ON THE ROAD:

EXCAVATIONS ALONG THE MAYA *SACBE* AT

X-UAL-CANIL, CAYO DISTRICT, BELIZE

A Thesis Submitted to the Committee on Graduate Studies

in Partial Fulfillment of the Requirements for the

Degree of Master of Arts

in the Faculty of Arts and Science

TRENT UNIVERSITY

Peterborough, Ontario, Canada

Anthropology M.A. Program

June 2000

ABSTRACT

On the Road:

Excavations along the Maya *Sacbe* at X-ual-canil,

Cayo District, Belize

Sonja Andrea Schwake

The *sacbeob* (causeways) of the ancient Maya are a public architectural feature which had symbolic, political, social and economic implications. They served to define the connection between the natural and the social landscape, and formed the physical network linking Maya centers. Excavations conducted along the *Lahkin Sacbe* at the site of X-ual-canil, Cayo District, Belize, Central America during the 1996 and 1997 field seasons provide the evidence used to explore the ritual aspects of function and meaning for these features. Ideas related to the sacred landscape, landscape archaeology and rituals of agricultural fertility are also discussed in relation to the *sacbeob*. Regarding the function and significance of these structures, it is concluded that their value was as items of material culture used in procession and ritual to integrate the population at the site. A model related to the larger site function of the control of water is developed also.

ACKNOWLEDGMENTS

This thesis is dedicated to the memory of my grandfather,

Otto Van Lehn. His strength, wit and wisdom will always inspire me.

The work recorded here has been a truly collaborative effort from its inception. The individuals to whom I owe thanks are many and are appreciated for their unique perspectives and contributions, their support and unrelenting confidence in my abilities. The following list is by no means exhaustive, and is not in any specific order.

At Trent, I would like to thank my supervisor, Dr. Paul Healy, for his light-handed guidance in the development of these ideas. He has allowed me to work independently on this material, and always been supportive in times of need. I would like to acknowledge Dr. Stan Loten for agreeing to be the external examiner for my thesis committee. Also thanked are the other members of my thesis committee, Dr. Gyles Iannone and Dr. John Topic. I feel very privileged to have had the opportunity to work with Gyles over the last seven years, as he has truly been an exemplary role model and mentor. Aside from sharing his vast knowledge of field work and the ancient Maya, he has offered his unflagging friendship, for which I am continually grateful. Also at Trent, a special thank-you to Mrs. Sandi Carr and Mrs. Paulette Nichols, both of whom have graciously helped ease my way through a variety of difficulties, all the while making apparent their obvious enjoyment in dealing with students. Dr. Hermann Helmuth has also been a friendly, supportive face at Trent. My fellow graduate students are also thanked for their support. Financial support

was kindly provided by both Trent University and through the Social Sciences and Humanities Research Council of Canada (in the form of grants to Dr. Iannone).

A special individual who gave me my first opportunity to do fieldwork in Belize is Dr. Jaime Awe. Jaime has had a considerable impact on my ideas about the Maya. Thank you so much for your continued support of the SARP research, and for your friendship.

In Belize, there are numerous individuals who have assisted in our work. First, the Belize Department of Archaeology, Commissioner John Morris and former Commissioner Brian Woodeye are thanked for their support. The various owners of the land on which X-ual-canil sits are thanked for allowing us to conduct work on their property as well as for their continued interest. Special thanks are offered to Ingrid Melton, Doug Trani and the Janus Foundation. The amazing and wonderful people of Belize are thanked for welcoming us to their country year after year to undertake this research. Their friendly spirit is infectious, and they are the main reason why I continue to look forward to working in Belize. Victor and Theresa Tut and their family (Jeronie, Everald, Ismelda, Gina, Fernando, Omar, Julie, Eric, Carolita and Andy) welcomed us into their home and were awesome hosts during our summers in Belize. Carlos Ayala has also helped us with much more than just transportation. Also thanked are Bob and Nettie Jones at Eva's restaurant, as well as numerous other individuals from San Ignacio town. I owe thanks to our numerous Belizean colleagues who have made the time in the field both worthwhile, because of their hard work, and hilarious because of their wonderful spirit- David Valencia, Jose Martinez, Lazaro Martinez, Efrain Martinez, Hugo Panti, and Everald Tut.

I have to thank everyone on the SARP project for being a great crew with which to work- Colin Agnew, Sarah Carr-Locke, Josalyn Ferguson, Nadine Gray, Mark Hoeltzel, Patrick Killpack, J. Paige MacDougall, Tara McEnery, Jolene McMurdo, Michelle Meagher, Pete Prince, Jeff Seibert, James Stemp, Beth Young as well as all the field school students who have put in a lot of hard work. Special thanks to Carol Sakamoto for her unconditional love and support!

Several others have provided help and support during the researching and writing of this thesis and are thanked: Tina Christensen, Jim Conlon, David Cruz, Sherry Gibbs, Christophe Helmke, Dave Lee, Denise Mardiros, Allan Moore, Holley Moyes, Rhan-ju Song, and Norbert Stanchly.

Finally I would like to thank my mother, Janette, as well as my siblings, Bob and Carolyn, for all their help and encouragement and for being my greatest supporters. My father, Peter, was a constant source of inspiration to me as I finished this work. His dignity and courage motivated me every day. Thanks also to my Grandmother, Maria Van Lehn. A huge debt of gratitude and special mention is owed to one friend who has helped me through some of the hardest times in my life. I love her for her kind spirit, and generous support- Nadine "Beaner" Gray- thank you!!

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER I

INTRODUCTION TO *SAC'BEOB*

The *sacbeob* of the ancient Maya have been studied through archaeological inquiry, informed by detailed ethnographic knowledge of the modern Maya, in order to understand their function and significance. Their function has been postulated through rigorous examination of their form, study of the features and artifacts found in association with them, and through examination of the specific architecture that they link. Several distinctions can be made to categorize these constructions based on whether or not they link inter- or intra- site architecture, in what manner they terminate, and from where they initiate at a site's epicenter. *Sacbeob* can be understood through analyses focused on the evolution of paths and roadways, through the study of monumental architecture, through their construction, and through mythological, cosmological and directional alignments. This chapter will define *sacbeob*, and how they have been studied and understood by archaeologists. This information is presented to provide background for the research completed along the *Lahkin Sacbe* at the site of X-ual-Canil, Cayo District, Belize.

THE *SAC'BEOB* OF THE ANCIENT MAYA

Although it can be said that human communication is limited by the very nature of the available media, various materials can ingeniously assume a complex variety of nuance and meaning within the social realm. The message is sometimes implicit, sometimes explicit, and always culturally derived. Monumental architecture is one category of constructed material which is imposed on the landscape with a multiplicity of intentions.

The raised causeways of the ancient Maya, known as *sacbeob* (*sacbe* in singular), provide a particularly interesting example for study.

Sacbeob can be classified according to their temporal and geographic context, constituent materials and construction history. In addition to concrete descriptions of the *sacbeob*, a discussion of the architectural features commonly associated with causeways will provide contextual information with which questions related to more general significance can be based. A discussion of purpose or 'function' must also be included to address the roles which the causeways held. This attempt to define the *sacbeob* of the ancient Maya provides a useful contribution towards developing a model of Maya social organization. How this model is influenced by something as specific as monumental causeway construction helps to test and complete a holistic picture of the integrative social relationships that were defined through the medium of architecture.

THE SIGNIFICANCE OF MONUMENTAL ARCHITECTURE

One defining quality of monumental architecture is that, in elaboration and scale, it exceeds any practical functions which it is intended to fulfill (Trigger 1990:119). If function is the only consideration, most monumental constructions could indeed be replaced by much smaller, less complex edifices which would not require as great a level of labor investment or resource procurement to build. This is not to say that monumental architecture does not fulfill functional roles, but there are a multiplicity of lenses with which one can attempt to view monumental construction to bestow an understanding of the centrality, symbolism and importance it held for a specific culture.

