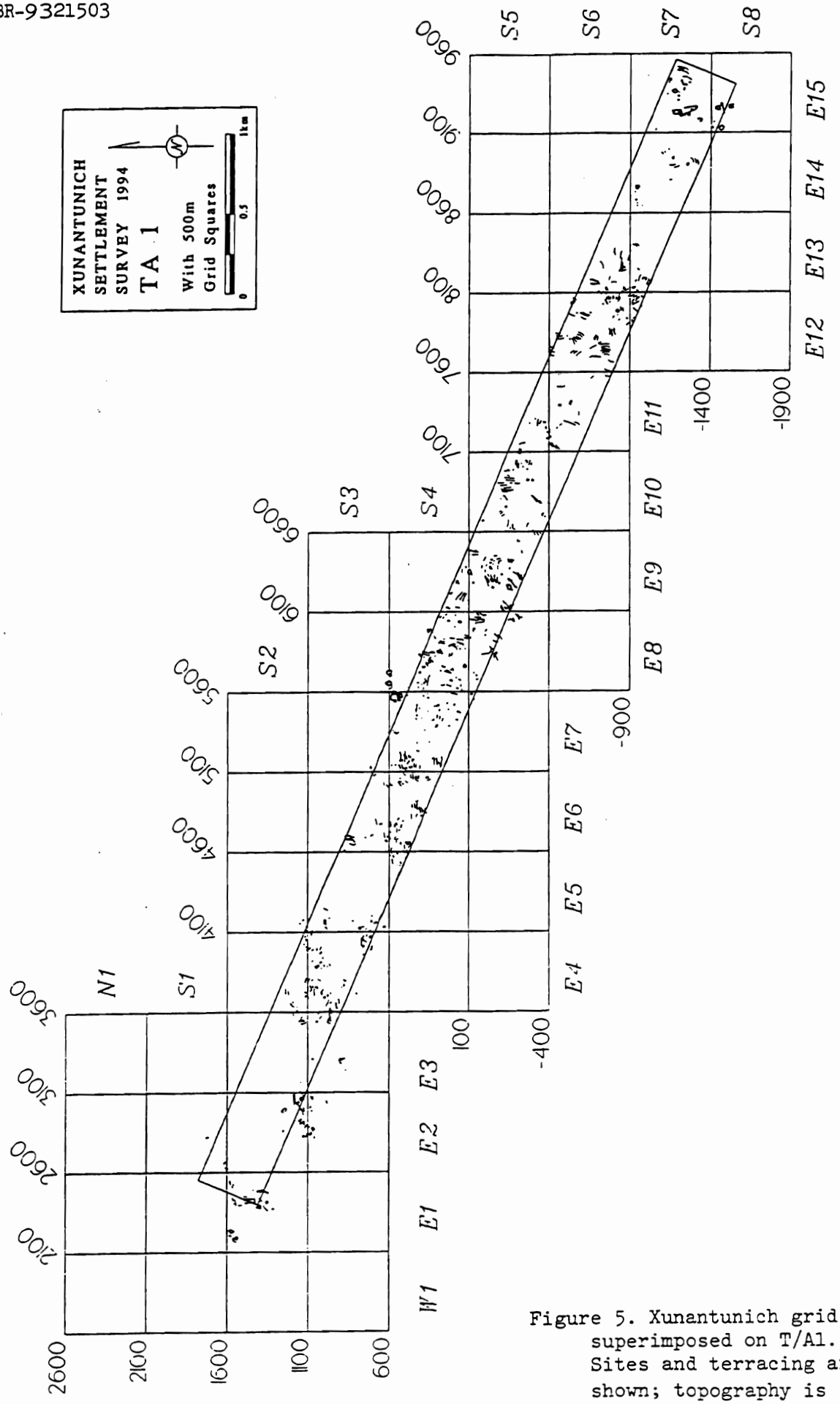


Figure 5. Xunantunich grid superimposed on T/A1. Sites and terracing are shown; topography is omitted.

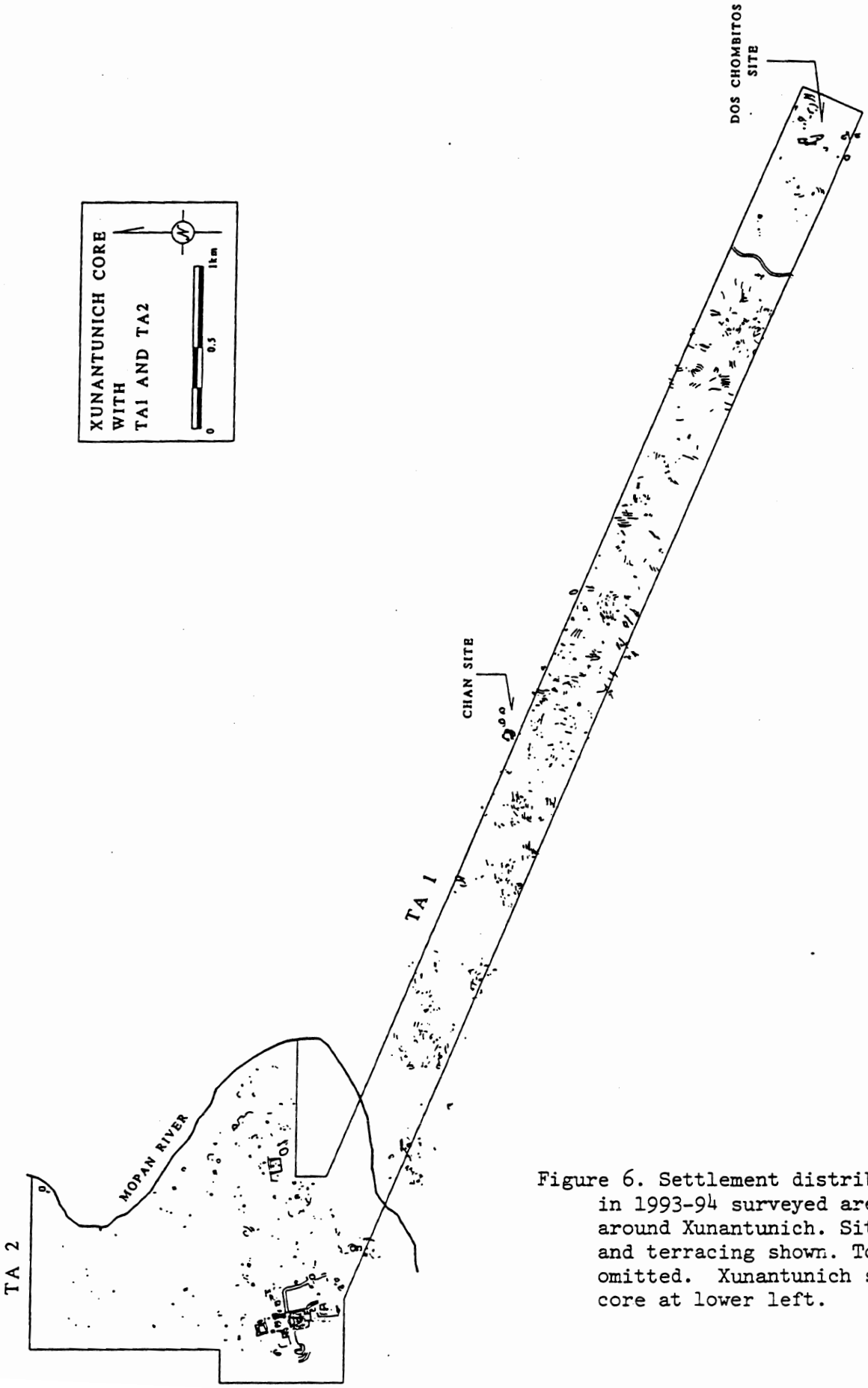


Figure 6. Settlement distribution in 1993-94 surveyed areas around Xunantunich. Sites and terracing shown. Topography omitted. Xunantunich site core at lower left.

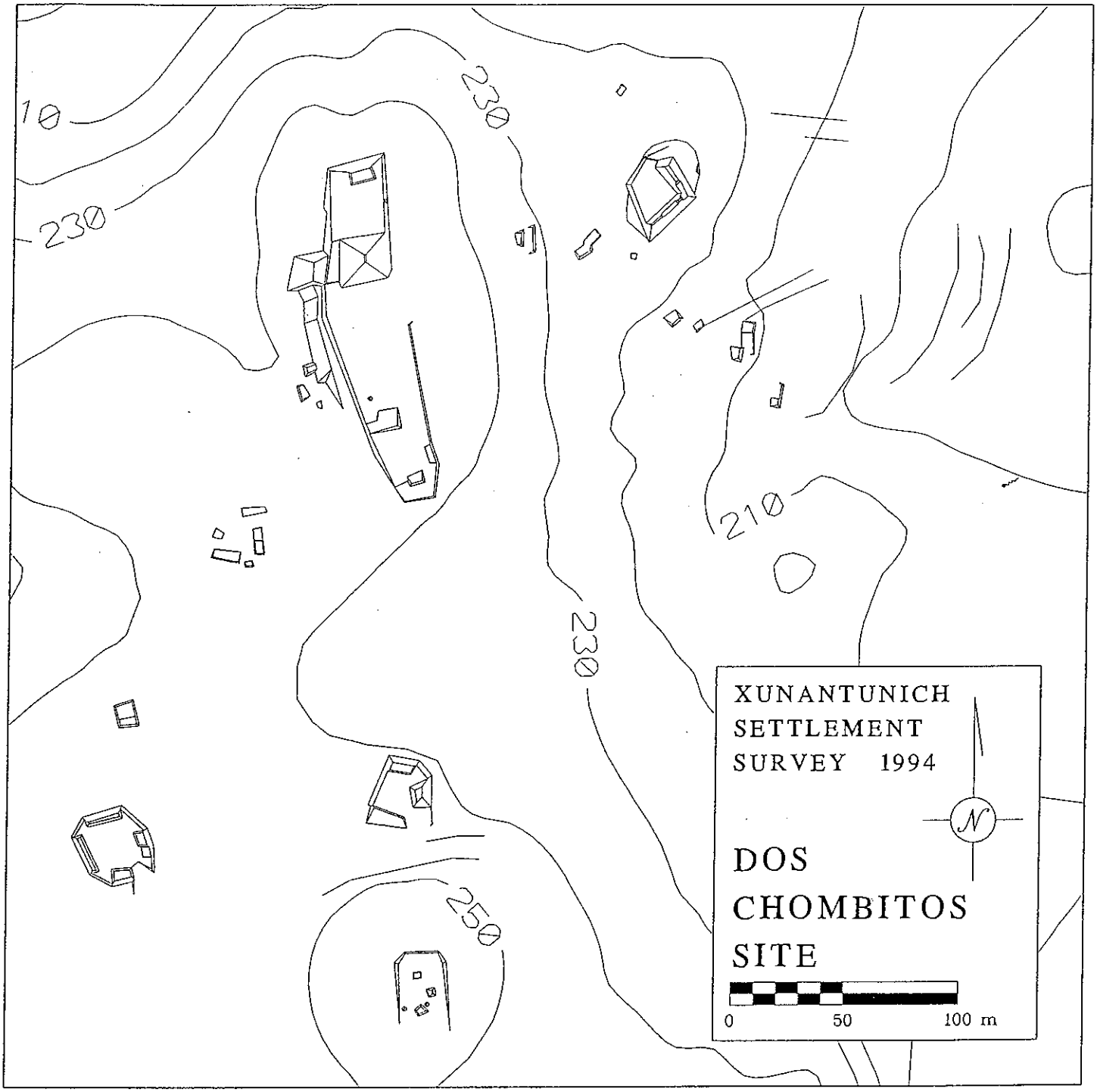


Figure 7. Dos Chombitos site and environs. Contour interval is 10m. (The causeway cited in text is at upper right, the parallel lines extending across the slope.)

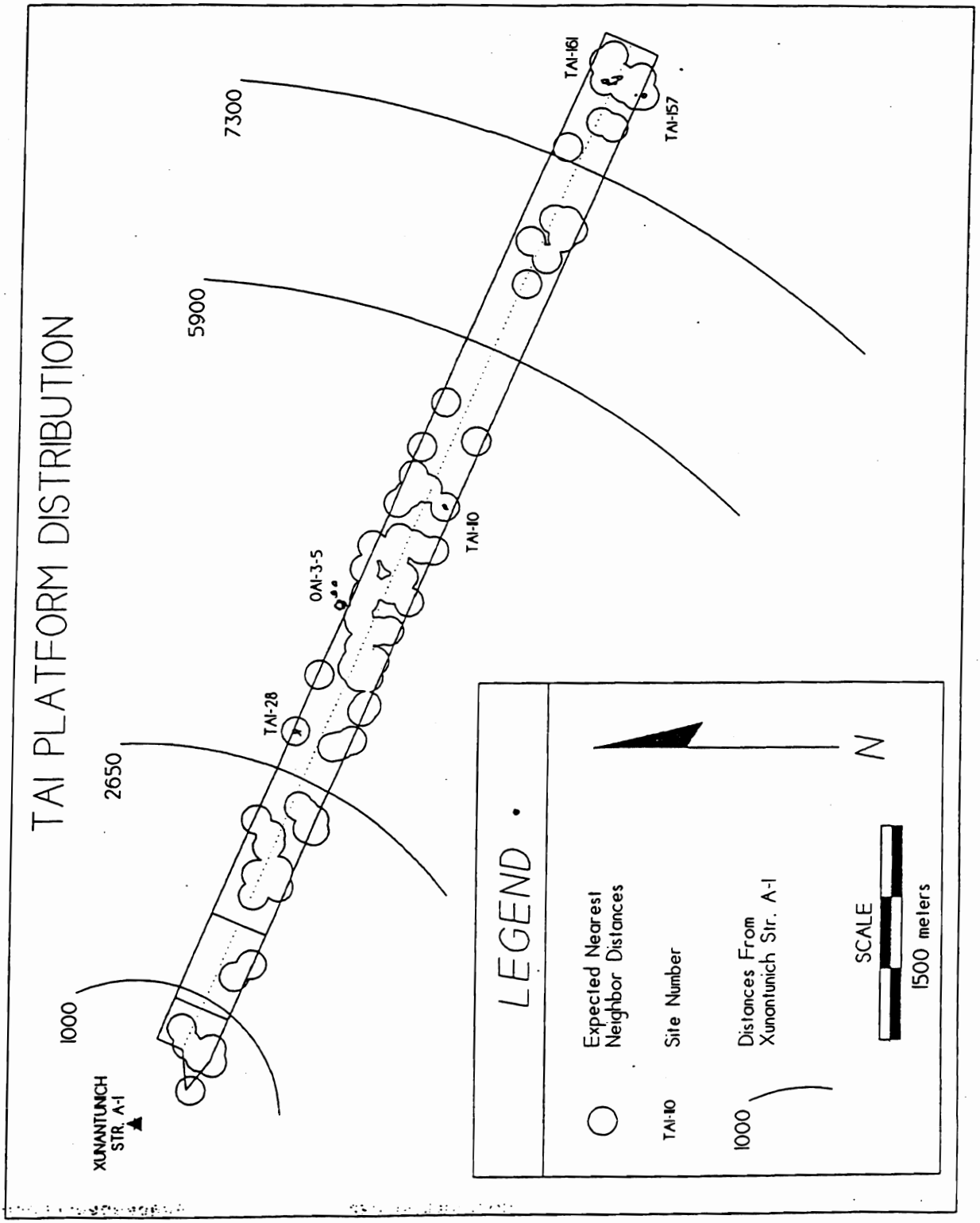


Figure 8. Graphic display of Nearest Neighbor and Stem-leaf analyses for T/A1.

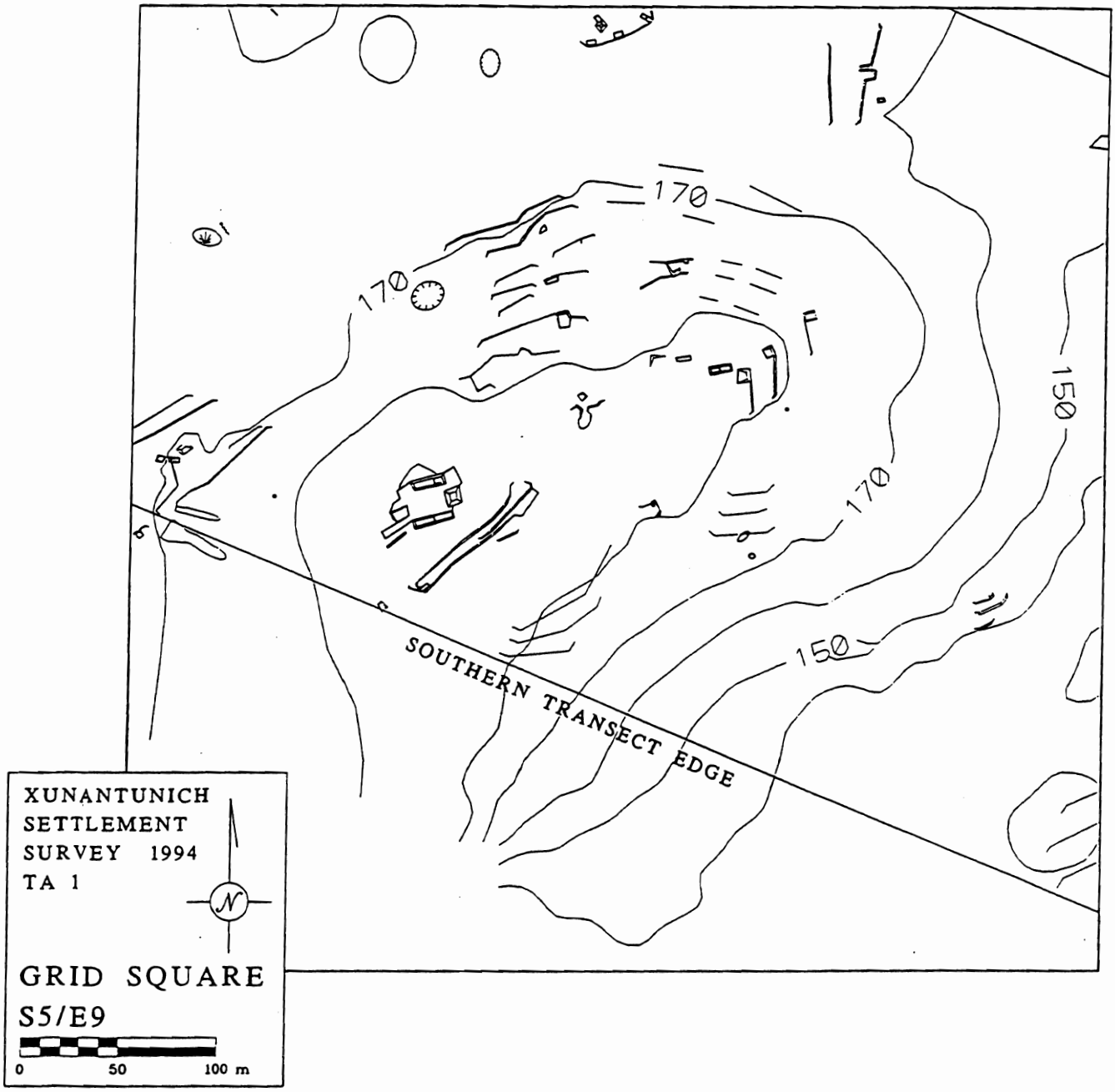


Figure 9. Xunantunich grid square S5/E9. Contour interval is 10m. The large site at center left is T/A1-110. Terracing is primarily of type 3 in provisional typology.

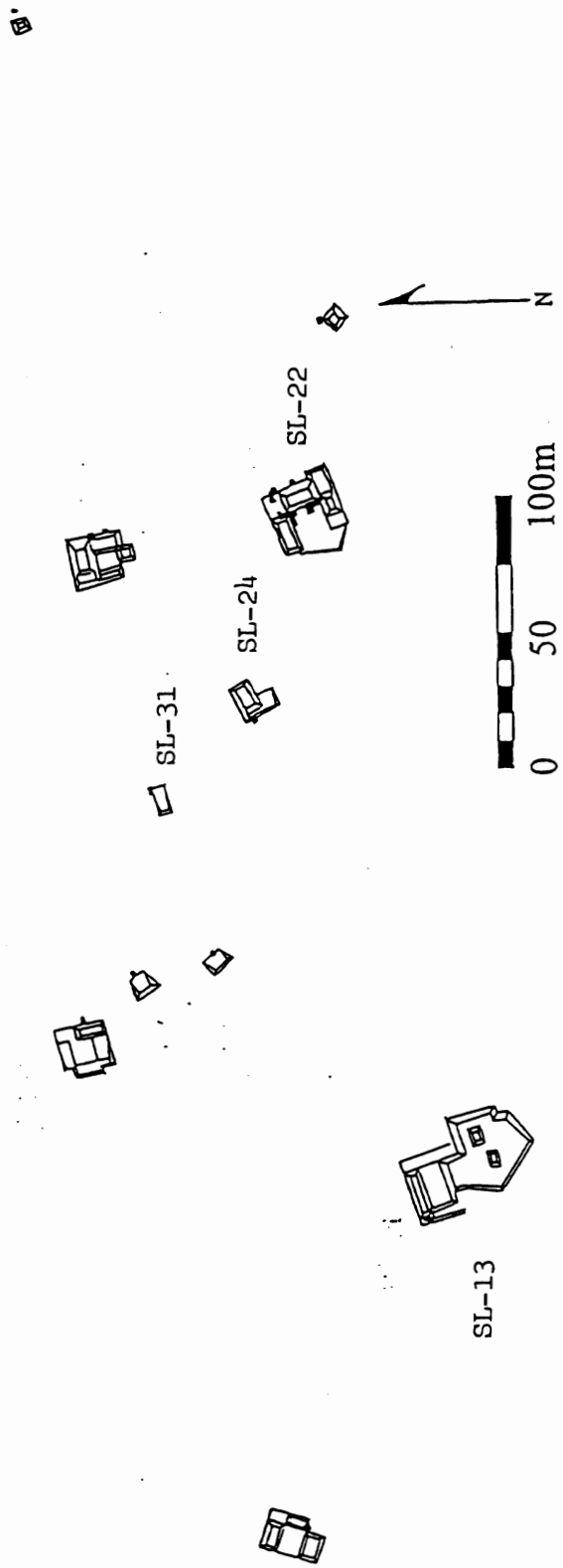


Figure 10. Settlement cluster at San Lorenzo. Adapted from LeCount 1993.

# Excavations In And Around Plaza A-I And Plaza A-II

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Excavations in the vicinity of Plazas A-I and A-II (Figure 1) focused on documenting the increasing architectural complexity that developed in the center of Xunantunich during the period of its primary occupation. Of course, defining precisely when that period was, is a major goal of the current project. Aside from chronological issues, the excavations described below were aimed at developing an understanding of some of the cultural processes that might have been responsible for the architectural accretions throughout the history of Xunantunich.

## Structure A-1: Excavation of the Central Trench

by Thomas R. Jamison and Gregory A. Wolff

Excavation of Structure A-1 (Figure 2) continued in 1994 with the central trench (operation 79) started under the direction of Scott Zeleznik and Wendy Natt during the 1993 season. This trench was started as a 4 by 8 meter excavation into the summit of the structure on the north-south axis. It was placed over the southern half of the summit in order to allow for connection with another excavation through the southern stairway and terraces. Approximately 3.4 meters down into the substructure the excavation was stepped in 50 cm on all sides to form a 3 by 7 meter unit.

We continued that excavation in 1994 in hopes of locating a deposit or earlier structure that would aid in our interpretation of Str A-1 and its reason for being placed in the middle of the previously open plaza between Str. A-6 and Plaza A-III. Unfortunately, a section of the trench collapsed in early March and forced us to reassess the stability of the excavation and its safety. Although we could have stabilized the excavation and continued, we decided the potential information we would recover was outweighed by the cost and risk that would entail. Therefore, the excavation was discontinued.

We did, however, learn more about the construction of Str. A-1. It continued to be similar to that excavated in the 1993 season. The fill continued to be divided into construction bins from about 2 meters on a side down to .5 meters on a side. The bin walls were composed of a range of materials from large chert cobbles to small limestone rubble. Fill of these bins also ranged greatly from fairly clean silt or clay to rubble or cobble fill or any combination of these materials. Most of the fill did not have much sand in it, however, with clay and silt being the bulk of the matrix.

In addition, some bins had high concentrations of ceramics while others had less. However, most lots had moderate levels of ceramics, frequently of very good preservation and of fine quality. These materials included many polychrome fragments as well as a couple pieces of plain alabaster vessels. There were some chert flakes and cores, but very few tools apparent. The variation in ceramic content per lot could indicate different contexts for the source of the fill material. Thus, the

fill seems to have been coming from a range of contexts including elite deposits. Also, as with the previous season of excavation, the differences in fill color and texture were very distinct and could be significant in terms of their sources as well as reflecting the mode of labor used for construction of the building. Compartmentalization such as we found with the construction bins suggests that some form of group labor units such as families or gangs of laborers were responsible for filling certain areas or sized bins. The idea of "symbolic fill" was suggested in 1993 due to the variety and distinction of colors of fill seen in the trench. However, this season did not reveal any pattern that could help us elaborate that suggestion beyond a nice idea.

As in 1993, the excavation of the central trench was carried out based on the internal construction of the A-1 substructure. "Construction bins" continued to structure the fill of A-1 and excavations were divided within the trench framework according to those bins. As with the fill removed in 1993, the bins excavated in 1994 varied tremendously in the character of the walls surrounding them and the fill within each. Frequently there were open spaces between bins that were not contained by formal walls. Some bins constructed as four sided units were surrounded by others that were formed with one or two walls abutting the four sided constructed bins. Some sense of the sequence of construction could be ascertained by the ways in which the bins connected and the batter of their walls. Several of the bins were obviously constructed from deep in the substructure and could be traced vertically for several meters. The battered walls to such bins caused them to be smaller at the top then at the base. Although they were constructed coincidentally with the surrounding fill, they form column like units in the fill of the substructure.

The structure fill varied considerably, although perhaps not as much as the fill higher up in the substructure. Some of the bins were of river cobbles with little or no soil fill. Others were soil contained by rubble or cobble walls. A few caps of lime mortar mix were encountered in the excavation. Some covered the whole excavation and were clearly pauses in construction. Other levels of mezcla covered smaller portions of the substructure as it was being constructed, showing in only a portion of the excavation.

As part of the central excavation, a 2 meter wide cut was continued from 1993 through the construction terrace facing on the south side of the structure. The axial excavation through the south stairway of A-1 in 1993 uncovered the rough construction terraces running underneath the stairway. These construction terraces coincide approximately with the cut block terrace faces to the east and west of the stairway. The cut through the terraces was originally 2 meters wide, but as we continued to cut into the construction terraces of the structure, the poorly consolidated fill made it impossible to retain that width. The excavation connected the central trench with the excavation completed in 1993 through the southern stairway of the substructure. It was, thus, intended to provide a complete section through the southern two thirds of the A-1 substructure.

Unfortunately, the connection of the central trench with the stairway excavation caused the poorly consolidated walls of the central trench to become increasingly unstable. A portion of the excavation collapsed during excavation (without harm to anyone) and forced the excavation to be abandoned.[1]

Excavation was also carried out as part of Operation 79 at the base of the 1993 trench through the southern stairway of the structure. This area was excavated by Zeleznik and crew through the final stairway and the construction stairway to the faces of the construction terraces retaining the substructural fill. At the base of this trench a rough three step feature was uncovered that had been constructed up against the base of the lowest terrace face. This construction that appeared in the east side of the 1993 trench ran out of the sidewall and extended approximately 80cm into the trench.

This construction consisted of three rough steps faced with limestone cobbles and rubble and filled with limey soil. Nothing about it indicated any sort of special context in terms of artifactual deposit. However, the construction itself may have been some sort of symbolic beginning between construction of the lowest terrace face against which it was placed and the placement of the construction stairs over it. Like Structure A-1 itself, these steps rested on the earlier of the two preserved plaza floors. It has been suggested the steps were used to construct the first stages of the substructure, however, that seems unlikely to me as they were very narrow and low, and unlikely to facilitate much. Perhaps a combination of such a function with the symbolic representation of that function could explain their purpose.

Once this construction was removed, we cut through the plaza floor in order to examine a cut in the bedrock first noted by Zeleznik in 1993. This seemed to be a likely location for a cache or burial, so it was further investigated in 1994. Directly on the axis of the building, the bedrock had a 75 to 80 cm wide break in it that appeared to be an intentional cut. This cut extended from just to the south (outside) of the final phase stairway and ran to the north under the construction stairs. Unfortunately, this "cut" proved to be a natural fracture in the bedrock. It was filled with what had first appeared to be cobble and mezcla fill, but what upon excavation was clearly differentially eroded bedrock. The original fracture in the bedrock seems to have promoted erosion on either side, thus, the affected area was widened as erosion deteriorated the limestone.

Operation 79 provides a clear picture of the construction of A-1. Excavation of the central trench (between 1992 to 1994) extended from the top of the structure at 183.092M ASL to 175.318M ASL. This trench, thus, cleared 7.244M of construction fill without any indication of an earlier version of Structure A-1 within the substructure (see discussion of Ball Court 3 below). The trench, therefore, left 4.648M of the substructure uninvestigated. However, that relatively low height discounts the likelihood of a structure of any considerable size being located within that space.

The possibility of a tomb or other deposit placed under A-1 or dug into the edrock remains. In particular, the three stelae depicting, one or more, rulers were originally placed on the south side of the substructure and may mark A-1 as the location of royal burial similar to that identified by Demarest at Dos Pilas (Demarest 993).

The central trench made it obvious that there was no large construction in hat location prior to Late Classic 2 times when the bulk of the substructure of Str. A-1 was constructed in one phase. Thus, the area that is now occupied by Plazas A-I and A-II was one large plaza until Late Classic 2 times (see concluding section for more discussion of the Plaza A-I and A-II sequence).

## Excavations in Structures A-17 and A-22: Identification of Ball Court 3

by Gregory A. Wolff and Thomas R. Jamison

### Introduction

One facet of the 1994 field investigations at the Xunantunich site center involved excavations on the west side of Structure A-1. An apparent discrepancy in the symmetrical nature of the pyramidal substructure of Structure A-1 was observed at the northern portion of the western side of the structure. Initially it was assumed that this discrepancy was due to differential collapse from the structure, but the degree to which the colluvium extended westward suggested that such an explanation could not fully account for the totality of the extension. Further consideration of the situation led to the hypothesis that a small terrace was added to the structure, sometime after its initial construction phase. A series of test excavations was undertaken in order to investigate the presence of some sort of addition (Figure 3).

### Identification of Structure A-22

To examine the possibility of a later addition to Structure A-1, our immediate goal was to identify the terraced substructure on the west side for comparison with substructural terracing identified on the north side during the 1992 and 1993 field seasons (Zeleznik 1993: 37-39). Those previous excavations and clearing operations identified three terrace retaining walls and questionable evidence of a fourth terrace retaining wall. During the 1994 field season, excavations were undertaken to locate those same terraces on the west side (suboperations 76P through 76U, plus 76Z). Six one meter by two meter test units and a single one meter by one meter test unit were placed end-to-end, beginning at the apparent base of the A-1 substructure, and continuing up the side of Structure A-1 (i.e. to the east). After clearing the disturbed surface layer and collapse debris, the terraced substructure was apparently revealed. However, the preservation of the terrace retaining walls on the west side was rather poor, complicating the identification of the substructural terraces. As noted by Zeleznik (1993: 37-8) for the north side terrace retaining walls, the poor preservation may be due to the combination of the softness of the limestone and the lack of a

tenon to securely fasten the facing stones to the substructural core.

The elevations of these poorly defined terraces on the west side did not correlate as well as expected with the elevations for the north side platform terraces. In an attempt to better define the terraces, three additional test units were placed end-to-end at the northwest corner of the building. These suboperations (76AA through 76CC) cleared the disturbed surface layer and collapse debris. The excavations followed the western limit of Structure A-1, as represented by a north-south oriented line of large cut limestone blocks. These blocks are the facing stones for the basal terraced platform. The base of the excavation was defined by the plastered plaza floor. Following the edge of the substructure and the plaza floor south, the north-south line of cut block limestone terminated upon reaching an east-west oriented basal moulding and wall. Well-preserved plaster was present on both the basal moulding and the lower portion of the wall. The basal moulding was roughly 93 cm tall and about 45 cm deep. The wall was of a different construction than the north-south wall of Structure A-1, consisting of thin, horizontally laid, slab-like limestone blocks. The original height of the wall is uncertain at this point due to poor preservation and collapse of the original structure, but the preserved portion of the wall uncovered during this year's excavations measures more than 1.2 meters above the basal moulding, yielding a height of at least 2.1 meters.

That the north side terrace retaining wall of Structure A-1 was superposed on the east-west wall and moulding, and that the two walls were manufactured differently indicates that two temporally distinct constructions are represented. The earlier edifice has been designated Structure A-22. Although the exact dimensions of Structure A-22 can only be estimated until further clearing excavations are undertaken, it appears that the long axis orientation of Structure A-22 is roughly aligned north-south. The eastern extent of Structure A-22 is unknown at this point, but the dimensions of the structure compare favorably to Structure A-17, located immediately to the west. Indeed, the two appear to be mirror images of each other. Structure A-17 measures approximately 20 meters north-south by 10 meters east-west; Structure A-22 appears to be roughly 20 meters north-south also. This fact suggested to us that the two buildings functioned as the lateral range structures of a ballcourt (for a discussion of the terminology of ballcourt architecture see Smith 1961; Scarborough 1991; Taladoire and Colsenet 1991; and Healy 1992). This possibility was investigated in a series of additional suboperations (suboperations 141A through 141D).

**Identification of Ballcourt 3**

To explore the possibility that Structure A-17 and Structure A-22 served as the lateral structures of a ballcourt, a series of additional suboperations was undertaken. The objectives of these excavations were twofold: to compare the morphology of Structure A-17 with that of Structure A-22, and to attempt to locate a ballcourt marker or other ritual paraphernalia associated with the ballgame. To accomplish the first, three one meter by two meter test units were dug end-to-end, beginning at the apparent base of Structure A-17 and continuing west up the side of the structure

(suboperations 141A, 141B, and 141D). To accomplish the second, a two meter by two meter unit positioned at the center of the playing alley was excavated (suboperation 141C).

Despite a large disturbed area on the top of the building courtesy of an excavation earlier this century, an initial glimpse into the morphology of Structure A-17 was provided by the excavation of suboperations 141A, B and D. These three units removed disturbed surface material and collapse debris, revealing a north-south oriented wall battered to the west. This wall, the western playing wall, was composed of small limestone rubble, and was met on the east by a poorly preserved plastered surface (the bench top, located at approximately 171.942 meters asl). Beneath this surface was a layer of ballast consisting of medium-sized cobbles in a dark grayish brown, slightly clayey silt matrix. The original height of the western playing wall is unclear due to collapse and modern disturbance, but surely was taller than its current measure. At present the wall stands 1.13m tall above the interface with the western bench top. The western bench face was not identified this season, but the bench top is estimated to be about 2.95 meters wide. The majority of the ceramic material recovered from these suboperations is from the Middle Preclassic period, but a few Late Classic sherds were found in the lowest stratigraphic levels.

Suboperation 141C consisted of a 2 meter by 2 meter unit centered on the point estimated to be the exact center of the playing alley. This excavation was carried out to bedrock, which lay at 170.194 meters asl. Below the disturbed surface layer of compact soil was a layer of small- to medium-sized limestone rubble and cobbles which was uniformly distributed, perhaps intentionally so, across the unit. The deposition of this layer of limestone rubble may have been the result of excavations carried out earlier this century on Structure A-17. The modernity of this deposition is suggested by the presence of two well-preserved cohune palm nuts recovered from this level. Below, a poorly preserved plaza floor was identified, marked only by scant traces of plaster along with a layer of small limestone gravel which served as ballast. The layer of ballast and the traces of plaster are situated at roughly the same elevation (170.922 meters asl) as the well-preserved plaster found at the interface of the playing alley with the sloping bench face of the eastern lateral structure (Structure A-22). Evidence of a second prepared surface was found roughly 30 cm below the aforementioned playing alley floor. This second surface was marked only by a layer of ballast consisting of compact soil with a moderate amount of small limestone gravel. Between these two prepared surfaces lies a layer of fill consisting of dark grayish brown silty soil with a small amount of small limestone rubble and gravel. Other than these two poorly defined surfaces, no other evidence was found in this unit for additional playing alley floors.

No stone ballcourt marker was located, but in the middle of the 2m x 2m unit, almost exactly at the spot estimated to be the center of the playing alley, a burial was discovered. Initial indications of a special deposit located at the center of the playing alley were provided by the discovery of numerous fragments of unworked slate from a localized area just beneath the playing alley floor ballast. A large number of

jute shells were also recovered from this locality. Located below the slate fragments were the poorly preserved skeletal remains of what has been tentatively identified as a subadult of unknown sex, probably interred in a flexed position. A few well-preserved rodent bones were also found among the human remains, but their condition suggests that they may have been deposited more recently and that their presence among the human remains is probably coincidental. Few slate fragments were found among the skeletal remains, suggesting that the slate may have served to cap the burial. Items associated with the burial are limited in number, and include jute shells, other unidentified shells, chert flakes, and ceramic sherds. The ceramic material recovered from the burial dates to the Middle Preclassic and Late Classic I periods. Judging on the basis of stratigraphy, the burial appears to be associated with the construction of the latest playing surface. The burial cuts through both the latest prepared surface and the fill between the two surfaces, but is overlain by the ballast for the latest playing alley floor. The base of the burial was defined by bedrock.

A second intrusive feature predates the burial. This small but well defined circular deposit (diameter = 25 cm) penetrates the earlier prepared surface, and is overlain by the layer of fill between the two prepared surfaces. The feature fill included a few small flecks of charcoal, a couple of non-diagnostic sherds, chert flakes, and jute shells.

Interestingly, beneath the playing surfaces of the ballcourt a low, one course platform was encountered. A pair of medium-sized limestone slabs, 8-10 cm thick and horizontally laid, were encountered about 20 cm above bedrock. These slabs were faced on the west side and aligned roughly north-south, and were covered with a wet-laid mezcla surface. The exact dimensions of this low platform are unknown as it extends beyond both the northern and southern limits of the test unit, and probably extends further to the east. Time constraints at the end of the field season prohibited further investigation of the platform. The burial penetrated through this platform, halted only by bedrock. No diagnostic artifacts were recovered from the platform fill.

Preliminary analysis of the ceramic material recovered from suboperation 141C informs us that the assemblage is dominated by Middle Preclassic sherds (Jocote and Mars Orange), and includes Early Classic, Late Classic I, and Late Classic II sherds. Even the lowest stratigraphic levels contained sherds from these later periods.

The architectural characteristics of Structure A-22 compare favorably with those of Structure A-17. The playing alley of the ballcourt was encountered in suboperation 76Q, where a poorly-preserved plaster surface at an elevation of 170.922 meters asl meets the sloping eastern bench face. The bench face is characterized in this suboperation by three large pieces of limestone rubble which form a north-south oriented battered wall facing west. The bench face was presumably plastered when the ballcourt was in use, but no trace of plaster was

found. Currently the bench face is only one course tall, measuring about 30 cm high. From bench face to bench face, the playing alley was approximately 5.5 meters wide. The interface between the bench face and the bench top has eroded away, but judging by the elevation of the plastered surface of the bench top at the playing wall (171.878 meters asl), the bench face would have measured about 95 cm tall (assuming a level bench top surface). The eastern bench top was about three meters wide. The portion of suboperation 76P where the plaster has eroded away offers a glimpse of the construction of the bench. The ballast for the bench consisted of a layer of medium- to large-sized cobbles and limestone rubble in a dark grayish brown, slightly clayey silt matrix. This layer was in turn covered by a rough mezcla surface. The eastern playing wall was battered and constructed of small- and medium-sized limestone rubble. The current top of the playing wall was located quite near the ground surface prior to excavation, and while the wall currently stands about one meter tall, it probably stood even taller prior to collapse and erosional activity.

Excavations in suboperation 76S revealed that the construction of Structure A-22 was handled in a manner similar to that of Structure A-1, namely through the creation of fill-retaining bins (Zeleznik 1993; Jamison and Wolff, this volume). The bin walls were usually assembled using small- and medium-sized cobbles, and small limestone rubble. The fill generally consisted of dark grayish brown, slightly clayey silt with small limestone rubble, gravel, and limestone bits. Characteristic of most of the excavations undertaken on the western side of Structure A-1, the ceramic material was mostly Middle Preclassic, with a small but consistent presence of Late Classic sherds in even the lowest stratigraphic levels.

The top of the substructure of Structure A-22 was exposed in suboperations 76T and 76U, where portions of a well-preserved plaster floor were located at 175.24 meters asl. This floor lips up to meet a north-south oriented wall constructed of large cut limestone blocks. Although the wall is now only one course tall, it probably stood higher. The fill behind this wall was similar to the fill encountered in the interior of Structure A-1; it consisted mostly of loose, limy, grayish brown silt with much limestone rubble. This differs from the more compact, dark grayish brown silt with lesser amounts of limestone rubble generally found in the substructural fill of Structure A-22. The large cut limestone block construction is reminiscent of the facing stones on the north side of Structure A-1 at the base of the first terraced platform. This wall of large cut limestone blocks does not extend below the plastered surface on top of Structure A-22, suggesting that the wall represents the western extent of Structure A-1, superimposed on the other structure. The well-preserved plaster floor which lips up to meet the western wall of Structure A-1 implies that Structure A-22 was probably still in use after the construction of Structure A-1.

## Discussion

The discovery of Structure A-22 was unexpected. Previous investigations into the construction history of Structure A-1 suggested that it was essentially built

in a single massive construction episode during the latter half of the Late Classic period (Zeleznik 1993: 54). Additional excavation this season (suboperations 79JJ through 79QQ) of the axial trench begun in 1993 substantiated this supposition, and initial investigations on the west side of the substructure did not seem to contradict this position. However, upon excavating the three suboperations at the northwest corner of the substructure, it was apparent that a structure antecedent to Structure A-1 was present. This structure, designated Structure A-22, was partially subsumed by Structure A-1.

The fact that there was an earlier structure located off to the western side of Plaza A-1 was initially puzzling. The site center is marked by its focus on the central north-south axis formed by Structure A-6, Structure A-13, and Structure A-11 (and later Structure A-1). Structure A-22 would appear, however, to have been located off this central axis. A possible reason for this discrepancy is implied by the morphological similarity between Structure A-22 and Structure A-17, which suggests that the two structures served as the lateral range structures of a ballcourt.

Ballcourts in the Southern Maya Lowlands have been suggested to display a relative degree of standardization throughout time and space (Scarborough 1991: 137). This standardization is also evident at Xunantunich. The other north-south oriented ballcourt at Xunantunich, comprised of Structures A-18 and A-19, compares favorably with the newly discovered ballcourt in terms of the relative dimensions of the playing alley and lateral structures. Both ballcourts are open-ended and located in the site core. The location of a north-south oriented, open-ended ballcourt in the site core is a familiar pattern in the Southern Maya Lowlands (Scarborough 1991). The relative dimensions of the playing alley of the new ballcourt at Xunantunich also correspond nicely with those for open-ended ballcourts in the Southern Maya Lowlands (Scarborough 1991: 135 [figure 7.3]).

A ballcourt which appears to be similar to Ballcourt 3 at Xunantunich has been described for the site of Pacbitun in western Belize (Healy 1992). Similar to the newly identified ballcourt at Xunantunich, the ballcourt at Pacbitun is open-ended, aligned approximately north-south along its long axis, and centrally located near the core area of the civic-ceremonial center (Healy 1992: 229). The twin range structures at Pacbitun measure about 17.5 meters long, 10.3 meters wide (basal width), and about 3.5 meters tall, while the playing alley measured 4.8 meters between bench faces (ibid.). These dimensions are similar to those inferred for the same features of Ballcourt 3 at Xunantunich. The twin lateral structures are approximately 15 meters long and 10 meters wide. Structure A-22 measures 4.3 meters tall; the height of Structure A-17 is difficult to determine due to the crater on top of the structure left by an excavation earlier this century, but it demonstrates a measurement similar to that of Structure A-22. The playing alley is somewhat larger than that identified at Pacbitun, spanning about 5.5 meters. The Pacbitun ballcourt was constructed in the Late Preclassic, and substantially modified during the Late Classic period (Healy 1992). While a Middle Preclassic presence at or near Xunantunich is evident given the amount of Middle Preclassic ceramic material recovered from the construction

fill of Structure A-17, Structure A-22, and the playing alley floor, the two lateral range structures appear to have been constructed sometime in the Late Classic period. But why would the eastern range structure be located in the plaza?

The open area designated as Plaza A-I has been interpreted as the most important public space at Xunantunich (Leventhal 1993). Along with Plaza A-II, this space represents the largest public area at Xunantunich. The plaza is defined on its southern limit by Structure A-6 (El Castillo), on its northern limit by Structure A-1, and on its western and eastern sides by a number of smaller structures. With the construction of Structure A-1, the area of Plaza A-I/A-II is essentially halved, focusing access and activity toward the south in Plaza A-I. Apparently built in a single construction episode, the date of Structure A-1 appears to be no earlier than the end of the Late Classic, perhaps about AD 700 (Leventhal et al. 1993: 11).

Prior to the construction of Ballcourt 3 and Structure A-1, Plaza A-I provided for unrestricted access to all portions of the site center, including access to other areas via the various sacbeob which linked the site core to "greater Xunantunich" (Keller 1993).

Although the undefined end zone of the open-ended ballcourt "might be seen as manifesting less restricted access to a public gathering of spectators" (Scarborough 1991: 134), the ballcourt served at once to highlight the internal sociopolitical boundaries present at Xunantunich and to unite the disparate factions of the society through the presentation of public ritual (Gillespie 1991). Thus the construction of the ballcourt in Plaza A-I/A-II can been seen as an initial step towards some degree of restriction of access to portions of the site core. It is, however, the single, massive episode of construction of Structure A-1, superimposed on Structure A-22, which underscores the extreme restriction of access in the site core near the end of the Late Classic period, emphasizing the newly defined Plaza A-I. Although the terraced portion of the west side of Structure A-1 may have been used as seating for spectators of the ballgame ritual (Scarborough 1991: 138), the elites of Xunantunich certainly emphasized their role in the changing nature of Maya society near the end of the Late Classic period with the construction of not one, but two buildings charged with socioreligious meaning.

**Conclusions**

In the context of the totality of the excavations undertaken on the west side of Structure A-1, the confusing nature of the morphology of the terraces begins to make sense. Rather than exhibiting solely the terraces of a single phase of construction of one building (Structure A-1), as seen on the north side, the west side also displays an earlier structure, which is in time partially subsumed by the construction of Structure A-1. Plaza A-I appears always to have been a locus of ritual activity at Xunantunich (Leventhal et al. 1993: 11). The discovery of a ballcourt at the western edge of the plaza would seem to underscore that assertion. At this point it is unclear whether or not the ballcourt was still a locus of ritual and/or social activity late in the history of Xunantunich. It seems certain, however,

that the ballcourt retained some measure of socioreligious significance, as it is not entirely enveloped by the construction of Structure A-1. In addition, the presence of Structure A-22 in Plaza A-I provides further evidence for the restriction of access in the Xunantunich site core in latter days of the Late Classic period.

In conclusion, further investigation is needed in order to discern the relationship between Structure A-22 and Structure A-1. Is the bench identified during excavations at the northwest corner of Structure A-1 the northern extension of the eastern playing wall, or are they distinct architectural features? Does socioreligious activity continue to occur at the ballcourt during the waning days of the Late Classic? Additional investigation is also needed to clarify the morphology of the lateral structures of the ballcourt. The exact dimensions of the ballcourt can only be estimated until further clearing excavations are undertaken to better define the dimensions of Structure A-17 and Structure A-22. Finally, what are the relationships between the three ballcourts at Xunantunich? Is there a change in access to certain ballcourts over time? Are all three contemporaneous? Further examination of the nature of the ballcourts of Xunantunich promises to be enlightening, offering greater insight into the nature of late society at Xunantunich.

## Excavations of Structure A-3: Defining the Stairway and Connection of Motmot Wall

by Thomas R. Jamison and Gregory A. Wolff

Structure A-3 was chosen for major excavations over the next several seasons for reasons of chronology and function (Figure 4). First of all, much of the emphasis of the Xunantunich Archaeological Project is on the Late Classic and Terminal Classic occupation at the site. This emphasis is, in part based on a model of late florescence of the site with minor occupation hypothesized prior to the Late Classic. Thus, an attempt must be made to locate earlier deposits and architectural constructions that would confirm or cause a redefinition of the model.

Thin Preclassic deposits are commonly located directly over the bedrock in much of the vicinity, however, no architecture has been securely identified as Preclassic. In order to confirm the non-monumental nature of Preclassic occupation, Structure A-3 was chosen as a likely location for a large Preclassic structure if one were to exist. This determination is based on the potential of A-3 being part of an "E-Group" complex as described for a number of sites throughout the Maya Lowlands starting in the Preclassic Period (cf Blom 1924; Ricketson and Ricketson 1937; Rupert 1940). This complex would include Structures A-2, A-3, and A-4 on the east and Structure A-8 on the west. Ball Court 3, constructed in the Late Classic, prior to Structure A-1, seems to have broken up the "E-Group" complex. However, such a function could still have been carried out until the construction of A-1.

Another reason for excavation of A-3 is that it seems to be an integral feature

of the changes that took place in Plaza A-I during the Late Classic. It was incorporated into Plaza A-I with the placement of Structure A-1 slightly to the north. A-3 faces into Plaza A-I, defined in the Late Classic, that became a focus for the community during the Late Classic and Terminal Classic periods. Construction of the wall (Motmot wall) connecting A-1 to A-3 and restricting access to the plaza, or defining its northeast corner, clearly incorporates the stairway of A-3 in the space. Therefore, the building must have retained certain public functions during the Late Classic that others, such as those around Plaza A-II, or Structure A-2 that was partially blocked by A-1, may not have retained.

Relatively good preservation of the structure was also a factor in its choice for excavation. Structures A-2 and A-4 have both undergone quite major excavations prior to XAP, leaving stairways and summit rooms that are trenched or cleaned out and, thus, lacking contexts that would aid interpretations. A-3 is the least disturbed of these three structures, making it an attractive choice for investigation. The preservation of A-3, however, may not be as good as we first thought. Limited excavation in 1994 suggests it was deteriorating very early, possibly during the Late Classic (see below).

Excavation of A-3 started with an effort to define the stairway of the substructure and the connection of the late wall running towards A-3 from the southeast corner of A-1 (Motmot wall). Although Motmot wall is quite disturbed in places by roots and burning it was easily traced directly to the northwest corner of the stairway of A-3 where it appears to rest on and end at the lowest step of the A-3 substructure stairway. The plaza floor was poorly preserved, however, sections preserved close to the A-3 stairway demonstrate the wall was resting on the latest plaza floor.

The bedrock in this area is approximately 40 centimeters below the plaza surface, but slopes up towards A-3. The higher bedrock in front of A-3 was leveled and used as a base for the plaza paving. In these areas small limestone rubble ballast was, nevertheless, used between the modified bedrock and the finished plaster surfacing. A low terrace in front, facing to the west, of the rise in the bedrock is clearly an earlier use of the bedrock rising in this location to create a low terrace. This construction is preserved to approximately 25 centimeters in height, but was probably once higher. Only a small portion of this construction was exposed in 1994 and we did not want to dismantle it at that time. During the 1995 season we hope to expose a larger section of this terrace to allow for dating and interpretation of its function and relationship to A-3.

Once Motmot wall had been traced to the northwest corner of the A-3 stairway we attempted to define the stairway and examine possible additions to the front of A-3, as had been seen in front of A-4 (see Jamison 1992). Definition of the stairway proved to be more difficult than expected due to poor preservation of the individual steps. Several construction episodes were identified in these excavations. They have been interpreted as (1) the remnants of the stairway facing,

(2) the stairway core face, and (3) construction stairs under the stairway.

The general outline of the base of the stairway is fairly clear, but clearing to examine the steps above the plaza surface found very little intact. A few rough lines in the fill may be the remains of the steps, but are not clear enough to be convincing. It is clear, however, that there is a construction stairway under the final eroded one. The well preserved construction stair was uncovered in a small trench excavated slightly south of the central axis of the stairway. Due to the poor preservation of the final stairway, we may have to rely on the form of the construction stair to provide a general structure by which to estimate the form of the final stairway. Ceramics recovered from the core of A-3 date to the Middle Preclassic and Late Classic Periods.

The rough form of the collapsed stairway up the front of A-3 suggests that it may have had two flights of steps with a stair block set at the intersection of the two. This suggestion is based on a seemingly different angle of slope for the collapse from the stairway between the top of A-3 and the bottom. Possibly, the stairway could be separated into two flights with a landing and/or stair block dividing them. The lower flight would probably be at a steeper angle than the upper flight. This suggestion, of course, has to be tested with excavation. The different angle of slope could also be caused by differential collapse. The presence of a fragment of a carved stela in the collapse slightly above the base of the structure may support the suggestion of a stair block or landing part way up the stairway. Frequently such features support stelae, so the fragment found in the collapse material near the base of the structure could have fallen from higher up the structure face.

The excavations of A-3 described thus far focus on investigations of the western face of the structure. The architectural components around the southwest corner were more difficult to untangle for a clear understanding of their sequence and functions. In this area excavations were initiated with the intention of locating a northern edge for the terrace identified in 1992 during the excavations in front of Structure A-4 (Jamison 1992). Between the two structures Schmitt had excavated a trench that cut through a late addition to their west sides in order to clear the intersection of the substructures of the two structures. Our excavations in 1992 determined that he had cut through the middle of a low terrace added to the base of the substructures that extended out to the west. Therefore, we hoped to locate the northern face of that terrace and follow it to the east in order to identify its connection with A-3.

Initial units uncovered only fairly loose rubble fill and collapse debris with no clear structure or orientation. Moving to the north, however, a line of large cut facing stones running east to west was located seemingly placed on top of the southern end of the A-3 stairway and extending out from the stairway about 65 cm west of the bottom step. This cut stone face was laid as veneer facing for material to the south consisting of fairly compact clayey silt with a great deal of small rubble. This determination is made based on the fairly uniform face on its northern side as opposed to an uneven face on its southern side and the more compact fill to the

south as opposed to more loose soil and rubble to the north. The fill south of this face is not broken up by clear bin walls, but there are fairly distinct areas of different materials that may indicate some degree of bin construction technique here similar to Structure A-1. Excavation into the fill of this late construction recovered ceramics dating to Late Classic I, Late Classic II, and Terminal Classic Periods.

A difficulty in the identification of this face as part of the same construction identified in 1992 is presented by the significant difference in facing between the two locations. The southern facing retaining wall located in 1992 is composed of thin slab masonry laid horizontally. In contrast, the wall on the corner of the A-3 stairway is constructed in a veneer form with large cut blocks. This discrepancy may indicate we are dealing with more than one construction or different phases to one construction. However, the late date of the structure could also account for differential facing techniques from one side to another. If this is a single construction, the terrace identified in 1992 between A-3 and A-4 appears to extend from the southern corner of the A-3 stairway to a point approximately 4 meters north of the A-4 stairway. Evidence that these measurements circumscribe a single construction may never be found, due to the drastic cut between A-3 and A-4. However, traces may be encountered in the coming season to help confirm or deny such an interpretation.

Preliminary excavations at Structure A-3 have provided an initial view of the structure dimensions and an impression of a deteriorating structure being modified with small constructions at its base. Careful maintenance of the Late Classic Structure A-3 appears to have stopped at the end of the Late Classic and attention focused on small additions to its western side during the Terminal Classic Period. The combination of Terminal Classic wall on the north connecting with Structure A-1 and the Terminal Classic platform construction on the south enclose the earlier stairway of Structure A-3. These late additions may have changed the functioning of A-3. They may also have focused attention on the stairway (that may have been crumbling) and its associations.

## Excavations in the Group East of Structure A-12

by Thomas R. Jamison and Gregory A. Wolff

Excavations east of Structure A-12 (Figure 5) were undertaken in 1994 in response to finding heavy concentrations of ceramic materials during excavation of foundation trenches for the new visitor's center (see Hiltz 1993). The project ceramicist, Lisa LeCount, saw the material coming from those excavations and suggested further excavations would contribute a valuable dimension to her ceramic studies relating to the distribution of vessel styles and forms throughout the Xunantunich settlement area (cf LeCount 1993). In addition to the interest prompted by the ceramic deposits, the area contains an interesting architectural group that seems to have been tied to the royal household of Plaza A-III directly to the west. This proximity and high volume of ceramics suggested the group may have functioned as a food preparation area for the royal family as well as for events

in Plaza A-II to the south, to which it is open.

At the start of excavations the group seemed to consist of three primary structures (A-23, A-24, A-25a, and A-25b) with two terraced areas attached (Terraces 1 and 2) (Figure 5). As is usually the case, clearing excavations revealed complexity to the situation that was greater than initially perceived (Figure 7). The limited were able to define the basic organization of the group and some of the history. Figures 6, 7, and 8 illustrate the location of excavation units, interpretation of architectural finds, and coincidence of Malerization with excavated architecture.

First of all, clearing of sections of the primary structure of the group (Str. A-23) revealed that it faces to the south towards Plaza A-II. There does not seem to be another structure opposite Str. A-23 facing north, so the group seems to have been open towards the plaza.[2] Structure A-23 is a building platform at least a meter in height with a central stairway on its south face. The structure is constructed with a limestone cut block facing over rough rubble core. Much like Structure A-1. Excavation on either side of the stairway demonstrates that a late addition to the south face of the structure was a low, roughly 50 centimeter high, terrace that was placed up against the earlier block facing of the structure to create a two terrace face. This addition may also have been made to the west and north faces of the structure, as suggested by an excavation of the northwest corner of the structure, although this is less certain. The east face seems to have been at the edge of the platform on which the group was constructed, so addition to that face may not have been carried out, or it collapsed more readily. Excavation at the southeast corner of the structure did not provide an indication.

The area south of Structure A-23 is a constructed terrace (Terrace 1) that forms a plaza. The east face of this terrace was constructed in a two stepped face, replicating the latest phase of Structure A-23. The lower step of the face was approximately 80 cm high and the upper step at least 50 cm high. The terrace area had a large quantity of broken ceramics and other artifacts scattered across its plastered surface. Principally, these materials were concentrated in the stairside corners and towards the east end of the platform. There was also a high concentration of materials at the base of Terrace 1 on its east side. The overwhelming majority of these ceramics were Late Classic II. Only in the uppermost levels were Terminal Classic sherds recovered. This pattern seems characteristic of this group of buildings.

The one excavation into the core of Structure A-23 was a 1 x 1.5 meter unit in the center of the platform. Here at least three phases of construction were identified with the earliest being a wall faced to the east with a plaster surface that had some burned areas on it. A later wall faced to the north seems to have completely buried the earlier one, although this idea would need confirmation from further excavation. Finally, the whole platform surface seems to have been covered by fairly large rubble and cobble fill. Nothing is preserved of the form of construction of this last phase. We do not consider this final fill to be a burial or "killing" of the structure since it does not appear to have been laid over the south face of the

platform. Therefore, the structure seems to have remained in use after this latest fill was placed (other structures in the group did not remain in use after this filling, see below).

Structure A-25a is a low platform that had a significantly different function and history than Structure A-23. Although it was built on the bedrock, like Structure A-23, it was a very low platform with a front (eastern facing) terrace about 20 cm high and 1.4 meters deep and a rear (western) section at least 40 cm high that may have been a raised room at the back of the structure.

It does not seem to have been a vaulted building based on the presence of a posthole located on the interior of the building that went was present during two phases of the structure. Initially, it was a post about 15 cm in diameter that went through a plaster floor and into the bedrock. Later a second higher floor covered the first, but the same location was used for a smaller roughly 8-10 cm diameter post.

The sequence of occupation of Structure A-25a is different from Structure A-23 in that at some point in the groups history it was cut down and buried by a level of silt and ceramic debris, while Structure A-23 continued to be used. Late Classic II ceramics were found throughout the silt overlying the platform. Terminal Classic ceramics seem to occur in the area only in the collapse debris from Structure A-12 and not in the silt fill. This burial of Structure A-25a may have occurred at the time that the eastern face of Structure A-12 was constructed, however, this timing is uncertain. The silt fill level covering Structure A-25a is at the level of the base of the cut block facing of the face of Structure A-12. Under the silt the face of A-12 is a rough rubble foundation of one or two courses resting directly on the bedrock and incorporating the bedrock in some locations. Therefore, it seems likely that the silt was laid after construction of the A-12 face in order to cover the rough foundation courses.

Structure A-24 is a more elaborate structure, like Structure A-23, that is located on the southern, more public side of the group. It is a fairly high platform that was at least 1.2 meters tall at its highest point, the northern end where the bedrock slopes down to the north. Its face is constructed of large cut blocks like Structure A-23, however, the retaining wall of the Structure A-24 platform has a more complex profile. In the narrow space between Structure A-24 and Structure A-12 the face is best preserved. There it consists of three courses. (1) a low 22 cm high basal course in which the stones are battered to slope up towards the building, (2) a slightly higher 31 cm high vertical course set back from the first by about 4 cm, and (3) a top vertically faced course 37 cm high and set back an additional 4 cm from the middle course. The top surface of the platform was plastered over the latest fill of the structure.

A late construction episode identified with Structure A-24 is a small wall constructed between the northeast corner of Structure A-24 and the southwest corner of Structure A-24. This "plug" filled the gap between the two structures that

had been a narrow passage about 50 cm wide. In this location the structures on either side were at least a meter high, so that placement of this wall would have effectively cut off access to the area behind these buildings.
The latest construction episode of Structure A-24 is an addition to the east face of the structure. After the "plug" was constructed, a new facing was added to the east face of Structure A-24 that covered the plug and met the southwest corner of Structure A-23.

The east face of Structure A-24 (both the earlier and later facings) at its northern end is a vertical. However, about 2.4 meters towards the south the vertical face abuts a slope of rubble and mezcla that extends east of the vertical face of the structure. In addition, the modern ground surface becomes decidedly more gently sloped as if the structure is terraced or incorporates a stairway rising to the west. Since the mezcla and rubble mentioned above extends further to the east than the facing to the north, an outset stairway is a likely interpretation. Unfortunately, time constraints prohibited close examination of this area.

An idea that could aid in the interpretation of the group's function is the hypothesis that a stairway may connect Structure A-24 with A-12. Again, unfortunately, there was not enough time to investigate that possibility.

As with Structure A-23, the one unit placed into the Structure A-24 fill encountered a complex sequence that included two walls, one of which may have been a bench facing south with a small post partially set into its vertical face. Inside the "bench" fill was a stone lined pit about 35 cm in diameter and a total of 50 cm deep. It was capped with a roughly flat stone. The upper 30 cm of the pit was constructed with small rubble forming the walls and the lower 20 cm cut into the bedrock. This feature seems like it must have been the location of a cache during the occupation of the structure. However, upon excavation, the only contents of the feature was loose sand that seems to have sifted in from the surrounding rubble fill.

Finally, Structure A-25b is a small platform at the northern edge of the group, set just before the bedrock begins to slope down precipitously to the north. It received a similar treatment to Structure A-25a, although only its southern edge seems to have been buried with the same silt level. Further to the north the fill over Structure A-25b appears to be more rubble and debris and less of a purposeful event to create a new useful surface. This seeming haphazard filling may account for the rather poor preservation of this structure. Most of the faces we encountered were low and may not have been more than one course high when the structure was in use. However, there are some locations that were clearly cut down like Structure A-25a.

In addition, one location on the eastern side of the structure had what seems to be a niche constructed into its face. It was a roughly 30 cm opening in the face of the structure into which the plaster floor exterior to the structure extended about 15 cm where it turned up to a wall that was no longer present. Outside the structure

directly in front of this gap was a patch of burned plaster approximately 50 cm east - west and 37 cm north - south. Burning had also effected the small rubble stones that made up the face of the structure on either side of the gap.

Investigation of this anomaly suggests that it was part of the late use of the structure. An earlier phase can be seen immediately inside (west) of the rubble face. There the plaster that turns up to the absent wall is mirrored by another patch of plaster that turns up to the same missing stone but to the east. That is, there was a free-standing wall that was an earlier phase of the structure. It was cut down and covered by a later low filled platform, the face of which was located directly to the east. The niche and burning may have been part of the second phase, or it could have occurred after that second phase was deteriorating and prior to the whole structure being buried.

East of Structure A-25b is Terrace 2 that consisted of a wedged shaped area of bedrock with its point to the north. The widest part was on its southern end where it was almost 6 meters wide and at its northern end it was about 3.5 to 4 meters wide. The surface of this terrace had been leveled, filled, and plastered with the eastern edge built up with a small retaining wall at the edge of the bedrock ledge.

Below Terrace 2 is an area that we thought would turn out to have been modified into a rough terrace by leveling of the bedrock. However, excavation of three units across this space from east to west revealed little potential modification and what seems to be a naturally sloping bedrock surface. The only possibly modified area is at the edge of Terrace 2. In this location the face of Terrace 2 may have been cut out of the bedrock to form a battered face. Confirmation of this cut as cultural was not obtained, however, the large number of quarries in this vicinity suggests it was modified. At the base of Terrace 2 there is a thin area where the bedrock is fairly level for at least 1.3 meters before it becomes irregular and slopes down to the east. This area may also have been formed through modification of the Terrace 2 face.

Once Structures A-25a and A-25b were buried, the area between Structures A-12 and Structure A-23 would have provided a larger activity area. The same silt level that covered Structures A-25a and A-25b seems to have also covered the northwest corner of Structure A-23. This corner of that structure may have been cut down as well to be evenly covered, however, the southern or front of Structure A-23 appears to have remained open and in use, as evidenced by the lack of fill over the surface of Terrace 1.

The ceramic materials from this group have been preliminarily identified by Lisa LeCount as dating from Late Classic II and Terminal Classic Periods. In each location where ceramics are stratigraphically deposited they show a strong LCII component overlain by a slight (low density) Terminal deposit. Therefore, the group was occupied during the LCII and Terminal Periods and seems to have undergone some major changes with the burial of Structures A-25a and A-25b.

## A-14 and A-4: Recording and Stabilization

by Thomas R. Jamison

Finally, the 1994 season saw the implementation of a process, that will take several years to complete, of cleaning, recording, and stabilizing trenches excavated and left open by previous workers at Xunantunich. These trenches have been open for many years and expose the interior of structures to severe weathering. The investigations were prompted by (1) a desire to understand the place of as many structures as possible in the sequence and (2) to make way for stabilization of trenches where intact architecture was continuously eroding away.

They proceed as follows. First of all a trench is thoroughly cleaned in order to locate any architectural features that may be visible. If floors or walls are identified, ceramic samples are collected from fill above or below such features to provide an assessment of chronology and function. A sketch plan and/or profile is completed, points are shot in with the total station, and the exposure is photographed.

Generally, little information can be gathered from these endeavors without significant amounts of excavation to remove the years of collapse that has collected in these pits. Some of these, in particular Gann's excavation in Structure A-7, are very deep and destroyed much of the interior of structures. However, it was decided that prior to stabilization of these areas some recording should be attempted to gain some understanding of the structure prior to filling of the trench.

With these goals in 1994 we cleaned and recorded the earlier excavations in Structures A-4 and A-14. The trench in Structure A-4 is a large cut through the stairway, examination of which revealed little about the architecture of the structure. Unfortunately, this steep cut is not easily backfilled. It appears to be fairly stable at this point, so filling was not attempted in that case.

Structure A-14 was more promising as a source of information. There the pit was broad, but provided a fair cross section of the upper half of the structure. This profile was cut back to reveal several floors, but no clear faced walls. A small number of ceramics were recovered from the fill between these floors.

Preliminary examination of the ceramics from Structures A-4 and A-14 indicate that most are Late Classic.

Notes:

(1) The choice to close the excavation was decided by weighing factors of safety, potential information, and cost. Although we were certain a framework could be constructed inside the excavation to ensure the safety of people and prevent any other collapse, the cost and kind of information likely to be retrieved were determined to outweigh the benefits of continued excavation in that suboperation.

(2) However, modification of the surface may have taken place in this portion of the site during the past 50 years or more. This has long been the location of the caretaker's hut, bodegas, and, as of 1993, a stelae hut. Thus, structures that may have faced opposite Str. 1 may be destroyed or obscured. Although, construction of the two recent structures (caretaker's office and bodega, 1992 and stelae hut, 1993) did not reveal any structural remains.

Figures:

(1) Plan of Plazas A-I and A-II
(2) Plan of A-1.
(3) Plan of Ball Court 3.
(4) Plan of A-3.
(5) Group East of A-12 Plan - prior to excavation
(6) Group East of A-12 Plan - with unit locations and structure interpretations.
(7) Group East of A-12 Plan - with structure interpretations.
(8) Group East of A-12 Plan - with structure interpretations and Malerization prior to excavation.

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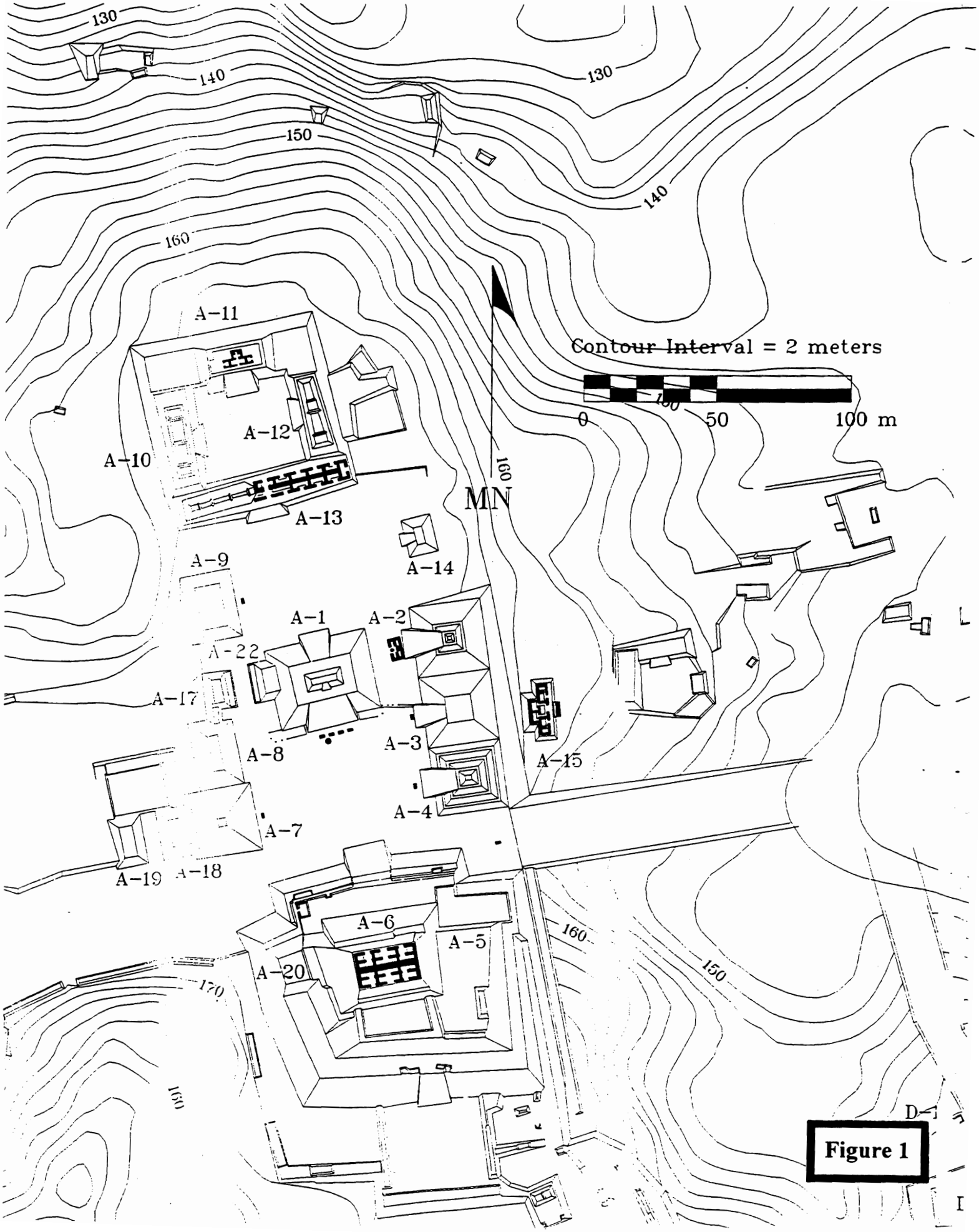
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Figure 1

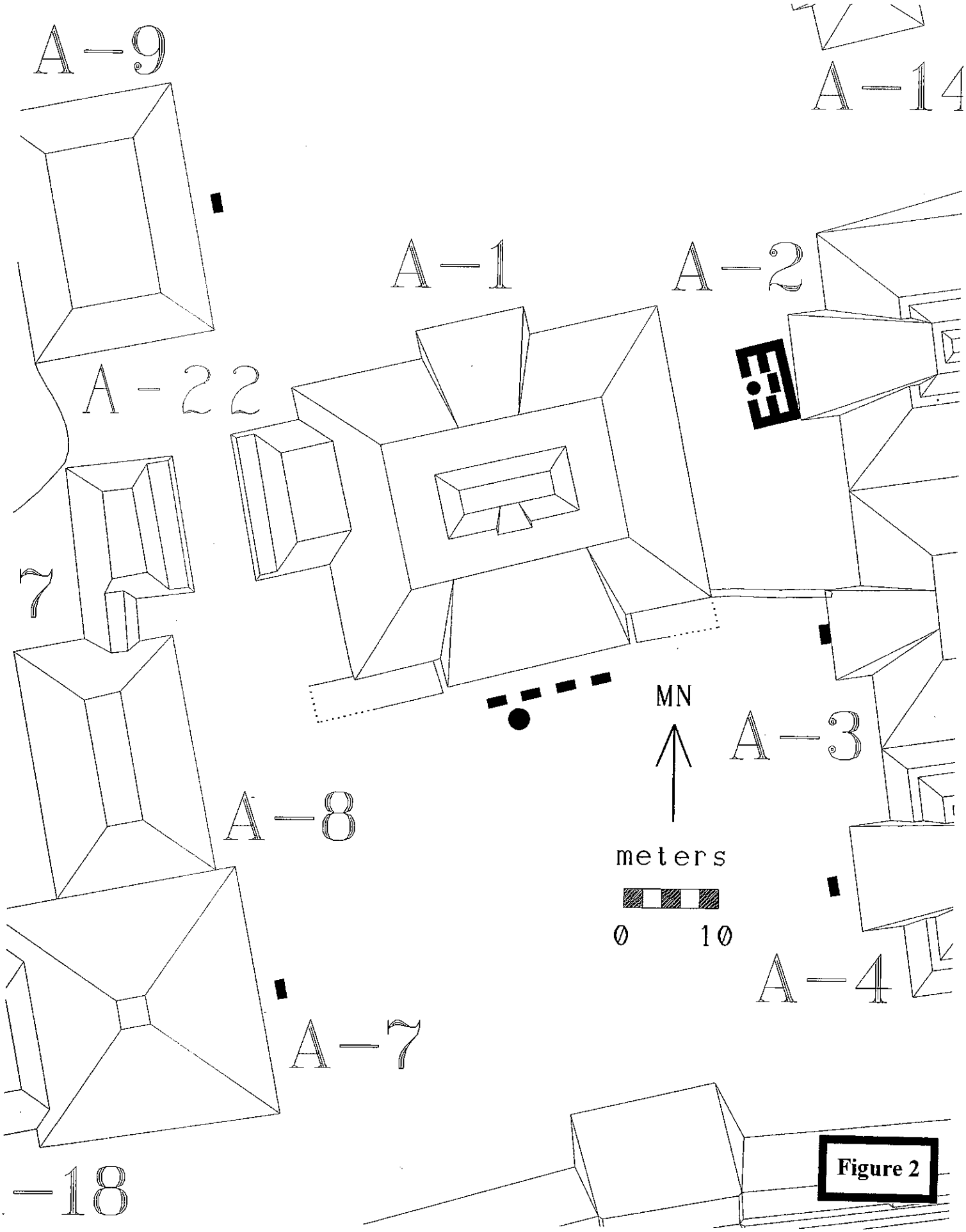
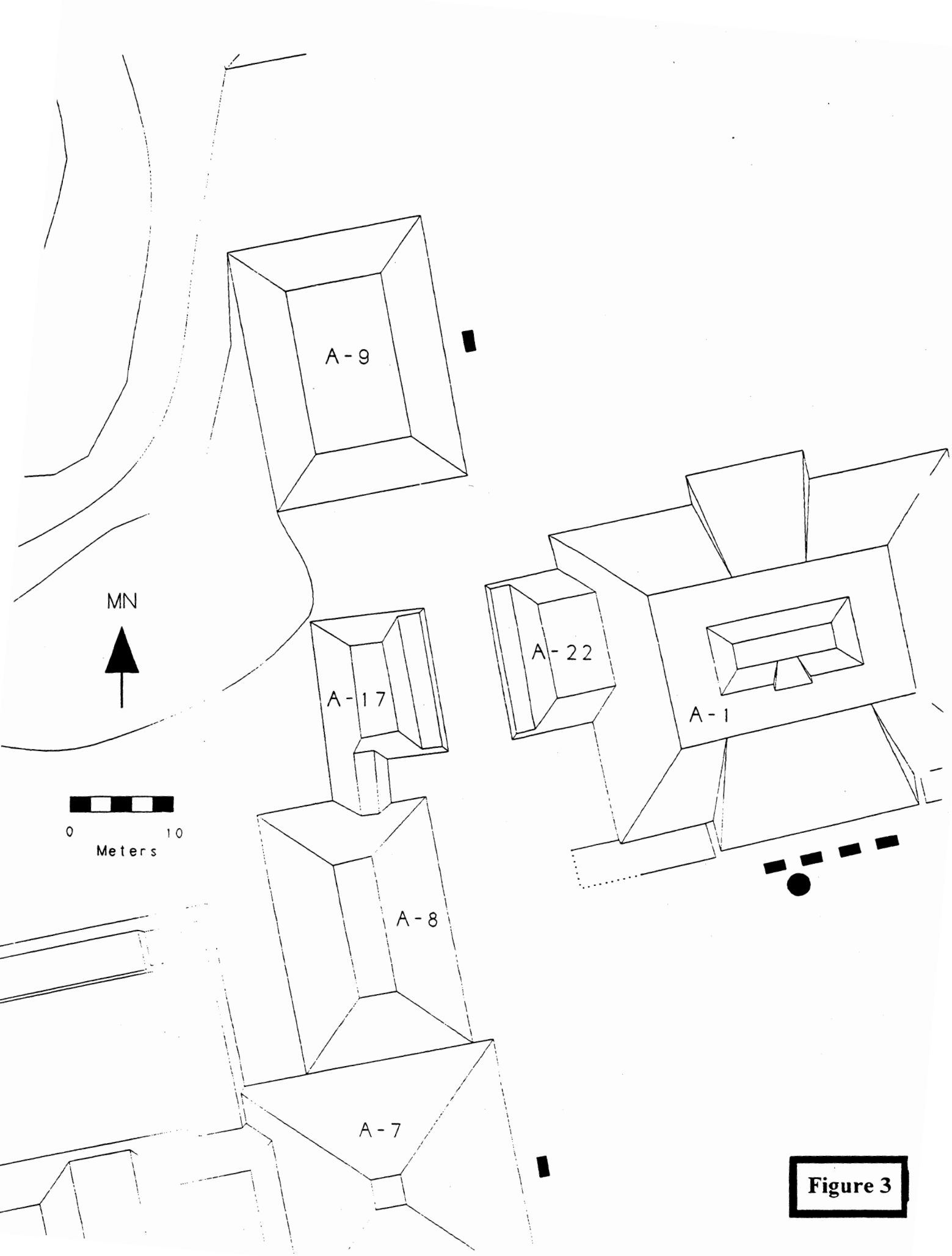



**Figure 2**

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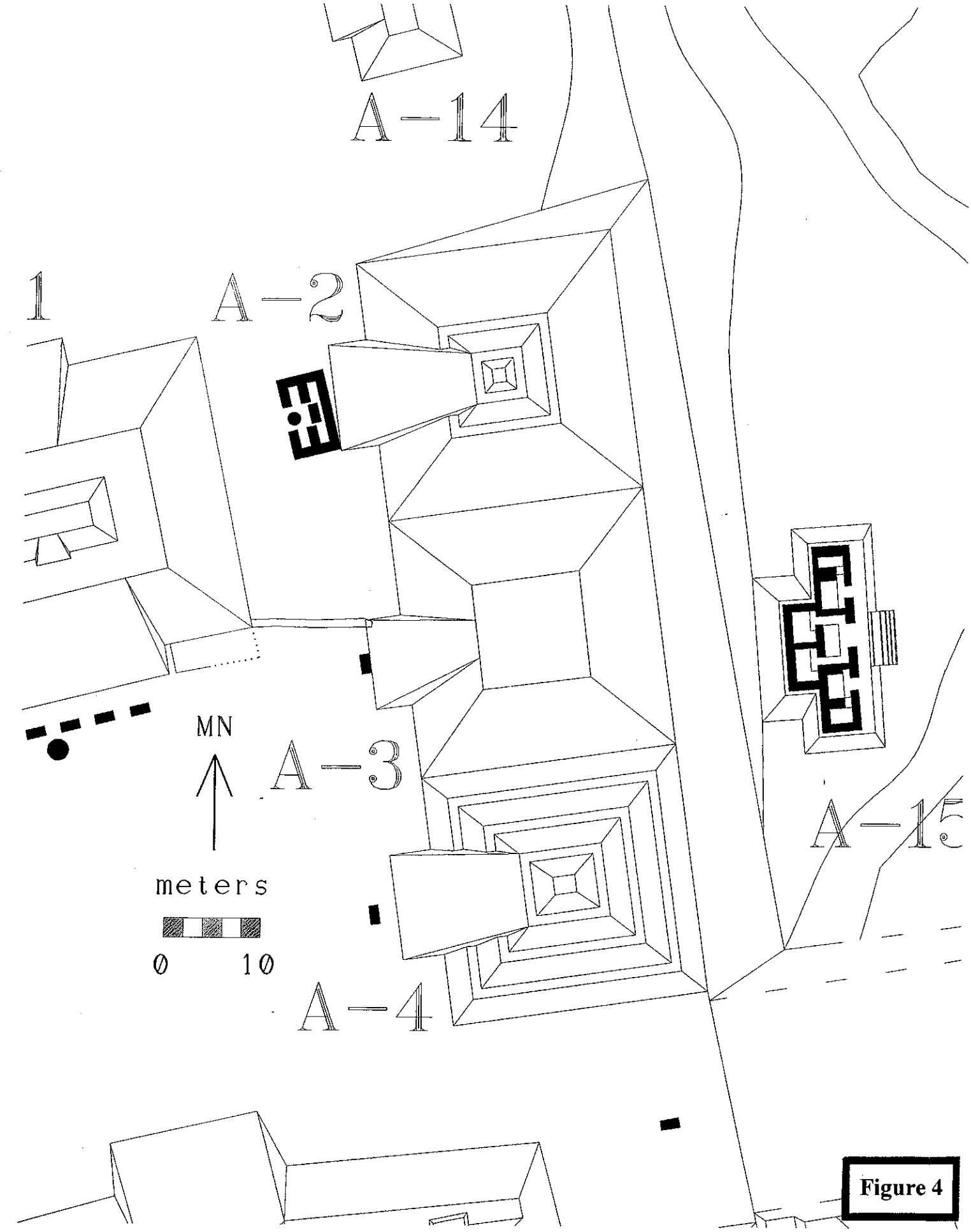


Figure 4

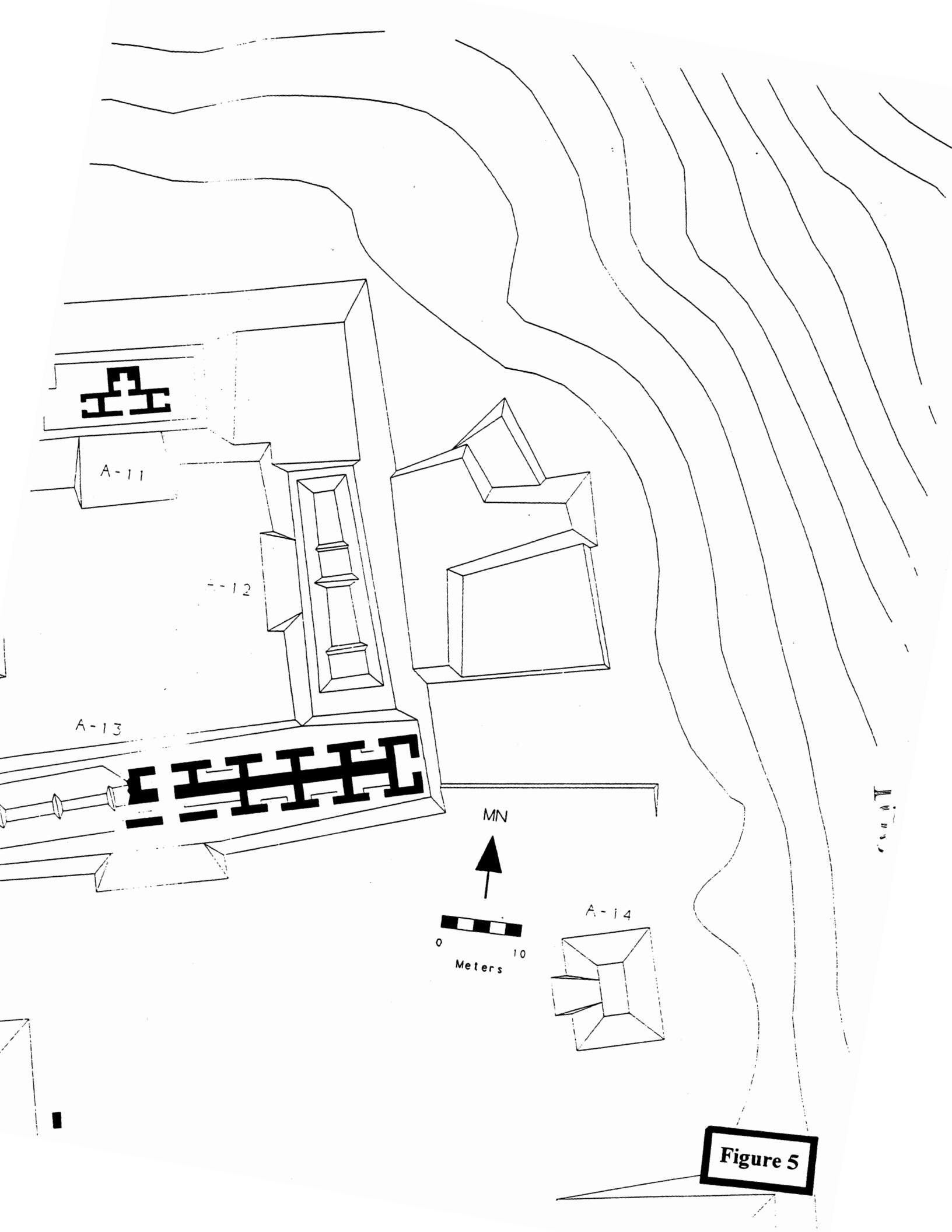


Figure 5

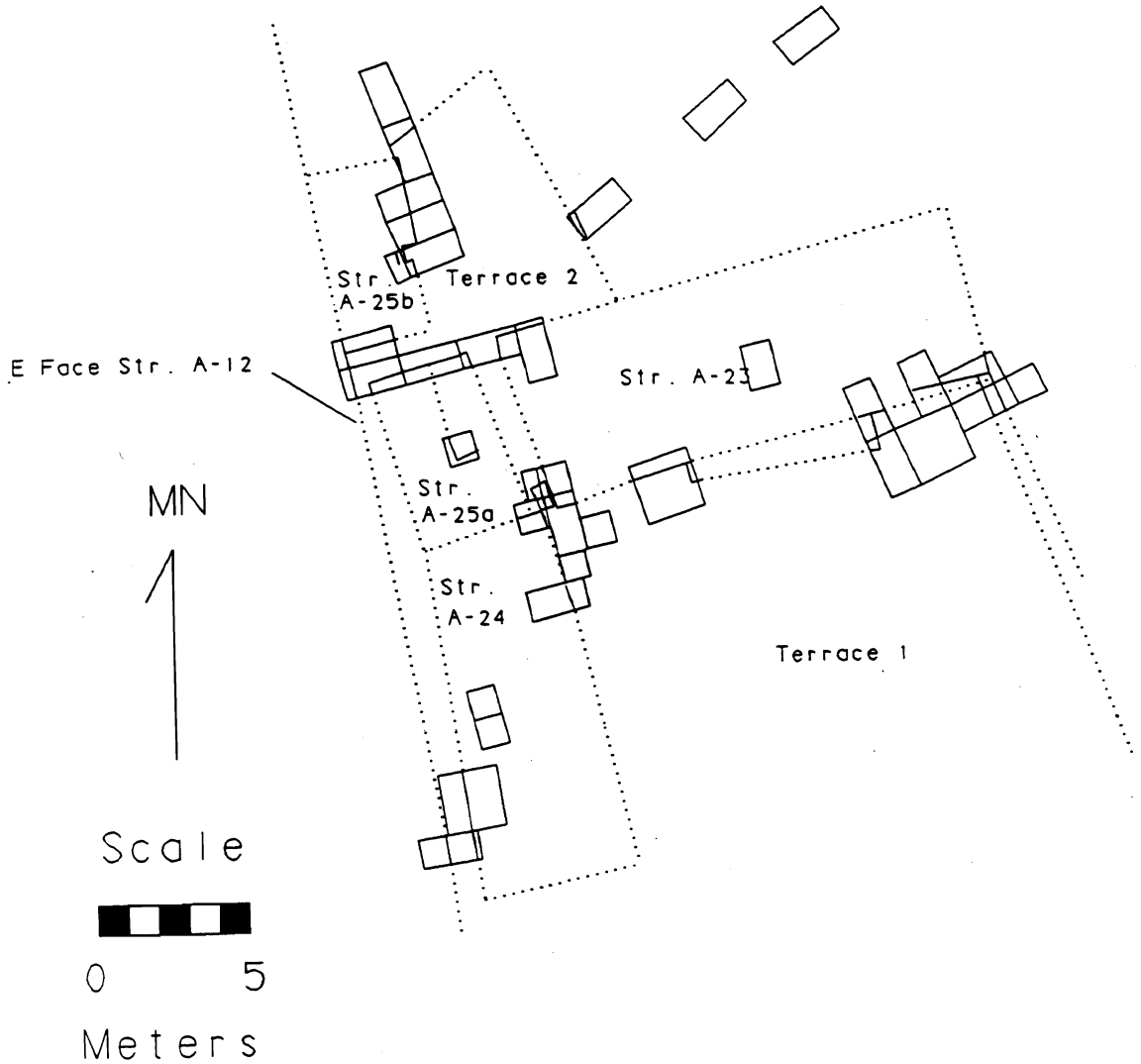
Str.
A-25b
Terrace 2
E Face Str. A-12
Str. A-23
MN
Str.
A-25a
Str.
A-24
Terrace 1
Scale
0
5
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**Figure 6**

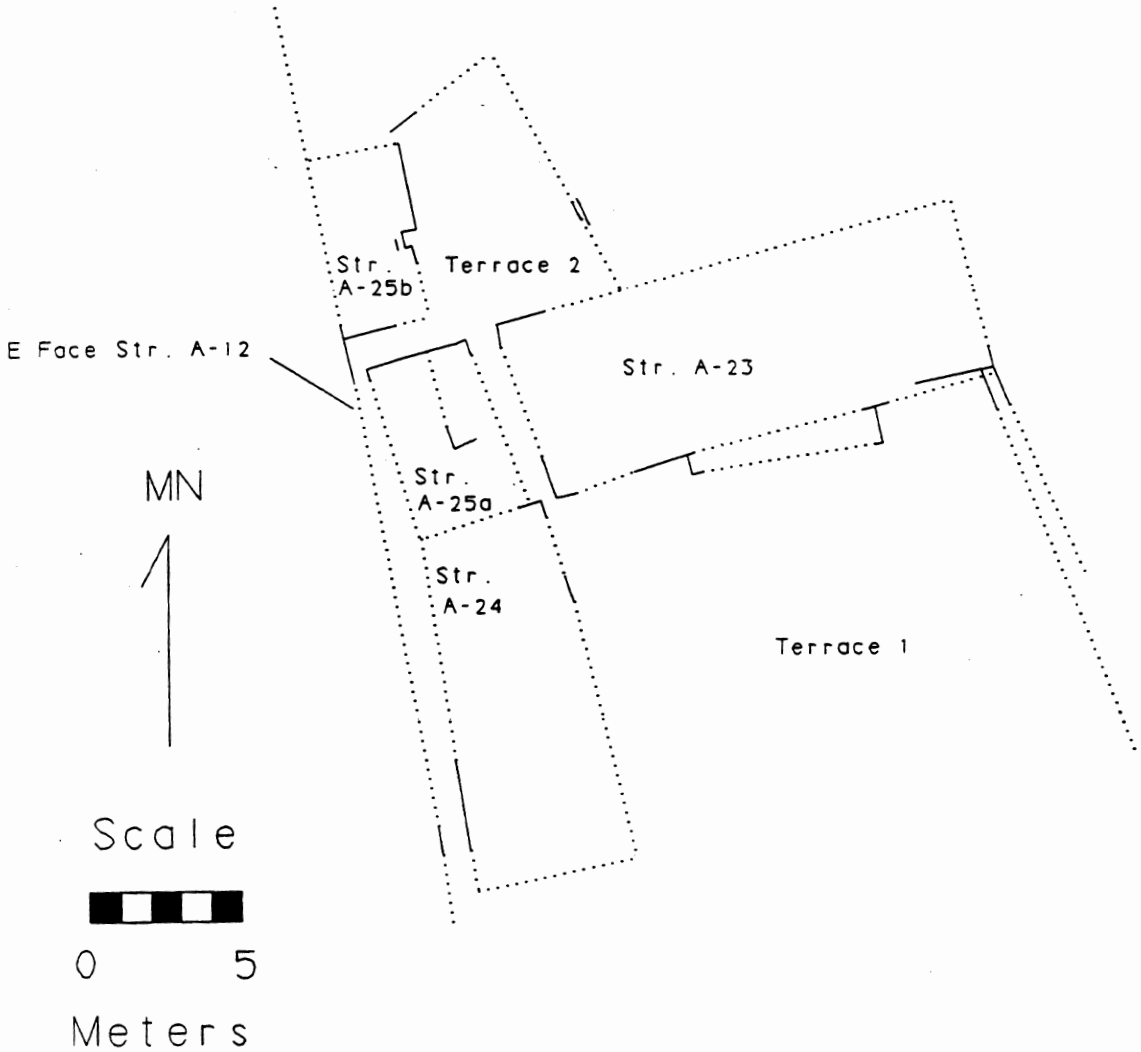
Str. A-25b
Terrace 2
E Face Str. A-12
Str. A-23
MN
Str. A-25a
Str. A-24
Terrace 1
Scale
0
5
Meters

**Figure 7**

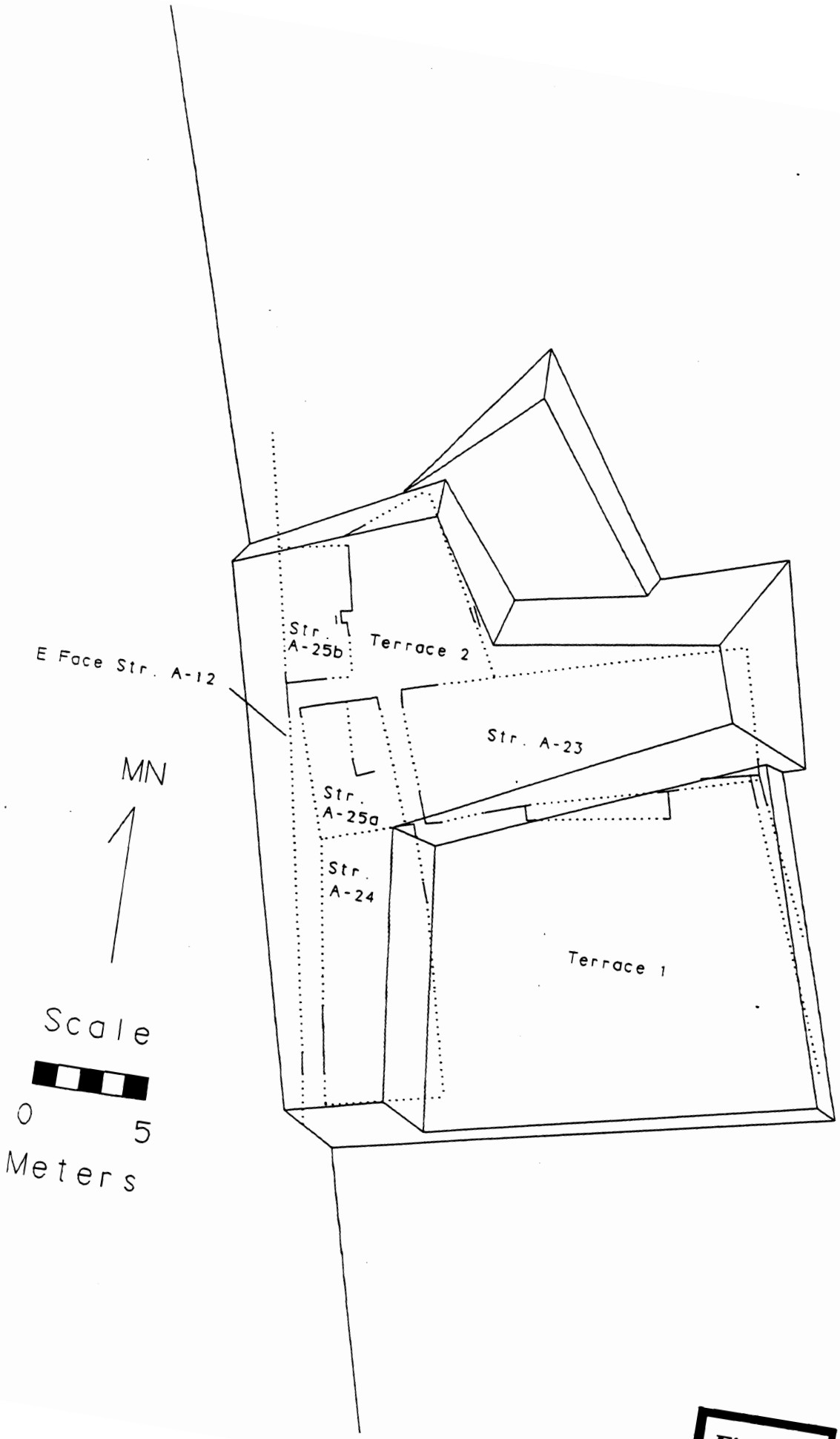
E Face Str. A-12
Str. A-25b
Terrace 2
Str. A-23
Str. A-25a
Str. A-24
Terrace 1
MN
Scale
0
5
Meters

**Figure 8**

# Form, Function And Meaning

# 1994 Excavations on El Castillo, Structure A-6

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El Castillo, Structure A-6 is one of Belize's important national landmarks, a symbol of Belizean national identity. This large stepped pyramidal structure with a northern and southern stair and a vaulted superstructure with multiple rooms, is located in the main architectural complex, Group A, at Xunantunich (Figure 1). Its size, rising 128 feet above the level of the plaza A-I, its many levels and rooms, and bas-relief frieze are unprecedented in Maya architectural development in the Belize river valley. As the ancestral shrine of Xunantunich's ruling family, A-6 provides an unparalleled research opportunity to investigate a structure whose iconography and architecture are an index of Maya political centralization in the politically turbulent Late and Terminal Classic period.

Though A-6 has been a focus of archaeological inquiry since the 1950's with the discovery of the bas-relief frieze on its eastern side (Satterthwaite, 1950, 1951), the current Xunantunich Archaeological Project (XAP) under the direction of Richard M. Leventhal, University of California at Los Angeles, and Wendy Ashmore, University of Pennsylvania, is the first large scale systematic attempt to examine the complexities of the construction, function, and meaning of this monumental structure. Only through collaborative research at A-6, under the direction of many interested professionals, will a dynamic picture of this dramatic structure be constructed.

The 1994 investigations of A-6 combined research focusing on the interpretation and consolidation of previously exposed architecture; the excavation, interpretation and conservation of the east and west bas-relief friezes; and new excavations on the upper west, south and east terraces.

Under the direction of Rudy Larios, Getty Conservation Institute consultant, and supervision of Ruben Penados, Department of Archaeology, Belize, consolidation and stabilization of A-6 continued this season. Several aspects of A-6 were specifically targeted: 1. the stabilization of the east-west and north-south cracks which currently threaten the structural integration of A-6; 2. the construction of a new tourist viewing platform on the east side of A-6; 3. and consolidation of the A-6-1st and 2nd superstructures. This work adds to our detailed understanding of the construction of A-6 1st and 2nd.

Under the direction of Haydee Orea, and supervision of Carolina Castellanos, both of the Instituto Nacional de Anthropologia y Historia, Mexico City, the conservation of the western bas-relief frieze on the superstructure A-6-2nd, was completed. In addition, the central mask of the east frieze, was exposed and consolidated (Orea and Castellanos, 1994; Chi and Meneses). Virginia M. Fields, Los Angeles County Museum of Art, is undertaking the investigation of the symbolism and meaning of the eastern and western friezes, which depicts cosmological imagery and Xunantunich rulers.

The final component of the 1994 investigations of A-6, the excavations of the western, southern and eastern terraces, will be the focus of this presentation. The 1994 work was the third season of excavations into A-6 by XAP. While we have made significant advancements in our understanding of the construction, function and meaning of A-6 based on these excavations, many years of comprehensive research at A-6 will be necessary before final interpretations can be made. When seen as part of the larger integrated study of A-6, preliminary interpretations of the construction sequence, access patterns, and meaning of the terraces of A-6 can be put forward.

**Previous Research**

While El Castillo has been the subject of archaeological investigations from the 1950's, the vast majority of previous research has focused on the eastern bas-relief frieze (Satterthwaite, 1950, 1951; Mackie, 1961, 1985), and the A-6 superstructures, A-6 1st and A-6 2nd (Mackie, 1961, 1985). Only limited research had taken place on the massive A-6 substructure and associated terraces and platforms (Department of Archaeology, Belmopan 1970, 1991).

Systematic investigations of El Castillo were inaugurated in 1992 under the supervision of Ruben Penados (also see Leventhal et. al., 1992). Large-scale excavations began in 1993 under the supervision of Julia L. J. Sanchez, University of California, Los Angeles (Sanchez, 1993). The 1993 season resulted in the excavation of the upper register of the west frieze as well as areal excavation of the upper west terrace of A-6. Sanchez (1993) documents two major construction phases of A-6 associated with its two superstructures A-6 1st (ultimate) and A-6 2nd (penultimate). These two major construction phases were first defined by Satterthwaite (1950).

Excavations of the upper west terrace in 1993, uncovering final form architecture, revealed a series of walls and floors relating to several construction phases. Of particular interest is the conclusion that while the central superstructures (A-6 1st and A-6 2nd) were the result of two major modifications, the upper west terrace was a location of continual modification and reconstruction; new spaces were created, and access ways were created which both facilitated and restricted entry into these spaces.

Between February 14, 1994 and May 24, 1994 a team of seven archaeologists and assistants undertook excavations on the western, southern and eastern terraces of A-6. The immediate goal of this research was to define the construction sequence and chronology of these areas.

Building upon 1993 research, the main excavations on A-6 in 1994 (Operation 102) sought to further define the construction sequence of the upper west terrace through the enlargement of areal excavations begun in 1993 (Figure 2). Ceramic identifications for the 1994 material were made by Lisa LeCount and Lori Pacheco. Architectural terms used throughout this presentation will follow Loten and Pendergast (1984) where they have defined similar architectural configurations. The

only exception is my use of the terms superstructure and substructure where Loten and Pendergast utilize building and platform. In order to easily distinguish the myriad of walls encountered in the excavations of A-6, free standing walls are named by birds and terrace facing walls are named by colors.

In addition to the main Operation (102) a series of test excavations (Operations 106, 124, 125, 147 and 149) were undertaken on El Castillo in 1994 (Figure 2). The purpose of Operation 106 was to explore the possibility of excavation within the inner rooms of A-6 2nd. The purpose of Operations 124, 125, 147 and 149 was to attain a preliminary understanding the east and south terrace, upon which to build a more comprehensive excavation plan for future seasons.

## Excavations: Stratigraphy

### Operation 102

The main series of excavations on A-6 in 1994, Operation 102, can be divided into three distinct projects. One, an areal excavation on the northwest corner of the A-6 (Figure 2) examined the construction of the two uppermost terraces of the A-6 substructure. Two, an areal excavation along the east face of Str. A-20, provided a preliminary investigation of this rectangular structure located on the western edge of the upper west terrace of A-6 (Figure 2). Three, six intrusive excavations penetrated into architecture of the upper west terrace of A-6 (Figure 2), to attain information on chronology and construction.

### Operation 102: The Northwest Corner Of A-6

Seventeen suboperations, 102D,E,G,K,L,N,O,R-U,W,X,AA,EE-GG, form a large areal excavation on the northwest corner of the A-6 substructure (Figure 2). These suboperations were excavated through surface soils and collapse debris to expose architecture visible in A-6's final phase. Sanchez (1993) exposed the west face of the uppermost two tiers of the A-6 substructure (Peach and Puce terrace facing walls). Peach, the uppermost terrace facing wall of the A-6 substructure, is battered with an apron molding, constructed of large rectangular faced limestone blocks, rising approximately 4.10 meters high. Puce, the terrace facing wall below Peach, is outset 1.30 meters from Peach wall. Floor 10 surfaces this outset, both lipping up to Peach wall and over Puce wall. Puce wall, constructed in the same manner as Peach wall, has the same inclination and apron height, though Puce sub-apron measure is greater than that of Peach. Excavations did not reach the foot of Puce. A section of the third tier of the A-6 substructure, Mauve terrace facing wall, including the apron molding of Mauve wall, was subsequently excavated in unit 102CC (see Figure 7). Assuming that the apron height of these terrace facing walls remain constant, while the sub-apron measure increases, Puce wall is estimated to be 4.90 meters high (this estimate is utilized in reconstruction elevation drawings Figures 3 and 5). The number of terraces which comprise the A-6 substructure is currently unknown. This substructure supported both the A-6 2nd and A-6 1st superstructures.

Terrace facing walls Puce and Peach were followed to the northwest corner of

A-6. Two subphases of this substructure construction were revealed. The first substructure was constructed with approximately 90 degree inset corners (Figure 3). Subsequently the inset corners were modified forming a square cornered substructure; compact sascab core material abutting the exterior face of the inset corners was faced by Chocolate wall (Figure 4), a similarly constructed battered terrace facing wall (Figure 5). This modification is stratigraphically associated with A-6-2nd as plaster floor 29 both lips down over the fill within the inset corners of the substructure and continues to plaster floor 3, a floor capping the substructure situated below the final resurfacing of the substructure summit, plaster floor 1, which lips up to the building platform of A-6-2nd.

A stair, abutting Puce and Chocolate walls, of which only the uppermost six steps were excavated, leads from the north side of A-6 to plaster floor 21 which surfaces an elevated plaza area on the upper west terrace. The stair is 2.60 meters wide. The core of each step is constructed of compact soils containing few small pieces of limestone uncut rubble. This core is faced by narrow cut limestone blocks which form the stair riser. The stair was covered by a thin plaster surface which lips up to Puce wall (Figure 4).

**Operation 102: Structure A-20**

Str. A-20 is a rectangular structure located on the western edge of the upper west terrace of A-6. Seven suboperations, 102J,P,Q,V,Y,Z and BB form a large areal excavation along the east face of A-20 (Figure 2). These suboperations excavated through backdirt, surface soils and collapse to expose the east face of A-20.

Structure A-20 is constructed on plaster floor 21. A-20 consists of a low building platform surmounted by a rectangular building, the east face of which is defined by a vertical free standing wall constructed of large faced limestone blocks, Macaw wall. Macaw wall is preserved to no more than three courses high. An entrance into A-20 on its east side is defined by a large 5.70 meter doorway within Macaw wall. The two round columns are constructed on the building platform and lie 0.70 meters from Macaw wall within the doorway.

The columns are constructed of small tightly packed rounded cut limestone blocks. They currently stand no more than 0.60 meter high. These round columns of A-20 are a unique architectural style in the southern lowlands (Figure 6).

The south extent of A-20 lies within the limit of the plaza area defined by floor 21, bounded to the south by Verde platform facing wall. The north extent of A-20 does not lie within the limit of the plaza area defined by floor 21, bounded to the north by Rojo platform facing wall. Thus A-20 must be associated with a subsequent northern enlargement of this plaza area (no retaining wall further north than Rojo was encountered in 1994, but eroded core material visible to the north of Rojo indicates such an extension). The north extent of A-20 has completely collapsed off the north slope of A-6.

The platform with round columns excavated this year lies stratigraphically below a multi-roomed building which was mapped by XAP in 1992 and recovered. Due to time constraints the relationship between these two constructions was not investigated. Only the eastern face of A-20 was uncovered to allow for a more comprehensive investigation of this unique architectural construction in future seasons.

**Operation 102: Intrusive Excavations**

Six suboperations 102CC,HH,LL-OO are associated with intrusive excavations into architecture of the upper west terrace of A-6 (Figure 2). We penetrated architecture in 3 areas for information on chronology and construction. These three areas are; A) below floor 21 (102CC,HH), B) South of Verde wall (102LL,MM,OO), and C) west of Puce wall (102NN).

A: Excavations Below Floor 21

102CC penetrated below Floor 21 south of Quetzal wall and below 1993 suboperation 40JJJ. In 1993 Quetzal wall, a free standing wall, was called Olive wall as it was considered to be a platform facing wall. After the excavation of 102CC/1-8 (the fill south of Quetzal wall), it became clear that this wall is the south facing free standing wall of a range building which was buried in the construction of the plaza area surfaced by plaster floor 21. Careful burial led to the complete preservation of this range building from the top of the vault to the base of the basal molding (Figure 7). Red painted plaster still covers the majority of the exterior face of this building. Due to time constraints no attempt to locate the doorway or enter this building was made. But its excellent preservation and complete vault indicate that this building would be a good candidate for future excavations.

Ceramics from 102CC provide a LCIIa date for the construction of plaster floor 21. No absolute dates for ceramic subphases LCIIa and LCIIb are currently available; these are pending chronometric analyses and the final analysis of LeCount.

B: Excavations South of Verde wall

102LL and 102MM were placed south of Verde wall, the south facing terrace wall retaining the fill below floor 21. Verde wall is a slightly battered platform wall constructed of large cut limestone blocks. The area south of Verde wall, excavated in 102LL and MM, was filled with loosely deposited materials. To the east in 102NN the area south of Verde wall is surfaced by plaster floors 11 and 13, creating a higher plaza area to the south of plaster floor 21. Plaster floors 11 and 13 did not extend into the areas excavated in 102LL and MM. Verde wall was followed to a depth of approximately 1.80 meters where plaster floor 44 was encountered. Floor 44 lipped up to Verde wall, where eroded it was apparent that Verde wall continued down below floor 44. A sequence of soil and sascab fills were excavated above floor 44 and south of Verde wall. A midden, lots 102LL/3 and 4, 102MM/4, 5 and 6 (Figure 8), was localized within these fill episodes. This localized midden deposit can not be considered strictly a primary or secondary midden deposit, but redeposited primary midden material swept into the fill from a nearby location; this assertion being

made due to the large size of the sherds and the number of reconstructable ceramics broken in-situ.

The midden consisted of an organic greyish-brown-clayey-silty soil containing a density of charcoal and some limestone inclusion. Large fragments of carbonized wood and two carbonized corn cob fragments, will be subject to future ethnobotanical studies and radio carbon dating. Chert and chalcedony flakes, obsidian blades, animal long bone fragments, and a quantity of well preserved ceramics were also recovered. All midden ceramic material has been identified as LCII in date. The consistent date of this enormous quantity of ceramics, further supports the idea that this localized midden is the refuse of a specific event. The elaborate forms and non-utilitarian nature of the midden ceramic material support a preliminary hypothesis that this event was a ritual feast. Such an interpretation also follows from the public and dramaturgical nature of A-6 (see preliminary interpretations and conclusions below). Food and feasting are central to contemporary and ethnohistorically documented Maya ritual performances (Farriss, 1984). Therefore, morphological analysis and comparison of the midden ceramic material, both modern and ancient, should lead to a more comprehensive understanding of this deposit.

Excavations continued below floor 44 in suboperation 102OO which was placed at the base of 102LL and MM. Approximately 0.30 meters below floor 44, Amber wall, which runs parallel to Verde wall, outset approximately 0.60 meters to the south, was encountered. Amber wall is a slightly battered platform facing wall, constructed in a similar manner as Verde wall. The foot of Amber wall was not encountered, as 102OO was arbitrarily stopped at the base of lot 102NN/12 where the excavations became too deep to continue work.

Ceramics from the fill and midden material of 102LL and MM above Floor 44 are LCII and LCIIb. Ceramics from the fill below Floor 44 represent a continuum of Middle Preclassic, Early Classic, Late Classic I, II and Terminal Classic ceramic materials.

C: Excavations west of Puce wall and below floor 11

102NN intruded into plaster floor 11 west of Puce wall and at the base of 1993 suboperation 40YY. Core material west of Puce wall was excavated. At the base of the unit three steps of a stair extending from north to south and abutting Puce, were exposed. Based on size and morphology, this stair is constructed in a similar manner as the stair abutting Puce at the northwest corner of A-6 which leads to floor 21 (see above page 5). The stair in suboperation 102NN, based on calculations of average tread width and riser height should also lead to floor 21; thus is the south access way to the floor 21 plaza level.

The eroded nature of ceramic material from 102NN only allowed for a general Late Classic assessment to be made.

## Operation 102: Construction Sequence

### Major Construction Phases

Based on Operation 102 we can now define three major phases of architectural construction of A-6. Phases 1 and 2 have been previously defined by Satterthwaite (1950) and Sanchez (1993). Reconstruction plan view (Figure 9) and sections (Figures 10a and 10b) visually outline the major architectural phases and subphases discussed below.

**Phase 3:** The earliest major construction phase currently excavated on A-6 is represented only by the south facing free standing wall of a range building, Quetzal wall. The eastern extent of this range building was buried in the construction of the substructure supporting A-6-2nd. The western extent of this range building may have remained open and in use for a period of time, but was subsequently buried in the construction of a raised plaza area, surfaced by floor 21 (see subphase I below). Only future tunneling investigations (to be inaugurated in 1995 under the direction of Julie Miller, University of Pennsylvania) will be able to determine the full form of Phase 3 architecture on A-6. The question which may be asked at this time is whether in Phase 3 the A-6 summit was surmounted by a group of range buildings, or if the range building identified by Quetzal wall, is associated with a central pyramidal construction, following a similar architectural pattern as represented by the latest two major phases of construction on A-6.

**Phase 2:** A substructure measuring on average 26.5 meters north/south by 36.0 meters east/west at its summit is constructed partially burying the Phase 3 architectural complex. This large substructure serves as the support for the multi-roomed superstructure A-6-2nd with its elaborate bas-relief frieze. Initially this substructure was constructed with inset corners (Figure 3). The final square shape of the substructure was achieved by enclosing the initial inset corners (Figure 5).

**Phase 1:** A-6-1st, the final multi-roomed superstructure is superimposed over the A-6-2nd. The west, south and east facades of A-6 2nd are buried in at least three construction episodes, first by Violet wall, then Red wall, and finally Yellow wall.

### Subphase Modifications

A sequence of subphase modifications on the upper west terrace of A-6 can now be defined based on the excavation of Operation 102. These subphase modifications certainly post-date Phase 3 construction and initial Phase 2 construction. They may commence within either Phase 2 or Phase 1; they are all stratigraphically later than the enclosing of the inset corners of the A-6 substructure. These subphase modifications can not definitely be assigned to Phase 1 or 2 based on stratigraphy because both the A-6 2nd and 1st are supported by the same substructure. They can not be assigned to Phase 1 or 2 based on ceramics chronology, at this time, because we do not have a large enough diagnostic sample of sherds from within A-6-1st and 2nd. For this preliminary architectural sequencing, these

subphase modifications of the upper west terrace of A-6 will be assigned subphase designations A-I, as they may be associated either with either major architectural Phase 1 or 2.

**Subphase I:** The area north and south of the range building whose south facing free standing wall is Quetzal, is raised to the top of the Quetzal wall vault and surfaced by plaster floor 21. This elevated plaza area is retained to the south by Verde wall and to the north by Rojo wall and abuts the west face of Puce wall. Mint wall, facing north (see Sanchez, 1993), overlies floor 21 to the north of Verde wall forming a parapet with Verde wall along the southern edge of floor 21. Based on subfloor fill ceramics this construction dates to post LCIIa.

**Subphase H and G:** Two stairs are constructed leading from the north and south to the plaza area defined by floor 21.

**Subphase F:** The area south of Verde wall is raised to the level of plaster floor 44. Subfloor fill material contains ceramics of the Middle Preclassic, Early Classic, Late Classic and Terminal Classic periods. A Terminal Classic component was only identified in one lot (102OO/5) which contained few and eroded sherds. Based on stratigraphy it seems likely that Terminal material was intrusive.

**Subphase E:** The area south of Verde wall is raised to approximately 5.1 meters above plaster floor 44. This upper plaza is capped by floor 11 which is subsequently resurfaced by floor 13. This upper plaza extends and wraps around the south and east sides of A-6 (see Operations 125 and 149). Sub-phase E is post LCIIb based on sherds from the fill south of Verde wall.

**Subphase D:** A stair (excavated in 1993, see Sanchez, 1993) steps up from floor 21 to floor 11.

**Subphase C:** A low platform faced by Hazel wall (See Sanchez, 1993) is constructed on floor 11.

**Subphase B:** The area north of Rojo wall is extended north. No facing wall further north than Rojo was encountered in 1994, but eroded core material visible to the north of Rojo indicates such an extension.

**Subphase A:** A-20 is considered the ultimate construction on the upper west terrace of A-6. This assessment is based both on the stratigraphic position and morphology of the structure. As the north extent of A-20 does not lie within the limit of the plaza area defined by floor 21, bounded to the north by Rojo wall, A-20 must be associated with a subsequent northern enlargement of this plaza area. The core material north of Rojo wall was not excavated, so no *terminus post quem* date based on this extension, can be put forward at the current time. The fill below floor 21 dates this construction to post LCIIa; this date must be considered significantly earlier than the construction of A-20 as A-20 is stratigraphically a number of

subphases later than floor 21. Buildings with circular columns are typical to Terminal Classic architecture in the Yucatan, though circular columns are found as early as the Early Classic. Combining the above information, the best present interpretation of A-20 is as the ultimate construction on the upper west terrace of A-6, and probably Terminal Classic based on morphological considerations.

The subphase modifications presented above are only a preliminary attempt to define an architectural sequence at A-6. Stratigraphically there is no way to relate the construction of Hazel platform and A-20. Neither can we relate the north extension of the west terrace beyond Rojo wall to the south extension of the west terrace beyond Verde wall. It is the morphology of A-20 which leads to the supposition that the northern extension is later than the southern extension. Future investigations leading to more detailed chronological assessment of A-20 will be critical is elucidating a definitive construction sequence for the western terrace.

## Other Excavations:

### Operation 106

The purpose of Operation 106 was to enter into the inner rooms of A-6 2nd (Figure 2). The reason for this is twofold:

1) Archaeological: To identify the plan and construction of the inner rooms A-6 2nd and to understand the process of filling and burial of these rooms.

2) Conservation: Clearing the inner rooms behind the west frieze will provide a ventilation area, through which water evaporating from the structure core may escape without damaging the stucco facade of the west frieze.

Due to the instability of the eroded vault of Parrot wall, the exterior vertical free standing wall of A-6-2nd, above and south of the south doorway of the west face of Parrot wall, we were unable to enter into the inner rooms of A-6 through this doorway. A subsequent attempt to enter the inner rooms of A-6-2nd was made into the south door of the east face of A-6-2nd (Operation 124I, O and Q). Again the vault and fill was determined to be too unstable for excavation, thus 124I, O and Q concentrated on the consolidation of this loose interior room fill to provide a stronger support for the east frieze. While unsuccessful in 1994, we now understand more clearly issues relating to the stability of the fill of the inner rooms of A-6-2nd, and a more informed plan for future excavations into A-6-2nd is being developed.

### Operation 124

Operation 124 was assigned to the investigations on the east side of A-6-1st and 2nd and the upper east terrace of A-6 (Figure 2). Suboperations 124B-F,H,J-N and P, were undertaken to excavate to the level of plaster floor 1, the final plaster surfacing associated with and lipping up to the building platform of A-6 2nd, along the east face of A-6. This was undertaken in order to examine the eastern extent of

the east-west cracks which run through A-6 and prepare for the construction of a tourist platform for the viewing of the east frieze, to be built at the level of floor 1 .

**Operation 125**

Operation 125 was assigned to test excavations on the upper south terrace of A-6 (Figure 2). The purpose of these test excavations was to attain a preliminary understanding of the relationship between the construction of the upper south terrace and upper west terrace.

Three suboperations 125H, I and J were located in the southeast corner of the upper south terrace of A-6. These units were excavated through surface soils and collapse to plaster plaza floors 46 and 47 (with absolute elevations of 189.783 and 189.723 respectively). Floors 46 and 47 represent resurfacing of the final plaza floor of the upper south terrace of A-6. Floors 46 and 47 have the same absolute elevations of Floors 13 and 11 (respectively), located on the upper west terrace of A-6. Floors 13 and 11 are the uppermost (highest) plaza floors on the upper west terrace of A-6. This indicates that in its final form a plaza floor area extended at the same level from the west to south sides of A-6.

**Operation 147**

Operation 147 was assigned two test excavations on the lower south terrace of A-6 (Figure 4). The purpose of these test excavations was to attain a preliminary understanding of the relationship between the construction of the lower south terrace and upper south terrace, upon which to build a more comprehensive excavation plan in future seasons.

Test excavations were located north of the east platform on the lower south terrace of A-6. The east platform is a composite platform consisting of a high lower platform (circa 1.50 meters high; Magenta wall) and a smaller upper platform (Rust wall), of which only the lowest course of dressed facing stones remains.

Excavations continued to follow Magenta wall down to the plaza floor of the lower south terrace (designated plaster floor 48). Directly overlying plaster floor 48 is a deposit of collapsed cut limestone blocks (147B/9). Accumulating above this original collapse is a localized refuse deposit which contains densely packed ceramic material as well as collapsed cut limestone blocks (147B/5-8). Accumulating over this refuse deposit is more recent collapse containing a few cut stone blocks (147B/2-5) which underlies the contemporary disturbed surface (147B/1). The well preserved ceramic material from lots 147N/5-8 are identified as LCII. This leads to a significant conclusion that this lower southern terrace of A-6 was abandoned and covered by fallen masonry blocks and rubbish at the end of LCII. This finding corroborates the hypothesis that there was a major shift in the orientation of the site core of Xunantunich in the end of the Late Classic (Leventhal et. al., 1993); a shift to a focus on Plaza A-I and a northern orientation. Such a shift has previously been attested through the construction of Structure A-1 in the center of Plaza A-I (Zeleznik, 1992; Jamison, 1993; Jamison and Wolf, 1994) and the restriction of access to A-6 from the

southern plazas at the end of the Late Classic (Chase, 1992). Preliminary investigations of the lower south terrace lend further support to this hypothesis.

### Operation 149

Operation 149 was assigned to one test excavation located north of the south platform of the upper east terrace of A-6 (Figure 2). The purpose of this test excavation was to attain a preliminary understanding of upper east terrace, upon which to build a more comprehensive excavation plan in future seasons.

The plaza floor of the upper south terrace, plaster floor 49, was encountered approx. 30 cm below the ground surface. Floor 49, is very eroded and exists only in the southern 1/3rd of the unit. Floor 49 is at approximately the same absolute elevation (189.70) as Floor 46 and 47 and 11 and 13, the latest plaza floors on the upper south and west terraces of A-6. This indicates that in its final form a plaza floor area extended at the same level from the west to south to east sides of A-6.

## East And West Frieze Excavations

### Operations 102 And 124

The primary objective of the excavations of the east and west friezes (Operation 102F, H and M, excavations of lower register of west frieze, and Operation 124A, excavation of the central mask of east frieze; Figure 2) was simply to expose these friezes and facilitate consolidation work. Through this endeavor a number of interesting observations as to the condition at time of burial and the process of the burial of the A-6 2nd friezes can be commented upon.

A deposit of stucco, 124A/2-D1, was found in the inset niche south of the south ear flare of the central mask of the east frieze on A-6 2nd. This stucco has not fallen from the niche which is completely plastered. It must have been intentionally placed in this location indicating that the frieze was in a state of disrepair/erosion prior to its burial during the construction of A-6 1st. Orea and Castellanos (1994) also note patching and resurfacing of the frieze during its use life.

The densely packed sascab core material surrounding the east and west friezes of A-6-2nd are largely devoid of ceramic materials. In this light it was remarkable that a deposit of Mount Maloney ceramics and two chert flakes lay in the niche north of the figure head with a Kawil headdress surrounded by a day sign cartouch, on the lower register of the west frieze (Figure 10). Three partly reconstructable LCII Mount Maloney vessels comprise this deposit. LeCount (1993) discusses the multi-faceted nature of Mount Maloney vessels, which make up 30% to 40% of Xunantunich's Late and Terminal Classic ceramic assemblage. I consider this deposit of Mount Maloney vessels an intentional ritual deposit or cache; the remains of a ritual event which were part of the careful and intentional burial of the west frieze of A-6-2nd during the construction of A-6-1st.

## The Function And Meaning Of El Castillo, Str. A-6

At a recent conference at Dumbarton Oaks entitled "Function and Meaning in Classic Maya Architecture" organized by Stephen Houston, conference participants characterized the Classic Maya built environment, particularly its large public buildings and spaces as the locations of ritual performances; dramaturgical settings (e.g. Fash, 1994; Houston, 1994a; Miller, 1994; Stuart, 1994; Webster, 1994; also see Schele and Freidel, 1990). Public buildings were not the somber, silent monuments of today, but dramatic locations. As dramatic stages which serve as a set for ritual actors, exterior spaces on public buildings had an essential role in the public function of Maya architecture. Giving as an example, the Temple of the Inscriptions at Palenque, Miller and Webster note that as stages, the substructure of a Maya building would be continually modified, while the superstructural facade would remain largely unchanged (Ruz, 1992; Miller, 1994; Webster, 1994). The numerous subphase modifications to the terraces of A-6, which are contemporary with the ultimate two superstructures of A-6, present a vision of A-6's exterior spaces in a process of continual reconstruction and modification; spaces which would have set the stage for dramatic ritual events.

Beyond interpretation of the architectural form of A-6, artifacts from excavated special deposits and middens can also provide a window to view the dramatic ritual events which took place on A-6. A special deposit of three partly reconstructable Mount Maloney vessels intentionally deposited in an inset in the west frieze during its burial, are interpreted as ceremonial food containers; the archaeological manifestation of a ritual event on A-6. Preliminary in-field assessment of the elaborate and non-utilitarian nature of the ceramic material from localized midden material contained within the fill south of Verde wall, supports a hypothesis that this deposit is an archaeological manifestation of another ritual event on A-6.

Architectural changes on A-6 both reflect and are reflected, in a dynamic interplay, the changing social, political and economic relations at the site. One such change is northern focus of site orientation in the Late Classic. The construction of A-1, the restriction of southern access to A-6, and abandonment of the lower south terrace of A-6 in the Late Classic all point to a shift in orientation in this period (see above).

In the above preliminary interpretations of the form, function and meaning of A-6, I have chosen to focus on the public and ritual nature of this building. This is not to negate that fact that this building was also the stage of countless day to day activities. The function and meaning of the day to day dramas on A-6 will become clearer with more detailed and complete excavations of the many buildings and platforms of A-6.

Houston made a general comment in his introduction to the Dumbarton Oaks conference, "Function and Meaning in Classic Maya Architecture", that in order to fully understand Maya buildings, they must first be completely excavated (Houston, 1994b). While this may be a tall order in regards to large buildings, such

as A-6, Houston's comment is correct. The collaborative investigations of numerous professionals on A-6 over the past three years have come a significant way in furthering our understanding of the form, function and meaning of this building. But it is clear, that after three years of extensive research on A-6, we are still in the preliminary stages of this investigation. Future research involving comprehensive surface and tunneling excavations, conservation and consolidation, will provide a more definitive picture of this complex and dramatic construction.

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To all the rest of you, and you know who you are, who have put up with me, listened patiently and advised, what can I say here but thanks for helping me along all the ups and downs.

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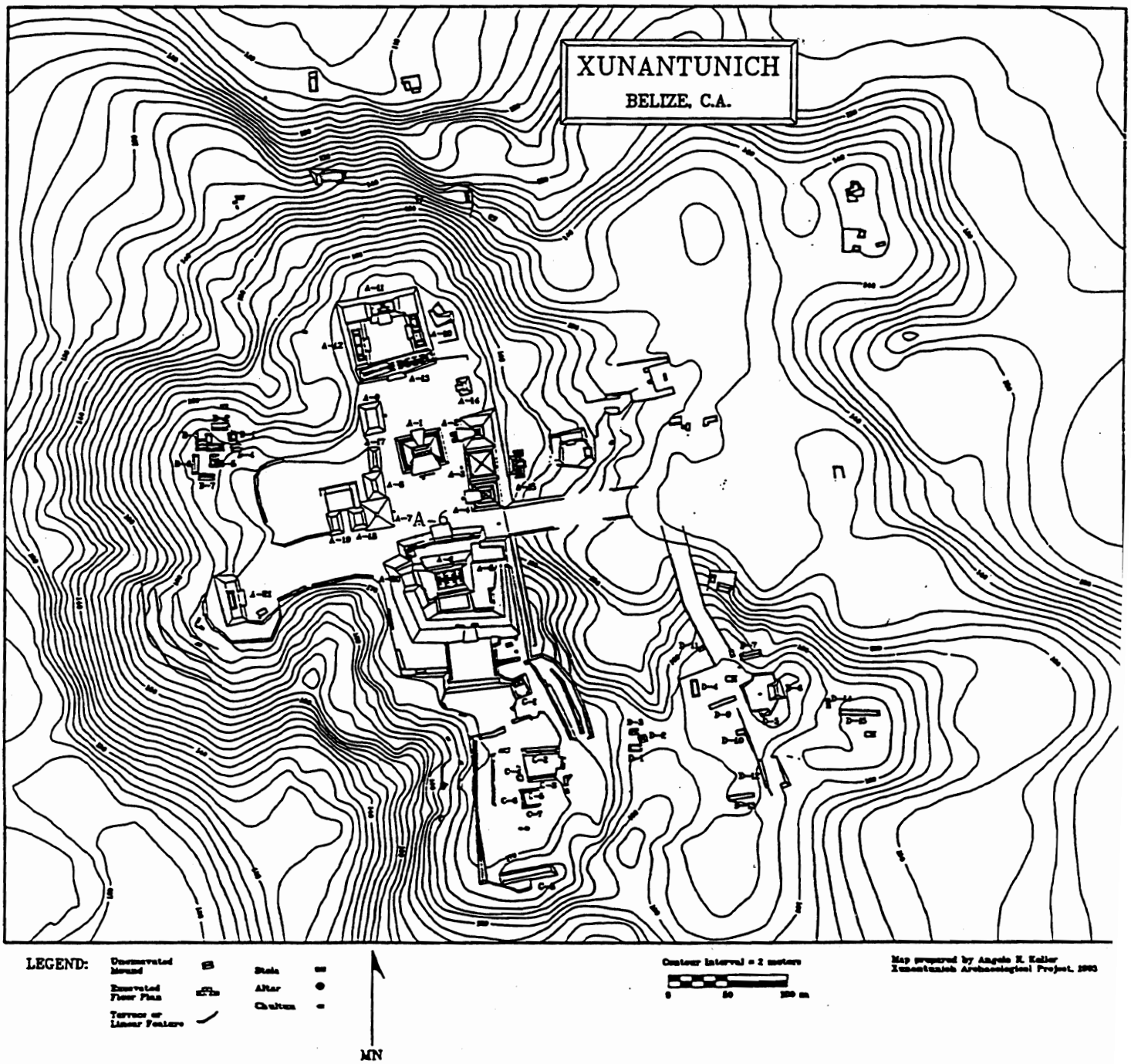



FIGURE 1: THE XUNANTUNICH SITE CORE, GROUP A AND STRUCTURE A-6

FIGURE 2:
A-6 SUBOPERATIONS
1994

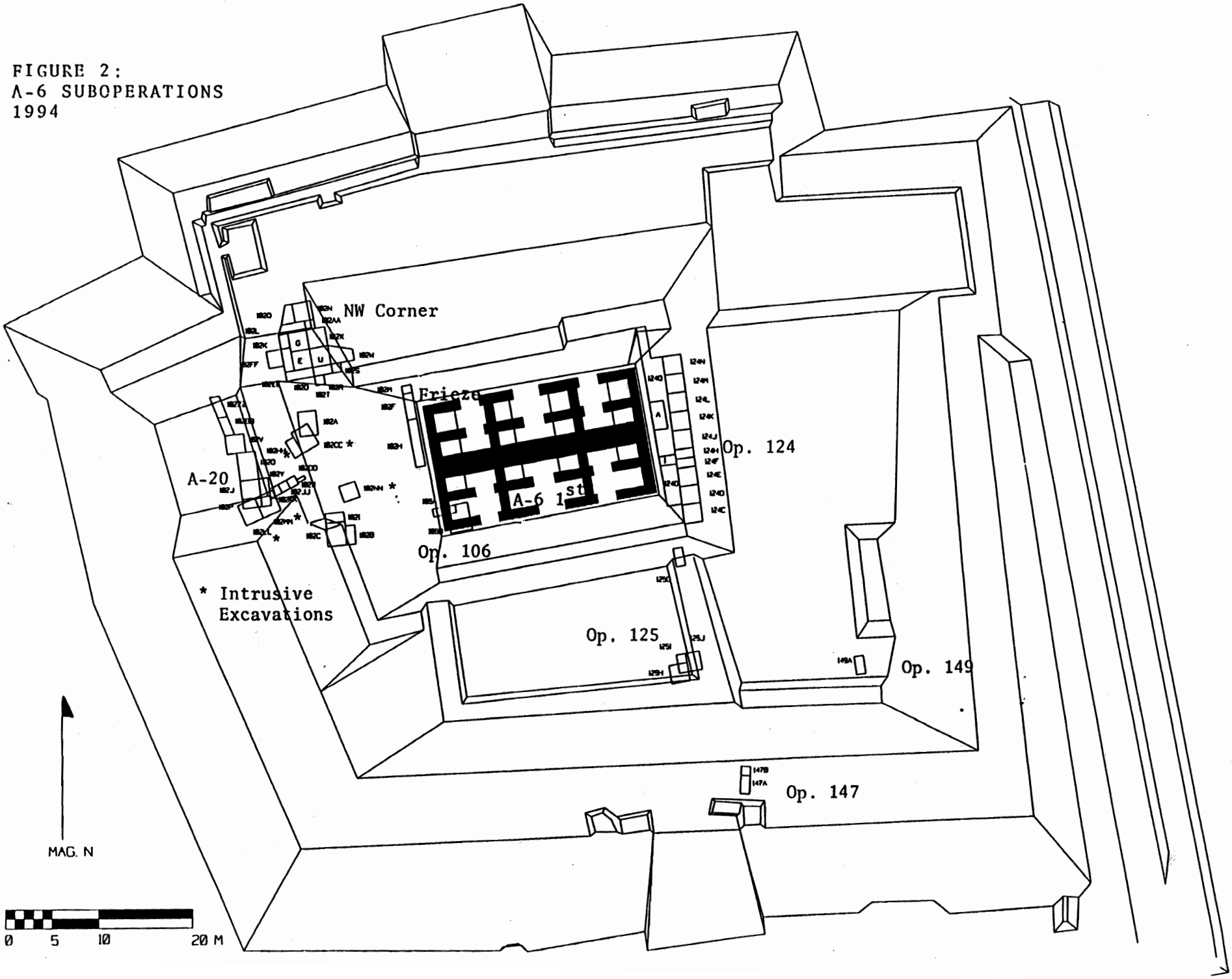
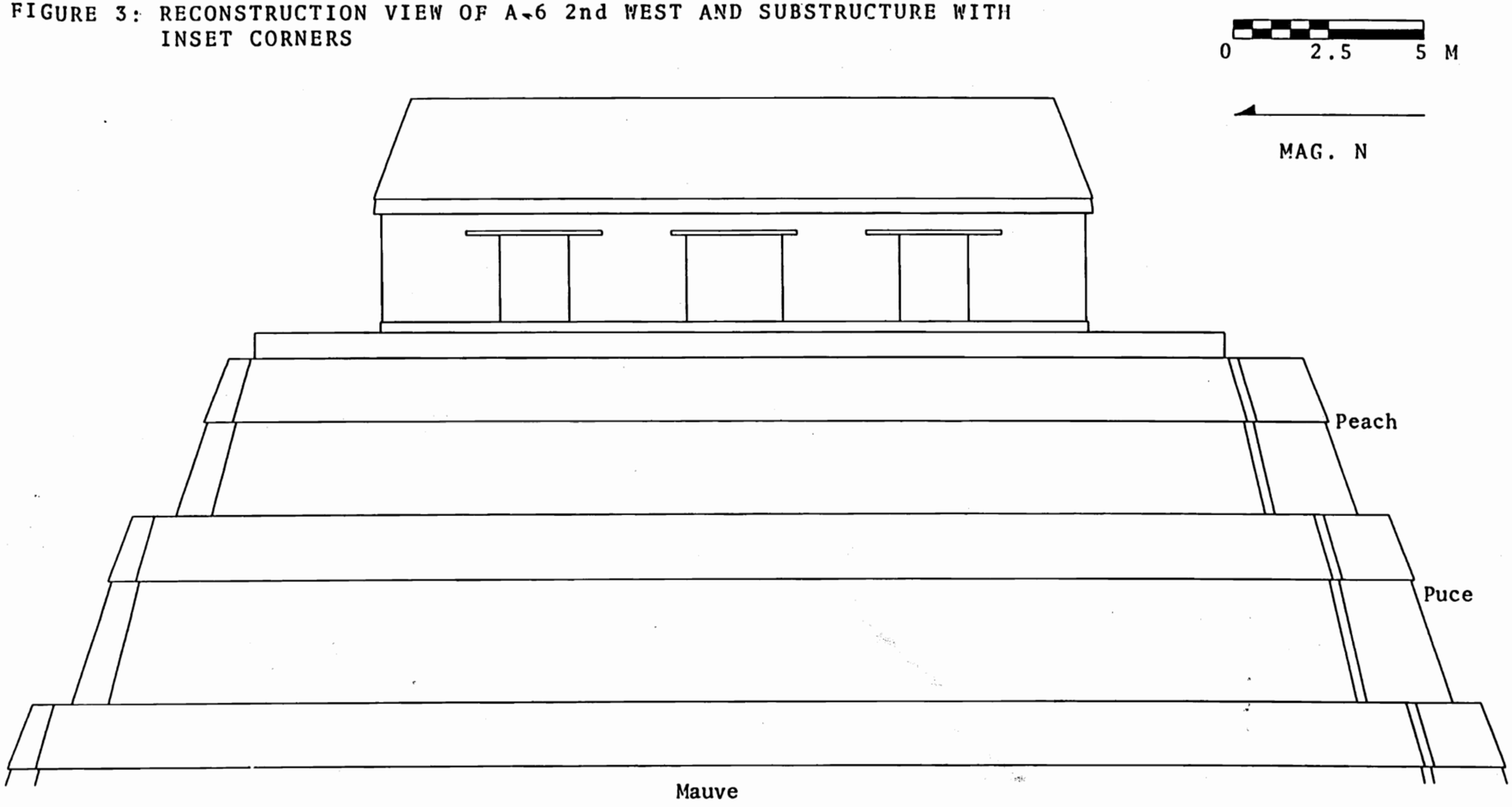


FIGURE 3: RECONSTRUCTION VIEW OF A-6 2nd WEST AND SUBSTRUCTURE WITH INSET CORNERS




The vestiges of a second storey of A-6 2nd were identified but are not included on this reconstruction (see Larios and Penados 1994)

C. ROBIN 1994

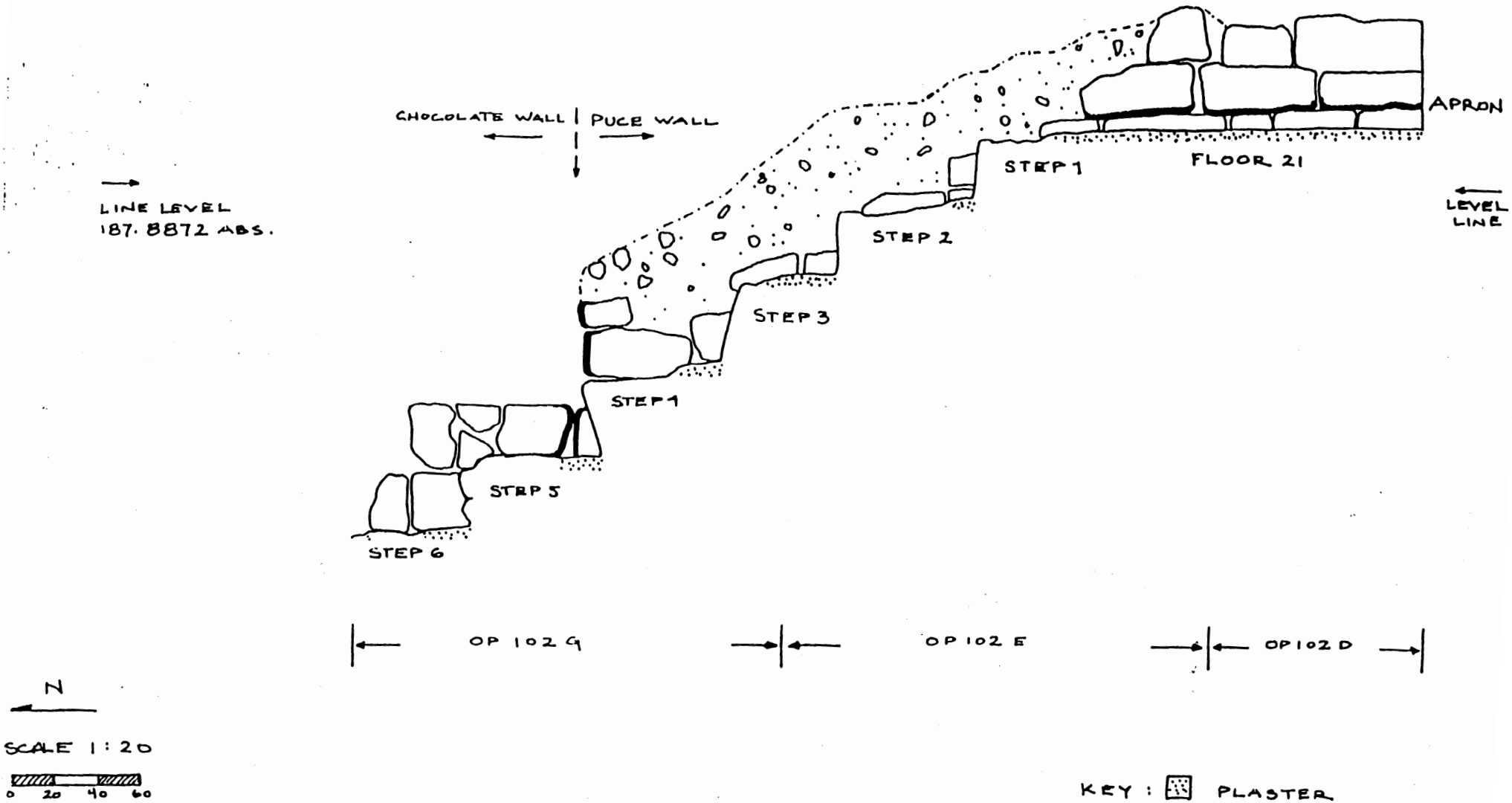
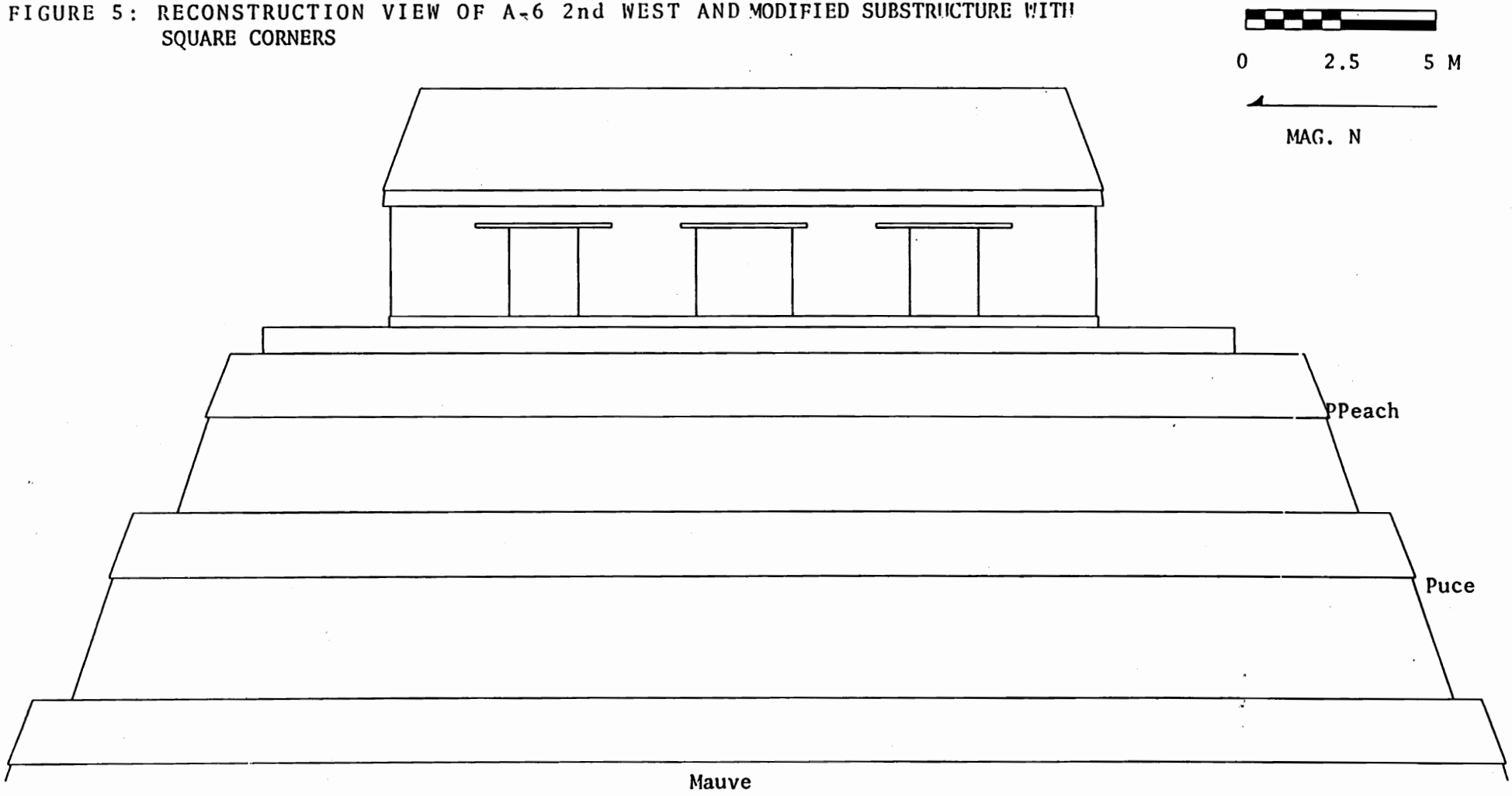



FIGURE 4 : PUCE AND CHOCOLATE WALL, WEST FACADE STAIR AND FLOOR 21

FIGURE 5: RECONSTRUCTION VIEW OF A-6 2nd WEST AND MODIFIED SUBSTRUCTURE WITH SQUARE CORNERS




The vestiges of a second storey of A-6 2nd were identified but are not included on this reconstruction (see Larios and Penados 1994)

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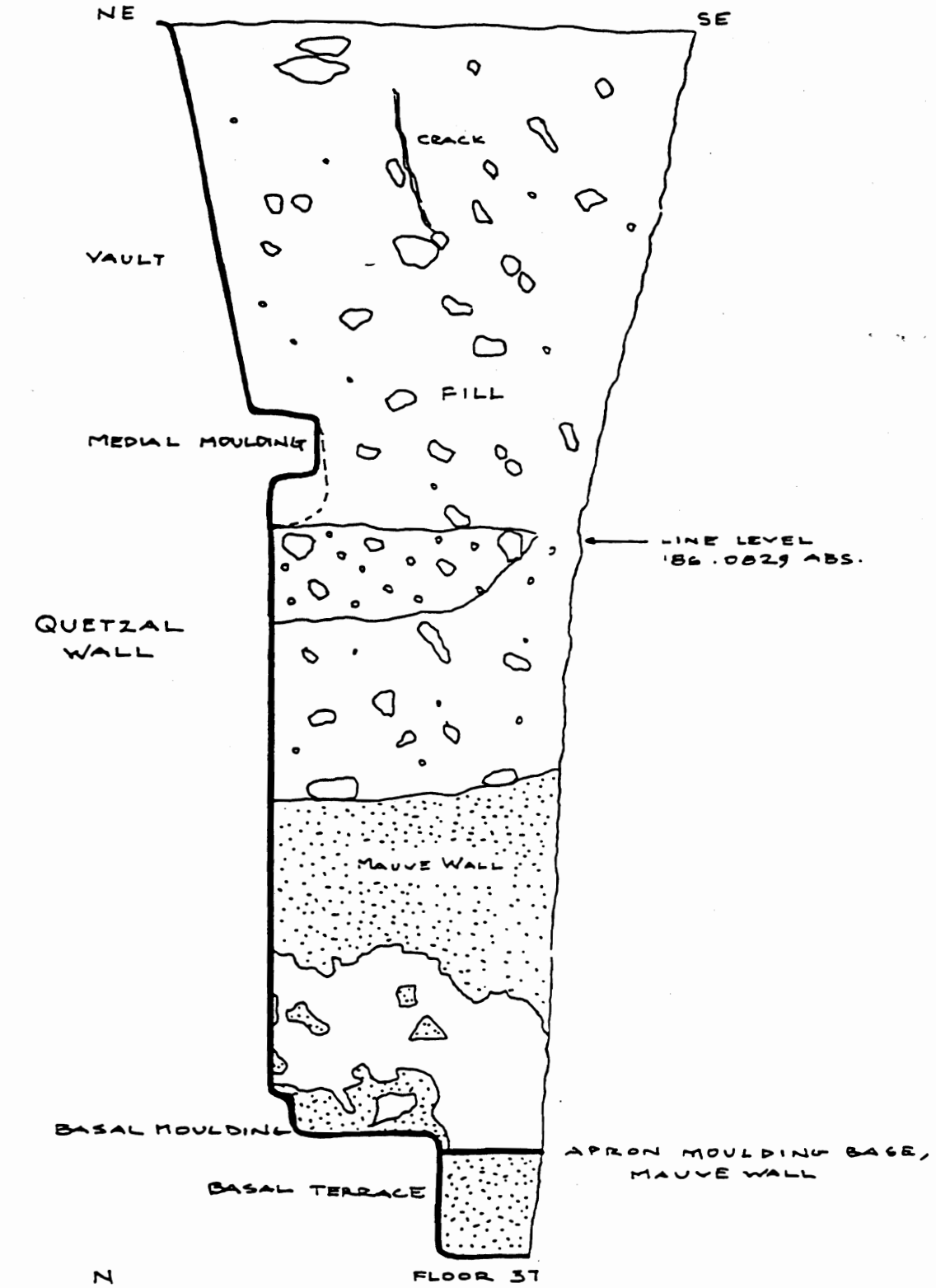
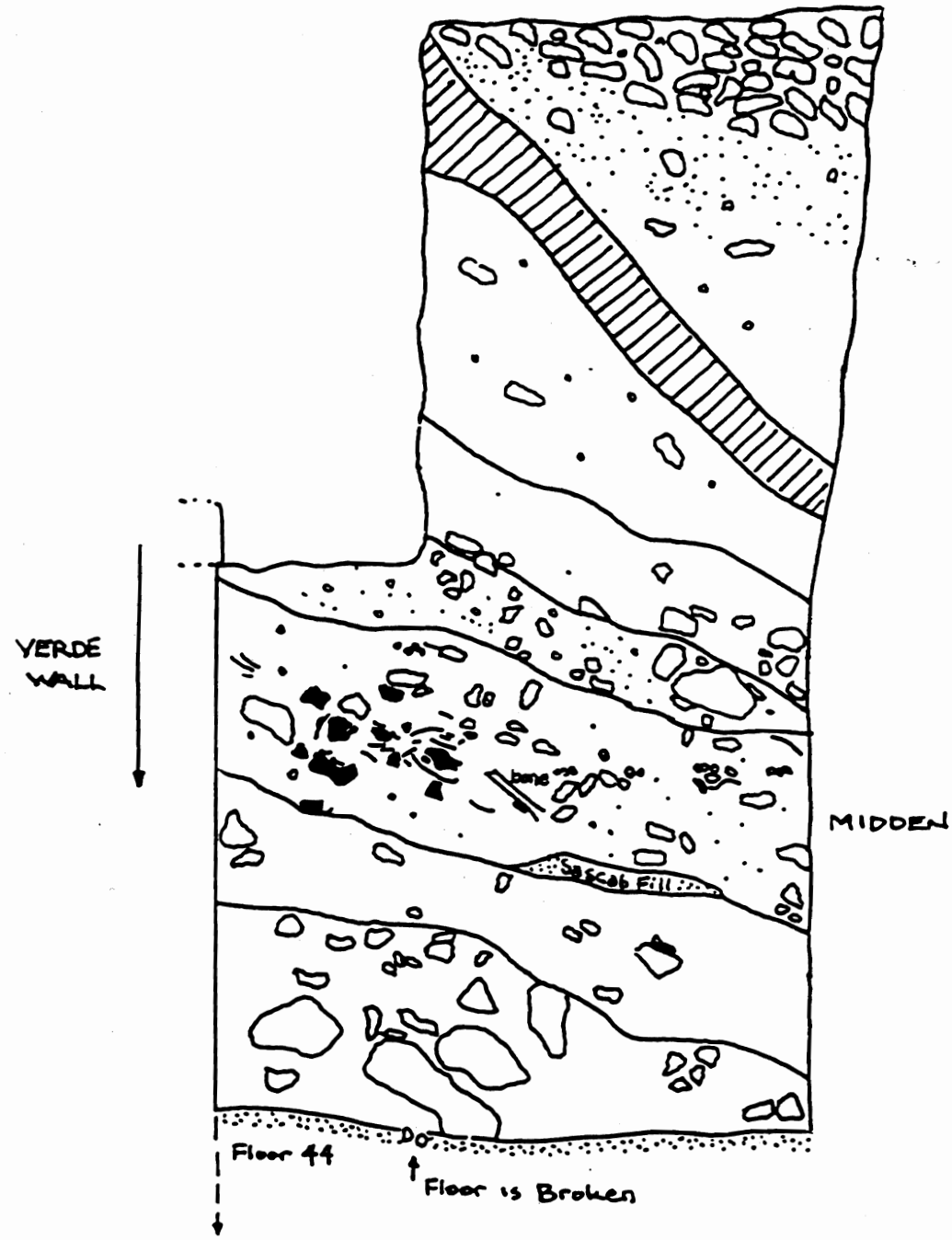



KEY: ⊡ PLASTER.
(NOTE: THE PLASTER ON MAUVE WALL IS A VERY PALE BROWN 10YR 7/3

DRAWN BY: CYNTHIA ROBIN
26 MAR 94
INKED BY: MATT LYNGART

FIGURE 7 EAST SECTION 102 CC
PROFILE, QUETZAL WALL




N

SCALE 1 : 20

KEY : TREE ROOT

PLASTER FLOOR

CERAMIC SHERDS

DRAWN BY : CYNTHIA ROBIN
EPRAIN CHAN, ROGELIO CHAN
INKED BY : MATTHEW LYNGAR

FIGURE 8 : EAST SECTION 102 LL AND MIDDEN

FIGURE 9: RECONSTRUCTION PLAN VIEW A-6 1994

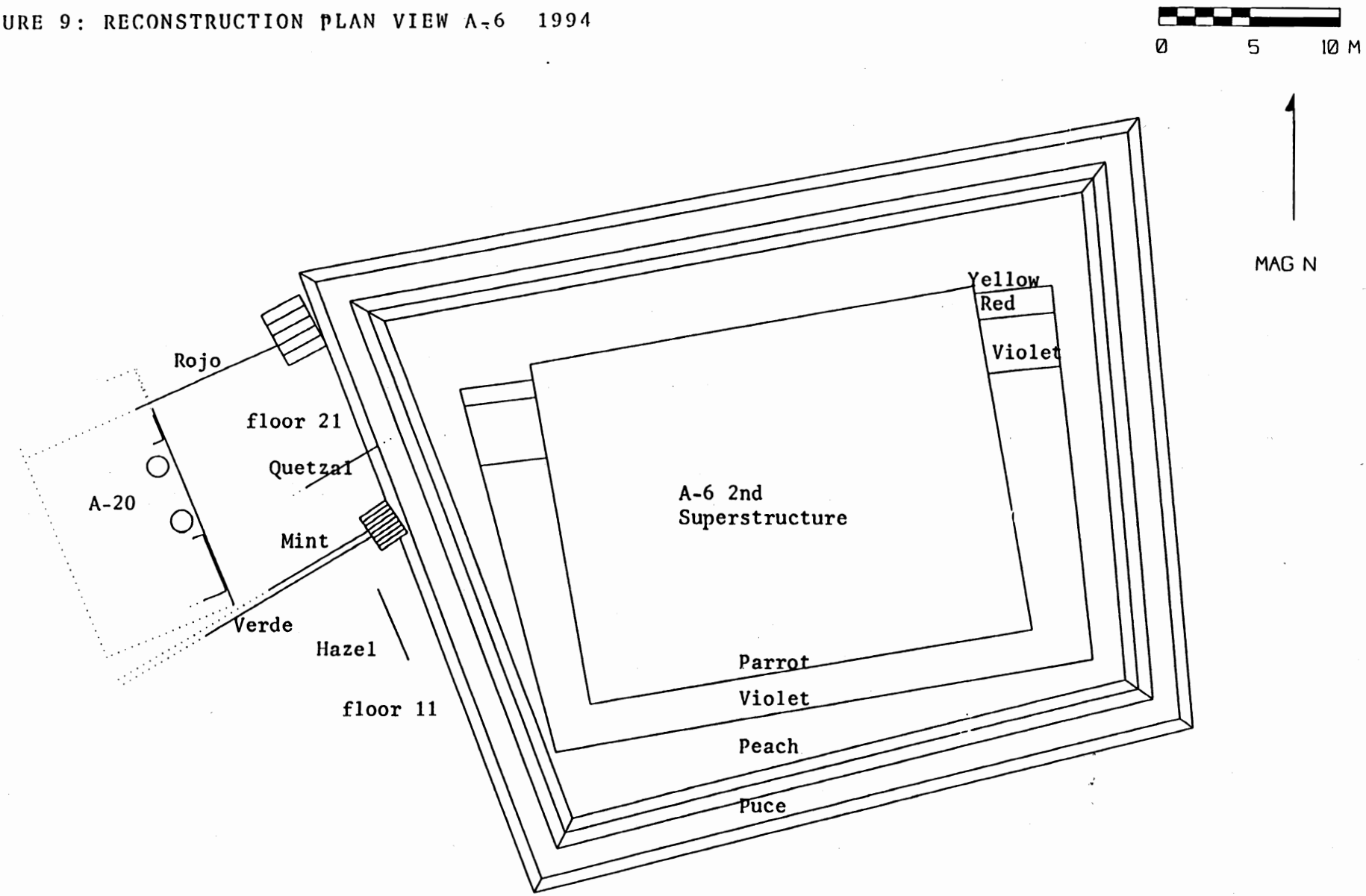
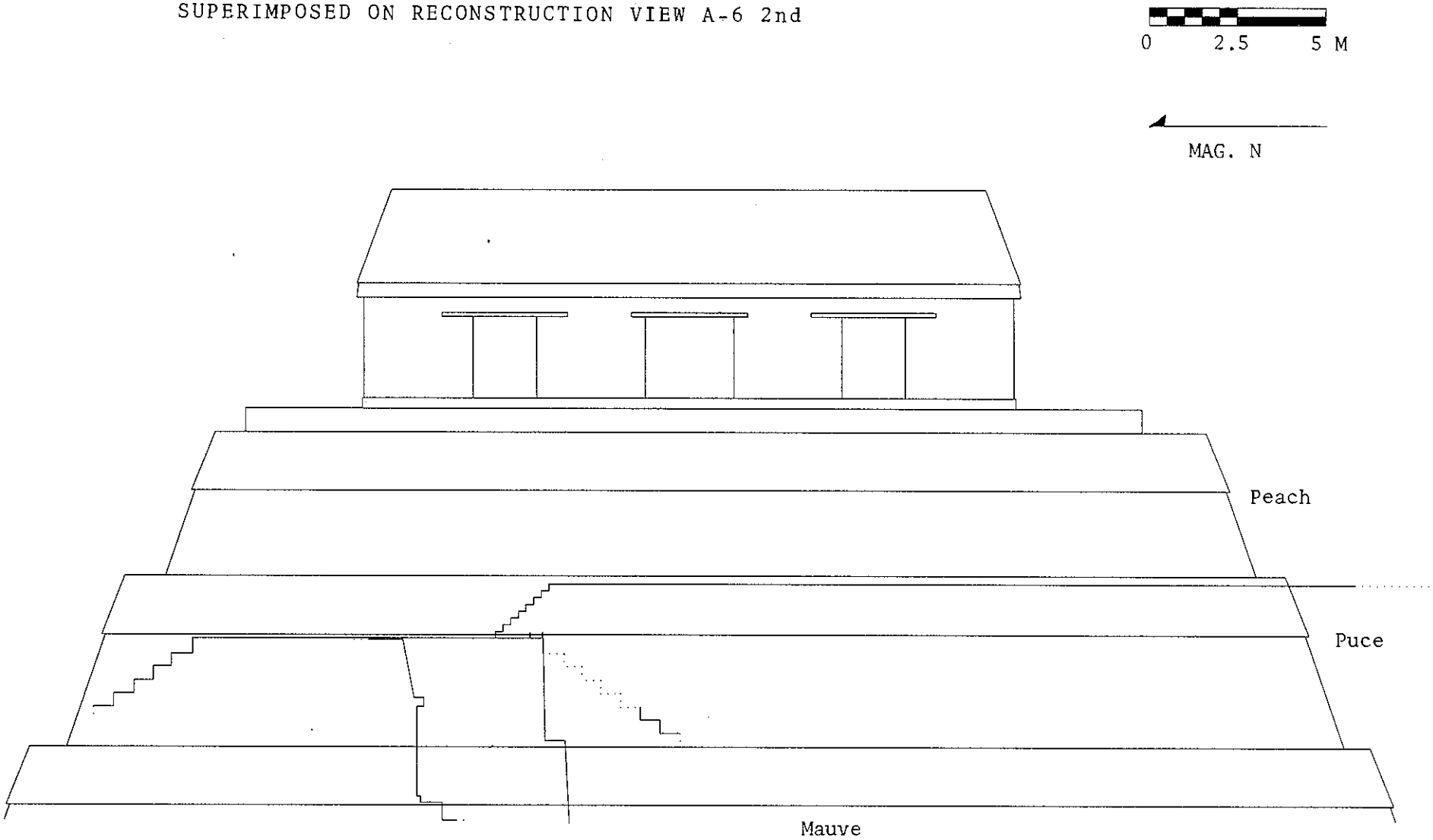


FIGURE 10a: SECTION UPPER WEST TERRACE OF A-6
SUPERIMPOSED ON RECONSTRUCTION VIEW A-6 2nd

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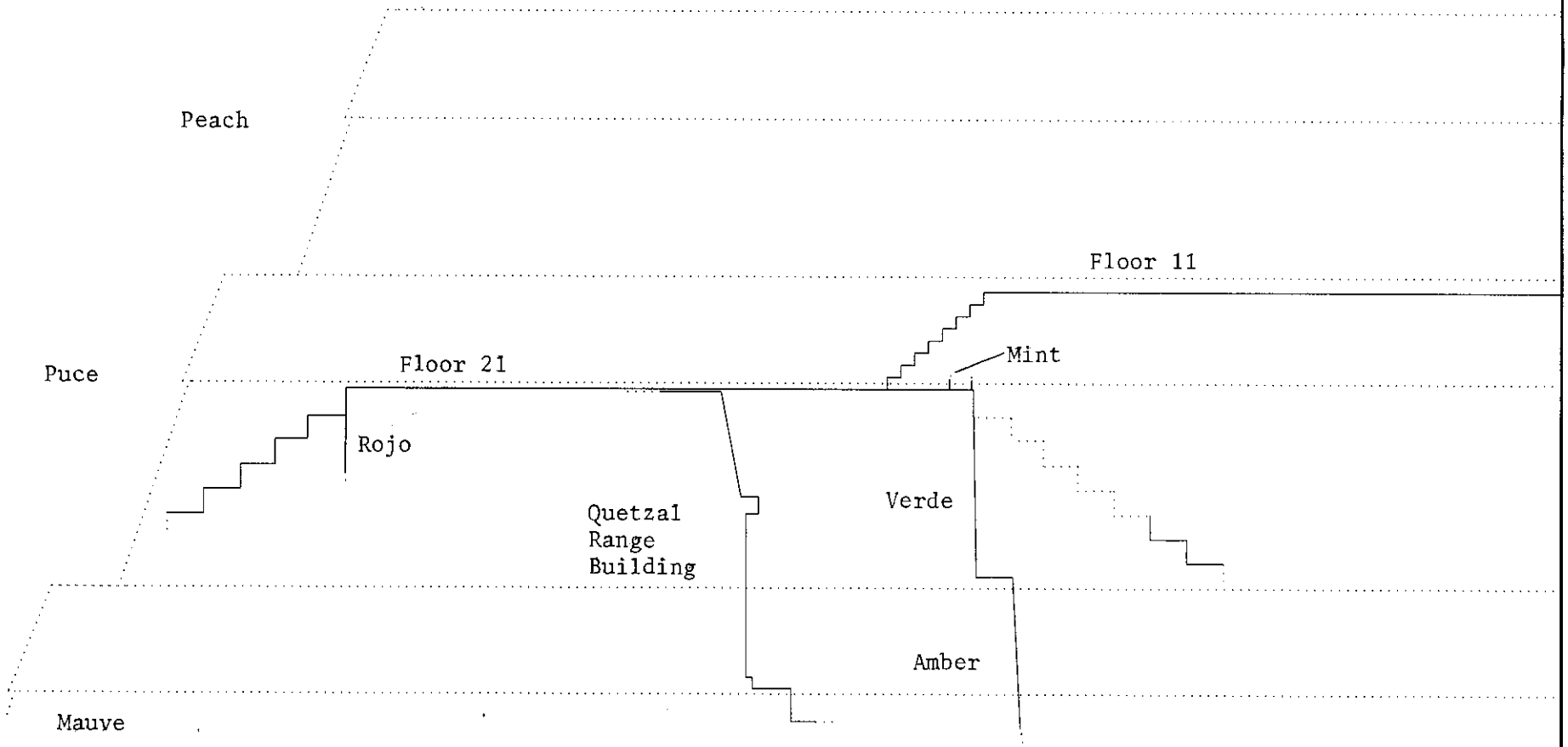
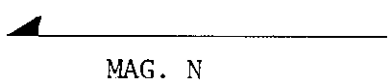




FIGURE 10b: CLOSE UP OF SECTION UPPER WEST TERRACE OF A-6 SUPERIMPOSED ON RECONSTRUCTION VIEW A-6 2nd SUBSTRUCTURE WITH SQUARE CORNERS

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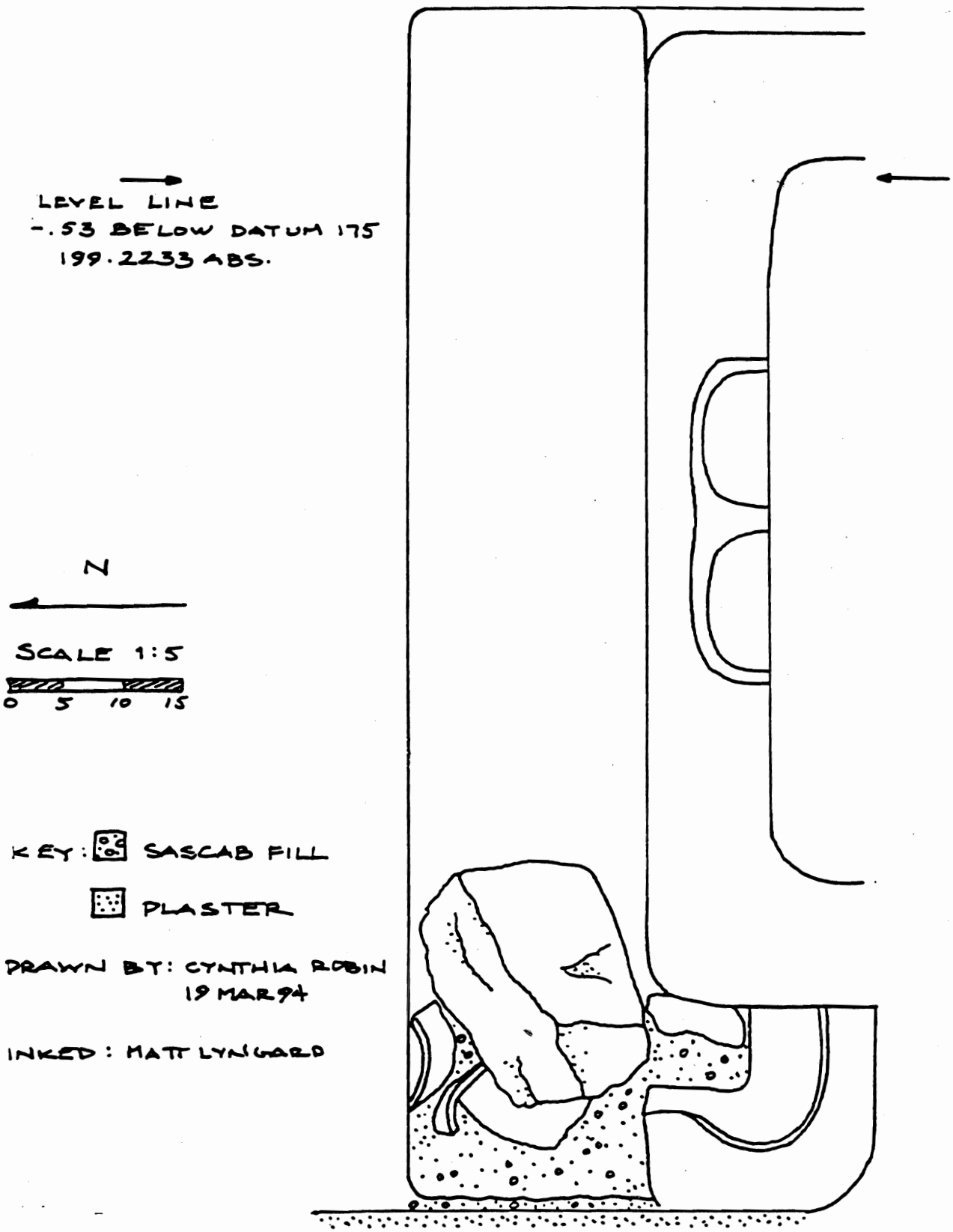
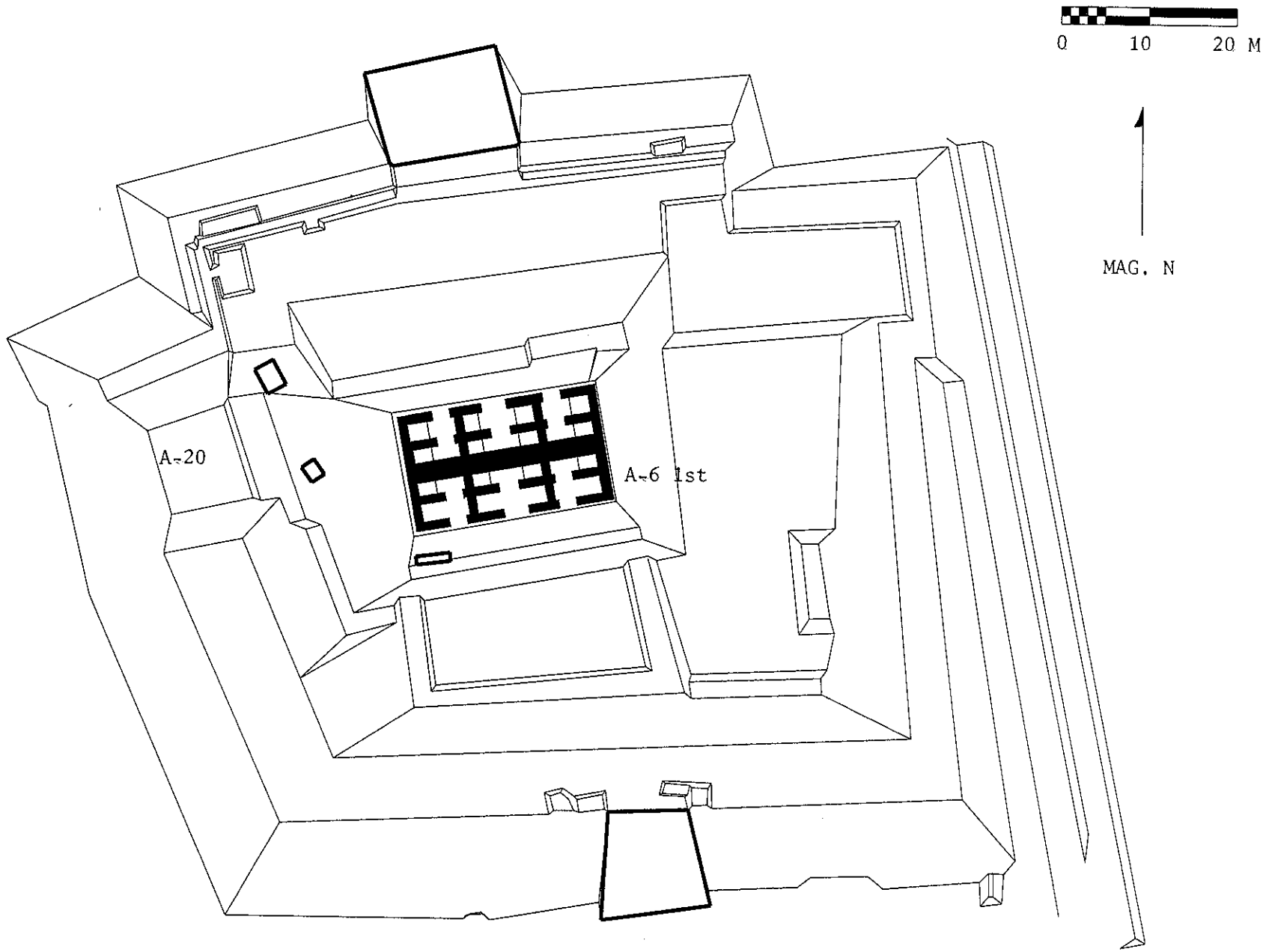



FIGURE 11: SPECIAL DEPOSIT
NORTH OF DAY SIGN CARTOUCHE,
WEST FRIEZE

FIGURE 12: A-6 ASCENT AND STAIR NARROWING




C. ROBIN 1994

# The Royal Charter at Xunantunich

Virginia M. Fields
Los Angeles County Museum of Art

Architectural sculpture in the form of monumental, polychromed, modeled stucco masks appears abruptly in the Maya Lowlands during the Late Preclassic period at such sites as Cerros, El Mirador, Tikal, Uaxactun, and Lamanai (Freidel and Schele 1988). This great public art created a symbolic landscape in which religious and political ceremonies took place and where religious and political doctrines underlying the concept of kingship and the cosmos were expressed.

The tradition of architectural sculpture continued throughout the Classic period, both in the Southern and Northern Lowlands, blossoming into myriad local styles. The so-called Palace of the Stuccoes in northern Yucatan, for example, which was built near the close of the seventh century, is adorned with a stucco frieze that encircles the upper façade. The frieze comprises a unique composition of anthropomorphized birds and animals, whose metaphorical meaning perhaps concerns sacrifice, death, and the Maya underworld (Miller 1991).

Also at this time, the Puuc area of Yucatan is home to a tradition of mosaic stone sculpture, in which pieces of carved and shaped stones were assembled into geometric motifs and patterns as well as masks representing supernaturals and other beings and objects, and these were tenoned into the façades of monumental public buildings (Sharp 1981).

Architectural decoration in the Southern Lowlands during the Late Classic, however, more typically focused on themes of rulership, such as royal portraiture and insignia, dynastic narratives, and the relationships between the natural and supernatural worlds embodied in the ruler's experience. At Palenque, brilliantly painted stucco reliefs in a palette made up of mostly reds, blues, and yellow, adorned the piers of buildings, functioning like stelae in other Maya cities (Schele 1985). Relief sculpture portraying the actions of kings and queens was also placed on basal platforms, entablatures, and roof combs. At Palenque, large stone armatures were constructed to which modeled stucco was attached, and modeled oversized figures fully in the round were inserted into roof comb niches (Greene Robertson 1977).

Yet another localized tradition of modeled stucco architectural sculpture occurred at Xunantunich in the waning years of the Late Classic period. This tradition is expressed in a dual register composition which combines the great façade masks reminiscent of the Late Preclassic with the narrative style of Late Classic architectural relief sculpture as seen at Palenque.

Xunantunich sits on a hilltop in the west-central area of Belize, in the western end of the Belize River Valley, overlooking the Mopan River. In Ball and Taschek's (1991) model of political organization in the upper Belize River Valley, they proposed the existence of a large polity, centered at Naranjo, which controlled a series of communities in the valley. The principle, local administrative center in the upper Belize Valley during the early and middle parts of the Late Classic (between A.D. 500 and 700) was apparently Buenavista del Cayo, whose ties with

Naranjo are documented by the hieroglyphic inscription on the Buenavista vase (Houston et al. 1992). Xunantunich apparently succeeded Buenavista as the primary administrative urban center in the western Belize Valley around A.D. 700 (Richard Leventhal et al., 1993 Field Season Report).

The largest and most imposing building at Xunantunich is Structure A-6, which rises to approximately 130 feet above Plaza A-1. Plaza A-1 is the most important public space at Xunantunich, and Structure A-6 undoubtedly served as the primary ritual building for the city (Richard Leventhal, 1992 Field Season Report). A large staircase on the north side of the structure led down to Plaza A-1, while a staircase on the south side of the Castillo led to a recently discovered architectural group, thereby placing Structure A-6, also known as El Castillo, in the middle of the central area of Xunantunich (Richard Leventhal, 1992 Field Season Report).

The lower two-thirds of the building consists of a series of terraces built onto the pyramidal structure, while the upper section of the building reveals evidence of two building phases. The earlier building phase, known as A-6 2d, dating to around A.D. 800, consisted of a superstructure which faced all four directions with three doorways to the north, south, east, and west. A plaster frieze encircled the upper portion of the building on all four sides. Investigations of the west side of Structure A-6 2d by Julia Sanchez during the 1993 field season revealed that the frieze, located above the doorways, was made of roughly shaped stone which was then covered with plaster. Traces of red paint were found on fragments of plaster from the fallen door lintel at the south end of the west side (Julia Sanchez, 1993 Field Season Report).

The portion of the frieze on the eastern side of A-6 2d was excavated in the 1950s by Linton Satterthwaite and others, and it has been almost completely reconstructed several times over the course of the past forty years. The east, west, and southern sides of A-6 2d and the frieze were covered by the ancient Maya with the construction of A-6 1st, while the north side, facing toward Plaza A-1, was left open. Access to the southern group was also retained, but over time, focus shifted to the northern access.

The north and south (front and back) sides of the frieze were destroyed with the gradual deterioration of the building from the time of its apparent abandonment around the eleventh century A.D. The western side of the frieze was excavated during the 1993 and 1994 field seasons, revealing an entirely distinct iconographic program from that found on the eastern side of A-6 2d. Unfortunately, the western side is also partially eroded, leaving approximately one and two-thirds sides of a formerly four-sided sculptural frieze, making interpretation of the entire composition difficult.

The following is a brief description of the surviving fragments of the Structure A-6 2d frieze. By setting the frieze in the context of Late Classic period

Lowland Maya sculptural themes, it is possible to suggest a role for the frieze in relating the divine right of the kings of Xunantunich.

The frieze on the eastern side of Structure A-6 2d comprises two horizontal registers in which the components of the composition, as well as the two registers, are separated by framing bands of plaited cloth or twisted cords and elements representing celestial phenomena (fig. 1). The twisted or plaited cords suggests the location Na Ho Chan, a supernatural location in the sky where creation of the universe was initiated (Freidel et al. 1993). This place is evoked in a black background vessel, which shows the birth of a god at Na Ho Chan Witz Xaman (First-Five-Sky-Mountain-North) (Freidel et al. 1993:fig. 2:31). The young deity, framed in twisted cords, is flanked by two aged gods who play a role in the divine acts of creation.

Three monumental masks, situated above three doorways, dominate the lower register of the frieze. The central mask, excavated during the 1994 field season, presents a long-lipped supernatural with a crossed-band motif in its forehead, reminiscent of the depiction of Chak Xib Chak (fig. 2) on the Cosmic Plate, which also carries a reference to Na Ho Chan in its inscription, and the portrayal of Kan Hok Chitam in the guise of Chak Xib Chak on a carved limestone panel from Palenque (fig. 3). The watery associations of Chak in combination with the celestial associations evoked by the lunar signs, skybands, skybearers, and Venus/star signs in the upper register of the frieze further imply the celestial location Na Ho Chan. Chak is also recognized as playing an important role in the acts of creation (Taube 1986; pers. comm. 1994).

The two masks framing the composition in the lower register are more readily identifiable as Pax gods, characterized by the crossed bands in their jawless mouths and the streams of "goo" issuing from their mouths. The phonetic reading of Pax in the inscriptions is *te'*, tree, and these masks may evoke the concept of the World Tree, the central axis of the Maya cosmos. The World Tree is the path of communication between the natural and supernatural worlds as it is defined at the center of the cosmos, and the king personifies the World Tree.

The remains of a serpent-headed throne, surrounded by a skyband, appear above the central mask in the eastern frieze. The placing of three throne stones, one a jaguar, one a serpent, and one a water lily, during the acts of creation centered the cosmos and allowed the sky to be lifted from the primordial sea (Freidel et al. 1993:66-67; Looper 1993).

The frieze on the western side of Structure A-6 2d also comprises two horizontal registers, whose elements are separated by similar framing bands of different types of plaited or twisted cords or cloth, and beadlike elements (fig. 4). Formerly, the lower register comprised three monumental masks, located over three doorways. Unfortunately, the upper courses of the west wall of Str. A-6 2d collapsed toward the south, causing the frieze in that area to also collapse (Julia

Sanchez, 1993 Field Season Report). Two masks remain, separated by a daysign cartouche containing a profile depiction of an axe-eyed creature wearing a headdress of God K, whose name has been identified as K'awil (Stuart 1987). Given the pattern on the eastern side, the mask at the southern end of the west wall probably matched the axe-eyed mask at the northern end.

The upper register is set back about a half meter, and its upper region is eroded. From north to south, the register contains a now headless figure, who once faced north, and who may also be a skybearer; the remains of a three-dimensional seated figure, framed by a skyband and feathery or leaflike elements, which terminate in elaborate knots; a dancing figure, whose hands rest on, or clutch, ropes or cords which drop from the skyband overhead and whose head is turned to the south; a cross-sectioned shell, framed in a cartouche which is open at the top and resting on a thronelike base; and finally, three vertical columns, two of which resemble plaited cloth or rope, and one which resembles columns of hieroglyphs, although none of the signs is legible (except one resembling an oversized *k'in*). The remains of another serpent-headed throne rests on one of the plaited columns.

The enthroned figure sits under a canopy formed by the skyband above his head and feathery or leaflike elements which terminate in elaborate knots. The frame recalls the feathery thrones seen on a red background vase in a scene that strongly resonates with themes of death and warfare (Freidel et al. 1993:pl. 39). A similar scaffold frame, decorated with feathers and shrunken heads, enclosing a scene of decapitation and sacrifice, occurs at Tonina (Yadeun 1992). Because of the severe erosion to the upper area of the Xunantunich figure, however, it is difficult to determine if corresponding death and warfare iconography occurred here. The figure may also represent an ancestor or subsidiary lord, as seen on Copan Str. 22A (Fash 1992:fig. 11).

Adjacent to the enthroned figure is a dancing figure, whose proportions are those of the skybearers who appear on both eastern and western façades, but who appears to be spewing "goo" like a Pax god. This figure clutches cords that descend from the skyband in a scene corresponding to those found in both carved monuments (such as Caracol St. 3; see Taube 1994:figs. 3a-d, where this association was first defined) and painted books (such as the Paris Codex, p. 22; see Freidel et al. 1993:fig. 2:32). These cords are identified as the sky umbilicus, or the cords of the sky, *xtab ka'anil* (Freidel et al. 1993; Taube 1994) These cords represent the vector of sustenance between the sky and the earth which was manifested at the birth of the Maize God.

The role of the cross-sectioned shell, which rests on a thronelike base and is framed by an open-ended cartouche, is less clear in this composition of mythico-historic significance. In combination with the cartouche located below the shell, a possible reference to ancestors may be stated. Here, a beautifully modeled profile head, marked with axe eyes and mouth barbel, wears a headdress of the god K'awil. Rulers who wear the smoking axe of K'awil only do so after death, such as Pacal on

the Palenque sarcophagus lid (fig. 5). Cranial torches denote ancestors, and there may be such an expression here. K'awil is also associated with the ritual and sacrificial actions that represent the reciprocal relationship that exists between people and the gods.

These emblems may also represent ancestral names or toponyms. On the carved frieze at Tonina, for example, figures sit on daysign cartouches in which their names and/or titles may be related (Yadeun 1992). In a representation similar to the Xunantunich example is the image engraved on a vessel from Burial 14 at Seibal (Sabloff 1975:fig. 392; see fig. 6). Here, a jawless K'awil-like profile head is represented as a *wits*-monster, a personified mountain with a cleft forehead; the head is framed by skyband elements, implying a celestial location for this personified mountain.

The presence of the remains of a serpent-headed throne in the center of the composition mirroring that on the eastern façade suggests a parallel function for Str. A6-2d to Copan Str. 22A, identified by Fash (1991:131-134) and Fash (1992) as a *popol nah*, or community house. Ten *pop*, or mat, signs are built onto the entablature of this four-sided building, signifying its identification as a *popol nah*, which was designed for meetings of community councils. Eight human figures were also depicted on the entablature, each seated cross-legged over a hieroglyph, which Fash (1991:131) suggested were place names of communities within the Copan realm.

In his analysis of Quirigua St. A and C, Looper (1994) suggested that the serpent headed throne is associated with women and ancestor communication. The king (or queen!) who commissioned the Str. A-6 2d frieze was undoubtedly portrayed sitting on this central throne.

The mask on the northern end of the lower register of the western façade is characterized by axe eyes, associating it with the number six, or the word *wak* in Maya. An identical mask most likely was found at the southern end of the western frieze. As the Pax gods on the eastern façade are read as *te'*, tree, so too is *wak* related to the concept of the World Tree, which is named *wakah kan* or *chan* ("Raised-up Sky"). The notion of a four-sided house whose corner posts are world trees constitutes the fundamental metaphor for the Maya cosmos (Taube 1994), a concept compatible with the four-sided Str. A6-2d. The World Tree (and the ruler as World Tree) is the axis of communication between humans and the gods or ancestors.

The central mask on the western façade has characteristics of the sun god with its square eyes, tau tooth, and mouth barbels. The mask lacks its lower jaw; the patron of the month Pax happens to be the sun god without a lower jaw.

An intriguing iconographic and epigraphic parallel to the composition of the Xunantunich frieze is found on the paired Quirigua stelae A and C, whose north faces are shown in fig 7. Elements at Xunantunich that correspond to St. A include cords dropping from the skyband above, clutched in the right hand of the king, who

is dressed as the world tree in the form of the axe-eyed god of the number six (*wak*); he is also adorned with jaguar characteristics and is dancing. On St. C, the king, dressed as the tree in the form of the Pax god again clutches cords dropping from a skyband. These are *hotun*-ending monuments that were dedicated at 9.17.5.0.0, which also commemorate the act of creation: the hieroglyphic inscription on St. C opens with the date 13.0.0.0.0 4 Ahaw 8 Cumku, the date when creation began, and the text continues on to relate the placing of the three throne stones, which are the symbolic prototypes for the hearthstones used in Maya homes for over three millenia (Freidel et al. 1993:67). The three stone thrones centered the cosmos as the hearthstones center the home.

The south faces of these two monuments (fig. 8) reveal the king holding a jaguar throne stone on St. C and a snake-headed throne stone on St. A, replicating the actions of the gods who set the equivalent throne stones at creation. By depicting himself in this manner, the king portrays himself as the architect of the *katun* and as the driving force behind the events of creation (Looper 1993).

A corresponding message is conveyed by the architectural frieze at Xunantunich, which by its form and content, reveals the ruler as recapitulating creation and reiterating his role as the *axis mundi* of his community. For the ancient Maya, creation was at the heart of what they represented in their art and architecture (Freidel et al. 1993:60). The epic of creation as related on such Classic Maya monuments as the Tablets of the Cross, Foliated Cross, and Sun at Palenque, as well as at Xunantunich, parallel the sixteenth-century Quiche Maya creation epic, the *Popol Vuh*, in the manner in which the story of creation is incorporated into the political charter of a Maya city.

Acknowledgments: I would like to thank Dr. Richard Leventhal for inviting me to take part in the Xunantunich Archaeological Project. I greatly appreciate the gracious hospitality extended to me during my brief stay at Xunantunich in 1994, where I benefited from discussions--iconographic and archaeological--with members of the staff and crew. I would also like to express my thanks to colleagues who provided me with many insights into the interpretation of the frieze, especially Karl Taube, Linda Schele, and Steve Houston.