Attempts have been made to quantify the labor and resource investment which would have resulted in the creation of particular monumental constructions (e.g., Abrams 1994). This kind of assessment relies on the evolutionary premise that people inherently follow the most energy efficient strategies to build architectural constructions. Useful comparisons about social relationships are then postulated from these determinations (Abrams 1994:37). This reduction of large scale architecture to labor input provides a basic quantitative assessment of labor costs which facilitates statistical comparisons, however, quantitative methods do not provide a sufficient explanation for all the purposes of monumental architecture.

Attempts to understand monumental architecture as an integral component of symbolic relationships, human interaction, and the fusion of the cultural and natural landscapes are of greater utility (Lawrence and Low 1990, Leach 1983; Trigger 1990). The representative relationship between monumental architecture and ideology has been suggested as a template to describe how culturally shared mental structures are manifested in the world (see Ashmore 1991:199; Lawrence and Low 1990:466; Stone 1992:109). Seen as an expression of human (cultural) integration with the landscape (nature), monumental architecture actively defines a place for human interaction, communication, performance and ritual celebration (Keller 1995:87). In addition, the construction itself becomes a visible symbol of the social power an individual or corporate group commands. One aspect of social power can be described as the control of energy (labor and resources) that is demonstrated through conspicuous consumption or display (Trigger 1990:125). The architecture can be understood by initiated participants of the culture to symbolize

the recognized social connections between people, or alternately, the distinctions between different social strata in a hierarchical system (Lawrence and Low 1990:459,463).

In the case of monumental architecture, information is both implicitly/passively and explicitly/actively communicated by the very existence of the construction. Monumental architecture can be described as a fusion of the cultural and natural landscapes which plays out within the social realm, as people interact in these places. The places themselves assume meaning as cultural referents that define issues of social power, agency, integration and the establishment of identity, independent of practical function. The relationship between the architecture and the individual (or group) is an interactive one. The very people who created the monumental construction then find their behavior to be influenced by the built environment (Lawrence and Low 1990:454).

SACBEOB DEFINED

The *sacbeob* of the ancient Maya provide an interesting example of a monumental construction which probably held a multitude of implications for the people who built and used them. *Sache*, literally translated, means 'white road' (Freidel et al., 1993:77). This is most likely a reference to the fact that these roads were paved or surfaced with ground white lime known as *sascab* (Folan 1991:222). There are several ways in which *sacbeob* can be classified. A description of 'roadways' within a continuum, from simple to elaborate constructions, provides a functional nomenclature; while a description of the apparent dichotomy between intrasite and intersite *sacbeob* is also useful. Finally, there is a differentiation between the physical, concrete constructions themselves and the mythological existence of *sacbeob*. *Sacbeob* are referred to in accounts of the mythology

of the Maya and this aspect of the roadways will be discussed in a subsequent section of this chapter. These ideas lead into considerations of the importance of the orientation of these constructions, and whether their alignment may reflect the paths of movement of celestial bodies on the horizon.

Evolutionary Perspectives

Although *sacbeob* are most frequently glossed as roads, it may be a misnomer to refer to the *sacbeob* of the ancient Maya as roads at all because of the implied functional similarity they would then share with modern-day roads. By labeling these constructions as roads, we tend to think of them exclusively in terms of transportation. It may be more appropriate to refer to them using descriptive terms such as 'constructed linear features', but this technicality will not clarify the issue . *Sacbeob* will continue to be referred to by a term that is 'loaded' with an assumed functional role. Earle (1991:10) has outlined a theoretical hierarchy of New World roadways which ranges from the simplest form in which they occur (paths) to the most complex (roads). In between these extremes fall various sorts of linear stone features which include boundary walls, gateways, and passages (Fletcher 1983:89). Paths are defined by their unplanned nature, irregular use, and malleability, whereas roads are considered to be planned, formalized routes which require a degree of organized labor for their construction (Earle 1991:10). This perspective, which includes very simple to more complex forms of routes, would place the *sacbeob* of the ancient Maya on the high end of the roadway continua. Linked with the presence of the various forms of routes is the idea that there is a concomitant level of

social complexity which must be present before elaboration of the simple path can occur (Earle 1991:11).

Intrasite and Intersite Sacbeob

Typically it is the length of the *sacbe* which determines if it is placed within the intrasite or the intersite category (Deneven 1991:231).The longer, intersite causeways are those which have been identified to link associated sites, although the degree of autonomy which each possesses is debatable. The roadway can be seen as a visible link between sites in this case, but also a reminder of potential subordinate relations between a regional center and its tributary centers (Folan 1991:226). The function and importance of the intersite *sacbeob* are related to one's conception of the settlement system of the ancient Maya. If Maya sites are seen as autonomous regional centers, then the presence of connective architecture between two centers can be interpreted in a different way from the model which has one dominant site in control of many regional lower order sites. The *sacbeob* can be seen alternately as cooperative structures which facilitate communication and transportation between sites, or as manifestations of the will of a 'conqueror' site upon a subordinate.

The other identified type of *sacbe* is the intrasite variety. Intrasite *sacbeob* tend to be shorter than the intersite variety. They link specific types of architectural features such as residential or administrative loci in the periphery of the site to the site core (Folan 1983:87). These linkages are thought to be representative of the related statuses of the people utilizing the structures at the termini and the people in the site core. In effect, these

peripheral features take on the status and importance of their correspondents in the site core, because of the physical link which the *sacbeob* provide (Jaeger Liepins 1994:89).

A consideration of what the *sacbeob* link (the termini) blurs the distinction between the classification of intrasite and intersite causeways. Chase and Chase (1998:5-6) state "at least ten of the known *Caracol* causeway termini would have qualified for the label 'minor center' had they not been tied to the epicenter by causeways...[they were] initially separate centers that ultimately were engulfed by the expanding urban center of Caracol during the Late Classic Period." In the strictest sense then, these examples of minor centers being engulfed through epicentral expansion should be classified as intersite *sacbeob*. Their proximity to the site core however, would also be reason to classify them as intrasite *sacbeob*. The utility of this classification (intrasite versus intersite) is limited, as there tend to be instances which do not fall neatly within one or the other, but rather exhibit characteristics of both.

Construction of Sacbeob

The constructions themselves (*sacbeob*) tend to exhibit characteristic features across wide geographical and temporal expanses. They typically consist of raised masonry walls of cut limestone which serve as retaining walls for the fill of the roadway itself. This surface is then paved with lime cement known as *sascab* (Deneven 1983:231; Folan 1983:222). These walls can be single or multiple coursed and may have (in the more elaborate constructions), double faced parapet walls. The surface of the roadways are usually raised in the center as compared to the outside edges (a crown) to facilitate the drainage of water from the road bed, as the *sascab* surface would not have been

permeable to water. In some instances, there are parallel, linear alignments of stone which run down the center of the road surface, as well as inset culverts, which transect *sacbeob*, that are thought to serve as water drainages (Folan 1983:222).

The *sacbeob* in the Maya area are very diverse in dimension. As a unified group (considering both intersite and intrasite constructions), they range in length from several meters to many kilometers (99 km in the case of the Coba-Yaxuna causeway; Folan 1983:223). The width of the *sacbeob* can also vary from 3 to 30 meters (Cheetham 1995:36). The *sacbeob* can be of various heights, from low-to-the-ground constructions of around 0.5 meters, to constructions that are several meters high. Folan (1983: 83) reports one of the Coba *sache* to be at least 7 m in height at certain points along its length. A single *sache* can exhibit a variety of dimensions depending on the natural shifts in the landscape that are transversed by the construction (Freidel and Sabloff 1984:79). The *sacbeob* were constructed in one of two ways: either as a complete entity where one building effort resulted in the entire *sache* being built, or they were constructed in separate sections which were linked over time (Folan 1983:82; Keller 1994). There is also considerable diversity in the architectural features which are found in association with *sacbeob*.

Mythological Sacbeob

> *And then they came to the Crossroads, but here they were defeated, at the Crossroads:*
> *Red Road was one and Black Road another.*
> *White Road was one and Yellow Road another.*
> *There were four roads, and Black Road spoke:*
> *"I am the one you are taking. I am the lord's road"* [Tedlock 1985:111]

There are various references in the literature to the existence of the *sacbeob* as a component of the mythology of the ancient Maya (Folan 1983:224; Freidel et al., 1993; Tedlock 1985:111). The mythological hero twins travel on a 'road' to get to Xibalba (the underworld) in the creation story of the Popul Vuh, as do the dead on their final journey to Xibalba (MacLeod and Puleston 1978:71; Tedlock 1985). There are reports of *sacbeob* on the surface of the earth as well as underground *sacbeob* which are said to connect certain features of some sites in the Yucatan. One example is the apparent underground *sache* which connects the site of Coba with the cenote at Chichen Itza (Folan 1983:224). Folan (1983:225) also describes an aerial connection route that manifests itself as a blood-filled tube between Tulum and Coba, which was said to have been built as an act of war by the Itza Maya. This blood-filled tube is also known as a sky-umbilicus and by the terms *kuxan sum* or *sakbe*, and is, contrastingly, described as a life sustaining connection which fed the ancient rulers who lived in the now ruined structures (Tozzer, in Freidel et al., 1993:105-6). Alternately, *sacbeob* have been described as land-level representations of the Milky Way. This connection could explain why the literal translation of *sache* means 'white road', as it is in reference to the similar 'white road' formed in the sky by the Milky Way (Freidel et al., 1993:76-7).

Directionality and the Cosmological Alignment of Sacbeob

It has been suggested that city plans in the Maya area replicate the cosmos, or reflect aspects of ideology (Ashmore 1992:173; Cohodas 1985:53). The symbolic importance of architecture, such as the twin pyramid group at Tikal, increases when it is

viewed as a physical representation of the Maya world view (Ashmore 1992:200). The *sacbeob* of the ancient Maya could also represent some aspect of ideology.

Ashmore (1991:199-200) has indicated the importance of directionality among the ancient Maya. She notes that the symbolic manipulation of space through architecture is common worldwide, and that this often ties into concepts of the importance of the cardinal directions. To the Maya, east was where the sun emerged from its nightly journey to Xibalba, north was the sun at the peak of its daily path, west was where the sun returned to Xibalba at night and south was exemplary of the sun in the middle of its journey through Xibalba (Sharer 1994: 523). Cohodas (1985:53) notes that the sun passes from north to south through the vernal and autumnal equinoxes, thus the north-south direction could also be representative of the sun's journey to the underworld. Ancient Maya rulers would sometimes associate themselves with the sun's movements (an implicit daily triumph over the lords of the underworld) through the assumption of the persona of the sun god, Kinich Ahau (Sharer 1994: 531). The union of the concepts of directionality, leadership, and control of celestial movements were emphasized through the symbolic aspects of monumental architecture such as *sacbeob*. The movement of people along the roadway itself might serve to replicate and emphasize some of these implicit meanings. The movements of celestial bodies other than the sun could also have been replicated by the directions in which *sacbeob* were oriented. These could have held specific importance for ritual or other essential aspects of ceremonial life.

Shamanism and Sacbeob

One distinctive feature of the *sacbeob* of the ancient Maya is that they are straight constructions which go right over natural obstacles in the landscape, rather than pass around them (Devereux 1997:212; Romanov 1973:3). The aspect of 'straightness' has been suggested to be of considerable significance, especially in light of the compatibility with the existence of straight monumental earthworks and shamanistic practice (Devereux 1997; Dobkin de Rios 1977:13; Trombold 1991:4). Ritual movement in straight lines may in fact be a widespread New World phenomenon, as it was described as an integral component to ceremonies in Peru (Topic 1992: 31). The potential ideological importance of *sacbeob* additionally makes them an ideal media to utilize as symbols for shamanistic practice. Devereux (1997:213) has suggested that many large scale, linear monuments in the New World occur in areas where people are known to have used hallucinogenic plants in shamanistic trance ceremonies. He states that these linear features (including *sacbeob*) could be symbolic expressions of trance conditions which transform the natural landscape into the sacred landscape. Linearity is a recognized shared entoptic pattern experienced in trance states, thus the linearity and straightness of the *sacbeob* make them the ideal representations in the landscape of shamanistic symbolism (Devereux 1997:219). The ancient Maya were known users of hallucinogenic substances in such instances as the ritual administration of enemas for example (Iannone 1995). Thus it is plausible to suggest that the ritual movement of people along the *sacbeob* was seen as a reflection of shamanic belief, not to mention the implications this movement had for the reinforcement of a

certain social prestige or power (Devereux 1997:219). The key feature that is important is the straightness of the construction, and the belief that, in their journeys to the supernatural world, shamans travel a straight and direct path. The aspect of straightness was selected for in building *sacbeob*, as they are often straight and direct regardless of obstacles in the landscape which would have been easier to avoid altogether.

Architecture Associated with Sacbeob

An isolated study of the *sacbeob* themselves may not present as complete a picture as when they are examined in the context of their surrounding architecture and associated features. The causeways are found with a combination of different architectural complexes that provide the framing context with which the *sacbeob* can be understood. In addition to their associated architectural structures, *sacbeob* by their very nature (being monumental linear constructions) do in fact form a concrete link between different types of architectural complexes. What follows is a listing of the architectural features commonly associated with *sacbeob*, as well as an examination of their termini.

Lower-Order Architectural Associations

Of the features which are associated with *sacbeob*, what I am considering to be of 'lower-order' status are primarily small constructions which typically augment the structure of the *sache* itself and are not part of the terminal complexes. These include several types of ramps, which abut the roadways, and specially constructed platforms in the middle of the roads, which sometimes include a superstructure to create a 'gateway' of sorts, that traffic must have passed through (Folan 1983:83). There are reports of buildings sitting atop of *sacbeob*, with access stairs placed on the *sache* itself. Many small

shrine structures, which range from small piles of stones to more formalized platform-type constructions, are also found in association with *sacbeob* (either centrally placed atop the constructions or adjacent to one side-wall of the *sacbe*). *Stelae* and altars are found in close proximity to *sacbeob* as well. Folan (1983:83) notes that *sacbeob* can themselves function as dams for the control of water, and may be associated with the manipulation of water flow by the built environment.

Terminal Complexes

There are a great variety of structures and architectural features which can be found at the ends of *sacbeob* in the Maya area. This variety of termini suggests a variety of functions. Often, the *sacbeob* connect to small or large formalized plazuela groups thought to have a residential function. These groups can also be of an administrative nature (Jaeger Liepins 1994:49). The termini also commonly consist of pyramidal structures which contain burials and mortuary offerings, or raised platforms thought to hold a 'ritual/performative' function (Cheetham 1994, Cheetham et al., 1995, Schwake 1996). In relation to the site core, the proximal ends of *sacbeob* tend to be initiated within the main plaza of the epicenter, but this depends on the layout of specific sites

Monuments Associated with Sacbeob

One set of features commonly associated with *sacbeob* are stela and altar complexes (as is the case for these examples from the Belize Valley, X-ual-canil, Pacbitun, Cahal Pech, Xunantunich). Schele and Freidel (1990:71) emphasize the importance of stelae as stone representatives of the trees that cover the earth, "The slab-shaped monuments they carved with the images of kings were called *te-tun*, 'tree-stone'. Plazas

filled with these tree-stones then represented the earth covered by a tropical forest". They also discuss altars as portals between the corporeal world and the supernatural world, and point out that Maya rituals today still involve the creation of altars (Schele and Freidel 1990:427). That these monuments can be found frequently in association with *sacbeob* is an indication of the ritual importance of these structures, and certainly that they were more than simply utilitarian edifices.