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## Figures

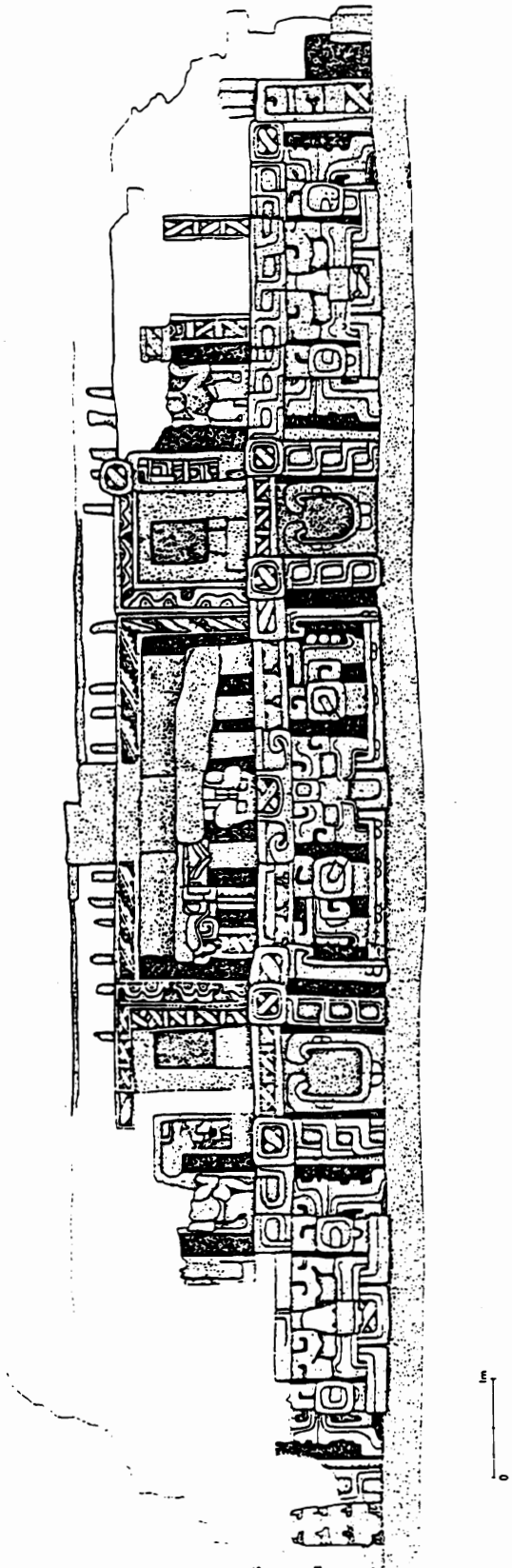


Fig. 1

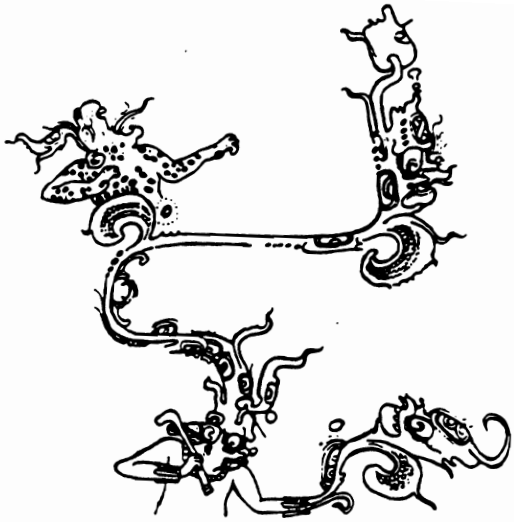


Fig. 2

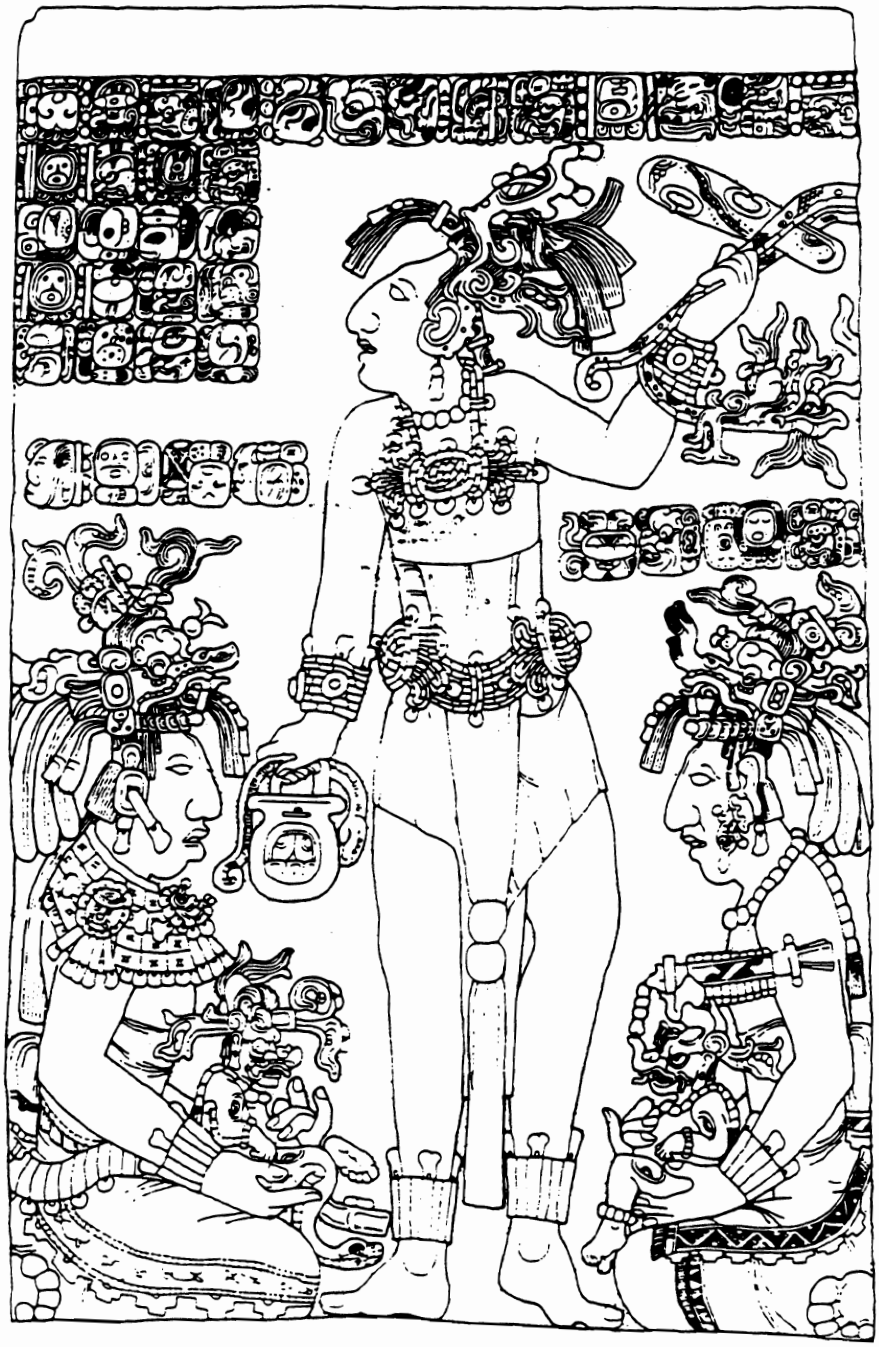


Fig. 3

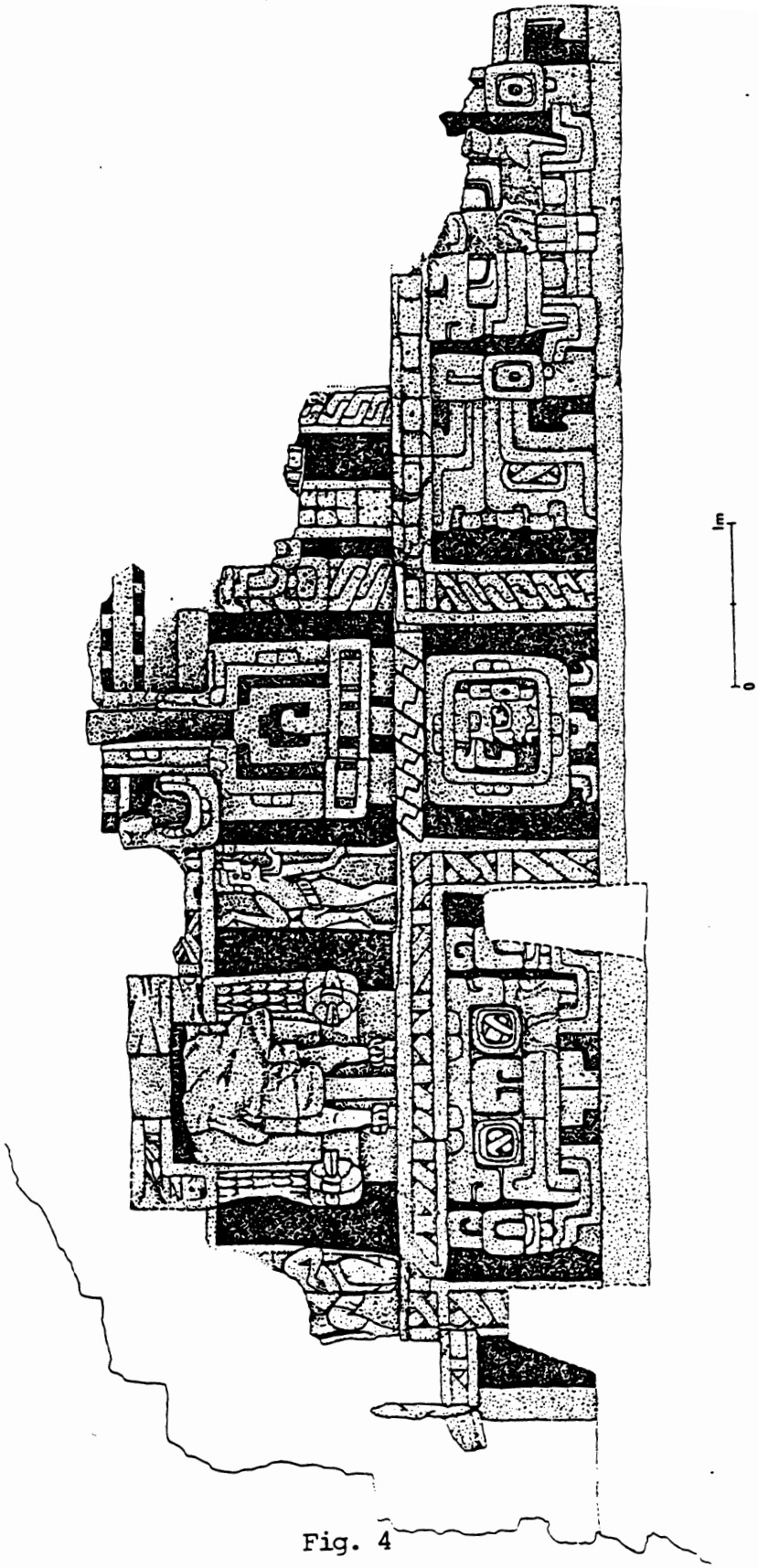



Fig. 4

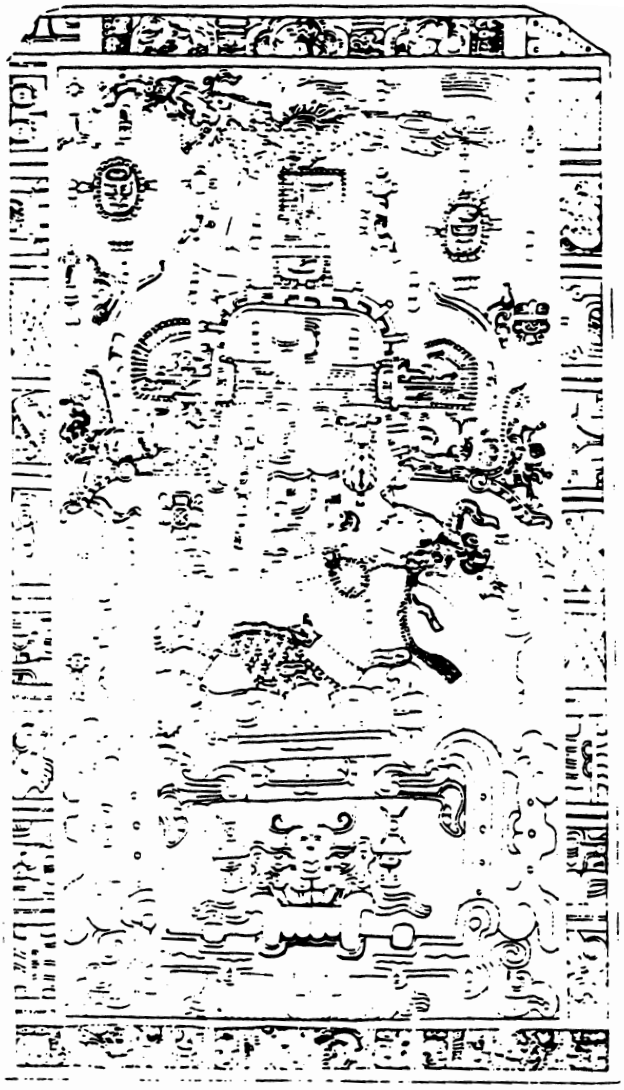


Fig. 5

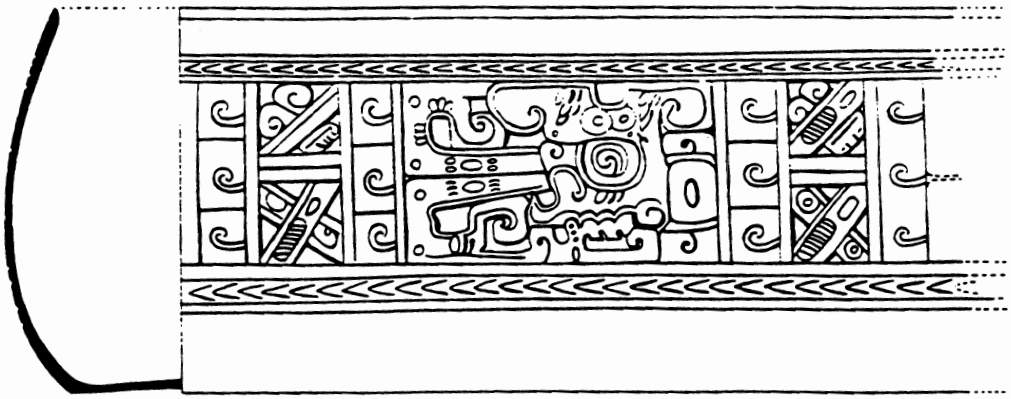
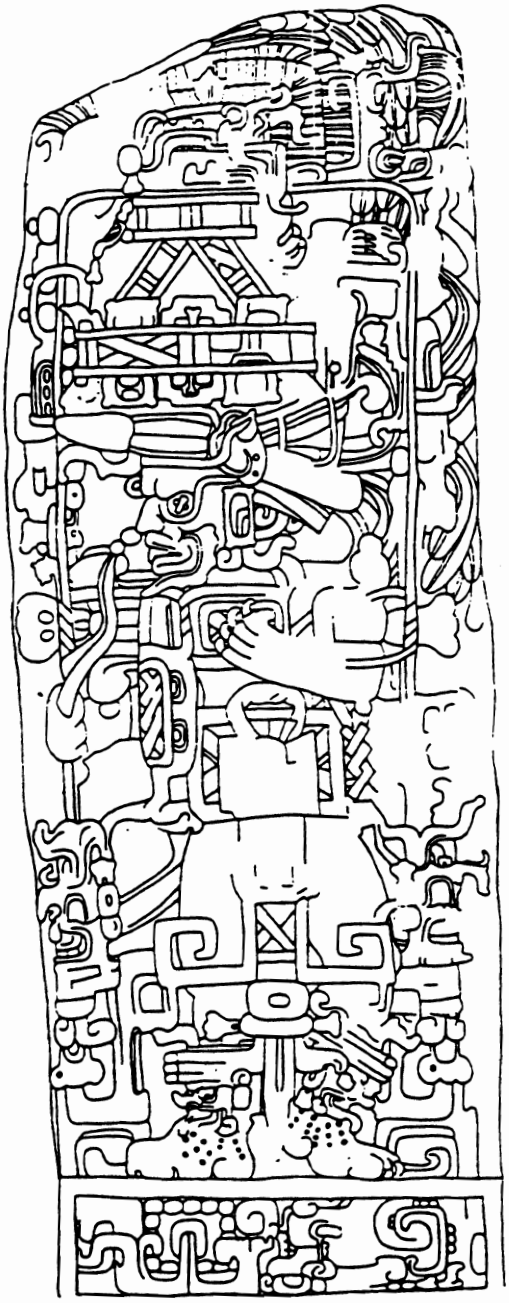
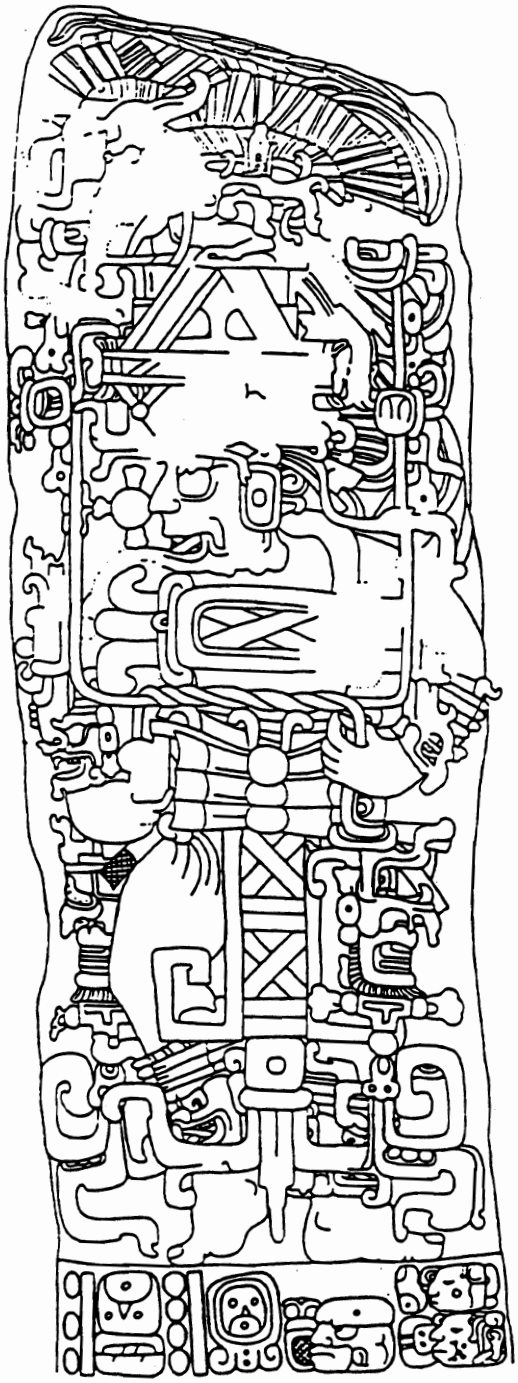


Fig. 6

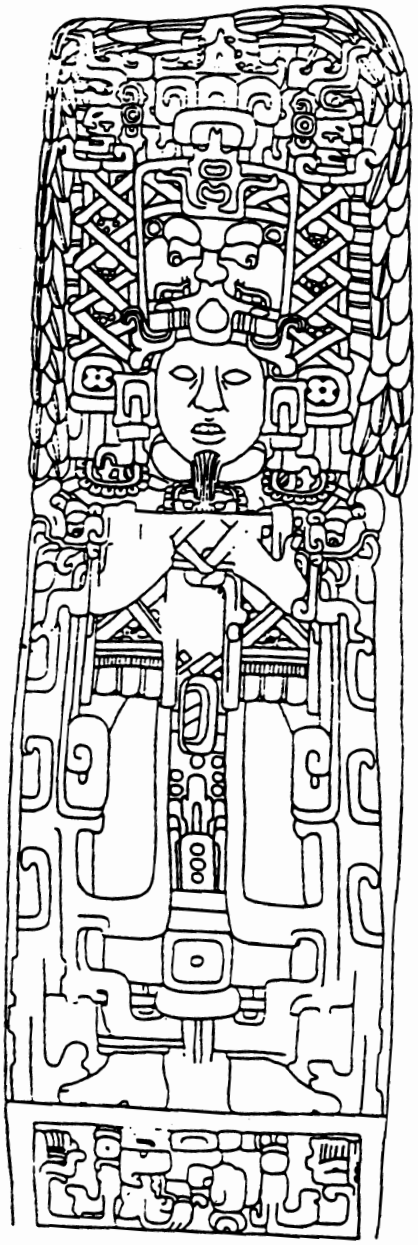


St. A

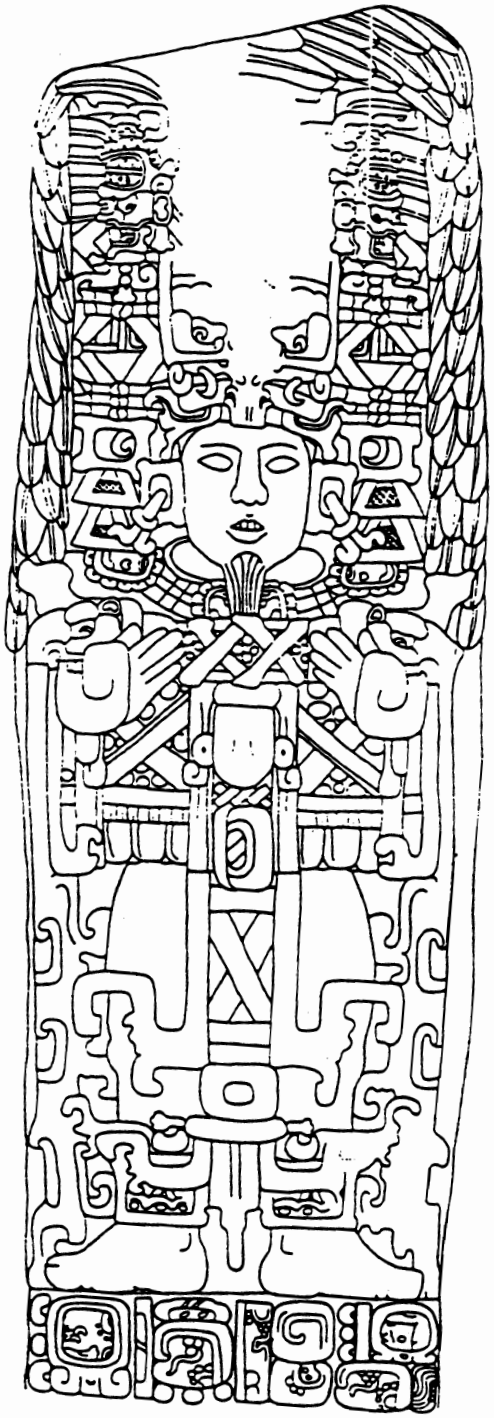


St. C

Fig. 7



St. A



St. C

Fig. 3

# The Xunantunich Sacbe Project 1994

Angela H. Keller
University of Pennsylvania

> Festivals and the processions associated with them provided an important structural balance that countered the trends toward an anarchic cosmos and a fragmenting social order .... the transcendent event of moving from shrine to shrine, weaving a fabric of unity over the dispersed symbols of heterogeneity.
>
> Freidel and Sabloff 1984:184-5

> Fiestas were the one occasion in which the entire population was certain to gather in the center, where all members could see themselves as a community and reaffirm social bonds outside the family circle.
>
> Farriss 1984:332

The project reported upon here is still ongoing, scheduled for another two seasons of fieldwork, and therefore this report is in great part a hypothesis to be further explored in the coming years. As part of the larger Xunantunich Archaeological Project (XAP), the Sacbe Project has focused upon the identification and documentation of the ancient Maya sacbes and associated spaces at Xunantunich in an attempt to situate them within the physical and spiritual communities of their creation and use. The material recovered in this past year of field work, while surely preliminary, has led me to reconsider the significance of Maya roadways and the activities they entail in the construction and maintenance of social identity and political stability at Xunantunich during the Late and Terminal Classic.

An ancient Maya sacbe testifies not only to the tremendous energy expended in its construction, but also to the repeated and arguably sacred movement of people along its course. In a field where we are continually at a loss to "see" the people of the past amidst their ruined constructions, roadways offer a rare clarity of vision - people walked along these avenues in exactly the manner that we can today. In the Maya area, people probably also danced, sang, and chanted along their sacbes (Freidel, et.al. 1993). They likely carried many of the ritual accoutrements we find archaeologically and ethnographically -- censers of smoking copal, staves and wands of office, effigies, and flowers, to name a few (Gates 1978; Freidel, et.al. 1993; McGee 1990; Vogt 1970). The ancients, like modern Maya, may have even stopped their processions at certain points along the way defined by constructions or monuments, perhaps identifiable today (Benavides 1981; Vogt 1970; Coe 1965; Folan, et.al. 1983; Freidel and Sabloff 1984; Willey 1982). While the nature and intent of this movement of people in the past is the substance of the hypothetical assertions below, the fact of that ancient movement is unambiguously defined by the very sacbes themselves.

Still, to date we have done very little to understand that movement on and around sacbes. Surely, many scholars have discussed the manner in which sacbes connect one structure or plaza to another (Benavides 1981; Folan, et.al. 1983; Ringle

1992; Villa Rojas 1934), but these are essentially architectural relationships - relationships between buildings rather than the movements of people. All too often we have left the reconstruction of the performances and activities enacted at ancient Maya the centers to graphic artists and other non-archaeologists. Not that these have been particularly unreasonable, but it is odd that the actual activities of the Maya **in their major cities**, not to mention the function of those activities in the construction and maintenance of the power of those ancient cities, have been so little explored by archaeologists (for some exceptions: Schele and Freidel 1990; Freidel, et.al. 1993; Freidel and Sabloff 1984).

Additionally, in appraising ancient Maya ritual and state religion, archaeologists have generally focused upon the images and words produced by the ancient Maya elite or their retainers, leaving the nature of the experienced events largely unexplored. By this I mean that we have tended to think of the rituals of the ancient Maya as statically as they are preserved in stone and on ceramic vessels, rather than as the dynamic events they must have been. Festivals which, like those of today, must have incorporated multiple activities -- such as processions, games and gaming, speeches, pageants, sacrifices, dances, market fairs, and feasts --and multitudes of people, elite and commoner alike. This last point, the inclusion of non-elite persons in the reconstruction of ancient Maya activities at great centers, is often underdeveloped.

Generally speaking, we only "see" Maya commoners in the context of the quotidian peasant activities of household reproduction -- farming, small-scale manufacture, and child-rearing (Ashmore and Wilk 1988; Pohl 1985; Webster and Gonlin 1988). The Maya center, conversely, has traditionally been the near-exclusive province of the elite as they enact rituals, engage in warfare, and make royal visits. This is not to say that Mayanists have not considered the possibility that common persons did come in large numbers to the great centers, but more that once we got them there mentally, we did not really know what to do with them. The common populace and their activities were not well-documented by the Maya themselves, and consequently its members have been unrealistically standing around as passive observers of elite activity in most of our personal mental reconstructions of ancient Maya centers.

The problem, then, is how to establish commoners as well as elites as active individuals within the dynamic complex of activities and structures that must have constituted an ancient Maya center. The method that I have chosen is, first, to start deliberately with archaeologically retrievable structures that by their very nature require us to consider the movement of ancient peoples as a significant activity - ancient Maya sacbes. While there were surely many kinds of paths and roadways used by the Maya in constructing their daily movements and possibly their perceptions of the structure of their physical and spiritual world (Vogt 1970, 1976; Konrad 1991; Landa 1941), I am centrally concerned with those avenues of movement that were so significant as to be constructed in the most elaborate and enduring fashion, in stone and plaster on a truly monumental scale. Examples of

such grand constructions are replete within the Classic Maya lowlands, and generally speaking do not appear to be roads built expressly for the transportation of goods and people to and from centers (Demarest 1989; Freidel and Sabloff 1984; Konrad 1991; Ringle 1993; Villa Rojas 1934). On the contrary, the few examples of systems of long-distance sacbes connecting sites to other sites have as yet only been found at two major classic sites, Coba and Caracol (Folan, et.al. 1983, Chase and Chase 1987). These most assuredly are impressive, but are likely distinct from the general pattern of sacbe-building within the Classic Maya Lowlands. Overall, what I would call the typical or archetypal Classic Maya sacbe is a strictly intra-site phenomenon, linking one ceremonial part of a site to other ceremonial sectors within the same center (for Classic Maya examples at other sites see site maps of Tikal, Uaxactun, Yaxha, Seibal).

At Xunantunich to date, we have identified two sacbes of this archetypal variety: one linking Group A (the site core) with Group D (an elite residential outlier) and another very short and broad one linking the core of Group A with Structure A-21 at the western edge of the site (Figure 2). These and other possible sacbes along with the spaces associated with them form the substance of the continuing Sacbe Project at Xunantunich.

With sacbes as a focus, the next logical step is to attempt to integrate the interpreted movement along them into a coherent set of activities which necessitated the construction and use of sacbes within major Maya centers. While, practically no excavation has been conducted upon sacbes and related structures (Ford, personal communication 1994; Jaeger 1987; Willey 1982), I have been aided in contextualizing my sacbe research by a whole host of theoretical work which both explicitly and implicitly defines the use of ancient Maya sacbes (Coe 1965; Earle 1991, Freidel 1981; Freidel and Sabloff 1984; Folan 1977, 1983, 1991; Konrad 1991; Kurjack 1974, 1979; Kurjack and Andrews 1976; Ringle 1993; Vogt 1970; Villa Rojas 1934). Stated most baldly, Classic Maya sacbes were essential components of Maya social, religious, and political performances constituting "in effect extended stages for ritual" (Ringle, 1993:13). As such, sacbes formed a part of a complex of open public spaces -- plazas, ballcourts, and possibly specially designated fair or market areas -- used by elite and commoner alike during Maya "state" rituals. Considering the relatively dispersed settlement around the Xunantunich core (Figure 1), these hypothesized state rituals may have been a focal mechanism integrating the regional populace (see also Braswell, Keller, and Yaeger, 1994).

**Previous Work:**

During the spring of 1993 our vision of the ancient center of Xunantunich was dramatically altered by the identification of features previously thought absent at the site -- sacbes (Figure 2). During the 1993 field season, two sacbes were found, one each emanating from Groups A and D and apparently running in a collision course (it is now clear that these two sacbes are actually one curving road connecting the two plaza areas - Sacbe I - see Figure 3). This discovery led us to reevaluate the sacbe-like corridor running westward to Structure A-21, and to wonder about the

possibility of its continuing west as a longer roadway. None of the earlier research at Xunantunich had attempted a complete survey of the site and therefore the possibility of finding formerly unmapped structures, groups, and sacbes was quite high. Still, identifying Sacbe I, a 15 meter wide road with retaining walls at places in excess of 1 meter high, in direct association with previously mapped and excavated areas occasioned a major reorientation of our thinking about the nature of the site.

Several enigmatic features became surprisingly clearer with the identification of the sacbes. First, the seemingly "out-of-place" locations of two small stela, one in Group A (Stela 5) and the other in Group D (Stela 12), became significant (see Figure 3). Both of the "out-of-place" stela are, in fact, at the thresholds where the sacbe adjoins the plaza areas -- each one seems to stand as a boundary marker at the entry to the plaza and the emergence of the roadway. Along these same lines, in 1994 another apparently "out-of-place" small stela fragment was located just east of Structure A-21. While work to the west of Structure A-21 has yet to confirm the presence of a sacbe running westward, the position of the stela fragment is now suggestive.

Second, the unexplained orientations of Structures A-15 and D-7, facing away from the plaza groups with which they are associated, is less confusing considering their direct proximity to Sacbe I (see Figure 3). Again, both of these structures had an "out-of-place" feel to them until we recognized that they face out toward traffic along the sacbe. Interestingly, the two structures share several structural features in addition to their spatial association with Sacbe I. Both, are partially carved out of the natural bedrock upon which most other structures are built, and both are range structures with three front rooms containing large, high benches. Apparently, whatever processional activities occurred between Groups A and D upon Sacbe I also entailed some kind of activities requiring a very specific kind of structure at the entrance to each plaza group (for more information on the excavation of Structure D-7 see Braswell 1994, this volume; and for Structure A-15 see MacKie 1985).

Finally, the position of the impressive Structure A-21, peripheral to the main group and unincorporated into any formal plaza arrangement, is greatly clarified in light of the sacbes (see Figure 2). Once we recognized the occurrence of causeway-building at Xunantunich, the corridor leading west to Structure A-21 was easily reinterpreted as a short, broad sacbe in its own right. Adding further weight to the proposition that the A-21 corridor was a sacbe conceptually for the ancient Maya, is its association with the north-south running ballcourt comprised by Structures A-18 and A-19 (see Figure 2). Archaeologists have long recognized the regularity with which ballcourts are placed at the edges of core plaza groups, and recently the association of ballcourts with causeways and otherwise liminal or transitional spaces has been forcefully advanced (Gillespie 1991; van Bussel 1988). Directly across the plaza from Sacbe I, the A-21 Sacbe forms a balanced, symmetrical site plan begging the question of whether the whole system -- sacbes, ballcourt, stelae, and associated structures --was conceived and executed as a single program.

**The Data From 1994:**

During the 1994 field season, the Xunantunich Sacbe Project roamed from one end of the site to the other in an attempt to test possible sacbes and related structures as a complete constructional program. In reporting the data I will move chronologically from the first work of the season to the last. As an aid to the reader, I would like to take some space to define some of the terms used in this report. The Xunantunich Archaeological Project (XAP) uses several terms to define excavations which are not always used in the same manner by other projects. Here, an **operation** refers to a set of excavation units of varying size placed within a conceptually defined and bounded space (i.e. a building, plaza, sacbe, or defined open space) -- these are given numbers. A **suboperation** is an arbitrarily sized excavation (1x2m, 2x2m, etc) placed within an operation area -- these are given letters. Suboperations may be placed contiguously to form larger trenches or clearings. In this report I will use a term not used generally by the XAP excavators, a **unit**, to refer to a set of contiguous suboperations that for all intents and purposes constitute one coherent excavation endeavor. The term unit is used to simplify the discussion of suboperations which are almost always discussed in association with their contiguous counterparts (see Figures 4, 6, 7 and 16 for graphic examples).

**Work West Of Structure A-21**
(Operation 111)

We began the season with high hopes of identifying another sacbe to the west of the site continuing out from the short A-21 sacbe previously mentioned (see Figure 2). What we found was suggestive, but still problematic. As already discussed, we identified a small uncarved stela fragment just east of Structure A-21, seemingly "out-of-place" and light enough to have been moved there by two people. Still, the clear association of boundary stela at the thresholds of Sacbe I makes this stela fragment more interesting. If the A-21 Sacbe continues further to the west, this monument might have marked its departure from the site core.

With that in mind, I resurveyed the western and southern flanks of the hillside upon which Structure A-21 rests. Extensive quarrying activity characterized the whole of the southern flank leaving no smooth course for a possible sacbe. Similarly, to the southwest of Structure A-21 we identified constructed terraces (Figure 4) which would have been too high in their undestroyed form to function as steps. That left only a narrow strip of unterraced and unquarried hillslope west of Structure A-21. This corridor (see Figures 2 and 4) is bounded on the south by the series of terraces, and to the north by a steep-sided ravine. While practically no stone alignments or topographic indications were present to lead us to believe that this corridor might be a constructed feature, the presence of the stela fragment and the east-west alignment with Sacbe I made at least a test operation worthwhile.

Operation 111 included all of the clearing and excavation work conducted west of Structure A-21 (Figure 4). Initially, the whole study area was cleared of major growth, and two 2-3 meter strips perpendicular to the possible sacbe course were well-cleaned and surface-collected. Surprisingly, no artifacts or clear

indications of construction were found in these cleaning suboperations (111A and 111B - not shown, overlaid by later excavations). Still, the edge of the ravine, to the north, appeared squared and straight, as if it had been modified. And a slight east-west rise to the south directly abutting the north-south running terraces also had a very regular, structured look to it. These two features, running essentially parallel to one another, were good candidates for the two sides of a walled sacbe. Thus, on the basis of our previous suspicions and the subtly modified appearance of the corridor area, we proceeded with a series of test units.

Essentially five locations were examined: two test units on either side of the proposed sacbe searching for wall or parapet features, and one test unit in the center of the corridor (Figure 4). Both of the units downslope and to the west (111C/F and 111H), yielded sparse artifacts and no clear indication of human construction. The natural topography may have been modified by the ancient Maya to form this corridor, but neither of these units was conclusive in that regard. To the east and upslope, though, the two side units (111I/K and 111D/E/G/M/N) revealed clear, if enigmatic, human construction.

In the northern unit (suboperations 111D/E/G/M/N - see Figures 4 and 5), we encountered rubble and cobble fill organized into segments by low stone walls (Figure 4b). Unfortunately, no clear boundaries of the construction could be identified in excavation or upon surface survey -- we seemed to be in the middle of a much larger constructional enterprise. Nevertheless, in suboperation 111M, to the south (see Figure 4), the density of fill diminished and just over two meters to the south in suboperation 111L (placed in the center of the possible sacbe) no evidence of human construction was preserved. On the basis of the excavation information, it appears that the Maya artificially leveled this area by infilling low areas in the natural bedrock, and that the fill may not have been bounded in all places by retaining walls.

The final unit placed along the possible southern boundary (111I/K) yielded more clear construction evidence (See Figures 4 and 5). The 111I/K area was chosen on the basis of the slight linear rise noted above. In this locale we found a cut and shaped bedrock face and an adjoining plaster floor (Figure 5a). The bedrock face had been very carefully cut and smoothed into a step-like form, and at the base of this "step" lay a partially preserved plaster floor curving up to the cut face. The floor was constructed directly upon the bedrock with some evidence of sub-floor ballast. Just a small 15cm strip of the plaster floor was preserved (directly abutting the cut bedrock face), and its continuation and extent could not be determined. Interestingly, though, the floor sloped dramatically to the northwest, with the natural slope of the hill, making it unusual as a terrace floor since those tend to be level. Rather, taken together, the cut bedrock side and sloping plaster floor to the south, and the modest infilling of uneven bedrock to the north, are suggestive of a possible sacbe or access feature.

Unfortunately, time did not permit any further work to the west of Structure

A-21, although in future seasons it may. As a final note, while very little artifactual material was recovered from the test units in Operation 111, of the diagnostic ceramics recovered, the resounding majority were from the early portion of the Late Classic (LCI -- see LeCount 1992). This accords quite well with the material from Sacbe I where ceramics from within the sacbe parapet walls would date the construction to the end of LCI or the early part of LCII. Thus, the idea that this whole series of constructions might have been conceived and executed as a unit remains plausible chronologically.

**Sacbe I**
(Operation 122)

Next, we moved across the site core to investigate what is now called Sacbe I, the sacbe emanating from Group A. After placing twenty test units (all Operation 122 - Figures 6 and 7), some consisting of multiple contiguous suboperations, we confirmed that Sacbe I is in fact one continuous, curving roadway connecting Groups A and D (see Figure 3). The intent of these preliminary excavations was primarily to document the course of the sacbe, and secondarily to examine its construction.

Initially this appeared to be a quick and simple task, but because of modern disturbance caused by the construction and use of the access road to the site (noted in Figure 3), and the heavy depositional activity in the low, wet pocket of clayey soil through which the sacbe runs, we found it virtually impossible to follow the sacbe on the basis of the present topography. Before excavation in many of the units no stone or characteristic 'rise' was evident to predict the .5 to 1.0 meter high wall below. Therefore, we resorted to taking small leaps between excavation units since each new unit was a gamble considering the curving of the road and the lack of identifiable surface clues. Where we jumped too far along the alignment of the sacbe, we often found that we had misjudged the movement of the roadway, although some of these units, off the line of the parapet walls, gave us other interesting information (particularly Suboperations 122M/O/R/U, and 122RR, see below).

Happily, this extensive testing has afforded us a uniquely rich picture of a Classic Maya sacbe. Previously, the only reported excavation specifically aimed at documenting a Classic Maya sacbe, of which I am aware, was that of David Cheetham at Zopilote, an outlier of the Cahal Pech center in the Belize River Valley (Cheetham 1992?- see also Willey 1982). Compiling the material from the 1994 excavations we can now present a more complete analysis of the construction and final form of this sacbe, an analysis which should be of use to researchers investigating similar structures elsewhere.

Construction:

Sacbe I has a fairly consistent form along its whole course consisting of double-walled stone parapets, roughly a 1.5 meters wide and 0.7 meters high, lining the lowered, plastered roadbed averaging 15 meters wide (Figure 8, Sacbe I

reconstruction). In places (units 122LL, 122BB/EE/FF, 122AAA, and 122CC), the exterior parapet walls stand a meter or more in height, apparently to follow the slightly undulating natural ground surface. Also, as the sacbe rises to meet the level of Plaza I (Group A), the north parapet rises well above a meter in height, although the parapet is very poorly preserved today (unit 122A/B/C/D/E/H). Despite these differences in the exterior height of the parapets, the interior of the sacbe appears to have been fairly regular with the interior parapet walls maintaining a constant height of one or two stone courses or 40 to 60 cm. As a whole, the sacbe would have seemed regular and coherent, without any notable changes in the formality or quality of construction.

Where we have identified the plastered walking surface of Sacbe I (suboperations 122B, 122G, 122W, 122NN, 122SS, and 122BBB), it was built upon only the amount of ballast necessary to create a somewhat level appearance (Figure 9a-d). Thus, where the ancient natural surface (bedrock or clay) undulated significantly (unit 122A/B/C/D/E/H), up to a meter of fill supported the plaster surface, while in other more naturally level locations (unit 122F/G, and 122T/W) the plaster surface rests upon only the thinnest layer of ballast directly above the ancient topography.

Additionally, on the basis of three units (122T/W, 122NN/SS/QQ, and 122WW/BBB - Figure 9c,b,d and Figures 10 and 11), we have reason to believe that two plaster coatings were laid down during the construction of Sacbe I. The two plaster surfaces are likely **not** two separate phases of construction, but rather two steps in the same construction. The lower plaster surface in each case runs under the basal course of the interior parapet wall forming a preliminary constructional surface. In each case the plaster is fragmentary and does not continue much beyond the base of the interior parapet wall. The upper surface, on the other hand, appears to have been the final walking surface which covered the width of the roadbed and the parapets in one continuous application (see particularly unit 122WW/BBB - Figures 9d and 11). This method of creating temporary plastered working surfaces during construction is also evident on the Castillo (specifically in the central Structure A-6), and may represent a common pattern of construction at Xunantunich. While it is still possible that the two plaster surfaces reflect two distinct phases of construction, the coherence of the sacbe construction and the overall concordance of its artifactual chronology (see discussion below) leads me to believe that Sacbe I was built at one time as complete construction and was then maintained in essentially its original form.

Keeping in mind the regular appearance that Sacbe I would have had plastered and complete in antiquity, there are still some variations in the constructional techniques of the parapets which were not necessitated by topographic undulation. First, along the southern parapet of Sacbe I as it approaches Plaza I of Group A (unit 122F/G), the Maya used the natural bedrock, cut and smoothed, to form the base of the interior parapet wall (Figure 9a). Much like the cut bedrock step associated with a plaster floor discovered in unit 111I/K to the west

of Structure A-21 (Figure 5a-see discussion above), the cut bedrock face in unit 122F/G is associated with a fragmentary plaster surface which is likely the final sacbe surface now badly eroded. While we found no wall stones in place to indicate that the interior of the parapet was higher than the bedrock step, it seems likely that the interior wall was of the same height as that of the exterior wall preserved to the south. Thus, it would seem that the Maya used natural topography when necessary and expedient in forming Sacbe I. Second, in some units where the sacbe was built directly on the ancient clay sub-surface, we have encountered evidence of construction ditches, dug as a foundation for the external parapet walls (see Figure 12 for two examples). Again, in the past this variation in construction surely would have been invisible below a layer of white plaster.

Finally and more suggestively, we discovered differences in the kinds and quality of stone masonry along the extent of the exterior parapet walls (Figures 13 and 14). This is best exemplified in the 122MM/TT/UU/VV/XX/YY unit where there is a clear break in style between suboperations 122MM and 122TT (see Figure 14). The differences are not related to any obvious functional requirements, but rather may indicate distinct segments of construction along the sacbe. That is, the breaks in masonry style may reflect the joining of road segments constructed separately. This manner of sacbe construction was also noted at the Classic center of Coba, where surveyors found an unfinished sacbe clearly "built in sections" on the basis of "an isolated section of sacbe ... completed with nothing but many meters of empty space between it and other finished sections" (Folan 1983:82).

Considering the scale of the construction on Sacbe I, building in segments seems only reasonable, but the fact that the segments are distinct in quality and technique is interesting. The differences suggest that different groups of people, with differing traditions of construction and levels of skill, completed each section. These segments may be reflections in stone of the ancient social organization of work. Perhaps sacbe construction was as Folan reconstructs, with "groups of workers ... made responsible for the construction of a section of road and perhaps for its upkeep later" (Folan 1983:82) -- physically tying commoners to the center and linking them to one another not just once but over time on a periodic basis. Once again we are reminded of the significant role of the non-elite in the construction, maintenance, and use of ancient Maya centers.

Taken together, the tests placed along Sacbe I in 1994 allow a schematic representation of its construction (Figure 8). Initially, the ground was cleared of humus and debris down to the natural sub-surface, either bedrock or a thick, homogenous clay. Sections of the road were then defined and the exterior parapet walls built segmentally to a predetermined level -- thus the walls are higher where the natural topography was lower. Next, the walls were partially filled and a plaster working surface laid, upon which the interior parapet walls were erected and the remainder of the parapet fill secured. Finally the roadbed itself was artificially leveled and the final plaster coating applied to the entire construction, walking surface and parapets. While the parapet walls may have been built by relatively

unskilled labor, the final plastering surely required specialists as it does today. Although we as yet have no evidence for the replastering and maintenance of Sacbe I, I assume that such activities did occur, possibly supported, if not conducted, by the groups that initially constructed the sacbe segments.

Artifacts and Chronology:

No artifacts were recovered clearly *in situ* on the sacbe floor or parapets, but a few interesting items were recovered just off the sacbe walls. In unit 122F/G we removed twenty (20) obsidian prismatic blade fragments, eleven (11) of which were recovered south of (outside of) the exterior parapet wall in suboperation 122F. Nowhere else along the sacbe did we find such a concentration of obsidian fragments and considering the proximity of this unit to the collapse debris from Structure A-5 (on the Castillo) above, I am hesitant to associate the blades with activity on the sacbe. Still, in suboperation 122F we also found a modelled ceramic drum fragment, similar to the Late Classic Macal Orange wares, which, with the obsidian blades, may suggest that some kind of special ritual activity occurred along the flanks of the sacbe as it entered the core of the site.

Further to the east, in the sacbe roadbed, we also recovered a complete granite metate (item number: 122RR/2-P1; dimensions: 32cm x 56cm x 12cm - see Figure 15). Close by in unit 122TT, outside of the exterior parapet wall (to the west), we removed a mano fragment made from the same unusual yellow and black striated granite as was used in the manufacture of the metate (see Figure 15). The two artifacts together, mano and metate of the same material, lead me to suspect that this was a set which is close to its final use area, not in trash or fill. People rarely throw out undamaged metates, and while the position of this one, on its side as if fallen or thrown, is probably not original, I find it hard to believe that the metate was thrown into the roadbed as fill.

More likely, the metate and mano were resting on the top of the parapet and fell to the sides at some time in antiquity. The presence of a layer of yellow, ancient clay overlaying the sacbe parapet in suboperations 122VV, XX, and YY (just south of 122RR where the metate was found - see Figures 15 and 14), suggests that the sacbe was flooded and inundated with natural clay at some time in the past -- assumedly after site abandonment. Possibly this flooding was the natural activity which dislodged the mano and metate from the parapet leaving them in their tumbled state. If this scenario is accurate, then this mano and metate constitute the best evidence we have to date of activity, beyond walking, on or just off a sacbe. Because of its position and the disturbance of the modern access road above, the metate is unlikely to yield any chemical or botanical information regarding its use. What was being ground here at the turn in the sacbe is unknown, but it seems fairly clear that the activity did occur in a place where we would least expect it.

Finally, although only preliminary probing into Sacbe I was conducted in 1994, all of the diagnostic ceramic material is statistically of an earlier composition

than that of much of the construction tested so far in the site core. On the basis of the material we have now, I would advance that Sacbe I was constructed at the end of our Late Classic I (LCI) phase or in the earlier part of our Late Classic II (LCII) phase. As mentioned above, this is the same time period to which the construction to the west of Structure A-21 (excavated as Operation 111) is dated. We also had a significant amount of earlier Preclassic and Early Classic material in the collapse debris surrounding the sacbe suggesting some occupation at that time on the Xunantunich ridge. Most probably, those constructions were razed upon the initiation of Late Classic construction, and the material scattered and used as fill. If Sacbe I was built slightly earlier than the true florescence of the site, we can imagine that the activities upon and around it constituted a significant part of the attraction of the general Belize Valley populace to Xunantunich throughout its Classic history -- further, that those activities may have formed a basis for centralizing and maintaining authority within the valley.

**Test Excavations In The Northeastern Complex**
(Operations 122, 152, and 157)

Only preliminary testing was conducted in the prosaically named Northeastern Complex (Figure 16). Construction appears to have been modest with two and three course exterior walls built directly upon bedrock or the natural clay (see Figure 17). Chronologically, the structure located in unit 122M/O/R/U/V (Figure 17) dates to the same LCI/LCII boundary period as does Sacbe I and the construction west of Structure A-21. The other two units placed in the Northeastern Complex (152A and 157A - see Figure 16) did not probe the structures, but the ceramic material from collapse debris was resoundingly LCII. Thus, in use if not in construction, these two platform groups are of a later (LCII) date than that proposed for Sacbe I. Further work in 1995 should clarify the picture.

The most interesting thing to note about these test excavations is their general lack of artifacts. These structures of the Northeastern Complex are clean of trash or use-related debris. In this regard they are more similar to the clean, open, public spaces of the site center than they are to the more cluttered spaces of private households (see Yaeger 1994, this volume). While more work must be completed here to be definitive, the assertion that this complex was an open, public space associated in use with the sacbes is not unrealistic.

**Conclusion**

According to general consensus, Classic Maya sacbes were fundamentally imbedded in the state ceremonies which served to connect disparate communities, legitimize authority, and instill a sense of common identity in the masses assembled (Turner 1974; Folan 1991; Freidel and Sabloff 1984; Ringle 1993). I propose that these "ceremonies," so often mentioned but rarely elaborated upon, can be best understood as periodic festivals involving processions, market fairs, ballgames, and a whole host of performances and practices that may or may not be archaeological retrievable.

Just such a model of festival activity at Maya centers was proposed thirty years ago by Michael Coe (1965), reasserted more recently by David Freidel (1981), and variously manipulated by many other scholars of the Maya (Vogt 1976; Farriss 1984; Ringle 1993; Freidel and Sabloff 1984 -- for a dissenting opinion see Hammond 1991:275). Stated most simply, the primary activities constituting the power and identity of a major Classic center would have been periodic festivals or state rituals tuned to an ancient ceremonial calendar. These festivals would have been the primary means for common persons to interact with people from outside their small communities, and one of the few times that the entire population attached to the center might be expected to be present there (for an ethnohistoric example of this see Farriss 1984).

To examine this model of periodic festivals forming the basis of Maya socio-political integration and state worship at Xunantunich, I have been investigating not only the areas that sacbes connect, but also those with which they seem to be spatially contiguous. Of particular interest in that regard, has been the Northeastern Complex, identified and mapped in 1993 (see Figures 2, 3, and 16). This complex of low-lying, possibly non-residential structures has not warranted a "group" name simply because it does not spatially comprise a distinct set unto itself. In fact, in alignment and proximity it appears to be intimately linked to the curving sacbe linking Groups A and D, Sacbe I. That is, the Northeastern Complex spatially looks to be specifically oriented with respect to Sacbe I, and as such forms an adjoining set of spaces arguably linked to the activities enacted upon the sacbe.

While residential settlement along sacbes is a well-documented pattern within the Classic Lowlands (Chase and Chase 1987; Folan, et.al. 1983; Ringle 1993; Willey 1982), these northeastern structures do not appear to be entirely residential in form or artifact association. To the contrary, as mentioned above, in all of the test units placed this year, no identifiable use-related debris or trash was found on or around the structures. In essence, they are "clean" -- as are most public spaces in Maya centers. Thus, I am now entertaining the hypothesis that this area, proxemically linked to Sacbe I, was a public space which may have served as part of the staging grounds for periodic festivals, involving processions along the sacbes, held at the ancient Maya city of Xunantunich.

Tying together the information and theory covered thus far, I propose that all of the architectural spaces and features discussed here -- Sacbe I, the A-21 Sacbe, the A-18/19 ballcourt, Plaza I of Group A, Structures A-21, A-15, D-7 and the entire Northeastern Complex -- may form a coherent program of construction, and, more controversially, a complete set of open, public spaces utilized in the performance of grand state rituals or festivals involving elite and commoner alike. What is different about this assertion concerning the use of spaces at a large Maya center from previous work along these lines is simply that I intend to examine the whole complex as a unit, explicitly, with the idea in mind that these areas were linked in practice and thought by the ancient Maya. Certainly, I do not intend to ignore spaces and features outside of those already defined above, but I have taken these as a

starting point, which on the basis of spatial information and preliminary excavation appear to comprise an intentional unit.

The excavational investigation of such a large area is a daunting prospect, but one which appears absolutely necessary in order to define the complete set of experiences and activities involved in the festival performances which I take to have been fundamental in the construction of the Xunantunich polity. In this regard I am significantly influenced by the work of cultural anthropologists in the formulation of an anthropology of experience (see Bruner and Turner 1986). These scholars share an interest in revitalizing our methods of describing culture and its workings by focusing on human "experience" and the "expressions" of those experiences. By "expressions" what is meant are representations in the form of performances, texts, and images -- things recognizable to the anthropologist and the archaeologist alike. Further, these expressions "are presented to us by the cultures we study; they are what is given in social life," and therefore they are a uniquely emic starting point for any anthropological analysis (Bruner 1986:5). In Edward Bruner's words:

> The advantage of beginning the study of culture through expressions is that the basic units of analysis are established by the people that we study; . . . expressions are not only naturally occurring units of meaning but are also periods of heightened activity when a society's presuppositions are most exposed, when core values are expressed, and when the symbolism is most apparent.
>
> Bruner 1986:9-10

I suggest that an archaeology of experience, that is an archaeology specifically addressing a total set of spaces and features utilized in what was experienced by the participants as a coherent and complete event, may be a useful method of recovering the dynamic quality of long dead cities. Sacbe I and its associated spaces may have been the stage for a complete cultural expression, a festival. With luck the next two years will bring greater clarity to this hypothesis.

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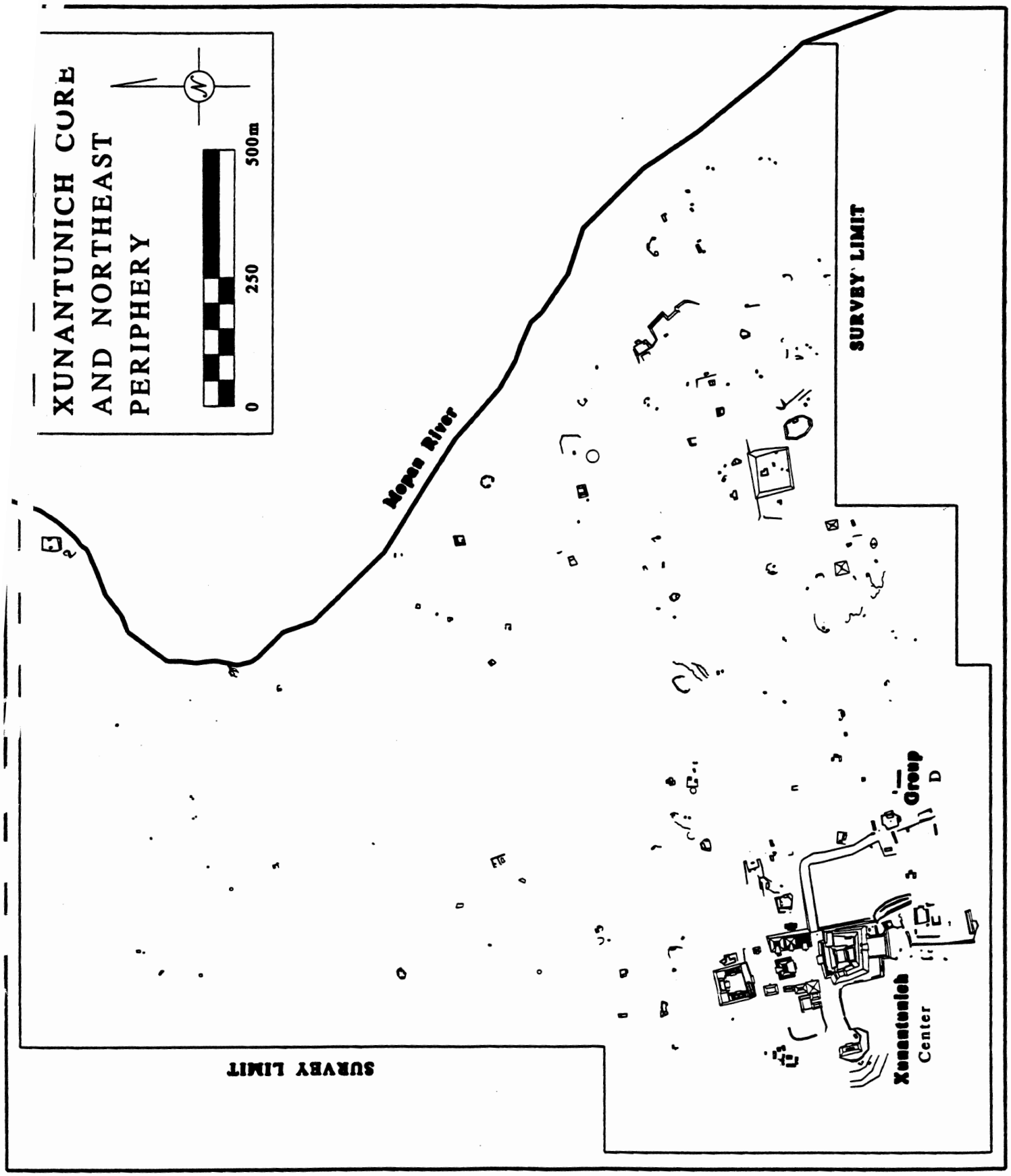

XUNANTUNICH CORE
AND NORTHEAST
PERIPHERY
0
250
500m
Mopan River
SURVEY LIMIT
Group
D
Xunantunich
Center
SURVEY LIMIT

Figure 1

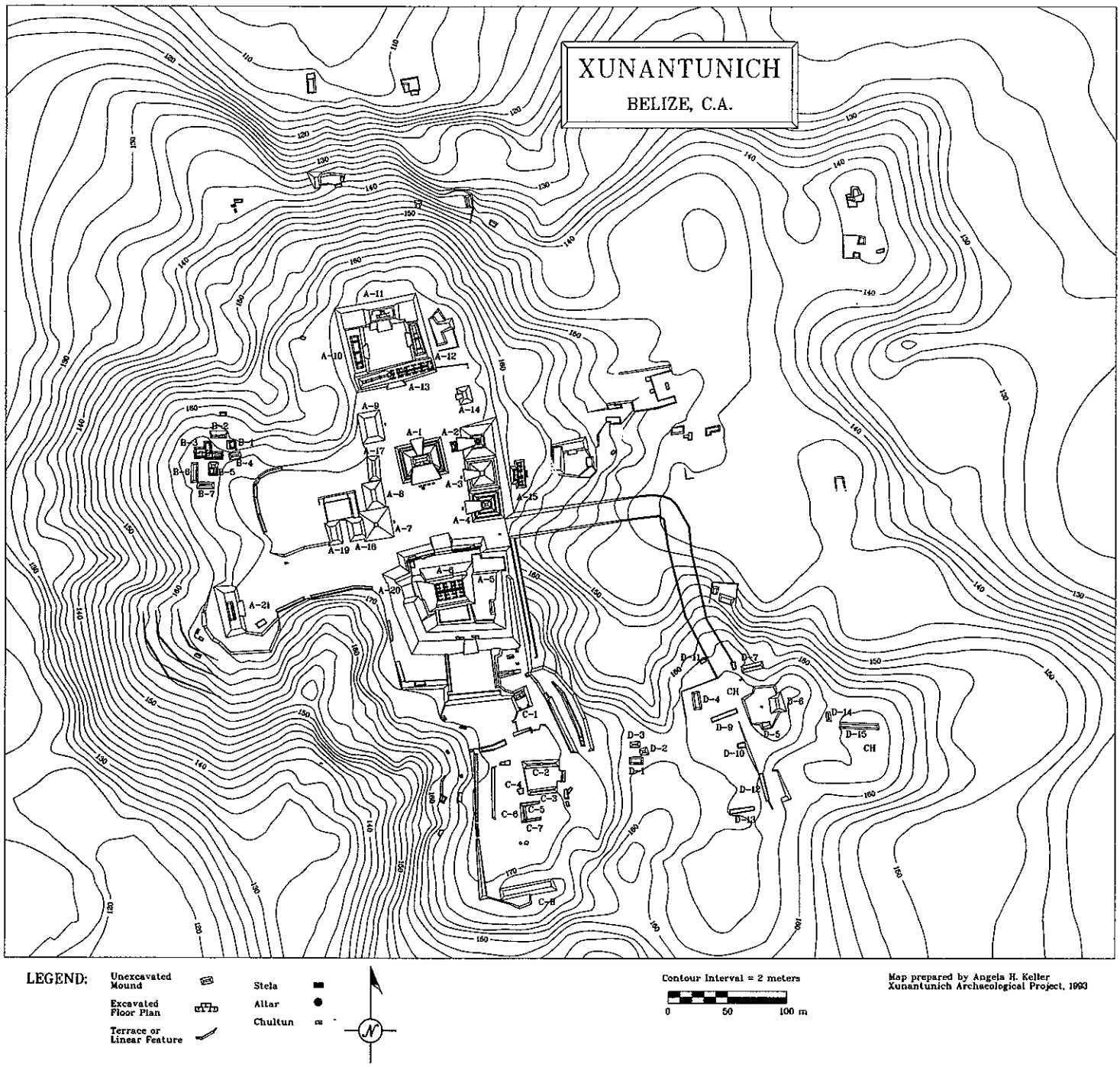

XUNANTUNICH
BELIZE, C.A.
LEGEND:
Unexcavated Mound
Excavated Floor Plan
Terrace or Linear Feature
Stela
Altar
Chultun
Contour Interval = 2 meters
0
50
100 m
Map prepared by Angela H. Keller
Xunantunich Archaeological Project, 1993

Figure 2

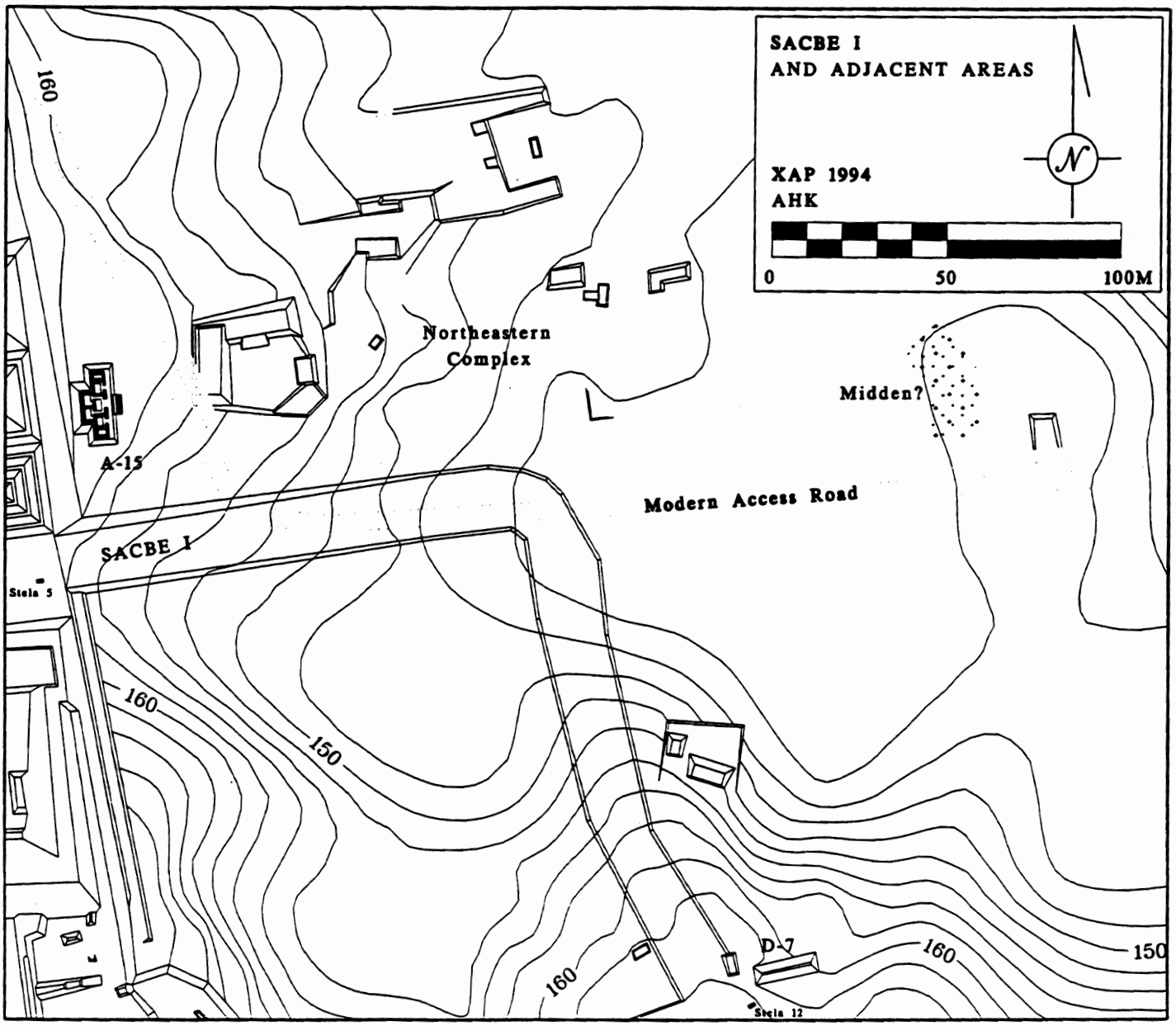
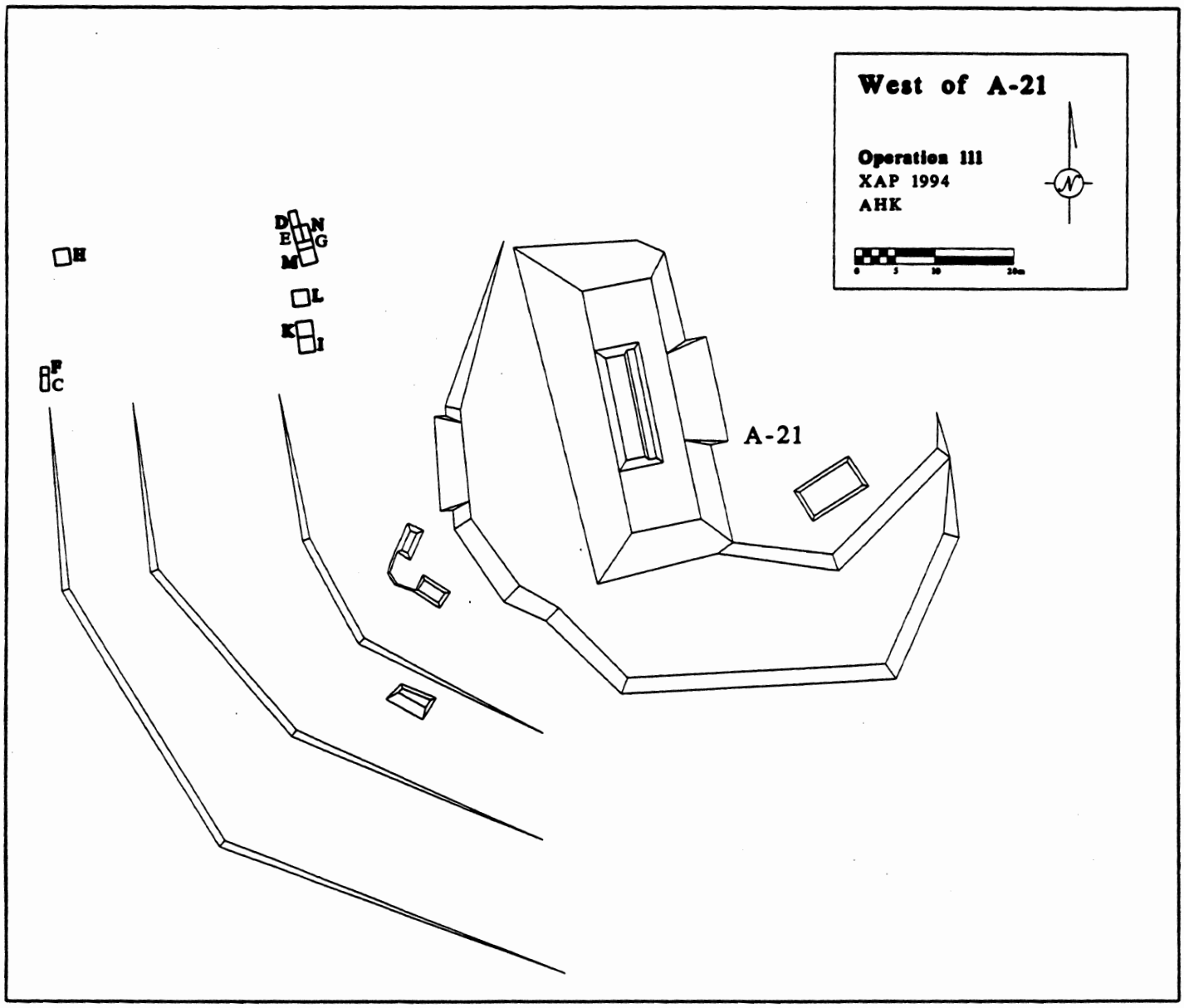

SACBE I
AND ADJACENT AREAS
XAP 1994
AHK
0
50
100M
160
Northeastern
Complex
Midden?
A-15
Modern Access Road
SACBE I
Stela 5
160
150
160
D-7
160
150
Stela 12

Figure 3


West of A-21
Operation 111
XAP 1994
AHK
0
5
10
20m
N
H
D
E
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G
M
L
K
I
F
C
A-21

Figure 4

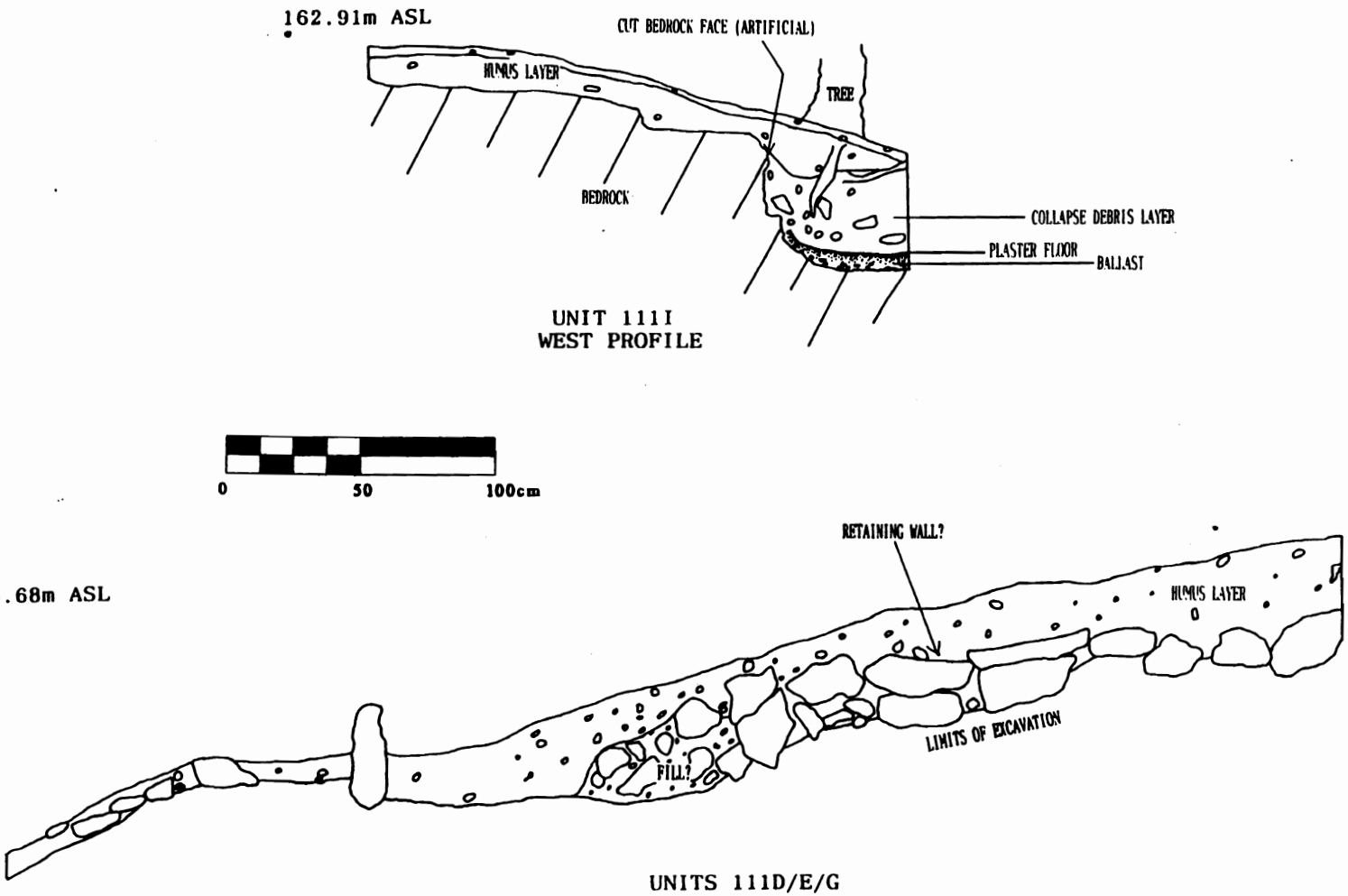

162.91m ASL
CUT BEDROCK FACE (ARTIFICIAL)
HUMUS LAYER
TREE
BEDROCK
COLLAPSE DEBRIS LAYER
PLASTER FLOOR
BALLAST
UNIT 111I
WEST PROFILE
0
50
100cm
160.68m ASL
RETAINING WALL?
HUMUS LAYER
LIMITS OF EXCAVATION
FILL?
UNITS 111D/E/G
EAST PROFILE

Figure 5

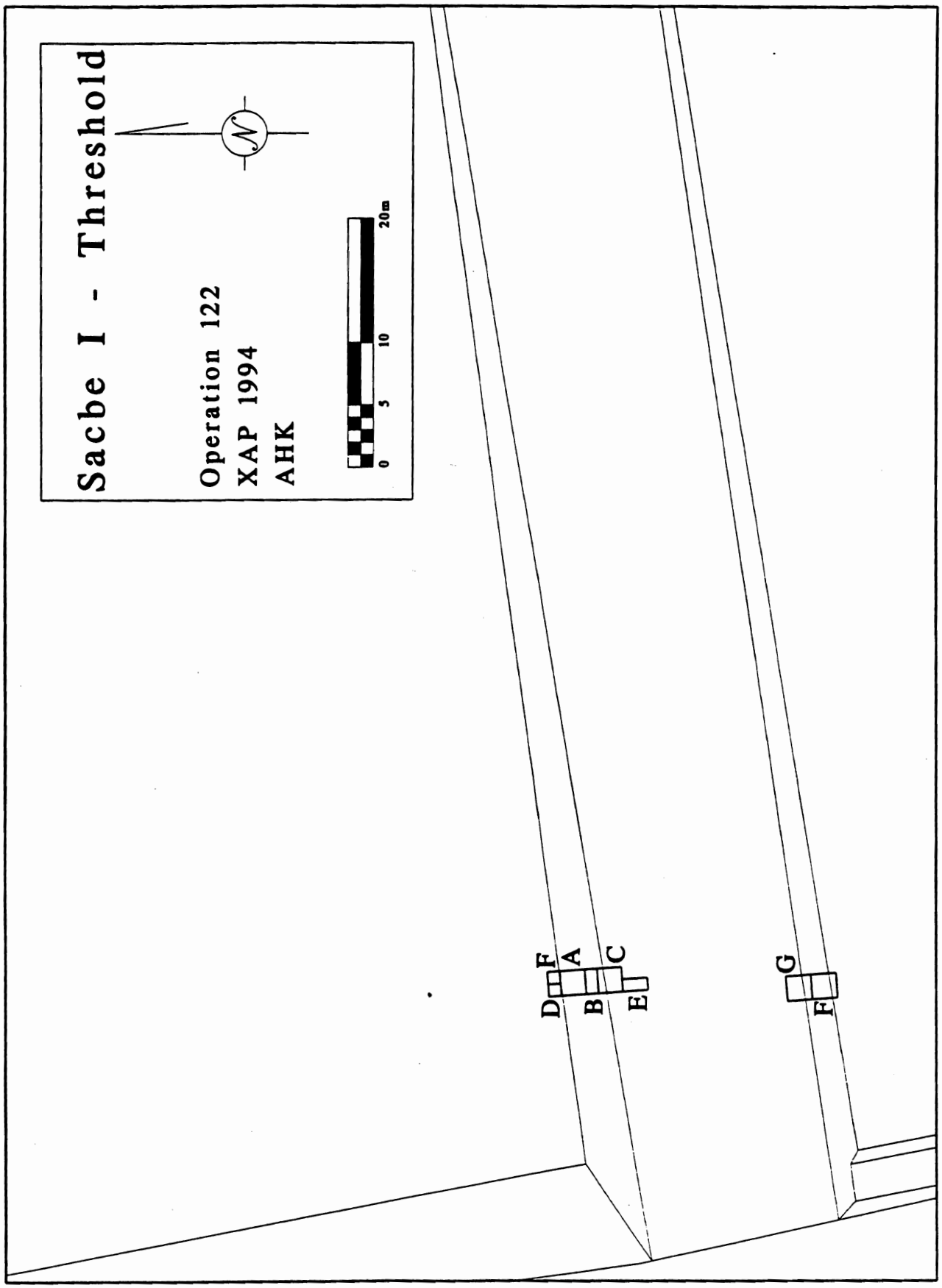
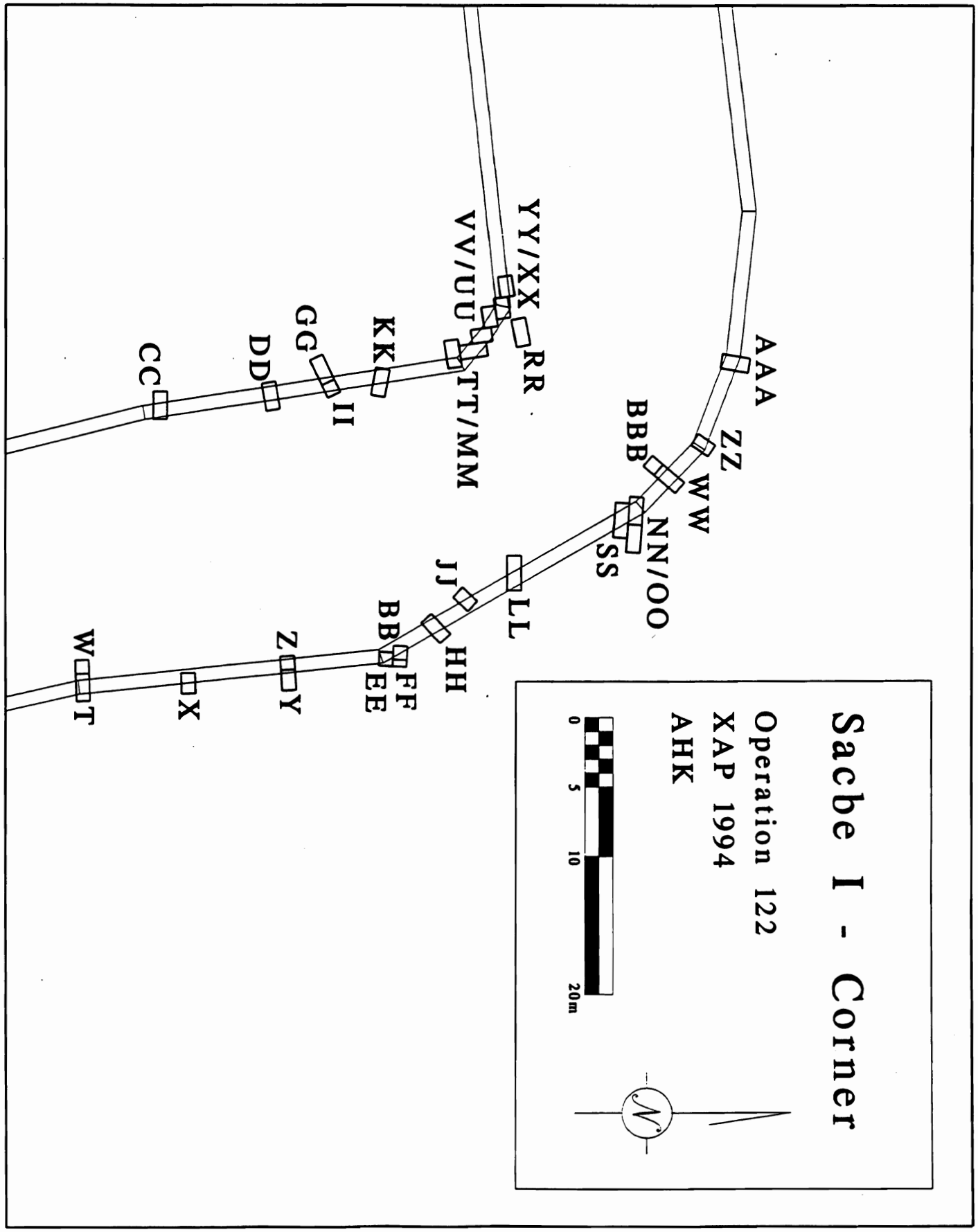

Sacbe I - Threshold
Operation 122
XAP 1994
AHK
0
5
10
20m
D
F
A
B
C
E
G
F

Figure 6


Sacbe I - Corner
Operation 122
XAP 1994
AHK
0
5
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20m
AAA
ZZ
WW
BBB
NN/OO
SS
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JJ
HH
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TT/MM
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Figure 7

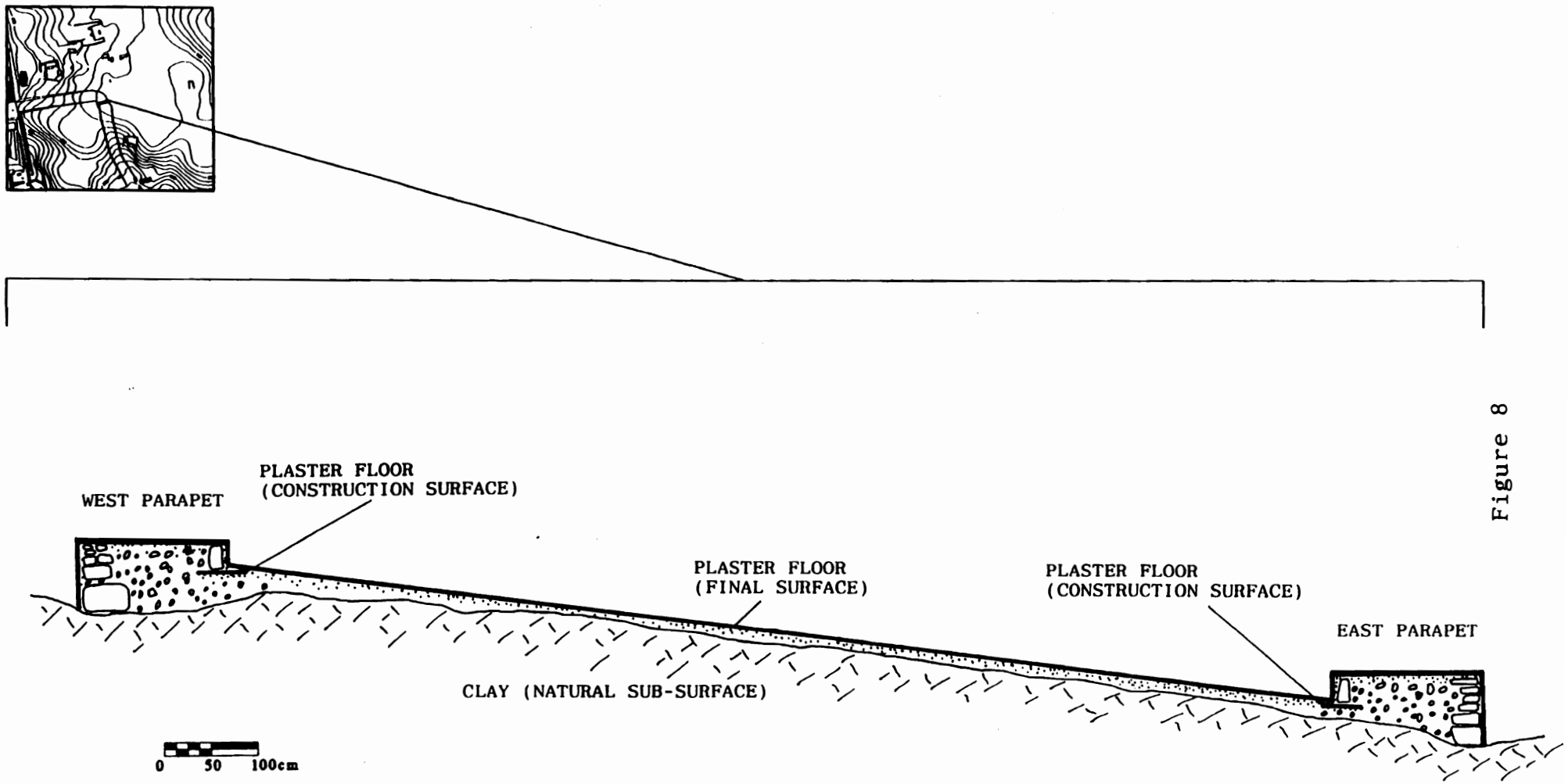
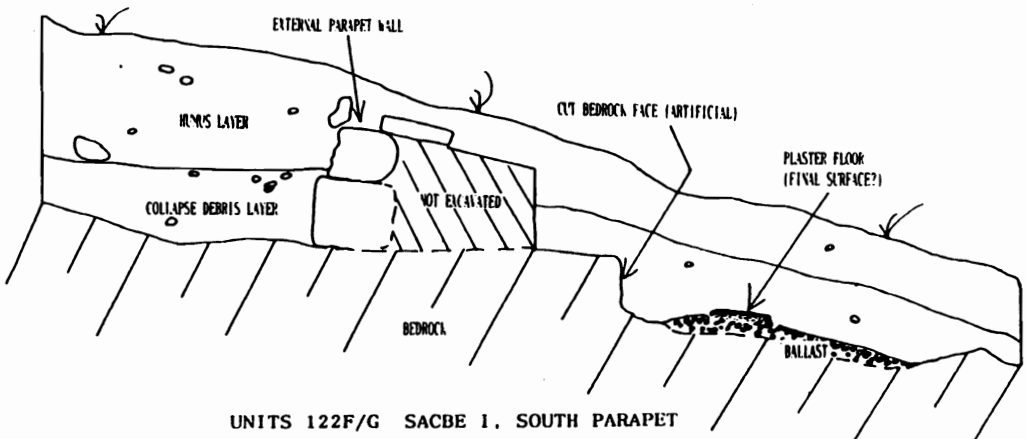



Figure 8

SACBE I RECONSTRUCTION -- CROSS-SECTION FACING NORTH

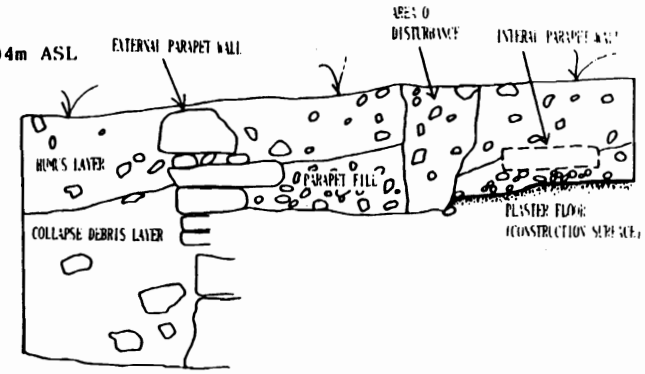
164.70m ASL




UNITS 122F/G SACBE I, SOUTH PARAPET

(Showing use of cut bedrock face in the construction of internal wall)

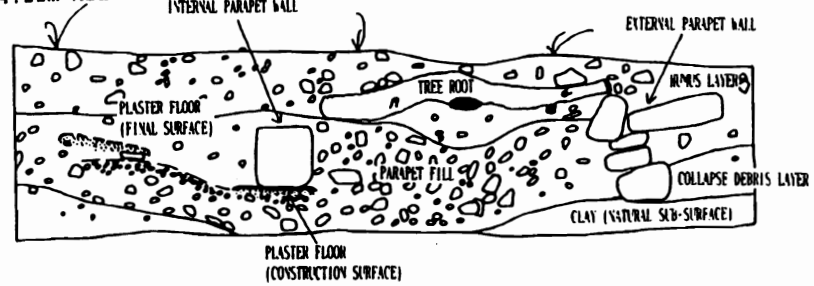
143.04m ASL




UNIT 122SS SACBE I, EAST PARAPET

(Showing east parapet with construction plaster floor)

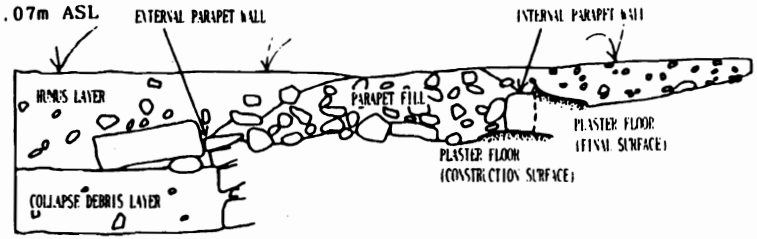
144.22m ASL




UNITS 122T/W SACBE I, EAST PARAPET

(Showing east parapet with construction and final plaster floors)

143.07m ASL




UNITS 122WW/BBB SACBE I, NORTH PARAPET

(Showing northern parapet with construction and final plaster floors)

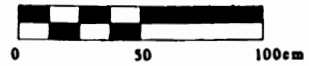
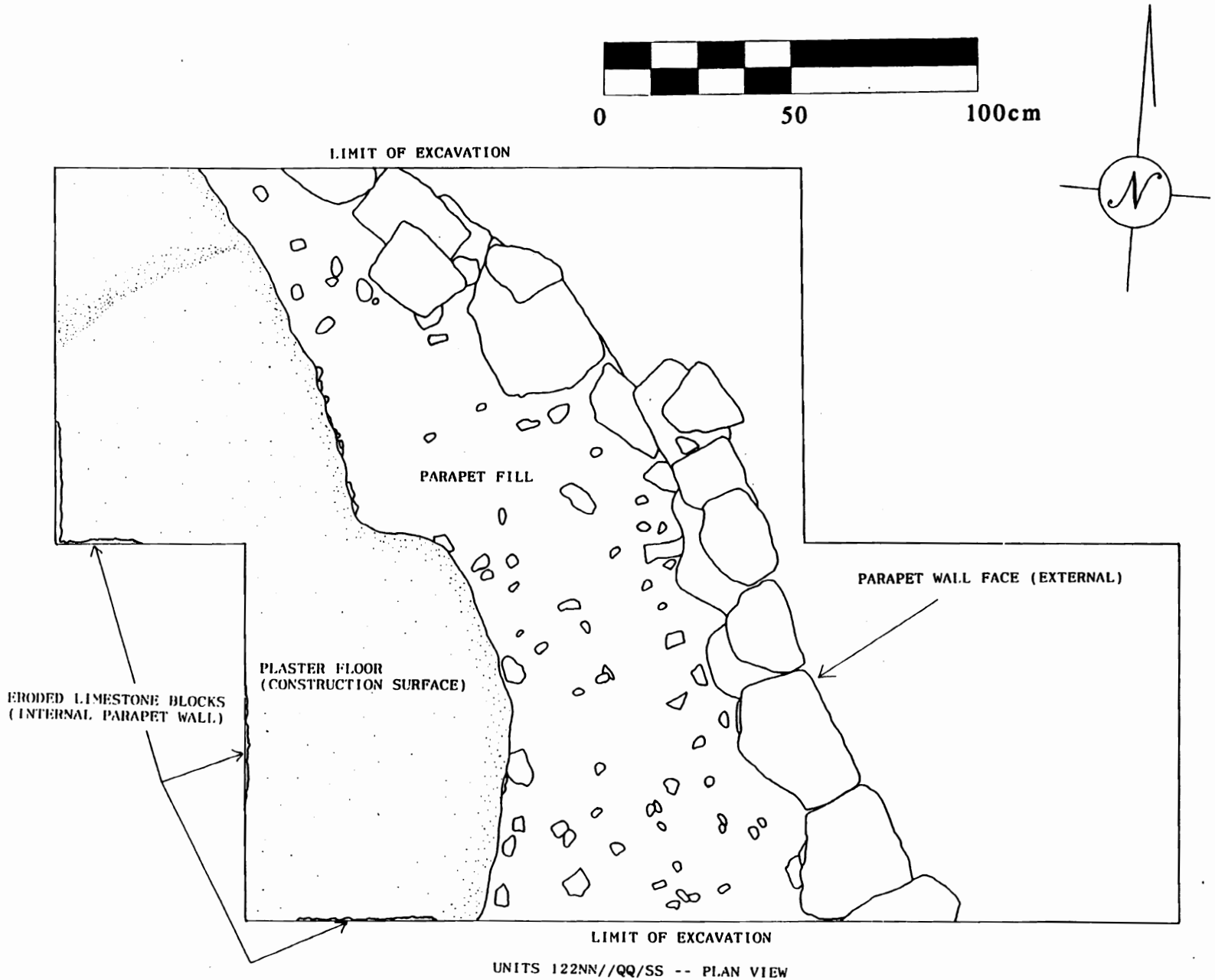


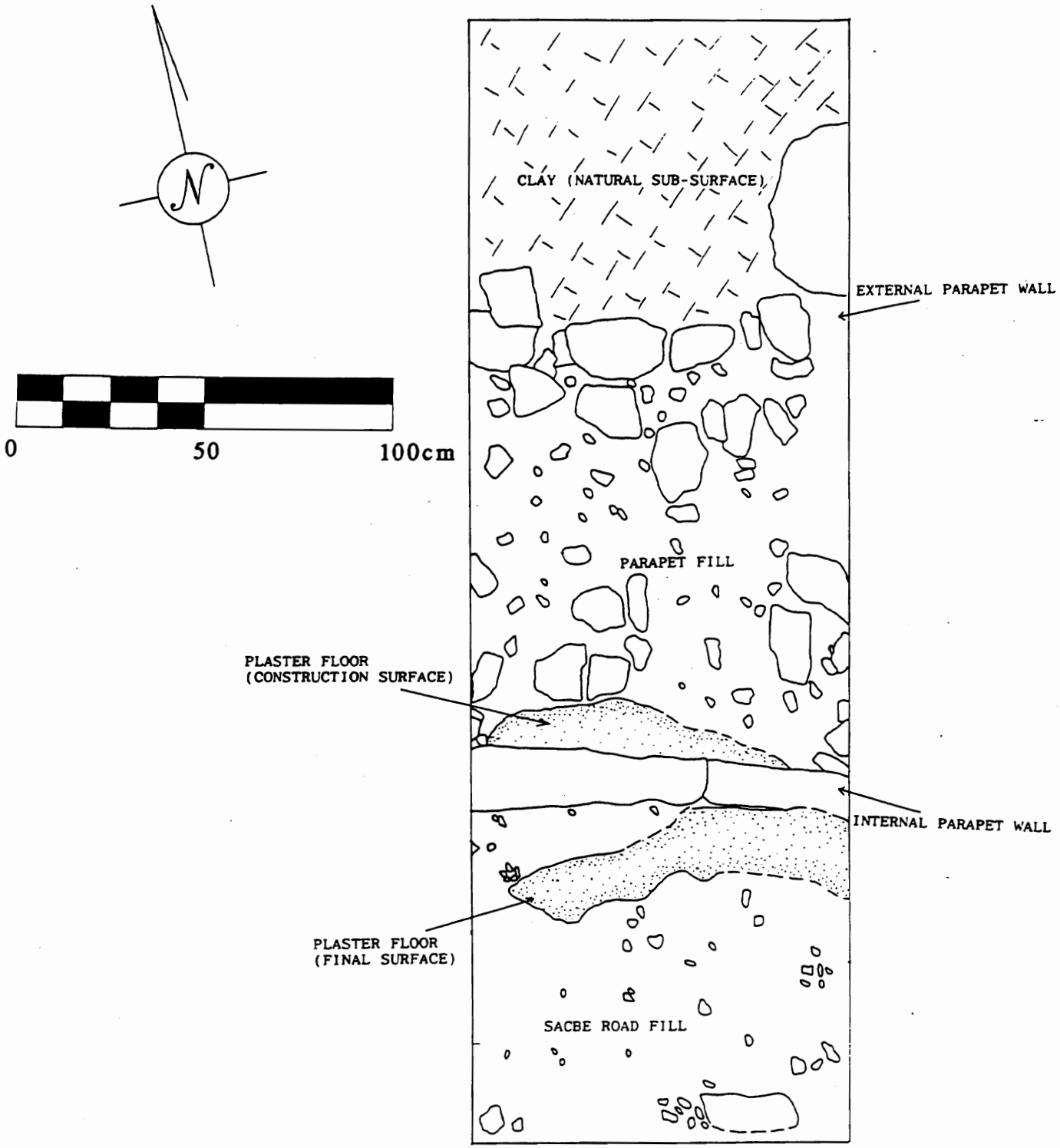

Figure 9a,b,c,d




UNITS 122NN//QQ/SS -- PLAN VIEW

(Showing the curve of Sacbe I, and the plaster construction surface)

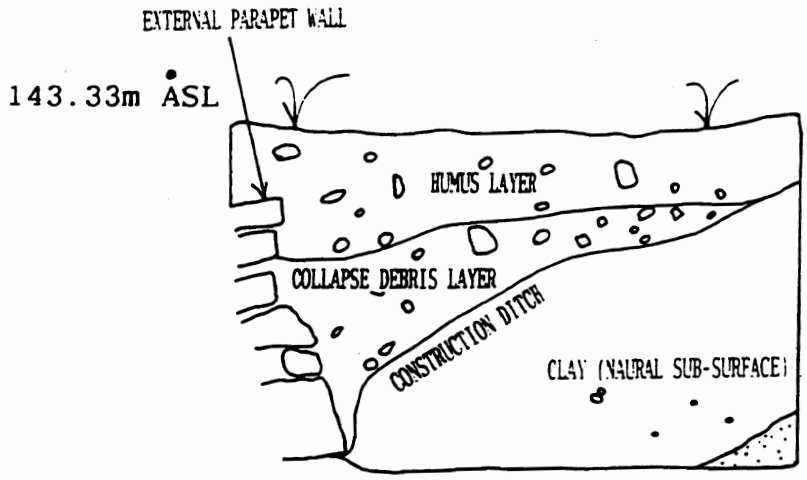
Figure 10



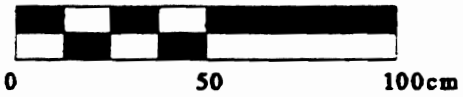

UNITS 122WW/BBB -- PLAN VIEW

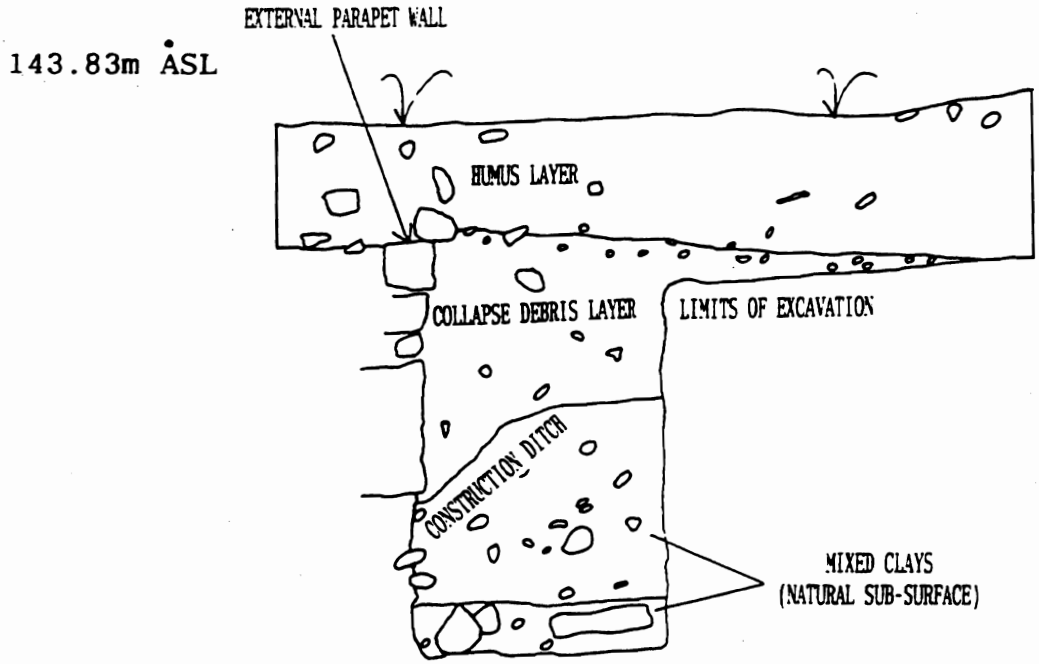
(Showing the north parapet with construction and final plaster floors)