FUNCTION OF *SACBEOB*

One of the main premises of western science is that there is an inherent relationship between form and function. Archaeologists often categorize items of material culture based on their supposed function. Therefore, an examination of the potential functions which the *sacbeob* may have held logically follows from the preceding description of their structure. *Sacbeob* have been attributed a wide variety of potential functions from purely transport oriented purposes, to a primary emphasis on their symbolic importance.

Transportation

Because we gloss the Maya term "*sacbeob*" as "roads" in English, there is an unspoken expectation that they must have been constructed for the transportation of goods and people. Many researchers have in fact stated that the *sacbeob* held a transportation function for the facilitation of military troop movement or for economics (Chase and Chase 1996:31, Cheetham 1994 1; Folan 1983). The economic reason seems plausible, as there could have been considerable trade and goods exchanged between sites, especially ones linked by intersite causeways (such as Yaxuna-Coba). Their use to facilitate the movement of military troops, though possible, just does not seem plausible,

for then there would be an obvious limitation imposed on the place to which troops could travel.

Symbolic Importance

The importance of *sacbeob* to the ideology of the Maya has already been discussed. There are those who believe that *sacbeob* derive their primary functional importance from the symbolic realm (Keller 1994). The movement of people on the *sacbeob* in this case can be seen as a ritual pilgrimage, where it is the movement itself which is of the greatest significance: the actual passing of individuals through the culturally determined sacred landscape. These processions may have taken on a performative aspect, as there would have been individuals present to witness this passage of people, and the associated rituals (Ashmore 1992; Cohodas 1985; Folan 1983). Outside of the Maya area roadways are frequently seen to have cosmological/ideological significance, such as the Chincha roads in Peru or the Chacoan roads in the Southwestern United States (see Wallace 1991; Mathien 1991). These types of symbolic functions have not been fully explored by Mayanists for the *sacbeob* of the ancient Maya.

Maintenance of Relationships

The *sacbeob* probably had the facilitation of communication as an essential function. They do form concrete links between different architectural clusters (whether these are intrasite or intersite). This would maintain a physical reminder of the connection between the linked groups, or at least the individuals who had constructed them (Folan 1983:87; Tourtellot 1993:229). Communication of a more mundane nature would also be aided by the presence of the raised causeways, again most importantly in the case of the

long distance intersite causeways. Instead of performing solely symbolic roles, *sacbeob* functioned as conduits upon which people traveled to visit, trade or exchange goods. By the very fact that causeways connect two different types of architecture, it is implied that there is some connection between the two on a symbolic as well as physical level (Ashmore 1992:174).

Water Control

Sacbeob have been found to function in the control of the movement of water, serving as check dams in some instances. Scarborough (1991:126) states "At several elevated locations within and immediately outside the central precinct, reservoirs were formed behind well-defined causeways, ...[which] functioned to dam water within a sizable catchment area" for the site of *Tikal*. Thus the *sacbeob* could have held an important function related to the manipulation of the natural flow of water through the landscape.

SOCIAL IMPLICATIONS

Many researchers have given primacy to the features of the natural environment such as landforms, climate, soils, vegetation and mineral resources when describing the way humans have developed their space (Morrill 1970:8). Intuitively, I would say that the features of our social environment also have important implications with regard to any developmental undertaking, such as the construction of monumental architecture. The very presence of a route which links two places demonstrates their physical connection, but more than just connecting the architecture itself, there is a connection established between the individuals who occupy that space (Morrill 1970:147). Those individuals interact for a variety of reasons: to exchange goods and information, visit family members,

and generally fulfill 'social' obligations to others. These social obligations can sometimes be coercive (as in the case of a dominant elite in a hierarchical society), but the function of communication is always fulfilled (Hassig 1991:25). A construction such as a *sache* physically and visually engraves information about the nature of the social relationship in the landscape and serves to form a sense of unity amongst the whole (Ashmore 1992:173). This sense of unity to a community can be described by the term 'integration', which is, in effect, the ultimate probable function of *sacbeob* within the mundane and ritual worlds. Just as the *sacbeob* likely served a multiplicity of functions, people are integrated in societies in a variety of different ways for different reasons. Thus, the definition of what the *sacbeob* really were becomes unanswerable in the absence of the specific social and temporal context of a particular construction. *Sacbeob* occur across the entire Maya area, including modern day Mexico, Belize, Guatemala and Honduras. They have been dated to a wide temporal span as well, with the earliest constructed *sacbe* dating to the Middle Preclassic Period (500 B.C.) at Komchen in the Yucatan and examples from the Post-Classic Period (after A.D. 1000) at Cozumel (Freidel and Sabloff 1984:79; Sharer 1994:129). Undoubtedly the social setting changed from their initial use to the Late and Terminal Classic Periods, but they do present an example of an architectural form which was consistently present at many sites and had a very long history.

SUMMARY

There are multiple ways that the *sacbeob* of the ancient Maya were manifest in the landscape, and multiple ways of viewing them. Construction analysis and labor investment assessments can provide descriptive and quantitative measures of *sacbeob*. The symbolic

importance of these constructions is harder to identify. Attempts to look at ethnohistoric literature can initiate this process, as can a more general understanding of the Maya world view. Ultimately though, it is social interaction which defines the creation of public architecture such as *sacbeob*. The work presented here represents an attempt to suggest possible reasons for why *sacbeob* were built. Thus, there are nested levels of significance and meaning which *sacbeob* held for the ancient Maya. This realization does not make the study of *sacbeob* clear cut, but it makes them a good candidate for study because they do have the potential to describe many aspects of the existence of the ancient Maya.

CHAPTER 2

THEORETICAL PERSPECTIVES

This chapter will explore, from a theoretical standpoint, some of the issues related to the study of monumental public architecture. The definition of cultural space and place, landscape architecture, the sacred landscape, site layout principles (including the concept of liminal space) and human geography as they relate to social organization will be examined. A preliminary discussion of the role architecture plays in relation to integrative social relationships will provide a lens through which to view the *sacbeob* (causeways) of the ancient Maya.

THE NATURE OF ARCHAEOLOGICAL INQUIRY

Archaeology as a discipline seeks to understand past human cultures through the excavation, analysis, and interpretation of material remains. These remains are represented by portable or non-portable artifacts, architecture, settlement locations, and areas of past human activity. The method of archaeology is the application of rigorous scientific data collection and analysis, in an attempt to acquire objective information about the material in question. The presence of indisputable, objective information is in reality not achieved through archaeological study as no confirmation of the veracity of archaeological interpretations can be made. Rather, the use of 'sophisticated analytic techniques' is given priority in archaeological inquiry (Fagan 1992:12). One of the prime questions related to this inquiry into material culture is the significance it held for the people who produced it.

Many factors are responsible for the outward manifestation of material cultural remains; one of the most frequently discussed is the environment. The extent to which the

environment determines the appearance of cultural remains is something which merits further consideration. The natural environment can shape the physical appearance of material culture through human adaptation to it. The cultural environment can also have an important impact on the form of material culture through influence which values certain stylistic or functional characteristics over others. There remains uncertainty regarding which aspect exerts greater influence, culture or environment; or whether there is a continuum of influence between the two. Current debate in archaeological theory centers on whether or not there is any degree of individual agency that determines the physical manifestation of material culture (Shanks and Tilley 1987:107). In any attempt to understand the complex nature of the relationship between culture and nature, it is prudent to adopt a multidisciplinary approach. Information gathered through history, ethnography, experimental archaeology, and geography must complement strict scientific data gathering. When looking at monumental public architecture, the contributions that emerge from human geography can be informative, including concepts related to landscape, space, place, and symbolism. These types of analyses allow for what should be explicit in archaeological reporting - meaningful interpretation of the significance of material culture, exceeding a simple "laundry-list" type of reporting from a site. This is not to say that scientific rigor (the prioritization of sophisticated analytic techniques) is not desired, just that the product of an exclusively applied scientific approach is often the reduction of material culture to a minimum and the omission of potential meanings that are culturally relative and extend beyond utility (Tilley 1991:10). Functional analyses are useful as a

starting point from which to elucidate a more complete range of the significance of material culture, rather than being an end in themselves.