Figure 11



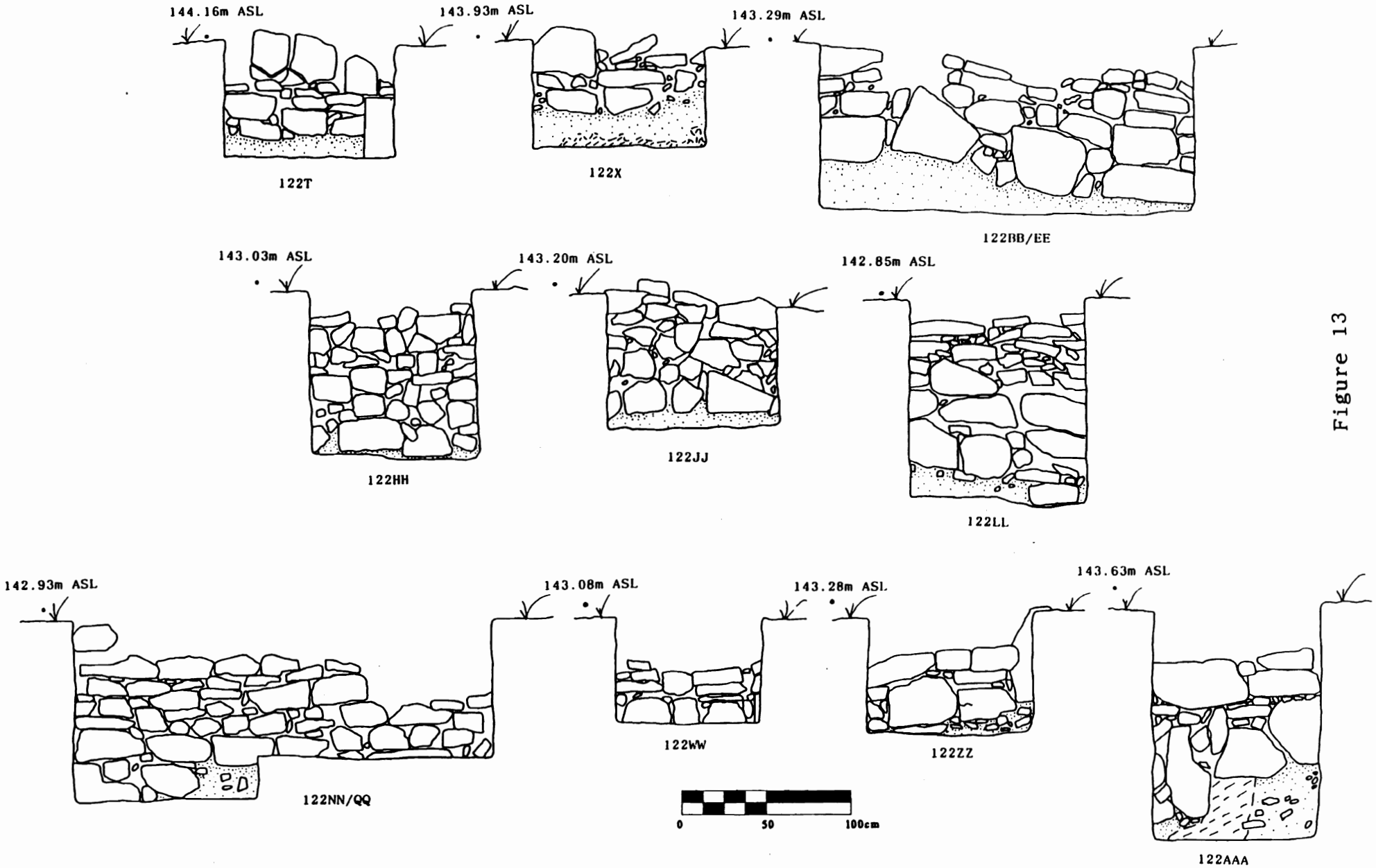

UNITS 122BB/FF
NORTH PROFILE



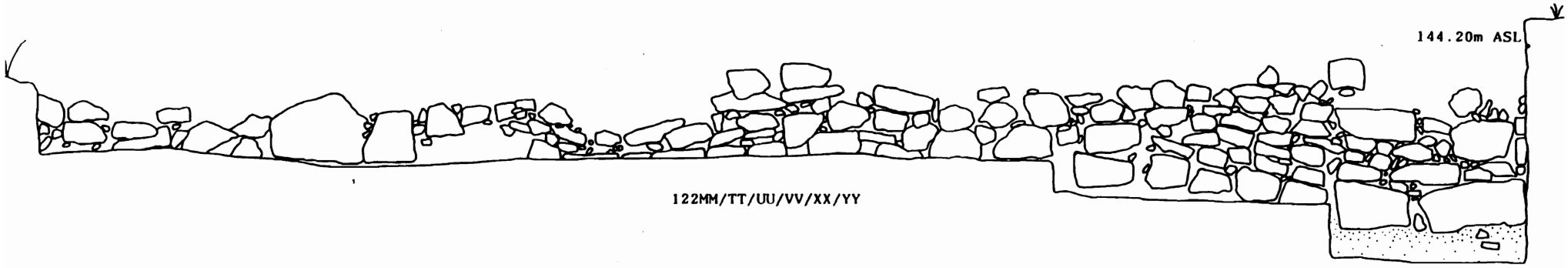

UNIT 122AAA
WEST PROFILE

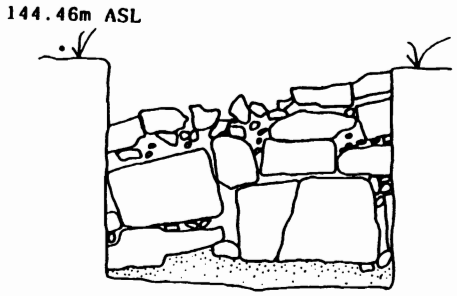
Figure 12a,b

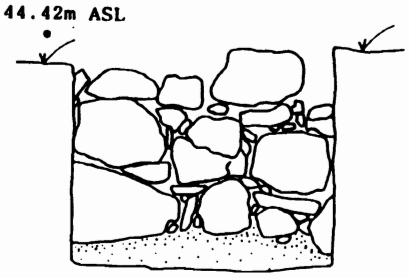


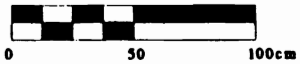

EAST/NORTH PARAPET (EXTERNAL WALL SIDES)

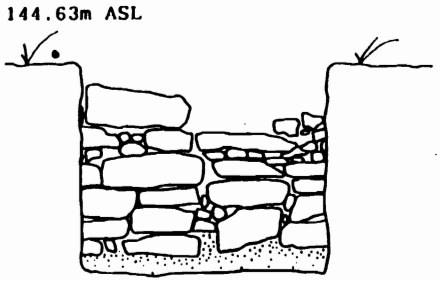
Figure 13

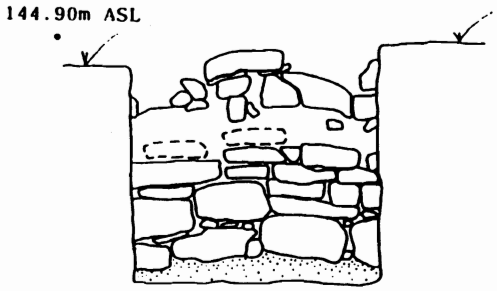



WEST/SOUTH PARAPET (EXTERNAL WALL SIDES)

Figure 14

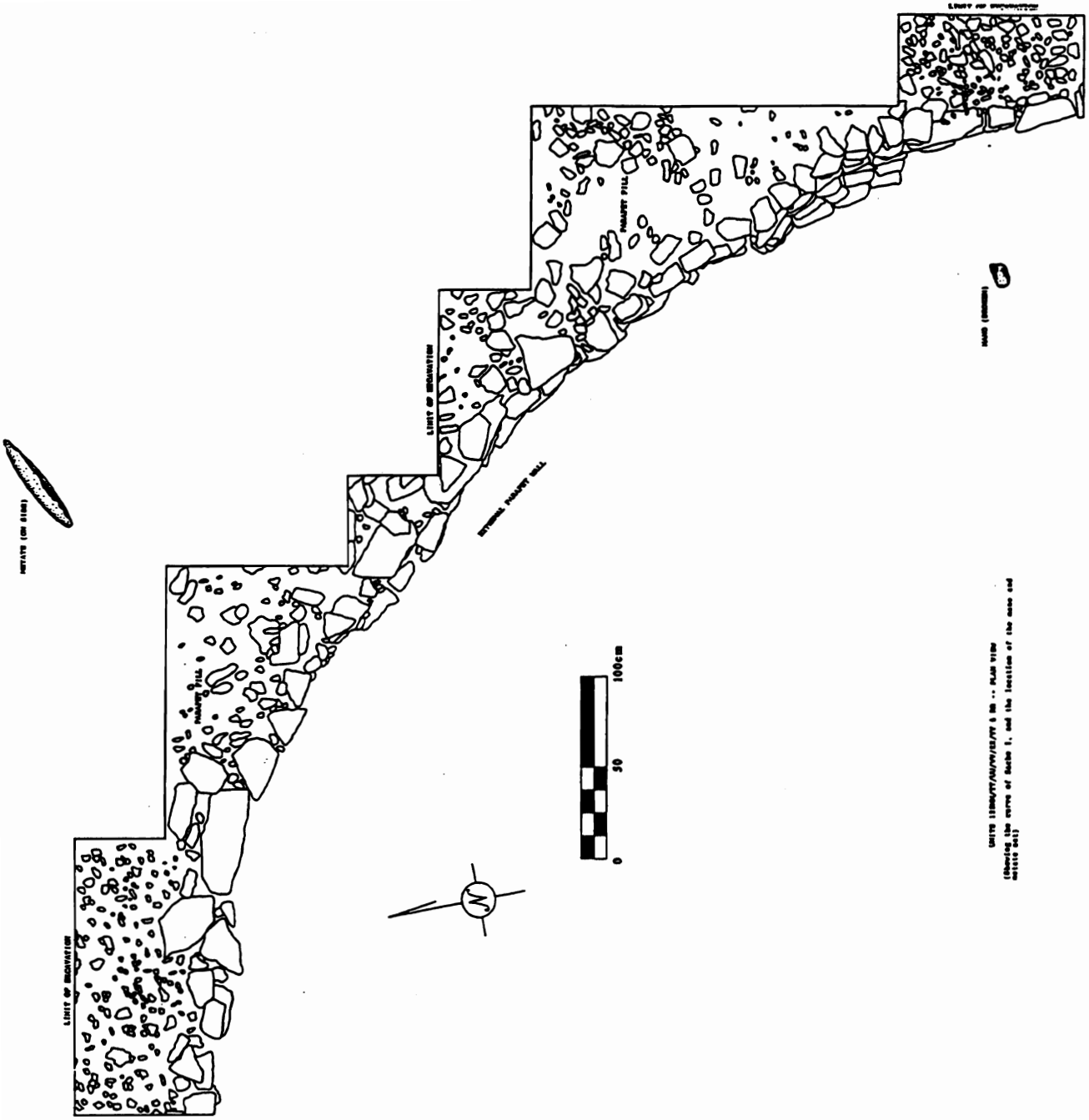
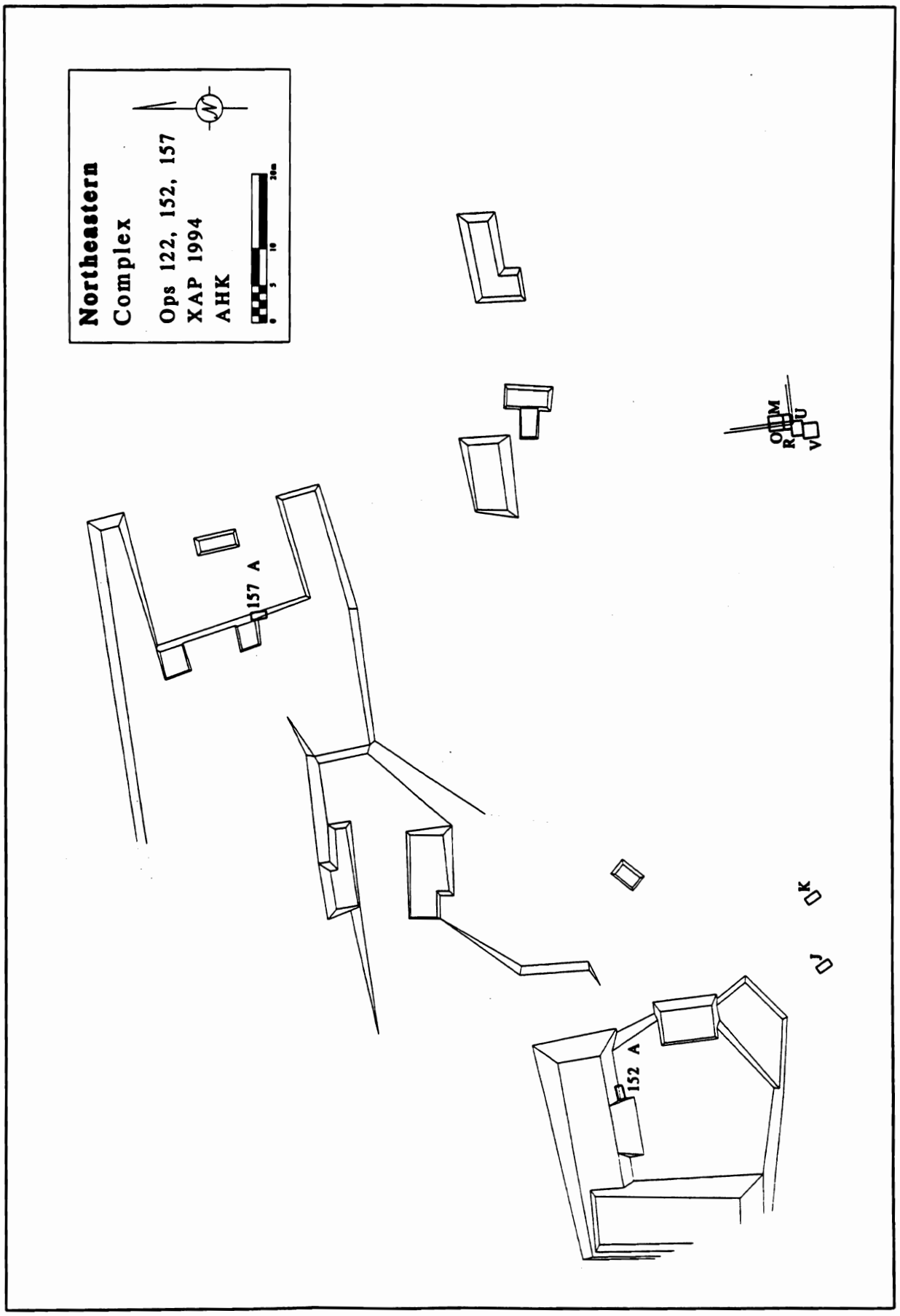

LIMIT OF EXCAVATION
PARAPET FILL
LIMIT OF EXCAVATION
EXTERNAL PARAPET WALL
PARAPET FILL
LIMIT OF EXCAVATION
0
50
100cm
N

Figure 15


Northeastern
Complex
Ops 122, 152, 157
XAP 1994
AHK
0
5
10
20m
157 A
152 A
O
M
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U
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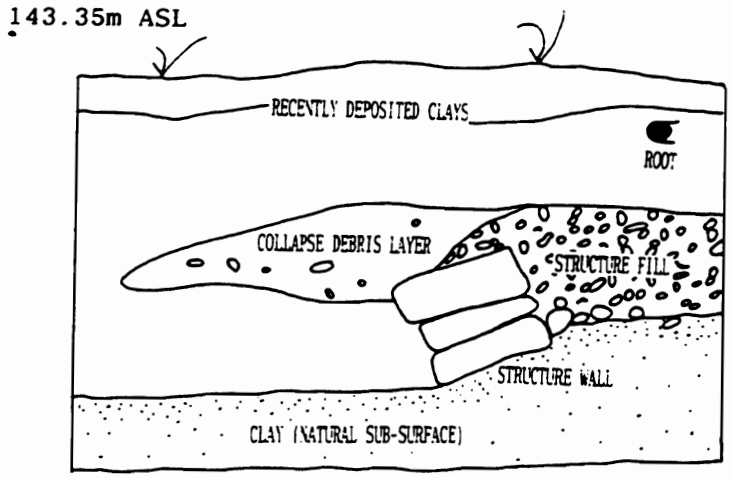
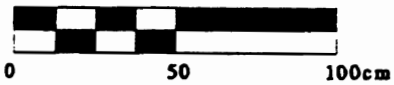
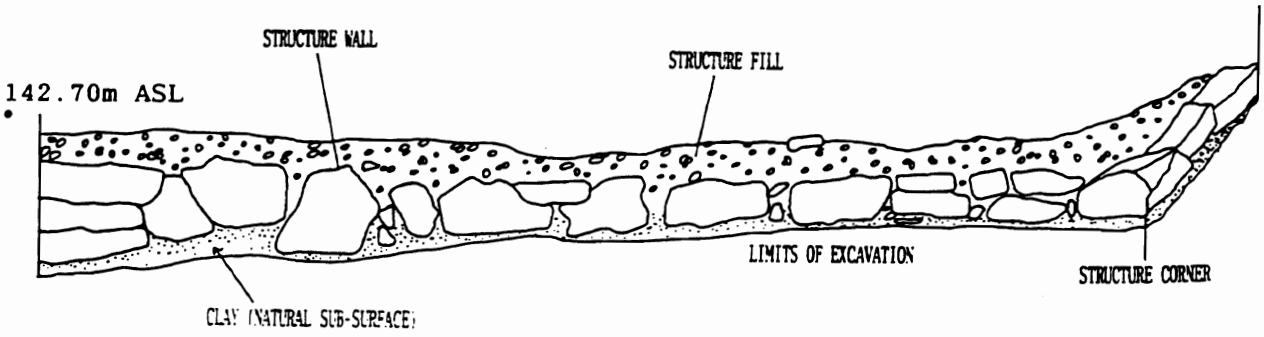
K
J

Figure 16




UNITS 122M/O
NORTH PROFILE




UNITS 122M/O/R/U
WALL ELEVATION - FACING EAST

Figure 17a,b

# Xunantunich Archaeological Reserve Survey 1994

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## Introduction

One of the goals of the Xunantunich Archaeological Project (XAP) is the systematic survey and mapping of the lands comprising the Xunantunich Archaeological Reserve. This Reserve has been established by the government of Belize in an effort to preserve the nation's natural and cultural resources for education and tourism. The XAP Settlement Survey, directed by Dr. Wendy Ashmore, is currently investigating the spatial and temporal distribution of settlement in the region surrounding the Reserve. The survey of the Reserve itself has been under the supervision of Dr. Richard Leventhal, who directs the excavation and consolidation activities on the Reserve.

The Reserve survey for the 1994 season built upon the previous seasons' work by past project members. Angie Keller, who performed the 1993 reserve survey (see Keller, 1993), aided the author in learning the methods and conventions involved in the reserve survey. The 1994 season had four main objectives:

1/ Complete three dimensional polygon mapping of the site core

2/ Survey in data coordinates and elevations for the various site center excavations

3/ Complete the survey and mapping of the Xunantunich Archaeological Reserve

4/ Time and landholders permitting, expand the Reserve survey, with its methodologies and conventions, to the land immediately surrounding the Reserve

In addition to the above stated objectives, additional mapping was performed on the lands owned by Mr. Rudy Juan, which contain the site of San Lorenzo (see Yaeger, this volume). This work was done during "down-time" between the performance of the above tasks. This mapping included preliminary topographic mapping of this area, as well as linking existing field maps of the structures of San Lorenzo drawn by J. Yaeger to the digital data set developed in this and previous XAP field seasons.

This season's Reserve survey also assisted in the field logistics and spatial integration of the Xunantunich Settlement Survey (XSS) with the Reserve survey. The XSS archaeological transects are anchored by main ceremonial sites, Xunantunich being the largest and at the intersection of two of these transects. The transect data is referenced by the same grid as the Reserve and as such can be displayed in the same map. It should be stressed, however, that although the data can be rendered on the same map and appear as one, they were collected using separate methodologies and for separate purposes.

## Methodology

The survey of the Reserve was performed using a Topcon Total Station with data being input to a data collector which was then downloaded daily to the project computers. The data was then processed in SURFER to produce topographic maps

and in GenericCADD to draft Maler maps of the structures. The data was also arranged into ASCII files for use in Silicon Graphics programs for the development of three dimensional models of the site architecture.

A number of permanent monuments referenced to a master site grid by Northing, Easting and arbitrary elevation exist throughout the Reserve, established during previous field seasons. These were used by the author both to "shoot in" data for the excavations as well as to tie in the unsurveyed sections of the reserve to existing maps. Establishing vertical and horizontal controls for the various excavations, including Actuncan and San Lorenzo, was done on a weekly basis. In addition to locating the excavation units on the reserve and calculating elevations for profiles and drawings, data on architecture and structures were also collected. This information would aid in the later interpretation of the complicated architectural construction sequences which were being excavated.

Three dimensional polygon mapping had for the most part been completed by this season. At the site core, structure A-15, just outside the site core plaza to the east, along the modern road, was all that remained to be mapped, in addition to any new structures encountered on the Reserve.

The main tasks of the Reserve survey were to establish the actual boundaries of the Xunantunich Archaeological Reserve, complete the detailed topographic map of the Reserve, complete the mapping of all cultural features on the Reserve and, if possible, extend the Reserve survey to adjacent non-Reserve lands, in particular, the lands stretching down from the site core to the river.

In order to perform these tasks two workers were employed in the labor of cutting transects off the road to the fenced boundary of the Reserve. These transects were laid out North to South and spaced out approximately 30 meters from one another. Spot elevations were taken every 8 to 10 meters (depending on the pace distance of the rod-man) until it was impossible to see the rod-man due to vegetation or topographic obstructions. At this point a new station was shot in over a nail driven into the earth.

This process was followed down each transect cut through the secondary growth forests of the Reserve until the fence line was reached. Stations were set up near unmapped structures in order to perform the mapping. It was at times necessary to shoot in additional stations in between the transects into the forest in order to reach some structures.

The surveying process picked up where the previous year's survey had left off, to the north and south of the road which accesses the site from the east. The same strategy of 30 meter-spaced, north-south transects was followed throughout the Reserve survey. Additional east-west transects were placed due north of the site core in order to map in topography and several structures located last season but not yet mapped. These were also spaced 30 meters apart where topography allowed.

Transects were also shot along major topographic features, mainly the two steep drainages/ravines at the north edge of the Reserve and running off the eastern side of the Reserve. Extra spot elevations were taken off the transects where the topography demanded.

Reference points were shot on structures encountered which were used in conjunction with field notes on orientation and relative heights in order to later draft the Maler representations of the structures in GenericCADD. At this time additional points were also taken in order to construct the three-dimensional polygon representation of the structures.

An initial base line of stations set up along the road at the start of each transect helped to minimize the propagation of error due to multiple set-ups and backsights. The average error allowed in backsiting was kept down to sub-centimeter. It was occasionally possible to check the accuracy of the station locations at the ends of transects by shooting across to stations at the end of the previous transect. These shots were usually off by only a matter of centimeters.

In order to survey the western border of the Reserve parcels, it was necessary to refer to land records of the Reserve's land acquisitions. In addition to the main Reserve parcel, two smaller parcels to the west of the Reserve were acquired by the Belize government in order to encompass all of Xunantunich's main structures (specifically Group B and structure A21). The concrete markers designating the parcel boundaries were shot in where they were present. Missing markers were located on the basis of the other markers' locations and the acreage listed in the parcel records.

Survey performed on the lands of Mr.Rudy Juan was again started from permanent monuments located near the site of San Lorenzo. Multiple stations were shot in around the pastures in order to cover the most area. Spot elevations were taken every 8 to 10 meters with additional shots taken in order to catch variations in topography. Radial transects from the stations were used to cover the topography, as well as transects along fence lines. Reference points were also shot on the center of structures in these pastures in order to tie in the existing Maler map drawn by Yaeger .

Survey on the lands to the east of the Reserve, by permission of the Valdez family, followed a similar methodology as used on the Reserve. However the density of recent secondary re-growth required a grid of transects (north-south and east-west) in order to locate all existing structures and topographic variations. Spot elevations along these transects were taken as in the Reserve with stations set up at the intersection of north-south and east-west transects and near structures to be mapped. These intersection stations served as accuracy checks when they were later encountered by traverses down the perpendicular transects. On average the accuracy was comparable to that experienced on the Reserve. Structures were mapped in as

Maler representations while polygon mapping was not done (excepting Group E) in the interest of time constraints.

**Results**

*Reserve Survey*

The Reserve survey encompassed those lands not surveyed in previous field seasons, primarily the eastern side of the Reserve. Although this eastern area comprises roughly half of the actual reserve, it has a much lower site density than the western half, which contains the site core (see map).

To the northeast of the site core a plateau area extends out dropping off down to the lands outside of the Reserve. Two steep ravines exist to the north of the Reserve and to the east of the Reserve. The northern ravine has sides up to 10 meters steep and judging by its stony bottom, probably carries a great deal of runoff during the rainy season. The eastern ravine appears as if it is receiving new runoff caused by the increased use on the road off to the south of it. The bajo area which the road runs through seems to receive runoff from the site core, which then continues north into this ravine and out into the last plateau above the river. The bottom of this ravine is covered by soils and some exposed limestone.

The vegetation in this area is composed of bajo vegetation and cohune palms in most of the flat areas. Hill slopes contained more deciduous vegetation, such as chichem and chaka trees. Bajo vegetation areas generally seemed to have deeper soils of a thick clay-like nature. A large pit dug for mining clay for consolidation purposes revealed a deep layer of clays under a topsoil of grey organic based sediments. The slopes coming down off the plateaus often had exposed bedrock protruding out.

The area to the south of the road is characterized by a stepped plateau descending from Group D. The top of this plateau was characterized by bajo vegetation and soil types, while the slopes descending to this area and sloping away from it were covered by exposed bedrock outcrops and upland (deciduous) vegetation types.

Structures located in these areas were mainly in the form of small mound groups either in associations of two or three or alone, on flat areas, usually outside of bajo areas. This settlement was neither dense nor extensive in terms of the size of the structures. Almost all slopes contained either small or large "pocket quarries" or linear quarries. Pocket quarries are characterized by a semi-circular exposure of the bedrock face on a slope with a spoil or debris pile directly below slope of the exposure. To the northeast a long linear exposure of a rock face with corresponding spoil pile was mapped in proximity to a structure situated on top of a quarried face to the east and a mound group to the west.

An ascending run of linear quarry faces forming a stepped terrace system was found on the eastern edge of the Reserve. Atop these quarries/terraces was a flat

area with a large earthen platform with one possibly two small structures on it. This platform overlooks the last large terrace area overlooking the river, outside the Reserve.

To the northeast of Group D and south of the road a small collection of mounds and mound groups ringed a slight depression area on the plateau just below and to the east of Group D. This depression contained no bedrock outcrops, no structures and was covered by bajo vegetation. A collapsed Chultun was found on the eastern rim of this plateau.

**Valdez Land Survey**

Survey extended to the east of the Reserve was made difficult by the presence of recent secondary growth. For the most part the regrowth appeared to be of the deciduous, upland type, although this may be due to recent landuse activities, i.e. swidden agriculture.

The pattern of descending slope, plateau area followed by descending slope and plateau area continued to the east down to the river. Site density remained low with only a few small mounds and mound groups-associations, with the exception of Group E. It appeared as if a series of bedrock modifications ran down slope from Group D down to Group E, taking advantage of the natural topographic trends. These modifications were characterized by the quarrying of exposed bedrock along the contours of the hill slopes with flat areas created sometimes containing mounds.

Group E was composed of two large earthen mounds facing each other (about 40 meters in between them) just slightly off of a direct east-west orientation. The eastern structure was the taller of the two, standing roughly 10 meters high. Both structures did have some cut blocks of limestone on the surface near the top, however a large looter's pit on the side of the eastern structure indicated no architecture, only limestone fill. The structures themselves are both oriented slightly off a direct north-south orientation, both rotated in towards the "plaza" between them, pinching off the northern entrance to the plaza. The southern edge of this plaza area is not too tightly closed off by a line of two structures and one bedrock-modified feature. This line of structures runs off to the southeast towards a small mound group, which then leads to the edge of the plateau which drops steeply to the river. The northern entrance to Group E runs out along until the edge of the plateau where it drops down to the road. Across the road from this entrance is the 'party platform' (see article this volume).

**Juan Farm Survey**

The topographic survey was made relatively easy by the lack of trees on these pasture lands. One field of the Juan Estate was mapped from the entrance of the property down to the river. The gently sloping lands were dotted by many small mounds, previously mapped by Yaeger (see Yaeger 1992). There did not appear to be any modification of the land. Down by the river relic river channels and flood plains were apparent.

**Interpretations**

Site densities appear very low around the surface of the Reserve, although there exists the potential for subsurface structures (see Keller and Braswell this volume). The locations of the smaller structures make use of the existing topography and the modifications to the landscape due to quarrying, for maximum effect. An otherwise small structure placed atop the edge of quarried face gives the mound the appearance of being larger when approached from the down slope side. This often made finding the mounds tricky, as they were readily apparent when approached from one direction but almost not there from the opposite direction.

To the north of the road it appeared as if there was an aguada. The clay pit which was dug here indicates that this area was probably covered by standing water at one time in the past (Bill Woods, personal communication), however that is not to say that there was water here during the time of the Maya.

Another potential aguada area was the plateau to the east of Group D. The depression area on top of this small plateau appeared to be very swampy, based on the vegetation present and the surface appearance of the soils. However, to the north there was no apparent retention wall to prevent water from running off down to bajo area that the road runs through and then draining out through the ravine that runs to the east (see map).

Outside of the Reserve it appeared at first that Group E was an isolated center of activity outside of the site core. However it now appears that this group is connected to the site core via a series of bedrock modifications and small structures that run up the slope to Group D. The 'Party Platform' seems to be linked to Group E by virtue of it being in line with the north entrance to the plaza area at Group E.

Many of the features both inside and outside of the Reserve are problematic to interpret solely on the basis of survey. If indeed the Maya were modifying the landscape to some degree, one must first ascertain the degree to which recent activities have modified the landscape in order to not confuse the two. The topography seems to indicate that an approach from the east would be the preferred entrance to the site core. The series of modified bedrock plateaus leading from the east up the hills to the site core gives some credence to this hypothesis. However only excavation along these features will shed light on exactly what is going on in this area. Further survey to the west, up to the Guatemalan border would also aid in understanding the settlement patterns immediately surrounding the site core.

**Conclusion**

The Xunantunich Archaeological Reserve Survey has been completed. Detailed topographic mapping has been completed for the entire Reserve and all structures readily apparent on the surface have been mapped using Maler mapping conventions. More detailed plans on the locations of undiscovered or unnoticed structures will undoubtedly be produced as future excavations take place around the

site core.

As it seems that the occupants of Xunantunich attempted to minimize their input of effort in formal architectural construction, the surveyor must attempt to view the natural landscape as part of the Maya's world. Topographic features were utilized in order to maximize the effect of the placement of the architecture. The western approach to structure A21 is an example of this blending of natural topography and cultural construction.

What this author has interpreted as bedrock modifications on the eastern slopes of the Plateau, appears to link the site core to the otherwise separate Group E, the 'Party Platform' and, ultimately, the last natural terrace above the river.

The additional survey outside of the Reserve which has begun this field season, helps to extend the detailed view of the natural and cultural landscape surrounding Xunantunich. Coordination of methodologies and strategies between the Xunantunich Settlement Survey and any further Reserve Survey extensions, such as the Juan Estate, is vital for comparability of data sets.

Acknowledgments: The author wishes to extend his gratitude to the two Belizean workers who were vital to the performance of this work, Amir Coccom and Jesus de Dios. Additional thanks to Angie Keller who gave instruction on the methodology previously established and on the use of the equipment. Doctors Leventhal, Ashmore and Jamison's guidance and comments were, of course, invaluable, as were the suggestions of and conversations with the entire XAP crew.

# Early Monumental Construction at Xunantunich: Preliminary Investigations of Group E And O/A2-1

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Clarence H. Gifford
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**Introduction**

An opportunity to enhance our understanding of the longevity of Xunantunich's settlement was provided in the 1994 season when permission was granted to undertake preliminary investigations on the Valdez property lying to the north, east and south of the Xunantunich Archaeological Reserve (Figure 1).

During May, 1994, survey, surface collection and test excavation were conducted on the Valdez property. Given this unique opportunity members of the XAP site core and XSS staff joined together to optimize research in an area which had not previously been available for archaeological investigation.

**Methodology**

The survey of the Valdez property was undertaken in two parts. John Walkey completed the mapping of the paired architectural complex, Group E (Figure 2). This mapping consisted of a 100% survey area (see Keller, 1993). The remaining area of the Valdez property was investigated by the XSS team: L. Theodore Neff, Samuel V. Connell, Jennifer J. Ehret, Clarence H. Gifford and Jon C. VandenBosch. Where Transect Archaeological 2 (T/A2) crossed Valdez properties standard XSS survey methodology was followed. The remaining area was surveyed through a combination of systematic and opportunistic strategies (see Connell et. al.; and Figure 2). Along TA/2, the XSS crew investigated a large 13 meter high platform, O/A2-1, located approximately 85 meters to the northeast of Group E, across the modern road leading to the Xunantunich site core.

Surface collections and shovel tests were collected by Jennifer J. Ehret at Group E and O/A2-1. This included three opportunistic surface collections at Structures 1 to 4 of Group E (Figure 3) and 22 systematic shovel tests at O/A2-1 (Figure 4). These surface collections produced a range of ceramic materials spanning the Middle Preclassic to Terminal Classic periods; a large number of these were Mars Orange, a type diagnostic of the Preclassic/Protoclassic periods (Gifford 1976). This finding is of significant importance because preliminary chronological assessments of the Xunantunich settlement area in 1992, revealed predominantly Late Classic material (Ashmore et. al., 1993; Yaeger, 1992). Ashmore (et. al., 1993:20) comment that these findings did not confirm an initial hypothesis on the longevity of settlement at Xunantunich and are not in accord with more extensive research previously undertaken on settlement in the Belize River valley. The more intensive XAP settlement work in 1993 and 1994 does confirm an initial hypothesis of the diachronic nature of Xunantunich's settlement, though settlement dating to the Late Classic, based on surface materials, remain most common (Yaeger and Connell, 1993; Connell et. al., 1994).

Based on survey and surface collection data, Group E and O/A2-1, provided an opportunity to investigate the little-understood diachronic development of Xunantunich. To this end, one week of test pit excavations was planned in these

two areas. Three two meter by one meter test excavations were placed at Group E (Operations 154 and 155) and two at O/A2-1 (Operation 156). The purpose of Operations 154-6 was to further define the construction and chronology at Group E and O/A2-1. Assessment of the excavated ceramics was undertaken by Lisa LeCount and Lorie Pacheco.

## Group E

Group E is located approximately 800 meters east of the site core. It is situated on a natural limestone rise and dominated by two large pyramidal structures (Strs. 1 and 2). Str. 1 is the slightly larger of the two in its basal dimensions. Strs. 1 and 2 are oriented along an East-West axis roughly parallel to each other. The terrain surrounding these two structures has been terraced. Ten smaller platforms and mounds lie in the immediate vicinity of Strs. 1 and 2, to the north, west and east.

### Group E Test Excavations: Stratigraphy And Chronology

Operation 154

Operation 154 consisted of one test excavation placed in the center of the summit of Str. 2 (Figure 3). Excavations revealed one phase of platform construction. Approximately 40 cm below the contemporary surface, the final white plaster platform floor of Str. 2 was present, though riddled with root disturbance. A single course of roughly cut limestone blocks remained of the inner, west face of a masonry free standing wall overlying this platform floor. A large concentration of daub found on the plaster floor indicates that it probably supported a building constructed of a low masonry wall surmounted by a bajareque or adobe superstructure.

Material from the sub-floor fill of Str. 2, a compact white sascab interlaced with layers of loose uncut limestone rubble, yielded few and mostly undiagnostic ceramics. Despite the opportunity for contamination due to root disturbance, the small sample of diagnostic ceramics from lots 3, 9 and 12 were identified as Mars Orange type. One piece of ash ware was identified in lot 12. Ash wares are traditionally identified as Late Classic (Gifford, 1976), but LeCount (1992) notes that such an assessment can be problematic as ash wares are not temporally restricted. This single sherd may also be the product of root contamination.

Operation 155

Operation 155 consisted of two test excavations placed in the terrain between Structures 1 and 2; 155A at the base and east of Structure 1 and 155B at the base and west of Structure 2 (Figure 3). Both test pits were excavated to a depth of approximately 80 cm through natural soils containing cultural material down to decomposing bedrock. No evidence of a plaza floor was encountered. Excepting a few Late Classic ceramics in the topsoil of 155A and two pieces of ash ware (155A/lot 1 and 155B/lot 3), all ceramic material recovered was identified as Mars Orange type.

## O/A2-1

O/A2-1 is located approximately 85 meters northeast of Group E. O/A2-1 is dominated by a monumental platform, 100 meters N-S by 115 meters E-W, (Additive Feature 1, F1) rising 13 meters in height. Platform F1 is surmounted by four mounds. A ramp extends from the northeast corner of platform F1. Along the northwest side of platform F1 is another ramp or elevation proceeding towards the site core. Natural limestone deposits are high and visible in a road cut to the south of platform F1, then drop down towards the river to the north. These surface features indicate that the monumental size of platform F1 may have been achieved, in part, through the modification of an existing hill or knob top.

**O/A2-1 Test Excavations: Stratigraphy And Chronology**

Operation 156

Operation 156 consisted of two test excavations; 156A in the center of platform F1 and 156B in the northeast corner (Figure 4). This placement of test excavations enabled the examination of both the construction and chronology of platform F1, and the slope of natural deposits below platform F1.

Test excavation 156A revealed a single phase of platform construction. Approximately 30 cm below the contemporary surface of 156A an intact plaster floor was encountered. This provided a sealed context for sub-floor fill ceramic material. All sub-floor ceramics have been identified as Mars Orange type. Bedrock was encountered sloping from south to north, 90 to 110 cm below this plaster floor.

No intact plaster floor was encountered in 156B. Despite this lack of sealed context, both post abandonment soil accumulations and eroded sub-floor fill ceramics were uniformly Mars Orange type. While bedrock was not encountered in this unit a deposit of natural pinkish sascab sloped from north to south at the base of the unit.

Natural deposits underlying platform F1 slope down from south to north in the center of platform F1, then change slope to north-south in the northeast corner of the platform. Rather than a consistent south-north downward slope, these natural deposits form an undulating surface, the concave depressions in which are filled by consecutive layers of silt and sascab fill (156B lots 3-5), as part of the modification of this natural rise in the construction of platform F1.

**Conclusion**

Preclassic occupation has been well documented throughout the Belize river valley (e.g. Actuncan, Cahal Pech, Belize river area: McGovern, 1992, 1993; Awe, 1992; Awe and Campbell, 1992; Ford and Fedick, 1992). Survey, surface collection and excavation at Group E and O/A2-1 have preliminarily identified a significant Preclassic settlement context in the vicinity of Xunantunich. While the proposed Preclassic date, must be considered tentative, as the majority of the excavated ceramic materials come from either sub-floor fill deposits, or are not directly associated with structures; the pervasiveness of Mars Orange type ceramics in these

areas provides a stark contrast with sub-floor and above floor ceramic material excavated in Group A. Additionally, post-abandonment accumulations in 156B yielded solely Mars Orange type material.

Though Group E and O/A2-1 were recorded with separate identification numbers and are currently physically detached due to the modern road leading to the site core, chronological information gained from both surface collections and test pits and spatial proximity, suggest the contemporaneity of these constructions (Figures 1 and 2). Consequently, Group E and O/A2-1 should be considered part of the same conglomeration of monumental construction at Xunantunich in the Preclassic.

While preliminary, the integrated research at Group E and O/A2-1 in 1994 illustrates the diachronic nature of Xunantunich's settlement, which consisted of large-scale monumental construction possibly dating to the Preclassic. This provides a local historical context from which the late and rapid florescence of Xunantunich's site core arose. The preliminary 1994 research provides a base for future investigations on Xunantunich's diachronic development.

Acknowledgments: The 1994 investigations at Group E and O/A2-1 were supported by the Xunantunich Archaeological Project, Department of Archaeology, Belmopan, the United States Agency for International Development, Belize and the National Science Foundation. Permission to conduct research in Belize was granted by Mr. Harriot Topsey, Archaeological Commissioner, Department of Archaeology, Belize. We would also like to thank the Valdez family for permission to work on their property.

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While so many of us were directly involved in this project, it is hard to know where to start and stop with the acknowledgments. We would like to thank all of the Belizean survey and excavation crew members who were involved in various aspects of the project, without whose dedication none of this would have been possible, Delia A. Cosentino for photography, Angela H. Keller for computer graphics, and Lisa LeCount and Lori Pacheco for ceramic analysis.

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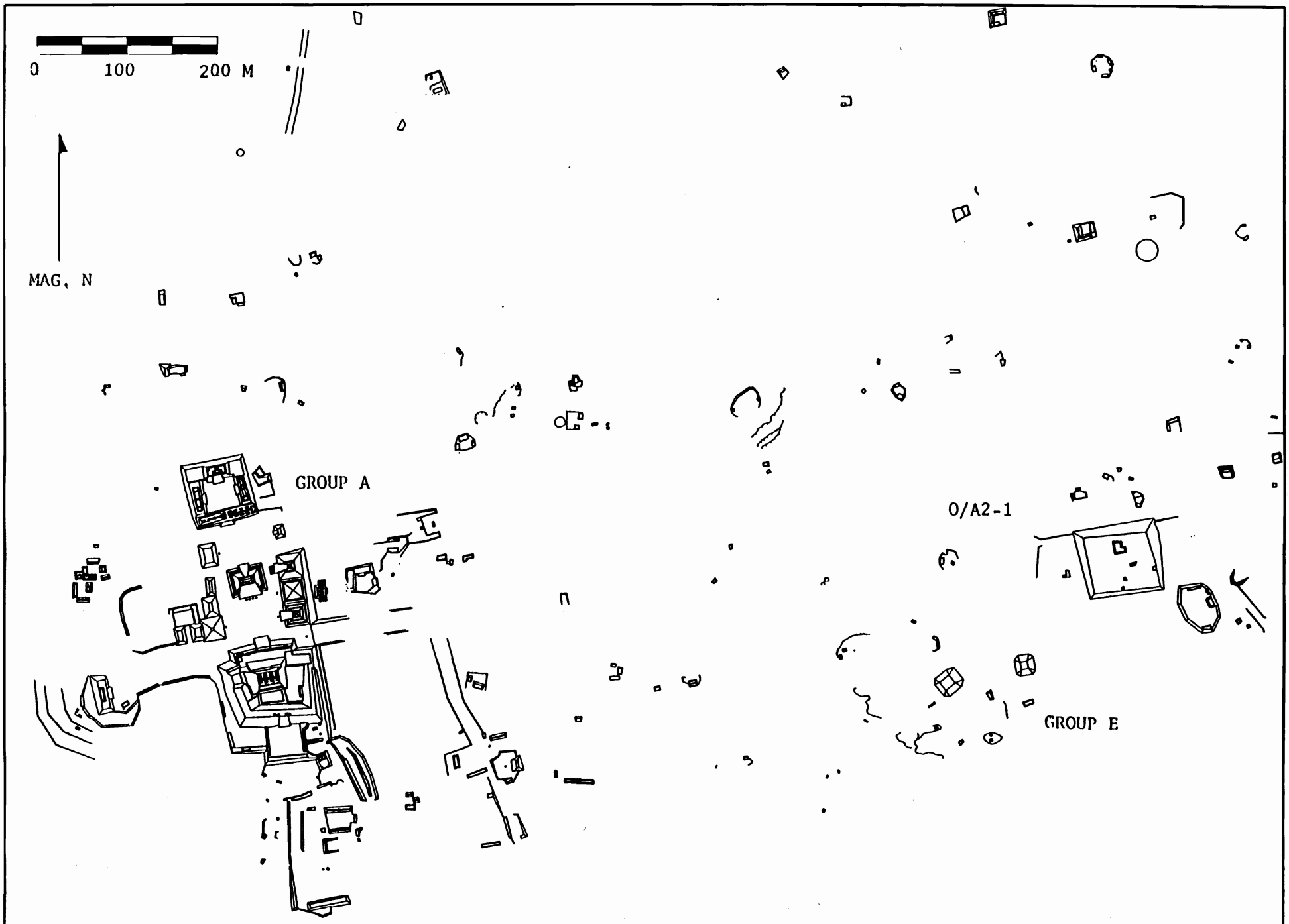



FIGURE 1: XUNANTUNICH SITE CORE GROUP A, GROUP E AND O/A2-1

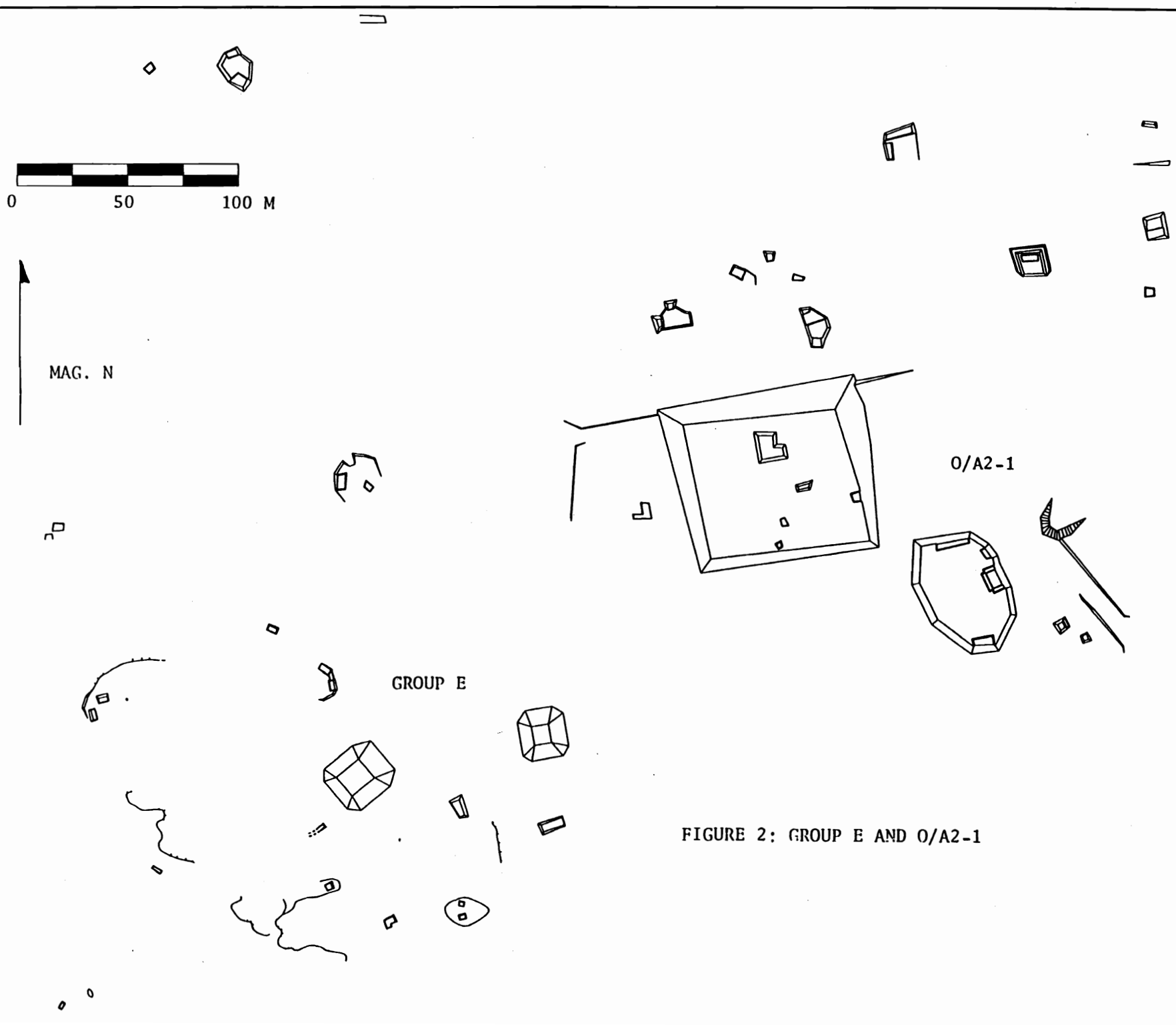
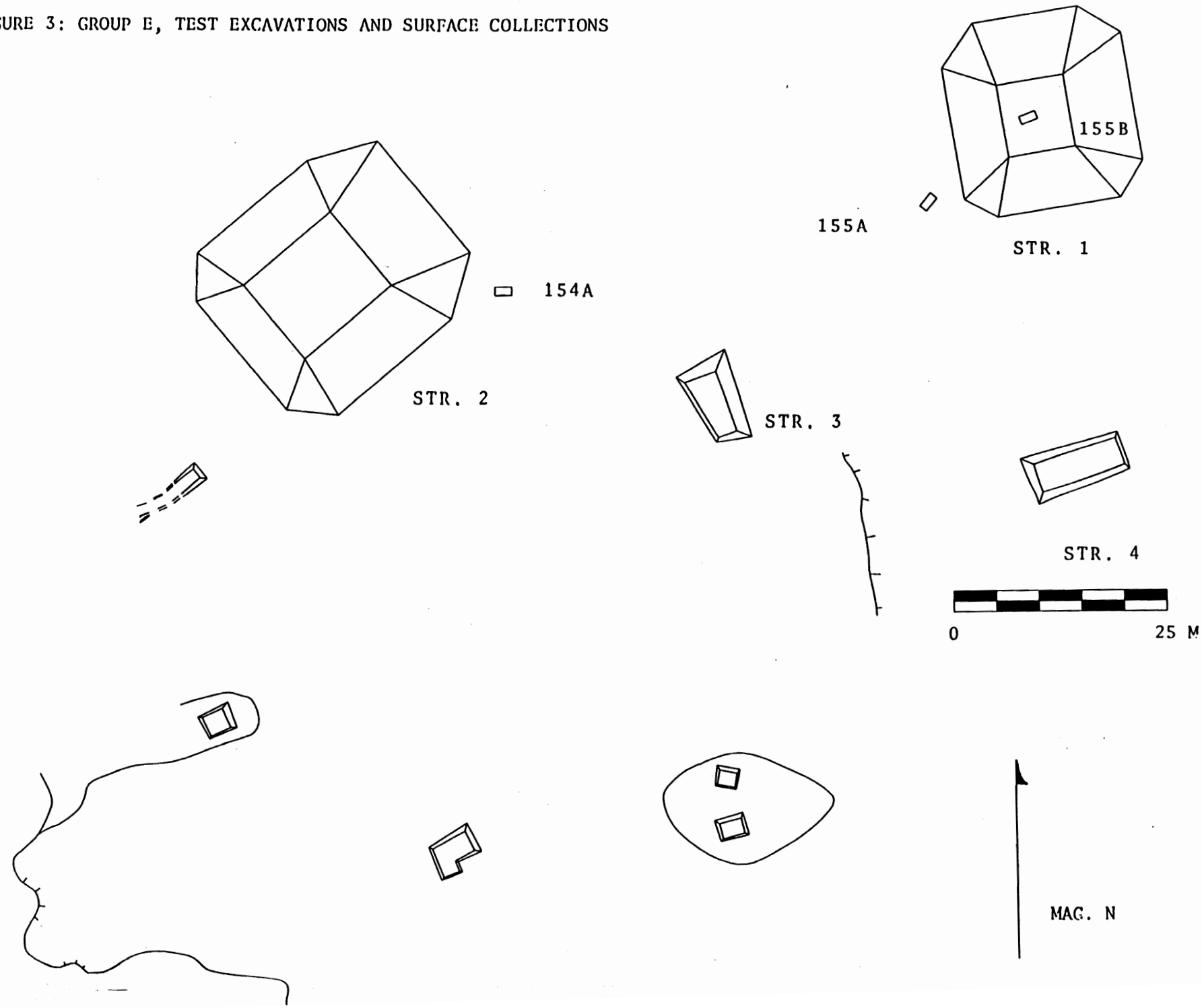



FIGURE 2: GROUP E AND O/A2-1

FIGURE 3: GROUP E, TEST EXCAVATIONS AND SURFACE COLLECTIONS



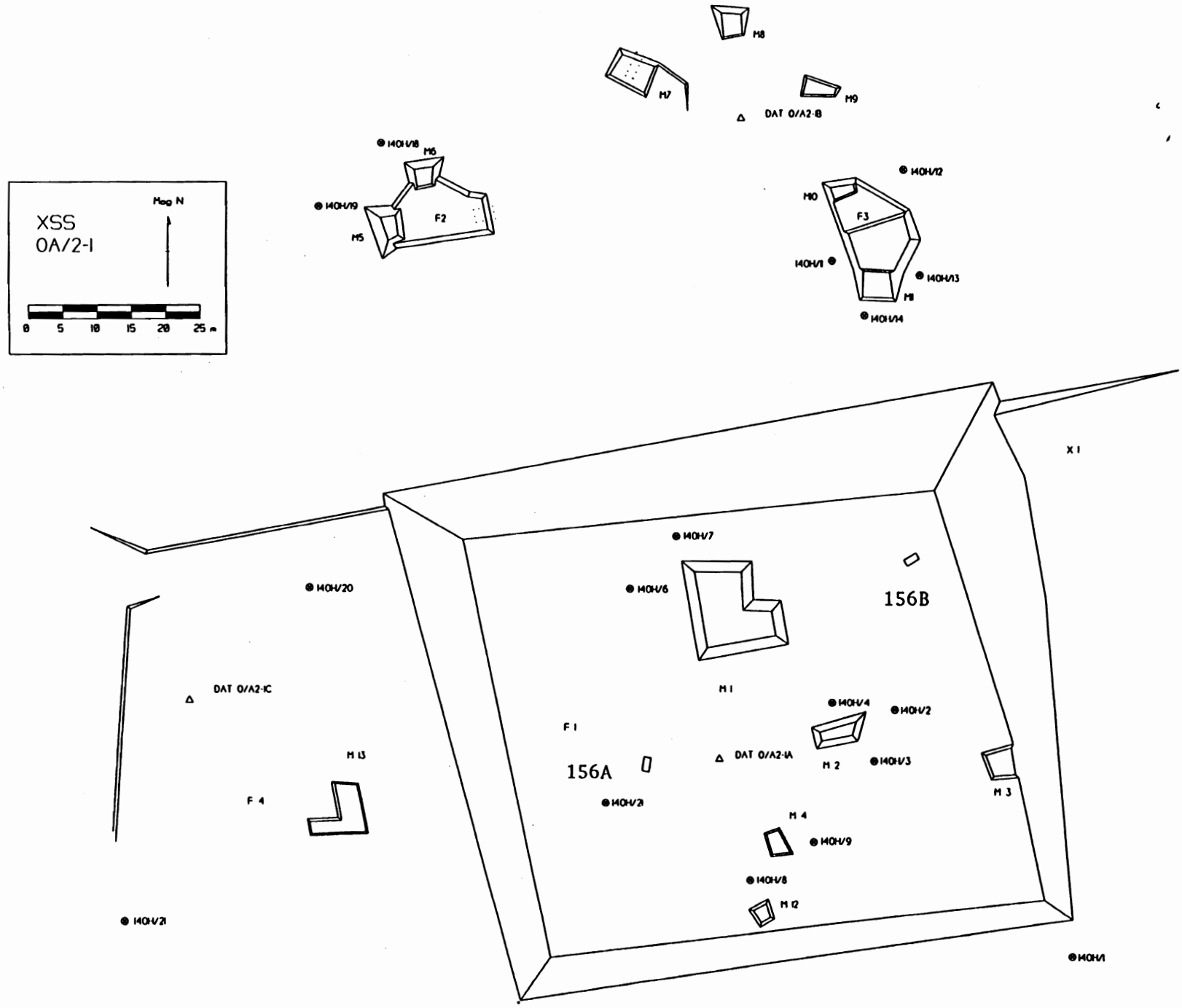



FIGURE 4: O/A2-1, TEST EXCAVATIONS AND SURFACE COLLECTIONS

# Actuncan, Belize:
# The 1994 Excavation Season

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**Introduction**

The third archaeological field season at Actuncan, Belize, was conducted from February to June 1994. As in previous seasons (McGovern 1992, 1993), this work was supported by and carried out under the auspices of the Xunantunich Archaeological Project, directed by Dr. Richard M. Leventhal of the University of California at Los Angeles and Dr. Wendy Ashmore of the University of Pennsylvania. Additional support was provided by the UCLA Friends of Archaeology.

We began this season with a fairly good understanding of the temporal and spatial limits of Actuncan. Previous work (McGovern 1992, 1993) indicated that construction at Actuncan began during the Middle Preclassic (1000-300 BC) and continued until the close of the Late Classic (ca. AD 850). It also revealed that although most of the site was abandoned by that date, one area, the ritual acropolis at Actuncan South, continued to see use throughout the Terminal Classic (AD 850-1000). A survey program had resulted in a detailed map of the site core, and a more general idea of the surrounding settlement (Fig. 1).

The primary objective of the 1994 excavations was to collect architectural construction data from a sample of the identified public structures at Actuncan. This objective was in accordance with my particular research goal of determining what, if any, correlation existed between public architectural construction activity at Actuncan and the extent to which the center was politically autonomous. To this end, a number of excavation techniques were utilized. These included trenching two structures at Actuncan North, test-pitting the platform of the acropolis at Actuncan South, and cleaning, recording and extending a number of looter's trenches in both areas of the site.

In this report I begin with a general overview of the operations completed during the 1994 field season, after which I present a detailed examination of the results from one of them - the excavations into Structure 4 (Operation 83).

**The 1994 Excavations**

As noted above, excavations during the 1994 season not only concentrated on monumental public architecture, but took extensive advantage of existing looter's trenches and tunnels in formulating architectural construction sequences. To summarize, a total of six looter's trenches and tunnels were examined in five structures (Fig. 2). These included Looter's Trenches/tunnels 1 (Ops. 83M-P) and 3 (Ops. 83F-L and Q-S) in Str. 4, Looter's Trench/tunnel 4 in Str. 1 (Ops. 119A-P), Looter's Trench/tunnel 5 in Str. 5 (Ops. 112A-Q), Looter's Trench 6 in Str. 6 (Ops. 120A-J), and Looter's Trench 7 in Str. 12 (Op. 148A). Note that Looter's Trench/tunnel 2 in Str. 4 (Ops. 83A-E) was examined during the 1992 and 1993 field seasons and was reported in McGovern 1992 and 1993.

New excavations carried out during the 1994 season included test pits into the Actuncan South Plaza/Platform (Ops. 45E-H), a trench into Str. 19a (Ops.

132A-H), a trench into the alley and western building (Str. 13) of the Actuncan North Ballcourt (Ops. 91B and 131A-H), a test pit beneath Str. 12 (Ops. 148B-C), and miscellaneous surface collections (Op. 12).

Str. 1 - Op. 119

Str. 1 is an 11 m. tall pyramidal temple which sits atop the massive pyramidal platform of Str. 4. Looting activity in this structure consists of Looter's Trench/tunnel 4 (Fig. 2) which was cleared and recorded this season, as well as a small 2 m. high by 1 m. wide by 2 m. deep tunnel into the structures northwest basal corner which we have not examined closely. Looter's Trench/tunnel 4 began as a shallow trench to the north of Str. 1 into the top of the Str. 4 mound. The looters encountered a series of three eroded Late Classic (AD 600-850) floors (the upper occupational surfaces of Str. 4) and one well constructed and preserved Early Classic (AD 250-600) floor (Floor 4) less than a meter below the surface. This particular floor descended down the front (northern) facade of Str. 4 as a beautifully constructed staircase. The looters used this floor as the horizontal base for their large medial trench/tunnel into the northern facade of Str. 1. Surprisingly, the looters missed discovering two postholes in Floor 4 located along the basal course of the Str. 1 facade on either side of their trench. These postholes had diameters of approximately .15 m. and depths of .5 and .6 m. The posthole to the east of their trench (Lot 119D/2-D1) contained at its base a cache of four obsidian blade eccentrics and eight chert eccentrics arranged on a layer of fifteen unbroken jute shells (Lots 119D/2-P1 to P13). Unfortunately the fill in the posthole above the cache contained fewer than five ceramic sherds, none of which were diagnostic. Nevertheless, based on its stratigraphic position, I believe it likely that this cache dated to the Late Classic. We also encountered a smashed and eroded Terminal Classic plate (Lot. 119A/1-P1) resting in situ on the final occupational surface of Str. 4, Floor 1.

Due to Str. 1's exposed position at the pinnacle of the tallest building at Actuncan, it is no surprise that its final facade is extremely eroded. This erosion was accentuated within the limits of the looters trench, making it quite difficult to define the facades profile. However, based on evidence from both that profile and from other portions of the northern facade not covered by overburden, it seems apparent that this facade comprised a staircase ascending to the standing walls present on the summit of the building. On reaching this facade, the looter's began a 1.5 m. high tunnel into Str. 1, still using Floor 4 as their horizontal guide. They tunneled 6.75 m. through fill devoid of ceramic material before encountering an earlier construction phase.

This phase comprised the Late Preclassic (300 BC - AD 1) Platform 1 (Lot 119G/1). The platform measured 2.4 m. from front to back, and stood just over a meter high. Floor 4 abutted the northern face of this platform .6 m. below its surface. At the rear (southern) edge of the platform rose a .55 m. thick freestanding wall. No front wall was encountered, but assuming one exists, it is possible that the looters missed it by tunneling right through its doorway. A

well-constructed box-shaped step-like feature abutted the front of the platform at its base. Based on its stratigraphic location, this feature post-dated the construction of the platform, but predated the overlying Floor 4, suggesting a Late Preclassic to Protoclassic date (300 BC - AD 250), although no diagnostic ceramics were recovered. Although one obvious function of this feature may have been to afford easier access to the surface of the platform, it has also been suggested that it may have served as a cache box (Tom Jamison, personal communication 1994). Since the looters all but destroyed it, this mystery will remain unsolved. The looters also excavated a 5.5 m. deep pit below the surface of the platform. This uncovered evidence of as many as four earlier construction phases (none of them datable) in the upper 1.5 meters of the excavation, but also indicated that the lower 4 m. of fill all represented a single construction phase. Finally, the looters tunneled through the back of the platform, exposing this rear facade to a depth of 2.5 m. before giving up their excavations. The profile of this section of the tunnel revealed a series of three floors which postdated and abutted the rear facade. The lowest of these floors dated to the Late Preclassic.

The conclusions to be drawn from this brief discussion of Looter's Trench/tunnel 4 include the following:

1) The massive pyramidal platform of Str. 4 reached nearly its present height of approximately 14-16 m. no later than the Late Preclassic, at which time it was surmounted by a 1.25 m. high platform with a stone superstructure. We can not be sure whether Str. 4 reached its present volume during this period or during the following Early Classic.

2) Str. 1, which sits atop the summit of Str. 4, was probably constructed in a single operation during the Late Classic, although an Early Classic construction date can not yet be definitively ruled out.

Str. 5 - Op. 112

Str. 5 is an 8 m. tall pyramid which sits on the eastern edge of the Actuncan South plaza-platform. It is also one of the most heavily looted structures at the site. This looting took the form of Looter's Trench 5 (Ops. 112A-Q), a trench which measures approximately 18 m. long (Fig. 2). The trench skirted the northern edge of the staircase located on Str. 5's western face, and had as its base the plaza surface. As the trench cut into the western facade of the structure, it revealed at least four major phases of nested construction and numerous minor stages and modifications. At the termination of the trench deep in the bowels of Str. 4, the looter's excavated a 4 m. deep pit straight down into the surface of the plaza-platform, revealing three or four major phases of construction in that exposure. Thus, although detailed analysis of this trench is not complete, the broad outlines of Str. 4's construction history and some of the plaza-platform's can be described.

I will begin with a discussion of the construction history of the plaza-platform since it underlies and predates Str. 5. The earliest construction revealed was the battered eastern edge of the well-constructed plaza-platform (Op. 112K).

Although the pit did not extend far enough to expose the horizontal occupational surface of the plaza-platform, it did indicate that surface lay no more than a meter beneath the final plaza surface. We were not able to date this phase. During the Late Preclassic the plaza-platform was extended horizontally by 2.5 m., although it was not raised an appreciable amount. This Late Preclassic addition (Op. 112J) was very well-constructed, and was battered at the same angle as the earlier platform facade. Later during the Late Preclassic the surface of the plaza was raised to approximately its present height (Op. 112I). And again during the Late Preclassic the area of the plaza-platform was once more expanded (Op. 112H) horizontally (though not vertically) by an unknown amount (the extension was certainly over 3 m., however).

The earliest version of Str. 4 was completed during the Late Preclassic, and rested directly on the plaza surface (Op. 112G). It faced westward into Plaza A, and had a staircase on its western face. This staircase ascended to a terrace at a height of 3.2 m. The terrace facade was adorned with a 2.25 m. high red painted stucco mask which extended out of the facade .6 to .8 m. This mask had been damaged in the looting, and had since been even more ravaged by its exposure to the elements, but its general makeup as a human (or human-like) face was still relatively clear. The top surface of the terrace was about 4 m. deep, at which point another staircase ascended an additional 2.5 m. to the apparently level summit of a platform. Rather than extending out from the platform's facade, however, the staircase was instead set into the facade.

The next phase of construction greatly expanded the volume of Str. 4, but did not increase its height. This was accomplished by expanding the size of the summit platform so as to cover the terrace of the earlier structure. At the same time both the terrace and the staircase were extended farther west into Plaza A. Both the terrace facade and the facade of the summit platform were adorned with red painted sculptured stucco masks. These masks were horribly damaged by rain and root action, but even in that condition it was obvious that they did not represent human faces. We were unable to date this phase of construction using ceramics. However, it seems quite likely that this construction dated to the Early Classic.

The final major addition to Str. 4 involved the Late Classic II (AD 700-850) construction of a masonry superstructure on the building's summit. At least one room was identified, although it is as yet unclear whether it was vaulted. A pair of steps ascending to something at the back of the room were also revealed at the extreme eastern extent of the trench. Perhaps they lead to a still buried bench along the back wall of the room. Also at this time the masks on the platform and terrace facades were covered by masonry retaining walls.

A final fascinating discovery was made on the floor and steps in the back of the Late Classic II room. A .6 to .75 m. thick layer of thousands of burnt Late Classic II and Terminal Classic sherds, broken but complete bowls, dishes, and

vases, and charcoal rested on the floor and stairs (Op. 112M-D1). They were obviously smashed and burnt in situ in what can only be considered a termination ritual.

Str. 6 - Op. 120

Str. 6 is a 7 m. tall eastward facing pyramid located on the western edge of the Actuncan South plaza-platform. It is abutted on the north and south by 5 m. tall platforms. Looter's Trench 6 (Ops. 120A-J) slices for over 6 m. into the north side of the northernmost platform (Fig. 2). At its termination the looter's excavated a pit 3 m. deep into the Actuncan South plaza-platform on which Str. 6 rests.

The pit into the plaza-platform revealed two major construction phases and several minor modifications. The earliest phase visible in the profile was the battered western face of the plaza-platform. This version of the platform was approximately .75 m. lower than the final version, and it had a 1.2 m. high apron running along its top edge. Although we recovered no diagnostic ceramics from the fill, this earlier plaza-platform almost certainly dates to the Late Preclassic. Burying this earlier platform was the final platform which extended an unknown distance farther to the west, probably in order to better accommodated the construction of Str. 6 on its surface. This phase too appears to date to the Late Preclassic. Between the construction of these two phases a number of small and, frankly, enigmatic modifications were made to the surface of the earlier platform. These consisted of a number of overlapping step-like features which served to raise portions of the plaza surface. Some of these features appeared to have been chopped in antiquity, perhaps to accommodate the construction of the final plaza surface.

The Str. 6 construction phases revealed in the trench were, if anything, even more confusing. The trench cut through and destroyed the intersections between several retaining walls, making an interpretation of their stratigraphic relationships difficult. It appeared, however that the earliest construction phase represented was a corner of a tall Late Preclassic platform facade. This platform was then expanded to the east (toward the front of the building) and later to the north (the side of the building). Finally, a low terrace was added to the north side in conjunction with a replastering of the plaza surface. All of these construction phases seem to date to the Late Preclassic.

Str. 12 - Op. 148

Str. 12 is a range type structure located along the northwest edge of Plaza C in Actuncan North (Fig. 3). Looters had trenched into the western face of the structure near its southern end (Looter's Trench 7). On clearing out the trench it was discovered that the Str. 12 core consisted entirely of chert boulders piled up in a single operation without the use of any matrix or cement. A limestone masonry wall defined the structures western facade. Ceramic collection within the trench suggested a Late Classic II date for the structure. We initiated two test

excavations on either side of the masonry retaining wall, and discovered that Str. 12 was built atop a .2 m. layer of earth which lay upon an Early Classic plaster plaza floor. Beneath this floor we revealed a sequence of two more Early Classic floors.

Str. 19a - Op. 132

Aside from our work in looter's trenches, we also performed some trenching of our own in order to ascertain the construction history of some non-looted structures. We placed one of these trenches medially into the southern facade of Str. 19a, an elongated pyramidal structure located along the northern edge of Plaza C at Actuncan North. The trench extended into the base of the structure for 6 m., and then stepped up and continued for another 2 m. at a height of 2 m. above the base of the structure (Fig. 4).

Our excavations revealed a poorly preserved Early Classic staircase built in conjunction with a .8 m. rise in the surface of Plaza C. This construction rested atop a Late Preclassic plastered plaza floor which showed evidence of having been resurfaced twice. Midway into the trench, and beneath the stairs, we uncovered a crudely constructed Late Preclassic retaining wall. At the northern extreme of the trench, the staircase, which at this point had reached a height of 4.3 m., covered a pair of horizontal Late Preclassic plaster surfaces. (Floors?). Unfortunately, we were not able to continue a horizontal exposure, so I was unable to determine whether these floors represented the upper surface of an earlier terrace or platform, or had some other function. We were also unable to determine a direct connection between these surfaces and the retaining wall found lower down and closer to the front of the building.

Str. 13 - Op. 131

Str. 13 is the western building in the Actuncan North ballcourt. In 1993 we had placed a 2x2 m. test pit in the center of the ballcourt alley to determine a chronological sequence. This season we extended a trench westward from the earlier excavations about halfway (6 m.) into this western ballcourt structure (Fig. 5). We also excavated into the summit of the structure on this same axis, and continued with clearing operations down the western face of the structure. These excavations revealed that the ballcourt was constructed in the Protoclassic, and underwent modifications which constricted the width of the playing alley in both the Late Classic I and Late Classic II periods.

Plaza-Platform A - Op. 45

Test pits were placed into Actuncan South Plaza A in two areas near the northeast corner of Str. 4 (Fig. 6). We placed one of these excavations in order to examine a possible stela butt, and the other to better define the relationship between a series of floors uncovered in the first test pit, and those visible at the mouth of Looter's Trench/tunnel 3. The lots from these excavations have not yet been analyzed, so there is little I can say about chronology. We did, however, confirm the presence of a stela butt erected in the final plaza surface.

Structure 4 - Trench/tunnel 1 (Suboperations 83M-P) - A Detailed analysis

Str. 4 is a large pyramid which dominates not only the Actuncan South acropolis, but also the site as a whole (Fig. 1). It rises approximately 15 m. above Plaza A, and is surmounted by three temples, Strs. 1, 2, and 3. Work on this structure during previous seasons consisted of cleaning, recording, and collecting ceramics from a large looter's trench/tunnel (Trench/tunnel 2) which bisects the staircase on the structures northern face (McGovern 1992:Fig. 3, 1993:121 and Table III). During the 1994 season we carried out similar work on the structures two remaining looter's trenches/tunnels (Fig. 2).

Trench/tunnel 1 (Figs. 7 and 8) is located half-way up the western face of Str. 4, penetrating the facade directly beneath Str. 3, a small structure on the summit of the large pyramid. The trench/tunnel has a total length of 13 m., the first 4 m. of which comprise an open trench, with the remainder of the length forming a tunnel. After the walls and floor of the trench/tunnel were cleaned of debris, four suboperations (Ops. 83M-P) were defined. These suboperations corresponded to obvious changes in construction materials and/or techniques. The aim was for each suboperation to represent a single construction phase or subphase (stage).

Op. 83M was the outermost suboperation, and consisted of the surface and final extant phase of construction. Because of the steep slope of this facade, there was very little overburden or collapse debris covering the surface, at least from the level of the tunnel upward (below the mouth of the tunnel was a huge talus slope of mixed collapse debris and looter's backdirt). Because this facade was presumably the final surface of the structure, it was quite weathered, and no traces of plaster remained. The building material for this construction phase consisted of hard limestone slabs, ranging in size from .1-.2 m. high, .4-.6 m. deep, and .2-.5 m. wide. They were neatly laid in a light gray to grayish brown hard lime concrete. Very few diagnostic ceramics were recovered from this suboperation, but those that were suggest that this construction phase dates to no older than the Early Classic.

Op. 83N was a beautifully faced, terraced facade. The looter's trench revealed a section of one terrace from its foot to its top edge (verge), and partially revealed a section of a lower terrace from its verge down to a depth of 1.6 m. The terrace whose entire height was uncovered measured 3.4 m. high, and was battered at an angle of 25( from the vertical. If we assume that this represents the average height of the terraces on this facade, and that the facade is, in fact, terraced from the plaza surface to the summit of the structure, then this terrace should represent the third-highest of four terraces. The north wall of the trench/tunnel revealed the vertical face of an outset which measured approximately 1 m. deep by 1.8 m. high, and which was battered at an angle of 16( from the vertical. The south wall of the trench/tunnel revealed that the

terrace face was decorated with three horizontal moldings which abutted the outset.

A number of rectangular blocks (.2-.3 m. high by .2-.3 m. wide) jutted out from the facade at irregular intervals. Our initial assumption was that they were ornamental in function - either the very eroded remains of decorative elements or the armatures for such adornments. However, the extreme irregularity of their placement and the crudeness of their fabrication contrasted greatly with the well constructed and preserved facade into which they were set. Thankfully, this puzzle seems to have been solved by a suggestion proffered by Rudy Larios (personal communication, 1994), who believes that the blocks were added as anchors for the attachment of the final phase of construction.

The facade itself was constructed of a thickly plastered facing of mortared limestone blocks, ranging in size from .2-.3 m. high, .3-.8 m. deep, and .3-.8 m. wide. This facing was backed by a core of irregular pieces of limestone in a light brownish gray cement. Very few diagnostic ceramics were recovered from this suboperation, but those that were suggest that this construction phase dates to no older than the Early Classic.

Op. 83O consisted of a very crudely constructed limestone masonry facing which was battered at an angle of 22( from the vertical. It was backed by a core of irregularly shaped chert and limestone boulders which averaged .15 m. high by .4 m. deep by .4 m. wide, and which were set in a dark grayish brown limy clay mortar. Once again, few diagnostic ceramics were recovered, but those which were suggest a Protoclassic age for this construction.

Op. 83P consisted of a limestone masonry facade which was battered at an angle of 25( from the vertical. This facade was roughly plastered, and the quality of its finish did not equal that of the facade found in Op. 83N. The facing stones ranged in size from .1-.25 m. high, .3-.6 m. deep, and .3-.4 m. wide. The core consisted primarily of limestone slabs with dimensions similar to those of the facing, but also included some chert boulders measuring from .2-.3 m. dia. The core was neatly laid in a mortar which graded between a grayish brown limy clay and a light gray soft lime cement. The few diagnostic ceramics recovered suggest a Late Preclassic date for this construction phase.

Structure 4 - Trench/tunnel 3 (Suboperations 83F-L and Q-S) - A Detailed Analysis

Trench/tunnel 3 (Figs. 9 and 10) is located just east of the main staircase on Str. 4. The trench/tunnel has a total length of 10.8 m., the first 4.4 m. of which comprise a trench, with its remaining length forming a tunnel. After the walls and floor of the trench/tunnel were cleaned of debris, ten suboperations (Ops. 83F-L and Q-S) were defined. As with Trench/tunnel 1, these suboperations corresponded to obvious changes in construction materials and/or techniques,

with the aim of representing each construction phase or subphase (stage) with a single suboperation.

Op. 83Q included the overburden and collapse debris which covered Str. 4. Material resting on what may have been the final occupational floors and surfaces of Str. 4 was collected in separate lots from material higher up in this layer of debris. This suboperation consisted of well-mixed masses of limestone boulders and rubble in a brown to very dark grayish brown loam and/or humus. Scattered about in this mass were a number of toppled cut-limestone blocks and large quantities of ceramic sherds. For the most part, this suboperation was heavily disturbed by root and animal action. Lots collected from the west and east walls of the trench (Ops. 83Q/1 and 83Q/2, respectively) primarily contained ceramics diagnostic of the Late Classic II, although Op. 83Q/1 also included several Middle Preclassic sherds. Material found on Floor 1 (Op. 83Q/3) also dated exclusively to the Late Classic II. It should be noted that the construction phase defined in Op. 83S (discussed below) may have originally included a plaster floor which overlay Floor 1. If so, the material found on Floor 1 might actually represent fill from beneath this eroded floor, rather than occupational debris.

Op. 83S included a strange line of very large cut-limestone blocks which was erected as the final construction activity on Str. 4. These blocks, measuring .5 m. high by .3 m. deep by 1 m. wide were placed on a .1 m. thick layer of fill right at the basal edge of the structure. They form, in effect, a low free-standing wall along the structures face. Whether the fill on which this wall rests continued to the north as the final surface of Plaza A is difficult to say. If it did so, however, it has left little trace of its existence. Only a handful of sherds were recovered from this construction, and they dated to the Late Classic.

Op. 83R included plastered Floors 1 and 2 and their ballast. On the eastern side of the trench Floor 1 was quite well preserved, while on the western side it was very distinct even though its plaster surface had been eroded away. Floor 2 was rather eroded in spite of the protection afforded by the overlying Floor 1. This suggests that it wore out in antiquity, and that Floor 1 was laid to replace this damaged surface. The ballast of both floors consisted of limestone rubble in a light brownish gray lime cement. Floor 1 partially overlaid a line of large cut-limestone blocks (.3 m. high by .9-1 m. deep by .3-.4 m. wide) which served as the basal course of the final construction phase of Str. 4 (Op. 83L; see below). This line of limestone blocks appears to have been chopped prior to the construction of Floor 1, in order to better accommodate its addition. Floor 2 overlaid Floor 3, and lipped up onto the face of the line of cut blocks, suggesting that its construction was either contemporaneous with or subsequent to the laying of this basal course. Ceramics recovered from the fill of each floor suggested that they both dated to the Late Classic I.

Op. 83L included the final very eroded facade of Str. 4. Although the basal course of this phase was constructed of quite large cut-limestone blocks, as discussed above, most of the facade consisted of somewhat smaller mortared limestone slabs (.1-.15 high by .4-.6 m. deep by .3 m. wide). The core was made up of limestone slabs ranging in size from .1-.2 m. high by .2-.6 m. deep by .2-.5 m. wide, which were set in a light gray lime cement. This entire phase of construction rested on Floor 3. Ceramics collected near the surface of this construction phase (Ops. 83L/2 and 3) included Late Classic II and Terminal Classic diagnostics, while those collected from deeper within the core (Lot 83L/4) dated to the Late Classic in general. Because of the extremely eroded nature of this phase of construction, the paucity of ceramic material in the core material in general, and the abundance of the ceramic material in the overlying collapse debris, I think it likely that Lots 83L/2 and 3 reflect post-depositional mixing between the two strata, rather than being representative of the final phase of construction alone. For this reason I tend to favor the earlier date suggested by Lot 83L/4. A date of Late Classic I for this construction phase would also make more sense in light of the Late Classic I date of the overlying Floors 1 and 2.

Op. 83K revealed some very interesting architectural features. By this point in their excavations the looters had given up on trenching and had begun tunneling into the base of Str. 4, using Floor 3 as their horizontal guide. Their tunnel penetrated the Op. 83K facade at the intersection between a set of stairs and an outset platform. The east wall of the tunnel revealed the bottom four steps of the well-constructed Staircase 1, while the tunnel's west wall exposed the eastern face of the outset Platform 1. It was readily apparent that the staircase had originally abutted the eastern side of this platform. Not only was the plaster on this facade broken along a stepped line which corresponded exactly to the four stairs visible in the opposite wall, but it even curved outward from the facade in many places, onto the now missing surfaces of the risers and treads. The steps consisted of thickly plastered cut-limestone blocks, measuring up to .3 m. high by 1 m. deep by .4 m. wide. They were backed by a core of chert and limestone boulders in a light gray to light brownish gray hard lime cement. The outset platform was similarly constructed. Its northern facade stepped back from a rounded basal molding to a height of 1.2 m., at which point it was battered at an angle of 20( from the vertical, attaining a total height of 1.75 m. This entire construction phase rested atop plastered Floor 3, and contained a handful of Late Preclassic to Early Classic diagnostic ceramics.

Op. 83J included the very well-constructed plaster Floor 3, and its associated ballast and underlying fill. Floor 3 consisted of a thick layer of hard lime plaster covering a .15 m. thick limestone rubble ballast in a white lime cement. This overlaid a layer of square limestone blocks set in a dark grayish brown limy clay mortar, which rested on Floor 4. Floor 3 lipped up onto the front and eastern side of an outset platform, Platform 2, and also lipped up onto a staircase, Staircase 2. No diagnostic ceramics were recovered from the fill beneath Floor 3.

Op. 83I appears, in retrospect, to have included two construction phases. The stratigraphically later phase was represented by plaster Floor 4, and its associated ballast. The original plaster surface of Floor 4 was `feathered onto the chopped tread of one of the steps in Staircase 2. Three subsequent replasterings of the floor extended over this tread. The ballast consisted of a .27 m. thick layer of dry laid chert cobbles. No diagnostic ceramics were recovered from Floor 4.

The earlier phase of construction identified in Op. 83I included Staircase 2 and Platform 2. Staircase 2 abutted Platform 2 in a manner similar to that in which Staircase 1 abutted Platform 1 in Op. 83K, and it was obvious that they were built as a unit. As in the previous example, the tunnel grazed the eastern facade of the platform and penetrated the staircase. Staircase 2 was a well constructed but somewhat eroded series of four steps. The lowest step uncovered was chopped in antiquity, presumably to accommodate the construction of Floor 4 which extended northward at the level of its tread. It is unknown whether the horizontal plaster surface extending north from the base of this step represents a floor or the tread of a lower step. Although the next step up was well preserved, the nosings of the two upper steps were worn away. The steps were plastered and were constructed of shaped blocks of a rather soft white sascab in a hard white lime cement. Late Preclassic diagnostic ceramics were collected from this staircase.

Platform 2 was extremely well constructed. The core consisted of chunks of white sascab in a very hard white lime cement, and was faced with small shaped limestone blocks measuring .1 m. high by .1 m. deep by .3 m. wide. The vertical eastern face of the platform was covered with a very hard, fine gray stucco, while the sloped northern face was adorned with a bright-red modeled stucco relief. Although the roof of the tunnel did not extend high enough to reveal a horizontal surface on the top of the platform, the shapes of the north and east facades as they entered the unexcavated area suggested that this surface was not much higher up. Middle Preclassic ceramics were collected from this platform.

Ops. 83 G and H together probably represented a single phase of construction, although they were apparently built as separate stages. Op. 83 H consisted of Platform 3 which was remarkably similar in its manner of construction, materials used, and placement to Platform 2. In fact, the builders of Platform 2 merely extended the vertical eastern face of Platform 3 northward so as to cover up the northern facade of Platform 3. This facade sports a beautiful but enigmatic three-dimensional sculpture of very hard red-painted stucco (Fig. 11). Patterned areas of gray on the stucco have suggested to Virginia Fields the possibility that these portions were originally painted fugitive green, but have faded through time (personal communication 1994). The visible portion of this sculptural element projects over a meter from the face of the platform before it is

covered by the unexcavated fill of the overlying Platform 2. Late Preclassic to Early Classic ceramics were collected from this platform.

Op. 83G comprised Staircase 3, five of the well-constructed steps of which were profiled in the trench wall. The second step from the bottom was deeper than its sister steps, and it corresponded with the horizontal surface onto which the sculpture in Op. 83H extended. The steps above this one abutted the face of the eastern side of Platform 3.

Op. 83F consisted of four steps of the well-constructed Staircase 4. The riser of the bottom step was decorated with unpainted modeled stucco. The top step of the series was chopped where the rear of its tread would have met the riser of a higher step. These steps abutted a balustrade-like surface visible in the western profile of the trench. This balustrade continued westward beneath Platform 3.

**The Construction History of Str. 4**

Using the data gathered from Looter's Trenches/tunnels 1, 3, and 4, discussed above, and from Looter's Trench/tunnel 2 (McGovern 1992:Fig. 3, 1993:121), we can begin to make some interpretations about the construction history of Str. 4. To begin, I will attempt to tie together the architectural features found in the various cuts. First, I would argue that the four staircases visible in the profile of Tunnel 2 directly correspond with the four staircases visible in the profile of Tunnel 3, even though there are some intervening architectural features (Tunnel 3, Platforms 1, 2, and 3, and the Staircase 4 balustrade). Second, I would argue that Staircase 1 in each of these tunnels corresponds to the Early Classic Floor 4 and its associated staircase exposed in Trench 4 at the summit of Str. 4. I also believe, though the argument is more tenuous, that all of these components correspond to the Early Classic terraced facade visible in Trench 1 (Op. 83N). Moving backward in time, Platform 2 and Staircase 2 (Tunnel 3) seem to correspond with the battered facade found in Tunnel 1, Op. 83O, and probably date to the Late Preclassic or Protoclassic. Platform 3, Staircase 3, and their associated sculptured facade (Tunnel 3), appear to correspond with the battered facade found in Tunnel 1, Op. 83P, and probably date to the Late Preclassic. Finally, Staircase 4 could date to either the Middle or Late Preclassic; only Middle Preclassic sherds were recovered from this phase, but I would nevertheless lean towards a Late Preclassic date. Moving forward in time from Staircase 1, the final construction phase for Str. 4 seems to date to the Late Classic I period.

**Conclusions**

The data collected at Actuncan this season tend to confirm the basic site chronology constructed after the 1993 season (McGovern 1993). Strikingly, our findings point up the essentially continuous nature of the growth of Actuncan over a span of at least 1,300 years. And once again, the dearth of any Terminal Classic material at Actuncan North strongly supports our contention that this portion of the site was abandoned at the end of the Late Classic II period, while

in contrast the continued use and occupation of Actuncan South in the Terminal Classic period was forcefully brought home by the evidence for a Terminal Classic termination ritual discovered in the room on the summit of Str. 5. The presence of massive Late Preclassic and Early Classic painted stucco masks and other sculpture on the facades of the temples at Actuncan South joins with the site's carved stela and overall monumentality to suggest anew that Actuncan played a major role in the social and political development of the upper Belize River Valley. Conversely, the presence of a site like Actuncan in the midst of a region filled with more or less comparable sites argues for more diffuse and segmented models of political organization for the valley then have heretofore been proposed.

Acknowledgments: Many people contributed to the success of the 1994 field season at Actuncan. Chief among them were Dr. Richard M. Leventhal and Dr. Wendy Ashmore, both of whom provided indispensable support and advice. My fellow members on the XAP crew deserve much gratitude for their good friendship and their insightful suggestions. This work has been as much a function of the XAP spirit as of any effort on my part. I wish to thank Lisa LeCount and Lori Pacheco for their invaluable work on the analysis of the Actuncan ceramics. Any kudos for the results of this season's work should go to the Actuncan crew members from the village of San Jose Succotz: Luis Chi, Miguel Chan, Antonio Moh, Minel Comal, and especially their captain, Gilberto Requena.

Without the acquiescence of the Belizean Department of Archaeology led by the Commissioner of Archaeology Harriet Topsey, and the Actuncan landowners, Srs. Galvez, Gomez, Juan, Manzanero, Ranji, and Requena, this study would not have come to fruition.

The work being undertaken by a number of other archaeological projects both within the Belize Valley and in the near beyond has served as a source of ideas and inspirations. I would like to acknowledge the intellectual debt I owe to the leaders and members of the Belize Valley Archaeology Project, the Belize Valley Archaeological Reconnaissance Project, the Caracol Project, and the El Pilar Project.

Finally, all of this work would be for naught were it not for the love of friends and family. I thank the Juan and Penados families for their kindness and comity, and my wife Cheri and son Owen for the love that sustained me.

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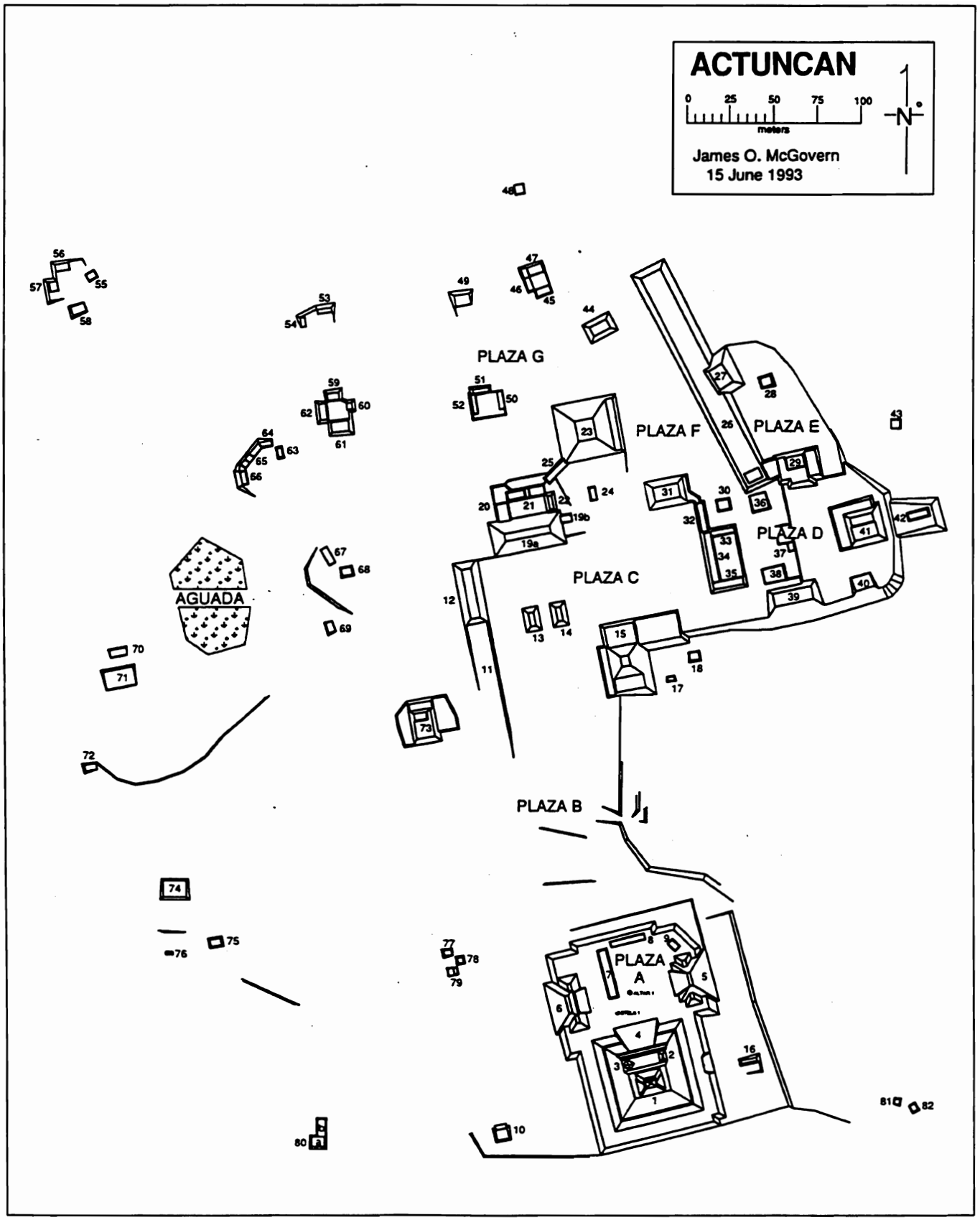


Figure 1. Map of Actuncan.

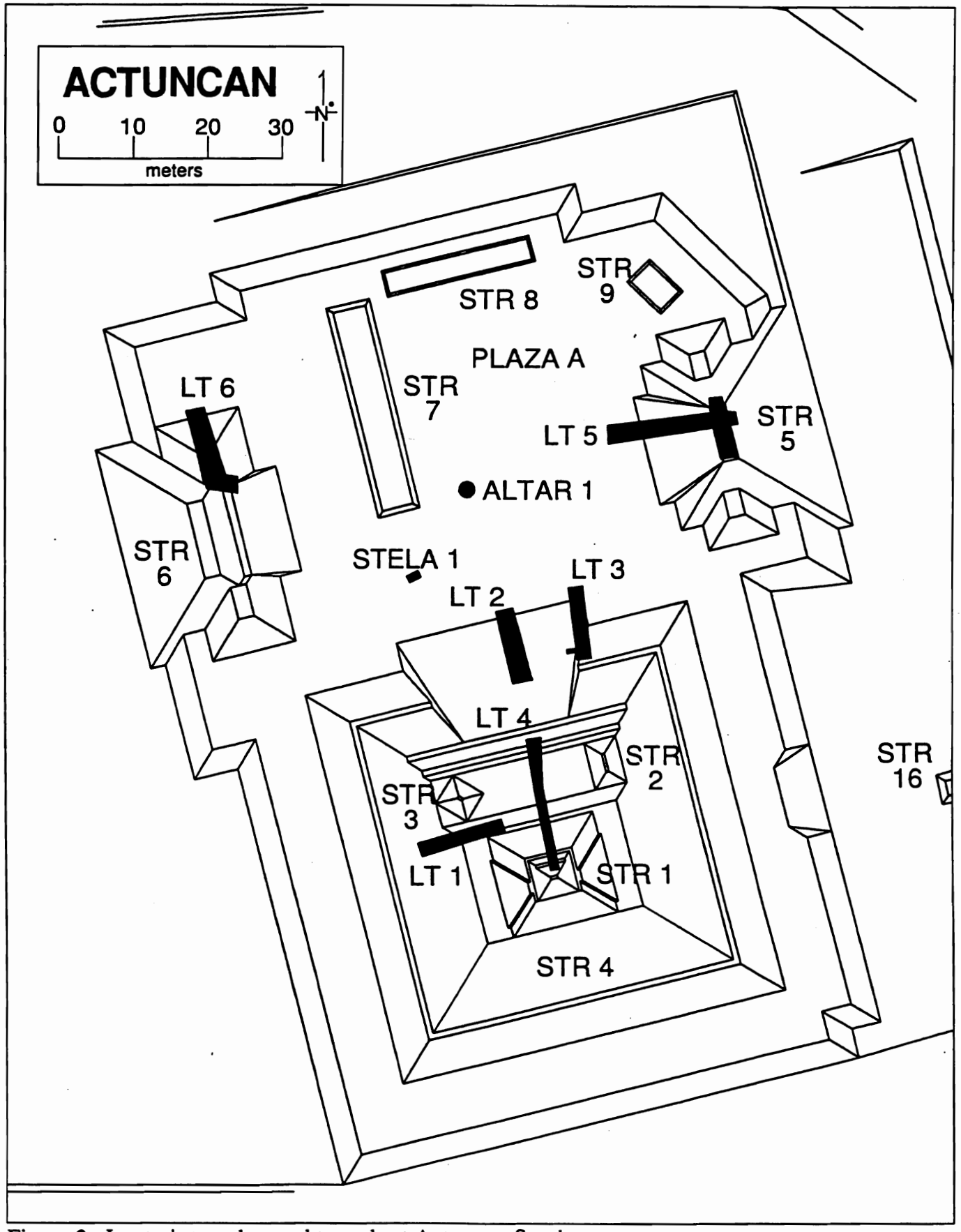


Figure 2. Looter's trenches and tunnels at Actuncan South.

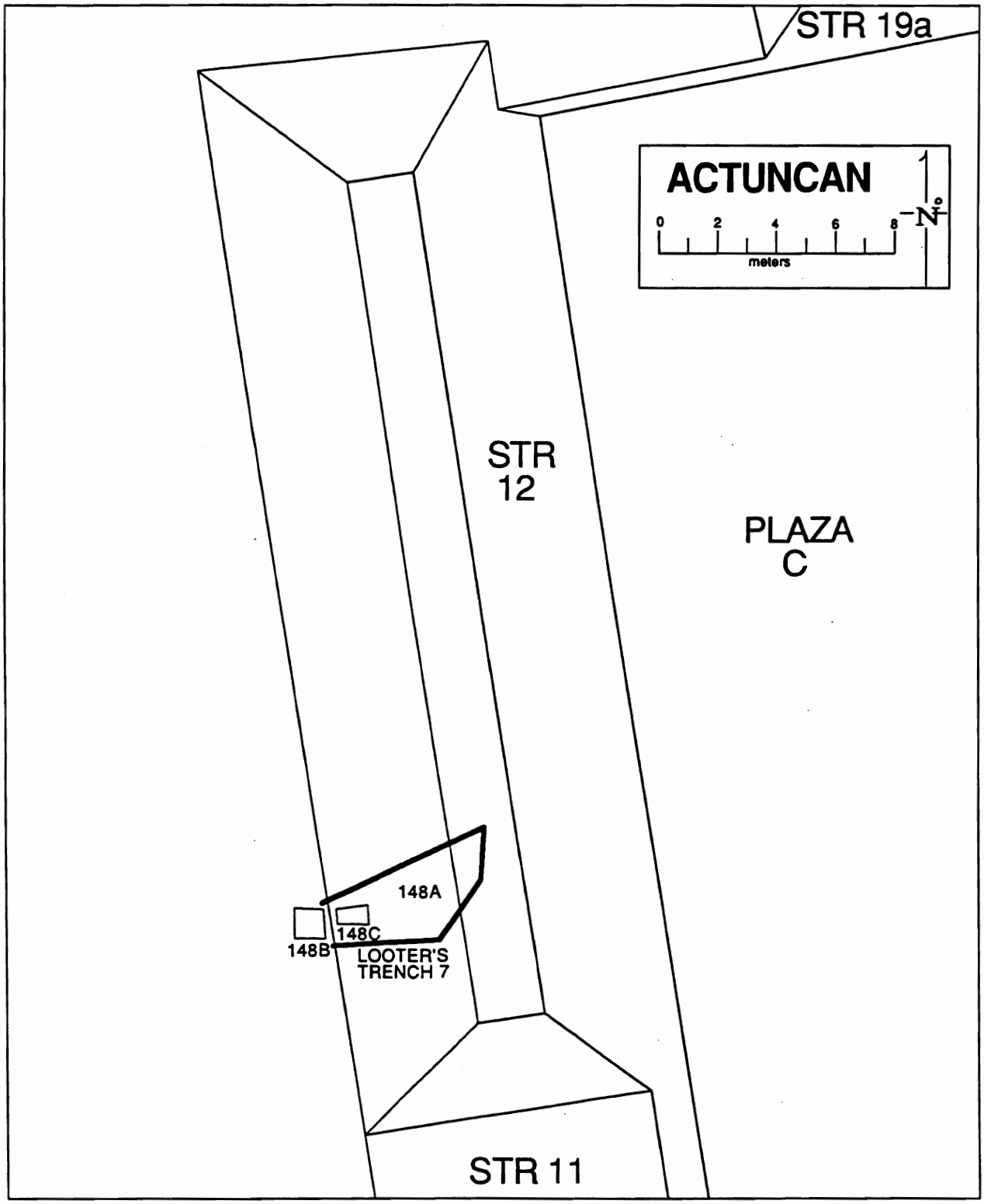

Figure 3. Locations of Operation 148 and Looter's Trench 7.

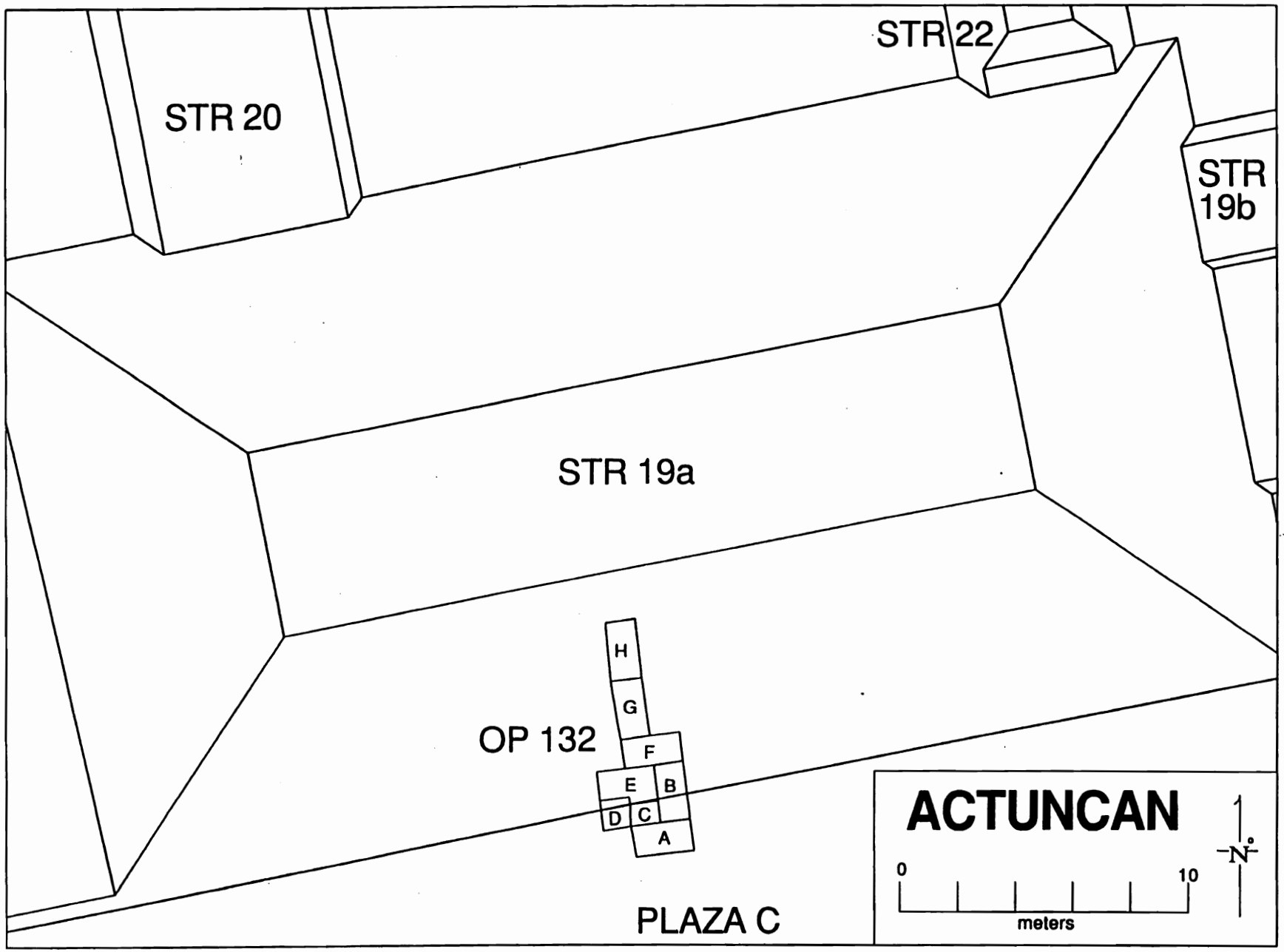


Figure 4. Location of Operation 132.

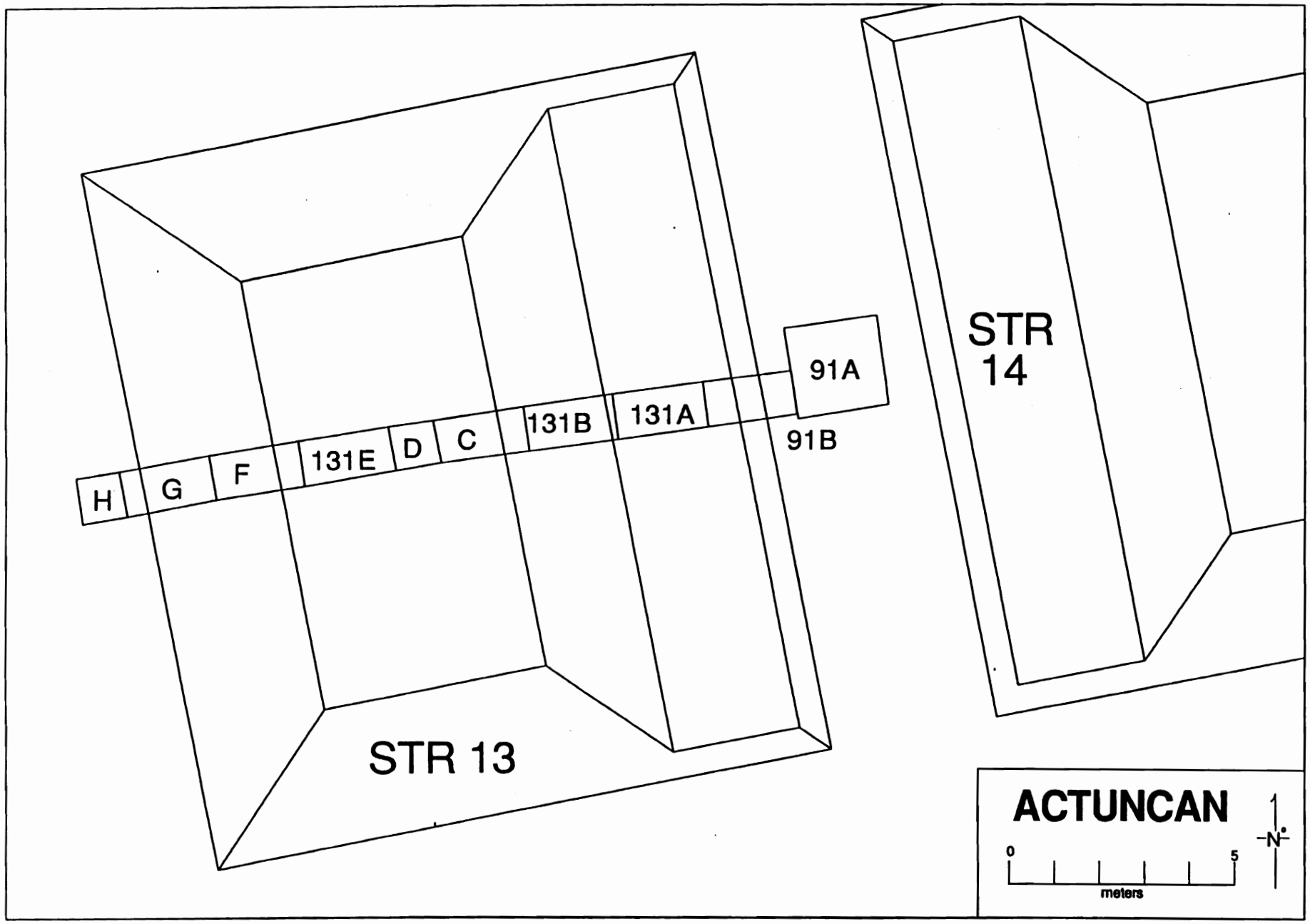


Figure 5. Locations of Operations 91 and 131.

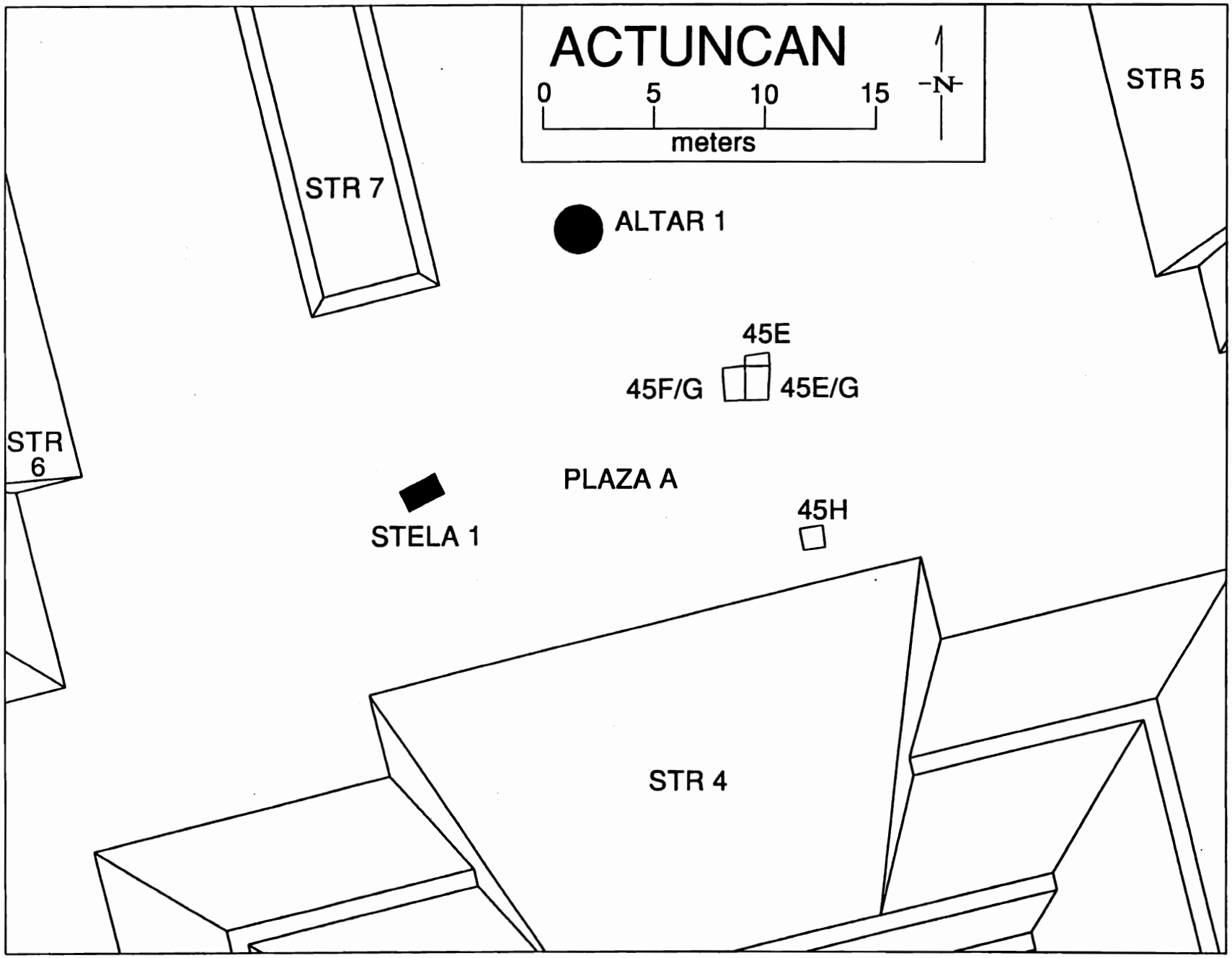


Figure 6. Location of Operation 45.

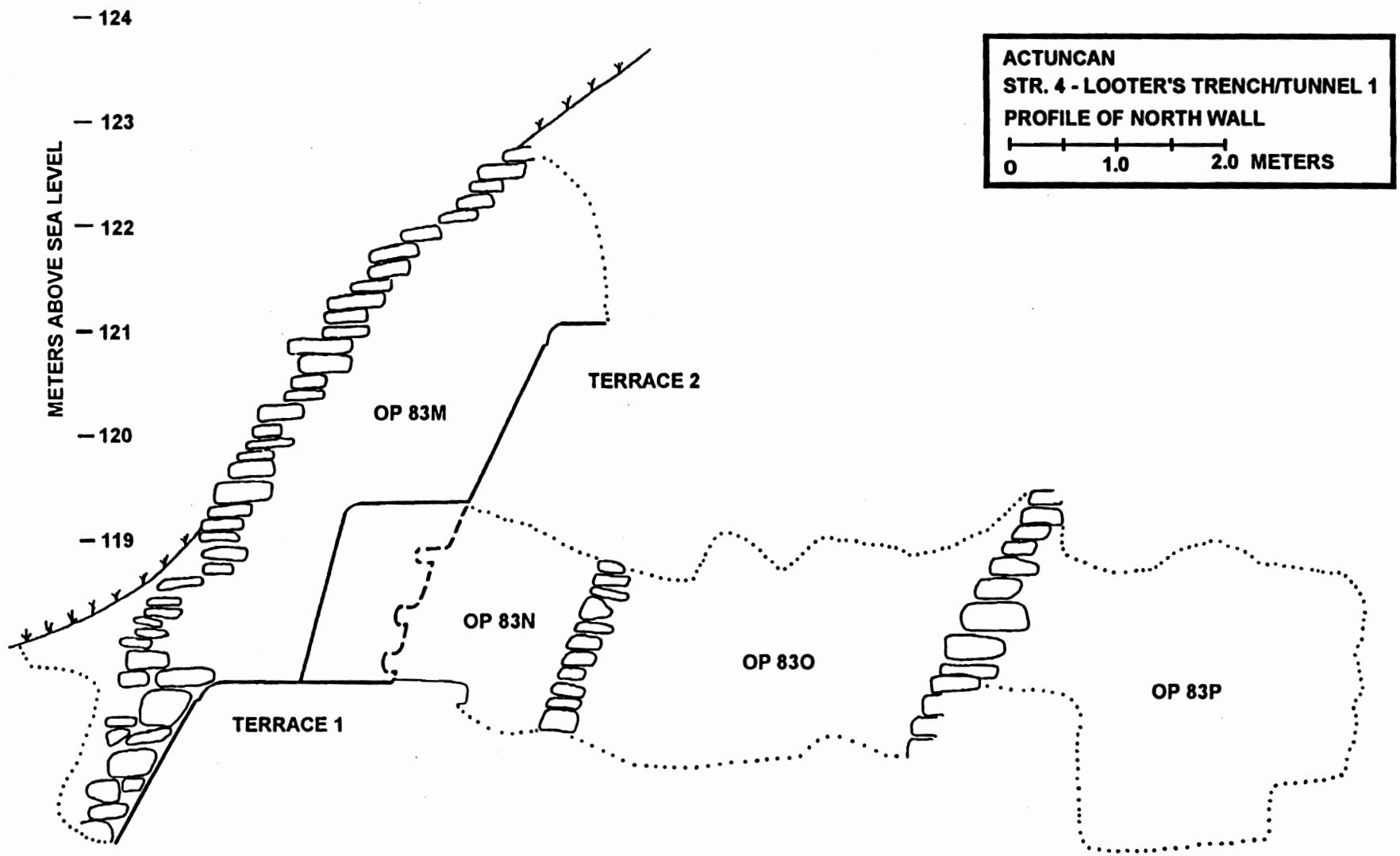


Figure 7. Structure 4, Looter's Trench/tunnel 1, profile of north wall.

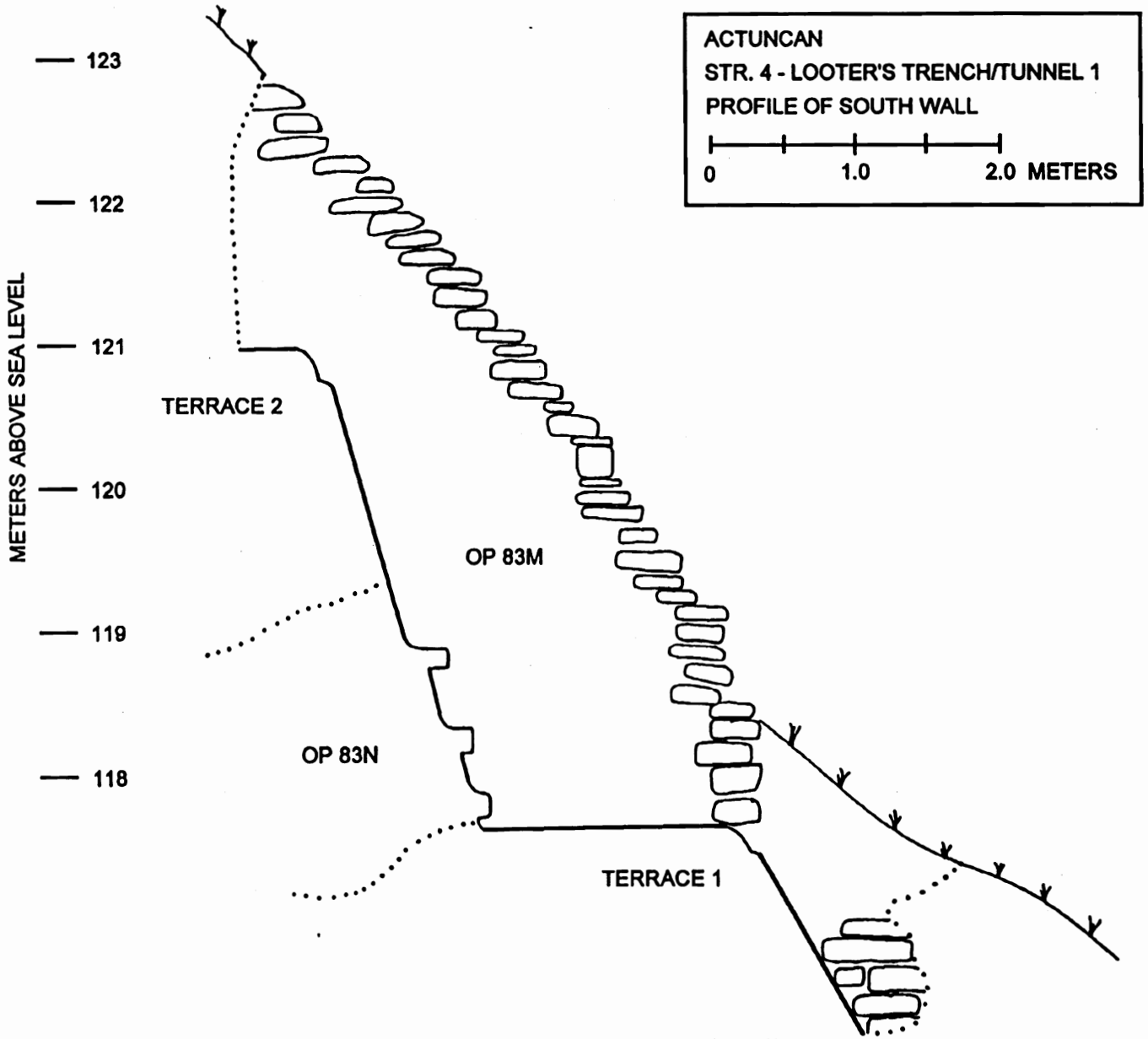


Figure 8. Structure 4, Looter's Trench/tunnel 1, profile of south wall.

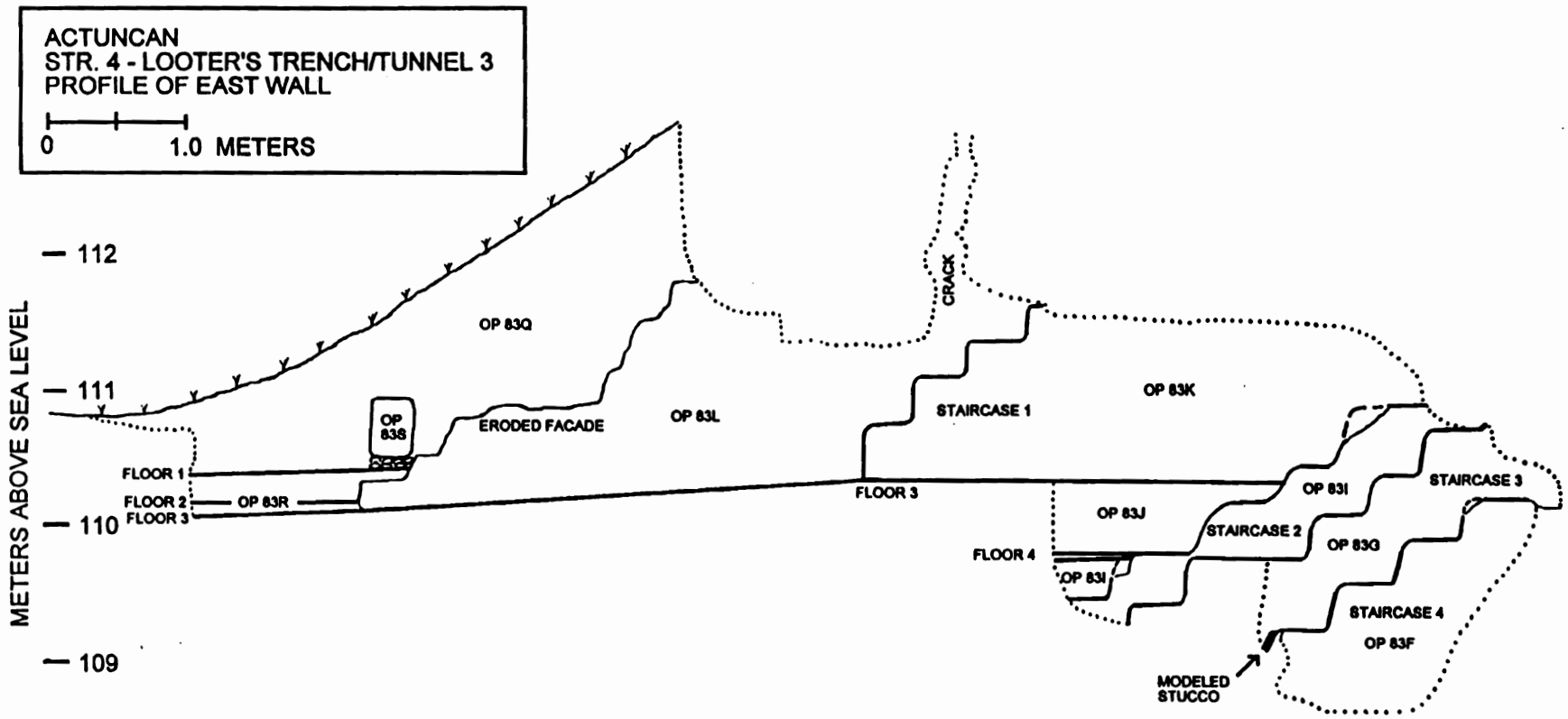


Figure 9. Structure 4, Looter's Trench/tunnel 3, profile of east wall.

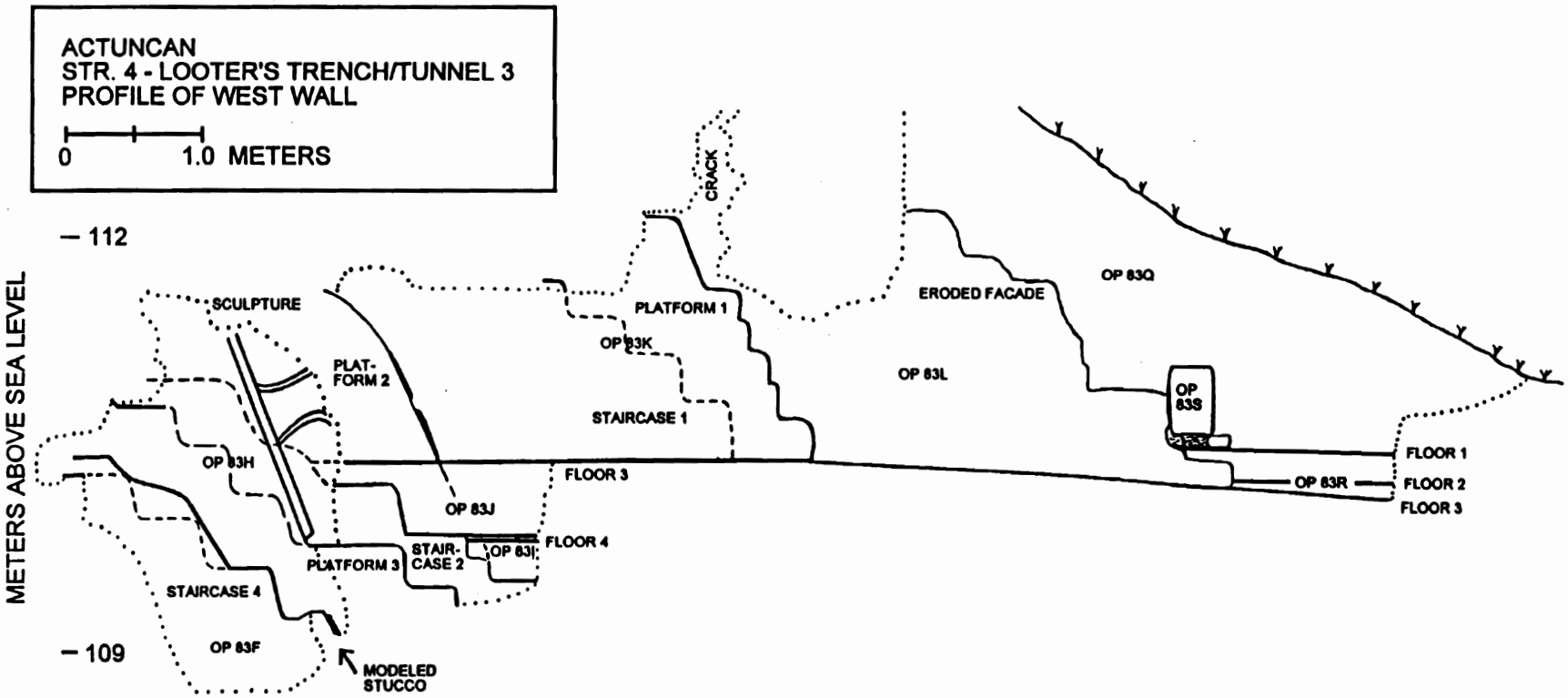


Figure 10. Structure 4, Looter's Trench/tunnel 3, profile of west wall.

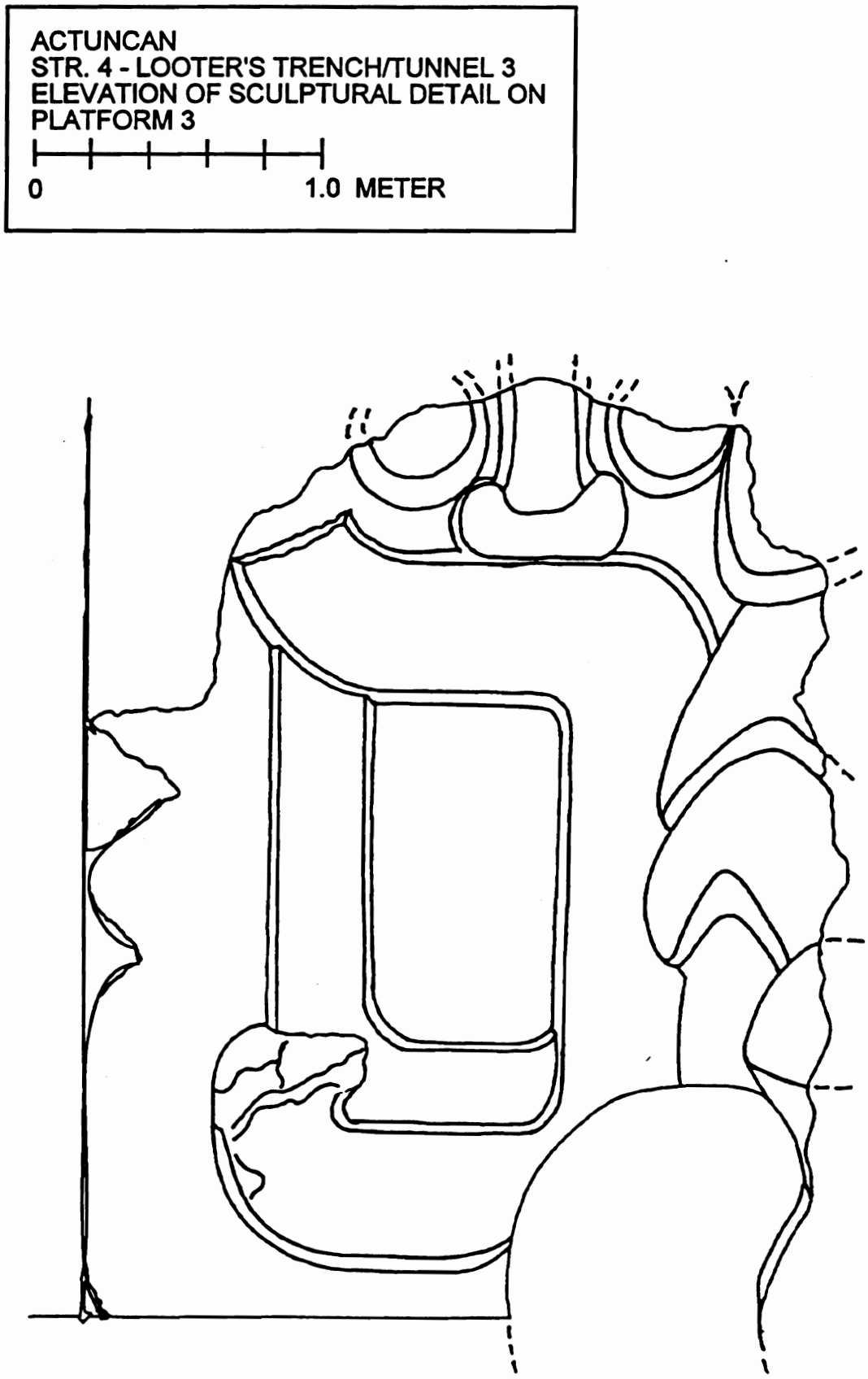


Figure 11. Structure 4, Looter's Trench/tunnel 3, Platform 3, elevation view of sculptured facade.

# 1994 Fieldwork at San Lorenzo: Excavations at an Outlier Community

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University of Pennsylvania

San Lorenzo is a small outlier site, located approximately 1.5km northeast of the site core of Xunantunich on the opposite bank of the Mopán River. The research at San Lorenzo has been an important component of the Xunantunich Archaeological Project (XAP) since 1992 for several reasons. First, it includes the project's only extensive excavation to date of domestic structures outside the site cores of Xunantunich and Actuncán, although more are planned. Second, it is the only intensive study of a rural community in the Xunantunich hinterland, providing data crucial for understanding the nature of the larger Xunantunich polity, which included but was not limited to the regional elite at Xunantunich. Finally, the research promises to provide comparative data for more detailed excavations planned along the settlement transects. The following report presents the data from San Lorenzo to date, focusing on the results of the 1994 field season.

Before continuing this report, a note on the name San Lorenzo is in order. San Lorenzo is applied in its broadest sense to the name of the Juan family ranch upon which the site is located. The ranch is quite large, however, and includes hundreds of mounds and other ancient features. This larger settlement area, perhaps better thought of as "Greater San Lorenzo," appears to contain several spatially distinct clusters of mounds which may correlate to the residential communities of different social groups, or could reflect different activity areas; they remain largely unknown, however. One of these discrete clusters, located just south of the Nabitunich Hotel on the southern edge of the Juan ranch, is the object of my research, and I will use the name San Lorenzo to refer specifically to that group in this report.

The principal goal of the current research at San Lorenzo is to reconstruct the social and political organization of this rural community in the Terminal Classic period. The spatially discrete nature of the settlement remains suggests an emic social unit that I call a community, broadly defined. Further, the amount of formal variation between mound groups in both size and lay-out suggests a fair degree of internal social and/or economic differentiation. Excavations have yielded rich primary deposits dated to the Terminal Classic ceramic phase (TC), providing a solid artifactual database to complement the formal variation mentioned above and the different types of architecture exposed in different groups. Combining these three data-sets, differences between households within the community can be reconstructed with a high degree of confidence. These structural differences, as well as the differential distribution of various activities —ritual, economic, and others — are two important aspects of community organization that are visible in the archaeological record. Preliminary results from the 1994 season give me confidence that, with further clearing excavations, we will be able to construct a fairly detailed synchronic picture of the San Lorenzo community in the Terminal Classic period.

**Previous Research at San Lorenzo**

XAP first surveyed San Lorenzo in 1992 to obtain settlement data from the Xunantunich hinterland for comparison with that around the site core (Yaeger

1992). In 1992 and 1993, John VandenBosch mapped parts of "Greater San Lorenzo" located just to the north as part of his investigations of the linear cobble features there (VandenBosch 1992, 1993). The combined results of these surveys document two interesting features of the local settlement: 1) discrete clusters of ancient settlement above the household level, and 2) a high degree of variability in mound and patio group morphology. These observations seem to be applicable to the wider Xunantunich hinterland, based on preliminary assessments of data from the Xunantunich settlement survey directed by Dr. Wendy Ashmore (Ashmore et al. 1993; Ashmore et al. this volume; Yaeger and Connell 1993).

Within the Greater San Lorenzo settlement area, there are discrete concentrations of mounds and other ancient features. One of these, distinguished spatially as well as by its construction, is the area of enigmatic cobble mounds investigated by VandenBosch (1992, 1993). A second is the group I refer to as San Lorenzo, a cluster of eight mound groups and 13 isolated mounds located on a series of alluvial terraces of the Mopán River, some of which were modified by the ancient Maya (Woods, Holley, and Dalan 1993). I suspect the existence of at least one other spatially discrete settlement cluster and plan to conduct more rigorous spatial statistical analyses to test this proposition. San Lorenzo and similar group-focused patio clusters (*sensu* Ashmore 1981) documented in the Xunantunich hinterland probably represent the remains of rural corporate communities that formed an important component of the Xunantunich hinterland, possibly similar to the *pet kah* type of village documented for the early colonial period (Marcus 1983:469). Other feature clusters, like the cobble mound group mentioned above, may be non-residential, possibly related to localized and specialized economic activities (VandenBosch 1993).

The second striking feature of the San Lorenzo settlement is the remarkable diversity of size and lay-out of the mound groups that comprise the settlement clusters. Many factors influence architectural morphology, including wealth and status (Haviland 1982; Tourtellot 1988b), length of occupation (Ford and Arnold 1982), the domestic developmental cycle (Haviland 1988; Tourtellot 1988a), the function of the structure or group (Haviland 1981; Leventhal 1983; Tourtellot 1988b), and the ethnicity of the occupants (Leventhal, Demarest, and Willey 1987). While survey is useful for documenting morphological variability of a large sample of archaeological remains, detailed excavation data is required to address the complex interaction of these factors in structuring differences between mound groups. The potential to explore these issues in a fairly variable yet spatially d
discrete community motivated the initiation of excavations at San Lorenzo in 1992.

Sabrina M. Chase began excavating at San Lorenzo in 1992 and conducted a full season of research in 1993. Chase (1992, 1993) has presented the goals, methods, and results of this research elsewhere. However, a brief overview of her work provides the background necessary for understanding the fieldwork carried out in 1994. The 1992 excavations constituted the pilot work at San Lorenzo, and Chase excavated several units in a patio group now designated SL-22 (the evolving nomenclature at San Lorenzo is discussed below). These preliminary investigations

identified three important facts about this group: 1) Op. 72 revealed that the masonry of Str. 2 was composed of nicely cut limestone blocks; 2) Op. 70 suggested that the elevated patio of the group was erected in one construction phase, its height produced mostly by altering the natural hillside; 3) Op. 71 demonstrated an occupation sequence from the Late Classic I phase (LCI) to the Terminal Classic (TC) at the group, marked by four or five construction episodes on the structures south and east of the patio.

A major goal Chase's research in 1993 was to identify activity areas on the patio surface of SL-22. Clearing along the front (patio-facing) sides of Strs. 1, 2, and 3 revealed differences in platform construction, especially on Str. 3, but only a light scattering of occupation debris in front of the structures. However, the corners of the patio where structures came together contained dense and well-preserved refuse deposits, probably the result of patio debris being swept into the nearest corner (Chase 1993). The cultural materials on the plastered surface of the patio included ceramic types diagnostic of TC, while a stratified refuse deposit behind Str. 2 contained materials ranging from LCI to TC. Although detailed analyses of the distribution of artifact types within this patio group have not been conducted, Chase observed a higher density of jars in the southeast corner of the patio, associated with Str. 3. Further data from this group is discussed below.

A second goal of the 1993 season was to expand our understanding of group variability at San Lorenzo by testing a sample of groups stratified by size, internal organization, and location. To accomplish this goal, Chase identified five types of groups and tested seven mound groups within San Lorenzo. The chronology reconstructed from the testpit data suggests that there was no uniform occupation sequence for the household groups at San Lorenzo. Although most groups were occupied in the Late Classic II phase (LCII), not all were occupied in the TC and a few show initial occupation as early as the Early Classic phase (EC). Furthermore, distributional analyses of the ceramic material, unavailable to Chase when she wrote her preliminary report, show that smaller mound groups tend to lack polychrome vessels and, interestingly, do not have the incensarios or dishes usually associated with ritual activity (Lisa LeCount pers. com. 1993; Yaeger and LeCount in prep.).

The excavations completed by Chase in 1992 and 1993 yielded some very interesting results, and I was delighted to have the opportunity to continue the work at San Lorenzo in the 1994 season. Although my interests differ somewhat from Chase's, the quality of her recording has maximized the utility of her data for my own research, resulting in a nearly seamless data set. The 1994 excavations discussed below rest on the sound foundation that Chase laid in 1992 and 1993.

**Objectives for the 1994 Season**

In planning for 1994, I envisioned the season as the first of at least two years of additional fieldwork at San Lorenzo. Accordingly, I set forth two specific goals that advanced the larger research objective of understanding community

organization at San Lorenzo. First, I needed to develop a typology of mound groups to guide the excavation sampling strategy. Second, I wished to begin extensive clearing of a cross-section of mound groups at the site, hoping to end the season with three groups significantly cleared. Excavations would begin by completing Chase's work in SL-22, clearing in front of Strs. 1, 3, and 4 to uncover in situ refuse and running trenches across Strs 1 and 3 to better understand their superstructures. Following that, I intended to excavate two other groups belonging to types distinct from SL-22. As is often the case, these goals required minor adjustments because of unexpected findings. Specifically, the extra time spent working in SL-22 after the discovery of a vaulted superstructure, coupled with preliminary testing demonstrating no solid TC component in two groups, kept us from completing excavations in three different types of groups. We were able to finish work in SL-31, complete our intended work in SL-22, and begin work at SL-24, as well as test SL-20 and SL-25. The results of excavations in each of these groups will be discussed in turn, following a short description of the group typology employed and the sampling strategy implemented at San Lorenzo.

**Documenting and Classifying Group Variability**

San Lorenzo's location in a cattle pasture made the morphological variability between mound groups quite obvious. Systematic survey and mapping of 27 hectares encompassing the core of San Lorenzo and some scattered remains to the south (Yaeger 1992) and of the settlement remains centered on the cobble mound features just north of the core of San Lorenzo (VandenBosch 1992, 1993) provide us with the data to postulate boundaries for several corporate communities within Greater San Lorenzo, as discussed above. It also facilitates the construction of a typology of mound groups found in these communities.

Chase (1993:129-131) developed a typology of mound groups at San Lorenzo consisting of five types, based on the morphological criteria of size and internal complexity and further taking into account the location of each group vis-a-vis other groups and topographic features. Unsatisfied with the conflation of locational and formal criteria, I suggest an alternative typology which is based on the San Lorenzo data, but uses variables being recorded on site forms by the Xunantunich settlement survey so that it cab be applied easily to sites documented elsewhere on the project. The basic unit of analysis for the typology is the mound group, defined using criteria similar to those for a "site" on the Xunantunich settlement survey. Any mounds or patio groups within 25m of one another are considered to be part of the same group; mounds or other features located more than 25m from other features are assigned to their own site/group. This definition attempts to limit archaeologically identified groups to the physical remains of a single household (or a series of single households over time).

Using these criteria, the groups mapped in 1992 were re-categorized and re-labeled. The mounds around San Lorenzo were mapped in two episodes, resulting in the two systems of nomenclature seen in the 1993 report. I have re-assigned labels to these groups using the conventions of the XAP settlement survey of

designating the survey area with a prefix ("SL" for San Lorenzo) and sequentially numbering sites within each area (*e.g.*, "SL-22"). Archaeological features are numbered within site. These new labels may cause some confusion for those familiar with previous work at San Lorenzo, but they will increase the compatibility between the data-sets from San Lorenzo and from the Xunantunich settlement survey.

The typology I propose uses two simple criteria for classifying the mound groups at San Lorenzo which together account for a great deal of the morphological variability at the site: the presence or absence of a formally defined non-mound space (i.e., a patio), and the number of apparent architectural foci (patios or mounds). This leads to a simple four-type classificatory scheme shown in Table . Many other variables could be used to divide these sub-types even further. Perhaps the most salient and analytically important of these is the height of the associated mounds, which varies within each of the four types defined. Also, some features have a different shape (i.e., pyramidal mounds) or composition (i.e., the linear cobble mounds surveyed and mapped by VandenBosch (1992, 1993) which could be used to define variants of these four basic types.

The spatially discrete settlement cluster I have tentatively identified at San Lorenzo consists of five Type IA patio groups, 14 Type IIA groups, and three Type IIB groups. I initially identified group SL-24 as a Type IIB group, but excavation revealed a formal plastered patio surface, forcing its re-classification as a Type IA group with only two structures. The geographical core of the community is a set of four Type IA groups (SL-22, 23, 24, and 25). There is only one group near San Lorenzo that meets the criteria for Type IB (SL-13). By pure spatial criteria, it appears to lie just beyond the edge of the San Lorenzo community. However, its size suggests it may have been a focus for several social groups in the greater San Lorenzo area, and we plan to investigate it in 1995.

| | Sub-Type: | Possible variants: |
|---|---|---|
| ıup | A. Single Patio | Number of structures<br>Height of structures<br>Number of sides enclosed<br>Height of patio<br>Presence of certain types of structures (*e.g.*, pyramids), or of other features (*e.g.*, chultunes) |
| | B. Aggregated Patios | Same as above |
| | A. Single Structure | Structure plan (amorphous, linear, rectilinear)<br>Structure height<br>Structure profile (regular, terrace-like, composite)<br>Structure composition (cobble, limestone, mixed) |
| | B. Multiple Structures | Number of structures<br>Height of structures<br>Distance apart<br>Relative positioning/organization<br>Presence of other features, or of specific types of mounds |

**Table 1: Group Typology for San Lorenzo**

## Clearing a Sample of Three Mound Groups

Our first excavation goal for 1994 consisted of finishing clearing excavations in SL-22, a Type IA group with an elevated patio and four structures. Following this, we sought to clear significant portions of one Type IIA and one Type IIB group. The first Type IIA group (SL-20) excavated contained no TC deposits, nor did the first Type IIB group (SL-25) tested. SL-31, however, presented us with a Type IIA group occupied in the Terminal Classic, and we cleared it extensively. Excavation also revealed a significant TC occupation at SL-24, a group we had identified initially as a Type IIB group but later reclassified as Type IA.

SL-22 (Ops. 110, 113, & 129):

Group SL-22 is a typical patio group. Four structures demarcate three sides of an elevated patio, leaving it open to the west. As in the Plaza Plan II defined at Tikal (Becker 1971), the tallest structure (Str. 2) lies on the eastern side of the patio, rising 2.5m above the patio surface. One-meter high Str. 1 delimits the northern edge of the patio, while Strs. 3 and 4 form the southern edge of the patio. Str. 3 is 2m high, and Str. 4 is a low platform attached to the western edge of Str. 3. Previous excavation had cleared most of the west face of Str. 2, as well as considerable portions of its north side and northeast corner. These excavations had also exposed 2m of the north side of Str. 3 and 5m of the south side of Str. 1. Our work in 1994 continued clearing the patio in front of Strs. 1 and 3, extending the latter operation to include parts of Str. 4. Work on Str. 3 included clearing its two frontal terraces and some 2m of its west face. Furthermore, we placed bisecting strips across Strs. 1 and 3 to identify any superstructural remains and the architecture of the platforms' rear (off-patio) faces. Similar goals motivated the placement of testpits on Str. 2. We

excavated a total area of 61m$^2$ at SL-22 this season, bringing the total excavated area at the group to around 110m$^2$. The discussion of these excavations will be organized by structure.

Str. 1 (Op. 113): Chase (1993) found a rich refuse deposit in the corner of the patio at the junction of Strs. 1 and 2 (Ops. 85J/4-D1 and 85G/4-D1) and cleared west along the patio face of Str. 1 for several meters. Leaving a 50cm balk between the 1993 and 1994 units, we extended excavations 3m further along the south face of Str. 1, as well as clearing a 1m wide trench north across the mound. These excavations resulted in a fuller understanding of the architecture of Str. 1, revealed a stratified midden behind the structure, and exposed more primary deposits suggestive of the activities associated with Str. 1.

Chase (1993:139) tentatively identified two stones in Op. 86C as the eastern edge of an outset stairway. Work in 1994, however, uncovered new evidence suggesting that those limestone blocks were in fact wall stones tumbled from the south facing of Str. 1. Just west of these stones, we exposed the badly disturbed remains of the true stairway in Ops. 113B and 113C. This axial stairway was apparently composed of three steps constructed using cobble core facings and limestone finishing blocks. Of these, only one cobble of the lowest step remained in situ with a very eroded piece of limestone in front of it. Three other lines of evidence support the conclusion that this was indeed the locus of the stairway despite the poor preservation of the masonry. First, the cut limestone masonry that forms the south platform facing of Str. 1 in both 113D and 86A does not continue behind the stairway, where a core facing of large cobbles separates the body of the platform from the fill of the stairway. Secondly, the stairway fill is an orange-red clay matrix with many artifacts, especially LCII ceramics. This matrix is distinct from the refuse, collapse, and soil that accumulated against the facing of Str. 1 in Ops. 86A and 113D. Third, the platform facings of Str. 1 rest on a "footing" of cobbles set just below the patio level. This building technique is very common at San Lorenzo (Chase 1993). A similar cobble footing outlines the stairway, neatly corresponding with the section of the platform devoid of limestone-block facing. Finally, removal of the balk between Op. 113B and Op. 86A revealed the eroded blocks that once formed the eastern edge of the outset stairway and its underlying cobble footing.

Most units along the southern side of the structure uncovered a scatter of TC occupation debris on the eroded remains of the plastered patio surface. This material was much denser in two areas: the corner of the patio at the intersection of Strs. 1 and 2 (comprising Ops. 85J/4-D1 and 85G/4-D1, excavated in 1993) and the corner formed by the western edge of the outset stairway (Op. 113D/5-D1). These two loci were apparently places where refuse and debris from the patio surface accumulated until it warranted moving it to a more permanent midden. The deposit in Ops. 85J and 85G was quite dense and included pieces of bone, obsidian blade fragments, some chert tools and debitage, as well as many sherds, including the remains of eight nearly complete vessels (Chase 1993:141). In contrast, the refuse deposit found in Op. 113D was less dense and less diverse. The deposit lacked lithic

material or ground stone, and the only faunal remains were one piece of mother-of-pearl-like shell and one fragment of a deer antler. The majority of the artifacts in the deposit were potsherds, and only a limited number of vessel types are represented. Ubiquitous domestic forms such as the Mt. Maloney bowl and the Cayo Unslipped jar (Gifford 1976; LeCount 1992, 1993) are conspicuously absent in this deposit. Instead, ash-tempered sherds from Belize Red types dominate, apparently coming from a limited number of vessels, although we have reconstructed only a few of them so far. These include oven-foot tripod dishes of the McRae Impressed and Platon Punctated-Incised types and several thin-walled barrel-shaped vases with incised decoration including "pseudo-glyphs" belonging to the Martins Incised (*sic*) type. Chase recovered some of these same forms from deposit in Ops. 85J and 85G.

The ceramic types discussed above, while found associated with Strs. 2, 3, and 4, occur in a much higher frequency in deposits associated with Str. 1. Furthermore, the deposits associated with Str. 1, especially those from Op. 113, lack some artifact types common elsewhere in this patio group. Most notable is the nearly complete absence of artifacts associated with food preparation and storage, such as Cayo Unslipped jars or Mt. Maloney bowls, and manos or metates; also striking is the scarcity of faunal remains. These types of artifacts and ecofacts are found in high frequencies associated with Structures 3 and 4, especially the latter. Instead, the refuse associated with Str. 1 is dominated by elaborately decorated ash-ware dishes and vases, thought to be important serving vessels, especially for ritual meals. These artifact distributions suggest that Str. 1 was an important and specialized locus for ritual activities in SL-22, especially ritual meals. It might further be pointed out that it is the northern-most structure of the patio group, north being a direction associated with divine ancestors in Maya cosmology (e.g., Ashmore 1991). Furthermore, the ease of accessibility of this structure and its relatively open superstructure (discussed below) suggest the possibility of wider community participation in this activity (Braswell, Keller, and Yaeger 1994).

The 1m wide strip across Str. 1 produced no evidence of a superstructure on the platform, apart from some pieces of fired daub which suggest a perishable bajareque building. However, the platform surface is heavily disturbed by several round holes, ca. 40cm deep. These could be the result of human disturbance, but look more like the root scars of corozo palms. Because of the extensive disturbance, we left one 2m long unit of this strip unexcavated. Extending our strip 2.5m beyond the platform's north edge, we located a stratified refuse deposit sloping against northern platform facing. The northern facing of Str. 1 was given the field designation Carrot Wall.

Carrot Wall is unusual in its masonry. Its uppermost courses consist of large limestone cut blocks set veneer style, similar to the southern facing of Str. 1 discussed above (Beet Wall), and to the western face of Str. 2 (Artichoke Wall). However, these blocks rest on a 15cm thick band of smaller faced limestone blocks, including many thin (ca. 2-4cm thick and 4-8cm wide) limestone slabs, which in turn lay on a cobble footing that is at least two courses thick. Since this unit did not

continue to sterile, it is possible that further cobble courses lay below. The junction between the small limestone slabs and the large veneer blocks matches the top of the LCII midden stratum, which in turn is partially overlain by a 15cm thick stratum of nearly sterile yellow sandy clay. The TC refuse deposit sits atop the sandy clay and the highest parts of the LCII stratum, covered by fill materials that have eroded out of the core Str. 1. The sandy clay lens is apparently the result of natural erosion processes, whether one sudden erosion event or the gradual accumulation over several decades is unclear. If it was the latter, it apparently was during a span of time when little or no refuse was being deposited in this part of the group, suggesting a hiatus of activity at this structure, or perhaps at the group as a whole. Regardless, the source of the colluvium is probably a natural sandy deposit located approximately 100m upslope, and Chase found similar sandy clays in her testpits at SL-23 (Ops. 95A and 95B), located much closer to this sandy deposit.

Given the evidence for modifications of Str. 2 discussed below (Op. 129D), it seems quite possible that the large-block masonry portion of the wall pertains to a construction episode distinct from and subsequent to that of the smaller limestone block band. The midden deposits that lie against the wall would date such a rebuilding to the TC or earlier, while the fill materials from the core of Str. 1 — although fairly superficial — contained Late Classic materials, predominately LCII, as did the fill that had eroded onto the refuse deposit discussed above. This data strongly suggests a LCII construction date for the final phase of Str. 2, with the possible exception of the modification to Carrot Wall, while the associated refuse deposits point to continued use into the TC.

Str. 2 (Op. 129): Chase (1992, 1993) cleared much of the west side of Str. 2 (Ops. 72 and 85), defining the structure's central staircase and the intersection of the platform with Strs. 1 and 3. She also cleared the northwest and northeast corners of the structure and placed one testpit along the eastern edge of the platform (Op. 90). Our work in 1994 included placing two units into the top of the structure to look for remains of a superstructure, excavating a 1 x 1m testpit behind the structure to obtain flotation samples from the stratified midden Chase found there, and exposing part of the south wall of the structure.

Str. 2 is the largest structure in SL-22, and its core facings (Artichoke Wall on the west side of the platform, Broccoli Wall on the south, and Celery Wall on the east) are constructed of limestone blocks set veneer style. The front side of the platform, facing the patio, contains the best quality masonry and uses larger blocks. Access to the top of the platform from the patio was via an axially-placed staircase. We have no firm evidence for multiple terraces on the body of the platform, although the in situ southern facing of the structure and pattern of fall there suggest the possibility of multiple terraces.

Our work on the platform summit consisted of clearing two units (Ops. 129A and 129B) to look for any evidence of a superstructure. After a few uninformative lots, we discontinued these units with the exception of the eastern half of Op. 129A.

This latter area was excavated another 50cm in an effort to date the fill of the structure. However, the lots produced few artifacts, and the nature of the matrix — limestone rubble in a sascab-like matrix — differed significantly from the fill of either Str. 1 or Str. 3. Near the base of the unit we exposed a low north-south running line of small, shaped cobbles, three courses high. It is very difficult to understand this architecture, since it runs along the very edge of the unit and is only exposed for a length of 1m, but it does suggest the possibility of some kind of masonry superstructure. Chase (1993) found a fair amount of burnt plaster and some burnt daub in the TC stratum of the midden behind Str. 2 (Op. 90G), which she interpreted as evidence for a burnt superstructure consisting at least partially of perishable materials. The question of a superstructure on Str. 2, therefore, remains open.

We placed one 1 x 1m testpit along the eastern side of Str. 2, directly north of Chase's Op. 90G. I wished to obtain some flotation samples for comparison with those taken from deposits associated with Strs. 1, 3, and 4. Furthermore, stratified middens are rare at San Lorenzo, and this operation would increase the artifact sample from this good stratified context. The testpit reached a depth of 150cm below ground surface without reaching a sterile context. I stopped the unit 8cm below the cobble footing of the eastern facing of Str. 2 (Celery Wall) in what appeared to be an ancient surface with scattered refuse and charcoal. This is presumably the ancient ground surface upon which Celery Wall was erected.

Some 75cm of stratified LCII and TC midden slope down from Celery Wall, covered by collapse and slumped fill from Str. 2. Celery Wall is composed of small- to medium-sized limestone blocks, clearly larger at the top, set upon a one-course footing of roughly-faced cobbles. An unusual feature of Celery Wall is a 5cm outset some 60cm above the base of the platform. This feature, too narrow to be a terrace and clearly not a step, seemed enigmatic at first. However, after comparing this feature with evidence of modifications to Celery Wall of Str. 1, I tentatively interpret this feature as a basal molding. The size of the limestone blocks that form the outset and the masonry above it suggest the possibility of two construction episodes, raising the intriguing possibility that the upper section of Celery Wall was constructed with a basal molding relative to the ancient ground/midden surface at the time of construction. We can postulate a LCII/TC construction date from the midden stratigraphy: the top surface of the LCII midden —the ancient land surface at the end of the LCII or beginning of the TC periods —abuts Celery Wall approximately 15cm below this outset. For comparison, the 4cm-wide basal molding on Dewberry Wall on Str. 3 is 4cm wide and is located 16cm above Oregano Floor. However, excavation into the core of Str. 2 is necessary to test these ideas more convincingly.

Str. 3 (Ops. 110A-K, 110N, 110O, 110Q-Y): In 1992, Op. 71 tested the raised area connecting Strs. 2 and 3, revealing four successive plaster floors and eventually uncovering a crypt burial containing the remains of a single adult with three inlaid teeth, two decorated with jade and the third with a darker mineral, possibly pyrite

(Chase 1992:51). The following year, Op. 85O exposed 1.5m of the northern face of Str. 3. Excavations in 1994 concentrated on clearing the northern edge of the structure to determine its final architectural form. In addition, we excavated a 1m wide strip across the structure and cleared more of the raised area between Strs. 2 and 3.

Str. 3 witnessed a great deal of architectural modification, especially in the LCII and TC periods. Unfortunately, because it was not buried by subsequent construction, much of the TC architecture is very poorly preserved: the final plaster floors have dissolved away and are often identifiable only by their ballast; walls have tumbled; pedogenesis has radically transformed the uppermost matrix so that stratigraphy reflects soil formation processes as much as it does ancient behavior. These factors complicate the task of reconstructing a complete picture of the final layout of Str. 3. Further clouding the issue, it seems that Str. 3 did not conform to the symmetrical ideal that archaeologists often assume for Maya architecture. A discussion of the structure is best accomplished by describing the earliest reconstructable architecture and then building upon that foundation, much as the Maya builders did.

The earliest version of Str. 3 that we can discern is a low platform with limestone block facings (Blueberry and Cherry Walls on the northern and western sides, respectively) and capped by a plaster surface (Fennel and Basil Floors). The platform was at least 8m long and probably some 4m or so wide. Its 50cm height suggests that an outset step provided access to the platform surface, probably around the area of the in situ step onto the second terrace of the platform discussed below. The second construction consisted of a slightly smaller platform placed on top of the original one, leaving a 60cm wide terrace on the northern side of the structure and a slightly wider (120cm) terrace on the west side. This platform's facing was composed of several courses of medium-sized, roughly-shaped cobbles and limestone blocks (Apricot and Quince Walls). This second platform was 40cm high, and a axially-placed 15cm step provided access from the lower terrace to the plastered surface (Oregano Floor) of the platform. This step was placed before Apricot Wall was built. Based on a few temporally diagnostic ceramic sherds, this second construction episode dates to the Late Classic period. Although the plaster surface which caps the platform (Oregano Floor) is directly associated with a vaulted masonry superstructure to be discussed below, there are no subsequent terrace features that run the length of Str. 3. Thus, I cannot establish any stratigraphic links between the final construction activity on either side of the step and will discuss them separately.

On the eastern end of Str. 3, there had been a 45cm gap between Apricot Wall and Str. 2 which was filled with an unusual matrix resembling prepared and poured plaster. This plug was then capped by Mole Floor at the same elevation as Oregano Floor. Together, these floors comprised a plaster surface that ran along the north side of the vaulted superstructure, passing between it and the southern edge of Str. 2, leading to a wider area east of the Str. 3 superstructure. This flat area witnessed at least three subsequent modifications that can be firmly dated to the TC: there were

several large fragments of TC vessels broken on Mole Floor directly under two of the additions, and the third stratigraphically postdates the other two. The first modification consists of a 25cm high plastered platform of very rough limestone blocks, presumably abutting the northern wall of the superstructure, although we have not excavated there yet. This small platform extended some 2m out from the superstructure, leaving a 1.75m alley between it and Str. 2. Its western edge probably lies in the balk between Ops 110W and 110K, making its width approximately 2m. A subsequent modification extended this platform to the east an undetermined distance, while the third modification closed the alley between Strs. 2 and 3. This final episode consisted of a 25cm high northward extension of the first modification, abutting Str. 2 and possibly covering part of the lower terrace of Str. 3. These changes did not block access to Str. 3 from the patio, but the final modification would have hindered access to the raised surface east of the Str. 3 superstructure. A fair amount of TC refuse, including many sherds from a single fine orange vessel, accumulated along the eastern edge of this final modification.

An equally complicated set of modifications comprise the final construction phases on the western half of Str. 3. At present it is unclear if the western half of the second terrace of Str. 3 was ever the same height as the eastern half. Apricot Wall runs the entire length of the terrace, but its final form is 10cm higher in the west. The use of cruder, unshaped river cobbles at the top of the platform facing here suggests that a second construction episode raised the height of the platform. However, a poorly-preserved course of small limestone blocks apparently demarcating the eastern edge of this hypothetical episode extends below the level of Oregano Floor, suggesting that the platform was bi-level by design. Further excavation is necessary to resolve this issue. Apricot is well-preserved in the western half of Str. 3, in part because the final construction episode on the west half of Str. 3 covered it almost completely. This final modification consisted of placing fill down on top of the lowest terrace of the substructure and raising it at least 25cm. The final height of the modification is unknown, since no evidence of its plaster surface was preserved, but it might have extended to the top of the Apricot Wall given the density of fallen masonry in front of this section of the structure.

The superstructure of Str. 3 is the only masonry building excavated at San Lorenzo, although others may be present in SL-13, SL-23, and possibly at SL-24. From surface indications, we can reconstruct an east-west oriented building, probably with two rooms. No doorways have been found, but I suspect they will open up to the north, facing the patio. Although our excavations have only cleared a 1m wide strip across the building, enough of it is exposed to be confident of some aspects of its layout. The northern wall of the room is 80cm thick and composed of small to medium-sized limestone blocks. The exterior face of the wall rises from the upper platform of the substructure and has a basal molding. The final interior floor of the building lies some 55cm above the exterior platform surface, suggesting that the interior of the building was reached by steps up to the doorway(s).

The western edge of our excavations exposed the face of a north-south cross-wall, again indicating the existence of at least two rooms. Opposite this wall, the eastern edge of our trench revealed a 35cm-high face of worked limestone blocks that probably constitutes the edge of a 130cm-wide bench. A passage between the front (northern) wall of the room and the bench would have allowed movement in front of the bench. Unfortunately, the rear wall of the building has clearly fallen away, today found in the thick zone of collapse debris packed with small worked stones resting on the ancient ground surface in Op. 110S, a few meters to the south. The southern-most in situ stone of the bench corresponds with a toppled line of stones that may represent the remains of the rear wall. If so, the room would have been 220cm wide.

There is ample evidence that the superstructure of Str. 3 was vaulted. The walls of the building are the only free-standing walls in the group, and they are preserved to a height of nearly 1.5m above the platform surface, higher than most wall stubs for bajareque superstructures. Along the northern edge of Str. 3, we had found a few small-to medium-sized faced limestone blocks with obliquely worked faces and tenon-like surfaces, apparently vault stones. Excavation within the room discussed above turned up over a half-dozen more vault stones from quite a small area, as well as three large rectangular limestone blocks, the largest measuring 65 x 30 x 25cm. These larger stones could be capstones, but their thickness suggests instead that they formed part of the vault spring. The unusual size of the large slabs and the unique shape of the beveled vault stones leaves little doubt that a vaulted masonry building crowned Str. 3.

Two interesting features were associated with this superstructure. The first of these is a cache pit in the northwest corner of the room described above. Our first indication of the cache was a circular break in the plaster floor, some 75cm in diameter. Careful excavation of this feature revealed a sudden decrease in the diameter of the pit after about 20cm. This smaller diameter feature is probably the original cache pit, and the wider intrusion through the plaster floor marks the removal of the cache; this hypothesis was corroborated by the fact that the cache pit was empty. The residents of this group apparently continued using the building, however, since the pit was intentionally filled to the floor level with rocks, refuse, and soil. This occurred in the TC to judge from the fill materials.

The second feature is really a composite of three features. While clearing the front of the northern wall of the superstructure, we found a rectangular area, 20cm high and at least 25cm wide, where the wall lacked any masonry. We did not excavate this rectangular void for fear of destabilizing the wall, but it seems likely to be a niche. The wall below the niche and the plaster floor at the base of the wall are darkened from repeated burning on the platform surface, further attested to by a 10cm thick deposit of very fine grey ashy matrix at the base of the wall. My alternative interpretations were that this evidence had resulted from either ritual burning activities associated with the niche or from a hearth, despite the relative lack of domestic artifacts in the surrounding matrix. The former seems more likely

given evidence from a small test unit excavated through the floor to get a clean sample of sub-floor fill to date the substructure of Str. 3 that exposed two shaped cobbles placed at right angles, directly under the ashy deposit and the niche. It was impossible to explore this feature in any detail because it was at the very edge of our excavation and under the wall of the superstructure. However the cobble lines apparently extend to the south and east, demarcating an area of looser matrix which may be fill inside a crypt. Fuller excavation is clearly necessary to better understand this intriguing suite of features.

The artifacts recovered from Str. 3 came mostly from the northern terraces of the substructure and from the patio surface directly in front of the structure. The variety of artifacts was notable, including a wide array of ceramic vessel types associated with domestic activities, as well as some serving vessels such as tripod dishes; large storage jars of the Cayo Unslipped types were quite common. All of these vessels, combined with a fair number of animal bones, mano and metate fragments, pieces of spindle whorls, chert tools, and obsidian prismatic blade fragments, seem to comprise a fairly typical domestic assemblage (see LeCount 1993 for a discussion of domestic ceramic assemblages). We also found fragments of incensarios, including a large piece of a flanged effigy censer some 3m directly in front of the niche and ashy deposit discussed above.

Str. 4 (Ops. 110L, 110M, 110P): Str. 4 is a low platform that was appended to the west side of Str. 3 at an unknown date. Prior to excavation, we thought it might have been a special function accessory building, such as a kitchen. Excavation of three 1 x 2m units confirmed this to be the case. Architecturally, Str. 4 consists of a single course of roughly-shaped limestone blocks extending west from the northwest corner of Str. 3, creating a 15cm high platform. Our excavations exposed the northeast corner of Str. 4, revealing a dense deposit of refuse associated with kitchen activities, as well as a shallow posthole and pieces of fired daub that indicate the existence of a perishable superstructure.

The surface of Str. 4 was difficult to define. Small pieces of plaster and a fairly dense pack of small limestone rocks suggest a roughly prepared plaster floor with some sub-floor ballast. The refuse deposit was, nonetheless, quite clear. Consisting of large fragments of utilitarian vessels, especially large bowls and jars of various sizes, the deposit lay along the eastern edge of the platform, sloping up against Str. 3. Other artifacts included some obsidian prismatic blade fragments and a chert bifacial "axe", all showing considerable signs of wear. A nearly complete metate was found in Op. 110P, and all three units contained unusually high concentrations of charcoal and faunal remains, including a large piece of a conch shell. All of this evidence points toward assigning Str. 4 a specific function as an area for food processing and, probably, storage — what we would call a kitchen. It is not unusual to have distinct structures serving as kitchens in patio groups (Tourtellot 1988b); like kitchens found at other sites, the location of Str. 4 is peripheral to the other structures of the patio group. We collected six flotation samples and seven macrobotanical samples from the deposits associated with this structure which should provide some insight into

the ancient plant use at San Lorenzo, including both subsistence and other uses such as firewood and building materials.

**SL-31 (Op. 138):**

SL-31 is an isolated mound located near the edge of one of the larger human-modified terraces of San Lorenzo. The eastern edge of the mound is indistinguishable from the ground surface, while the western edge consists of a gentle rise of some 80cm. A single testpit by Chase in 1993 (Op. 95G) on the northern side of SL-31 revealed a TC component at this group, and in 1994 we cleared the final architecture of the northeast and southwest quadrants of the structure. The architecture in SL-31 presented a more complex picture than we had anticipated: the northeastern quadrant provided evidence for five sequential construction phases, and the southwestern quadrant contained three terrace facings and a step-like feature that probably constitute two building phases.

The masonry of SL-31, with one exception, consisted of coursed medium-sized cobbles, some roughly worked. The one exception is a low facing of small slab-set limestone blocks excavated in Op. 138B and given the field designation Dahl Wall. The architectural sequence in the northeast quadrant of SL-31 begins with a low platform with three subsequent additions, with a fourth platform whose relation to the initial platform is uncertain. The oldest exposed platform is delineated by two retaining facings, named Corn Wall and Pasta Wall. Subsequently, Pasta Wall was extended to expand the platform 2m to the east. The third modification saw the construction of Dahl Wall, forming a terrace, 10cm high and 75cm wide, abutting the north side of the platform demarcated by Pasta Wall. Finally, Barley and Grain Walls were laid down 1.5m west of the eastern edge of the platform, extending the platform north some 60cm beyond Dahl Wall and filling over parts of Dahl Wall. Probes into the core of SL-31 revealed a buried line of architecture oblique to all other facings excavated, under the fill of the second construction episode. The limited area excavated did not allow us to determine if this buried platform ran under or abutted the original platform formed by Corn and Pasta Walls, although the former seems likely given the oblique angle of the architecture.

Limited excavation into the platform core in Ops. 138A and 138E provided material for dating these building episodes. Although the original platform remains undated, it is likely that it dates to the LCI, given the lack of significant amounts of earlier material associated with SL-31. The second phase of construction contains fill dating to the LCI; probes into the third and fourth construction phases revealed few datable ceramics, but those found date to the LCII phase. As at many of the San Lorenzo groups, there are trace amounts of Middle Preclassic, Late Preclassic, and EC ceramics at SL-31, but they come from fill contexts and are not necessarily associated with any early occupation at this specific group. There was apparently no TC construction at SL-31, but the fair quantity of TC materials associated with the structure indicates continued occupation.

Clearing the southwestern quadrant of SL-31 revealed three very low terraces facing west and stepping up to the top of the platform. The facings of these terraces are roughly-worked and unworked cobbles, generally one course high, that run to the far southern edge of the platform. The southern platform facing is of similar construction and grows gradually taller with each successive terrace. Appended to the west side of the lowest terrace is a rectilinear cluster of small cobbles that may have been a small step. I suspect from the uniformity of construction and the physical relationship between the fill and the terrace facings that all three terraces are components of a single construction episode. The associated ceramics all support a LCII date of construction with some TC use.

Excavations did not uncover any plastered surfaces in SL-31. However, we did find a possible occupation surface of small limestone rocks, somewhat like sub-floor ballast but not as dense, just off the northeast corner of the platform (Op. 138B) in the inset corner between Dahl Wall and Barley Wall. This matrix was probably the result of gradual accumulation of rocks and debris in this part of the platform, arising in part from disintegration of the limestone blocks of Dahl Wall. Although the density of rocks decreased with distance from the platform, the surface extended some 60cm out from Dahl Wall and even 20cm west along the north face of Grain Wall. The materials overlying this surface were LCII and TC in date and included one very large fragment of a metate with little wear. In the next unit to the east (Op. 138H), we recovered many small flakes of lithic debitage, clearly the remains of fine finishing or retouching work. Although lithic artifacts are fairly common at SL-31, forming a major component of the platform core, the debitage density in Op. 138H was markedly greater than elsewhere in the group, especially very small flakes. Notwithstanding, preliminary analysis of the artifacts associated with SL-31 suggest a domestic function for the structure. The amount of fired daub found at SL-31 provides good evidence that a bajareque superstructure once topped the platform.

**SL-24 (Op. 146):**

Before excavation, SL-24 appeared to be a Type IIB group, consisting of two structures joined perpendicularly. I did not classify this group as a Type IA because the area inside the corner formed by the two mounds slopes significantly to the south. Excavation revealed that this area was in fact plastered and constituted a formal patio, although the two plaster surfaces excavated also slope down to the south. Thus this group should be re-classified as a Type IA group with two structures.

Chase tested SL-24 in 1993, excavating two adjacent testpits (Ops. 95C and 95D) on the north edge of Str. 1 of the group, exposing a TC primary refuse deposit on top of an eroded floor just north of the limestone-block northern platform facing of Str. 1. Our excavations in 1994 cleared 4m of the eastern face of Str. 2, extending 2m out into the patio area on the opposite side of Str. 1 from the 1993 testpits. We had intended to expose the interior corner formed by the intersection of Strs. 1 and 2, but we placed our units a bit too far south of this juncture; further work in this group in 1995 will expose the southern face of Str. 1 and clear more of the patio area.

The excavations along Str. 2 revealed that this structure, in its final configuration, consisted of one terrace, ca. 40cm tall and 120cm wide, with a slight 10cm step up to an upper platform surface; the field names for these two architectural components are Fudge Wall and Cookie Wall, respectively. Both of the terrace facings of Str 2 are constructed of cut limestone block. However, Fudge Wall consists of several courses of medium-sized blocks, while Cookie Wall is composed of two courses of thin slab-set pieces of limestone. It is not clear yet if Cookie Wall post-dates or is contemporaneous with Fudge Wall, although stratigraphically it cannot predate it. Flat-lying sherds and a slight matrix change marked the remnants of a platform surface above Fudge Wall; we infer a similar surface above Cookie Wall, but natural transformation processes, especially root action, have obscured any evidence of this surface. Materials above these surfaces dates to the TC period, while fill material from the platform formed by Fudge Wall suggests it was constructed in the LCII. Fired daub indicates that a perishable superstructure once topped the platform.

As mentioned above, the presence of a plastered surface in the area defined by Strs. 1 and 2 surprised us. This floor sloped perceptibly down to the south, as does the ground surface. Heavy disturbance of this area by a large leaf-cutter ant nest, thankfully abandoned some time ago, made the lower strata of Ops. 146B and 146C difficult to interpret and resulted in a great deal of mixing of cultural materials. However, the presence of two plastering episodes with some 10cm of fill between them is clear. The upper surface is covered with materials dating predominantly to the TC, while the bulk of the material between the floors dates to the LCII, despite some mixing of materials because of the heavy bioturbation. The upper floor stratigraphically post-dates Fudge Wall, while the lower floor appears to be roughly contemporaneous with it, although its exact articulation is not clear due to the fragmentary preservation of both the floor and the platform facing.

The materials in this group are strongly suggestive of domestic occupation. Apart from a fairly typical domestic ceramic inventory, we found several fragments of granite manos and metates. We also noted the presence of artifacts indicating some ritual activity, including incensario stoppers, two Old God effigy feet from a tripod plate probably used in serving ritual meals, and the tip of a notched exhausted obsidian core similar to those found in a sub-stela cache in Group D by Jennifer Braswell (Braswell this volume). Unfortunately, this eccentric fragment comes from the area most disturbed by the ant nest, and its original context is therefore unknown.

Further clearing at SL-24 planned for 1994 will expose more of the patio area and the front faces of Strs. 1 and 2, as well as clear more north of Str. 1, where Chase found fairly good refuse contexts and the hints of a plaster floor. Str. 1 is an intriguing structure because its saddle shaped profile suggests it might have held a masonry superstructure; we will bisect the mound in 1994 to determine the morphology of the platform and the nature of its superstructure.

**Excavations at Late Classic Groups**

As discussed above, our work at San Lorenzo focuses on understanding the Terminal Classic community there. Therefore, we ceased work in two groups when our first units recovered no evidence of a TC occupation. The results of the work at each of these groups is briefly described below.

**SL-20 (Op. 136):**

Group SL-20 is an isolated mound located on a gentle slope approximately 75m east of SL-22. The mound has only a slight height on its upslope side but is elevated some 50cm above the natural surface on its downslope side, where several large limestone cobbles are visible, apparently fallen platform facing stones. We placed three contiguous 1 x 2 m units along the eastern, upslope side of the mound, beginning approximately at its midpoint and running to the northeast corner of the mound. We hoped to expose the wall and platform surface of the structure, as well as clear any ancient refuse deposits trapped against the structure.

Our excavations revealed some 2m of the eastern platform facing of SL-20, as well as 1m of the northern facing. The platform had been two courses high (ca. 30cm) in the area we exposed, the lower course preserved in situ and the upper course having slumped outward; no platform surface was preserved. The cultural material recovered from SL-22 dated exclusively to the LCII. We continued one unit (Op. 136C) beyond the basal course of the platform to look for any buried occupation. The resulting lots contained few artifacts, all rather small and eroded, embedded in a clay-like matrix that appeared to be the B horizon of the natural sub-soil. Preliminary inspection of the types of artifacts associated with the mound suggest it was a domestic structure, and especially interesting was the density of lithic artifacts. Besides debitage, the lithic material included a ca. 10cm long stemmed point, a second smaller stemmed point, and numerous cores and re-touched flakes. The body of the platform also has a high density of chert cores and debitage.

Because we found no TC deposits, we stopped excavations at SL-20 after finishing these three units. However, the excavations at SL-20 provided an interesting example of a type of architecture unknown from any other excavations at San Lorenzo. The majority of the stones comprising the platform facings were an unusually soft limestone, the color and texture of blackboard chalk which had been worked and shaped so as to fit together fairly tightly. One result of this inter-digitation between courses was that the entire second course of the east facing apparently fell forward as a unit. The fill of the platform contained a fairly high density of smaller pieces of this same material, as well as ceramic and lithic artifacts. The origin of this stone is unknown, although hard clay-like concretions on the surfaces of some of the cobbles from the fill suggest to me that it was formed in an alluvial or lacustrine environment. None of the other structures excavated at San Lorenzo - neither those of LCII or TC date - exhibit similar construction.

**SL-25 (Op. 139):**

SL-25 is a fairly simple Type IA group composed of one mound situated at the north end of a slightly elevated surface, apparently a very low (<25cm) platform or patio. Very subtle elevation differences suggested a second structure lay along the west side of the patio, but excavation of Op. 139B yielded absolutely no evidence of architecture along this admittedly indistinct line. Given the density of TC material at SL-22 and the presence of TC materials in testpits excavated in the four groups closest to SL-25, we expected to find Terminal Classic material at SL-25 as well. However, detailed sorting of all lots from the two 1 x 2m testpits excavated into the group (Ops. 139A and 139B) revealed only a few TC sherds in the uppermost lot of 139B; the vast majority of the datable material was from the LCI and LCII phases.

We placed Op. 139A so as to excavate along the western facing of the only structure in SL-25. The unit exposed a one-course facing composed mostly of crudely shaped cobbles turning west at the far southwestern corner of the unit to form the southeast corner of the structure. The two lots excavated in this unit extended down to the ancient ground surface at the base of the platform. The bulk of the cultural material recovered probably consists of fill that spilled out from the core of the structure, accounting for the exclusive presence of diagnostics from the LCI phase. Because of the limited area excavated, a comprehensive understanding of the architecture is impossible. It appears, though, that the eastern facing of the structure of SL-25 was terraced, the first terrace being only one course high. This would account for the lack of large stones, neither in situ nor slumped, from a second course above the preserved facing just described. A possible alternative is that the ancient Maya removed upper courses of the eastern facing for use elsewhere.

As noted above, we had identified a possible second structure in SL-25, perpendicular to the first and demarcating the western edge of the patio. We intentionally located Op. 139B to reveal any architecture of that structure; the results were negative. Op. 139B did expose a very low wall of small limestone slabs that apparently relate to the southern face of the platform, possibly part of a stairway. This feature sat on the eroded remains of the patio surface of SL-25.

**Conclusion**

The intention of this report has been to present the data from our 1994 excavations in a fairly raw state. Project ceramicist Lisa J. LeCount has completed detailed cataloguing and classification of the ceramics from the site and conducted some formal analyses and distributional analyses (LeCount 1993; Yaeger and LeCount in prep.). In addition, Jon VandenBosch (pers. com. 1994) has examined the lithic assemblages from some groups. However, a comprehensive examination of the artifacts, faunal remains, and flotation materials recovered from San Lorenzo remains pending. The density of material in the TC contexts and their remarkable state of preservation promise that the artifactual data will greatly add to our understanding of San Lorenzo (see Braswell, Keller, and Yaeger 1994; Yaeger and LeCount in prep.).

Excavations planned for 1995 will focus on expanding our excavated sample, completing excavations at SL-24 and beginning work at the Type IB group, SL-13. The masonry superstructure of SL-22 and features associated with it demand further work as well. Ultimately, the data obtained from these excavations and the subsequent artifactual analyses will allow us to reconstruct the social organization of the Terminal Classic community of San Lorenzo and the relationship between its inhabitants and the nearby center of Xunantunich.

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I am deeply indebted to Sabrina Chase for her overwhelming generosity regarding both her time and her data. The high quality of Chase's work has allowed me to integrate it with my own, providing a nearly seamless data set. XAP directors Dr. Wendy Ashmore and Dr. Richard Leventhal provided the necessary blend of advice, encouragement, and good humor, and informal discussions with them and other XAP colleagues, especially Jennifer Braswell, Sam Connell, Angela Keller, Lisa LeCount, Jim McGovern, and Ted Neff have improved the quality of this report. On the more practical end, thanks are due John Walkey for his total station services and Neil Ross for some drawing assistance. Minette Church provided indispensable help during the end-of-the-season crunch. The 1994 research at San Lorenzo was funded by a grant to Dr. Wendy Ashmore from the National Science Foundation.

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## Appendix A: Concordance of 1992/1993 and 1994 Group Labels at San Lorenzo

**Figures:**

# Research at Chaa Creek
# 1994

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Research in the Chaa Creek zone continued in 1994 with a brief two week field season [Map #1]. Fieldwork took place in two phases: 1) the completion of the reconnaissance and survey, and 2) a preliminary test-pitting program. This report will describe methodology and results updating the working model.

Based upon initial impressions, we suggested that the Chaa Creek settlement zone be viewed as a semi-autonomous secondary center playing a dynamic role in the regional socioeconomic and political matrix of the upper Belize River Valley. The primary goal of the 1994 research, described herein, was to focus the working model on the kinds of relationships that Chaa Creek developed in terms of its important location (see below).

An increased interest in "middle stratum" sites, such as Chaa Creek, allows for more comprehensive and exacting models of Maya regional political and economic integration (Iannone 1994). By assessing the elite-level intraregional and interregional interactions between secondary centers, such as Chaa Creek, and primary centers, such as Xunantunich, we can develop a better understanding of Maya social, political and economic organization as seen from the outside looking in.

The Chaa Creek zone is located in the periphery, between four and six kilometers east of Xunantunich. The 1x2 km area stretches west from the banks of the Macal River including the eastern part of a large land-tract [Map #1]. I have already provided an excellent description of the area (Connell 1993). In review, Chaa Creek consists of four large platform groups and many smaller patio groups located along three east to west running ridges. These four predominant platform groups are noted for their monumental architecture and numerous "exotic" items recovered during preliminary reconnaissance (Connell 1993).

The first thing that strikes any visitor to the area is its apparent prime location within the valley. Prior research has focused upon the settlement at Chaa Creek as it pertains to three critical variables of location: 1) a large distinctively fertile tract of land that bounds the zone to the west; 2) the placement of settlement at the nexus of a locally unique portage route between the Mopan and Macal rivers; and lastly, 3) the location of Chaa Creek along the boundary of a proposed Xunantunich polity. The following will briefly describe each variable, demonstrating the pertinence of each to the location of Chaa Creek at a politically and economically vital loci within the upper Belize River Valley settlement matrix.

**Land-Tract**

We propose control of a 2.5 square kilometer block of land by the residents of the Chaa Creek zone. This long flat stretch of rich agricultural land, which

extends approximately two kilometers farther east than any other part of the Mopan valley, is the only place that bypasses the rough, hilly terrain between the two rivers [Map #1]. In addition, it is the only land in the area which the Mennonite farmers actively cultivate using state of the art modern equipment. Both Stela Group (CC1) and Blow-Out Group (CC5) strategically overlook the tract of land. I propose that as the need for food resources escalates it becomes necessary to have settlements adjacent to agricultural land in order to control food production. This fits the model used for growth and expansion at Copan (Fash 1983; Leventhal and Fash 1981) and has been noted throughout Mesoamerica (Grove 1984). In addition, ethnohistoric sources claim that cultivation of cash crops such as cacao was evident at Negroman/Tipu, along the Macal (Jones 1989; Muhs et al. 1985).

**Portage Route**

Due to the topographical characteristics of the tract of land above which the Chaa Creek sites loom, travel between the Mopan and Macal rivers, and, consequently, between Xunantunich and the Chaa Creek groups is more accessible. Even today, the road skirts the southern edge of the block of land before passing between Stela Group (CC1) and Plantain Group (CC5). The Chaa Creek sites are located at what appears to be the nexus of a natural route of communication between the Macal River valley and the wider Mopan drainage, a position referred to in the literature as a "gateway" (Hirth 1978). I propose a functional connection between a series of chert cobble mounds in the Chaa Creek zone, discovered on the northern ridge; and the enigmatic cobble platforms located along the Mopan river at San Lorenzo (VandenBosch 1993). We believe these mounds to be associated with river-based transshipment of goods, and now, possibly, the inter-riverine flow of goods (Ashmore 1993).

**Boundary Marker or Buffer Zone**

The Chaa Creek zone may have defined the limits of a Xunantunich polity during the Late Classic and/or an Actuncan polity during the Preclassic. During times of social and political unrest within the valley, this zone might have defined an edge of Actuncan's and, subsequently, Xunantunich's sphere of direct control. If archaeological evidence suggests a long occupation span at Chaa Creek that is contemporaneous with other centers in the valley and, therefore, sanctions the study of sociopolitical connections between the Chaa Creek zone and these larger site centers. In addition, the clear line of sight between the Chaa Creek groups and the Castillo at Xunantunich and Actuncan might indicate a necessary communication link between the regional centers and a boundary zone. A central-place analysis performed by Ball and Taschek (1991) places Chaa Creek close to the intersection of three hexagonal "segmentary-state" nodes. The Chaa Creek zone may have functioned as an interstitial site between centers in the upper Belize River Valley and those to the west such as Pacbitun and the newly identified large site of Guacamayo (Ashmore et al. this volume, see Dunham et al. 1989).

The 1994 mapping and test-pitting program attempts to address these variables as they relate to our model. Chaa Creek will be revealed as an integrated yet distinct zone interacting with the rest of the valley in a variety of contexts.

In order to begin to test this proposed model we need to make one critical determination. How can we place the peripheral zone of Chaa Creek squarely into a network of regional elite-level economic and political interactions? We need to show that elites were residing at and administering from Chaa Creek, and that these elites were intimately connected to the primary centers. Assuming we can, it will then be possible to hypothesize the different kinds and amounts of interactions, and eventually understand how they relate to Maya social, political and economic structure.

Ashmore (1993) proposes that only elites are affected by political and economic changes in the valley. Xunantunich Settlement Survey data corroborate her interpretation (Ashmore et al 1993). Therefore, if members of the elite social stratum were living at Chaa Creek we should be able to identify changes in the archaeological record comparable to changes already identified at the primary valley centers. For example, sometime during the Late Classic period Xunantunich fell under the control of Naranjo. A rejuvenated Xunantunich dominated the elite political landscape, superseding Buenavista in importance (Leventhal et al. 1993). I believe Chaa Creek was in a position to take advantage of this shift in political power. As a peripheral site Chaa Creek capitalized on its direct ties to a growing Xunantunich. Chaa Creek was tied economically (land tract and portage route) and politically (boundary). This can be demonstrated at Chaa Creek by documenting periods of expanding economic and political interaction shown through increasing levels of construction and exaggerated displays of wealth.

The secondary center operated as a heavily integrated unit working towards the common good of the state in production and control of distribution and transport of goods. This is corroborated by Iannone (1993) who interprets the Maya middle stratum sites as operating in a vacuum between untouchable upper level elites and the commoners. In addition, Chase and Chase (1992) posit that the middle-class were "articulators" controlling or managing state-run intensive agriculture.

Using the limited 1994 research results, three test implications were developed which support the model. If Chaa Creek was tied to an regional elite-level interactive system then:

1) The Chaa Creek zone should be a discrete settlement unit, possibly a village or hamlet, capable of interacting within a valley system as an integrated and powerful settlement unit. The completed survey and reconnaissance support this notion.

2) The occupation at Chaa Creek should be temporally comparable to Xunantunich and other centers in the region. Recovered ceramics place Chaa Creek squarely within the occupation sequences for the upper Belize River Valley region.

3) Material culture should correlate, in a very general sense, to the rest of the elites in the upper Belize River Valley and elsewhere. We needed to show that the artifact assemblage and architectural patterning at Chaa Creek are similar to the primary centers, such as Xunantunich, where elites dwelled. This was accomplished preliminarily by noting the types of artifacts and architecture found at Chaa Creek and making cursory comparisons to other sites. This technique will be honed in upcoming field seasons.

## Field Methodology

These three test propositions were addressed during both of the phases of fieldwork. They will be addressed during the analysis of each phase.

Survey of the Land-Tract

The research program began with a complete surface survey of the land tract, completed with the gracious permission of local owners. The eastern portion is owned by Jalil Bedran and is presently farmed by a Mennonite cooperative. The western portion, known as El Chial, is owned by the Espat family and cultivated with grapefruit trees. The land tract is the only area in this part of the valley under mechanized cultivation.

The relatively flat land-tract, measuring 2km x 500m, is being interpreted as a much earlier floodplain between the Mopan River and the Macal River. We hope to have the project geomorphologist investigate this area in the upcoming season. I believe that both the Mopan and the Macal Rivers were at one point flowing near the level of the land tract. Presently both rivers are flowing at approximately 40m below the ground surface of the land tract. This highlights the erosional processes caused by river flow.

East to west running ridges encompass the land tract both to the north and south. Preliminary reconnaissance encountered few platform groups strung along the ridges. Somewhere within the northern ridge area is the site of Nohoch Ek, which was excavated in 1949 by the Coe brothers (Coe and Coe 1956). The Coe's concluded that the middle-level site was intimately involved in Preclassic and Late Classic valley dynamics, especially ceremonial practices. Nevertheless, Nohoch Ek lacked the common indicators of elite centers, such as ball courts, temple pyramids and elaborate burials. The site is as yet unvisited by XAP, but will be visited next year. It most likely played a critical role in interactions with Chaa Creek, as well as with Xunantunich.

The survey of the tract of land was completed in two phases utilizing the same methodology as the Xunantunich Settlement Survey (XSS)(Yaeger and Connell 1993). A field-walk was conducted. Parallel N-S lines were walked every 50m. Sites were defined by the same criterion as XSS, each was given a CC number denoting it as a site within the Chaa Creek settlement survey region [Map #2]. Recent plowing activity has churned up and spread out these housemounds. As a result sites were commonly oval-shaped rock scatters with accompanying artifacts. Each separate scatter was given a Feature Number, and the XSS vital statistics were recorded (see Ashmore et al. this volume).

A surface collection was performed on at least one feature from each site [Table 1]. Each general surface collection consisted of approximately 100 sherds. Lithics were ignored unless they were finely crafted bifaces. The lots were counted and analyzed using the same format as XSS shovel test pits, but the analysis was done in the laboratory (see Yaeger and Connell 1993). Because the analysis was slightly more intense, I was able to make a higher frequency of temporal assessments than XSS [Table #1]. Most of the sites in the land-tract were Late Classic, but 40% had a strong Early Classic component. This Early Classic evidence suggests continued activity around the edges of the land-tract during a period of comparative inactivity in the upper Belize River Valley.

In addition, two high density lithic scatters (site CC56) were discovered in the eastern portion of the land-tract. We interpreted these as evidence of chert tool production. Very few tools were identified among the multitudes of flakes. The CC56 surface collection recovered only Preclassic ceramics. This small-scale Preclassic lithic production zone may have been tied to the Preclassic settlement identified along the ridge-tops at Chaa Creek (see below).

Continuing with the survey methodology, the sites in the land-tract were mapped as ellipses. Four data points were taken on each scatter feature. By setting the total station in the middle of the field, Ted Neff and I were able to rapidly map the settlement. Generic CADD maps were made of the area and paired with the reconnaissance map from 1993. The results were astounding. The differences were minimal between the reconnaissance map, made using property boundaries and paces, and the CADD map, made with a total station. A site that was placed on the earlier CADD map using the Belizean government property boundary designations came within 5m of the coordinate location as determined by the total station [see Map #3]. This lends strength to the argument that a settlement zone located in rough terrain, such as Chaa Creek, can be adequately mapped using property boundaries to locate sites in horizontal space (Schortman and Urban 1991a).

In order to assess settlement data comparability between XSS Transects and the Chaa Creek corridor I think it necessary to keep frequencies of site location in mind. The entire Chaa Creek field survey was completed in a vegetation factor of "VIS 1" on the XSS visibility scale, which has been defined as

"recently burned milpa: a plowed field (Yaeger and Connell 1994)." In other words, you can't miss the site unless it is buried below the plowzone. The acquisition of a total data set raises some questions. How much higher are the frequencies of site location in a plowed field versus the various types of vegetation encountered in Transects #1 or #2?

As yet XSS has not made determinations on percentages of sites located per unit designation on the vegetation scale. I feel comfortable proposing that every unit on the VIS scale be viewed as a span of 10% of the total number of sites that could be found. For example, a VIS 1 is 90% of the sites while VIS 3 is 70%. The average visibility for the transects is approximately 3, so in the Chaa Creek corridor I found 20% more sites. The visibility factor does not in any way affect comparisons of settlement distributions because we assume that the same percentage of sites would be missed throughout the terrain.

**Field Survey Results, Analysis and the Working Model**

The survey results show settlement predominately around the edges of the land tract. No households were found in the middle of the land tract [Map #2]. The household settlements are arranged in two clusters. The largest cluster (Cluster #1) defines the western perimeter of the Chaa Creek settlement zone. Cluster #1 consists of a series of 40 prehistoric housemounds located at the base of the ridge on top of which sits site CC1, previously named Stela Group.

Settlement cluster #2 is located along the southern edge of the land-tract, roughly 1km to the west of Chaa Creek. This dense settlement of razed housemounds appears to have been "mapped" onto the landscape in a rigid fashion. The seventeen housemounds are arranged in parallel linear rows along the edge of the field. Apparent preconceived spacing hints at administered settlement, ie. a labor or work camp (see below)[Map #4].

Besides the two clusters, the other crucial bit of settlement data was the sizable area of vacant terrain in the middle of the field. The evidence indicates that at no time from the Middle Preclassic up to the present has the central portion of the field been settled.

The results of the field survey begin to confirm test implications #1 and #2. Data support a model focused on Chaa Creek's role as a secondary center involved in regional interactions. First, Chaa Creek is contemporaneous with other regional centers. The sites in and around the field all have very general Classic period assemblages, and a sizable amount have Early Classic phases [Table #1]. These dates tie the settlement with the major Chaa Creek platform groups and with Xunantunich. Second, Chaa Creek is a distinct zone of settlement. Cluster #1, on the eastern edge of the field, demarcates the western side of Chaa Creek settlement zone. This western border is coupled with previous reconnaissance data showing drop-offs in settlement to the north, east, and south.

Armed with the above positive results I will leap toward more tentative propositions concerning the relationship between Chaa Creek and the fertile tract of land. First, given the data at hand, it is safe to say that throughout prehistory, as well as today, this land-tract has been recognized as a extremely fertile zone. Second, we know that the central part of the land-tract was never settled in prehistory. What social organizational principles dictated that this rich agricultural land be set aside for millennia? For the moment, I propose that it was used for large-scale administered intensive agriculture during the Late Classic, and possibly the Preclassic. If settlement was unadministered and random, then the field would be filled with settlement. To what extant cultivation of the field was controlled by the elites of Chaa Creek and beyond, is what I intend to investigate.

We see agricultural practices occurring today that might be analogous to prehistory. As mentioned above, the land-tract is used for intensive mechanized farming. The rich loamy clay is distinctively fertile. In addition, water seems to be plentiful. A series of modern water-holes or aguadas are located throughout the area. Each modern aguada is simply an area where the earth has been excavated out to make a water-hole. No lining or retaining features are needed to hold the water. During the driest part of the year most aguadas hold enough water to support the local farmers and their livestock. Mechanized pumps are used to water the crops during these dry months. For example, to south of El Chial there is a large pond which was big enough to make it onto the 1:50,000 Government maps. The existence of prehistoric aguadas seems highly plausible. Strategically placed aguadas might have supported a large-scale intensive agricultural system. Unfortunately, due to the apparent ease with which they could have been constructed, traces of these aguadas will probably not be recovered.

Approximately half of the land-tract is being used by the Espat family to cultivate grapefruits. According to the mayordomo of El Chial, the soil is capable of supporting intensive cultivation of trees. Negroman is the only other place in the region where arboriculture is practiced. Muhs et al. (1985) have shown that prehistoric cultivation of cacao took place at Tipu during the Late Classic.

It is possible that both the soil and availability of water could have supported the cultivation of cacao. The large tract of land below Chaa Creek provides us with some interesting questions to be explored next field season. A series of graduated flotation samples will be collected from spots around the land tract that appear the least disturbed. The samples will be analyzed by Dr. David Lentz at the New York Botanical Labs. If we can demonstrate that cacao was being produced in the fields we can more concretely talk about administered arboriculture at Chaa Creek. For example, settlement cluster #2 is apparently very rigidly structured, but also centrally located on the tract of land. I propose that it might be a series of field houses for attached or corvee farmers tending

and guarding the land for the elite (Brumfiel and Earle 1987). For the moment, in terms of the working model, the importance of the land-tract has increased our curiosity. Survey of the field has managed to define the Chaa Creek zone and confirm its close relationship with the land.

**Land-Tract Survey and XSS**

Survey of the large land tract compliments XSS research. The land tract serves as an opportunistic E-W transect that runs parallel to Transect #1 between 3-5 km to the north (Ashmore et al. this volume). The Chaa Creek settlement zone is comparable to the Chan site and Dos Chombitos. It is defined spatially as a community or pet cah (Marcus 1983, Ashmore et al. 1993 and this volume). Our opportunistic field survey transect connects the Chaa Creek community and the Macal River with the San Lorenzo community and the adjacent cobble mound area along the Mopan River (Yaeger this volume, VandenBosch 1993). We can analyze the changing settlement between San Lorenzo and Chaa Creek zone, keeping in mind that settlement survey in this opportunistic transect is VIS 1 (see above).

The San Lorenzo community and accompanying cobble mounds are on the western end of the previously identified portage route running between the rivers Macal and Mopan. Both Chaa Creek and San Lorenzo would have played integral roles in the control over and administration of transport between the two rivers. VandenBosch (1993) preliminarily proposed that the linear and cobble mounds along the Mopan were storage areas for goods in transit. Interestingly, there is a large outcropping of paleo-riverine chert cobbles located between the San Lorenzo and Chaa Creek communities (approximately 200m south of El Chial). These are remnants of an ancient river bed, presumably the Mopan (Wright 1994 pers. comm.). I preliminarily propose that the cobbles themselves might have been a crucial interregional trade item for Xunantunich and surrounding settlement.

**Test-pitting Program**

The second phase of investigations this past year was the test-pitting program at Chaa Creek. A range of platform groups were chosen for excavation. The stratified sample was based on varying group sizes. The program was designed primarily to secure a settlement chronology for the Chaa Creek zone (Implication #2). Specifically, I was looking for a sequence of occupation that highlighted major events of growth and decline at the primary valley centers. The data confirmed a sequence comparable to Xunantunich and Actuncan, with growth evident during the Preclassic and Late Classic time periods. These excavations and earlier surface collections suggest that elites were residing at and administering from Chaa Creek. In addition, the test-pitting program intended to begin assessing the types of material evidence that would best demonstrate elite-level interactions both intraregionally and interregionally (Implication #3). From the data collected we were able to judge the types of contexts that should prove useful in forthcoming excavations.

Seven operations were completed. The following will describe them in detail:

Operation 159

This operation was placed at site CC9, a small housemound platform group located along the upper flanks of one of the E-W running ridges that dominate the topography in the Chaa Creek settlement zone [Map #5]. The site has majestic views of the Macal River Valley looking south towards the area of Macaw Bank. The Chaa Creek runs W-E about 400m to the south and 40-60m lower in elevation. The drop down to the Macal river is sharp and steep. The Macal Valley differs from the wide terracing of the Mopan floodplain, here steep bedrock cliffs control a fast flowing, volatile river. The testing of CC9 was intended to provide a tentative date that could be attributed to other like sites at Chaa Creek. Many sites appear comparable both stylistically and architecturally. Within 200m of CC9 there 5 other groups that are similarly arranged. I propose that the Classic period population explosion spurred construction of many small housemound groups at Chaa Creek.

Site CC9 is set along a downward southerly slope. It is a single-mound platform group with the platform on the upward part of the slope. A smaller mound (M2) is also located off to the SE of the platform-mound complex. M2 was initially interpreted as the trash dump. A 1x2m unit was placed on the southeastern edge of the mound.

The unit was excavated to bedrock at 50cm below ground surface. There were no definitive occupational surfaces or construction sequences within this mostly cobble, sherd and lithic mound. The artifacts in the unit were strongly LCII (see LeCount 1993 for details). Operation 159 and 160, both conclusively demonstrated the Late Classic period date for the site of CC9. The evidence corroborates the proposed expansion of Chaa Creek during the Late Classic.

Operation 160

This operation was at site CC9. See above for initial description of the site. A 1x2m unit was placed on the north side of M1. The unit was designed to go through the platform at the base of the structure. Based on the stratigraphy and the artifacts collected, we are interpreting two occupation phases for this part of the site. As operation 159 confirms, during the Late Classic an earthen surface or tamped platform was constructed using fill from the surrounding area. Below the platform level we picked up evidence of Preclassic settlement. The sherds are uniformly early, and high amounts of shellfish such as bivalves and jute were recovered. Though this is extremely preliminary we do see two phases of occupation at CC9.

In addition, an extensive terrace system was discovered running along the flanks of the ridge and interdigitating with CC9. The entire area was mapped

with the total station. It consists of a series of cross-channel and flanking terraces along the ridge-side (see Ashmore et al. this volume). I had previously detailed the relative prosperity of the Chaa Creek settlement zone based on the general lack of terrace systems (Connell 1993). Though the CC9 terrace system and others were identified at Chaa Creek, terracing along the Chaa Creek ridge slopes is still infrequent in comparison to the density of XSS Transect #1. Nevertheless, the evidence for terracing during the Late Classic period at Chaa Creek attests to the population pressures which must have confronted its inhabitants.