The ways in which the material of past cultures are analyzed can be categorized in three ways: those studies which focus on what happens to the material of the archaeological record after it is deposited (post-depositional theory), approaches which focus on the retrieval and sampling of material culture (retrieval theory), and those approaches which focus on the relationship between material culture and the ancient social, cultural and environmental situations that surrounded them (analytical theory). The last of these approaches leaves the most room for interpretation on the part of the archaeologist because it is reliant on information which is no longer directly observable (Shanks and Tilley 1987:1). Analytical theory is also the most useful in trying to understand the importance and meaning of the remains of past cultures.

Some archaeological paradigms liken material culture to a text; implying that there are essential elements of meaning that can be 'read' from the item. The item itself becomes a signifier for other cultural truths or beliefs; depicting meaning differently than a script or written record would (Rose 1980:124, Tilley 1991:17). This meaning of material culture is what can be learned through the work of archaeologists. The utilitarian use of an item is merely one of its functions; it is the socially informed cultural context in which it is used that gives it a multitude of meanings and applications. An item of material culture can be used in a traditional way to replicate social actions and relations or, alternately in an innovative way to provide a subtle insurgence aimed at altering the status quo. The polysemous nature of material culture is often overlooked with strictly scientific or

statistical examinations of archaeological remains. Although it is desirous to understand the multivariate meanings of material culture, they may be difficult to elucidate and understand. Meanings are approximated through the process of interpretation yet cultural and temporal distance separate the interpreter from the original context of the material (Tilley 1991:121). There is also the problem of attempting to understand the meaning of material culture as being a one-to-one correlate for aspects of meaning. The significance of the meaning of an item of material culture is not always apparent; meaning is reflected, produced and re-enacted through the use of the item; it is the human activity surrounding the item that gives it meaning such that the "people" cannot be separated from it (Tilley 1991:126).

SPACE, PLACE, AND EXPERIENCE

Cultural meanings are only unimportant for those who choose to make them so

[Tilley 1994:2]

A useful concept to consider when trying to understand the interface between the natural and cultural worlds is the idea of landscape archaeology, and the differentiation between space and place. Instead of seeing the environment as somehow deterministic regarding human behavior, this view introduces ideas of integration between the natural and cultural worlds, and views them holistically so that meaningful discussion regarding the cultural landscape results.

The relationship between the terms 'space' and 'place' can be understood as a separation of geographic space, where cultural influence or signification of the environment gives meaning to the term cultural landscape. The terms 'space' and 'place'

have often been used interchangeably, yet in a sense, 'space' is the more abstract term. Space has been considered by the New Archaeology as "an abstract dimension or container in which human activities and events took place...the implication of this perspective was that activity and event and space were conceptually and physically separate from each other" (Tilley 1994:9). This view of space effectively disjoins it from the influence of human agency. Adding the dimension of agency results in undifferentiated space becoming 'place' as it is endowed with cultural significance or value (Tuan 1977:6). Additionally, there is an aspect of experience that is inherent in the definition of place, that is not necessarily required when referring to geometric space. Places, more so than spaces, are physically constructed in the world, but also dwell in our memories of them through repeated encounters (Buttimer 1980:24; Relph 1989:25). Each term requires the other for its definition. It is interesting then, to look at one function which replicative architecture may serve: to establish a sense of place. For instance, when there is a replication of architectural types in an area (the *sacbeob* of the Maya region, for instance), the builders were potentially trying to achieve a sense of a universal 'place-building'. In other words, every time they constructed a similar public edifice, they may have been attempting to approach some ideal replication of place, feeling or belief. A prime function of any type of architecture is to create a place through the bounding of space, resulting in an inside and an outside, and providing a channel for movement through the now culturally significant and bound space. Architectural constructions create, recreate, produce and reproduce existential space and in doing so, frame perceptual space (Tilley 1994:17).

Phenomenology

There is an additional significant element that affects any discussion of place: that of experience. The act of experiencing place is what gives it meaning (Tuan 1977:5). This meaning can be multi-layered and diachronic. The 'emic' experience of a specific place or architectural construction is that of an individual or group who is part of the culture that built the place. Today, we are just as fascinated by going to the significant places of past cultures, and thus the experience of the archaeologist when he/she goes to a place must also be taken into account when trying to enumerate the entire experiential significance of a place (Tuan 1977). Some analyses ignore the experiential aspect of place, but it is our specific qualification as human individuals that allows for a shared interpretation of place based on experience. Of any type of facts, we are uniquely qualified to present those that have to do with the human perspective (Tuan 1977:5). The importance of the experience of landscape is emphasized when a collective shares the meanings of a place, to a degree more than the experience of a lone individual (Cosgrove 1984:18; Godkin 1980:73) One of the most significant ways to describe a place, is to describe it as it can be experienced by a subject (Tilley 1994:12). An opposing view would entail a purely descriptive study of place, devoid of an experiential aspect, and focus on the presence or absence of specific characteristics within the place itself (Hirsch 1995:8). This viewpoint does not emphasize the culturally relativistic cognitive understanding of place that is informed by symbolic anthropological studies, where the symbolic importance of material culture and place is valued.

Phenomenology attempts to understand the meaning of place; without any distortion or reduction by positivist analyses based on statistical significance or other sorts of number-crunching. The emphasis in phenomenological studies includes aspects of the environment, sacred space, environmental behavior, place-making and architectural design as they can be experienced (Seamon and Mugerauer 1989:2).

Portals: Threshold and Liminality

Large-scale, public architecture serves to create "place" in the landscape, but it also provides the venue through which the flow and movement of people is funneled. The places where people move through the cultural landscape, and perform various activities, could not possibly hold equal significance to all users. This implies that there are some architectural places which are charged with different experiential aspects. There must then be zones that function as the transitional areas between different architectural places. It is specifically these liminal areas of transition which are important to consider. Site layout principles in the Maya area are significant in that architecture often maps aspects of cosmology onto the landscape (Ashmore 1992:173). Specifically, layouts such as the twin pyramid group at Tikal provide a mini cosmogram where architectural constructions 'stand in' or symbolically represent aspects of cosmology. It is significant that on the southern side of these groups a building with nine doorways can be found (Sharer 1994:167). The number nine was significant to the Maya as they believed that there were nine levels of the underworld, Xibalba. Alternately, the buildings themselves, such as structure EVII-sub at Uaxactun, can be oriented in a direction that is significant because of their relationship with the movement of astronomical bodies.

Spatial analyses of the organization of sites has emphasized the transitional zone between the site core proper and the adjacent space in the immediate area surrounding the site. One of the most significant occurrences at Maya sites is the frequency that ballcourts, a public architectural complex with ritual and symbolic importance, can be found in this immediate transitional zone between the site core proper and the adjacent, non-core space (see Ferguson 1999). Ballcourts are the physical manifestation of the portal to the Maya underworld, thus the access between the corporeal world and the supernatural one is physically located in a transitional spatial zone. Traditionally, this zone exemplifies the differentiation between the residential or public/administrative parts of the site and ritual or ceremonial areas.

The idea of threshold is that it is a place that embodies the pause between two worlds. The metaphoric doorway can imply a movement through place and time, involving the spatial memory or traditions which occur in that place (Lang 1989:207). Though the threshold divides the sacred from the profane, it is also the place where the two worlds communicate, and transcendence or passage becomes possible. The architecture functions as both doorway and symbol (Eliade 1959:25). The one requirement for an architectural area to function as an aspect of threshold symbolism is the presence of people. A dialogue on liminality does not exist independently, and could not be "uncovered" in the archaeological record. It is the people who used the place that give it meaning. Portals themselves become socially charged when their experiential significance is considered. "My history is present at the portal and is preserved in the benign lingering or haunting

presence of the people who have passed through this gateway...revealing the sustaining presence of others at every door" (Lang 1989:207).

LANDSCAPE ARCHAEOLOGY

Landscape archaeology usefully marshals the concepts of space, place and experience as a framework with which to view and interpret the material remains of past cultures. The unit of study is the cultural landscape, which can also be said to reflect and replicate social relationships. The term landscape has been used in a variety of ways in different contexts. Strictly speaking, it refers to the surface of the earth, or a part thereof, and tends to be studied through geographical inquiry (Cosgrove 1984:13). Initially, the term was used as a technical term in reference to painting. The appeal of the term was applied to natural, geographic space when people recognized the beauty in the rural landscape, and that it was almost artistic in its expression (Hirsch 1995:2).

The concept of landscape can be further embellished to refer to what is known as the 'cultural landscape'. The cultural landscape refers to the result of human interaction with the natural landscape; where people are the agents, human action upon the natural area is the medium and the cultural landscape is the result (Leighly 1963:343). Through the combined sum of individual's actions, the natural elements in the environment are appropriated to reflect cultural significance, from vegetation to stone and the earth itself (Daniels and Cosgrove 1988:1). The impact of human agency on the environment can further be seen to be a product of social interaction. The social organization of a society does influence how its members interact with their surroundings (Cosgrove 1984:14). Landscape is a product of social and cultural influence, a limitation imposed on how we

view the world around us. There is an essential shared cognitive template amongst the members of specific cultural groups in that how we experience our surroundings, what we value, what we consider useful or attractive; is culturally prescribed. In essence, there is no useful way to try to separate the natural/cultural dichotomy in space and place, as many studies in geography and anthropology have expressly set out to do: to define the essential, non-subjective element of geometric space using a Cartesian model (Hirsch 1995:8). By their very nature, cultural landscapes have a subjective component, witnessed by the fact that they were built by people. This is not to say, however, that this is a privileged cultural understanding that may never be understood by archaeologists, or that the humanist influence is not always considered in attempts to understand the significance of the material cultural remains of an ancient culture. Rather, where purely functional analyses have attempted to explain the economic utility of material culture, a symbolic or subjective appraisal of the landscape has been emphasized less.

In sum, the cultural landscape can be said to have a 'dual ambiguity' in that it is both an overt object, and a subject of human agency. Therefore, there remains an aspect of meaning in the landscape which lies 'beyond science'. This meaning is both culturally and historically significant, and not necessarily discernible through studies which utilize analytic techniques that emphasize scientific, law testing hypotheses alone. There is a symbolic dimension of this meaning which was implicit to those contemporaries who came into contact with the landscape itself (Cosgrove 1984:15, 18). This refers again to the importance of the subjective experience of landscape, and that depending on what is culturally valued, different characteristics of a landscape may have been differentially

valued. The cultural landscape can be described as containing only those characteristics judged significant by humans; the fusion of the physical world and cultural constraints. Of course these meanings can change through time and space, and it is these differences which the archaeologist seeks to know. The utilization of multidisciplinary approaches to archaeological inquiry is precisely how these differences can be approximated (including aspects of ethnohistory, historic accounts, human geography etc.). The significance of landscape then, must be enumerated with the adage, "the whole is greater than the sum of its parts" in mind. The elements which constitute a landscape create a totality of interrelated parts which is more culturally significant than an assessment of just the parts would infer (Leighly 1963:325).

The most important underlying element to understand when referring to the cultural landscape is how our perception of the interaction between culture and the environment is formulated. The concept of the cultural landscape enables a dialogue of sorts to exist between the individuals and groups of a specific culture and the environment. The environment informs the cultural structure which is constructed upon it, but there is a simultaneous influence upon the environment by the culture itself - the two are not mutually exclusive, but work in concert to create the formation of the cultural landscape. It is this way of dealing with the natural/cultural dichotomy that is omitted in strict environmental determinist models (Hirsch 1995:9).

THE SOCIAL ROLE OF LOCALE

The place where a specific activity occurs can be seen as a context for social action. The built physical environment reflects the nature of the social relationships of

which it is a product. The control of the means of production manifests itself in different ways in different cultures, and there is thought to be a requisite level of social complexity to build structures of a certain size. The built environment is involved in the processes of social production and reproduction, specifically in the sense of the place itself being a necessary prerequisite to a particular social action (Buttimer 1980:26; Tilley 1994:19). This ties in to the concept of 'tradition'; essentially a form of social reproduction itself. Through the honoring of tradition, specific places take on social meanings where repetitious action assures the participants that they are doing something 'correctly'; be it through the re-enactment of a ritual, or a functional activity such as planting a field (Giddens 1979:200). This does not mean that tradition is static, in fact, it may change to accommodate specific changes in other aspects of cultural life, such as economy. Traditions show how many aspects of culture resonate within the religious beliefs of a culture, and thus merit examination. Place itself is defined by social relations and the cultural interface with the environment. As such, place becomes a medium for action, and can no longer be described as a neutral area. In fact, place becomes important in political considerations and social reproduction (Tilley 1994:17-20).

An examination of the spatial boundaries of a culture can be used to infer aspects of its social organization. Monumental public construction reflects the type of political organization that was present, as it indicates the type and availability of labor resources (Renfrew 1984:12). Energetics studies in the Maya area have repeatedly concluded that the impressive public architecture characteristic of many large Maya centers was a result

of a large labor force (opinions differ as to the degree to which this was as a result of coercion) (Abrams 1994).

One problem that must be addressed in the attempt to postulate social relationships from looking at material culture is that patterns of social interaction are rarely static, and the study of something such as monumental public architecture does not fully inform us regarding the true complexity of social realities (Hirsch 1995:22). In essence, we are only looking at a snapshot, and trying to piece together the whole picture. This is not to say, however, that something of the dynamics of the social world cannot be postulated from the study of material culture.

Material culture contributes to social relationships in a multitude of ways: as currency, as a resource to be controlled and exchanged, and as a medium to represent social interaction. Many studies of material culture aim to recognize patterns which correlate with segments of the social system that utilized the material, in the attempt to piece together a picture of the social whole (Shanks and Tilley 1987:55). Of course, material culture is not a direct reflection of an entire social structure because it cannot hope to represent so complex an entity of which it is itself a part - one that serves as an active symbol and ideological agent (Shanks and Tilley 1987:107). It is, however, the material with which social relationships are lived and experienced. Material such as monumental public architecture bounds the place where social interaction occurs. In turn, it is social interaction which gives meaning to material culture (Wilson 1980:139).

THE SYMBOLIC AND SACRED LANDSCAPE

The symbolic aspects of landscape also merit examination. In traditional societies, where shamanism was the form of religious practice, there existed a reverence for the natural world which saw it as being meshed with the corporeal and supernatural realms. The Maya held such beliefs towards their surroundings, specifically towards the sacred mountains in the landscape. Mountains were considered to be the dwelling place of the gods, and they were worshipped at mountain-top shrines (Freidel, Schele and Parker 1993:127). This view was transposed to architecture so that it was seen as the embodiment of myth and cosmological thought (Tilley 1994:20-1). The temple pyramids of the Maya are thought to have been representations of the sacred mountain, so that the architecture replicated the sacred aspects of the natural world in a built ritual environment (Schele and Freidel 1990:71-2).

The practice of ancestor worship also manifests itself in the built environment. The flow of people moving through the landscape is reflective of an underlying shared cognitive template that is culturally derived. By this I mean that individuals involved in processional movement through the built environment would have experienced the architectural nuances that shaped their journey and known what they signified. For the Maya, the connection between the living and the ancestors was a portal that was signified symbolically by ritual architecture such as altar monuments and ballcourts. This ancestral linkage to the cultural landscape allows the living to exercise their social power and to legitimate it through ritual, in addition to forming a permanent bond between individuals and the land. This emotional attachment to specific architectural complexes which define

space is one of the essential elements of place-making (Tilley 1994:202). Further, it established a significance for specific places through the building of a cultural memory for that place, amplifying its symbolic importance. Thus, even representations of a cultural landscape, such as those seen in artistic depictions, emphasize the cultural meaning of that set of elements (Daniels and Cosgrove 1988:1).