Operation 161

This operation was a 1x2m unit placed on the main platform of site CC5, which has refused to relinquish the atrocious name of Plantain group [Map #6]. Site CC5 is one of the prominent groups at Chaa Creek. Prior to excavations we already had collected a wealth of architectural and artifactual data (see Connell 1993, Carpenter et. al. 1992 for details). In review, the site is characterized by an L-shaped platform group with the platform rising 2m and the mounds rising 3m from the platform surface. The site has been heavily looted. Trenches have exposed some impressive stonework and 1m thick supporting walls for corbelled arches. This past year Rudy Larios identified a plaster bench in the middle room of the eastern building. Exquisite ceramics have been recovered and dated from the looter's trenches, with evidence for activity beginning with the Middle Preclassic and continuing to the Terminal Period. One of the ceramic vessels is a small chip and dip bowl which Mr. Larios has recently associated with vase painting, because of its apparent similarity to a conch shell sliced in half.

The excavation unit itself was intended to yield a settlement chronology for the site and begin to place CC5 in a regional context.

The 1x2m unit was placed at the inset of the L-shaped structures, where preservation would have been greatest. At approximately 50cm below ground surface an extremely hard-packed plaster floor was encountered [Drawing #1 - F1]. In the interest of time and the sanity of the excavators we reduced the unit to 1x1m. Above the plaster platform floor two corbelled vault stones were recovered along with some smashed Late Classic pottery. Below the floor a thick lining of ballast was removed to reveal dry-core fill. This type of fill is uncommon at Xunantunich and more often identified at Caracol (Chase and Chase 1987). A plaster construction floor was at the base of the dry-core fill [Drawing #1 - F2], this marked a break in the platform construction process. The floor is too rough and irregular for a living surface, and no increase in artifacts accompanies it. Below construction floor F2 is a second fill layer of limestone cobbles mixed with a light yellowish brown sascab matrix. The break in fill types was due in part to the placement of a cist burial or cache intrusive to the fill below F2 [Drawing #2]. The cist consists of three slabs of limestone rock forming the southern end of a rectangle (see Braswell this volume for an example from Xunantunich's Group D).

The construction scenario could have been as follows: An initial cobble and matrix platform fill is laid down. At a certain point a series of burials or caches (I am proposing more than just the one we found) were placed into the preexisting fill layer with appropriate ritual ceremonies. Following or during these rites, a construction floor of poorly mixed plaster was laid down on top of the fill and the burials/caches. Next, the second dry-core fill layer was constructed and later the thick plaster floor (F1).

The cist was left untouched and backfilled. Whatever exotic goods are deposited in the cist will certainly help us assess what types of status relationships involved the inhabitants of CC5.

Below the initial evidence for Classic period occupation there is a third plaster floor [Drawing #1 - F3], above which is apparent a buried "A" horizon. The floor (F3) dates to the Preclassic, and the soil is possible evidence of prolonged abandonment. Some of the orange-wares collected from the Preclassic level showed signs of burning. F3 was constructed with simple technology, no ballast or stone fill was below. The Preclassic platform was apparently made by first clearing away the topsoil down to bedrock, and then filling in the irregular bedrock surface with very hard packed limestone, rock, and plaster fill. The construction technique is very different from later Classic methods.

In conclusion, operation 161 details two construction phases, and most likely two distinct occupation phases at the same locale. The data suggest a long hiatus between the Preclassic and Classic periods. The remarkable plaster floor (F1) further supports the observations made by Rudy Larios and others about the quality of construction at CC5. It appears that a harder mortar mix is used here, and that the wall construction utilizes smaller limestone cut-blocks in intricate manners.

Operation 162

This operation was designed to explore a possible Preclassic midden discovered at site CC64 during the 1993 reconnaissance [Map #5]. Site CC64 is a small platform group made up of three housemounds with the open side to the north. The group is located 100m to the east of CC1 (Stela Group), and is one of seven groups strung out along the top of the CC1 ridge. A unit was excavated in order to further temporally classify these secondary housemound platforms atop CC1 ridge.

A 1x2 m test unit was placed at the base of M2 in the area where the most early surface artifacts were discovered. As expected the artifact material was dense, obsidian blades and other household materials were recovered. The unit terminated at bedrock only 20cm bgs. The pottery assemblage was primarily

Late Classic, with higher concentrations of "elite" items. Though the proposed earlier time period was not prevalent, the data show a strong Late Classic household midden assemblage. This evidence supports the model of expansion of settlement at Chaa Creek during the Late Classic period.

Operation 163

The objective of this operation was to temporally designate the site of CC1 or Stela Group (see Connell 1993). Site CC1 is located on the western end of a long central ridge in the Chaa Creek zone. The open platform overlooks the large land tract to the north. To the east, are visible the prominent temples of Xunantunich and Actuncan. Underscoring the importance of dating site CC1, a new monument was discovered this past field season [Map #7]. The rectangular limestone slab lies 7-10m E of the stela identified in 1992 (Carpenter et al. 1992). The placement of this new monument is conveniently appropriate. Its location suggests that the long southern range structure had three doorways each with a small monument placed in front. The western portion of the structure has no monuments. To date, the monuments discovered at site CC1 include the two above mentioned monuments, a possible circular altar in front of the massive 5m high east building, and a mini entrance-sacbe-stela assemblage [Map #7]. The latter invites direct comparisons with the entrance assemblages found recently at Xunantunich and Group D (Keller 1993 and this volume, Braswell 1993 and this volume). These monuments at Chaa Creek argue for upper level elite interactions between Chaa Creek and other valley centers. The prevailing view of archaeologists working in the region is that these monuments are indicative of "middle level settlement units" (Iannone 1993). They indicate limited special functions, and suggest a dependency on the ruling elite for legitimization. Whether the monuments were sanctioned or an act of detachment remains to be seen. For the moment it is important to note the existence of monuments in the periphery.

With such an impressive set-up it is only fitting that the limited excavations in 1994 were extremely ambiguous. A 1x2m unit was placed in the center of the platform. Forces of erosion and superdeposition had churned up the stratigraphy. Excavations yielded three possible fill episodes, thus three construction phases. The earliest construction is concretely Middle Preclassic. Ceramic dates confirm that during this early period a massive construction effort was undertaken in order to level out the ridge top. Similar to CC5, the builders had cleared off the topsoil from the bedrock and then apparently used the maximum height of the bedrock as the platform level. The rest of the platform was then leveled out to whatever dimensions desired. Of course, the wider the dimensions the more labor was invested in building up and supporting the edges of the platform. Evidence from the base of the unit suggests that the planing out process used limestone cobbles and hard-packed clay. The stratigraphy shows quite clearly how stones were fit into the irregular bedrock depressions and placed perfectly for the strongest platform support. This massive building effort

is analogous to large Preclassic platform constructions at CC5, the "Party Platform" at Xunantunich (Robin this volume), and the main platform at Actuncan (McGovern 1993).

Subsequent Classic period construction efforts are heavily disturbed. Fill episodes were assessed based upon percentages of stone per stratum and by minor soil changes. The artifact assemblage collected from the upper "floors" is a mixed bag, with few diagnostics. In order to confirm the latest occupation floor and fill episode, I rooted around the stela base where a looter's pit cuts into the platform floor. The butt of the stela is set into the same occupation phase fill that I interpreted for operation 163. This upper level platform floor is very weakly designated Late Classic II.

Though the excavations were unenlightening, the 1993 looter's trench collection from the back of the western structure recovered a strong Late Classic component, as well as some Terminal Classic sherds (Connell 1993).

In sum, we have identified two, possibly three, construction phases at CC1. Future excavations will choose less eroded contexts to further strengthen the temporal sequence for CC1. The data tentatively confirm the ceramic sequence at CC5 (Plantain Group). An early Preclassic occupation was covered by extensive Classic period construction. The two monumental platform groups (CC1 and CC5) are 300m apart, and most likely experienced similar occupation cycles. This again lends credence to our model of Chaa Creek as a cohesive settlement unit which, at least during the Late Classic, was an expanding and integrated zone of settlement interacting on a regional level.

Operation 164

This operation was initiated in order to temporally analyze the occupation of a housemound platform group on the eastern end of the large central ridge [Map #5]. Site CC67 is a small tripartheid platform group with an open end to the south. The site was to be temporally compared to other small platform groups at Chaa Creek (sites CC9 and CC64). We were assessing synchroncity between these apparently later and more plentiful smaller platform groups.

The 1x2m unit was terminated at bedrock less than 30cm bgs. No distinct floor or fill episode was identified. Based on a few heavily eroded diagnostic ceramics, the site was interpreted to be Late Classic. The platform surface was most likely a tamped floor, similar to CC9. Also identified were two post-hole features, apparently bored into the bedrock. The perfect cylinders may have supported thick front patio awnings. In addition, two chultunes were discovered at the site. They are placed in front of the north and west buildings respectively. Both are relatively undisturbed and if excavated would provide some insight into the storage practices of the Chaa Creek inhabitants.

One other item of note about construction practices. At CC67, as with CC1 (Op. 163) and CC5 (Op. 161), the "A" horizon was apparently cleared off prior to constructing the platform. In none of these similar cases was the limestone parent material observed in its natural state of erosion. Apparently a new stratum of soil/fill was deposited onto the cleared surface. It is clear that not enough time has elapsed for the bedrock limestone to begin its natural erosion process. This construction pattern may be indicative of specific influences or temporal phases of construction.

Operation 165

A 1x2m unit was placed in the plaza of site CC18 or Blow-Out Group. This site is the largest and most imposing of the prominent platform groups in the Chaa Creek zone. The eastern building is a 50m long winged structure rising 5.5m above the platform surface. This group is most notable for its views of the large land-tract below and Xunantunich in the distance (Connell 1993). Unfortunately the unit proved inconclusive. Bedrock was encountered less than 30cm below ground surface. The solitary fill level dates to the Late Classic period. It consists of a densely packed small calcite stone and clay matrix. The stones were placed right on top of an irregular uptilting angular bedrock surface. Here again the earlier "A" horizon appears to have cleared away prior to platform construction.

1993 surface collections recovered a limited amount of Preclassic ceramics at CC18. The test-pit yielded only badly eroded Late Classic diagnostics. Despite the confusion, we know from the looter's trenches that the eastern structure went through at least three construction phases. We are still a long way from determining the role that this platform group played in for the Chaa Creek community, but due its size and strategic location we are comfortable in claiming its importance to Chaa Creek's regional interactions.

**Conclusion**

What, if anything, new can we say about Chaa Creek and our working model? Two primary things can be asserted conclusively. First, the Chaa Creek settlement zone is a bounded area of habitation. All evidence points to there being a clear delineation between housemounds associated with Chaa Creek and outlying settlement. This strengthens the argument for Chaa Creek to be viewed as a cohesive community or pet cah (Marcus 1983). More importantly, Chaa Creek can now comfortably be treated as an integrated settlement unit capable of interacting on a regional level.

Second, we can now assert that settlement at Chaa Creek was primarily during two temporal phases. The Middle-Late Preclassic period and the Late Classic period are both strongly represented in the ceramic chronologies. Likewise, the rest of the upper Belize River Valley has similar construction and settlement sequences. The Preclassic centers of Actuncan (McGovern this volume) and Cahal Pech (Awe 1994) give way to Late Classic centers such as

Buenavista (Ball and Taschek 1991) and Xunantunich (Leventhal 1993). Both of the above Preclassic centers were also occupied during the Late Classic, as was Chaa Creek.

The plowed field settlement survey also presents some fascinating temporal data. Many of the sites in Cluster 1, which defines the western boundary of the Chaa Creek settlement zone, have the elusive Early Classic component. The Early Classic has long been a barren time period for ceramicists working in the upper Belize River Valley (LeCount 1992). Along the edges of the large land tract we have identified a strong Early Classic occupation [see CC48-CC57 on Table #1]. I am preliminarily marking this as the interim settlement at Chaa Creek during the Early Classic hiatus. On the ridge tops there is only a smattering of settlement during this time period. I propose that during these times settlement on ridge tops was not viable.

Unfortunately the test-pitting program did not recover enough material for comparative artifact analysis. I propose future investigations investigate the differences in artifact assemblages between Chaa Creek and other peripheral sites in the upper Belize River Valley. I believe there will be a greater variety of ceramic types and exotic items at Chaa Creek. Assuming comparable excavation locales, we could use the upcoming XSS excavations in the periphery. The goal here is to develop a corpus of artifact types which are standard to peripheral areas, and then demonstrate the increased regional elite-level interactions by Chaa Creek.

What is important in terms of this settlement data is how we can begin to make interpretations about valley-wide dynamics based upon the settlement patterning of one peripheral community. For instance, what allowed for settlement to once again be relocated along the ridge tops during the Classic period? We now can begin to model the intricate system of elite level interactions that would have made it a viable alternative.

In this essay, I have deliberately avoided grand-scale political and economic models of the Maya and how they translate to the upper Belize River Valley. The working model we have developed for Chaa Creek is building towards that nadir. The crucial aspect of the research to date is that we have set Chaa Creek up to analyze its relationships intraregionally as well as interregionally. The initial research goals have been met. We are now capable of focusing on how Chaa Creek can and will help us interpret Maya social, political and economic structure. By virtue of its critical position at the nexus of many different social, ideological, political and economic forces Chaa Creek can effectively help us interpret the Maya.

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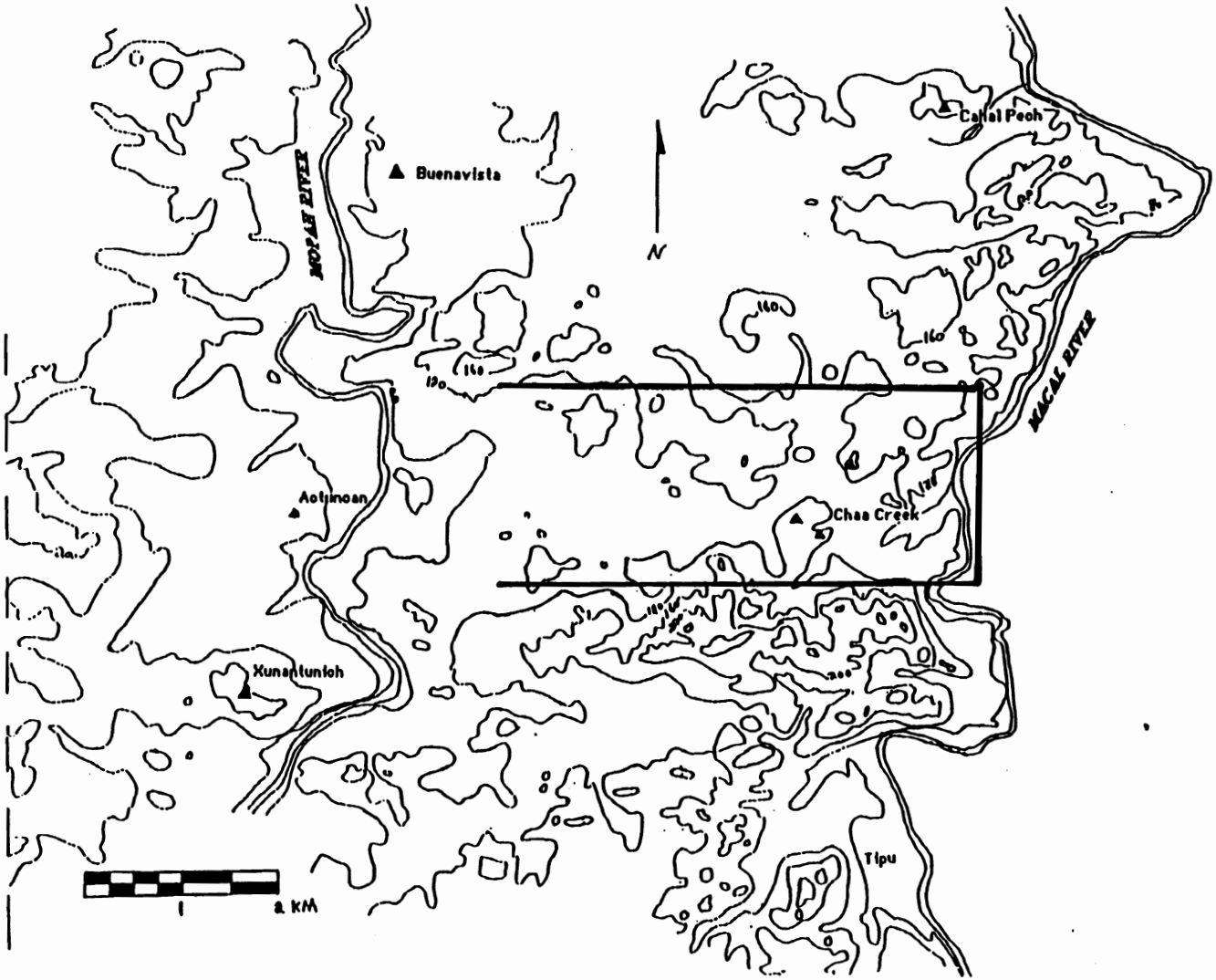
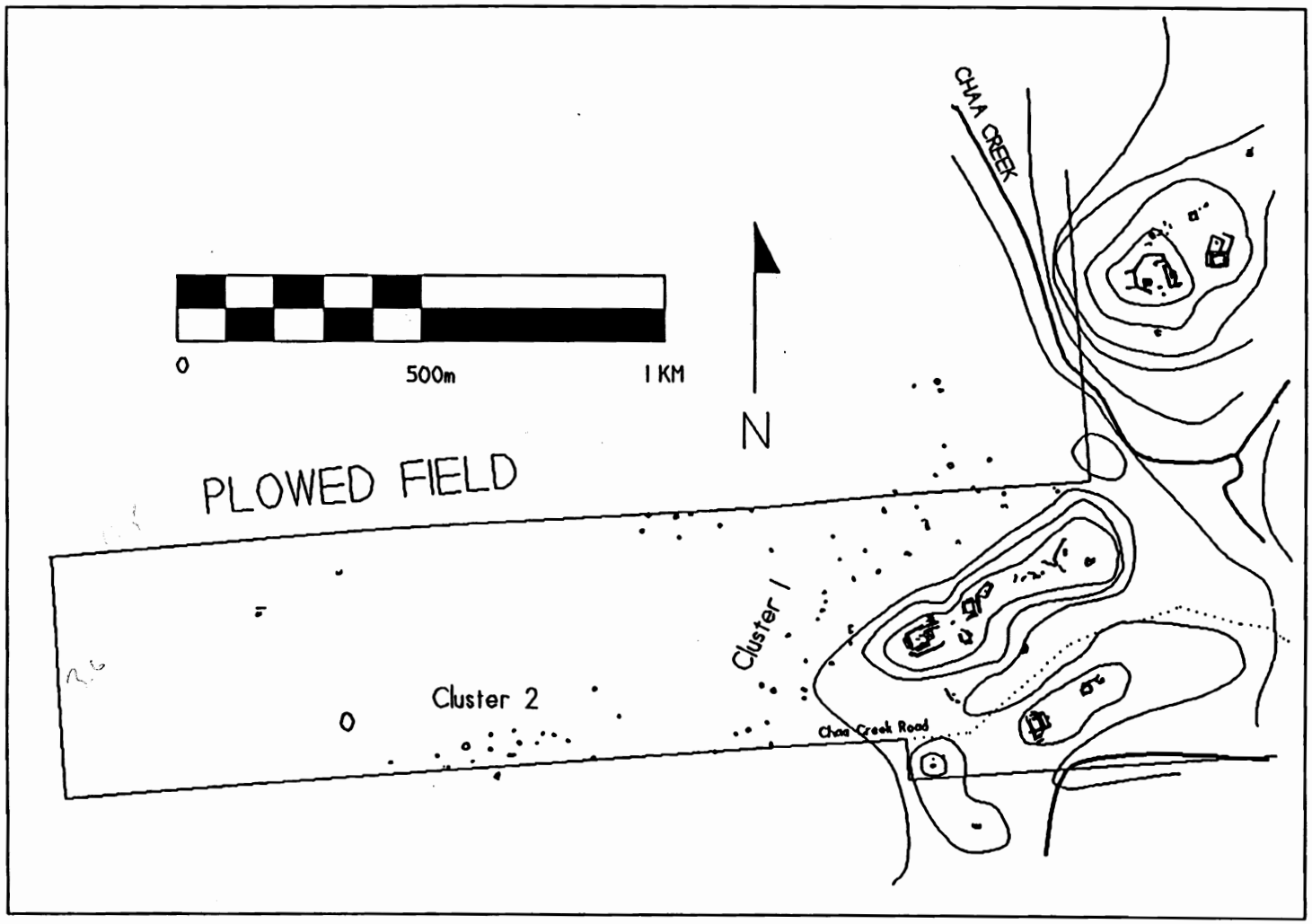
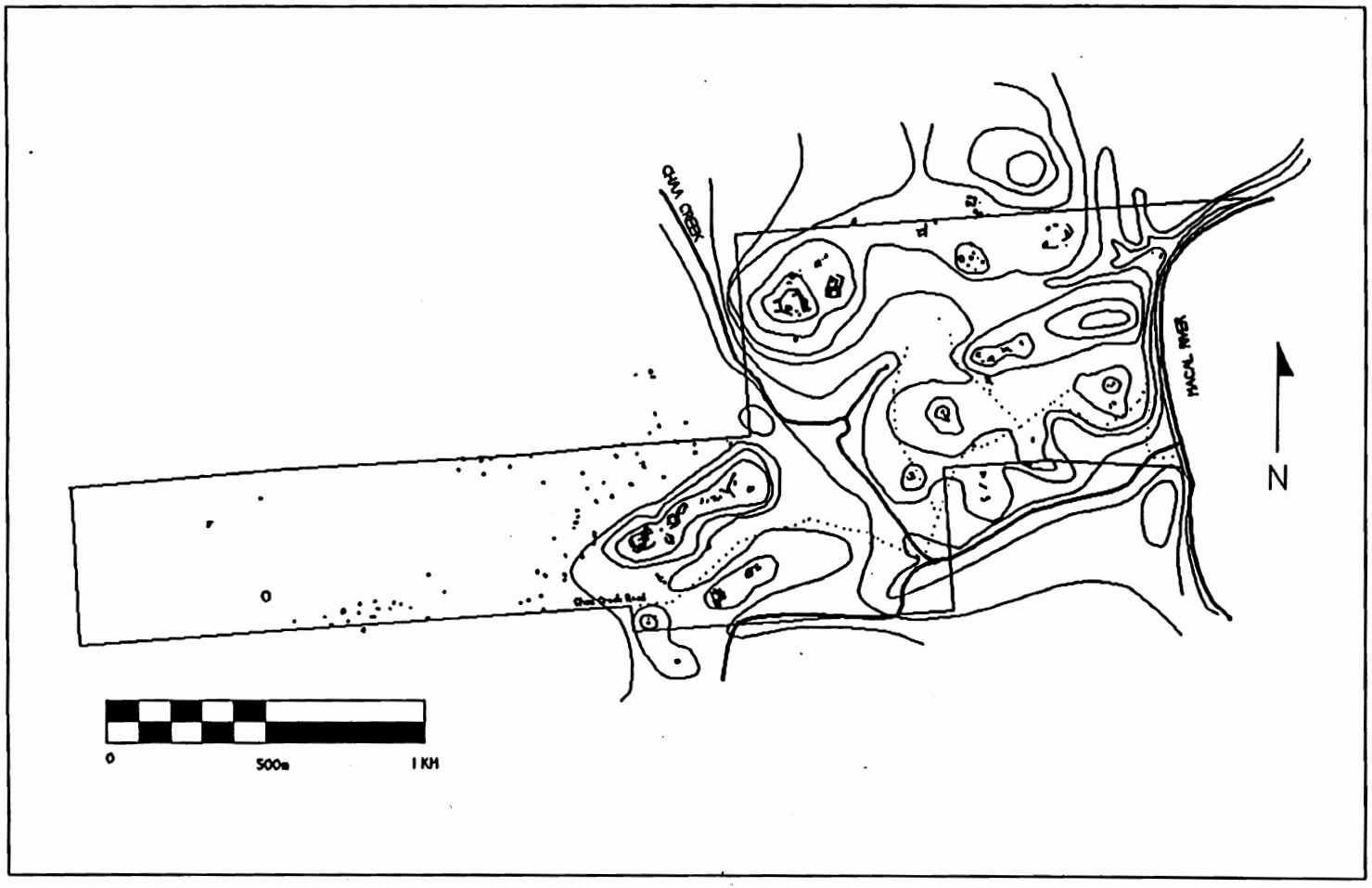



Map1. Upper Belize River Valley and Chaa Creek Zone




Map 2. Settlement clusters from plowed field survey.

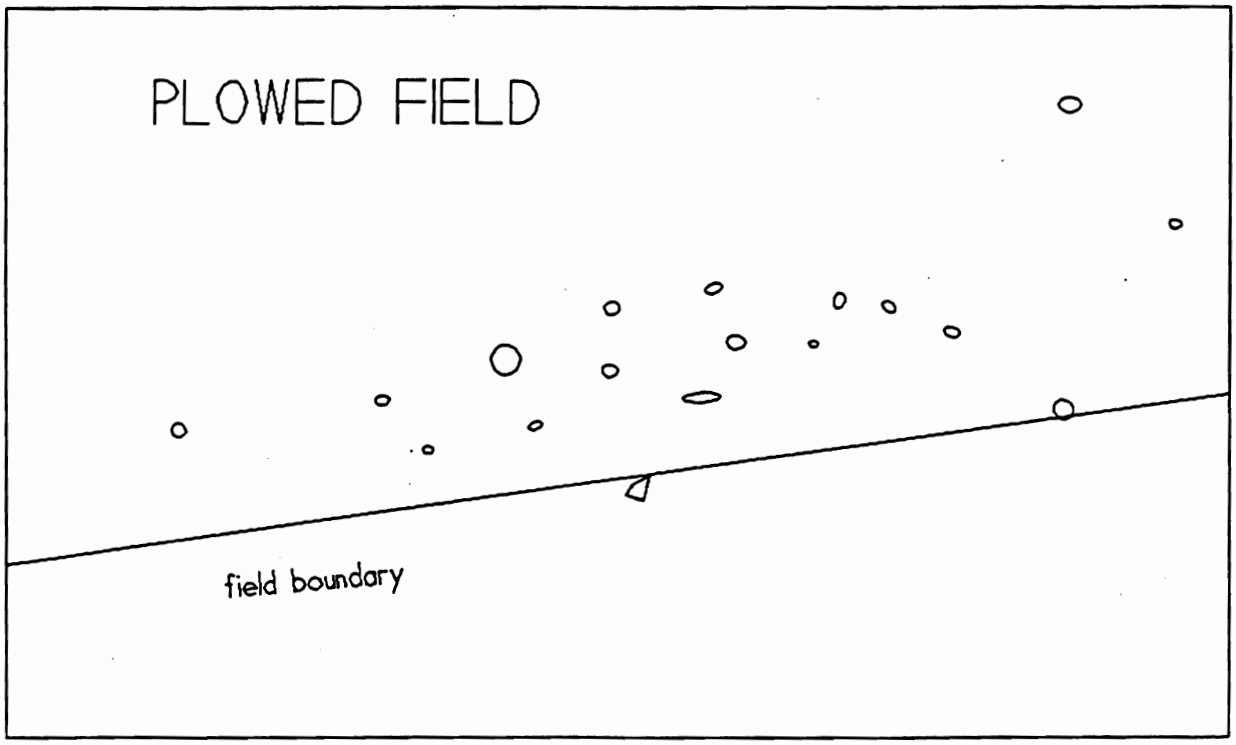



Map 3. Chaa Creek Zone

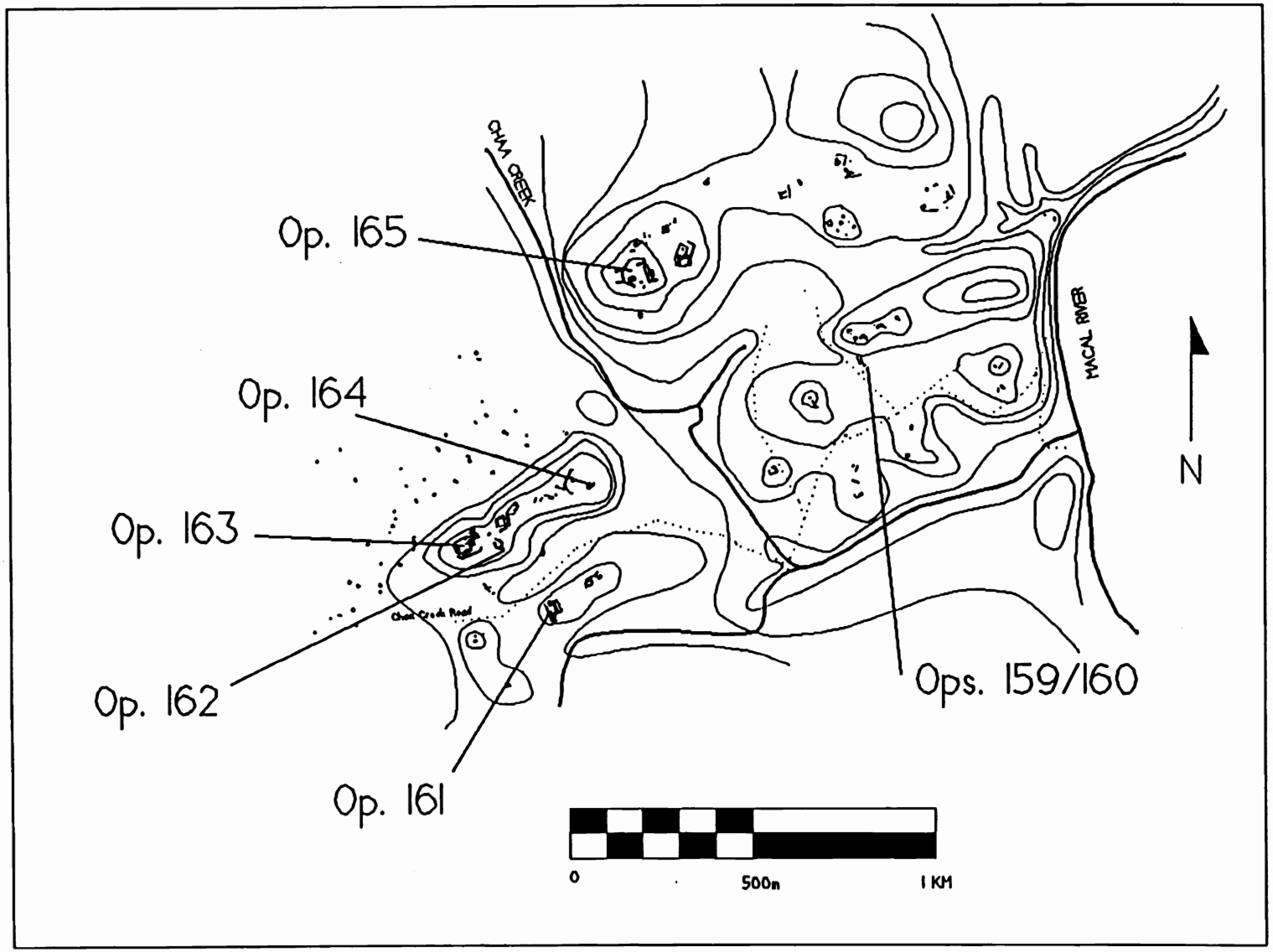
| Site | Lot # | Date |
|---|---|---|
| CC34 | 145A/1 | LCI-II |
| CC36 | 145B/1 | LCI-II |
| CC35 | 145C/1 | LCII |
| CC37 | 145D/1 | LC |
| CC38 | 145E/1 | Mixed |
| CC38 | 145E/2 | LCI-II |
| CC38 | 145E/3 | EC-LC |
| CC38 | 145E/4 | LCI-II |
| CC38 | 145E/5 | - |
| CC40 | 145F/1 | LCII |
| CC41 | 145G/1 | EC |
| CC42 | 145H/1 | LCI-II |
| CC42 | 145H/2 | LCI-II |
| CC42 | 145H/3 | LCI-II |
| CC43 | 145I/1 | Mixed |
| CC43 | 145I/2 | LCI-II |
| CC44 | 145J/1 | LCII |
| CC45 | 145K/1 | LPC-EC-LCI |
| CC47 | 145L/1 | LCI-II |
| CC48 | 145M/1 | EC-LCI |
| CC48 | 145M/1 | EC-LCI |
| CC49 | 145N/1 | LCI-II |
| CC49 | 145N/2 | EC-LCII |
| CC49 | 145N/3 | LCI-II |

| Site | Lot # | Date |
|---|---|---|
| CC50 | 145O/1 | LCII |
| CC50 | 145O/2 | LCI-II |
| CC51 | 145P/1 | EC-LC |
| CC52 | 145Q/1 | EC-LCII |
| CC53 | 145R/1 | EC-LCII |
| CC54 | 145S/1 | EC-LCI |
| CC54 | 145S/2 | T |
| CC54 | 145S/3 | EC-LCI |
| CC54 | 145S/4 | LCI-II |
| CC55 | 145T/1 | LCII |
| CC56 | 145U/1 | LCP-EC-LCI |
| CC57 | 145V/1 | LPC-EC-LCI |
| CC57 | 145V/2 | EC-LCI |
| CC57 | 145V/3 | LCI-II |
| CC58 | 145W/1 | LCII |
| CC58 | 145W/2 | LC |
| CC58 | 145W/3 | - |
| CC59 | 145X/1 | LPC-LCI |
| CC77 | 150A/1 | - |
| CC79 | 150B/1 | - |
| CC80 | 150C/1 | LCI-II |

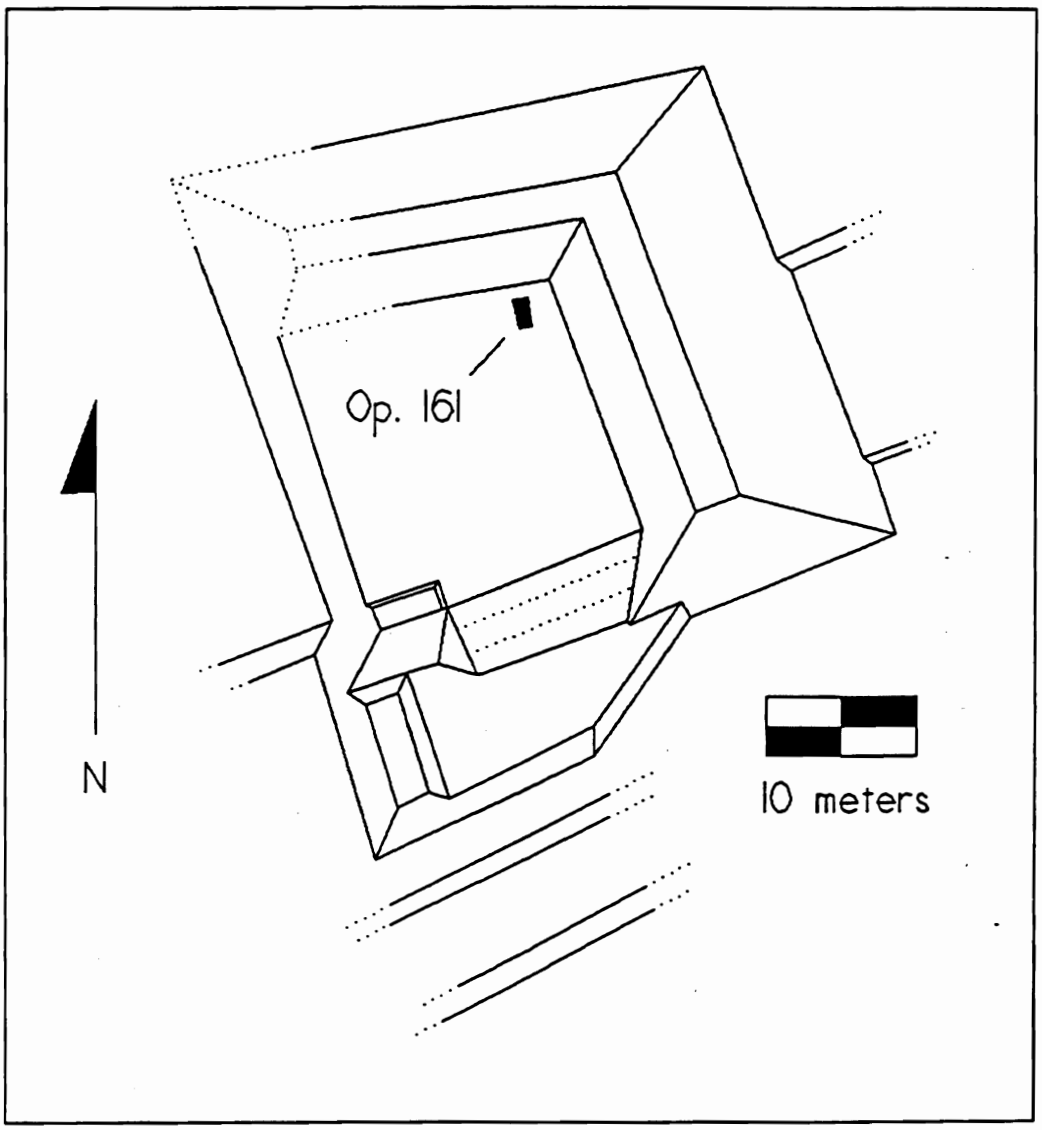
**Table 1. 1994 Plowed Field Surface Collections**



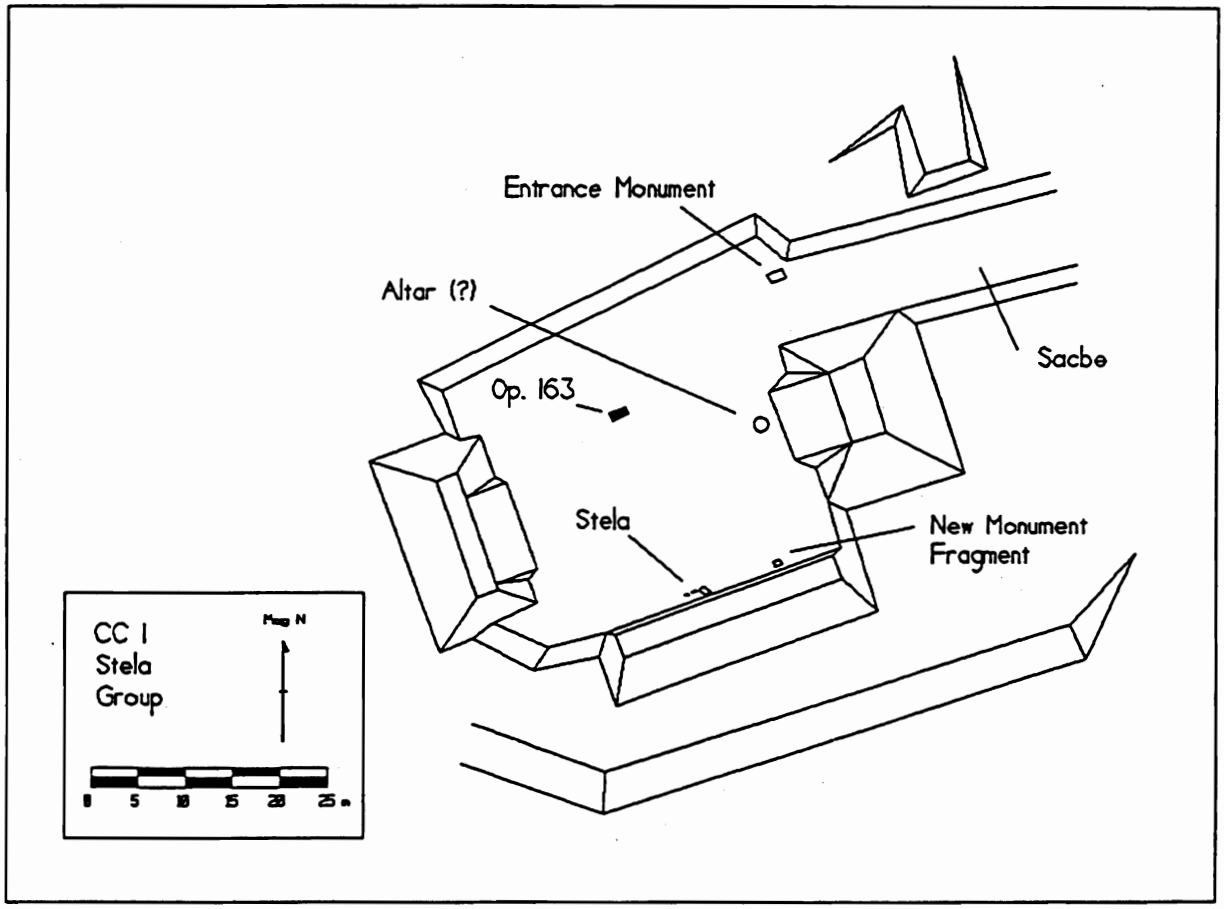

Map 4. Cluster 2



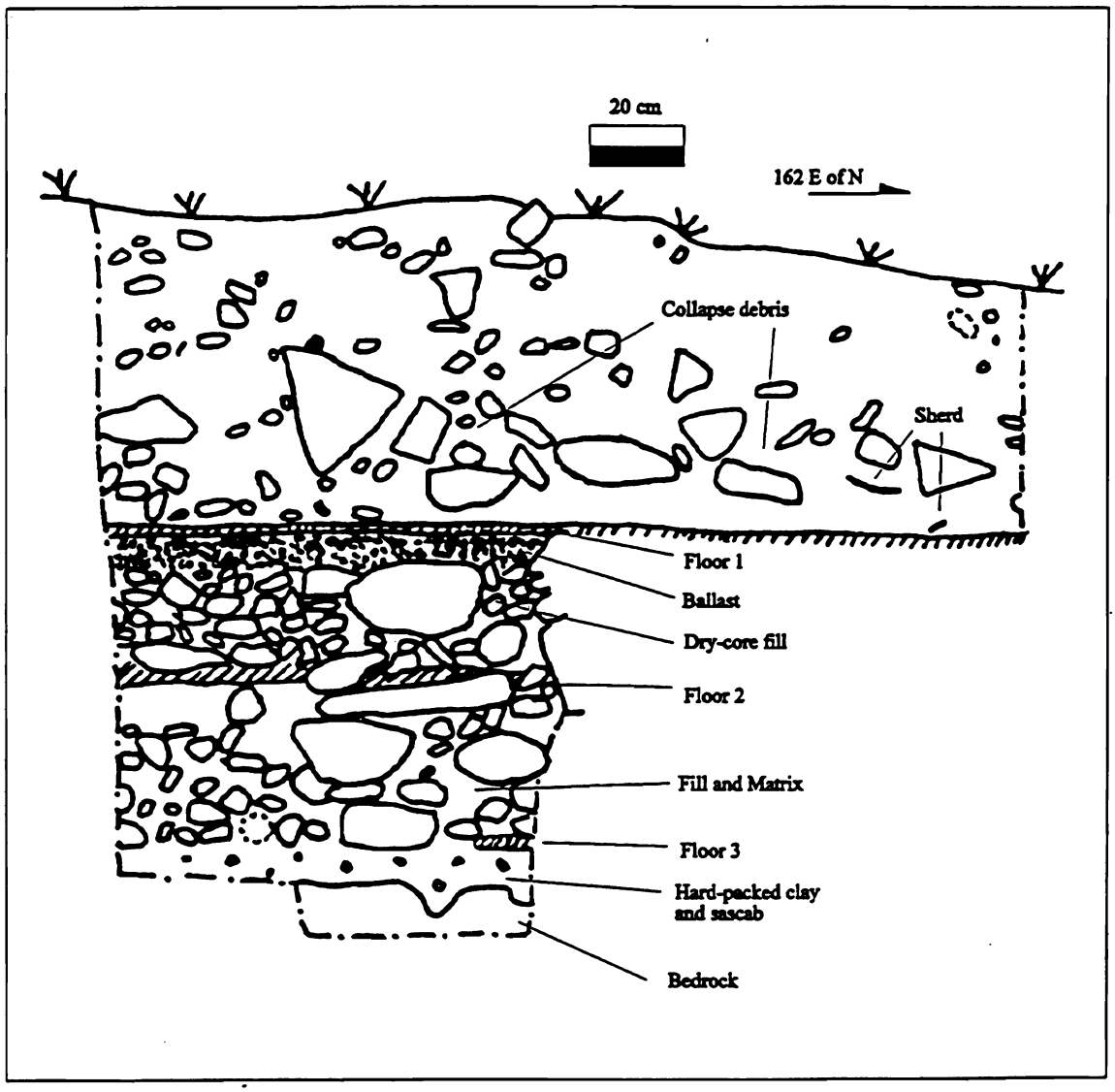

Map 5. 1994 test-pit operations



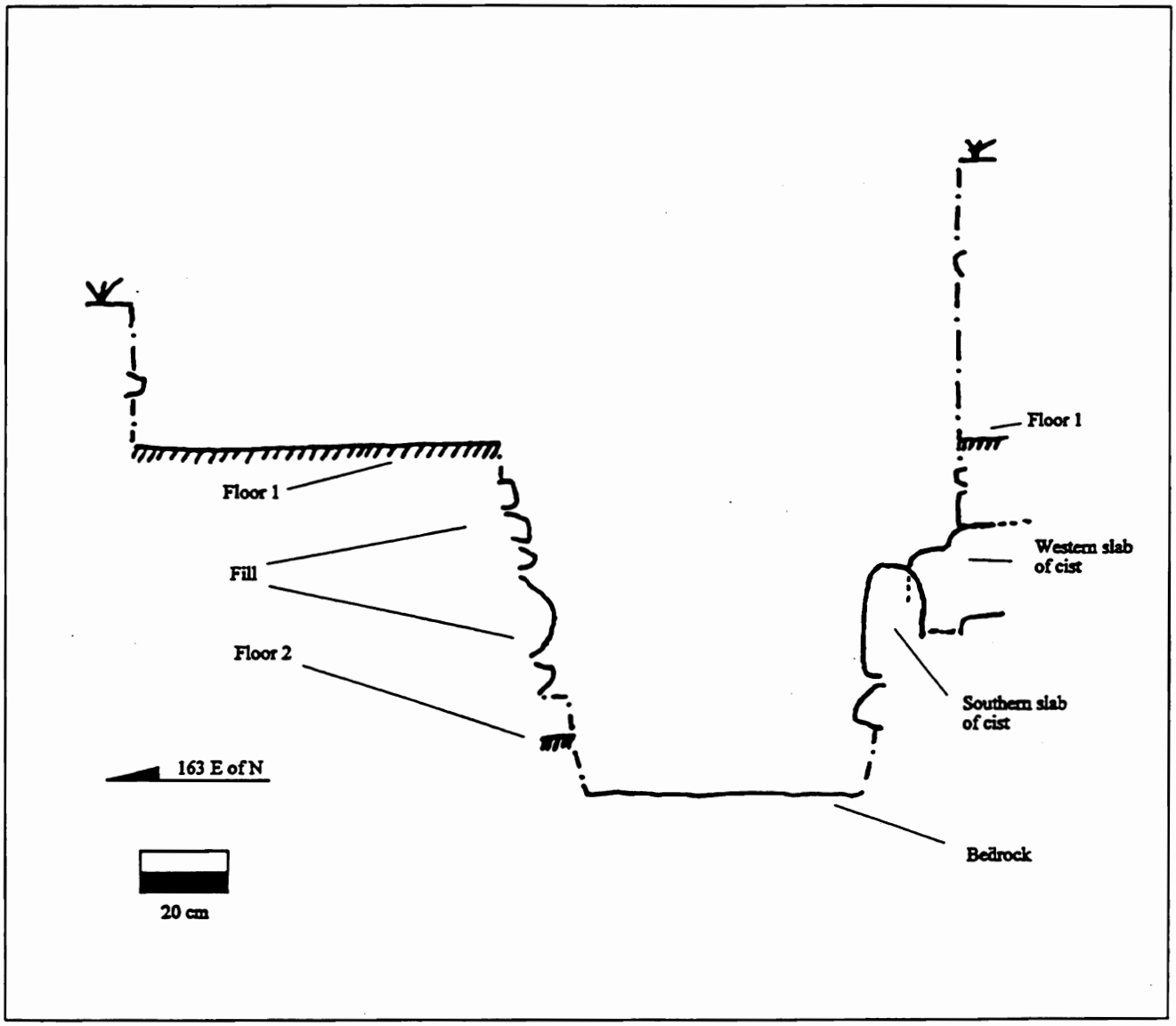

Map 6. Plantain Group (CC5)




Map 7. Stela Group (CC1)




Drawing 1. Operation 161 west wall profile




Drawing 2. Operation 161 section

# Notes on Chronology: The 1994 Progress Report on Xunantunich Ceramic Research

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After three years of excavations, XAP has begun to piece together a picture of Maya society at the mid-size, regional center of Xunantunich during the Late and Terminal Classic periods. Excavations focus on the latest architectural phases at three sites: the main architectural core of Xunantunich (Leventhal et al 1992, 1993; Leventhal 1992, 1993, 1994); its nearby elite hamlet, San Lorenzo (Chase 1992, 1993; Ashmore 1993, Yaeger, this volume); and Actuncan, a long-lived center only 1 Km north of the Xunantunich (McGovern 1992, 1993; also this volume). These excavations have yielded extensive sherd collections traditionally assigned to Gifford's Spanish Lookout phase. Thus, XAP ceramic collections provide an excellent opportunity to flesh out in greater detail the Late Classic ceramic assemblage and split the period into two separate phases: what we call the Late Classic II (LCII) and Terminal Classic phases, tentatively dated 700 to 830 A.D. and 830 to 1000 A.D., respectively.

This report, therefore, summarizes the research to date on the development of the Late to Terminal Classic ceramic chronology at Xunantunich. First however, before discussing chronology, a brief description of Xunantunich and San Lorenzo will be presented in order to examine the cultural contexts in which the ceramic sample was derived. Secondly, J.E.S Thompson's (1940) and James Gifford's (1976) chronologies will be reviewed. I feel a discussion of these previously established chronologies is important in order to clarify ambiguities I found within these schemes while working at Xunantunich. Ultimately, this paper will describe and illustrate Late Classic II and Terminal pottery assemblages to facilitate comparisons of pottery both among ranked households at Xunantunich and across sites within the Belize valley.

**Early Occupation and Ceramic Assemblages**

It should be stated that although my work focuses on the Late and Terminal Classic, Xunantunich and San Lorenzo have yielded scattered sherds and limited deposits predating the Late Classic period. Ceramic evidence points to an initial Middle Preclassic occupation with a more limited or intermittent use of the hilltop from Late Preclassic through Early Classic times. Despite this ceramic evidence, extensive testing and architectural clearing to date has recovered no in situ early architecture. The best evidence for Middle Preclassic occupation comes from fill used in the construction of temple A-1, plazas A-I and A-II, and A-17 (a third ball-court to the west of temple A-1). Their fill contains frequent Middle Preclassic sherds; at times, Preclassic sherds predominates over the Late Classic component. Yet at no time, does this fill contain a clean Middle Preclassic component. The only location where Middle Preclassic construction has been located is in front of El Castillo where possible wall remnants were encountered below Plaza A-1 (Operation 13D). Thus, the sheer quantity and general ubiquity of Middle Preclassic sherds argues for a moderately sized, early occupation of the hilltop.

In contrast, Late Preclassic through Early Classic sherds are scarce at Xunantunich. Sierra Red, Flor Cream and other waxy types are infrequently but

nonetheless consistently recovered from architectural fill. Similarly, basal flange bowl fragments are occasionally encountered in scattered excavation lots across the site. This year, large flanges occurred systematically, although scantly, in the sacbe fill to the east of Group A. Overall, the paucity of sherds dating between 100 B.C. and A.D. 600 signal a reduced use of the hilltop between its initial founding and later florescence. Given our current knowledge, their remains may be located within or beneath the massive architecture found within the central plazas.

Our Late Classic I (LCI) phase corresponds to Gifford's Tiger Run complex and is found at both Xunantunich and San Lorenzo. It is, however, poorly represented. Usually, LCI sherds are found in fill deposits located just above the sterile bedrock at Xunantunich or above the sterile clay at San Lorenzo. Many of these fill deposits contain both LCI and later sherds. This type of mixed fill indicates rapid expansion of Xunantunich and its supporting peripheral areas sometime shortly after 650 A.D.. Unfortunately, no primary LCI deposits have been found; this effectively limits our knowledge of the transitional complex and how it compares to later assemblages.

More deeply stratified deposits, yielding Late Preclassic through Terminal Classic ceramic complexes, have been located at Actuncan. Although the site contains extensive Preclassic architecture and some tantalizing early collections which could help clarify the ceramic chronology in the Belize valley, the deposits typically produce few diagnostic sherds. With the exception of Late Classic deposits, ceramic collections from Actuncan's architectural fill appear frustratingly jumbled and temporally discontinuous. This situation is most likely the product of both prehistoric building strategies and a sketchy ceramic chronology.

**Late and Terminal Classic at Xunantunich**

Between A.D. 650 and 830 major construction projects at Xunantunich superseded the small ridge top settlement and resulted, for the most part, in the architectural configuration we see today. Leventhal (Leventhal et al 1993) and Ashmore (1993:13) contend that this florescence resulted from increased local competition and instability in the valley due to the decline in power at Buenavista. Excavations in the central architectural core of Xunantunich continue to uncover massive Late Classic II public architecture, these excavations include the major substructure trenches into temple A-1, A-17, and Group C, a set of semi-public platforms, terrace arrangements, and compounds behind El Castillo. El Castillo (A-6) has received extensive work focused mainly on its top set of buildings and the famous plaster frieze.

Household excavations at Xunantunich focus on two areas: Group D, an elite residential complex composed of 14 mounds with a sacbe, two unpainted stelea, and a 6 meter central pyramid (Braswell 1992, 1993, also see this volume); and the complex east of A-12 interpreted as the service area for the royal residence (Jamison and Wolf, this volume). At Group D, all but three mounds (D-4,7,9) of the eleven tested were constructed or extensively modified in the LCII period. All three platforms of the royal service area east of A-12 were constructed in the Late Classic.

Household excavations are the focus of research at San Lorenzo, an elite hamlet of mid-size plazuela groups and single small mounds located along the Mopan river less than 1 km from Xunantunich. One moderate sized plazuela group, San Lorenzo Plaza Group 1 (SLPG 1), has received both platform trenching and horizontal excavation (Chase 1992, 1993; Yaeger, this volume) while four other smaller groups or mounds - San Lorenzo (SL) 22, 24, 25, and 31 - received horizontal stripping of the last architectural phase (Yaeger, this volume). Additionally, a test pitting program in 1993 sampled eight other platforms in order to locate household middens (Chase 1993). Analysis of ceramics from all mounds suggest that all but two (both contained in Yaeger's SL-28), were initially constructed and occupied during the LCI to LCII phases (see LeCount 1993). The other two mounds have yielded Early Classic sherds and thus may have been constructed earlier. As to be expected of households, SLPG 1 illustrates extensive architectural remodeling, plastering, and wall building which took place during the Late Classic II period.

The resulting picture of Xunantunich and its adjacent elite hamlet during the Late Classic II is one of rapid construction and architectural modification. Due to frenzied construction during the Late Classic II period, in situ trash deposits are difficult to locate. A deep stratified trash deposit (Op 123 A) containing Terminal and LCII assemblages is located in a corridor between A-12 and its ancillary service structure. Other stratified trash deposits were found along both sides of a stairway in the service building east of A-12 (Op 116 C,D,E,F) and behind plauzela group walls at San Lorenzo (Op 129D {90G}; 113 F,G). Smaller accumulations of single component LCII trash are slightly easier to find. Most are found in specific locations, usually against and behind domestic platforms walls (Op 22JJ; 95D,K; 130G; 136A-C; 142A), inside corners of domestic staircases (Op 116K; 74Z2), or within blocked off alley ways (Op 25D, 116I). A small ritual deposit of LCII vessels was found in a burnt feature within a benched room at Group D, possibly associated with a termination ritual (Op 22 Q/5-6). These deposits are the best data we have for reconstructing Late Classic II household assemblages and identifying temporal diagnostics.

Single-component domestic deposits, such as those described above, are the principal contexts used to reconstruct household ceramic assemblages. For my research, these primary contexts are extremely important for generating accurate proportions of pottery styles and forms. Late Classic II sherds from fill, however, can also be used in ceramic analysis - mainly for the purpose of general description. These sherds can be analyzed to determine the range of variation in basic characteristic such as rim size and form; paste and temper composition; surface treatment and color; and vessel forms and design elements. Used in conjunction with data derived from sherds located in more secure contexts, a basic description of pottery types can be generated. Ultimately, this base line data can be used to address differences between household assemblages resulting from factors such as political affiliation and social rank.

Terminal Classic construction at Xunantunich and San Lorenzo was

oriented more towards maintenance and modification rather than new, major construction. Although differences in the amount of building between the Late Classic II and Terminal periods awaits more extensive pyramidal trenching and volumetric studies, it can be tentatively stated that the site reached its maximum areal extent in the Late Classic II period. Even though all structures have yet to be tested, there appears to be no new pyramidal construction dating to the Terminal Classic. Within the civic center, Terminal construction focused on the modification or supplementation of existing structures such as the last building phase on the top platform of A-1 and possibly new building on top of A-6, such as A-6 1st. In fact, there is clear evidence to suggest the site closed in on itself. Most notably, a wall was constructed to restrict access to Plaza A-1 and limit admittance to the front of El Castillo (Jamison 1992, Leventhal et al 1993). Furthermore, activity areas across the site were reduced in size. For example, during LCII times, three platforms east of A-12 were constructed and used by the royal service workers. In contrast, during the Terminal period, service activities shifted onto the single southern mound closest to Plaza A-II with only scattered trash found across the rear platforms to the north.

At Group D, new Terminal construction focused on low, long mounds, D-4,7,9, located around the central platform, D-8. Additionally, the central platform was expanded to the north with the construction of stairs in the direction of the sacbe. However, some platforms, D-10,12,13,14,15, show little or no evidence of Terminal sherds and may have fallen into disuse (Braswell 1992, 1993, also see this volume). Thus during the Terminal Classic, Group D residents focused their activities in the northern portion of the complex and made limited use of the area to the south. This pattern of diminished activity areas is similar to that found in the central architectural core.

At San Lorenzo, evolution of the community is not as well defined as that of Xunantunich due to the greater excavation time and money directed at the architectural core. What we do know is that Terminal construction is confined to modification of existing mounds, much like that found within Xunantunich. At SLPG 1, the best evidence for Terminal construction is the supplementation in height of the southern structure (str. #3) and the building of a vaulted room (Yaeger, this volume). Burnt plaster and diagnostic sherds found along the rear wall of the eastern structure (str. #2) point to the modification or at least the re-plastering of the platform surface during the Terminal period. Little evidence remains for such Terminal remodeling on the lowest, northern structure (str. #1), although Terminal trash was found behind the rear wall (Op 113F/G). Among the smaller mounds tested this year, two out of four (SL-24 and 31) show signs of Terminal occupation. Site SL-24 presents strong evidence for Terminal period modification, while SL-31 under went little or no construction during this time. Lastly, only three (SL 23, 13, and 21) out of the 8 mounds test pitted in 1993 show good indications of Terminal occupation (LeCount 1993); whereby "good Terminal occupation" is assigned to those mounds with pits yielding Terminal diagnostics from non-surface lots. This is a important distinction because almost all San Lorenzo mounds have scattered Terminal diagnostics on the plowed and grazed surface. These sherds are clearly not

in situ and do not necessarily indicate Terminal occupation. Thus, roughly half of San Lorenzo's mounds were "abandoned", or more accurately, neglected by the community during the Terminal Classic. In conclusion, although Xunantunich weathered the collapse of the Peten Maya, it too found living difficult during the Terminal Classic.

Like the LCII deposits, the best Terminal Classic trash at both Xunantunich and San Lorenzo has been found inside staircase corners (Op 85J,G); on top of stairs (Op 22E,F,G & T,U,V; 85O); and behind platform walls (95C/5-D1; 129D; 138D; 146B). In addition, scattered in situ Terminal debris, but not midden deposits, can be found lying in a thin layer across the original, buried occupation surface or plastered plaza floor (22R,Y,Z,DD,JJ; 110A-M,R,S; 117C). Collapse debris from crumpling structures helped seal these accumulations between occupation surfaces and architectural fall producing clean, single-component deposits. As discussed in the Late Classic II section, Terminal sherds found in mixed surface contexts are used to supply information concerning pottery types as a whole. However, information concerning the frequency of types within a temporally discreet assemblage is derived from clean, single-component deposits described above.

**Chronology Building**

In 1992, I rapidly realized that in order to study Late Classic to Terminal household pottery assemblages, I would first need to clarify the chronological sequence at Xunantunich. Although previously defined sequences were available, both had their particular problems - many of which are discussed later in more detail. Originally, I found J.E.S. Thompson's Benque Viejo seriation quite accurate and useful in developing my initial catalogue. Unfortunately, many archaeologists in the Belize valley do not utilize his work and instead, prefer to use Gifford's type-varieties. Despite the wide-spread use of Gifford's scheme, I found it too general for my work at Xunantunich. Furthermore, many of Gifford's type-varieties did not match Thompson's types and thus I needed to correlate the two schemes. Consequently, I began looking for deeply stratified deposits suitable for pottery seriation.

Household excavations at San Lorenzo's SLPG1 (Op 71) yielded the best stratigraphy for establishing a ceramic sequence. A test pit in the saddle between two structures revealed a series of floors and associated fill levels which produced significant amounts of ceramic material needed for seriation (Chase 1992, LeCount 1992). In 1992, analysis of these ceramics, plus stratified lots from operations 18E and 39, provided the initial background data for the late sequence we use today (Late Classic I, Late Classic II and Terminal Classic). This chronology is based on the frequency of pottery attributes and types as well as the microseriation of Mount Maloney incurving bowl lips (LeCount 1992). These blackware bowls comprise approximately 30% of the vessel assemblage, making it the most common vessel type found in Xunantunich contexts. It is fortunate that these common bowls show continuous directional change in lip orientation and thus provide a reliable measure for dating most collections. Because this background work was so greatly

aided by previously established chronologies, a review of both Gifford's and Thompson's sequences will be presented and discussed below.

**Gifford's 1976 Barton Ramie Chronology**

Early Ceramic Complexes

Gifford's Barton Ramie chronology is the most widely used temporal sequence and pottery typology in western Belize and eastern Guatemala today. The importance of this work lies in the fact that his chronology spans the entire prehistory of the area and provides systematic description and illustration of temporally sensitive type-varieties. In general, I have found that Gifford's scheme works relatively well for the Middle Preclassic (Jenny Creek), the early part of the Late Preclassic (his Barton Creek complex) and the Late Classic periods (Tiger Run and Spanish Lookout). Given its success in identifying these periods across large areas, it appears that during these times, potters produced very similar wares. In many cases, Belize valley types mirror larger regional trends and point toward widespread production of standardized styles and forms throughout the greater Maya lowland area. Further simplifying our ability to identify these assemblages is the fact that domestic pottery is similar to that used as mortuary goods. These factors produced well-defined, easily recognizable assemblages. Reasons behind such widespread ceramic horizons are varied. Large, centralized states such as the Inka and Aztec typically spread imperial styles across wide areas. In the Maya lowlands, widespread styles could be result of trade networks such as those found in the Late Classic or the result of initial, rapid colonization of an area - a case which can be argued for the Middle and Late Preclassic periods, as well as the beginning of the Early Classic.

Unfortunately, this pattern of regional and contextual assemblage homogeneity is not found throughout the ceramic sequence. Between approximately B.C. 100 and 600 A.D., the local Belize valley potters appear to become more autonomous. This autonomy resulted in the proliferation of ceramics manufactured using local materials and idiosyncratic styles only loosely based on regional pottery trends. To complicate matters, domestic pottery differed radically from that encountered in ritual contexts. Gifford, in an attempt to subdivide this time period, resorted to using uncommon types and funerary goods, many of which he associated with foreign influences. His use of these rare items as temporal diagnostics was predicated by the unchanging and eclectic nature of the local assemblages. He defined the Proto-Classic complexes of Mount Hope and Floral Park based on various Usulutan and Chalchuapa (El Salvador) derived styles such as those found within the Sarteneja and Aguacate ceramic groups. These uncommon foreign styles are conventionally found in burial contexts and rarely encountered in trash or fill making classification and dating of domestic deposits difficult. The Early Classic assemblage, Gifford's Hermitage, is also based on uncommon items. This locally enigmatic phase is traditionally identified using Peten styled basal flange bowls which are infrequently found in either domestic or special deposits - even in the central Peten (R.E. Smith 1955). Fortunately, the Early Classic period has a set of more common diagnostic ceramic groups such as Minanha, Balanza, Pucte, and Dos

Arroyos which, despite having their own particular identification quirks, makes this period easier to recognize than Proto-classic periods.

It is my opinion that underlying Gifford's Proto and Early Classic complexes there is an unrecognized local assemblage. I believe this long-lived, autochthonous assemblage is capable of being identified and seriated. This view is shared by other researchers in the Belize valley (Jaime Awe, Anabel Ford, Gyles Iannone, and Pamela Weiss - personal communication). What we do know about this Belize valley tradition is that it contains a myriad of waxy, semi-waxy, glossy, and semi-glossy orange to red wares. These wares appear to be discreet groups, but because of small sample sizes, they currently defy quantitative or qualitative methods for unambiguously describing their differences. I suggest that this unstandardized, heterogeneous assemblage was the result of pottery production within small scale, regionally fragmented, uncentralized groups. In other words, within the Belize valley, many potting villages produced local ceramic styles with little influence from large scale polities to the west or north, let alone, from other neighboring valley groups. Until more research is conducted, the reasons for these independent traditions can only be speculated upon. Within small scale, localized political polities, such as chiefdoms, contact with outside groups can be infrequent or hostile; distribution systems can be limited; or local group affiliation can be expressed through distinctive pottery styles. All these situations have the ability to limit stylistic homogeneity. Understanding this highly variable set of assemblages, therefore, will take years of careful comparison among Belize valley localities. One suspected long-lived and wide-spread ceramic group, Sierra (Red), however, may be capable of seriation. If this is possible, it would help date the majority of lots containing common household trash dating between the Late Preclassic and the Early Classic periods.

Spanish Lookout Complex

Most of the ambiguities that I find while working with the Barton Ramie sequence at Xunantunich are related to the fuzziness of Gifford's distinctions between his early (LCII) and late (Terminal Classic) facets within the Spanish Lookout phase. Apparently, the low frequency of late facet deposits at Barton Ramie did not allow for its systematic separation from the early facet nor its succinct description (1976:226). Another confounding factor could have been Gifford's attempt to divide the entire phase into three facets (see reference to middle facet, 1965:377; 1976:226) which in effect, obscured the difference between early and late components. Despite these difficulties, many of Gifford's type-varieties and their temporal designations are mirrored in the ceramic assemblages at Xunantunich. The following is a list of Gifford's diagnostic type-varieties or ceramic groups by facet for the Spanish Lookout period. Please note that this list is a compilation based on both his 1965 and 1976 works. I compiled this list because of a number of ambiguities I found within the two schemes, especially the 1976 reference to Benque Viejo Polychrome as being present during the entire phase. In contrast, Gifford states in 1965 (WBGG:373-6) that ashware polychromes drop out of the assemblage in the late facet.

Early facet

Sotero Red-brown: Sotero Variety
Macal Orange-red: Macal variety
Dolphin Head (Red) group
Belize (Red) group
Vinaceous Tawny ware
Garbutt Creek group
Yalbac (Smudged-brown) group
Peten Gloss ware
Mount Maloney group

Late facet

Belize Red group
Garbutt Creek Red: Garbutt Creek and Paslow varieties
Vaca Falls Red types
Roaring Creek Red type
Kaway Impressed types (see 1965:373)
Mount Maloney group

At Xunantunich, some modification of Gifford's type-variety typology and chronology is required to separate the LCII and Terminal Classic assemblages. First, as would be expected, I found differences between Barton Ramie and Xunantunich collections which pertain to the distance between the two sites. For example, some Barton Ramie types are found in very low frequency at Xunantunich, groups such as Garbutt Creek Red, Sotero Red-brown and Yalbac Smudged-brown. The frequency of these types may have more to do with production and distribution zones or polity boundaries than temporal differences. Similarly, some very distinctive and abundant Xunantunich pottery styles are not found in Gifford's work, especially many types of blackware (Mount Maloney) jars and small rimmed bowls; groove-incised black slipped ashware vases; and all types of incensarios. I find these styles and forms very sensitive to temporal shifts at Xunantunich.

Secondly, it is my opinion that Gifford's reliance on the type-variety scheme hindered his ability to see subtle temporal shifts in decorative techniques, motif styles, and vessel forms within his types. This temporal variation is especially true for types within the highly diverse Belize Red Group, in particular Platon Punctated-incised and McRae Impressed types. For example, Platon Punctated-incised: Platon variety is defined by the grooved-incised lines, punctations, or various combinations of both applied to Belize Red dishes, bowls, or vases. At Xunantunich, I have found a total of fourteen variants of this type when combinations of vessel form and decorative techniques are taken into account. One of these formal variants, barrel-shaped vases, may have either a pseudo-glyph band near the rim (Figure #5a) and date to the LCII period or a simple, stepped design (Figure #5b) which dates to the Terminal Classic. I feel, therefore, that modal analysis can help separate diagnostic elements within Gifford's established type-

varieties and help clarify household assemblages, temporal complexes, and regional ceramic spheres.

Thirdly, I find more overall variation in ashware during the Late and Terminal Classic than Gifford. Temporally, ashware appears earlier and lasts longer at Xunantunich than is evident in Gifford's work at Barton Ramie. At Xunantunich, I find that some Belize Red: Belize variety dishes appear in the Late Classic I period while most Chunhuitz Orange: Chunhuitz varieties originate in the Terminal Classic. Two ashware hollow oven-feet with modeled faces have also been found indicating a possible precursor to the Post-Classic effigy foot within the Belize valley.

More importantly, I can not consistently make the distinction between Gifford's two ashwares: British Honduras and Vinaceous Tawny. This ware distinction is based on the correlation of slip and paste color. Specifically, British Honduras ware is associated with a red slip on light "buff" paste typified by the Belize Red group; whereas, Vinaceous Tawny ware is associated with an orange slip on a "tan" paste and typified by the Chunhuitz Orange group. I find, however, that ashware paste color graded continuously from light gray to strong brown with an equally continuous variation in surface color and treatment.

Much of the continuous variation evident in the slip color is due to the fact that the two slips are derived from the same clay based pigment. Red slips are produced using a thicker application of the pigment than for the orange slip (see Shepard in Thompson 1940:11-17) and any variation between the two extremes were produced by regulating the amount of pigment. Polishing also contributes to slip color, whereby polishing produces denser hues by aligning fine clay particles. Given a large sample of well preserved sherds, it is evident that combinations of slip color and polishing results in continuous variation in surface treatment. However, like Gifford, I find that the strongest patterning appears to be that the Belize Red group is consistently higher polished with denser hues than the Chunhuitz Orange group which has a thinner, lighter orange, matte slip. Patterning is also evident across surface treatment and vessel forms. In general, the Belize Red surface treatment is applied to a wider variety of forms than Chunhuitz Orange. Usually, orange slips are not applied to tripod vessels, rimmed bowls, barrel-shaped vases, pyroforms, or jars. I have, however, frequently found examples which contradict these associations.

William Woods, SIU-Edwardville soil scientist, suggests that ashware paste color may be a product of the amount of organic material in the clay source (personal communication). One possibility is that clay used for ashware is actually derived from buried, decomposing ash deposits found at the bottom of old lake beds. Within these lakebed deposits, more deeply buried ash based clay contain less organics than more recent deposits. Ashy clay could be stratified by the degree of organics and may grade through a single deposit. A second source of paste color variation may be due to firing conditions. I have found ashware vessels which

exhibit a range of paste colors from light gray to tan in what appears to be fire clouds. This suggests hotter, more reducing atmospheres produce light gray pastes, whereas more oxidizing atmospheres produce tan colored ones. To support this observation, light gray pastes are generally harder and "clink", whereas, tan to brown pastes are softer and more friable. Taken as a whole, these observations argue for a number of factors that result in different ashware paste colors including source of raw material and firing conditions. Although my detailed analysis has just begun, I find that both Belize Red and Chunhuitz Orange groups have the same overall range of paste colors. Furthermore, over 50% of the sherds from both groups exhibit reddish yellow (Munsell 7.5YR or 5YR 6/6, 6/8) paste. Despite these consistencies, Chunhuitz Orange pastes appear to be more variable and tend to be browner than the Belize Red group pastes. This indicates that although potters can obtain the same clays, those producing Chunhuitz orange have greater access to a larger range of resources.

Lastly, I found Gifford's jar typology confusing and difficult to use. Clearly, his most important criterion for jar classification was based on surface treatment and matrix composition which is consistent with his basic classification scheme. Unfortunately, this focus resulted in confounding lip types, rim curvatures, neck and collar sizes, and body forms across ceramic types. Once again, this methodology obscures important temporal variation. For example, I find that one of the most important diagnostics of the Terminal Classic is the piecrust lip on jar rims. This lip form is found across numerous Cayo and Alexander Unslipped types. Furthermore, I believe it is exactly those formal jar attributes confounded by Gifford that help determine differences in social standing. Jars provide information concerning the scale of domestic cooking, ritual feasting, and long-term storage.

Because of these problems, I was reluctant to use Gifford's typology as the basis for initial ceramic research at Xunantunich. Instead, I formulated a modal classification scheme based on specific variables which I felt were sensitive to both temporal and social aspects of ceramic assemblages. In addition to these variables, my computer based recording system does catalogue Gifford's type-varieties for non-eroded rim sherds. Only non-eroded rim sherds are assigned type-variety names due to the emphases of Gifford's classification on rim forms and decorative elements.

In an attempt to identify temporally sensitive variables for Late and Terminal Classic pottery, I relied heavily on Thompson's 1940 Benque Viejo ceramic research and Sabloff's 1975 Siebal typological scheme. I found Sabloff's scheme the most systematic for describing pottery forms and much of the terminology I use is adopted from his work. However, it was J.E.S. Thompson's research that provided the basis for much of my initial ceramic knowledge.

**Thompson's Ceramic Chronology**

Like the current Xunantunich project, Thompson apparently had problems locating earlier ceramic assemblages. His early Middle Preclassic (Benque Viejo Ia) sample was derived from an unknown location within Group A (1940:8) and his

later Preclassic (Benque Viejo Ib) assemblage was based on A.M. Tozzer and R.E. Merwin's 1909 Peabody Museum collections recovered from "Mound 1, southwest of Benque Viejo" (1940:8). His Early Classic (BV II) ceramic assemblage was, in his own words, "precariously established" on seven basal-flange bowl sherds found in mixed deposits. Since pre-Late Classic assemblages are not the focus of this report, the following section will concentrate on Thompson's contributions to understanding the later ceramic assemblages.

The strength of Thompson's 1940 Benque Viejo ceramic chronology lies in the distinction between the Late (his Benque Viejo III) and Terminal Classic (Benque Viejo IV) periods. His chronology was established by analyzing ceramic collections from well-stratified deposits located primarily in Group B, a residential complex west of the central plazas at Xunantunich. These collections were sorted using a classification scheme which allowed him to single out and combine temporally diagnostic elements across wares. I found his resulting ceramic types and their temporal assignments highly representative of the assemblages recovered from XAP's stratified excavations.

Thompson's Benque Viejo III (BVIII)

Thompson recognized the similarity in types among his BV III (Late Classic) collections. However, within this phase, he notes minor differences which exist between early and late components, although, these differences were "mostly questions of preponderance of various wares rather than a sharp break"(1940:9-10). Thompson distinguished Late Classic I (BVIIIa) from Late Classic II (BVIIIb) assemblages by the frequency of lateral ridged dishes and calcite tempered polychrome pottery (Table #1). I also found this to be a very strong pattern whereby ashware polychromes replace calcite polychromes in the Late Classic II phase. During the BVIIIb phase, Thompson notes the diversification of ashware types; I also find this to be true of both orange and red slipped ashwares.

Thompson's Benque Viejo IV (BV IV)

In Thompson's words, "Benque Viejo IV represents a clean break with the past, since most dominant forms are absent from earlier deposits" (1940:10). He describes the main Benque Viejo IV diagnostic features (Table #2) as flat lips on fugitive blackware incurving bowls; piecrust lips on unslipped storage jars; oven-footed red slipped ashware; carved redware vases; and the lack of polychrome ashwares (1940:11).

There are only a few areas in which my research contradicts Thompson's scheme. First, I find that some types are not as temporally discreet as Thompson indicated. Some of his Benque Viejo IV types may start earlier, at the very end of LCII(B), and then continue into the Terminal Classic. These transitional types are rare and include his Fugitive blackware (Mount Maloney) rimmed bowls, (Cayo) Unslipped storage jars with flaring lips (without piecrust decoration) and tall gentle outcurving necked plainware jars. Current excavations at elite contexts at Xunantunich (A-6 and A-12) has discovered a previously undocumented

polychrome ashware type which also falls into this time period. This red and black on light orange tripod dish has tall hollow columnar feet and one of these dishes has a notched basal angle.

Secondly, I think that barrel-shaped vases span both the Late Classic II and Terminal periods, whereas Thompson restricted their use to the LCII period. I have found that vases with groove incised stepped designs, like those shown in Thompson's figure 20, date to the Terminal while those with more elaborate pseudo-glyph bands date to the LCII period. I also disagree with placing fluted vessels into the Terminal assemblage, I feel fluting was discontinued after the Late Classic II period.

**The Xunantunich Ceramic Sequence**

My ceramic chronology for Xunantunich is not a new, radically different scheme; rather, it is the result of almost 60 years of research in the Belize valley by many distinguished archaeologists. Because of this body of work, I try to use those names and terms which have been previously assigned in an attempt to reduce confusion and title inflation. However, I generally only use Gifford's group names because many of his type-varieties confound form, decorative techniques and design motifs. The following section contains a brief summary of temporal diagnostics and assemblage lists for both the Late Classic II and Terminal Classic period ceramics. Lastly, a more detailed description of wares and illustrations of diagnostics are provided. The Late Classic I temporal diagnostics are only briefly summarized. All descriptive summaries are still tentative and awaits further statistical analyses, especially correlation coefficients to be performed at UCLA in 1995.

Late Classic I temporal diagnostics are easily recognized. The most common types are monochrome and polychrome lateral ridged dishes which mark the end of a long tradition of flanged vessels. These dishes can be produced in either calcite or ashware. No matter what the form, most calcite polychromes, such as those forming the Saxche/Palmar group, occur only in this period. Another common LCI diagnostic is a variant of Mount Maloney incurving bowls. The early incurving bowls have vertical faces and smoothed lips. Other less common LCI temporal diagnostics include the Sotero Ceramic Group where at Xunantunich, the thin walled, brown slipped vases are the most common form. The Sotero group is easily recognized by its smudged surface treatment applied to a brick red paste. These four types form the basis for recognizing the LCI period, however the assemblage also contains other less temporally discreet types. The assemblage is also composed of small jars with pinched lips (both Mount Maloney and Unslipped plainware); variants of the Macal Ceramic group; simple silhouette Belize Red dishes; flanged incensarios; some polychrome ashwares (forms yet to be defined); and Mountain Pine Red dishes and bowls.

The Late Classic II assemblage is the most diverse. It is during this time that ceramic groups contains the largest number of forms, decorative techniques and design motifs (Table #3). At Xunantunich, the Mount Maloney group is the most

common ware and contains temporally diagnostic forms such as incurving bowls with beveled lips and constricted jars with smooth neck profiles. Other temporal diagnostics include Dolphin Head Red group produced in bowls, dishes, and plates; some types of Cayo Unslipped plainware such as Alexander and Beaverdam type jars; most polychrome ashwares - especially figure and/or glyph banded painted vessels; and a wide variety of Belize Red types. Fluted bowls, dishes, and vases produced in either Chunhuitz Orange polychrome or Belize Red monochromes are also common. During the last portion of the LCII(B) period, the assemblage also contains a number of transitional types. Specifically these transitional types include Mount Maloney rimmed bowls, Unslipped Plainware jars with flaring lips or those with tall, gently outcurved rims; and Chunhuitz Orange polychrome tripod dishes with columnar feet.

The Terminal Classic assemblage is marked by a drastic reduction in types and a dramatic change in style. This makes identification of the period easy if sample sizes are sufficient (Table #4). Like the LCII period, the Mount Maloney Group comprises the largest portion of the assemblage. Constricted jars with highly outcurved rims and incurving bowls with flattened lips are the most easily recognized. Unslipped plainware jars with flaring or piecrust lips and spiked incensarios are also common. Although the Belize Red group is reduced in size, some forms of McRae Impressed dishes and bowls with oven feet appear to be the standard serving vessel. Platon Punctated-incised barrel-shaped vases with stepped designs and Chunhuitz orange monochrome incurving bowls are also found. No polychrome sherds have been securely dated to the Terminal period. Lastly, some Peten-style types are introduced including a Tinaja Red imitation tripod dish, locally produced Modeled carved vessels, and a gadrooned jar.

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Table #1
THOMPSON'S BENQUE VIEJO III DIAGNOSTIC TYPES

| TYPE | TEMPER | DATE |
|---|---|---|
| **Unslipped Plainware** | | |
| Simple silhouette dishes | Calcite | BVIII |
| Incense burners (flanged) | Calcite | BVIII |
| Scutate lids | Calcite | BVIII |
| **Red ware** | | |
| Lateral ridged dishes | Calcite/Ash | BVIIIa |
| Simple silhouette dishes | Calcite | BVIIIb |
| Shouldered dishes | Calcite | BVIII |
| Tau-footed Tripod dishes | Ash | BVIIIb |
| Tau-footed Tripod pans | Ash | BVIIIb |
| Simple silhouette bowls | Ash | BVIIIb |
| Tall cylindrical vases | Ash | BVIII |
| Barrel-shaped vases | Ash | BVIIIb |
| Fluted Tripod bowls | Ash | BVIIIb |
| Small drum | Opaque carbonate | BVIIIb |
| **Black ware** | | |
| Cylinder vases | Ash | BVIII |
| **Fugitive black ware** | | |
| Incurving bowls (beveled) | Calcite | BVIII |
| Barrel-shaped jars | Calcite | BVIII |
| Early storage jars | Calcite | BVIII |
| **Vinaceous Tawny ware** | | |
| Tawny ware tripod bowls | Ash | BVIIIb |
| Red/black on tawny bowls | Ash | BVIIIb |
| Red/black on tawny barrel-shaped vases | Ash | BVIIIb |
| **Other Bichromes and Polychromes** | | |
| Black on Red dishes | Ash | BVIIIb |
| Red/black on orange dishes | Calcite | BVIIIa |
| Glyph banded & figure painted vases | Ash | BVIIIb |
| Red/black on orange cinnamon dishes | Ash | BVIIIb |
| Polychrome with whitish ground dishes | Ash | BVIIIb |
| Polychrome with whitish ground bowls | Ash/calcite | BVIIIb |

Table #2
THOMPSON'S BENQUE VIEJO IV DIAGNOSTIC TYPES

| TYPE | TEMPER | DATE |
|---|---|---|
| **Unslipped Plainware** | | |
| Storage jars with piecrust lips | Calcite | BV IV |
| Storage jar with flaring lips | Calcite | BV IV |
| Late lids | Calcite | BV IV |
| Spiked vessels | Calcite | BV IV |
| **Red ware** | | |
| Oven-footed tripod dishes | Ash | BV IV |
| Oven-footed tripod pans | Ash | BV IV |
| Incised vases | Ash | BV IV |
| **Fugitive blackware** | | |
| Incurving bowls with flat lips | Calcite | BV IV |
| Bowls with recurved rims | Calcite | BV IV |
| Storage jars with flared necks | Calcite | BV IV |
| Large jars with outcurving rims | Calcite | BV IV |
| **Vinaceous Tawny ware** | | |
| Small bowls with recurved rims | Ash | BV IV |

TABLE #3
LATE CLASSIC II CERAMIC ASSEMBLAGE

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**Unslipped Plainware (Cayo Ceramic Group)**

1. Jars
    - Constricted Jars
        - Alexander variety
    - Open Jars
        - Alexander variety
        - Beaverdam variety
2. Incensarios
    - Flanged
3. Large flaring bowls
4. Tecomates
5. Closed ollas
6. Lip to lip vessels

**Calcite Redware (Dolphin Head Group)**

1. Plates
    - Flared rim
        - Offset angle variety
    - Outcurved rim with basal angle and flat base
2. Dishes
    - Outcurved rim with basal angle and round base
        - Plain variety
        - Incised variety
        - Notched variety
3. Bowls
    - Rounded or slightly incurved rim
        - Plain variety

**Opaque Carbonate Orange-brownware (Macal Ceramic Group)**

1. Constricted Jars
    - Short outcurved rim
    - Tall gentle outcurved rim
2. Bowls
3. Tecomates
4. Drums

**Calcite Blackware (Mount Maloney Group)**

1. Bowls
    - Incurved rim
    - Closed rim
    - Deep, vertical rim
2. Tecomates
    - Groove incised variety
3. Jars
    - Constricted
        - Smooth outcurved rim variety
    - Open
        - Outcurved rim variety

4. Vases
    - Incurved rim
    - Miniatures
5. Plates
    - Rimmed

## Red Slipped Ashware (Belize Red Group)

1. Plates
    - Flared rim
        - Plain variety
        - Incised variety
    - Outcurved rim
        - Plain variety
        - Incised variety
    - Simple silhouette
        - Plain variety
        - Offset angles variety
        - Punctated and incised variety
2. Dishes
    - Flared rim with basal angle and round base
        - Plain variety
        - Offset angles variety
        - Incised variety
        - Appliqued, notched basal angle with slab feet
    - Outcurved rim with basal angle and round base
        - Plain variety
        - Incised variety
        - Offset variety
3. Bowls
    - Incurved rim
        - Plain variety
        - Incised variety with ring base
        - Simple appliqued variety
    - Hemispherical
        - Plain variety
        - Punctated, incised variety
        - Fluted, incised variety
4. Vases
    - Cylinder
        - Plain variety
        - Incised variety
        - Fluted variety
    - Barrel shaped
        - Fine line incised variety
        - Gouge incised variety
        - Fluted variety
    - Pyroform
        - Plain variety
        - Incised variety
5. Jars
    - Closed

## Orange Polychrome Ashware (Chunhuitz Ceramic Group)

1. Plates
    - Flared rim
    - Hemispherical
2. Dishes
    - Flared rim
3. Bowls
    - Flared rim
        - Painted variety
        - Painted and fluted variety
    - Incurved rim
    - Hemispherical
4. Vases
    - Cylinder

## Other Polychromes

- Cream Slipped Polychrome Ashware (Zacatel?)
- Natural Unslipped Polychromes (Benque Viejo)

# TABLE #4
# TERMINAL CERAMIC ASSEMBLAGE

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## Unslipped Plainware (Cayo Ceramic Group)

1. Jars
    - Open Jars
        - Piecrust lip variety
        - Flaring lip variety
2. Incensarios
    - Spiked applique
3. Closed ollas

## Calcite Redware

1. Vaca Falls Ceramic Group
    - Dishes
        - Carinated tripod (Tinaja Red style)
    - Bowls
        - Carinated with impressions
    - Constricted jars
        - Inflared rim
2. Other Redware
    - Local Pabellon Model Carved
    - Local Cedro Gadrooned

## Calcite Blackware (Mount Maloney Group)

1. Bowls
    - Incurved rim
    - Rimmed
    - Closed
2. Jars
    - Constricted
        - Widely outcurving rim variety
        - Gentle outcurving rim variety

## Red Slipped Ashware (Belize Red Group)

1. Plates
    - Flared rim
        - Incised with hollow columnar feet (LCIIB? or T?)
    - Outcurved rim
        - Incised with hollow columnar feet (LCIIB or T?)
2. Dishes
    - Flared rim with basal angle and round base
        - Plain variety (?)
        - Incised variety (?)
        - Appliqued, notched basal angle with oven feet
    - Outcurved rim with basal angle and round base
        - Incised variety (?)
3. Bowls
    - Incurved rim
        - Incised variety with hollow oven feet

Appliqued, notched basal angle w/ hollow oven feet Rimmed
Incised, punctated variety

4. Vases
    - Barrel shaped
        - Groove incised variety
        - Fine line incised variety
        - Notched, incised applique variety (?)

## Orange Monochrome Ashware (Chunhuitz Ceramic Group)

1. Bowls
    - Flared rim
    - Incurved rim

## Ware Descriptions

**Xunantunich Unslipped Plainware**

Unslipped plainware at Xunantunich is identified by its wiped, matte brown to light, grayish brown surface that is indicative of its calcite tempered brown paste. Most Xunantunich plainware types would be considered members of the Cayo Ceramic Group, a component of Uaxactun Unslipped ware. This plainware is produced in large, thick walled forms which are carelessly wiped around the rim. Below the rim, the exteriors exhibit non-patterned striations and drag marks. Fire clouding and calcite speckling is common and adds to the gray appearance of the surface.

The paste is generally light brown with less than fifty percent of all sherds exhibiting firing cores. Paste colors range from light gray or pale brown to brown (10 YR 4/3; 5/2-4; 6/2-6; 7/2; to 7.5 YR 4/2; 5/3-6; and 6/3-6). Only the large, flaring bowl form exhibits a more reddish brown paste (7.5 YR, 5 YR, or 2.5 YR hues within 5/4-8 value and chroma). Gray core colors range from 10 YR 3/1-2; 4/1-2; 5/1-3; to 6/2. Tempering material is fair to poorly sorted, large (.5 to 3 mm), abundant (usually 40 % of paste), calcite and limestone inclusions with occasional granitic, magnetic pellets, and other coarse materials.

This plainware is most commonly produced in large, open jar forms with tall, outcurving necks and wide mouths, although some constricted jar forms were also produced. The most common LCII jar types are the Alexander variety with its square or elaborated lips that are sometimes grooved (Figure #1a); the very large, thick walled Beaverdam variety (Figure #1b); and an occasional Croja variety rim with thickened, fold-out lips. During the Terminal period, open jars exhibit highly flaring rims with piecrust appliques (Figure #1c, #2) or without appliques on their lips (Figure #1d). Flaring rims without piecrust lips may have originated earlier during the late LCII period but they are most commonly associated with the Terminal period. Incensarios are also temporally diagnostic with Pedregal Modeled, Appliqued Head variety indicative of the LCII period; the spiked Miseria Appliqued, Variety Unspecified incensario is indicative of the Terminal. Large flaring bowls (Figure #1e,f), tall gentle outcurving rimmed jars, tecomates, closed ollas, lids and possibly small lip to lip vessels are also produced in unslipped ware. Other than some varieties of lids and the tall gentle outcurving rimmed jars, these forms date to the LCII period.

**Calcite Redware**

Calcite redware at Xunantunich is comprised of a number of ceramic groups including Dolphin Head, Garbutt Creek, and Vaca Falls; all are components of Pine Ridge Carbonate ware. Dolphin Head Red is the most common and dates to the LCII period. During the Terminal period, Vaca Falls Red is present but not common. Garbutt Creek Red is rarely found at Xunantunich.

Dolphin Head Red is identified by its velvety red slip (Munsell 2.5 YR 4-5/8 or

10R 5/8) applied to a calcite tempered red paste. The thick, lustrous slip is found generally on the interior of plates and dishes, however some dishes and bowls can be slipped on both the exterior and interior. When the exterior is not slipped, the surface characteristically exhibits scrape marks across the body and tan fire clouds along the basal angle.

Dolphin Head Red paste is consistently red (Munsell 2.5 YR 4-5/8) and has a medium-fine irregular texture which breaks into angular fragments. Sherds generally exhibits thick firing cores. Tempering material is fairly sorted, abundant (20 to 30 %), moderately sized (.5 to 2 mm), angular to subangular calcite and granitic inclusions. Red nodules are common.

Dolphin Head Red is produced in open forms including flaring plates, outcurving basal angled dishes, and rounded bowls. Large plates have interior offsets and unslipped exteriors. Some have a single groove incised line encircling the rim. Basal angled dishes can be slipped on the exterior and exhibit either exterior offsets or groove incised lines encircling the rim and base. The Silver Creek variety is characterized by notching along the basal angle of dishes. Some incised dishes appear to have tripod feet. Bowls are generally plain redware and have ring bases.

Of the Terminal period redwares, Vaca Falls Ceramic Group is the most common and is represented by small, carinated tripod dishes characteristic of the Peten Tinaja Red style. Also present in small quantities are constricted jars with characteristically inflared rims (Roaring Creek Red) and carinated bowls with fingernail impressions (Kaway Impressed). Small quantities of local imitation Pabellon Model Carved and Cedro Gadrooned have also been found which, along with other Peten style ceramics such as Miseria Appliqued incensarios, indicate a continued link with the larger sites to the west.

**Opaque Carbonate Orange-redware**

First identified by Anna O. Shepard (Thompson 1940:7), this distinctive white calcite tempered orange-redware may be a variant of the Macal Ceramic Group. This well polished, yet unslipped ware, comprises approximately 10% of the LCII period assemblage and is also present in the earlier LCI period. It is identified primarily by its uniform and abundant temper but is easily recognized even when eroded as a thin walled, well-fired ware that "clinks". The unslipped surface is wiped and polished to a high luster on the exterior of vessels. Surface color ranges from yellowish red to red (Munsell 5YR 4/6, 5/6-8; 2.5YR 4/6-8) depending on the paste material used. Many exhibit repetitive groove incised geometrical designs, usually simple circular or V-shaped patterns, along the shoulder of jars or rims of tecomates. Jar rims are rarely polished on the exterior with polishing streaks originating along the collar. Interiors are not polished but show the uniform, horizontal wipe marks which resembling wheel thrown pottery.

The paste is fine textured for a calcite ware and the color ranges from red to

reddish yellow (Munsell 2.5 YR 4-5/6 and 5YR 5/6). Most sherds exhibit firing core although they are well fired and hard. Tempering material is well sorted, small (0.5 to 1mm), abundant (30%), angular white carbonate.

Opaque carbonate is produced in a number of closed forms including small constricted jars, tecomates with thickened lips, drums, and a form Gifford called, "Brandy snifters". Some open, unsupported spouts occur; therefore, some jars may actually be pitchers. Occasionally, small hemispherical bowl rims are found.

**Calcite Blackware**

Calcite blackware at Xunantunich is a member of the Mount Maloney Group, a component of Pine Ridge Carbonate ware. The Mount Maloney Group is identified by its black, matte slip applied to a calcite tempered brown paste. The black slip is found on both interior and exterior of open and closed forms. Most bowls and closed ollas are slipped on the exterior to just below the rim. Below this point, the exterior surface exhibits horizontal drag marks and striations. Only jar forms are slipped externally down to the base and internally to where the collar joins the body.

The paste is brown and a majority of sherds exhibit large gray cores making up to 90% of profile. Cores colors range from very dark gray to brown to yellowish brown (Munsell 10 YR 6/2-6; 5/1-4; 4/1-3; and 3/1). Occasionally, core colors can be found within the same chroma and value range within the 7.5YR hue. Exterior paste colors range from light brown to strong brown (7.5 YR 6/2-6; 5/3-6); reddish yellow/yellowish red (5YR 6/4-6; 5/6); and an occasional light red (2.5 YR 6/6) which is the result of fire clouding. The paste is finely textured for a calcite ware and generally well-fired and hard. Tempering material is consistently small (0.5 - 1.0mm), well-sorted, abundant (30 to 40% of paste), subangular, clear calcite crystals; sometimes opaque limestone chunks and red pellets occur.

The most abundant and easily recognizable form is the incurving bowl which makes up approximately 30% of the assemblage during the Late and Terminal Classic period at Xunantunich. Temporally diagnostic lips are the hallmark of this vessel form (Figure #3a,b,c). The earliest bowls, found in LCI period, have flat vertical lips which are rounded along the top and bottom face. Thorough time the lips bevel upward and exhibit sharply tooled edges with LCII bowl lips exhibiting elaborated edges and grooved faces. The upward bevel of the lip culminates in the Terminal period when lips are square and oriented horizontally to the rim orifice. Constricted jar forms also show temporally diagnostic attributes (Figure #3d,e,f). Earlier jars have smooth outcurving necks and pinched lips; whereas, Late Classic II jar lips are square with elaborated edges. Terminal jars exhibit widely outcurving necks which result a distinct angular break along the outcurving rim profile. Closed ollas, found throughout the Late and Terminal Classic period, also show marked lip and rim variation; however, sample sizes are not large enough to clearly determine temporal patterns. It is also interesting to note that closed ollas exhibit the largest range in variation among paste color and tempering material within Mount

Maloney forms. Other Mount Maloney forms include rimmed bowls (Terminal) and occasionally open jars, plates, and deep bowls or vases. These uncommon forms all date to the LCII period.

**Red Slipped Ashware**

Red Slipped Ashware at Xunantunich is a member of the Belize Ceramic Group considered a major component of British Honduras Volcanic Ashware. This ware is identified by its polished "Belize Red" slip applied to an ash tempered paste. Belize Red is generally produced in open serving vessel forms that can be elaborated with incising, impressing, and appliques. The type is easily recognized by the very gritty feel of its paste which is usually highly weathered. When the surface is intact, the finish is well polished to a high luster and the slip color is invariably red (Munsell 10R or 2.5 YR 5-4/6-8).

The paste ranges from pinkish gray to pink or light brown to reddish yellow (Munsell 7.5 YR 6/2-6; 7/4-6) with an occasional 10 YR hue within the same range of value and chroma. The most common paste color is 7.5YR 6/6 (reddish yellow). Fire clouds and overfiring produces light to dark gray pastes or firing cores in the range of 10 YR 4/1; 5-8/2; and 7.5 YR 6/3; 7/2. Tempering material is consistently well sorted, small (.5 to 1.0 mm), infrequent (<10 to 20%), crushed or powdered ash.

Red monochrome ashware is produced in plates, dishes, bowls, vases and occasionally small constricted jars. Within each of these primary formal types there is a myriad of varieties based on combinations of rim shape, foot form, decorative technique, and design motif - many of which are temporally diagnostic.

Plates

Plates can be produced with flared, slightly outcurved, or simple silhouette rims. All forms are slipped on both the exterior and interior with little variation in the quality of the polished surface. Flared and slightly outcurved plates have flat bottoms, many of which were supported by tripod feet. These plate forms can be either non-decorated redware or simply incised with one or two sets of grooved lines along the rim and/or above the base. Simple silhouette plates have rounded bottoms, presumably without feet. These forms can be non-decorated, incised, or punctated-incised. Some simple silhouette plates have interior and/or exterior offsets. All plates appear to date to the Late Classic II period although those with hollow columnar feet may date to the late LCII or the early Terminal period (Figure #4a,b).