Architecture also takes on symbolic importance for a culture as an icon, representative of social or political unity. For example, the building of the Canadian Pacific Railroad has been cited as a contributing factor in the unification of the nation of Canada (Haggett et al. 1977:68). The contribution of the railroad towards the unification of Canada in an economic sense cannot be denied, but there is also the coherence of thought which is associated with the railroad as a linking symbol of unity.

The built environment can take on important symbolic aspects while fulfilling other more mundane requirements. The sacred nature of some items, from the natural world or the built environment, gives them an essence that is referred to as hierophany (Eliade 1959:12). Hierophanies continue to remain themselves (trees, stones), while they also signify something else. The polysemous nature of what a sign can signify suggests that the symbolic aspects of architecture are more than arbitrary (Giddens 1979:16). The architecture of the ancient Maya also undoubtedly held such multivariate meanings.

LOCATIONAL ANALYSIS

One of the key questions to be answered in considerations of the cultural landscape is why certain areas were chosen for certain activities, and as the locales for specific built forms. A functional analysis of the environment or surrounding ecological area would take

into account water supplies, climate, soils, and seasonal availability of resources. This approach is centered on the assumption that there is an economically rational reason for the decisions related to site location (Tilley 1994:2).These reasons undoubtedly held a great deal of sway in the decisions regarding activity area and site location. However, a point counter to this type of argument would be that people chose to interact with the environment in places which are symbolic and significant regarding social memory and tradition also. The reality of site location selection probably takes into account both types of reasons: practical and symbolic. People would not tend to select an area solely on its symbolic virtue specifically if there were no practical reasons to build there (Tilley 1994:2).

In focusing on practical reasons for route location, analyses have typically fallen under the umbrella of locational theory, of which route location is a part. A single route is the smallest unit of consideration in locational theory, as the smallest element that makes up a network (Haggett et al. 1977:65). In attempting to apply these principles to the *sacbeob* of the ancient Maya, one must first assume that they do function as many have postulated, as roadways for the facilitation of the transportation of individuals. The most basic principle of route location is that it is the most direct path between two places, optimizing positive deviations (where the route may be altered slightly from a straight path in order to include a peripheral settlement along the route), and minimizing negative ones (high cost building areas or deviations to avoid insurmountable barriers) (Haggett et al 1977:65).

Route location has been analyzed under the discipline of human geography, which has relied heavily on mathematical and quantitative methods to describe the areas chosen for routes. A simplistic look at an economic model of route location would simply compare the building cost of the route (including material and labor costs), with the newly gained trade benefits of the access-way to describe network optimization (Haggett et al. 1977.75; Morrill 1970:115). This seems to fall short of a complete description of the importance of a route as it does not include any aspect of how individuals act regarding personal preference, sentiment, tradition or simply for the acquisition of a scenic view. The *sacbeob* of the ancient Maya for instance, cannot be satisfactorily categorized by the principles of route location alone.

Linear Connections in the Landscape (Paths)

A formalized path through an area of space transforms it into place. The location of such a path depends on prior use of the area, where people previously moved through the landscape and established a pattern of flow of movement. Paths establish and maintain social linkages at the individual level, as well as at the level of larger political affiliation. They emphasize past pathways of communication, and offer direct, tangible evidence of cultural interaction as they not only open up territories, but map a structure of connection atop an area (Topic and Topic 1983. 237).

The architecture which is linked by formalized paths is said to have structural homology in that it is unified in a concrete way and allows for the possibility of repeated actions along the path itself (Tilley 1994:30). Again the concept of tradition comes in; through confining the direction of movement, paths provide an area where people

explicitly follow in the footsteps of others, along a sanctioned route. This act of movement becomes tradition as it slowly becomes accepted as the "best way to move through the area", and emphasizes social relationships which are themselves reinforcing the status quo. The introduction of new paths, hence new linkages between constructions which introduce the potential for new repetitive movements, is a mechanism which merits further examination. Might it be restricted to certain members of society who have the right to introduce new architectural linkages between areas? "State" sanctioned control of public construction such as formalized pathways can emphatically reinforce the elites' right to rule, or a change in tradition can be peripherally introduced to bring about change in the established order (Tilley 1994:31). Either way, the architecture itself legitimizes the ordering of space to construct 'place' and reinforces a social hierarchy, by the preservation of the status quo.

SUMMARY

Some of the considerations which are important to the study of monumental public architecture include contributions from the fields of landscape archaeology and human geography. Essential to this approach are ideas related to space, place and the cultural landscape as well as to human agency and experience. It is the phenomenon of experience which gives meaning to architecture, as it is the social context and activities which occur in the built environment that are significant. The multitude of meanings which an article of material culture can have can be enumerated through analyses which prioritize these aspects in the archaeological record. In sum, the *sacbeob* of the ancient Maya are an example of monumental public architecture that have a multitude of functions: utilitarian,

economic, social, and religious. The remainder of this thesis will focus on a specific archaeological example from the Belize Valley. Excavations along the *Lahkin Sacbe* at the site of X-ual-canil in west central Belize will provide the material to test the viability of tying the ideas and concepts of landscape archaeology, spatial analysis, and social interaction to the archaeological record. In the end, contributions from both functional analyses and symbolic studies will be combined to assemble a more complete picture of the function of the *sacbeob* of the ancient Maya.

CHAPTER III

THE BELIZE VALLEY AND THE X-UAL-CANIL EXCAVATIONS

INTRODUCTION

This chapter will present an introduction to the Belize Valley, with an emphasis on the sites that have *sacbeob*. Special attention will be paid to sites in proximity to X-ual-canil that have similar configurations of associated architecture as the *Lahkin Sacbe* and the *Te Tun Na* Group. A detailed description of the 1996 and 1997 excavations that were conducted along the *Lahkin Sacbe* and at the *Te Tun Na* terminal group at the site, under the auspices of the Social Archaeological Research Program, will also be included. The unit location strategy, archaeological methodology, and excavation results of units placed in structures 14C, 15C, the *Zuhuy Ha* reservoir, in association with Stela 1 and Altar 1 and along the *Lahkin Sacbe* itself, will be discussed. In addition, information regarding the relative dating strategies utilized to provide a temporal framework for the excavations will be presented. Throughout the descriptions of the excavations, the field-produced maps of the architecture and material cultural remains will be presented so as to provide visual maps with which to understand contextual and spatial associations. An analysis of the recovered artifactual remains will also be presented.

THE BELIZE VALLEY

The Upper Belize River Valley is situated in west central Belize and has been the focus of numerous archaeological research programs in the past several decades (see Figures 1 and 2). The area along the Belize, Macal and Mopan rivers is characterized by rich alluvial soils, ideal for agriculture. Proximal to these alluvial floodplains in the westernmost

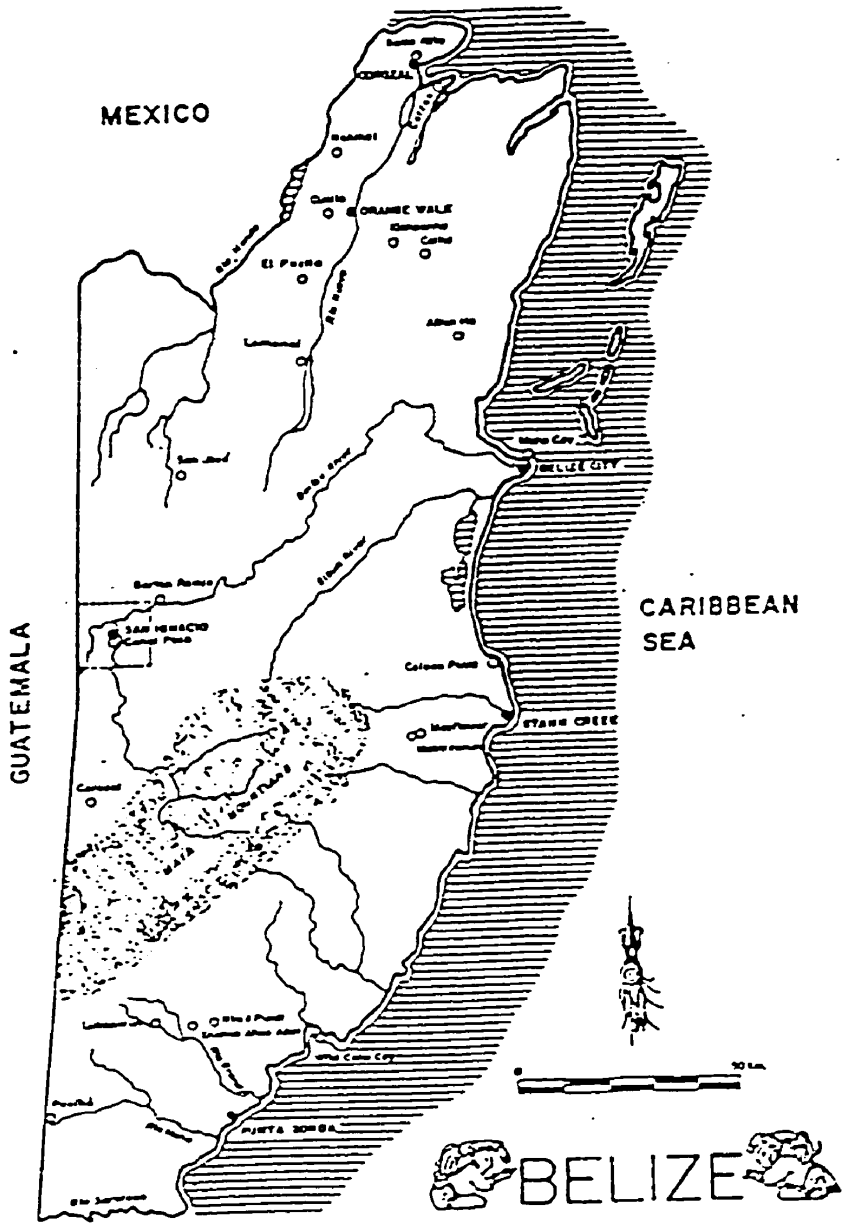

Figure 1

Map of Belize
(from Awe and Campbell 1989:3)

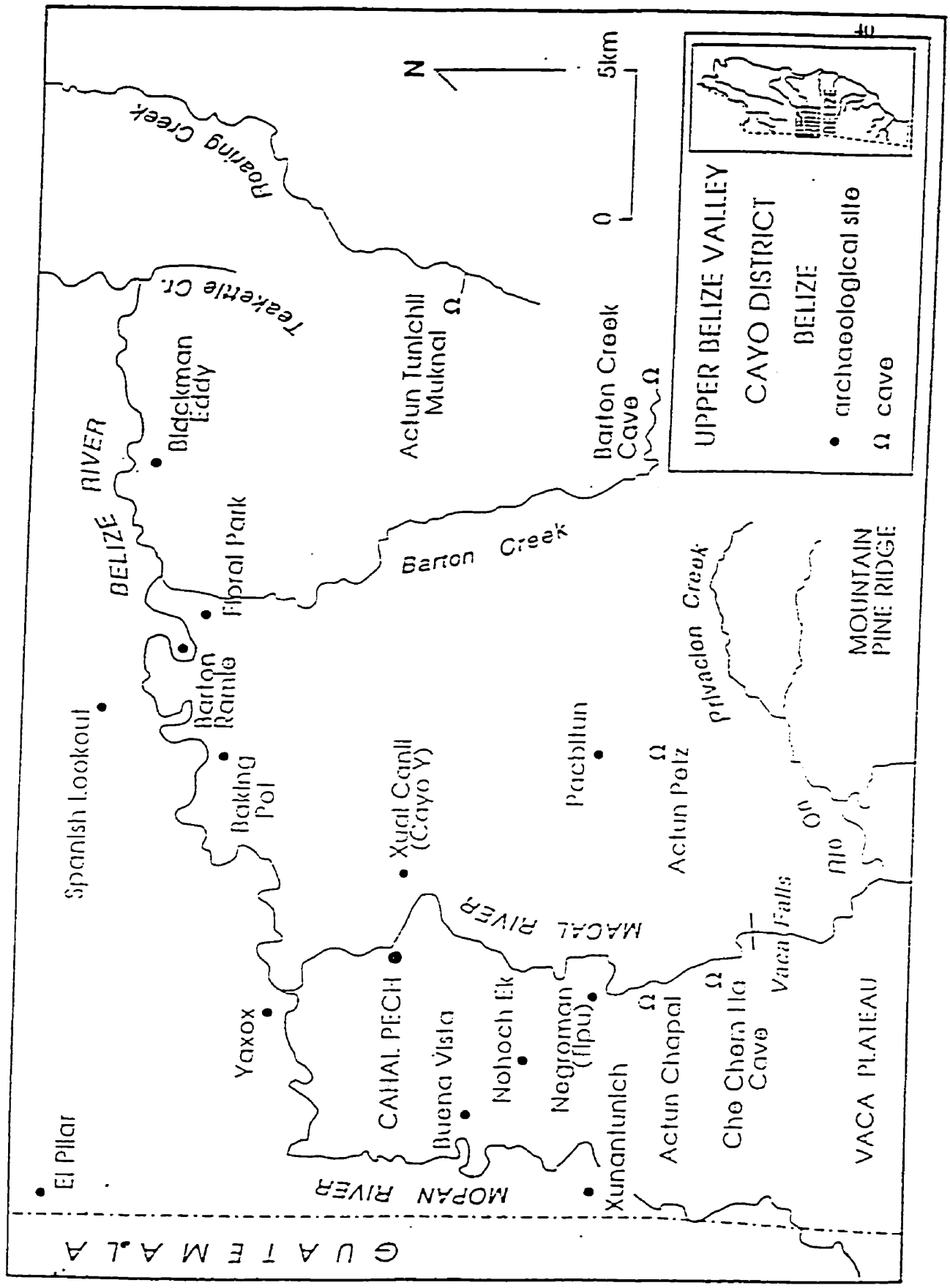

Figure 2
Map of the Upper Belize River Valley (from Awe et al. 1997:82)

regions of the Belize Valley are low lying limestone hills which form the buffer area into the Vaca Plateau and Maya Mountains to the south. Many of the ancient Maya sites in the region are strategically located atop these limestone ridges and hills (Cahal Pech, Pacbitun, Xunantunich, Zubin, X-ual-canil), to take advantage of the highest points of the natural topography for defense, panoramic view, and increased breeze. Alternatively, sites such as Baking Pot are situated in the valley bottom, adjacent to the Belize River. A discussion of several of these sites follows, with specific attention paid to those sites which exhibit intrasite *sacbeob* similar in configuration to the *Lahkin Sacbe* at the site of X-ual-canil. The site of Caracol will be discussed even though it is outside of the Belize Valley, as it has a large number of *sacbeob* which can contribute to a regional comparison of these features.

Baking Pot and North Caracol Farms

The two main groups at Baking Pot (one residential, one administrative) are joined by a 280 m by 15 m *sacbe* (see Figure 3) The *sacbe* was constructed in one building effort sometime in the Late Classic Period (Cheetham 1995:35). It is interesting to note the presence of a small rectangular structure straddling the east wall of the *sacbe*, just outside the main public plaza (similar to those seen at X-ual-canil, El Pilar, and Cahal Pech). Two subsidiary branches of this *sacbe* (*Sacbe* 1) extend from Group I to the south east towards a pyramidal structure, and from Group II (the elite residential compound at the site) to the south west. It is interesting to note that in two locations (Group I and II), *Sacbe* 1 leads directly into ballcourts which frame formal entrances to the groups. The frequency with which ballcourts and *sacbeob* are found in combination with each other has led researchers