Dishes

Dishes can be produced in four secondary forms, those with flared, slightly outcurved, rounded, or simple silhouette rims. However, the major of dishes have flared or outcurved rims exhibiting basal angles and round (rarely flat) bottoms, some supported with tripod feet. The latter two types - rounded and simple silhouette rims - are rare at Xunantunich. All dishes are

slipped and well polished on both their exterior and interior surfaces, although slipped surfaces below the basal angle are not highly polished.

Flared dishes exhibit the most decorative variation and can be 1. plain redware with or without offset angles; 2. simply incised with one or two sets of groove incised lines along the rim and/or base; or 3. having an appliqued basal angle with notching and sometimes incising (McRae Impressed type). McRae Impressed types usually are supported by oven feet and date to the Terminal Classic, although those with slab or Tau feet date to LCII period. Dishes with outcurved rims can be plain redware and exhibit offset angle or be groove incised. Groove incising commonly appears along the rim or above the base but some dishes have diagonal lines or fluting (Gallinero Fluted type) across the body. Round rimmed, round based dishes can be plain or fluted (also Gallinero Fluted type). Given the small sample sizes of each variety, dating is difficult. It can be stated that those with fluting appear to date exclusively to the LCII period. Lastly, simple silhouette dishes with lateral ridges date to the LCI period.

Bowls

Bowls can be produced in three secondary forms -incurved, hemispherical or rimmed. Incurved bowls are the most common and vary widely across the Late and Terminal Classic periods. These bowls are usually slipped and well polished on both the interior and exterior, although below the incurve the exterior slip is not well polished, sometimes its non-existent. This graded slip technique can be found on the interior as well. There are four variants of incurved bowls: 1. non-decorated with flat bases; 2. incised with a single or double grooved lines along the rim with ring bases (LCII) or three hollow oven feet (Terminal) (Figure #4c); 3: appliqued with lines and nubbins (LCII) along the body and rim; or 4: having notched and sometimes incised, appliqued basal angles (McRae Impressed type). This McRae Impressed type can have hollow oven feet and those that exhibit this attribute date to the Terminal period. Hemispherical bowls can be plain redware, punctated-incised or fluted-incised; most are assumed to date to the LCII period. Small rimmed bowls are usually punctated-incised and date to the Terminal period.

Vases

Vases can be produced in three secondary forms -cylinder, barrel-shaped and pyroform with pedestal bases. Cylinder vases can be produced in plain redware, incised or fluted and date to the LCII period. Barrel shaped vases are the most decoratively variable with temporally distinctive motifs. During the LCII period, pseudo-glyphs or complex geometric bands along the rim are usually rendered in either groove, gouge or fine line incising (Figure #5a). However, during the Terminal period, banded designs are less common and are replaced by a simple stepped motif that pend from lines along the rim (Figure #5b). These steps traverse down the body to just above the maximum diameter of the barrel shaped vases. Notched and incised appliques may also

date to the Terminal Classic period. Pyroforms are very rare and date to the LCII period; they can be plain redware or simply incised.

Jars

Small, constricted necked jars are rare and date predominately to the LCII period. These jars can have either a well defined collar or a more smooth inflection point where the rim meets the body. Those with smooth necks may actually be pyroform rims. All but one jar rim encountered is slipped red and thus classified as Belize Red; the other is a Benque Viejo Polychrome with a complex black and red geometric pattern painted along the shoulder. Belize Red types are commonly undecorated, although 2 out of 15 had a groove incised, banded geometric pattern encircling the shoulder.

**Orange Slipped Ashware**

First identified by J.E.S. Thompson at Xunantunich as Vinaceous Twany Ware (1940), Orange slipped ashware is a member of the Chunhuitz Ceramic Group. This ashware is identified by its orange slip applied to an ash tempered paste. During the Late Classic II period, this ware was produced in polychrome painted varieties, called Benque Viejo Polychrome, although the non-painted variety, Chunhuitz Orange, appears to have been produced in the Terminal Classic. The orange slip may be applied as either a non-polished matte (Munsel 5YR 7/6, 6/8, 5/8 or 2.5YR 6/6-4) or low polished surface (Munsel 2.5 4-5/8; 5YR 5/4-6; or 7.5YR 5-6/4). When polished, the orange slip color closely resembles "Belize Red". A third variation can result when vessels are slipped on a single surface while the opposite side is polished but left unslipped; thus, the unslipped surface serves as a natural ground for the polychrome paint.

Like Belize Red, Orange Slipped Ashwares are usually found highly weathered and information concerning decorative motifs are limited. Motifs are usually simple, geometric designs sometimes bounded by black framing lines. Red triangles are very common on incurving bowls where they are found bounded by black bands below the rim. Triangles are also found on the interior of flaring plates along with other geometric forms that compose complex, abstract layouts. Kin signs (Thompson 1940: Figure 57) can be found on the interior of plates and less commonly on the exterior of bowls. Generally, all forms exhibit red and black rim bands on both interior and exterior surfaces. Other than the rare fluted vessel or the notched appliqued basal angled plate, decorative techniques such as incising, impressing, appliqueing or carving are not used in conjunction with polychrome painting.

Paste colors ranges from very pale brown to strong brown and yellowish red to red (Munsell 10YR 7/4; 7.5YR 7-6/6, 6/4-3, 5/6; 5YR 6-5/6; and 2.5 5/6) but in more than half the sample the paste is consistently reddish yellow. This color range overlaps with pastes associated with the Belize Red Group and in most instances appears to be the same matrix. However, Orange Slipped Ashware pastes appear more varied and sometimes browner than those produced as Belize Red. Like Belize Red varieties, tempering material is consistently well sorted, small (.5 to 1.0

mm), infrequent (<10 to 20%), crushed or powdered ash.

In constrast to Red Monochrome Ashwares, Orange Slipped vessel forms and decorative variants are more limited. Flared rims predominate in all polychrome forms including plates, dishes, bowls, and vases. Plates have flared rims with flat bases and tripod supports. Some plates have tall, hollow columnar feet with rattles, presumably dating to the late LCII period. Flared rimmed bowls and dishes appear to be quite similar with much the same formal proportions and decorative motifs (Figure #6 a). Bowls or barrel-shaped vases (Figure #6b) can also be frequently produced with incurving rims and have a characteristic banded triangle motif on the exterior. Bowls with hemispherical sides are less common and have a large range of surface treatments and motifs. Cylinder vases are rare and highly eroded, some appear to be fluted and painted with board, vertical red bands. Flared and fluted bowls or dishs are also found. Many of these uncommon categories can not be pigeonholed by style or form. Shepard (see Thompson 1940:17) suggested that this situation may be the result of many centers of polychrome production. During the Terminal period, only orange monochrome incurved and flared bowls were produced, thus severely limiting the production of Chunhuitz Orange types.

**Other Polychrome Ashwares**

Cream slipped and natural unslipped polychrome ashwares are found in small quantities at Xunantunich. Cream slips can be thick or thin with thin slips approaching the color of the ash paste. Most cream slips and polished, self-slipped surfaces are used as backgrounds for black and red polychrome designs. These simple linear designs or kin signs are produced on outcurving bowls and dishes. However, some cream slips are used as a ground for complex figure painted scenes on vases and bowls. Some of these vessels display non-readable glyphs along the rim and body. These vessels exhibit the greatest range of paints, including specular red, to outline figures and washes of brown, gray and light orange to fill the glyphs and forms. More in depth analysis of paste, temper, and form of these rare polychromes will be forth coming.

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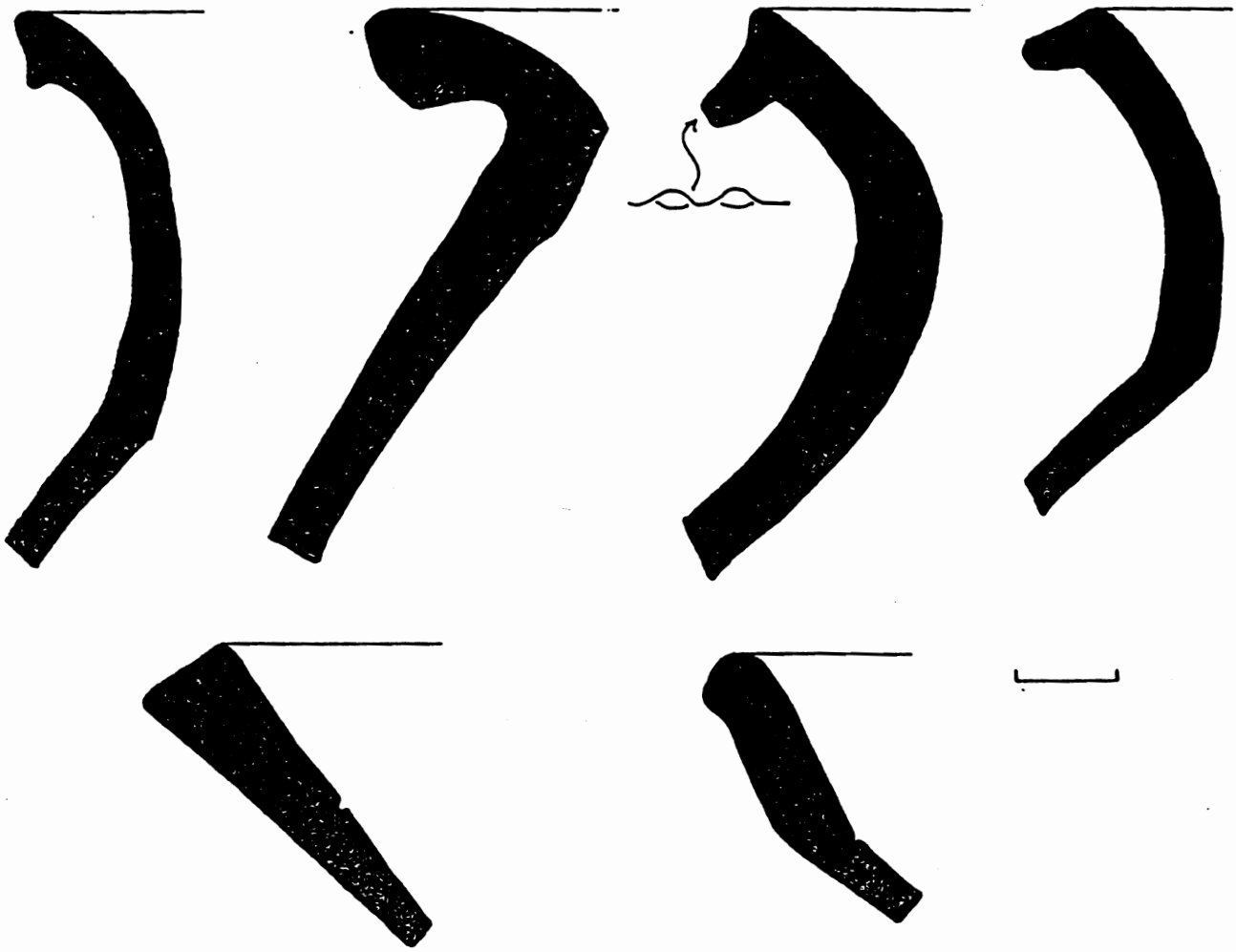

Figure 1: Xunantunich Unslipped Plainware

a: Alexander variety (116D/1.10946); b: Beaverdam variety (123 C/4.11332); c: Piecrust lip jar (123 A/8.11216B); d: Flaring lip jar (110U/2.13110); e and f: Large flared bowls (76F/1.18031, 138C/1.12683). Scale measures 2 cms.


Figure 2: Terminal Period Piecrust Lip Jar

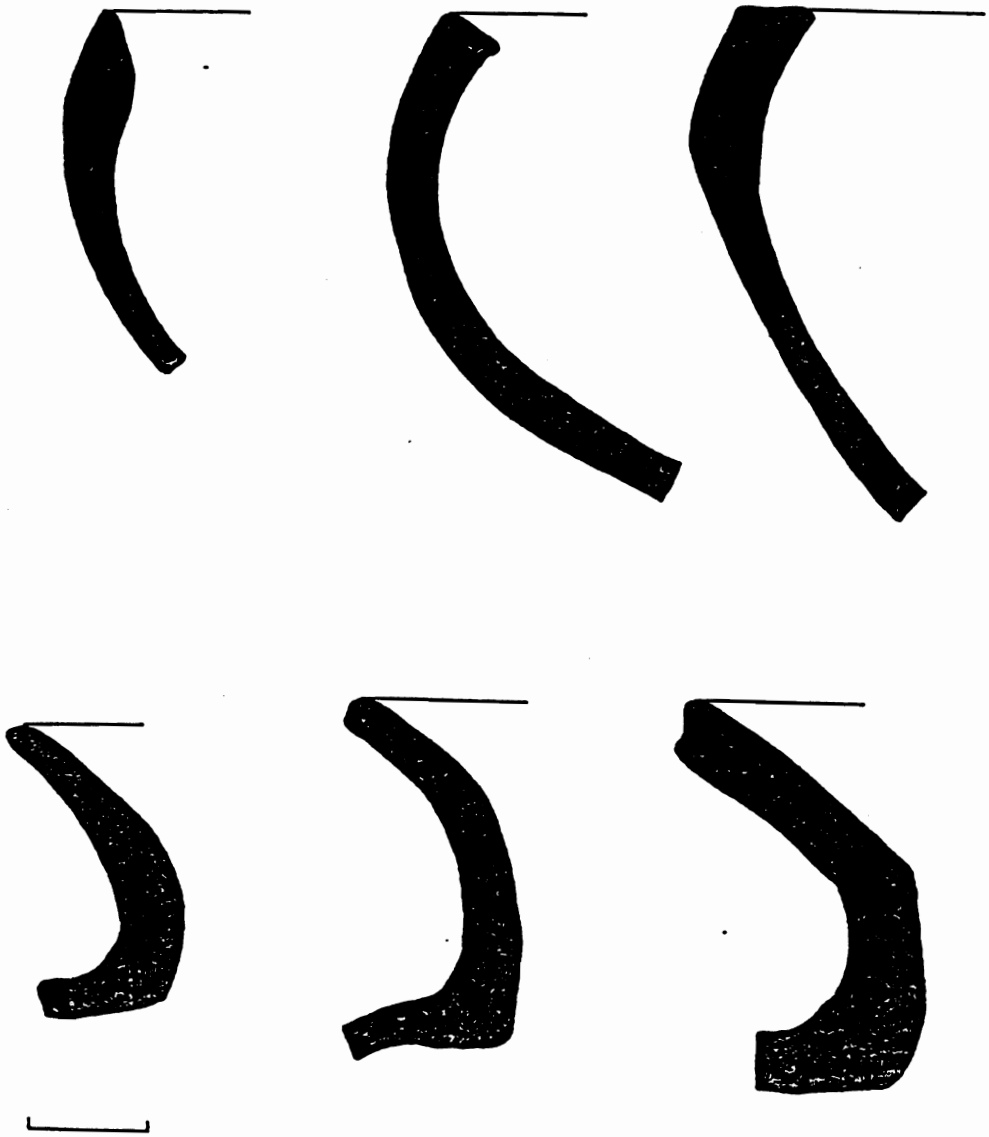

Figure 3: Mount Maloney Group

a: LCI Incurving Bowl (18E/7.1343); b: LCII Incurving Bowl (22L/5.4708); c: Terminal Incurving Bowl (85G/3.6300); d. LCI Jar (23G/3.8005); d: LCII Jar (123 C/6.11392); e: Terminal Jar (123C/4.11406). Scale measures 2 cms.

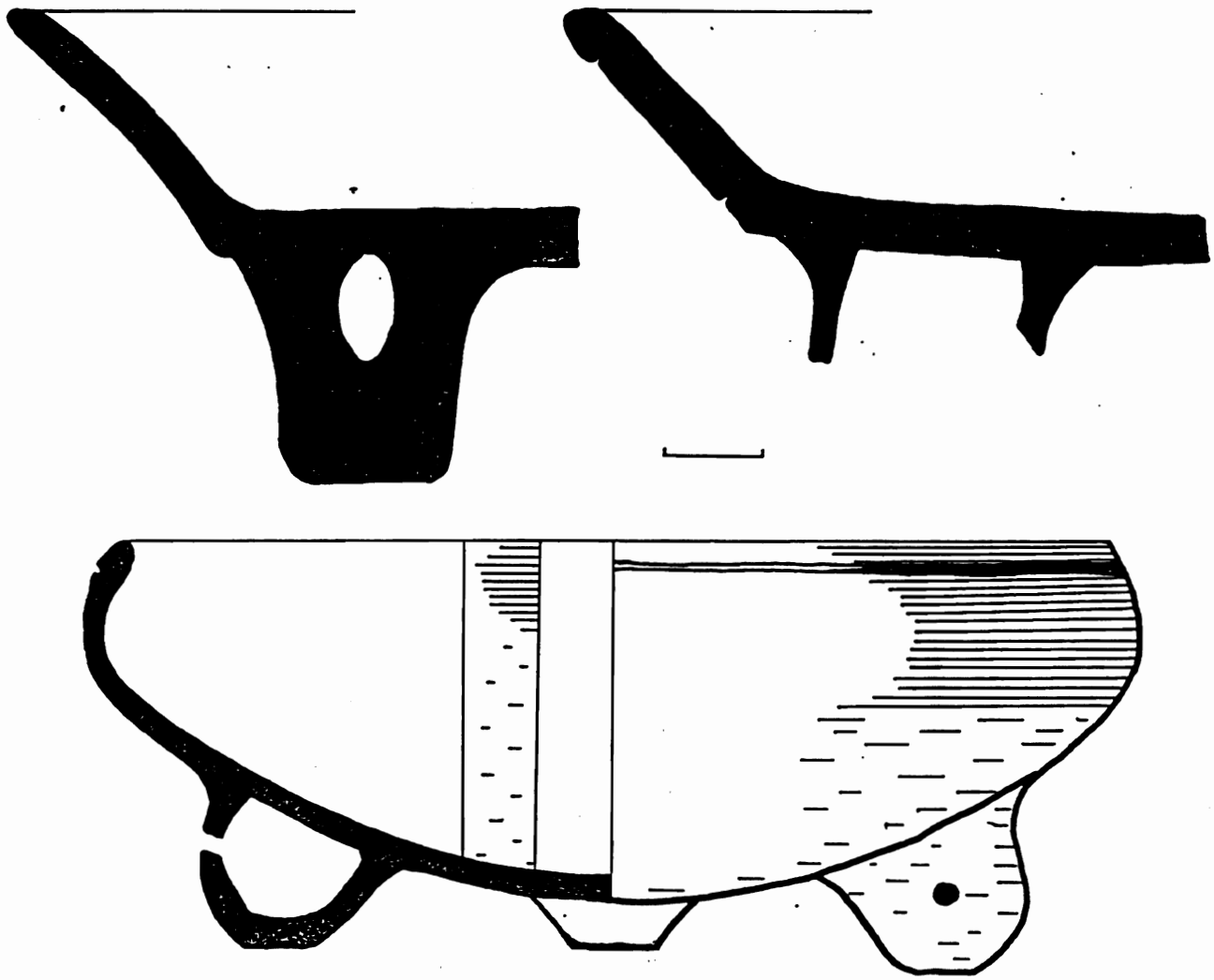

Figure 4: Belize Red Group

a, b: Plate with hollow columnar feet (117C/5.10614, 40NN/2 .8036); c: Incurving bowl with hollow oven feet (123A/7.11197).
Scale measures 2 cms.

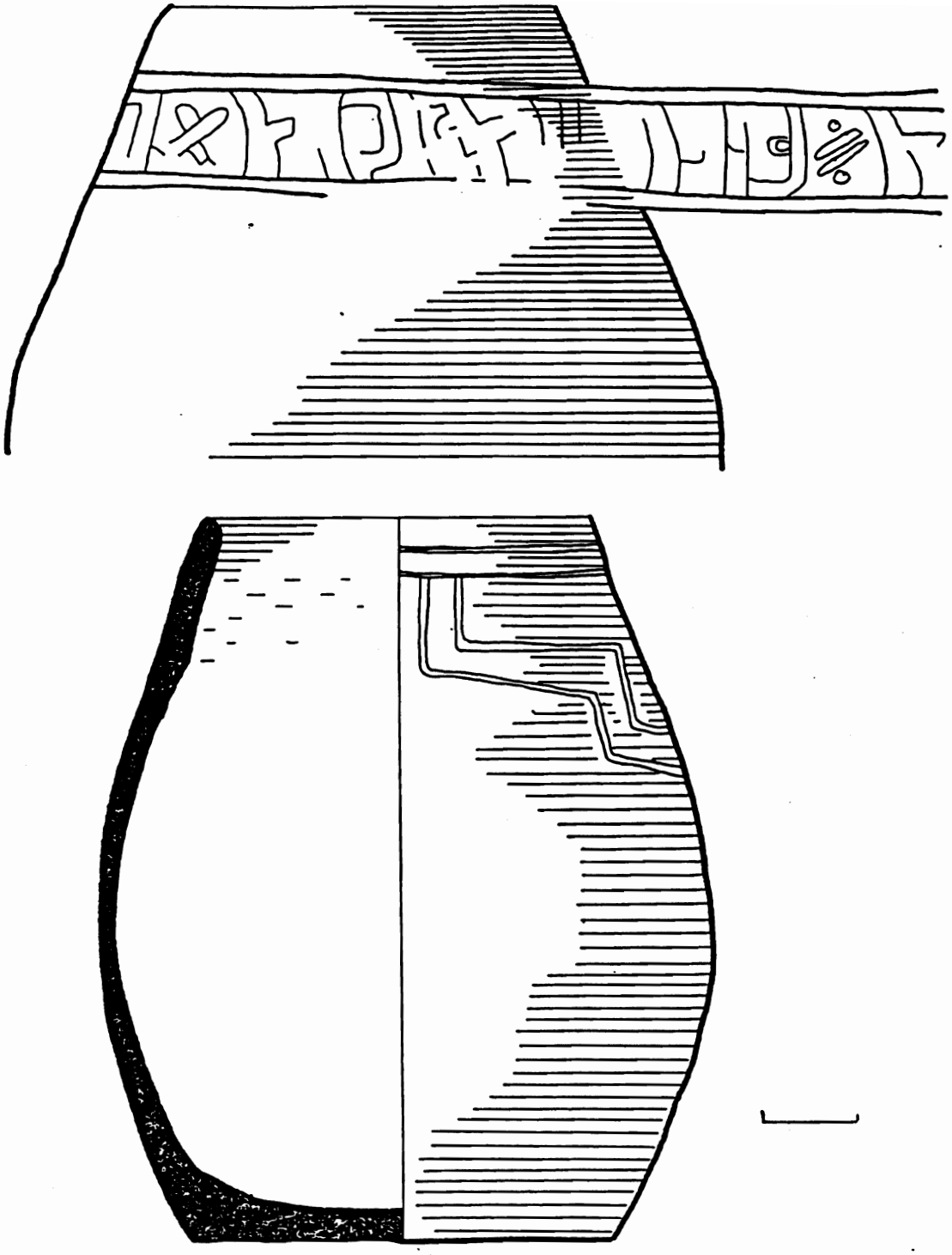

Figure 5: Belize Red Group: Barrel-shaped Vases

a: Fine-line incised, Pseudo-glyph design (113D/4.11513); b: Groove-incised, step design (85L/7-D1.6596). Scale measures 2 cms.

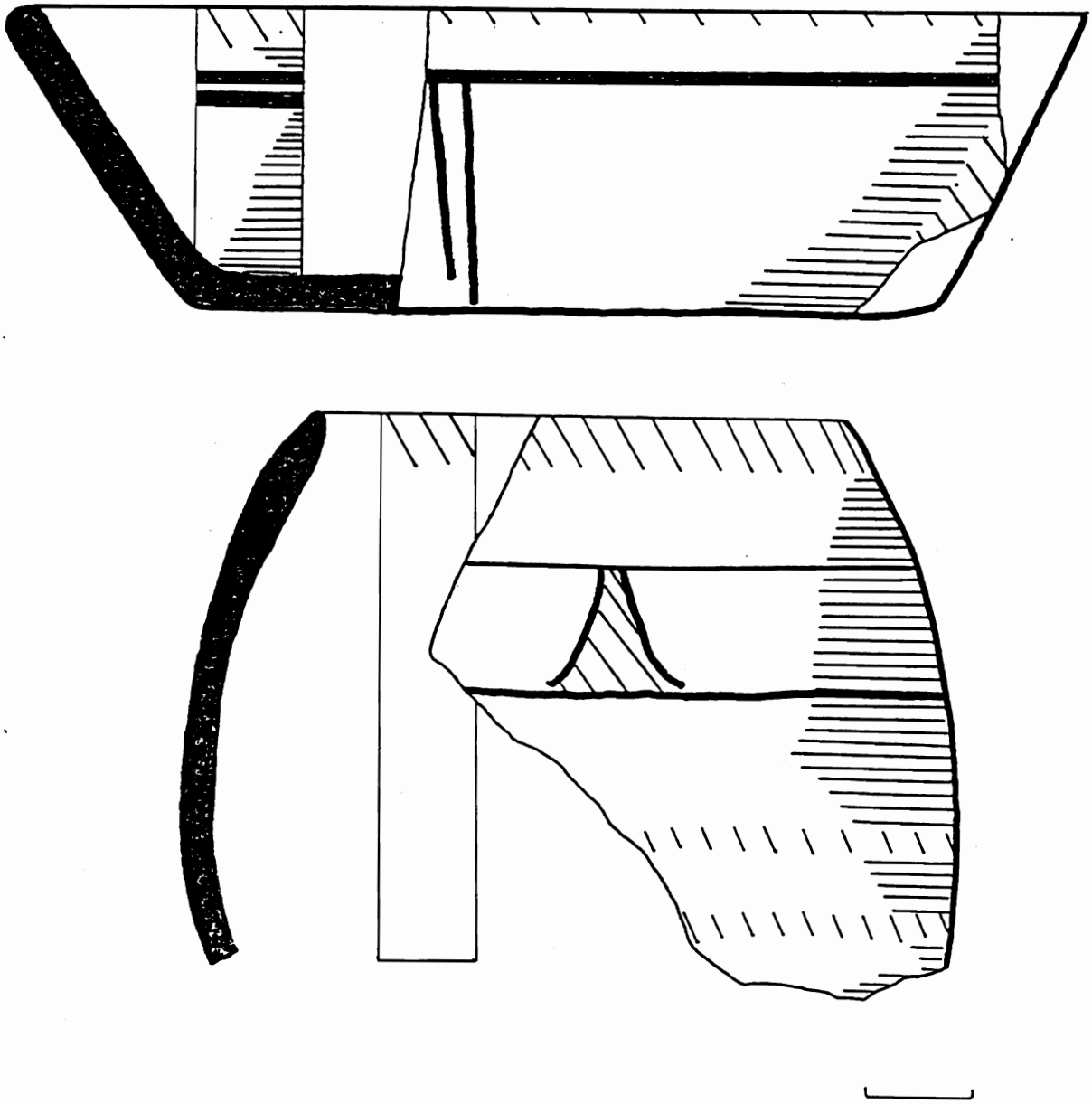

Figure 6: Chunhuitz Ceramic Group

a: Polychrome, flaring rimmed dish (79KK/26.15103); b: Polychrome, barrel-shaped vase (106B/7.15136). Scale measures 2 cms. Diagonal lines represent red paint; horizontal lines represent orange slip.

# Xunantunich Archaeological Project Archival Resource Report For 1994

Lady R. Harrington
University of California, Los Angeles

A primary function of the Xunantunich Archaeological Project Archival Resource is to respond to the research needs of the project staff. As the project progresses there are increasing questions to be addressed. We rely on ever increasing published materials. Also, we rely on the body of information which has been collected at various institutions over the years which bears on these questions. Additionally, we collect materials of a regional nature that impact the Xunantunich research questions.

The Xunantunich Archaeological Project is an on-going project. Certainly the gathering of archival material is also an on-going effort. From the beginning two years ago the volume of acquiring new materials has slowed somewhat, with only a few sources still untapped. A challenging aspect of managing the archival resource is to make certain it is accessible to the researchers. Published materials are more easily shared than field diaries, field sketches. Photographs are even less easily shared. The duplication of materials for ready access is influenced by budget restrictions balanced against research requirements.

There have been a number of reported archaeological investigations at Xunantunich beginning in the late 1800s. These lasted from about an hour by Sylvanus Morley, up to seven months by the Cambridge expedition under Euan MacKie. These investigations have produced varying amounts of materials into which XAP has tapped. As reported in the 1992 XAP Report, the XAP archival holdings are documented using Paradox 4.5 data base system.

We have assembled a comprehensive research library at the XAP field camp. This library allows the XAP staff, which spends from four months up to nine months at camp, to address some of their research questions during this time.

The photograph archive which XAP has assembled is a true treasure of the history of Xunantunich in modern times. This photograph collection has been assembled through the generosity and cooperation of the Department of Archaeology in Belmopan, from the University Museum at the University of Pennsylvania, from the Peabody Museum, from Euan MacKie's personal collection, and from former Commissioner of Archaeology Hamilton Anderson's photographs donated by his widow. This collection documents the chronology of the site from before areas were cleared and before there were excavations.

The photograph archive is an invaluable tool for the present XAP project which has conservation and consolidation as a major component. For example, there is a record of the frieze on the east side of A-6 (Castillo) as it was being uncovered in 1950 by Linton Satterthwaite and Anderson. At that time the frieze was in pristine condition before suffering nearly fifty years of erosion as well as

some reconstruction. During the 1994 season a portion of the center of the east frieze was excavated for the first time. With the photo documentation from 1950 we can compare this 1994 excavated portion with the earlier areas.

The XAP archive at UCLA continues to be shared with the Getty Conservation Institute. This principally consists of sharing the photograph archive and the ever-expanding bibliography.

A copy of the XAP Bibliography, updated 20 June 1994, is included with this report.

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Revised 3 November 1994

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# Investigations at Group D, Xunantunich, Belize: A Nonroyal Elite Corporate Group

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**Introduction: The Theoretical Approach of Group D Research:**

Research at Group D, Xunantunich, is intended to illustrate that a focus on the residential corporate group allows better comprehension of social and economic integration among members of past societies (Braswell 1993). As explained further below, Group D comprises the architectural remains of a residential corporate group led by people of the Maya nonroyal elite. Field investigations at Group D focus on providing adequate data to describe the scale, complexity, and integration (Blanton et al. 1981) of this elite group. Since "in archaeological terms, Maya elites are surprisingly poorly defined" (Henderson and Sabloff 1993:451), it is hoped that this study will contribute to clarification of such a definition.

The emphasis on the corporate group stems from the belief that some of the difficulty of creating a quantitative definition of elite residences arises a focus on discrete, individual structures as if they were isolated from the patios in which they are found. For this reason, at Group D the signs of elite status (stelae, temple-pyramid, major range structure) are taken collectively as markers that the decision-makers in the Group were of elite social status, and it is proposed that the entire group can be defined as both *elite* and *residential* because it is where the elite decision-makers, and others influenced by their decisions, carried out daily domestic tasks. The group of structures represents an elite residential social milieu, an elite corporate group: where the elite *lived*, not only where they slept. Although researchers have repeatedly noted that mesoamerican households are best identified with clusters of structures, and have acknowledged that the archaeological signature of a Maya household thus must be a complex of structures, students of the ancient Maya have continued to pursue "the function of range structures," "Maya palaces," or "detection of elite residences" and have remained unsatisfied with their results.

Hayden and Cannon's work illustrates the variable characteristics of residential corporate groups (1982, 1984). By describing the scale, integration, and complexity of this Maya nonroyal elite corporate group, a basis is built for comparing the material forms and interpreted functions of this building-block of Maya society to the forms and functions of other corporate groups. The foundation is also laid for postulating the mechanisms of social and economic integration among the members of this past society within the group and between the residents of Group D and residents of other groups.

**Definitions and Methodology in Group D Research.**

Group D was identified previously as a distinct group-focused patio cluster (*sensu* Ashmore 1981), consisting of a central temple-pyramid, stone monuments, range structures, and surrounding terrain without visible mounds (Braswell 1993). Since temple-pyramids similar to Str. D-6 (figure 1) had been proposed as lineage shrines (Becker 1972; Coe 1956; Leventhal 1983), and multi-room range structures, such as Str. D-7, as the dwellings or courts of the elite (Fash 1991; Freidel 1986; Harrison 1970), the working hypothesis was that Group D was dominated by a nonroyal elite leader. The size and arrangement of mounds within the cluster was consistent with residential groups identified at other Maya sites. Domestic refuse

such as grinding stones and utilitarian pottery has since been recovered in the group.

The residential corporate group is a "middle scale" settlement unit (DeMontmollin 1988). It is larger than the household, but smaller than the entire site or polity. Although "corporate group" frequently refers to people who share descent, residential ties may also be determined by marriage, patronage, work, or status. An elite residential group may have members whose archaeological remains would not otherwise be categorized as elite, because the elite identification is based on the status of an elite decision maker. Residential corporate groups carry out different activities within the social system. Identifying the kinds of activities that took place near the residences of the nonroyal elite may provide specific information about how the nonroyal elite took part in economic, ritual, and domestic systems. The identification of specific activities carried out in Group D is the goal of research proposed for 1995.

The investigation of Group D as a corporate group entailed, first, the definition of its boundaries. In 1992 and 1993, mapping and other investigations showed the group to be geographically isolated from other groups of mounds (Braswell 1992, 1993). This picture has not changed, despite the continued mapping and discovery of nearby groups by Xunantunich Settlement Survey and site-center mappers. In 1993 and 1994, the goal was to sample all buildings for occupational debris to consider function, status, and to gather sufficient evidence for dating. Another important goal was to study terrain without mounds to consider how the members of the corporate group used their landscape. The project design included a study of vacant terrain to allow consideration of the spatial relationships of all elements in the built environment, including "empty" space.

**The 1994 Season**

This season, all excavations planned for Group D were completed. Technical and artifactual analyses remain to be completed. The rest of this report provides a preliminary summary of 1994 field investigations. This report is intended as a data presentation and a highlight of current ideas; synthesis and interpretation will be presented in other publications.

**Excavation Results by Operation**

These operations were carried out in Group D in 1994:

| | |
|---|---|
| Op. 22, suboperations R-KK | excavation of Str. D-7, continued from 1992 and 1993 |
| Op. 74, suboperations I-KK: | excavation of Str. D-6 and related deposits in the main platform Str. D-8, continued from 1993. |

| | |
|---|---|
| Subop.s J, K, O, Q, S, U - Y, DD, EE, FF | cleared the front of Str. D-6. |
| Subop.s I, L, M, N, P, BB, CC, GG - KK | excavated beneath the platform surface into Str. D-8. |

| | |
|---|---|
| Op. 97, suboperations I-Q | excavations of the Sacbe, continued from 1993. |
| Op. 103, suboperations A-E | excavation of the north terrace of Str. D-10. |
| Op. 104, suboperations A-D | excavation of Str. D-10. |
| Op. 105, suboperations A-E | excavation of Str. D-13. |
| Op. 107, Suboperations A-H | excavation of Str. D-16. |
| Op. 121, suboperations A-E | test pits in terrain without mounds in the southwest quadrant. |
| Op. 137, suboperation A | excavation of a test pit at SW corner Str. D-1. |
| Op. 142, suboperations A-C | excavation of str. D-14. |
| Op. 143, suboperations A-C | excavation of Str. D-15. |

## Investigation of the Central Structures of Group D and the Sacbe

**Operation 74 (Str. D-6)**

Summary

The last-phase architecture of the south-west corner of D-6 was moderately well-preserved veneer construction. The central stair was very eroded. A trash deposit was found near the south stairside. A human burial was found within the collapse debris nearby.

Two crypt burials (*sensu* Chase and Chase 1987:57), cache vessels, a cache of obsidian eccentrics, and a plain burial were discovered associated with the central axis of Str. D-6 and Stela 11.

Evidence of three plastered platform surfaces was found. The penultimate phase is currently interpreted as having been plastered twice. The decomposition of these surfaces has been profound, so stratigraphy is interpreted from evidence in various locations.

Excavation Details

Architecture and Occupation

Str. D-6 has three construction phases known from the E-W looters' trench in the back (east side) of the structure and from excavations carried out in 1993 (Braswell 1993). Three floor levels were found in the platform, and although there is no stratigraphic evidence that the earlier floors abut the earlier versions of Str. D-6, each of the floors may correspond with a renovation of Str. D-6.

Intrusive excavations into the central stair (Op. 74J/2) and into the platform around Stela 11 showed that the last modification consisted of a new outset stair and battered stairside outsets.[1] To build the first step of the stair, a row of limestone blocks was placed for the risers on the penultimate platform floor. Behind these risers loose cobbles and earth were placed and plastered to form the tread. The

stairside outsets were built with large veneer stones. The last modification left the SW and NW corners of the penultimate substructure exposed; this substructure had a 5 cm basal molding which was not repeated in the latest modification. The latest floor of the platform lipped up to the last-phase stairside and the stairside outset that covered the basal molding of the penultimate structure (Op. 74O). Evidence for the two earlier construction phases of Str. D-6 was not sought or encountered in this year's excavation program.

A large trash deposit (Op. 74O/6-D1) was discovered near the corner formed by the southern stairside and the west facing of the southern stairside outset. Ceramic materials in this deposit included both Terminal Classic sherds and Late Classic II sherds (see LeCount 1992 for chronology). Surface lots nearby contained modern artifacts: a steel-hafted whetstone, a shotgun shell, and a bovine tooth. The low percentages of Late Classic material, the indications of surface disturbance, and the highly eroded nature of the central stair and surrounding architecture suggest that the midden was deposited in the Terminal Classic period, and suffered mixing-in of Late Classic sherds from the erosion and decomposition of Str. D-6.

A burial (Op. 74R/1-B1) was encountered about a meter south of this trash heap. The adult individual was laid extended on top of collapsed facing stones, with head to south. A circular earflare of worked shell was found near the cranial remains. Sherds found near this burial appear to date from the Late Classic II period. They may be artifacts eroding from the collapse debris into which the individual was placed. However, the generally low quantities of ceramics refuse incorporated into Group D core materials raises the possibility that the corner midden was used in both the Late and Terminal Classic periods, or that refuse from a Late Classic midden was redeposited with the burial when the interment was made.

Stela 11

Stela 11 was found in front of the last modification made to Str. D-6. It had fallen backwards towards the structure before excavations began (figure 2). The base of the stela was found at 169.22m asl, 52 cm below the level of the last phase floor that was probably at about 169.85 when it abutted the front stair. This last phase floor was encountered at 169.82 m asl within the southern stair side corner below the trash deposit (74O/6-D1), and at 169.74 m below the burial in collapse debris (74R/1-B1). The difference in the heights of the last phase floor is possibly because the floor sloped away from the structure. The penultimate floor was found at 169.72-4 cm immediately below the central stair (74J/2) and a previous plastering was found 8-10 cm beneath it. The earliest floor was found at 168.82 during the excavation of the crypt burials (next section.)

Stela 11 is a plain, rectangular stela measuring 2.3 x 1.02 x .47 m. It is of similar proportions to the plain stelae in front of Str.s A-2 and A-3 in the main group. Like those stelae, Stela 11 was located in front of a tall substructure with a large broad stair surmounted by a single building.

Ceramic sherds in the fill[2] around Stela 11 indicate that it was erected in the Terminal Classic period. A cache of eight chipped obsidian eccentrics, seven made on exhausted cores (figure 3), was excavated at 169.36 m asl, 49 cm below the estimated level of the last phase floor. Its elevation suggests that the cache accompanied the erection of the stela. The obsidian for all eight eccentrics came from the El Chayal source in highland Guatemala.

Burials in the Platform

Excavations into the main platform discovered a pair of stone-lined crypt-burials and the remains of a third burial without any grave construction (see figure 2). The crypts were arranged one on top of the other, with the same orientation. The third burial was to the west of the upper crypt. Although the stratigraphy is not definitive, the crypt burials were possibly interred during the construction phase associated with the penultimate platform surface. During this second platform construction phase, the platform was raised approximately 80-90 cm.

The lower of these two crypts (Op. 74JJ/2-B1) was cut into the initial platform surface, at 168.81 m asl (Figure 4). The lower crypt's occupant was a male 17-25 years of age (see Appendix A) laid extended, on a thin layer of clay above the bedrock, with head to the south, face down. He was interred with a pair of three-part earflares made of 2 shell pieces and a small jade hemisphere. A fragment of eccentrically chipped obsidian from the Ixtepeque source was found above the lower capstones.

The upper crypt (Op. 74HH/4-B1) was built at the same time as the lower crypt, for the platform surface was not resealed after the lower interment was made. The individual was laid on a silty layer above the capstones of the lower crypt. The body also was laid extended with head to the south but the bones were too deteriorated to judge sex, age, or anything more than general position (Figure 5). A jade bead was found between a fragment of scapula and some cranial fragments; it could have been an offering placed in the mouth of the deceased.

At least ten lip-to-lip small, unslipped sub-hemispherical bowls were deposited to the east and west of the upper crypt. The first plastering of the penultimate platform floor was found to the east of the cache vessels (not directly above them) at 169.74 m asl above the cache vessels whose uppermost reached 169.66 m asl.

The third burial (74N/8-B1) was encountered to the west of the upper crypt, and could not be completely excavated because it was found directly below the fallen stela. Only the tibiae, fibulae, and parts of the femora were cleared and collected. The size of the bones indicate that the individual was adult. This burial was probably laid head to south.

Dating

No date has be determined for the low platform into which the lower crypt was cut. It is not likely to be earlier than Late Classic I, based on the presence of Late Classic ceramic pastes among the infrequent ceramic pieces found in the fill.

The construction of the crypts and the deposition of the burials probably was carried out as the platform was raised 80-90 cm and the penultimate floor laid. Based on ceramic refuse found in the fill, and the form of the lip-to-lip cache vessels, which Thompson dated to the Late Classic III A or B period (Thompson 1940:fig. 7 d and e), the crypt burials probably date from the end of the Late Classic period, approximately A.D. 700-800.

The last phase of construction was undertaken in the Terminal Classic period, indicated by the Terminal Classic sherds beneath the last-phase stair.

The trash was deposited in the Terminal Classic period. Since the burial of the individual in the collapse debris occurred after the collapse of the structure this burial took place in the Terminal Classic period or later.

**Operation 130 (Str. D-5)**

Summary

Str. D-5 was heavily eroded leaving evidence of a substructure only. The structure was modified once by the addition of a low platform on the east side of the structure. A large deposit of ceramic sherds was found inside and outside the facing of this addition.

Excavation Details

Investigation of Str. D-5 began in 1991 when a 1 x 2m test pit (Op. 5B) was placed in the saddle between Str. D-5 and D-6. The test pit revealed two floors and an east-west facing which suggested that a construction feature connected the two structures. Excavation this year demonstrated that no such feature existed. Since no horizontal location had been recorded for the test pit, it was difficult to use 1991 information to guide this year's excavation. The test pit was subsequently rediscovered within the excavation of Op. 130B and 74EE.

Suboperations C, D, E, and F created a shallow trench 1 m wide over the N-S axis of the mound. This excavation revealed that the mound had suffered intense erosion so that only one basal course of the substructure facing remained on either side. Remaining core fill indicates that the substructure height was originally at minimum 2.6 m above bedrock in the south and 1.13m above the platform surface in the north. The fill was cobbles and earth.

Suboperation 130B, together with the reexcavation of Op. 5B, revealed that Str. D-5 had been built upon on the plastered surface of the penultimate version of the Str. D-8 main platform. The earlier platform here was .84 m high above bedrock and built on a cap of 25 cm of silt. The northeast corner of Str. D-5 was laid at 169.40

on the surface of this platform, interpreted as the second main-platform renovation, despite the intuitively unlikely difference of 24 cm between the level of the first plastering of the penultimate platform surface at the center of the platform and the surface at the corner of Str. D-5.

After the construction of the rectangular base of Str. D-5, a low platform was constructed that extended east from the northeast corner of Str. D-5. The north platform facing of this extension was discovered in excavation. Evidence for the last phase platform surface abutting the north facing of the extension was found in the 1991 excavations at 169.68m asl, but could not be found again this year. South of the facing was compact silt similar to the fill in the center of the platform. This fill protected and preserved the earlier platform surface it covered. A southern and a western terrace facing must have existed to define the other edges of the platform extending east from Str. D-5, but the eroded state of this entire feature indicated that these facings where probably completely eradicated, so that continued excavations would not be profitable.

Building the Str. D-5 extension necessitated filling in south of as well as above the penultimate platform surface because the extension extended farther south and east that the penultimate platform. A refuse deposit (Op. 130H/7-D1) was found south of the base of the penultimate platform. This deposit was interpreted as a basket-load of ceramic debris dumped in during the construction of the Str. D-5 eastern extension.

Two other refuse deposits were found associated with Str. D-5's extension on top of the penultimate platform surface. Op. 130H/3-D1 was found directly behind (south of) the north facing of the extension, within its fill. In front of (north of) the north facing, another refuse deposit was excavated as 130G/5-D1 and 130I/3-D1. These deposits were difficult to interpret because they lay close together, at the same level, on both sides of the extension's facing, both within the fill and outside the structure. Trash may have been first deposited on the surface of the penultimate platform, having been discarded from Str. D-6/2nd. The eastern extension of Str. D-5 incorporated some of this trash, and sealed that part of the deposit later excavated as 130H/3-D1. Later, more trash was discarded from the contemporary version of Str. D-6 and built up against the facing of the extension platform, creating 130G/5-D1 and 130I/3-D1. The seal over 130H/3-D1 was later broken by erosion and decomposition permitting other material to be mixed in. Detailed comparison of the forms and varieties of the sherds in these deposits is planned for 1995.

Dating

Str. D-5 was erected on the second version of the platform no earlier than the Late Classic II period, based on the presence of Late Classic II ceramics in the fill of the second version of the main platform, discovered in excavations of Op. 74[3]. The extension to Str. D-5 was possibly part of the same construction episode. Since the

Op. 130H/3-D1 trash deposit provides a *terminus ante quem*[4] date for the construction of the extension, Late Classic I and Late Classic II dates of sherds from that deposit support this date (Pedregal modeled incensarios and flat-lipped Mt Maloney bowls). The midden on the north side of the extension contained ceramics of Late Classic I and II dates.

**Operation 22 (Str. D-7)**

Summary

Str. D-7 was erected in a single phase of construction. A wide stair on the north side of the structure reached a terrace in front of a summit building of seven rooms accessed by three northern doorways. Termination rituals took place in the center room leaving holes dug in the bench filled with ashy dirt, burned, hard limestone cobbles, and ceramic sherds. A deposit of ash and dirt was also found on the floor of the center room.

Architecture

Test excavations made axially in the bench (22EE) and in the floor of the central room (22HH) demonstrated that Str. D-7 was erected as one construction event. No earlier construction was found, nor were burials or caches discovered.

The building was an elite residence. Associated ceramic refuse contained household ceramics such as water-jars, oven-footed dishes, and incurving rim bowls, elite-linked forms such as tripod serving dishes, and a higher percentage of slipped sherds than other structures. Str. D-7 had the widest variety of artifacts and greatest amount of imported material of all structures in Group D. Associated materials included pyrite, a drilled mirror-back, shell, obsidian, ceramic mold fragments and decorated ceramics. However, the total amounts of these material was quite small, no more than about 5 pieces of each of these items except obsidian and ceramics. No clear refuse deposits were distinguished around the structure, but many sherds (3973) were found in a small area near the western stairside on the north (Ops. 22T, U, V, and W).

Str. D-7 consisted of a long substructure surmounted by an unvaulted masonry superstructure. A wide stair on the north side rose to a terrace in front of the range of rooms. Three doorways, eastern, central, and western, lead off this terrace into the rooms.

The central room of the superstructure was completely excavated, following architectural indications of part of the center room and a small room adjacent to it on the west, excavated in 1993 (Braswell 1993). The center room was entered from the terrace through the central doorway 1.85 m wide. The center room was occupied almost completely by a large bench, .74 m tall, that left only a small floor space in the room itself. The adjacent, narrow room was created by erecting a north-south wall on the surface of the bench. The narrow western room was reached by a doorway at

the back of the bench on the west side of the center room. There was not a symmetrical doorway on the east side of the center room.

The western doorway from the terrace was 1.32 m wide and led from the terrace to a third, unexcavated room. From the shape of the mound it appears that there was a fourth room at the far west end of the mound. The east side of Str. D-7 was not excavated, but an assumption of general symmetry promotes the idea that the superstructure consisted of seven rooms, reached by three northern doorways off the terrace (Figure 6).

In the center of the edge of the bench in the center room, a hole had been dug 25cm deep and about 80cm wide (Figure 7). This hole contained a deep layer of dark gray ash and hard limestone cobbles about 10cm in diameter. Another pit of the same dimensions was encountered behind this one, offset to the west. This hole also contained a thick layer of dark gray ash, and hard, burned, limestone cobbles, as well as large sherds including water-jar rims and a broken serving dish. The plaster of the bench surface in the central room was stained dark gray with burning, as was the surface inside the small adjacent room, although no ash layer was found on the bench beneath the yellowish limestone collapse debris.

On the floor of the central room a 5cm layer of ashy dirt and sherds was found above the severely burned floor. Stains from burning climbed 10cm up the bench face and the interior room walls. In the north area of the floor a third area was dug out, but more shallowly (about 12cm deep) than the two fire-pits on the bench.

The interpretation of the two fire pits and the floor fire as termination ritual for this structure is tentative, but it is supported by the following observations. First, these fires were set deliberately and carefully in circular pits neatly dug into bench fill to uniform depth. The ash from the fires did not spread far beyond the limits of the pits, although the bench surface was stained gray by burning. This care may signify that the activities were carried out by the people for whom the structure had specific meaning, perhaps the original occupants, but not by squatters. This ash pattern also precludes the possibility that the ash deposit was caused by the fall of a burning roof. Second, the fires did not result from domestic activity. The position of the fire-pits, the amount of ash, the thickness of the deposits, and the sherds and limestone cobbles packed into the fire-pits are inconsistent with descriptions of hearths for cooking or other household fires. Possibly, the fires may have had something to do with signalling, positioned in front of a wide doorway looking north from the top of the hill, and out over the sacbe to the west of the building. The deposits in the fire pits document a ceramic assemblage in occupational context from the Terminal Classic period. Radiocarbon assays have been proposed for samples of ash from these unique deposits.

Dating

The preparation layer below the limestone rubble fill of the substructure contained sherds dating to the Late Classic II period. All other lots of occupational

refuse contained sherds diagnostic of the Terminal Classic period. Construction of this structure therefore took place either in the Late Classic II or in the Terminal Classic period, and occupation and termination took place in the Terminal Classic period.

**Operation 97 (Sacbe)**

Summary

The probable connection of the Sacbe's eastern parapet to the eastern balustrade of the N stairway of the main platform (Str. D-8, Op. 23) was revealed. The lack of physical connection between the sacbe's east parapet and the western side of Str. D-7 was demonstrated. The original location of Stela 12 was sought but not found.

Excavation Details

Suboperations I-Q excavated 21 m2 around Stela 12 in an attempt to ascertain the original position of this stela. Stela 12 is a plain, subrectangular stela smaller than stela 11. It measures 145 x 65 x 26 cm. It was discovered resting on top of the current topsoil layer, indicating that it was moved in the recent past. The stela was found next to the sacbe's eastern parapet in Op. 97 I-M where intact plaster floor was found. Very smooth bedrock was found very close to the surface in Op. 97O, P, and Q. The hole for the stela butt could not be found. The stela was probably originally located closer to the north stair of the main platform since it is unlikely that it had been moved uphill.

The construction technique used for the sacbe's east parapet was similar to that demonstrated in 1993 at various other locations on the east and west parapets (Op. 97 B - H [Braswell 1993]). The parapet was created of two parallel facings set directly on bedrock approximately .90-1 m apart. The facings were built of variable-size limestone rocks of different hardness and degree of working. The fill consisted of small cobbles and dirt.

The demonstrated alignment of the sacbe parapet indicates that it probably joined the eastern balustrade of the platform's north stair (excavated in 1993 as Op. 23). The parapet did not join to the SW corner of Str. D-7's substructure, but passed the corner about 50 cm to the west. There were no contiguous features to permit inferences about the sequence of construction or contemporaneity.

Artifacts collected in excavation of the Sacbe do not clearly pertain to the use or construction of the sacbe. Although some may have eroded out of the parapet fill, many are redeposited sherds washed in from the platform to the south, similar to those found in the surface lots of Op. 21 (chultun 1) excavated in 1992.

Dating

Because ceramic sherds found on the surface of the sacbe do not clearly pertain to the sacbe's use or construction, they do not contribute to a date for the sacbe in this location. Keller (this volume) has proposed a Late Classic date for

construction of segments further north (see also Braswell et al. 1994). The last, Terminal Classic modifications of the Str. D-8 platform did include the construction of the stair on the north edge with a balustrade aligned with the sacbe east parapet here. Nonetheless, Group D excavations provide no evidence to suggest any other than a Late Classic date for construction of the sacbe.

## Structures to the South and East of the Main Platform

### Operation 105 (Str. D-13)

Summary

The construction of Str. D-13 showed similarities to Str. D-12 (Op. 81) with which it shared a patio. The southern mass of the platform was built of hard, unworked limestone rocks arranged in rectangular task units filled with large, heavy stones without matrix. The platform was completed with the construction of further task units on the north side built of limestone rubble in a compact white matrix.

Excavation Details

The excavation of Str. D-13 revealed the final structure form and some information about construction technique. All lots cleared surface architecture except for 105B/2-4 and 105D/2-3 that excavated into structure fill. There were no sherds in the fill of north-side task units, and they were probably not abundant in the hard dry fill in the southern part.

Str. D-13 is a very long (21m) platform. The excavation, east of the midpoint, consisted of a 2m wide strip from S to N, expanded to 4m wide on the north side. Only the substructure remained, and no evidence of a superstructure was found.

On the south side a facing of hard, unworked limestone rocks was discovered set directly on bedrock. The color of the matrix near the wall itself suggested that a veneer of softer limestone, now thoroughly decomposed, covered the core facing. This kind of veneer covered the eastern or rear side of Str. D-12 (Op. 81) and excavation there demonstrated that veneers of soft limestone have, at times, eroded so thoroughly that no traces are left.

About 2.8 m north of the south facing, another core facing was found (in Op. 105B), built similarly of hard, unworked limestone rocks set on 8-30 cm of silt above bedrock. The two core facings (north and south) retained medium to large smooth cobbles of hard limestone. The south and north core facings were connected by a third facing running north-south. The third facing could be seen on the excavated surface on the top of the mound (Op. 105E/1). These three facings created a task-unit of the structure's core.

The north core-facing of a similar task-unit to the east was visible in Op. 105D/1-3. This eastern task unit was joined to the one described in Op. 105B by a core facing built between the units and set back 10 cm from their corners.

The front of the structure on the north side was faced with soft limestone veneer. Only the lowest course of this facing remained next to the remains of the plaster patio surface, but the veneer facing is understood to have risen in courses to form the front facing of the platform, on analogy to the technique exposed in excavations of Str. D-12, Op. 81 (Braswell 1993). The line of veneer stone stubs was in front of a core of white limestone marl cobbles in a compact white matrix of crushed limestone sascab. This fill was also constructed in task units, as demonstrated by the north-south core facing on the west side of the trench created by the excavation of 105D/1-3. No sherds were found in this matrix.

Dating

Ceramic sherds recovered in the excavation of this structure pertain to the use of the structure, since the fill was apparently clean of sherds when erected. Only 11 sherds of all lots excavated were diagnostic of a specific time period. Of these, seven were Late Classic II. None were Terminal Classic. Ashware comprised 7% of all sherds collected, a proportion that supports a Late Classic II date for construction and use of Str. D-13.

**Operation 103 (Str. D-10 N terrace)**

Summary

A line of large cut limestones visible in the leaf litter on the surface was cleared to reveal a large, low platform extending north from Str. D-10. This platform was built of variable-sized worked and unworked limestones retaining a loose fill of small limestone cobbles and dark earth.

Excavation Details

Suboperations A-D cleared most of the western face of a terrace that extended north from the Str. D-10 mound. Suboperation E cleared 2 m of the northern limit of this terrace. The terrace remains consisted of one or two courses of variably-size squared limestone blocks set directly on bedrock. The terrace facing retained small limestone cobbles in a loose matrix of very dark, organic clay-loam. From the height of the terrace floor revealed in Op. 105C/2 the total terrace height above bedrock is calculated as .70 m.

The eastern edge of this terrace was created by the exposed face of the quarried area immediately east of Str. D-10.

Dating

Artifacts recovered in these excavations represent both discard from the low terrace and erosion of artifacts contained in the fill. Ceramic sherds diagnostic of the Late Classic period and of the Terminal Classic period were recovered, implying that the final use of this terrace dates to the Terminal Classic period. Construction of the terrace could have taken place in the Late Classic period.

**Operation 104 (Str. D-10)**

Summary

The construction of Str. D-10 was similar to the construction of Str. D-12 and D-13, consisting of one platform without superstructure built of hard, unworked limestone. A step was uncovered on the north side, giving access to the top of the platform from the terrace described in Op. 103.

Excavation Details

Suboperations A-D cleared the surface architecture of this platform. No evidence of superstructural remains existed. The southern platform facing (Op. 105A) consisted of hard, roughly shaped limestone blocks set in courses directly on unmodified bedrock.

On the north side of the mound, patches of plaster floor at the base of the mound were evidence of the surface of the north terrace. A step rose 34 cm above the plaster floor, but the remainder of the mound was too eroded to determine whether other steps had existed. The step consisted of one course of thin limestone slabs apparently resting on dark organic loam between the step-stones and the plastered surface.

The fill of this platform was small cobbles in a dark matrix of organic loam.

Dating

Ceramic sherds from this operation date to all periods, Formative through Terminal Classic. Late Classic sherds comprise 55% of all diagnostic sherds. This proportion and the scatter of Terminal Classic diagnostics suggest that the structure was built in the Late Classic II period and used into the Terminal Classic.

**Operation 137 (Str. D-1)**

Summary & Excavation Details

Op. 137A was a 1 x 2m test pit located at the southwest corner of Str. D-1, where the shovel test at Op. 84D-90 had shown the highest number of sherds (70) of shovel-tests near the trio of mounds D-1, D-2, and D-3. Lots were excavated in arbitrary levels approximately 20cm deep because no natural stratigraphy was visible, and because the excavators were limited in experience and ability. No other suboperations were carried out.

Dating

Sherds in these lots represent refuse from the use of Str. D-1, and perhaps from the entire trio of Strs. D1-3. Of the 37 sherds with diagnostic rims, Late Classic I, II and Terminal Classic sherds were recovered in the lots of 137 A as follows:

| | LCI | LCII | TC |
|---|---|---|---|
| Lot 1 (N=11) | 36% | 64% | 0% |
| Lot 2 (N=20) | 25% | 70% | 5% |
| Lot 3 (N=6) | 5% | 25% | 0% |
| Lot 4 (N=0) | No diagnostic sherds present. | | |
| Lot 5 (N=0) | No diagnostic sherds present. | | |

Since 8% of all sherds were ashware, the provisional assignment of this operation to the Late Classic period (before the Terminal Classic) is warranted.

## Structures to the West of the Main Platform

**Operation 142 (Str. D-14)**

Summary

The excavation of this structure suggested that it originally faced east, away from the other structures in Group D. A high number of ceramic sherds was recovered from the structure fill and may represent the reuse of a midden from the rear of Str. D-6.

Excavation details

The stone facing on the west side was very soft and decomposed, which caused it to be dug right through during the excavation of the first suboperation, 142A. Evidence for the facing stones of the western side was recovered, nonetheless, in excavation of Op. 142C adjacent and north of 142A. The west face of the platform Str. D-14 was created of soft limestone blocks retaining limestone cobbles, marl, and artifact debris.

On the eastern side of the platform, excavation of Op. 142B revealed a course of hard, rectangular limestone blocks aligned directly on bedrock. Although this feature appeared like a step, it may have risen higher than one course. Nevertheless, the eastern side, being higher than the western side, and possibly having a step by which to reach the summit of the platform, is interpreted as the front of Str. D-14.

Dating

Sherds from Op. 142A/2, 3, and 4-D1 represent material incorporated into the fill during construction of the platform. 7% of sherds diagnostic of time periods (7/73) were Terminal Classic, so Str. D-14 can not have built any earlier than the Terminal Classic period.

**Operation 143 (Str. D-15)**

Summary

Str. D-15 proved to be different from all other structures excavated in that it was not built on bedrock, was very narrow and long, and had a very small amount of ceramic refuse. This structure is not currently interpreted as a house-platform.

Excavation Details

Suboperations A-C excavated a north-south strip, 1 m wide, in the east-central area of the mound. Evidence for the fallen south facing was demonstrated in Op. 143A although the excavation was carried out in a complicated way because the architectural remains were severely eroded. Evidence for the south facing was a line of rounded (but not water-worn) cobbles of hard limestone about 10cm in diameter.

A fallen stack of four of these cobbles could be seen in the west section, adjacent to three in place, providing a minimum height of .68 m for the south facing. These rows of cobbles were not set on a hard bedrock layer as other facings have been. Instead, they rested on a soil matrix of gray-brown silty soil. Sherds were found in excavation into this silty soil (lots 143A/2, 3, 6). Bedrock was reached 40 cm below the base of the cobble-line.

The position of the north facing was interpreted from evidence in 143C, where there were hard, rounded limestone cobbles in the northeast corner. Excavation south of this area (143B/2) had revealed small-cobble-and-loam fill. The estimated breadth of the Str. D-15 mound is 3.52 m. The estimated total height of the platform, calculated from the base of the stacked cobbles in the north facing to the highest point of the existing mound, is 1.15 m. The length of Str. D-15 is 33.21m.

Str. D-15 was a very long, low, narrow mound west of Str. D-14. About 15m north of the mound the land drops sharply down hill, so that a long, narrow patio seemed to be bounded on the south by Str. D-15 and on the west by D-14. In 1993's annual report of investigations in Group D, Str. D-14 and D-15 were interpreted as a household unit, because the two mounds flanked two sides of a patio. However, the unusually flimsy construction of this mound, the absence of artifact debris, and its extreme length and narrow breadth imply that the 1993 interpretation needs revision.

Dating

Only 13 diagnostic sherds were recovered of the 371 sherds in all lots. Of these, 7 were Formative, indicating greater preservation of the formative diagnostics (Mars Orange composition and cream colored or Sierra Red waxy slips). The presence of sherds of the Late Classic II period, nonetheless, suggests that the structure was not constructed before that period.

## Investigation of Terrain Without Visible Mounds

### Theoretical Basis

Hidden Structures

Many population reconstructions of Maya cities (see examples in Culbert and Rice 1990) assume that non-plaza areas without visible mounds did not contain residential platforms. However, in the peripheral areas of some Classic period central and southern lowland sites, researchers have discovered low-platform structures which had no surface manifestation (Ashmore 1988; Johnston, Moscoso, and Schmitt 1992; Pyburn 1990; Webster and Gonlin 1988). The question of whether such platforms exist within the center of Maya sites has been called the hidden structure problem. Since an increase in the number of structures at Group D could change the imagined scale of the corporate group (see Braswell 1993), and since material evidence for all segments of the corporate group was sought, a program of investigation of terrain without mounds was initiated in 1993 to discover whether hidden structures existed.

The area chosen for study was the large, flat area southwest of the main platform between Group D and the steep rise to Group C. Shovel tests were made every 5 meters. Soil samples were collected, ceramic sherds and chipped chert were counted, and obsidian was noted when present. High counts of artifact debris were hypothesized to indicate hidden structures. Results of shovel tests near Strs. D1-3 strengthened the hypothesis, because artifact counts per test were higher where mounds were present than away from them.

Infield Gardens

An alternative hypothesis was that an absence of artifact debris indicated that the area was the former location of gardens. Areas close to residential units are often proposed as the location of infield gardens. Although infield agriculture has long been viewed as a likely complement to extensive outfield milpa food production, finding or predicting visible archaeological correlates for infield gardens has been difficult.

The recent success in soil analysis indicated that analyses of soil phosphates might help in detection of evidence for infield gardens (Dunning 1989, 1992; Dunning et al. 1992; Killion et al. 1989). In the Belize Valley (including the site of Xunantunich) original soil phosphorus levels are typically low (Fedick 1988), and because non-human activity alters soil phosphorus levels only over extremely long periods of time, variability in soil phosphate fractions are good signals of ancient human activities. New techniques, known as phosphate fractionation analyses, detect soil phosphate "signatures" that indicate the type of human activity that modified the soil.

Although soil researchers have continued to develop the techniques that measure the phosphorus compounds in the soil as fractions of total phosphorus (Proudfoot 1976; Woods 1977a, b; Eidt 1977, 1984; Dunning 1992), the procedures are not uniformly accepted (Bethel and Máté 1989; Dunning 1994).

Woods, for example, has expressed concern that the strong acid technique used to prepare the soil in Dunning's technique makes the method unsuitable for use at Xunantunich (personal communication, 1992). Dunning advises, however, that although some phosphorus is lost when the acid stripping is used on soils like those at Xunantunich, the relative percentages of each phosphate fraction are not significantly altered (Nicholas Dunning, personal communication, 1993).

This year, ring chromatography measurements were carried out as a precursor to application of the more costly and controversial fractionation technique.

## Results

### Operation 107 (Str. D-16)

## Summary

The existence of Str. D-16 was predicted by the high number of sherds recovered in a shovel test. The structure itself was a small, low platform. A piece of carved slate and two chert eccentrics were associated with the structure. The working interpretation of this structure is that it was not a house-platform.

## Excavation Details

The shovel test made at Op. 84A-15 revealed 59 sherds, a number considerably higher than quantities found away from visible mounds, which were rarely over 10. Excavation of Op. 107A resulted in the discovery of the south facing of a low platform identified as Str. D-16. The entire platform was subsequently cleared. The platform was created by four low facings of variably-sized, hard limestone blocks and cobbles, enclosing a loose fill of small limestone rocks and earth.

The entire platform was cleared in suboperations A-H. The structure measured 2.50 x 3.23 x 3.00 x 2.95 m, and rose about 1 meter above the lowest point of bedrock on which it was constructed. Str. D-16 had no features that allowed determination of a "front" for the structure. However, sherds per square meter, possibly a measure of the location of refuse, were so much lower in Op. 107 H and G that the east side maybe the front of the structure, having been kept much cleaner during the use of the structure.

Three remarkable artifacts were collected near this platform. One was a very small piece of slate, engraved with a mat pattern and with remnants of red paint (figure 8a). The slate piece was recovered south of the structure in the mix of fallen fill and soil. Two pieces of chert flaked in eccentric patterns were also found in the mix of fallen fill and eroded material; one to the south of the mound and other near the northeast corner (figure 8b and c).

The rarity of chert eccentrics found outside of burial or cache contexts (Iannone 1993), and the rarity of engraved slate in any context, point to Str. D-16 as an unusual construction. Its extremely small size and square shape, too, make it different from any other structure at Group D.

For these reasons, Str. D-16 is interpreted as having a different function from all other structures in Group D. The chipped lithic flaking debris found in large quantities (approximately 2 kilograms/.20cm3 lot) east of Str. D-10, the unusually large terrace north of that structure, and the close proximity of the north terrace to Str. D-16 with its unusual lithic finds, lead the author to speculate that this cluster of features may indicate the location of a lithic workshop for the production of special eccentric chert and carved slate items. This speculation will be supported or undermined by artifact analysis planned for 1995.

## Dating

96% of 170 diagnostic ceramic sherds from Str. D-16 date to the Late Classic I (23%), Late Classic II (60%) and Terminal Classic (13%) periods. Construction and use of this structure are dated to the Terminal Classic period.

**Operation 121 (Test Pits in Terrain Without Visible Mounds)**

Summary

Five test-pits were made in the area of terrain without mounds to test the hypothesis that high artifact counts in shovel tests are the only indicator of hidden structures. This hypothesis was confirmed. An apparent mound was confirmed to be an outcrop of bedrock weathering into a false signature of a collapsed housemound. No conclusive evidence of Maya landforms for gardens was recovered, but the evidence does not preclude them.

Excavation details

The shovel-test program revealed three important modes in the distribution of sherds, low (0-10), medium (11-30), and high (56-70) counts (figure 9). The first tests (Op. 121 A and B) were made to explore areas where sherds counts were medium. The remaining tests (O. 121 C, D and E) were made where sherd counts were low. Op. 107 and Op. 137 were made where sherd counts were high.

Suboperation A excavated a 2 x 2 m square to bedrock to test whether a hidden structure could be found where the surface appeared mounded and where the amount of sherds and chert in the shovel test was medium. The shovel test at Op. 84B-55 had 22 sherds and no pieces of chert. Surface topography showed an elongated mound shape. Excavation revealed abundant sherds, but the limestone rocks and cobbles were extremely loose and the complete range of sizes was present, from tiny gravel to larger hunks of limestone. From these characteristics the topographic feature was interpreted as a layer of eroding limestone, covered by a cap of discarded artifactual debris, rather than a hidden platform.

The sherds in this deposit contained diagnostics of the Late Classic II period. It is speculated that this is refuse from the use of Strs. D-1, D-2, and D-3, deposited as far east from these structures as possible without reaching the use-areas of Strs. D-4 and D-9.

Suboperation B excavated a 2 x 2m meter square to bedrock to test whether a hidden structure could be found where the surface did not appear mounded but where the number of sherds and chert in the shovel test was medium. The shovel test at Op. 84E-50 had 17 sherds and 5 pieces of chert. Excavation revealed a low sherd density and dark clay soil in the upper 50cm. The lower 43cm was interpreted as non-cultural, and the few sherds in the lowest lot (op. 121B/4) probably resulted from movement of sherds into a natural layer.

The results of this test indicated that no hidden structure was present.

The sherds in this deposit contained ashware and at least two pieces of Mars Orange. No more specific date than Late Classic can be assigned to this collection. This is general Group D refuse.

Suboperation C excavated a 2 x 1m area to bedrock to test whether a hidden structure could be found where the surface topography showed an elongated mound, where limestone cobbles about 10 cm in diameter could be seen, but where the number of sherds and chert in the shovel test very low. The shovel test at Op. 84E-15 had no sherds and one piece of chert. Excavation revealed that bedrock was very close to the surface. The amount of soil passing through the screen was only about 75% of the amount of rock removed, although the excavators were purposely leaving as much rock in place as they could.

This mound was interpreted as resulting from non-cultural processes, specifically the erosion of limestone caprock. This interpretation was based on the facts above and three other observations. The excavated lot resembled fill except that each large rock could be seen to have split off from one adjacent to it, so that rocks appeared in plan view to fit together like puzzle pieces. The rocks removed from this unit ranged in size from gravel to medium cobbles, but pieces of all sizes were present, that is, there were no modal size classes as would be expected if they had been selected for placement as fill. The rocks did not vary in surface sheen or color, and presented a uniformly white, smooth appearance, rather than the variable appearance of both fill and facing stones in Group D.

The very small amount of ceramic debris in this lot contained sherds of the Late Classic period. Sherds are interpreted as general refuse from Group D.

Suboperations D and E created a 1 x 4m trench running N-S through a gentle rise in the north-center of the terrain-without-mounds test area. Because of the high soil phosphorus levels (described in the next section), manipulation of the natural landform by the ancient Maya was hypothesized. The rise was postulated to be the remains of a feature built by the Maya to hold back, or 'pond,' soil nutrients that without this feature could have run down the ravine to the southwest. Additionally, a hard, rectangular block of worked limestone, with dimensions 43 x 20 x 16 cm, was lying on the surface near shovel test Op. 84K-65. The dimensions of this stone were not typical of those used in building or platform construction, but the block lay at the base of the short, gentle incline up to north. Since infield gardens do not have a known architectural signature, it was decided to investigate the area of this unusual block.

In shovel tests, only 2 sherds and no chert had been found at the location of 121 D, but ten sherds had been counted at the location of 121E.

This trench revealed a deep heavy clay soil. The top 25 cm consisted of clay free of artifact debris. This layer of clay may have washed down from the elevated area (Group C) to the west, and the clay did not differ in color or texture from that

below it. 40 cm below the surface, the colors of the clay differed from the very dark brown above. The clay in the southern part of the trench was reddish-brown, and the clay in the northern part was greenish-gray. Hard calcium-patinated limestone rocks appeared within a reddish-brown clay that underlay the green-gray clay in the north.

No Maya landform modification was indicated by these data. The clay color changes are considered natural, as are the patinated limestone cobbles. This interpretation is subject to evaluation by a geomorphologist.

No cultural features were found here. The Late Classic date of the sherds is only a general date for Group D refuse.

## Conclusions from Excavation Results

The hypothesis that only the highest artifact counts indicate the presence of hidden structures was confirmed as no hidden structures were revealed even where visible landforms appeared to indicate the presence of mounds or other features.

**Ring Chromatography Tests for Phosphorus in Terrain Without Visible Mounds.**

Methodology

Ring chromatography is a simple procedure in which two reagents are applied to soil on an absorbent paper. The intensity of a blue ring on the paper, resulting from the reaction of the phosphorus released from the soil by the first reagent, HCl, and the second reagent, ascorbic acid, reveals the relative amount of phosphorus in the soil (Eidt 1977, 1984). The commonly used Eidt procedure uses an HCl reagent that frees phosphorus bound with calcium. Although the ring test is said to measure total phosphorus, or "settlement" phosphorus (Eidt 1977), the test actually measures the calcium-bonded fraction of phosphorus contained in the soil, likely the largest fraction. It does not measure the fractions bound with aluminum or iron, because these fractions are not released by the HCl reagent. Furthermore, this is not a test of phosphorus available to plants, a measure of soil fertility (used by Fedick [1988] and others). It is a test for *total* phosphorus that can evidence anthropogenic causes.

Ring chromatography provides measurements of phosphorus in the soil in five levels that can be distinguished by the experimenter. The method furnished a rapid and inexpensive way to distinguish high-phosphorus soils, a possible indicator of agricultural soils, but high phosphorus also results from the discard of plant and animal wastes around domestic clusters. In the site center of Xunantunich, high levels of total phosphorus were expected where occupation was evident from the mounds.

Results

Phosphorus values throughout the test area were very high. Figure 10 provides a spatial plot of phosphorus values from 1-5, where 1 indicates the lowest amount of phosphorus and 5 the highest. The uniformity of the high values in the

center of the test area is not what one would expect if high phosphorus levels were attributable to zoned discard of organic (and therefore phosphorus-laden) trash around domestic household units (cf. Ball and Kelsay 1992; Killion 1990). The high values in the center of the test area correlate with deeper soil in that area. The low phosphorus measures correlate with shallow soils in the south, and in the west may correlate with areas swept clean around houses.

Conclusions from Ring Tests

The terrain without mounds tested in Group D contains clay soils with good texture for food-plants and high amounts of total phosphorus. A great deal of the phosphorus is likely bound with calcium. The area could have been used for intensive gardening of food-plants because the high phosphorus indicates the possibility that phosphorus was added to the soil by fertilization with organic refuse such as plant or animal garbage (e.g. corn husks or bones), or night soil. Although the area may contain some added colluvium from Group C to the west, the contribution of soils from that area is likely to be small. The run-off would not have flooded the area with clay; instead, it would have carried the clay into the ravine to the southwest.

The ring chromatography tests were able to confirm high total phosphorus the area, but were not, by themselves, able to distinguish whether this phosphorus resulted from domestic activities around a house or from enrichment of the soil. Combined with the evidence that hidden platforms were absent in the test area (Op. 121), the high levels of phosphorus do indicate the possibility of soil enrichment for infield gardens. Furthermore, the high phosphorus levels do not exhibit the centrifugal-increase patterns of elevated phosphorus from garbage swept away from the house.

Future Work

More chemical analysis is indicated by the results of these phosphate tests. First, complete soil assays of samples are required to be able to accurately analyze the soils of the test area. It is essential, for example, to measure background phosphorus in the area, to make sure that high phosphate readings do not result from naturally high phosphates. The Yaxa soil suite[5] on the Xunantunich hilltop and in Group D is described as having naturally low levels of phosphorus (King et al. 1992), as most Belize Valley soils have. PH measurements must be made because of the strong influence soil acidity has on soil phosphorus compounds. Organic carbon tests have been made at Ixtutz, a contemporary sites up river from Xunantunich (Jacobo et al. 1993), and are recommended for comparison with that site and to reveal colluviation in the soil history of the test area. These tests are needed to characterize the soil sufficiently to assure that the phosphorus fractionation results are not due to soil chemical factors rather than human manipulation of the landscape.

Samples from immediately above the bedrock have been taken and can be used as samples to test the natural phosphorus level of soil from the parent material.

Second, phosphorus fractionation tests are indicated to validate the hypothesis that enrichment of the area as part of intensive gardening is the cause of the elevated soil phosphorus levels. Tests of samples already collected from throughout the test area can be assayed to see if they bear the phosphorus fractionation signatures typical of fertilized and cropped land.

## Summary and Conclusions

Summary of Data Highlights and Interpretations

The biggest enlargement of the main platform took place in the Late Classic II period. Architecture whose construction can be confidently dated to the Terminal Classic period is limited to Str. D-4 although D-7 may also have been a Terminal Classic effort. Occupation debris is also scarce, as if middens were not used for a long time. The best evidence of Terminal Classic activities in Group D was found at Str. D-7, at Str. D-6 and on the main platform, Str. D-8.

Ritual and mortuary activity conforms with patterns in the site center, including head to south burial practice and the deposition of caches of lithics in eccentric forms.

Although the group's leaders were elite, the amount of imported material recovered, such as jade, is very small. Even the most elaborate burials in the axial platform location contained no special polychrome vessels.

The ceramic assemblage and architectural form of most of the structures support the hypothesis that they were residential. The exceptions are Str. D-6, Str. D-16 and Str. D-15.

The use of terrain without mounds for fertilized gardens is supported by the results of the soil-test, shovel-test, and excavation programs in the southwest quadrant. Further detailed soil analysis including general soil composition analysis and phosphorus fractionation analysis has been proposed, to enhance interpretation of the use of this area.

Planned Analyses

Planned analyses include study of artifact assemblages by structure, and for the group as a whole. Comparison of elite groups with stelae outside site epicenters elsewhere is planned, as well as comparative analysis of causeway terminus groups. Comparative analysis of lithic eccentric caches from the Xunantunich site center excavated in previous years is underway.

Indications for Future Research at Group D

Complete excavation and repair of Str. D-6 is advisable due to the damage done to this major structure by looters. Repair of the small looters' trench in the main platform, Str. D-8 is also called for. Excavation of sacbe-related Str. D-7W and Str. D-11 might provide additional information on the use of the sacbe. Excavation of the plaza-surface within Strs. D1-3 might reveal more about the use of this small group related to, but outside of, Group D. Chultun 2 could be investigated. Investigation of SE terrain without mounds would provide further understanding of land use in the group.

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The results of this field season could not have been made without the skilled participation of all these people and the expert work of the excavation team. I extend my most heartfelt thanks to each one.

## Notes

[1] Architectural terminology in this report follows Loten and Pendergast (1984) except where noted. Their Lexicon provides a standard terminology that at times deviates from common usage. However, the imprecision of common usage leads to misunderstanding and incomparability of architectural description, so a standard terminology has been selected.

[2] The use of "fill" in this report does not conform to the meaning provided in Loten and Pendergast (1984). Fill in this report means any material interior to the outer facing of the construction.

[3] Op. 74L/4, 74M/4, 74N/3, 74P/4, 74GG/3, and 74II/1 deposits contained Late Classic II sherds.

[4] no earlier than

[5] Hilltop soils are mapped as Yaxa soil suite, Cuxu subsuite, Mt. Hope series (King et al. 1992). This designation corresponds to Redzina in the FAO classification or Lithic Redoll of the USDA nomenclature.

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## Appendix A

XUNANTUNICH ARCHAEOLOGICAL PROJECT
PRELIMINARY HUMAN SKELETAL ANALYSIS
by Ana María Boada
June 4,1994

Skeleton ID: Xunantunich, Group D, Op. 74JJ/2-B1

BONE INVENTORY:

**Cranium:**

| | |
|---|---|
| Frontal: | Present. Fragmented in large pieces |
| Temporals: | Present. Fragmented in relatively large pieces |
| Occipital: | Present. Well preserved |
| Nasal: | Fragmented |
| Zigomatic: | Fragmented in the areas of articulation with the temporal and frontal. |
| Sphenoid: | |
| Ethmoid: | Present |
| Lacrimal: | Present |
| Maxilla: | Present. Fragmented |
| Palatine: | Present. |
| Mandible: | Present. Restored |

**Teeth**

| | Maxilla | | Mandible | |
|---|---|---|---|---|
| | Right | Left | Right | Left |
| First Incisor | Absent | Present | Present | Present |
| Second Incisor | Present | Present | Absent | Absent |
| Canine | Present | Present | Present | Absent |
| 1st premolar | Present | Present | Present | Present |
| 2nd premolar | Absent | Present | Present | Present |
| 1st molar | Present | Absent | Absent* | Absent* |
| 2nd molar | Absent | Absent | Present | Present |
| 3rd molar | Absent | Absent | Absent | Present |

* Lost during life. Alveolus resorbed.

Non metric features: Shovel shaped teeth

**Postcranial skeleton:**

| | |
|---|---|
| Hyoid: | Present. Represented by one of the greater horn bones. |
| Right clavicle: | Present. Both epiphyses are missing and the shaft is broken in the middle. |
| Left clavicle: | Present. No epiphysis present. Shaft broken |
| Ribs: | Very fragmented. Unable to identify position and side |
| Vertebrae: | |
| Cervical: | Present. Atlas and Axis present but fragmented. Some of the cervival vertebra show erosion in articulatory surfaces and in the bodies. Some show osteofites. |
| Thoracic and lumbar vertebrae: | Some of them are present but because of a high degree of fragmentation they were unidentifiable. |
| Right scapula: | Present. Fragmented. Glenoid cavity has erosion of the bone. |
| Left scapula: | Present. Fragmented. Glenoid cavity fragmented; not enough surface to identify pathology. Small portion of the body left. |
| Right humerus: | Present. Very fragmented. |
| Left humerus: | Present. Fragmented. |
| Right ulna: | Present. No epiphysis present. Fragmented. |
| Left ulna: | Present. No epiphysis. Fregmented. |
| Right radius: | Fragmented. No epiphysis. |
| Left radius: | Fragmented. No epiphysis. |
| Carpals, metacarpals and phalanges are poorly preserved. Most of them are missing. | |
| Right innominate: | Present. Fragmented. Pubic symphysis absent. |
| Left innominate: | Present. Fragmented. The acetabulum and part of the sciatic notch and the auricular surface are present. Pubic symphysis absent. |
| Sacrum: | |
| Coccyx: | Absent |
| Right femur: | Present. Fragmented. Incomplete head. Diameter of the middle shaft: 267 mm. |
| Left femur: | Present. Fragmented. Incomplete head. |
| Right patella: | Absent |
| Left patella: | Absent |
| Right tibia: | Present. Fragmented. No epiphysis. Proximal and distal areas of the shaft are highly fragmented. |
| Left tibia: | Highly fragmented. Proximal epiphysis broken. |
| Right fibula: | Present. Fragmented. Epiphysis absent |
| Left fibula: | Present. Fragmented. No epiphysis |
| Tarsals: | Very fragmented. No epiphysis and poorly preserved. Unable to identify them. |

**General comments:**

The cranium shows a flat surface in the lambdoid area including the posterior area of the temporals and the superior area of the occipital. It can be due to a posture

of the infants over hard surfaces while sleeping or resting in dorsal position. No other cranial modifications were noticed.

In general, the postcranial skeleton is highly fragmented and the epiphysis are absent and poorly preserved.

Additional metric and non-metric traits will be identifiable following consolidation and reconstruction of the fragmentary remains.

**Pathologies:**
Mandible:
- Caries: In 2nd left molar in the occlusal surface
  In 2nd right molar on the neck of the disto-buccal area.
- Calculus: On the lingual surface of the right canine. Mild in the rest of the teeth.
- Occlusal wear: Incisors, right canine, premolars and molars have mild wear.
- Enamel hypoplasia: (was measured from the neck of the teeth until the band of hypoplasia).
  2nd right molar: One band at 1.2 mm
  2nd right premolar: One band at 1.7 mm
  Right canine: One band at 2.5 mm and other at 3.45 mm.
  2nd left premolar: One band at 1.9 mm
- Teeth lost: First molars of both sides.

Maxilla:
- Caries: 1st right molar: In the neck
- Enamel hypoplasia:
  Left canine: One band at 2.5 mm another at 4.2 mm.
  Right canine: One band at 2.7 mm
  1st left premolar: One band at 3.05 mm
  1st right premolar: One band at 3 mm
  2nd left premolar: One band at 2.7 mm

Further analysis will be possible when the skull is reconstructed.

Poscranial skeleton:
Moderate erosion on the articulatory surfaces of some of the cervical vertebra and osteofites in the body of the vertebra, as well as erosion of the glenoid cavity of the scapula suggests degenerative arthritis. The location of the degenerative process suggests it could be due to a mechanical stress.
There is no evidence of osteoporosis in the bones.
There is no evidence of cribra orbitalia.

SEX DETERMINATION:
Mandible:
- Symphysis: masculine
- Goniac angle: masculine

- Body: masculine
- Ascending ramus: masculine

Cranium:
- Superciliary arch: masculine (very marked)
- Zigomatic arch: masculine
- Temporal eminence: masculine
- External occipital protuberance: masculine
- Temporal eminences: masculine
- Malar: masculine
- Mastoid process: masculine
- Eye orbit: Unable to identify.
- Frontal eminences: Unable to identify

Pelvis:
- Ciatic notch: moderately wide, Feminine
- Acetabulum size: masculine
- General shape: Unable to determine
- Subpubic angle: Unable to determine
- Ischiopubic ramus: Unable to determine
- Ventral arc: Unable to determine

Femur:
- Linea aspera: masculine
- Head size: Although incomplete, looks large and robust. Masculine
- General appearance: masculine

The majority of the traits suggest that the individual was a male. However, given the lack of a comparative sample from the same population, the sex determination has to be considered tentative.

## AGE DETERMINATION

| | |
|---|---|
| Teeth wear: | 17 - 25 years old (After Brothwell 1965:69)<br>The auricular surface of the innominate shows a surface smooth and compact which suggests a young individual. This corresponds with the teeth diagnosis. |

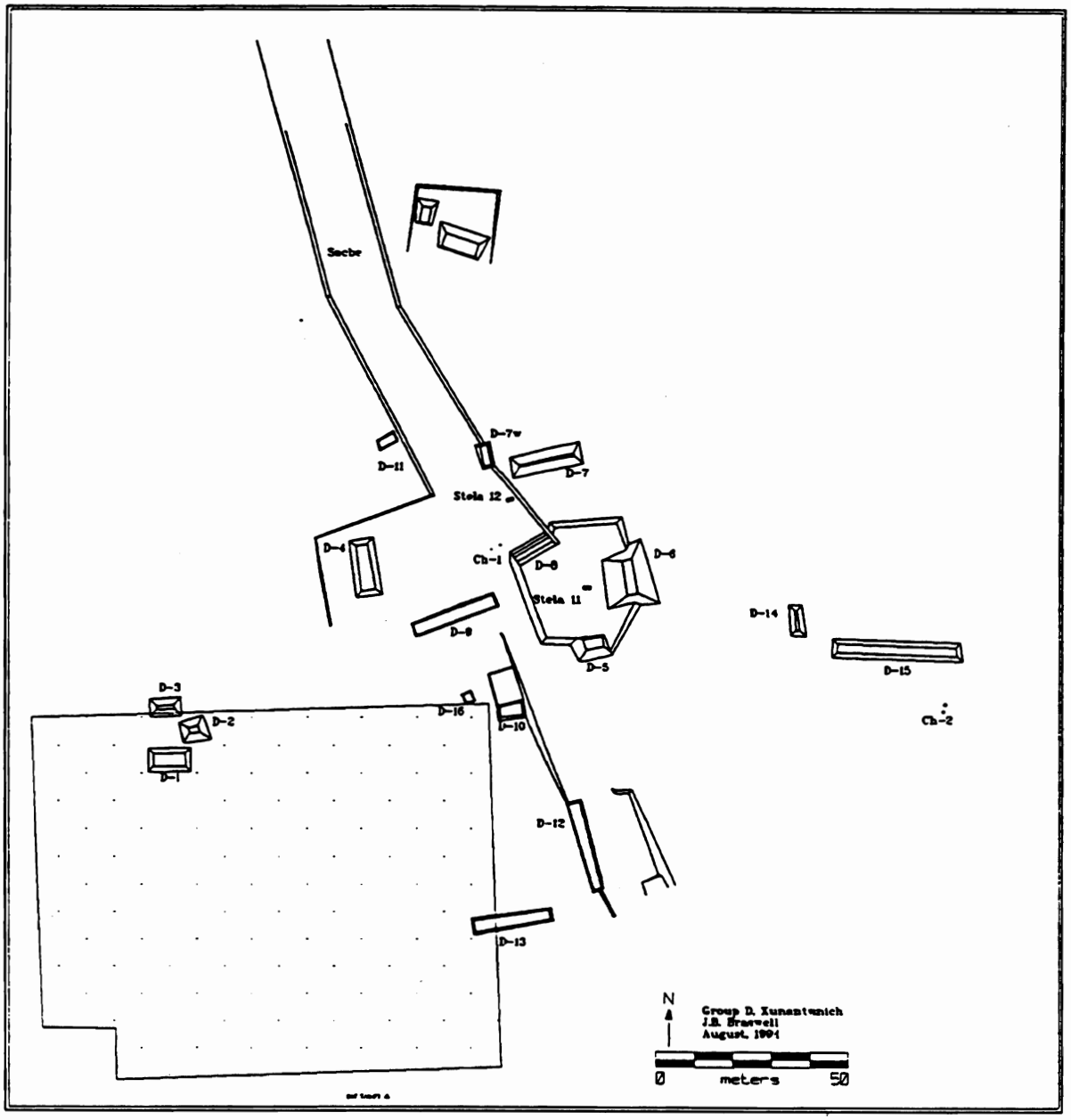



Figure 1. Group D, Xunantunich, Belize. The vacant terrain study area is represented by the rectangle in the southwest.

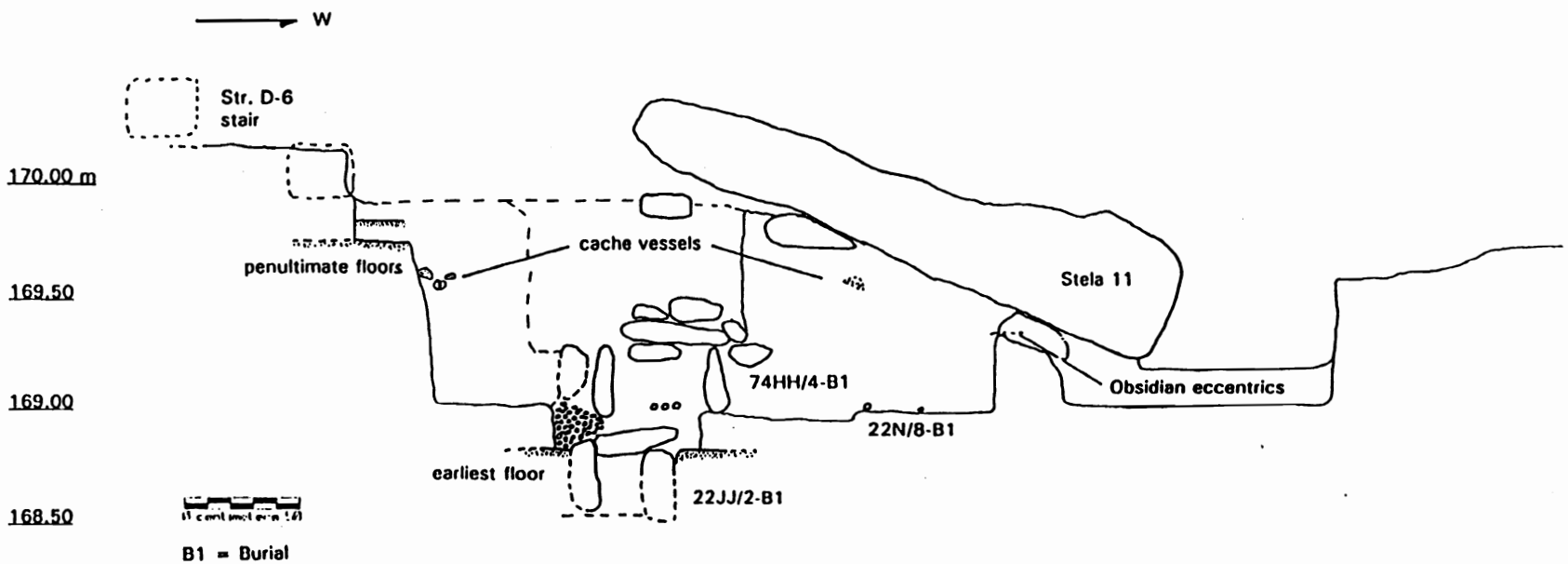



Figure 2. Profile: Locations of Stela 11, crypt burials, and cache of obsidian eccentrics in front of Str. D-6, Group D, Xunantunich.

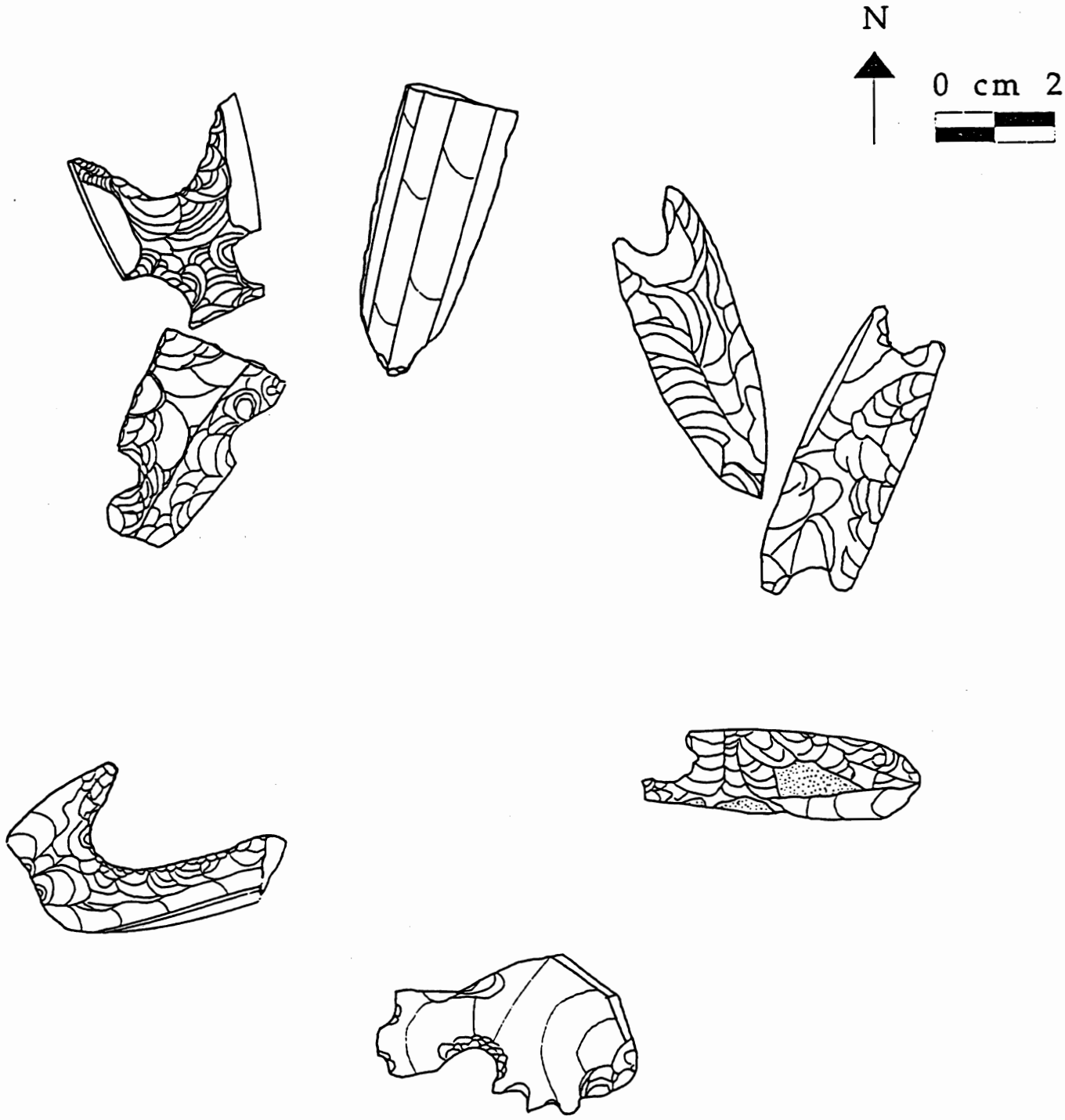



Figure 3. Obsidian eccentrics from Group D, Xunantunich, Belize

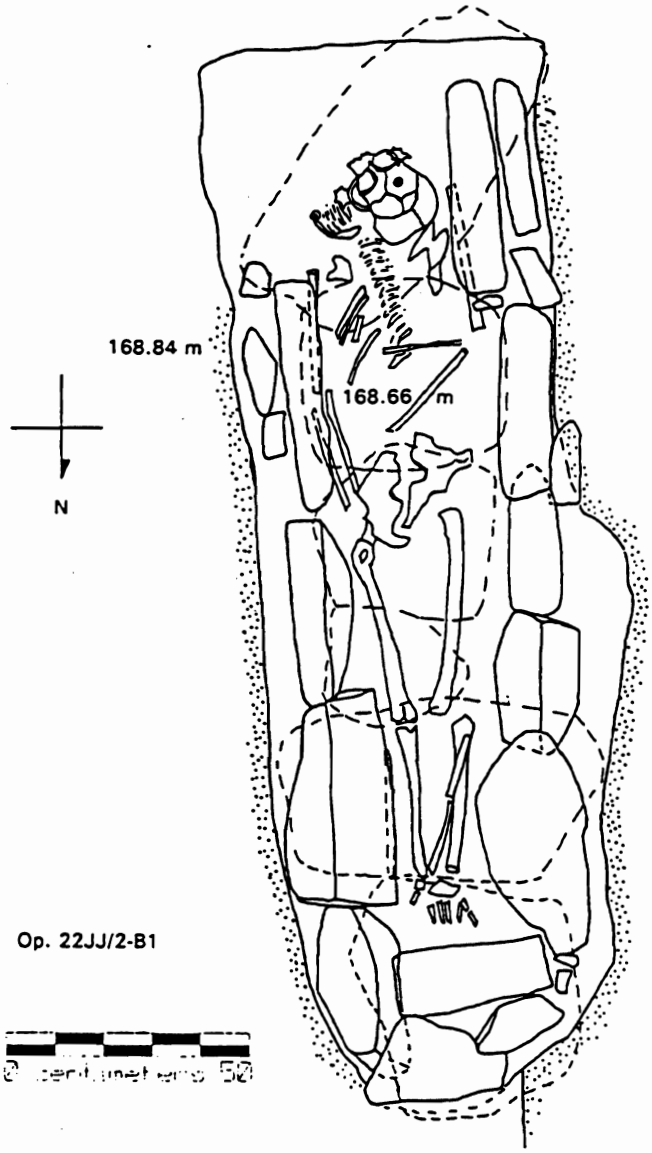



Figure 4. Plan: Lower crypt in main platform, Group D, Xunantunich.

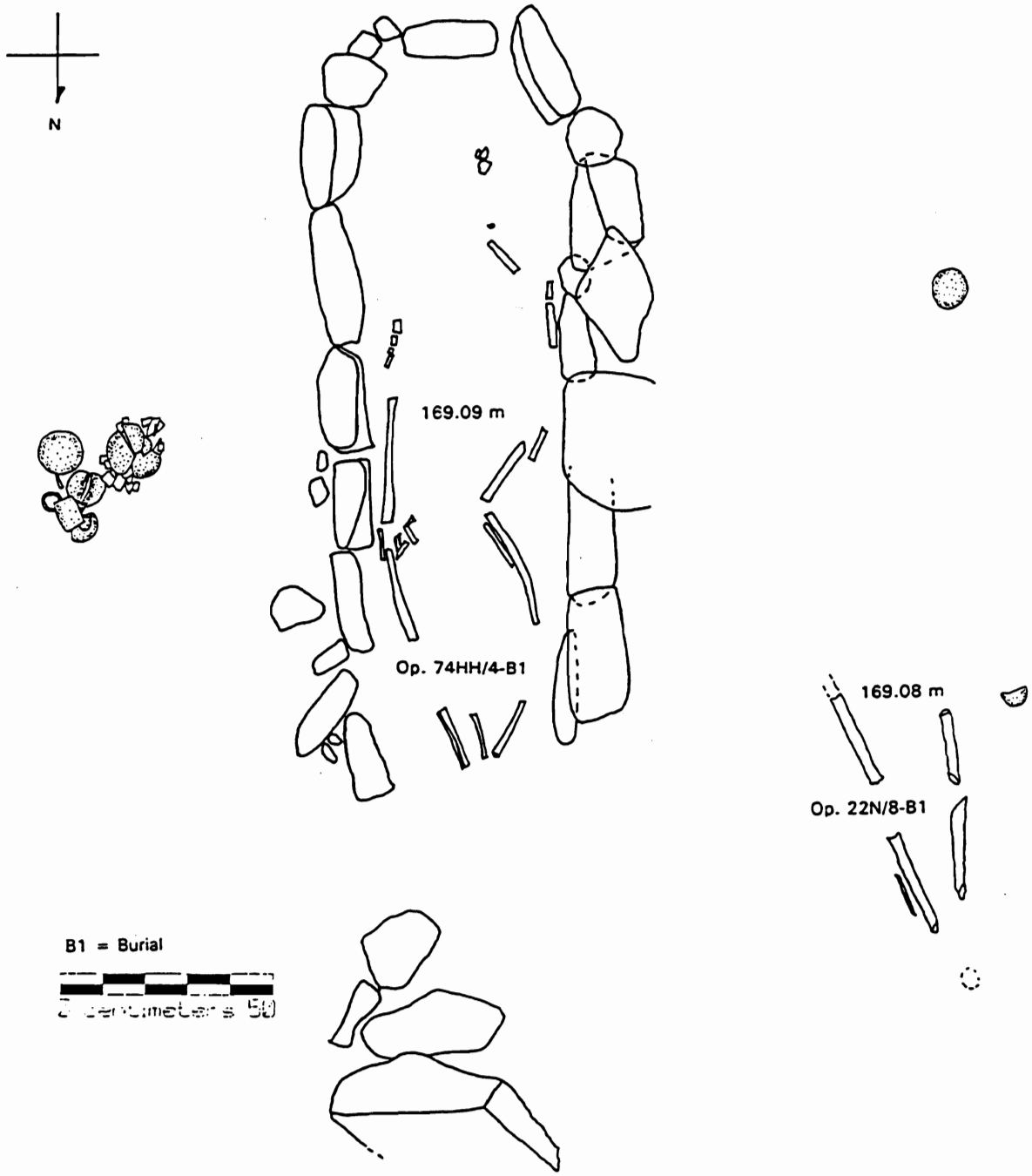



Figure 5. Plan: Upper crypt in main platform, Group D, Xunantunich.

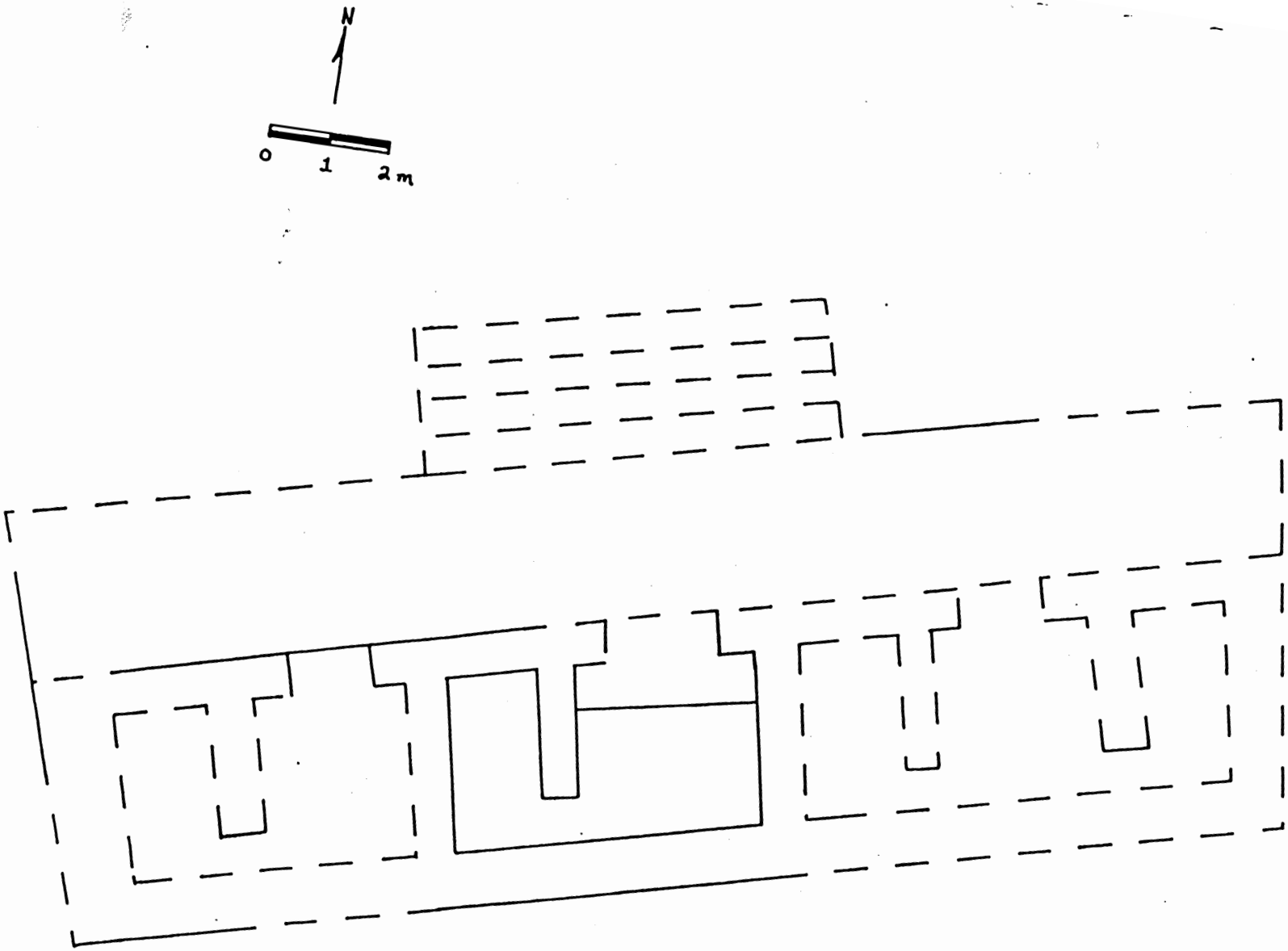



Figure 6. Str. D-7, Xunantunich, Belize

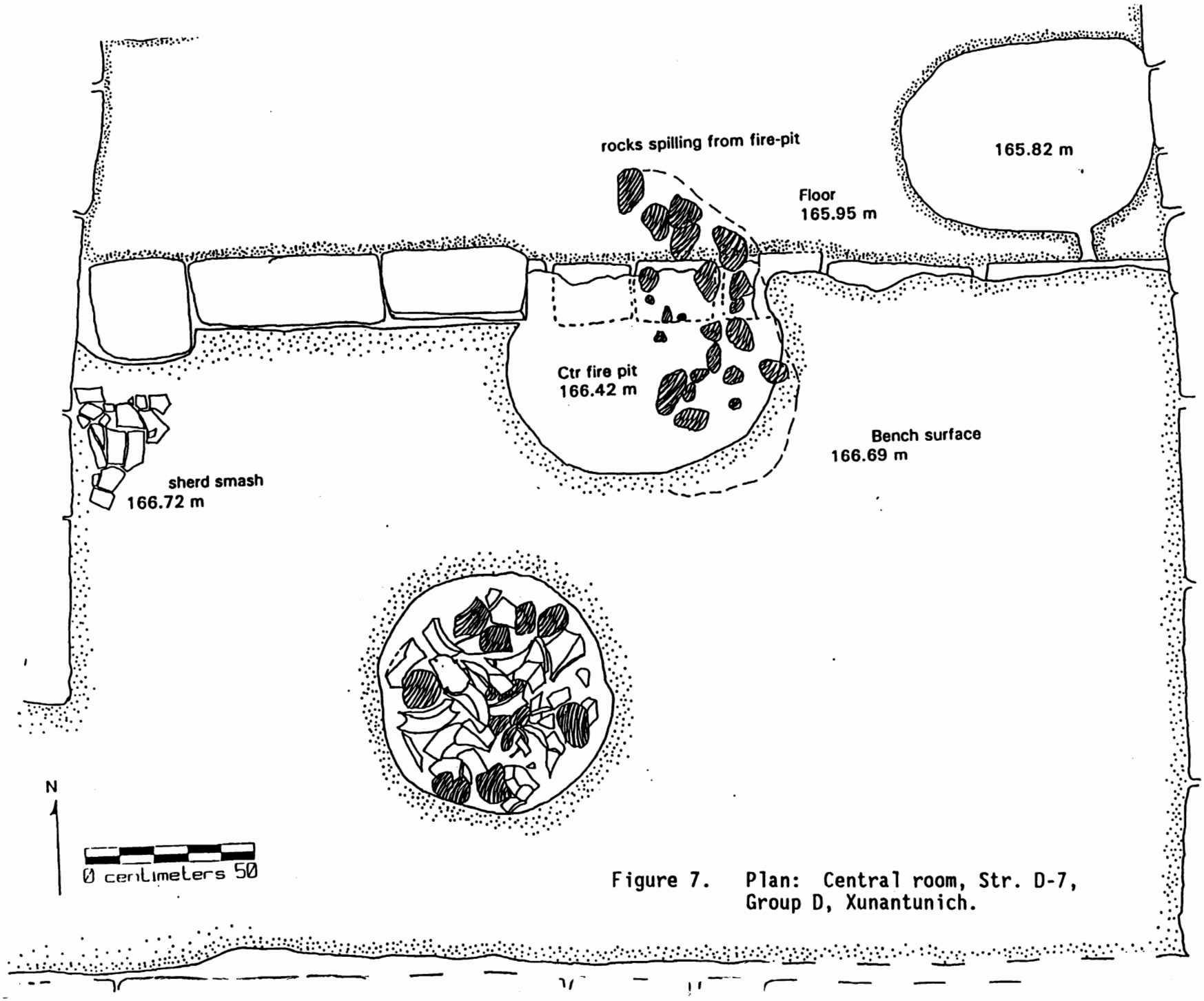



Figure 7. Plan: Central room, Str. D-7, Group D, Xunantunich.

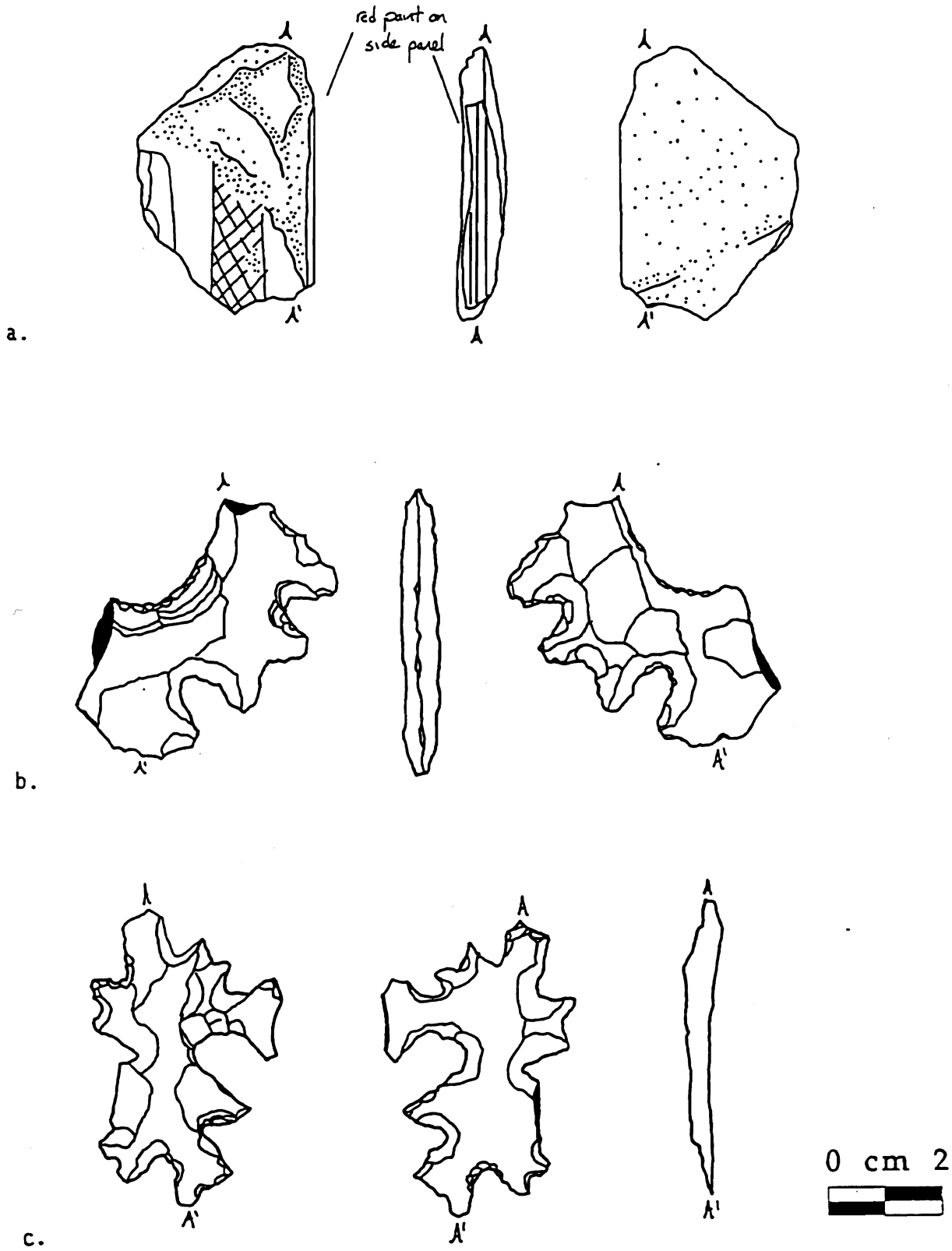
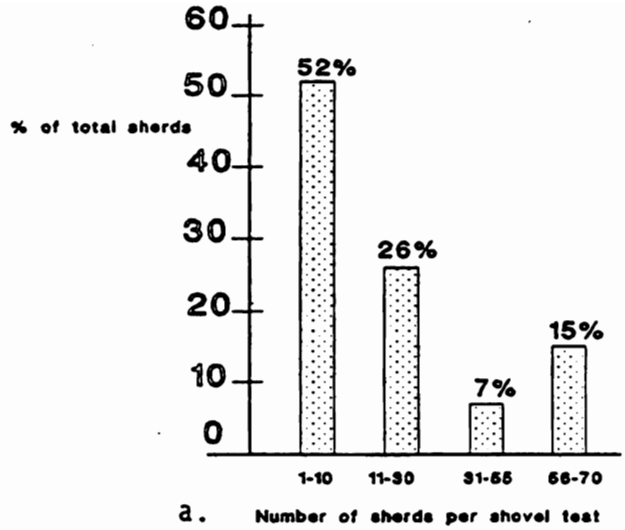
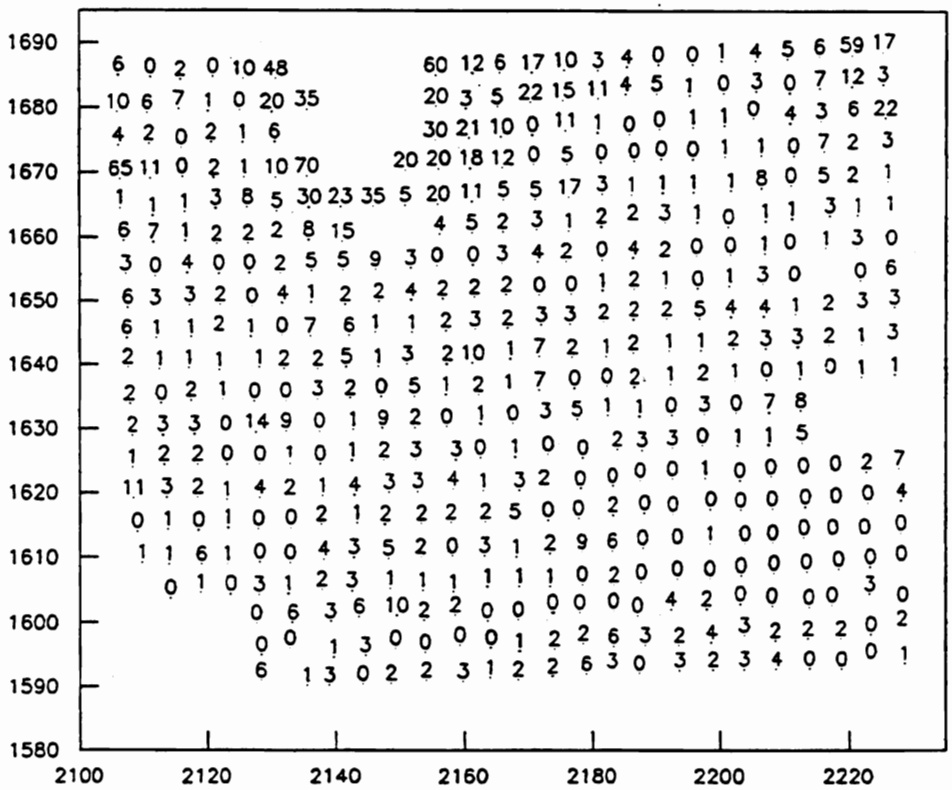



Figure 8. Special items from Str. D-16. a. engraved slate (Op. 107A/1), b. chert eccentric fragment (107E/1), c. chert eccentric fragment (107A/1-P1).




b.

Figure 9. Distribution of sherds per shovel test, vacant terrain study area, Group D, Xunantunich. a. Total sherds found in vacant terrain area accounted for by test pits with certain numbers of sherds, e.g. 52% of all sherds found were located in test pits that contained 0-10 sherds, b. numbers of sherds per shovel test.

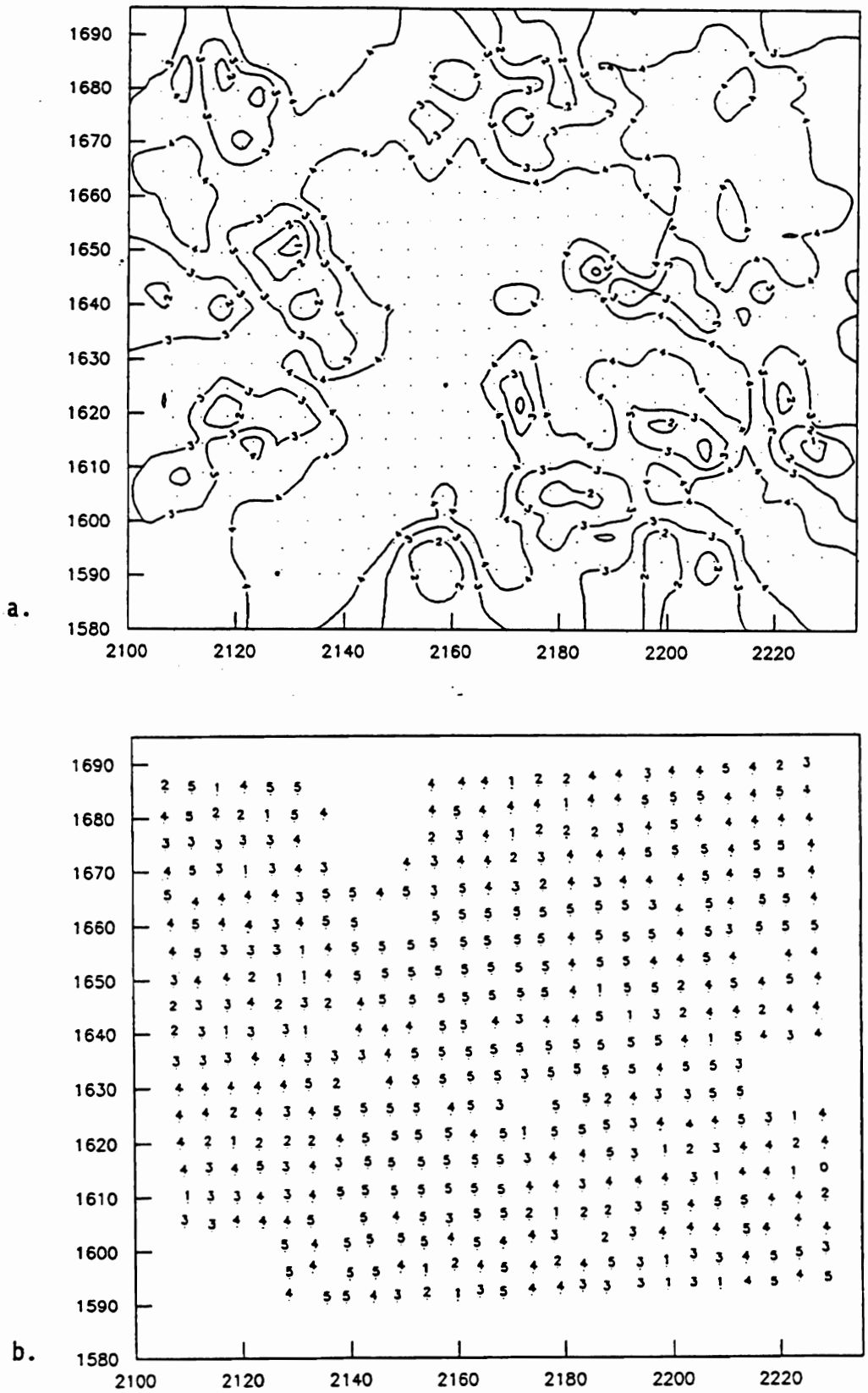



Figure 10. Relative levels of Phosphorus in vacant terrain study area, Group D, Xunantunich. a. Trend surface analysis of P values created by Surfer software. High levels (4+) are found in the center, and in the NW and NE corners near Maya structures. b. relative P levels at shovel test locations.

# The Xunantunich Settlement Survey

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## Introduction

The current program of settlement archaeology at Xunantunich, Belize, examines the nature of occupation in the vicinity of that ridgetop civic center, and tests current models of the organization and integration of Classic Maya society. Because Xunantunich endured--even thrived--during the Classic Maya collapse of the ninth century AD (Leventhal 1993), coordinated study of both the center and surrounding settlement provides a valuable opportunity to explore models of organization and integration at a time when nearby areas experienced turbulent political, economic and demographic upheaval (e.g., Culbert 1973, 1991; Demarest and Freidel 1994).

Xunantunich itself was the last of a series of relatively small prehispanic capitals in this part of the upper Belize river valley (e.g., Leventhal et al. 1992; Ashmore and Leventhal 1993; cf. Willey, Bullard, Glass, and Gifford 1965), from the earliest times of political differentiation in the Preclassic through the ninth-century Terminal Classic collapse. (The Postclassic period is best known locally from Tipu, whose prehispanic occupation as a whole is less widely appreciated than is its continuing occupation in Colonial times [e.g. Graham 1987].) A rich cumulative history of archaeological research in this region has documented shifts in paramount status among Cahal Pech (e.g., Awe 1993; Ball 1993), Actuncan (e.g., McGovern 1993), Buenavista del Cayo (e.g., Ball and Taschek 1991), and Xunantunich (Leventhal 1992, 1993; see Fig. 1). During Classic times, the region as a whole may have been subordinate to state-level authority based at Naranjo or Tikal (e.g., Ashmore and Leventhal 1993; Ball and Taschek 1991; Marcus 1993). Current models of Classic Maya life suggest that society in any but the largest, densest cities (e.g., Tikal, Caracol) was relatively *loosely* integrated along social, political and economic dimensions (e.g., Marcus 1993; McAnany 1993). From the foregoing models and the extant regional data base, we predicted (Ashmore 1993; Yaeger and Connell 1993 [hereafter Y&C]) that the local populace of the upper Belize valley was probably minimally affected by the cited shifts in regional paramount, and that perhaps such implied resilience was a factor in persistence of occupation through the time of the Classic collapse (see also Fry 1990; Pendergast 1986).

The Xunantunich Settlement Survey (XSS) investigates the distribution of occupation across the landscape, to examine how the nature and integration of occupants varied through time and space. To do so requires archaeological survey and test-excavation to document the traces of human settlement and sort them on chronological, sociopolitical, and economic dimensions; geomorphological survey and test-excavation to document changes in the alluvial settings so prominent in the region; and clearing excavations to provide details and further tests concerning social, political, and economic standing of those who occupied the sites attested through the archaeological survey. Pilot research in 1992 and 1993 involved initial geomorphological and archaeological exploration, and field-testing of specific archaeological survey methods (Holley, Dalan, Woods, and Watters n.d.; Yaeger

1992; Yaeger and Ashmore 1993; Y&C). With support from the National Science Foundation (Ashmore 1993), the 1994 season began full-scale implementation of archaeological settlement research within XAP; the geomorphological research was funded but its onset was deferred until the second NSF-funded season, in 1995.

A summary of XSS research in 1994 was prepared for NSF and the Belize Department of Archaeology (Ashmore 1995); it appears in slightly modified form at the outset of this volume. The present chapter outlines in more detail the research design and substantive accomplishments of the 1994 archaeological survey. Fuller background information is provided in the original NSF proposal (Ashmore 1993). Complementary coverage of XSS excavations at San Lorenzo appears elsewhere in this volume (Yaeger , this volume).

## Research Design And Methods

Ancient settlement in the middle and upper Belize valley has received significant attention from diverse scholars (e.g., Awe 1993; Ball 1993; Ball and Taschek 1991; Ford 1985; Ford and Fedick 1992; Graham, Jones, and Kautz 1985; Healy 1990; Willey et al. 1965). Because these research projects have had distinct goals, they have necessarily followed widely divergent research designs and sampling strategies. Although each has made valuable contributions to the whole, detailed comparison across data sets is often impeded. As outlined in the original proposal to NSF (Ashmore 1993), the XSS research design has drawn heavily from the collective strengths of these and other projects, to seek comparability with established data sets as well as pursuit of our particular goals. We gratefully acknowledge the models and records made available to us, and the advice our colleagues have shared.

### Sampling units and recording

XSS sampling focuses on systematic archaeological reconnaissance, mapping, surface collection, and shovel-test pitting along 4 transects (T/A1 through T/A4), illustrated in Figure 1. (The "T/A" designation allows distinction from pending geomorpological transects T/G1-10; see Ashmore 1993.) These sampling units are modeled primarily after the Tikal settlement program (e.g., Puleston 1973, 1974), the Central Peten Human Ecology Project (e.g. Rice 1976), Ford's intersite survey between Tikal and Yaxha (Ford 1986), and the Belize River Area Settlement Survey (BRASS; e.g., Ford 1985; Ford and Fedick 1992). A fifth and complementary XSS transect links Chaa Creek and San Lorenzo; it follows comparable methodology but is funded and reported separately (Connell, this volume). Other areas near Xunantunich have been surveyed opportunistically, including San Lorenzo (e.g., Chase 1992, 1993; Yaeger 1992, this volume) and, in 1994, a sizable block of land immediately wrapping around the north, east, and south borders of the Xunantunich site preserve (see below).

As described elsewhere (esp. Ashmore 1993; Yaeger and Ashmore 1993; Y&C), XSS T/A1, 2, and 3 are each 400 m wide; antecedent projects defined somewhat narrower transects (e.g., BRASS units, 250 m across; Fedick 1988: 153-154). We

widened the survey swath in hopes of capturing whole ancient social and settlement units more fully, and continued recording remains beyond transect boundaries when sites and features were only partially within the transect proper (see Table 1, below, for operational definition of "site" and other terms). T/A4 is modified to quadrat form because of the proximity of the international border between Belize and Guatemala, less than a kilometer from the center of Xunantunich.

T/A1 is the longest transect, running SE from Xunantunich to Dos Chombitos, a distance of approximately 8.5 km over increasingly broken terrain. Its precise alignment was set in 1993 as N113°46'20"E (Y&C: 176); less than a kilometer remains for completion in 1995, the portion between Dos Chombitos and the Macal. T/A2 (begun in 1994; completion in 1995) extends about 5 km north from Xunantunich, along the outskirts of Actuncan, to Callar Creek, over much gentler terrain roughly paralleling the Mopan river. Its alignment is N3°59'E. T/A3 (onset and completion in 1995) links Dos Chombitos with Tipu and Chaa Creek, along a roughly 4 km stretch of the Macal river, whose often sheer cliff edges contrast with the gentler borders of the Mopan. The exact bearing for T/A3 will be determined pragmatically in 1995, to minimize unmanageable terrain and maximize inclusion of significant known settlement features (e.g., Tipu and the large site reported slightly upstream on the opposite side of the Macal).

In all of XSS, recording is geared to the sampling units: Individual sites and other entities (see below) are labeled in numerical series linked to a particular sampling unit, such as San Lorenzo (e.g., SL-1; Yaeger, this volume), Chaa Creek (e.g., CC-1; Connell 1993, this volume) or one of the transects (e.g., T/A1-1). Survey crews also recorded some sites visible beyond the formal sampling units, or reported by local residents; these were designated as "O" sites--for example, site "O/A1-1" is the first-numbered site near but totally outside (i.e., "Off") T/A1. Sites in the aforementioned block NE of Xunantunich were designated as O/A1- or O/A2-, depending on whether they were nearer, respectively, T/A1 or T/A2; the modern site access road was taken as a convenient dividing line between O/A1 and O/A2 within the block.

**Terminology** (L. T. Neff)

Although terminology generally followed standard archaeological usage, XSS staff developed specific operational definitions for several classes of features. Within each class, individual items encountered were numbered in mutually exclusive series relative to a particular transect. Table 1 contains the basic XSS definitions; additional commentary is provided in immediately following text. As will be noted here and in some following sections, distinguishing among classes was sometimes difficult. We were reluctant to make hard-and-fast definitional distinctions a priori; field data classification therefore remains at a heuristic level; further analysis of verbal, numerical and graphic data will refine categories.

Sites

XSS considered features more than 25 m apart as constituting distinct and separate sites. This cut-off point derived in part from pilot observations, and despite its seemingly arbitrary nature, consistently yielded entities quite plausible as anciently meaningful settlement units. The 25-m "rule" was occasionally superseded for pragmatic reasons (e.g. observation of an aguada 40 m from other features, but in dense vegetation that would make separate plotting with the Total Station difficult; see below, Section IIC on procedures). Such instances are clear in the site forms and maps, and final site numeration will be more completely internally consistent. Frequently recognized cultural features included individual mounds, platforms, retaining walls, causeways (*sacbeob*), ramps (which might or might not, in future excavation, turn out to be stairs), chultunes, aguadas, and miscellaneous additive and subtractive features. See also the discussion of "terrace sets," below, as these were recorded in series separate from "sites."

Additive And Subtractive Features

The ancient Maya altered the landscape substantially by both adding and subtracting material. Most of the time, the resultant features could be categorized specifically as, for example, mounds or chultunes. Other features, however, were more ambiguous, and the two cited terms provided residual categories for recording observed modifications to the landscape (see also Section IIE, below).

Terrace Sets

The XSS definition of individual terrace sets remains relatively broad, and was intended to facilitate rapid recording of what quickly proved to be quite abundant entities along T/A1 (Y&C: 179-180). Although most field crew members were acquainted with the available literature on ancient (and modern) terracing (e.g., Donkin 1979; Turner 1974; Whitmore and Turner 1992; Wilken 1987), only one had worked before with such features in the field (Connell, at Xunantunich and Caracol). For the most part, we grouped and recorded slope-modification features (i.e., terraces) as entities distinct from "sites." This distinction was primarily formal, because the shelf-like terraces usually differed recognizably from mounds, platforms and such; recording forms (see below) sought somewhat variant information for terraces as compared with "sites." The operational difference between terraces and other features could be hazy, however, and functional inferences were sometimes strongly implicit in field labeling. Specifically, some "terraces" (implicitly related to food production) might better be considered three-sided platforms (implicitly related to domestic or other use, more generally; see, for example, Tourtellot 1988b). The intent in field definition was to combine heuristic utility with efficiency in the field, to provide consistent categorization criteria across observers, and to acknowledge the ambiguity of observational diagnostics. Results reported in this preliminary summary will surely change somewhat with ongoing investigation and analysis.

**Field Reconnaissance and Mapping** (J. C. VandenBosch and C. H. Gifford)

XSS survey procedures were outlined and field tested in 1993 (Y&C), and the following description incorporates refinements made in 1994. Once permission

from local landowners has been secured, the four survey phases are: (1) cutting the main survey line (*brecha*) and systematic perpendicular lines (*picados*); (2) reconnaissance or "picado walking"; (3) site mapping with compass and tape; and (4) Total Station (nicknamed EDM here) mapping. The five graduate student supervisors worked in pairs on specific tasks, with the fifth person available, as needed, for particular duties (often including computer data entry [see IIF, below], which otherwise took place in evenings and on weekends). Generally, individual students rotated through the pairs and tasks on a weekly basis, both to acquaint all supervisors with the full range of tasks and observations (and thereby standardize these) and to avoid burnout from repetition of the same task (cf. Ashmore 1993; Y&C).

Cutting The Main Brecha

Establishing the center line of the transect was accomplished by a crew of 2-3 local workmen armed with machetes, and a graduate student supervisor equipped with a Brunton compass and tripod. The compass directed the T/A1 brecha cut at 113°45' (cf. IIA, above). The local crew chief (*capitan*) followed, placing stakes at 20-m paced intervals along the centerline. These stakes served as the intersection points for the picados and brecha and were labeled with their respective picado numbers (e.g., 115N = the picado 20x115 m east along the brecha, extending northeast 200 m). Then the capitan used a Sunto compass to establish the orientation of each picado by placing a pair of stakes on either side of the intersection stake. Workmen followed this alignment by eye, placing auxiliary sighting stakes as the picado cut advanced, and checked periodically by the capitan. With few exceptions, the cuts retained the desired alignment for the entire 200 meters of the picado, as verified by subsequent EDM plotting. Soil samples were taken at 100-m intervals, along the brecha, but usually somewhat later than its cutting and reconnaissance.

Picado Walking

Each picado was reconnoitered by a supervisor, accompanied by one workman walking a parallel course approximately halfway (10 m) between adjoining picados. The supervisor counted paces along the picado, using pin flags to mark significant features for the mappers. (Supervisors and capitan measured personal paces against a measuring tape, to calibrate idiosyncratic pace lengths.) Each supervisor noted ambient vegetation, slope aspect and degree, and other noteworthy features, along with comments on identified (and "possible") cultural features. Vegetation was partially characterized using the "VIS" scale, a heuristic ordinal scale developed in 1993 to classify vegetation height, density and difficulty for survey (Y&C: 179 and Table 1). VIS categories range in .5 steps from 1.0 (e.g., recently burned milpa; plowed field) to 5.0 (not yet assigned; 4.5 readings are not common, but include very dense, high secondary growth with heavy ground cover). Slopes were grouped into six classes, from "flat" to "very steep" (see Table 3, below); these classes coincide only partially with published standard slope scales, but because they derived from XSS experience, they were easy to use and consistent in application. Reliability of VIS and slope assessments between supervisors was gratifyingly high. Identified sites were cleared enough so that reliable sketches could be entered in the

field book. Where visibility permitted, terraces were sketched into the notebook with pace-and-compass measurements; otherwise data for the standardized forms sufficed for terrace recording (see IID, below).

Picado walking customarily allowed the pair of graduate student supervisors to survey adjacent picados; this was extremely useful for on-the-spot discussion about continuity of terrace sets across the 20 m between picados. Communication between surveyors walking adjacent picados was especially important in situations where dense vegetation rendered visibility poor, and where terraces ran parallel to picados.

Upon completion of picado walking, supervisors transferred significant natural and cultural features to composite, cumulative sketch maps of the brecha and picados. The maps are approximately 1:400 in "scale," and usually span 7 picados along both sides of the brecha. "Significant" features included sites to be mapped, questionable sites requiring second opinions, terraces, modern cultural features, general topographic notes and other noteworthy natural features. Landmarks potentially helpful to orienting the mappers (e.g., modern roads, paths, etc.) were also sketched in. Each of these features was placed on the composite sketch maps by converting the individual supervisor's paces to meters (as calibrated earlier) and then plotting features relative to the nearest picado and the main brecha.

In compiling these composite maps, special attention was given to terracing. Notes about topographic setting and vegetation were noted on the map, as well as rough sketches of any cultural features encountered during the day. Using the notes and the 1:400 plan, surveyors could assess relations between individual terraces and the associations of terraces with other nearby cultural features. Finally, reviewing this accumulated terrace data, the surveyors created "terrace sets," as defined earlier. Individual terraces were grouped into a terrace set if they lay parallel to one another and were constructed to manage the same, immediate topographical setting. The surveyors next completed the Terrace Set Form for every terrace set created (see IIE, below). Terrace sets that were within 25 m of sites (as defined above) were included on the tape-and-compass site maps. In this way we were able to capture in more spatial detail the terrace sets immediately associated with sites; of the 131 terrace sets designated on transect T/A1, 43 were mapped directly onto site maps.

Site Mapping

Once picado reconnaissance was complete, a mapping crew visited each site, using the sketch maps as guides. The immediately surrounding areas were examined anew, and additional clearing was done as necessary for defining feature outlines. Detailed "Maler-ized" (see, for example, Carr and Hazard 1961) sketch maps were drawn of the site and used for relating feature outlines to the site datum. Mappers typically placed the site datum on the nearest picado, to expedite plotting them later with the Total Station. These datums also served as internal reference points for mapping the site with a Brunton compass, tripod, and tape measure, and an external link for the Total Station reading to plot the completed CADD plan of the

site within the XAP settlement map. After mapping the site, Site and Feature Forms were completed (see IIE, below). Shovel probes were excavated and their locations indicated on the map (either by tape and compass or by estimation); their contents were analyzed and recorded on the spot (see IID, below).

Total Station Mapping

The final phase of field survey consisted of mapping with the Total Station behind the picado walkers and site mappers. The "EDM-ers" moved down the brecha, taking readings on, minimally, every picado intersection and soil sample probe. Complex topography and dense vegetation along the brecha required new stations be set approximately every other picado. Nails labeled with flagging tape were used to keep track of set-up stations and backsight points. Foresight readings included site datum points and topographic data along and between the picados.

Off-Transect Survey (L. T. Neff)

Survey procedures were modified slightly for the previously cited block of land adjoining the north, east and south sides of the Xunantunich preserve. Land previously inaccessible to survey became available late in April 1994, and the trained XSS crew was diverted from completion of the southeast end of T/A1 to survey in this block. Included within the block are the origin portions of both T/A1 and T/A2, and these--recorded exactly like transect areas elsewhere--were the top survey priority. Beyond the transect limits, coverage was more rapid, and topographic documentation was necessarily pursued less thoroughly. Otherwise, search and recording procedures approximated those of transect survey, and often exceeded them in depth of detail.

In cattle pasture, for example, 100% sampling was achieved; elsewhere, every other T/A2 picado (i.e., a 40-m interval) was extended east to the Mopan river to maximize systematic coverage. Areas directly east of Xunantunich Group D were mapped by the site-core mapping team, with the same intensity and methods used in the core. Special emphasis was placed on recording Group E, first noted in 1992 (Leventhal 1992; Robin et. al., this volume; Walkey, this volume). All sites identified by XSS were mapped with compass and tape; shovel test pits were sometimes omitted, but as often were more intensive (see IID, below). A small series of soil samples was recovered from the open area east of the reserve (from grid areas N1 north and E1 east). Formal test pits were placed in Group E and Site O/A2-1 (see IIIA, below, and Robin et al., this volume).

**Surface Collections and Shovel Test Pits** (J. J. Ehret)

At this point in the survey, XSS artifact recovery emphasizes ceramics diagnostic of specific time periods, and secondarily, artifacts indicative of site function. Pottery diagnostics for this portion of Belize are outlined elsewhere by Gifford (1960, 1976), LeCount (1992), and Yaeger and Connell (Y&C: Table 2). As in 1993 (Y&C: 181-182), XSS crews sought pottery and other artifacts using a combination of shovel testpitting and opportunistic surface collections, from

ground surfaces within sites and from looters' trenches. The limitations on the latter two approaches were noted in 1993 (Ibid.: 181), and shovel tests continue to be the primary means for sampling artifactual remains in the survey. Formal test pitting at a subsample of surveyed sites will be instituted in 1995.

Temporally diagnostic pottery attributes include characteristics of surface treatment, paste, form of vessel, and specific decorative techniques. Project ceramicist Lisa LeCount reviewed these with XSS crew at the beginning of the 1994 season, and she was available throughout the season for consultation, as needed. Using as a model the 1993 form she developed (see Y&C, Figs. 7 and 8), the 1994 XSS Artifact Form was expanded to include a wider range of ceramics (see Fig. 1 and Section IIE, below). Soil information recorded on the Artifact Form in 1993 was placed on the Site Form in 1994 (see IIE, below).

On arriving at a site, the mapping supervisors would designate locations for shovel testpits. Actual excavations were accomplished by an accompanying Belizean crew member, while the supervisors completed the tape-and-compass map. This allowed simultaneous completion of two tasks, and gave the mappers time to choose additional locations if the first pit(s) came up empty. The supervisors would then assess the assemblage, and note all information on the artifact form. Unless there was need for consultation with LeCount or other specialists, recovered artifacts reburied immediately after on-site analysis. Later, in camp, the forms would be entered into the PARADOX database (see IIF, below).

The relative dimensions of individual test pits remained constant with the 1993 average of 0.5 x 0.5 x 0.5 m (Ibid.: 182), and a total of 544 pits and 68m$^3$ of soil were excavated between February 8 and May 25, 1994. The mean density of ceramic remains was 90.28 sherds/m$^3$ of excavated soil, but the range was quite wide. The mean size of a given shovel test was 0.125m$^3$, and although most sites could be assigned provisional age ranges, many shovel tests were devoid of diagnostic (and sometimes of *any*) remains.

As in 1993, the number of tests placed at any given site was dependent on the success of the first attempt there. Generally, pits were dug until ceramics were encountered, but due to time constraints the crews often stopped after three tests, even if no artifacts were recovered. A single pit for soil sampling and an opportunistic surface collection was deemed acceptable if a surface or looter's trench collection had already yielded a provisional date for the site. The principal exception to this generalization was the series of larger, more formally arranged sites in the previously cited block of land adjoining the Xunantunich preserve (see IIC, above). Because these sites occupy an interpretively critical location, and because access to that land is rarely available, individual sites in this zone were tested by up to 31 pits in a single site, and strong dates were secured for these locationally and typologically important sites (see IIIB, below).

To maximize XSS recovery of temporally diagnostic ceramics, Ehret examined recent research on household refuse disposal in Mesoamerica (e.g., Arnold 1990; Ball and Kelsay 1992; Hayden and Cannon 1983; Killion 1992; McAnany 1992; Santley and Kneebone 1993). Collectively, these studies document differential deposition in potentially predictable locations. Taking such findings into account, we placed the majority of XSS shovel tests within 10 m of a mound, often to its rear or side (i.e., sides not facing what appeared to be a patio). The goal was to "hit" areas where household refuse had been thrown. Other methods, such as expanding the collection area to a 25-m radius around the site, choosing pit locations according to densities of surface remains, and asking our Belizean workmen where they would throw their trash, all met with varying degrees of success. In the 1994 season, 149 (61.6%) of the 242 sites (in 544 collection lots) yielded at least preliminary site dates; the remaining sites produced only empty lots (n = 21; 8.7%) or lots whose ceramic content included no temporal diagnostics (n = 72; 29.7%). In mid-season, evaluation of yields by pit location did improve the success rate of the shovel-test program; we plan also to test the efficiency of post-hole digging equipment in 1995.

The total numbers of artifacts recovered are noted in Table 2. The most striking result involves the number and location of chert cores recovered. About 40% of the 57 cores were single examples from dispersed sites. However, the immediate environs north of Xunantunich and O/A2-1 yielded 34 cores in 5 sites (60%): 10 cores were located on the surface of T/A2-6, and O/A2-1, O/A2-2, O/A2-15, and O/A2-16 each yielded 6 (total, 24). The terrain itself is infused with chert cobbles, but these clustered traces of potential lithic production so close to Xunantunich and O/A2-1 may be significant in light of current discussions concerning of the organization of household craft production (e.g., McAnany 1993).

**Standardized Forms**

Survey recording was facilitated by use of six standardized forms, examples of each of which are included here (Figs. 1-6).

Site Forms (L. T. Neff)

Site forms were completed primarily during site mapping, although some information could not be supplied until later. These forms provide not only primary descriptive documentation for each site, but also serve as referents for associated features and artifacts described individually more thoroughly in the other forms.

Sites are numbered consecutively with reference to survey sampling unit, as described earlier. Locational reference is indicated by citing the nearest picado (where relevant) and, later, the number of the site datum in the running log of Total Station survey points. The latter points are numbered in consecutive series within each year of the survey (e.g., point S94-102). The initials of the mapping supervisors and the date the site was mapped key the form to field notebooks and sketch maps. Notes on current and recent weather conditions (especially with regard to rain and heat) serve as a reminder of conditions under which site observations were made.

Names of current land owners are recorded, along with property number from the government plat map. Cross reference is provided for the artifact collections by listing operation and suboperation, as well as type of collection (shovel test pit, surface collection, collection from an exposed looter's pit). Pertinent photo and map (drawing) numbers are included as they become available.

Descriptive data about the setting for the site include topographic setting (e.g., ridge top; alluvial terrace; hillslope) and degree and aspect of slope. Slope aspect designations approximate the orientation of the slope face (e.g., to the N, NE, SW). XSS slope degree categories were developed from team experience, as noted earlier; categories are shown in Table 3. Distance to nearest known water source is indicated, as is the form of that water (stream, pond, etc.). Information is provided on soils exposed in the shovel test pits (root zone depth; soil color and texture), along with notes on the nature and density of surrounding vegetation, and the VIS scale (Y&C). Disturbance, if any, is noted; most sites have some evidence of recent damage, and the extent of disturbance is also indicated. A section for comments allows addition or amplification of information, such as land-use history, nearest neighboring site(s), or clarification of complex slope aspects.

Additive Feature Forms (L. T. Neff)

"Additive features" are those created by construction or accumulation, as defined earlier. Within this general class, recurrent forms are platforms, mounds, retaining walls, sacbeob (causeways), and ramps. The term "additive other" served as a residual designation for those additive features whose form was ambiguous or problematic. Each feature is numbered with respect to a particular site (e.g., M[ound] 1 of Site T/A1-110). The recording form asks for the site number and the total number of mounds, if any. Descriptive data include notes on degree and type of disturbance, and nature of any exposed matrix (e.g., surface composition; nature and size of stones exposed in fill). When looting or erosion have revealed evidence of sequent construction or accumulation, the form prompts recording the minimum estimated number of episodes involved; when looting or erosion are absent, the estimate is "1." Evidence for a superstructure is indicated, when present. Data recorded regarding substructures (mounds or platforms) include facing materials (if observable), height (minimum and maximum), width, plan shape (e.g., rectangular), and basal area. Any associated artifacts are tallied, and if temporally diagnostic, a preliminary age assessment is noted.

Subtractive Feature Forms (J. C. Vandenbosch)

As described earlier, "subtractive feature" was defined to encompass cultural features which resulted from removal of material from the ground surface. Categories within the class of subtractive feature include quarry, chultun, modified bedrock, and "subtractive other." Quarries are interpreted as having been sources for raw materials removed for use elsewhere. These would include earth, cobbles or limestone bedrock excavated for use as construction fill or blocks, and chert nodules extracted for lithic reduction. Chultunes are interpreted as likely storage receptacles

excavated into parent material and having restricted surface openings, although many have been known to serve sequent functions, including burial chambers or trash dumps. Aguadas were identified by shallow, bowl-shaped depressions, enclosed on all sides to capture water run-off. Bedrock-modified features include natural exposures which appear to have been intentionally shaped to support a structure or to enclose an area (and thus are akin to platforms). "Subtractive other" features comprised a residual category for subtractive features not clearly assignable to any of the above categories.

Information collected on subtractive features includes site number, degree and types of disturbance, dimensions, form, composition, associated remains and tentative dating. Chultunes had additional information concerning disturbance (collapsed or intact), dimensions (diameter of apertures) and form (number of apertures). "Composition" was the material into which the feature was excavated, and in the case of quarries, also included residual waste material encountered. For both quarries and aguadas, special note was taken regarding recent or ongoing modern use.

Terrace Set Forms (C. H. Gifford)

As described earlier, a "terrace set" is considered as a system of walls or embankments on or at the base of a natural slope, for agricultural and/or nonagricultural purposes. Within a terrace set, individual terraces are roughly parallel and collectively appear to manage the same immediate topographic setting. As with sites, discrete terrace sets are designated when terraces are at least 25 m apart. Individual terrace sets (TS) are numbered sequentially within survey sampling units (e.g., TS43 of T/A1), and their location is noted with reference to nearby sites and picados. The form records number of terraces in a set, their minimum and maximum height and length, and an impressionistic modal length. These summary measurements and estimates were instituted because of the sheer abundance of terracing (see IIIB, below), and the need to keep the survey moving quickly and efficiently across the landscape. VIS scale assessment is also recorded on the form, along with slope degree and aspect, and orientation of terracing relative to the slope (e.g., parallel, perpendicular). Terrace construction facing is noted, when perceptible. The surveyor also categorizes the terrace-set as one of the following: linear set; complex angular arrangement following an uneven slope; "wraparound" continuous set following variable slopes and aspects; cross-channel or weir terraces; or "other" (clarified in comments on the Terrace Set Form).

Artifact Forms (J. J. Ehret)

Since the start of the 1993 season, XSS has sought to maximize in-field analysis of artifacts from surface collections, looter's holes, and shovel-test pits (Y&C). The theoretical justification is the relatively uncontrolled context for such material, but the compelling practical reason is the need to conserve and make best use of finite storage space available to the project. Artifacts from survey were relatively few per site (see IID), and could be examined quickly as a preliminary clue to site age and function. The artifact recording form therefore emphasized

summary tallies and notation of temporal and functional diagnostics, especially of for pottery.

Operation and suboperation numbers are noted for each collection lot; in 1994, Operations 82 and 114 were the designations for collections from T/A1 and O/A1 sites, and Op. 140 for those of T/A2 and O/A2. Each completed form includes the site, operation and suboperation number, initials of the field supervisor, and date and type of collection. Each form allows recording three lots, with three columns for responding to a list of prompts. The latter request tallies the sherds by vessel form and by ware (e.g., calcite, ashware). Formal or decorative modes are noted and tallied, when present, including diagnostic rim forms, flanges, ridges, and feet, as well as nature of surface decoration, if any. Because Mt. Maloney bowls are ubiquitous and abundant, and because LeCount's (1992) seriation of lip forms is quite sensitive to chronology within the Late and Terminal Classic, a special prompt requests indication of presence and number of particular forms. The field analyst designates the established ceramic types and varieties present (Gifford 1976; LeCount 1992), if any are identifiable. He or she also indicates time periods implied by type, varietal, or modal diagnostics, as a preliminary age assessment for the collection and site.

Fewer kinds of data are recorded for other artifact categories. The form requests data on ground stone (form and material), shell and bone items, chipped stone, and "other" artifacts. The chipped stone is categorized as flakes/debitage, tools, or production cores, of either chert or obsidian. As always, narrative comments can be added on the overall collection or its contents.

Soil Sample Forms

Soil samples are numbered consecutively within each season (e.g., SS94-106). Locational data are provided with reference to Total Station reading, along with characterization of topography, hydrology, and current vegetation. Any cultural impact is noted, including prehistoric remains or modern land use. The surveyor sketches and describes the soil profile exposed in the test, and indicates the stratigraphic source of the sample(s) from that test. Soil texture and Munsell color are described, along with natural and cultural inclusions.

## Computerized Database

Paradox Database (L. T. Neff)

Beginning with the 1994 field season, XSS developed a computer database using Borland's PARADOX 4.5 FOR DOS. Data entry was carried out on three IBM 286 personal computers and occasionally a Compaq 486. Four back-up copies of the database (two on floppy diskette and two on hard-drive) were updated on a weekly basis, and the entire database was printed at the end of the field season.

The goal of the XSS computer database was to provide a flexible and time-saving tool for storage, organization and manipulation of settlement data. The driving forces behind the structure of the database were the field forms and questions to be addressed. As field forms evolved through field testing, the database was altered to reflect these changes.

The essential structure of the database reflects interrelated goals of flexibility and ease of use. A flexible database allows ready organization and manipulation of data, often in tabular form. Each table's contents are logically related. The guiding principle here is that it is always easier to combine smaller elements into larger ones if the need arises. However, a flexible structure does not necessarily translate into ease of use from the perspective of data entry. Entering data into numerous small tables is tedious and time consuming. XSS alleviated this drawback by structuring the database to allow data entry into large tables from which PARADOX can produce multiple smaller and more specific ones, easier to use.

Cadd Maps (C. H. Gifford)

The surveyor who creates the tape-and-compass map of a particular site is responsible for rendering its computer map, using standard Maler conventions, on GENERICCADD 6.1 (Y&C). On these site maps, chultunes appear as conventionalized components (the letter "C" in a 1 m circle); all other cultural features are measured from a site datum, plotted and rendered exactly to scale. At this point, we plot natural springs and spring-fed aguadas with conventionalized components. As in 1993, we are content with the precision and quality of this computer aided drafting program. GENERICCADD allows us to plot results easily and effectively, whether they comprise site maps or larger views of the transect (see Ashmore, this volume, Figs. 6, 7, 9). On at least two separate occasions we were frustrated by the common problem of rendering tall structures according to Maler: when the vertical height of a given structure approaches half its horizontal dimension, the top surface appears significantly smaller in plan than it is in real space (e.g., M[ound]1 at O/A1-5, the "Chan Site," and feature M7 at T/A1-161, "Dos Chombitos"). In all cases, we adhered as closely as possible to the convention of showing vertical differences between two horizontal surfaces through the distances, in plan view, between their edges (Y&C).

Continuing from Yaeger and Connell's work the year before, we created a master survey map of transect T/A1 which contains the individual site maps, a topographic contour map of the transect (see SURFER, below), the terrace sets, and various natural features (Ashmore, this volume, Fig. 4). This map requires significant computer memory to manipulate. We work with this large file more effectively by separating the drawing elements of the map into different "layers" in GENERICCADD. This enables the user to divide images of the full drawing into like parts, and to work with these parts separately. On the master survey map, for instance, the topographic contour lines, looters' trenches and Total Station points exist on separate layers (see Table 4 for a list of the 20 layers in the master XSS map). Hiding or erasing layers temporarily creates a more manageable image; it also

facilitates queries of the map by isolating specific elements for study (e.g., the viewer can choose to view topographic contour lines and terrace sets without the clutter of Total Station points, picado lines, and site maps).

To assemble this master survey map, we download the Total Station points into a single drawing file in GENERICCADD, including the exact coordinate points for each site datum. Each site map, by now its own GENERICCADD drawing file, is then loaded onto the master map and placed in its exact coordinate space. We are confident of the location accuracy of each site on the master survey map because the process for placing sites involves laying the datum from the site map over the corresponding total station point representing that site datum. After each site is placed on the master survey map, we download a single drawing file containing the topographic map of the sample area originally created in SURFER (see below). The location accuracy of the topographic map in coordinate space depends on matching reference points which exist in both the master map and the GENERICCADD topographic map.

The final features to be placed on the master survey map are terrace sets. Using the 1:400 sketch plan created to study terraces (see IIC, above), we plot those terrace sets not included on individual site maps. Using the transect baseline (the entirety of which was shot in with the Total Station and appears on the master survey map as the true backbone of the transect), the terrace sets are plotted in reference to their paced distances along picados, and to their cardinal orientation as rendered on the 1:400 sketch map. Terrace sets drawn directly onto the master survey map are depicted by single lines. Using the Total Station, we were able to confirm the accuracy of plotting terrace sets in this way. On a few occasions, especially in large, open pastures, we shot in the edges of terrace sets and compared the plot locations with the actual coordinate locations as recorded by the total station; in all cases we were content with the accuracy (on transect T/A1 terrace sets 86, 92, 103 and 110 were shot in with the Total Station).

Surfer Topographic Maps (J. C. Vandenbosch)

Topographic data for XSS contour maps are collected with a Total Station. Topographic points are shot concurrently with site datum points, as described above (IIC). Due to the density of vegetation over most of the transect, topographic shots were often taken opportunistically. That is, there was no systematic means of obtaining topographic points, and few picados were traversed to the actual limits of the transect. Generally, elevation points were taken from the main brecha, without traversing down picados in any systematic manner. Additional elevation points were shot while traversing down picados to shoot in site datums, and in instances where vegetation permitted shooting across open areas. Some efforts were made to traverse zones of sharp elevation differences which had been noted in the course of walking picados, particularly if they were deemed significant (e.g., the arroyo containing the weir or cross-channel terraces, about .5 km NW of Dos Chombitos). Because of the way in which topographic points were taken, the reliability of the slope interpolations declines with increased distance from the main brecha. Despite

this, we are confident that the topographic portion of the survey is accurate well within the established resolution goal of 20 m contour intervals within the confines of the transect itself.

Contour lines are produced with the aid of the SURFER graphics package (Golden Graphics Software), the results of which are imported into GENERICCADD to create the master map (see above). Due to the irregular distribution of elevation points and linear shape of the transect, some experimentation was necessary for determining the most accurate interpolation method and parameters. SURFER plots generated by different interpolations were compared with field notes and sketches, to determine which interpolation method and parameters produced the most representative contour map. Eventually, we chose the inverse distance method, as outlined in the SURFER manual. A weighting power of three and a search radius of 200 m best represented areas of known topography, without extrapolating too far into unknown areas.

Master Data Files And Displays

Integrating settlement survey efforts with the efforts of the investigators in the Xunantunich site core, XAP Project Directors and CADDmappers defined the XAP mapping grid. The grid was anticipated at the beginning of the project, but its formal positioning awaited completion of mapping in the preserve, and at least preliminary mapping in the settlement periphery. From the onset of XAP, Total Station northing and easting coordinates have been referenced to a point N0E0 arbitrarily placed at some distance SW of Xunantunich. The precise position of the *grid origin*, at N2100E2100, maximizes inclusion of the site core in a pair of 500-m grid squares, specifically N1W1 and N1W2 (Ashmore, this volume, Fig. 5). The grid thereby essentially "radiates" from Xunantunich Group A. All outlying XAP investigations, including Actuncan, Chaa Creek, San Lorenzo, can now be incorporated within the grid system, and both grid and Total Station coordinates will be referenced to UTM coordinates as soon as possible.

## Research Results In 1994

Documentation of T/A1 reached the site of Dos Chombitos; as noted earlier, less than 1 km remains to be reconnoitered and recorded before reaching the banks of the Macal river. After recording Dos Chombitos, however, survey efforts were diverted to record newly accessible land adjoining the Xunantunich archaeological preserve, including the northwesternmost portion of T/A1 (between the Mopan and the preserve), as well as the southern origin of T/A2, and a block of land along the northern, eastern and southern margins of the preserve, through which the modern road to Xunantunich passes.

### Quantitative Observations

Survey documented 173 discrete sites along T/A1 and another 18 were designated as O/A1 sites. Although settlement is broadly continuous along this transect, mounds and mound groups form tighter aggregates in three places

described below. Twelve discrete sites have been recorded along T/A2 thus far, and another 39 are designated as O/A2, all of these within the block survey north of the Xunantunich access road, cited earlier.

Quantitative Analyses (J. C. Vandenbosch)

Intuitively, we can identify two or three clusters of sites along the span of T/A1. The most noticeable of these is near the mid-point of the transect, around the Chan Site (O/A1-1-3) and T/A1-110 (Ashmore, this volume, Fig. 6). There also appears to be some grouping at either end of the transect: near Dos Chombitos (T/A1-161) in the east, and possibly on the outskirts of Xunantunich to the west. The settlement gap immediately SE of the Mopan river is occupied by the modern village of Succotz.

Two statistical techniques were employed to define spatially discrete (and, ostensibly, socially meaningful) groups of architectural features along T/A1. The first was a nearest neighbor analysis and the second, a simple stem-and-leaf plot of distances to Xunantunich (as measured from Xunantunich Structure A-1). Only architectural features located on the transect proper were included in these analyses.

Separate runs were made for both mounds and platforms using each method. For this purpose, features classified as mounds in the field were considered platforms for these analyses if their dimensions exceeded ca. 7 x 10 m and they did not rest on a substructure. Additionally, rectilinear patio areas enclosed on three or more sides were considered platforms, even if they were not classified as platforms on the field forms and there was no indication of an elevated surface.

Nearest neighbor analyses: The program used for the nearest neighbor analyses was devised by Robert D. Drennan, and corrections for boundary effects (cf. Pinder, Shimada and Gregory 1979) were used to compensate for the linear shape of the survey area. The results of the nearest neighbor analyses are presented in Table 5. Despite employing a boundary correction in determining nearest neighbor statistics, it should be noted that long narrow areas such as T/A1 are poorly suited for rigorous spatial analyses. To some extent, this will be alleviated by diachronic comparisons once more comprehensive chronological information is available for the features. It is possible, however, that our operational definition of sites (with the 25-m boundary "gap" rule) partly predetermined the statistical results.

The nearest neighbor ratio for the platforms shows a fairly distinct tendency towards a random distribution ($R = 1.008$) and the departure of observed from expected values is not at all significant ($p<.50$). Mounds however, exhibit a tendency to a clustered distribution ($R = 0.519$). This tendency is fairly strong, and is also highly significant statistically ($p<.01$). The expected nearest neighbor distances for mounds and platforms have been plotted along the transect, and part of the results are included as Fig. 8 in Ashmore (this volume).

Stem-leaf Distances: The second method for defining spatial distributions of architectural features was a simple stem-and-leaf plot of the distances of T/A1 structures from Xunantunich. Since Str. A-1 is near the center of the main precinct of Xunantunich, its coordinates were used as the reference point for calculating T/A1 structure distances. The SYSTAT statistical program was used to calculate distances and produce the stem-leaf plots (see again Fig. 8 in Ashmore, this volume). Breaks in the stem-leaf plots were placed on the transect plots as arcs emanating from Xunantunich Str. A-1.

**Qualitative observations**

Site Typology (J. J. Ehret)

By the close of the 1994 survey season, XSS had documented 242 individual sites, in transect and opportunistic sampling units. The preliminary site typology defines 7 formal categories, wider in range than the typology described by Yaeger for San Lorenzo (this volume), but similar in approach. This step in the data analysis process formalizes distinctions among sets of features across space, and allows one to pose hypotheses as to why such sets are distinguishable at all. Not surprisingly, therefore, site typologies are well known in the Maya area, as elsewhere, and are usually hierarchical in nature (e.g., Adams and Jones 1981; Ashmore 1981a; Chase 1993; de Montmollin 1988; Fash 1983; Hammond 1975; Hendon 1992; Tourtellot 1988a, 1988b; Willey and Leventhal 1979). What varies most are the criteria used to distinguish hierarchical levels within a single typology. For XSS, observations by Yaeger and Connell (1993: 184-185) were reconsidered in light of data collected in both 1993 and 1994 seasons. The resultant typology is closely akin to those of Ashmore (1981), Bullard (1960), and Willey and Leventhal (1979); it focuses on units at the integrative levels of individual mounds to mound groups and clusters. Terminology used by the SAR Maya settlement seminar is adapted here.

The smallest unit of analysis is the individual mound, sometimes referred to as a Minimum Residential Unit (Ashmore 1981:47). Although Haviland (1966) and others have suggested that such individual mounds usually do represent domestic units, the functional identification is not an automatic equation (e.g., Ashmore and Wilk 1988; Tourtellot and Sabloff 1994). The next levels of spatial integration, "groups" and "clusters," are differentiated by numbers of constituent mounds and associated open "patio" spaces (Ashmore 1981: 48-49; cf. Bullard 1960: 355). The XSS operational definition of a site promotes immediate, in-the-field, formal analysis on the level of the mounds, groups, and clusters, and they are the focus of the working typology.

The five criteria used to create XSS 1994 site-types are (1) number of mounds in the site ; (2) spatial arrangement of the mounds; (3) presence or absence of a focal mound within a group (or focal group within a cluster; see Ashmore 1981); (4) presence and height of any supporting platform; and (5) maximum height of mound(s) within a group or cluster. Presence or absence of terracing is considered separately (see also "Terrace sets," below). Each of the cited criteria has potential implications for labor invested in construction (e.g., Arnold and Ford 1980; cf.

Haviland 1982), intra-group or -cluster organization, and role of the group or cluster in the broader community. Table 6 presents the 7 types and their exemplars in the 1993 and 1994 sample. In brief, they are:

- I Isolated mounds 1m or less in height
- II Informally arranged groups or clusters of mounds ≤1 m high
- III Formally arranged patio group of low height (≤1 m) and lacking a focal mound
- IV Structure-focused groups of low to moderate (1-2m) height
- V Group-focused clusters of low to moderate height with at least one formal group on a platform (If multiple sites were close enough to use the same site datum, they were considered spatially linked; edge effects are potentially problematic here, as in the nearest neighbor analyses described earlier.)
- VI Formal patio group with platform and mounds 2-5 m high (Focal mound possible.)
- VII Formal patio group with platform and focal mound(s) ≥5 m high

Despite the ease with which sites are assigned to these types, the typology remains preliminary and will doubtless be refined in the year ahead. Type II, the informal group or cluster, is the most prevalent site type (see Table 6). Although most of these groups are small (fewer than 4 mounds) and low in height, exceptions suggest the defining criteria need revision (rather than creation of a new type). As well, the distinction between Types III and IV can be quite thin, with the opinion of investigator often being the final call in judging a mound focal (cf. Haviland 1981; Hendon 1987). Types VI and VII plausibly represent occupants of higher social status (e.g., Tourtellot 1988a: 113). Type VII sites would probably be considered "minor centers" (Bullard 1960; de Montmollin 1988; cf. Haviland 1981), each perhaps the seat of a locally dominant lineage and/or representative of a major regional center--Xunantunich or otherwise.

Terraces appear immediately adjacent to examples of every site type except VII, with the majority of cases being linked temporally to the Late Classic and spatially with Type II sites. The form and inferred functions of these terraces are discussed below (see "Terrace sets"). Broadly speaking, however, terracing is implicitly linked with food production. According to Killion (1992), household gardens and infield farming are common in Mesoamerica and should be considered the norm rather than the exception. At present, no expansion of the site-type definitions seems warranted, to differentiate between terrace-linked and non-terrace-linked sites.

*Sacbeob* are other notable features encountered in 1994 survey. A *sacbe* is an elaborated walkway formally linking parts of a Maya site, or sometimes joining separate sites (Kurjack and Garza 1981: 300). Such features integrate settlement beyond the group and cluster scale, by creating material connections and formalizing movement (see also Keller, this volume). Two definite causeways were located

during the 1994 season, along with several other potential candidates. The two definite examples are adjacent to Type VI or VII sites. Each consists of a linear stone scatter leading toward or away from the principal site in the area. The latter cited causeway also evinced remnants of side parapets. This road extends east from Dos Chombitos (T/A1-161) to T/A1-165, ca. 200 m away. Both sites yielded ceramics implying Late and Terminal Classic occupation (see next section). The other causeway was harder to follow, because of plowing and other surface disturbance. Essentially the road ran in a northerly direction from the boundary of the Xunantunich preserve (north of Str. A-11), and test pits within the stone scatter recovered a small collection of Preclassic ceramic types (Mars Orange). If extended farther north along the same alignment, the causeway would reach the site of Actuncan.

Perhaps the most awe-inspiring feature of the 1994 season was site O/A2-1. This bilevel earthen platform is formally reminiscent of Late Preclassic monumental substructures elsewhere. Examples of platforms 3-9 m high are also noted by Harrison (1981: 277) in Quintana Roo, Mexico, and Hammond (1977) at Cuello, Belize. This category of architecture supports summit structures arranged asymmetrically, including a larger, possibly ritual structure. This description (cf. Harrison 1981: 277) is consistent with site O/A2-1, which supported a group of four informally arranged low mounds. In addition, a series of five isolated mounds are spread within 50 m east, west, and north of the platform. Formal test pits excavated into the platform recovered large amounts of Preclassic ceramics, and it is hypothesized that O/A2-1 was a focal point of local, ritually-oriented activities sometime in that period. If so, then this site predates most known construction at Xunantunich proper, but is contemporary with early monumental architecture at Actuncan to the north (see "Preliminary chronological analysis," below and McGovern 1992). Although the smaller structures at site O/A2-1 may differ in date from the platform itself, they may thereby signal continued use or at least recognition of the platform across the centuries.

Preliminary Chronological Analysis (J. J. Ehret)

As in 1993 (Y&C), age assessments for individual sites were often tenuous, based on a single sherd or the relative abundance of a paste group. The weaknesses of such dating were discussed in last year's report (Ibid.: 189). While remaining quite preliminary, these "first-run" assessments provide a broad working outline for shifts and continuities in settlement through time.

In brief, the 1994 settlement data support the current models for local development (e.g., Ashmore 1993; Ford 1990; Willey et al. 1965). Table 7 presents the raw numbers and percentages of sites apparently occupied in each time period. Because a site was counted once for each ceramic phase represented in its collections, the percentages (of the 242-site sample) do not add up to 100%.

Not surprisingly, but not directly evident from Table 7, only 13% of the dated sites appear to lack Late Classic occupation. A full 46% of dated sites had *only* Late

Classic occupation, while another 41% appeared to have been occupied for multiple phases including the Late Classic. The most common "sequence" is Middle Preclassic and some part of the Late Classic. In every category of site-type, Late Classic II is the period best represented, while Protoclassic, Early Classic, and Postclassic remains are sparse. This distribution may be at least partially an artifact of method, however (Y&C: 189), and only more intensive systematic sampling (i.e., through excavation) will refine the chronological distribution and test its apparent asymmetry.

The single most striking observation pertains to distribution of Terminal Classic (TC) occupation. With few exceptions, sites with TC dates are clustered near the Type VI and VII sites. The Chan Site, Dos Chombitos, O/A2-1, and T/A1-170 each define a nucleus around which TC occupation flourished. The Chan Site, T/A1-170, and O/A2-1 each evince a long occupation history, but investigations at Dos Chombitos yielded diagnostics pertaining only to the Late and Terminal Classic.

Terrace Sets (C. H. Gifford)

Terraces are the most abundant and ubiquitous architectural features encountered in the survey sample thus far; on transect T/A1 alone, 480 individual terraces were recorded verses 377 mounds, the next most common feature. However, as in 1993, identifying terraces continued to beguile surveyors for three reasons. First, the method of constructing terraces of rough stone and cobbles in the Xunantunich region has resulted in poorly preserved ancient terraces. Second, dense vegetation makes for scattered pockets of poor visibility and results in difficulty tracing the full extent of some terracing systems. Finally, natural bedrock outcrops common to this region are occasionally mistaken for badly eroded terraces (Y&C). While this year saw a number of instances where ambiguity caused frustration among the members of survey, we feel we maintained consistency among ourselves distinguishing terraces.

Terracing has received much recent attention in the Maya area (e.g., Dunning and Beach 1994; Turner 1974; Whitmore and Turner 1992). The existence of terraces in the Xunantunich area has been cited for some time (e.g., Ower 1927), but not documented systematically here until now. As elsewhere in the Maya world, terracing at Xunantunich seems to begin in the Late Classic. Its development is seen generally as the result of population pressure and concurrent agricultural intensification, though more work is needed to clarify the causal relationship linking these pressures and intensification. We expect further chronological clarification to come from the test pitting efforts planned for the 1995 season. In the interim, our initial analysis of terrace data attempts to illustrate (1) the extent of terracing within the survey sample, (2) how terrace distribution relates to natural features in the landscape, (3) what terrace form implies about the labor needed to construct these terraces, (4) how terrace morphology relates to slope management and, (5) what spatial relations existed between Maya residential location and ancient terracing. Discussion of residential location and terracing includes a preliminary typology of terraces and their inferred function.

Extent of terracing: The specificity of our terrace mapping system, and the resulting terrace database, approaches Fedick's "local-scale," in which survey research seeks concordance between the scale of resolution for land resource data in the sample area and the scale of organization at which decisions were implemented concerning agricultural management in ancient times (Fedick n.d.). We are confident that we have recorded the great majority of visible terraces in the survey sample covered thus far. While we have not yet formally assessed what portion of the transect is covered in dense vs. light vegetation, we note that 68% of the terrace sets recorded on T/A1 were discovered in a VIS-scale setting equal to or greater than 2.5, while 21% were discovered in where VIS-scale ratings were less than 2.5. This suggests that efforts to recognize terraces in dense vegetation were at least as effective as those in lighter growth. (VIS scale was not recorded for 11% of the terrace sets.) To date, we have not encountered terraces on transect T/A2; all terrace data discussed derive from T/A1. This fact poses interesting questions for the 1995 season and the continuation of survey on T/A2 concerning terracing along the drainages of the Macal and the Mopan.

Using GENERICCADD, we calculate a conservative estimate of surface area, or footprint, for each terrace set. To do so, we fit an irregular polygon closely around each terrace set, and then measure the area of that polygon. We place the polygon to wrap tightly around the down-slope edge of the terrace set, passing just around the ends of the longest terrace in the terrace set, and including a conservative width above the terrace farthest up-slope. To date we have mapped 131 terrace sets on transect T/A1 totaling 353,999 $m^2$. Excluding the modern village of Succotz which has not been surveyed (see also Y&C), we have surveyed 2,924,081 $m^2$ on transect T/A1. Terracing, therefore, covers slightly more than 12% of the survey sample. We estimate terrace density as ca. 164 terraces/$km^2$ within the transect as surveyed. While this seems a significant revision of Yaeger and Connell's 1993 estimate of 227 terraces/$km^2$, the contrast may be due to the character of the 1993 survey sample, which was dominated by the limestone hills immediately east of the Mopan river; the density ratio drops off significantly as one approaches the increasingly rugged topography around Dos Chombitos.

Terraces and the natural landscape: Understanding the relation between terrace distribution and natural topography and soils yields insight into how ancient farmers selected lands for terracing. Working with the PARADOX database, this year we recognized patterns in terrace location in regards to slope degree and aspect; soil chemistry analyses are pending on limited terrace samples. These data were recovered for both "sites" and "terrace sets" of T/A1, and the terrace-soil testing program will be expanded in 1995.

In one instance we recorded a terrace set on a "flat" surface (less than 1° inclination); in eight instances we recorded terrace sets on "steep" slopes (28-36°). The remaining 120 terrace sets occur on slopes of 1-27°, with fully 53% occupying "gentle" slopes (10-18°; Table 8). Inasmuch as ancient farmers concentrated terrace

construction on such low-slope situations, it seems the demands for agricultural production did not reach levels requiring cultivation of marginal lands with steeper slopes.

While slope seems highly significant for terrace location, slope aspect does not; terrace orientation is distributed almost equally among the cardinal and intercardinal directions (Table 9). We hypothesize that, at this latitude, slope aspect was not as strong factor in locating terraces as was slope degree or soil type.

Terrace physiognomy: It is difficult to understand exactly how terraces in the Xunantunich region were constructed (Y&C). In 53% of the terrace sets recorded we could not determine the kind of facing used, because of the poor preservation mentioned earlier. Therefore, while we can not currently quantify the construction energy reflected in the terraces of the sample area, we can look closely at the scale and formality of some terrace attributes and begin to make initial inferences about labor investment.

Observed length was recorded for the longest and shortest terraces in every terrace set encountered (see "Terrace Set Form," above). While plot width may be a more telling statistic, we found it difficult to calculate such width accurately without excavation. We believe that terrace length offers a fair initial impression of the scale of the original terrace set. The longest terrace recorded on transect T/A1 measured 100 m and the shortest, only 8 m. The average maximum length of all terraces recorded was 30.6 m, and the average minimum length was 18.6 m. The Terrace Set Form (see Fig. 5) also asks surveyors to record an impressionistic modal length for each terrace set--an infield approximation of the average length of terraces in a terrace set. The 131 terrace set length modes recorded in this field extends from 10 m to 80 m. 110 terrace sets (85% of all individual terraces recorded) occupy the lower half of this range (10 m - 44 m), while only 19 terrace sets (13% of all terraces recorded) occupy the upper half of this range (45 m - 80 m). It seems, therefore, in regards to sheer dimensions, that while expansive terrace systems do appear on the transect, they are the exception rather than the norm. We hypothesize that the larger terrace sets, which appear less frequently, required more concentrated and sustained efforts to construct, suggesting a more formal or centralized organization of labor. The smaller, more frequent systems needed correspondingly less labor to construct, suggesting management by perhaps a single household.

Terrace morphology: According to Dunning and Beach (1994), terrace form should evolve differently from region to region according to local population pressures and environmental variability. In Petexbatun, those authors grouped their terrace findings into three categories: "dry slope" or broad-based terraces running across gentle slopes; check dams, or "weir" terraces in drainage channels; and "footslope" terraces, across the base of steep slopes. Working farther down the Belize river from Xunantunich, Fedick (1994) describes a somewhat different set of forms: "contour" terraces (similar to dry slope terraces in Petexbatun), weir terraces, and curious "box terraces" recorded on flatter terrain . The last-named were, in

Fedick's view, most likely used as residential garden plots. For Caracol, Healy and his colleagues recorded very formal "linear sloping dry field terraces" which they compared directly to terraces at Rio Bec (Healy et al. 1983).

In the current sample from Xunantunich, 69% of recorded terraces are simple linear terraces, more than 80% of which occupy gentle to moderate slopes. Another 11% recorded are weir terraces, and the remaining 20% are complex terraces which wrap around or follow a varied slope. The small terrace systems immediately associated with residential sites are provisionally interpreted as "house gardens" (see below), but they do not match Fedick's box terraces in form. We have not encountered footslope terraces, box terraces, or the orderly and formal terraces like those of Caracol. Echoing the published findings discussed above, and in sharp contrast to the situation at Caracol, we believe the majority of Xunantunich-area terraces were likely assembled at a family level.

Terrace function: In 1993, Yaeger and Connell suggested that Xunantunich-area terraces directly associated with structures would have been loci of many different sorts of behavior, while terrace systems further afield might have had more strictly agricultural functions. Until formal test excavations are undertaken, this infield verses outfield assertion remains hypothetical. In the meantime, we can make use of data on form and dimension, and examine how individual terrace sets on the GENERICCADD master survey map interdigitate with residential sites. From this, we offer an interim classification of terrace use which recognizes four terrace types; two are a variation of the infield terrace and two are a variety of the outfield terrace.

*Type I* terrace sets are the smallest terrace sets and resemble "house garden" terracing systems. On transect T/A1, 13% of all terrace sets recorded are Type I (Table 10). On average, a Type I terrace set contains fewer than two terraces which are shorter in length and cover far less area than the larger Types II, III, and IV. These smaller terrace sets are built amongst residential sites and would have offered flat work surfaces or level garden plots for the site's inhabitants. There seems to be no rule regarding placement; Type I terrace sets are located down slope from sites (e.g., TS13 below T/A1-41; TS94 below T/A1-138), alongside sites, at the same elevation (e.g., TS53 at T/A1-119), and above sites (e.g., TS59 above T/A1-122; TS11 above T/A1-47). Often Type I terraces resemble structural retaining walls and, unfortunately, caused some interpretative confusion among 1994 surveyors in the field. If at least 5 m wide, a leveled "shelf" tended to be designated a terrace set. However, if the plot were shallow and supported mound, it was classed as a retaining wall. Admittedly, this is a difficult interpretation to make in the field, and if the differentiation is shown later to be arbitrary, the categories can be joined easily.

On transect T/A1, 18.3% of the terrace sets recorded are *Type II*. Although these terrace sets are large in length and area, they are designated infield features, Type II, when found amongst apparently residential groups and structures. While proximity doesn't necessitate contemporaneity, Type II terrace sets alongside

probable residences suggest a mix of activities mixed with domestic life. Generally, Type II terrace sets are characterized by four terraces on a gentle or moderate slope immediately below an arrangement of platforms and/or mounds. More than a single field house (see Type III), these constructions seem large enough to be full-scale residences. Also, Type II terracing seems too large for any but agricultural use (e.g., the average area of a Type II terrace set is nearly five times that of a Type I; see Table 10). Good examples of Type II terrace sets include TS15 below T/A1-42, TS50 near T/A1-105, TS99 below T/A1-142, and TS123 below T/A1-55.

*Type III* outfield terracing accounts for 20.6% of the terrace sets recorded on T/A1. They are greater in average length and area than are Type I and II terraces (see Table 10). Type III terrace sets are found on gentle and moderate slopes and include, on average, 4.7 terraces. Unlike Type II terrace sets--which seem to bend, turn and adjust to nearby residential sites--Type III terrace sets include terraces that are uniformly parallel and evenly spaced, and lie farther away from structures we've interpreted as residential. Because of the large size and formality of Type III terraces, we believe they had more restricted agricultural function.

The critical feature of a Type III terrace set, however, is its field house(s), which set Type III apart from both II and IV. We repeatedly found single mounds built within terrace sets. It seems these "field houses" are never situated in the same location twice within terrace sets. Some field houses rest up-slope from the terrace set (e.g., TS37 near T/A1-90; TS69 near T/A1-34), some rest within the terrace set (e.g., TS10 near T/A1-14), and others rest down-slope. We also found instances where the field house stood alone, and other where the field house was attached to a terrace (these we coined the "comma" terraces because of there dot-and-tail shape; see TS45 near T/A1-96 and TS49 near T/A1-49 for examples of each, respectively). In one instance, we mapped an entire Type III terrace set with tape and compass and believe it to represent a complete terrace and field house arrangement (TS78). While we note that these field houses tend to be diminutive in size and consistently rectilinear, we have not yet created a formal typology.

*Type IV* accounts for 36.6% of all terrace sets, making them the single most abundant type recorded in the survey sample. Because of their formality and relative grandeur, Type IV terrace sets are nearly identical to Type III terrace sets, except that they lack field house structures. Type IV terrace sets cover 138,916 $m^2$ (138.9 ha) compared to the next most common type which covers 106,233 $m^2$ (106.2 ha of Type III, see Table 10). Also, Type IV accounts for the majority of individual terraces recorded (40.4% verses 26.7% of Type III). Because of the coverage and scale of Type IV terraces sets, we believe that they were agricultural in function.

As with early findings of the BRASS survey, the Xunantunich area has produced little evidence of the kind of "centrally controlled program of terrace development" present at Caracol (Fedick 1994: 124). However, Xunantunich-area terrace types III and IV suggest a kind of construction effort and organization beyond that found in a single farming household. After further survey and a rigorous test

pitting campaign in 1995 we hope to gain a better understanding of the nature of such mid-level organization.

## Discussion

The combined results of these XSS programs supply broad outlines of an evolving social, political and economic landscape. As noted earlier, the original XSS research proposal posited that ancient Maya society and its organizational structure were generally loosely constructed, and that intensely studied urban centers like Tikal, Copan or Caracol most likely anchored one end of a continuum of organizational integration. The social, economic and political structures at a place like Xunantunich were likely to have been much less tightly bound, with population outside the immediate center linked more closely to local leadership and corporate groups. This loose tethering should have made the hinterland populace much more resilient in the face of changes at the top of the hierarchy. Although any periods of such change should serve as good windows to the dynamics of integration or dissolution, the period of the Classic Maya collapse should provide a particularly apt view. It is precisely that span in which Xunantunich, as a civic center, reached its peak development (Leventhal 1992, 1993). Results of the first of our two NSF-funded years in the Xunantunich peripheries are consonant with such a model of resilience, although they are not yet sufficient to constitute a true test (see also Braswell, Keller, and Yaeger 1994 for explorations of Xunantunich area integration). The Terminal Classic contraction of settlement suggested by XSS ceramic distribution hints at dissolution in the wider system and perhaps reinforcement of ties at village or similar levels of integration.

The transect data provide a controlled sample of settlement traces, and our growing familiarity with the survey area as whole supports the contention that the sample is broadly representative. XSS data have suggested spatial delimitation of plausible ancient communities, most relatively small, but some likely of long standing. The site typology provides a working model for hierarchical differentiation and integration among settlement units, albeit one begging further testing, particularly with respect to more refined chronological and functional analyses. That is, we recognize that the landscape observed is a palimpsest of occupations; we have begun to tease apart particular spans within the sequence, and specific roles within the set. The apparent shrinkage of settled areas and "communities" in the Terminal Classic mirror developments within the Xunantunich core, where access to public space contracts markedly to emphasize activities at Strs. A-6 and A-1 and in the plaza between them (e.g., Leventhal et al. 1993: 12). At the other end of the temporal continuum, we may even have begun documenting political centralization in the Xunantunich locale as early as the Middle Preclassic.

"Benque Viejo" (i.e., Xunantunich) is often cited as the northern edge of a zone of abundant terracing extending southward into the Maya Mountains (e.g., Ower 1927; Turner 1974; cf. Fedick 1994), but until now, the local distribution of

specific terrace forms has lacked systematic examination. We estimate that terracing covers some 12% of T/A1, and differences in terrace set form and placement suggest variability in ancient land tenure and use. As a whole the XSS terraces contrast markedly with the scale, elaboration, and near regimentation of Caracol terracing (e.g., Chase and Chase 1987, 1990; Healy et al. 1983)--surely reflecting contrasts in political and economic centralization in the two locales.

Thus far, evidence is wholly consistent with earlier impressions of relatively dispersed clusters of settlement, as opposed to the pronounced nucleation and density of Maya cityscapes at Tikal, Caracol, or Copan. The landscape was substantially modified, for direct habitation and for subsistence needs, but not to the levels of the cities just named. Abundant and diverse terracing of hillslopes argues both for intensification of food production, most likely in the Late Classic, and for variable systems of land tenure and management. The latter inference is compatible with the working model of loose vertical integration, with political and economic authority vested at lower, less inclusive levels of the regional organizational hierarchy.

**Plans For 1995**

The 1995 season will complete the archaeological transect surveys. T/A1 was likely the most difficult of the proposed transects, because of the nature of terrain and ground cover; the other transects should proceed more quickly, with an experienced crew moving across less "challenging" terrain. Stratified test-pit sampling will begin in earnest in 1995, to allow more detailed chronological and functional characterization of the sites encountered in survey. We look forward eagerly to testing and amplifying the inferences derived from data now in hand.

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## List of Tables



## List of Figures

**TABLE 1.** XSS TERMS AND DEFINITIONS

| Item | XSS Definition |
|---|---|
| Site | A *site* is one or more archaeological features (1) in which individual features are ≤25 m of one another, and (2) all other features are >25 m distant. |
| Additive Feature | A feature formed by *adding* material either by construction activities or cumulative deposition. |
| Subtractive Feature | A feature formed by *subtracting* material through construction activities or cumulative removal. |
| Terrace Set | One or more slope modification features (terraces) collectively distinguished from other, broadly similar entities by variant physical form, differing topographic position, or spatial separation. |

**TABLE 2.** TOTAL ARTIFACTS RECOVERED BY XSS IN 1994

| | | |
|---|---|---|
| Ceramic sherds | | 9628 |
| Chert | | 1458 |
| Flakes/debitage | 1323 | |
| Finished tools | 78 | |
| Cores | 57 | |
| Obsidian | | 11 |
| Flakes/debitage | 7 | |
| Finished tools | 4 | |
| Ground stone | | 22 |
| Shell | | 88 |

**TABLE 3.** XSS SLOPE CATEGORIES

| | |
|---|---|
| Flat | <1° |
| Very gentle | 1-9° |
| Gentle | 10-18° |
| Moderate | 19-27° |
| Steep | 28-36° |
| Very Steep | ≥37° |

**TABLE 4.** GENERICCADD DRAWING LAYERS FOR MASTER XSS MAP.

| LAYER # | LAYER CONTENT |
|---|---|
| 0 | Maler drawings |
| 1 | text labels |
| 2 | shovel-test-pit components |
| 3 | site datum components |
| 4 | feature labels |
| 5 | site legends |
| 6 | natural features |
| 7 | concrete property boundary post |
| 8 | historical structures |
| 9 | picado grid |
| 10 | terrace sets |
| 11 | terrace set labels |
| 12 | Total Station point number |
| 13 | Total Station point name |
| 14 | Total Station point (+) |
| 15 | Total Station elevation |
| 16 | looter's trench outlines |
| 17 | topographic contour lines |
| 18 | terrace set divisions |
| 19 | coordinate grid graph |
| 20 | terrace set areas |

**TABLE 5.** NEAREST NEIGHBOR STATISTICS (T/A1 SITES ONLY)

| | Observed | sd | Expected | SE | Ratio | P |
|---|---|---|---|---|---|---|
| Platforms | 100.161 | (69.085) | 99.323 | (6.388) | 1.008 | p<.50 |
| Mounds | 23.149 | (26.700) | 44.638 | (1.531) | 0.519 | p<.01 |

**TABLE 6.** XSS PRELIMINARY SITE TYPOLOGY

| Type | # Mounds | Max. Md. Ht. | Platform | Max. Pl. Ht. | Layout | Focus |
|---|---|---|---|---|---|---|
| I | 1 | ≤1.0m | N | --- | --- | N |
| II | ≥2 | ≤1.0m | N | --- | Inf. | N |
| III | ≥2 | ≤1.0m | N | --- | Formal | N |
| IV | ≥2 | 1-2.0m | N | --- | Mixed | Y |
| V | ≥4 | 1-2.0m | Y | ≥1m | Formal | Y |
| VI | ≥4 | 2-5.0m | Y | ≥1m | Fml/Mxd | Y |
| VII | ≥4 | ≥5.0m | Y | ≥1m | Formal | Y |

**TABLE 7.** XSS CHRONOLOGICAL DISTRIBUTION OF RECOVERED CERAMICS

| Time period | Number of Sites | % of 242 Total Sites |
|---|---|---|
| Middle Preclassic | 40 | 16.5 |
| Late Preclassic | 0 | 0.0 |
| Protoclassic | 7 | 2.9 |
| Early Classic | 25 | 10.3 |
| Late Classic I | 42 | 17.4 |
| Late Classic II | 90 | 37.2 |
| Late Classic (undifferentiated) | 64 | 26.4 |
| Terminal Classic | 29 | 12.0 |
| Postclassic | 2 | 0.6 |

**TABLE 8.** TERRACES AND SLOPE DEGREE.

| % terraces on slope | slope degree | # terraces on slope | #terrace sets on slope | mean # terraces/TS |
|---|---|---|---|---|
| 0.42 | flat | 2 | 1 | 2.00 |
| 6.46 | very gentle | 31 | 12 | 2.58 |
| 53.13 | gentle | 255 | 61 | 4.18 |
| 33.75 | moderate | 162 | 47 | 3.45 |
| 4.79 | steep | 23 | 8 | 2.88 |
| 0.00 | very steep | 0 | 0 | --- |
| 1.46 | not recorded | 7 | 2 | 3.50 |
| 100.00 | totals | 480 | 131 | |

**TABLE 9.** TERRACES AND SLOPE ASPECT.

| % terraces in aspect | slope aspect | # terraces in aspect | # terrace sets in aspect | mean # terraces/TS |
|---|---|---|---|---|
| 19.17 | N | 92 | 27 | 3.41 |
| 13.13 | NE | 63 | 16 | 3.94 |
| 11.46 | E | 55 | 14 | 3.93 |
| 7.50 | SE | 36 | 9 | 4.00 |
| 10.83 | S | 52 | 20 | 2.60 |
| 10.00 | S W | 48 | 15 | 3.20 |
| 9.38 | W | 45 | 14 | 3.21 |
| 8.96 | N W | 43 | 11 | 3.91 |
| 9.58 | not recorded | 46 | 5 | 9.20 |
| 100.00 | totals | 480 | 131 | |

**TABLE 10.** TERRACE TYPES.

| Terrace type: | I | II | III | V | Mixed |
|---|---|---|---|---|---|
| Observed attributes | | | | | |
| # of terrace sets | 17 | 24 | 27 | 48 | 15 |
| % of terrace sets | 13.0 | 18.3 | 20.6 | 36.6 | 11.4 |
| # of terraces in set | 33 | 98 | 128 | 194 | 27 |
| Mean # terraces/set | 1.9 | 4.1 | 4.7 | 4.0 | 1.8 |
| % of terraces | 6.9 | 20.4 | 26.7 | 40.4 | 5.6 |
| Mean TS area in $m^2$ | 782.9 | 3575.1 | 3934.6 | 2894.1 | 649.2 |
| Mean TS max. length | 33.6 | 44.9 | 52.6 | 33.5 | 21.7 |
| Total area covered (in ha) | 1.3 | 85.8 | 106.2 | 138.9 | 9.7 |

**Xunantunich Archaeological Project-- 1994 Settlement Survey**

**SITE FORM**

---

SITE # _____
Nearest Picado #
Datum Point #
Mapper:
Date Mapped:
Land Plot #
Current Owner:
Collection ops:
Types of Collection:
Photos:
Maps:

---

Topo setting:
Slope- Degree:
Slope- Aspect:
Nearest Water
Distance:
Direction:
Type:
Perm/Int:
Root Zone:
Soil- Color:
Soil- Texture:
Site Disturb. degree:
Disturbance Type:

---

Visibility Factors
- Veg:
- Scrub (Density):
- Ground (Density):
- VIS:

---

Weather:
- Now:
- Last 2 Wks:

| Features: | Feat. totals |
|---|---|
| f-platform | |
| m-mound | |
| w-retaining wall | |
| s-sacbe | |
| x-ramp | |
| a-add. other | |
| r-reservoir/ aguadas | |
| q-quarry | |
| c-chultun | |
| o-sub. other | |

---

**Terrace Set(s)# if applicable**

---

**Comments**
-- Land use history
-- Property ownership history
-- Closest Site
-- Clarify the slope aspect

Feat#2
Site#

# of Mounds
Dist.
Degree
Dist.
Type
Surf.
Compos.
Fill Stones
Size
Matrix

Construct. Phases
Super-structure
Facing

Profile

Plan

Length

Width

Basal Area(M2)
Min. Elev.
Max. Elev.
Assoc. Cult Remains

Ceramic

Lithic

Bone

Shell

Groundstone

Cut Stones
Dates

Comments (on Back)

| | |
|---|---|
| | Feat.# |
| | Site# |
| | Dist. |
| | Degree |
| | Dist. |
| | Type |
| | Max. |
| | Depth |
| | Ln. of |
| | Cut Surf. |
| | Area |
| | Waste |
| | Material |
| | Active/ |
| | Working |
| | Shape |
| | Sidewall |
| | Mater. Typ. |
| | # of |
| | Holes |
| | Dia. of |
| | Holes |
| | Collapsed |
| | Looted |
| | Assoc. Cult. |
| | Remains |
| | Ceramic |
| | Lithic |
| | Faunal |
| | Bone |
| | Groundstone |
| | Date |
| | Comments |

**SUBFORM**

# XSS Terrace Set Form

| | |
|---|---|
| | TS# |
| | Site #(s) (if app.) |
| | Picado# Distance |
| | Picado# Distance |
| | # of Terr. |
| | Max. Max. Height |
| | Min. Max. Height |
| | Impression. Height Mode |
| | Max. Length |
| | Min. Length |
| | Impression. Length Mode |
| | VIS |
| | Slope Degree |
| | Slope Aspect |
| | Facing |
| | Orientation |
| | Type |
| | Comments (on back) |

# XSS SURVEY ARTIFACT FORM

| | Op #_____ Site#_____ Collector_____ Date____ T_____ | Op #_____ Site#_____ Collector_____ Date____ T_____ | Op #_____ Site_____ Collector_____ Date_____ T_____ |
|---|---|---|---|
| | B--B/D--J--O(#/T) | B--B/D--J--O(#/T) | B--B/D--J--O(#/T) |
| Calcite/Sand | | | |
| Ashware | | | |
| Orangeware | | | |
| Micaceous | | | |
| Ash mono | | | |
| Calcite mono | | | |
| Ash bi | | | |
| Calcite bi | | | |
| Ash poly | | | |
| Calc. Poly | | | |
| Gloss Ware | | | |
| Waxy Ware | | | |
| **TOTAL** | | | |

| | | | |
|---|---|---|---|
| Forms (#/type where applicable) | | | |
| Rim | | | |
| Flange | | | |
| Ridge | | | |
| Feet | | | |
| Censer | | | |
| Other | | | |
| Decoration (#/type) | | | |
| M. Maloney (#/type) | | | |
| Type Var. | | | |
| TIME PERIOD - (see codes) | | | |
| other arts.(#) | | | |
| g.stone | | | |
| shell | | | |
| bone | | | |
| other | | | |
| | Fl/Db Tls Cor | Fl/Db Tls Cor | Fl/Db Tls Cor |
| chert | | | |
| obsid | | | |

COMMENTS (notables)

**XAP SURVEY SOIL SAMPLE INVENTORY**

Transect_____
Sample #_____
Coord:N_____
E_____
El_____
Date_____
Recorder_____

Describe the profile of pit from which the sample was taken (horizons, textures, inclusions, Munsell colors, etc.):

Describe the depth and stratum of the sample(s):

Describe the vegetation of the sampled area (types , VIS):

Describe the topography and hydrology of area:

Discuss pertinent nearby cultural impact (prehistoric remains, current uses):

Birchnall soil zone designation: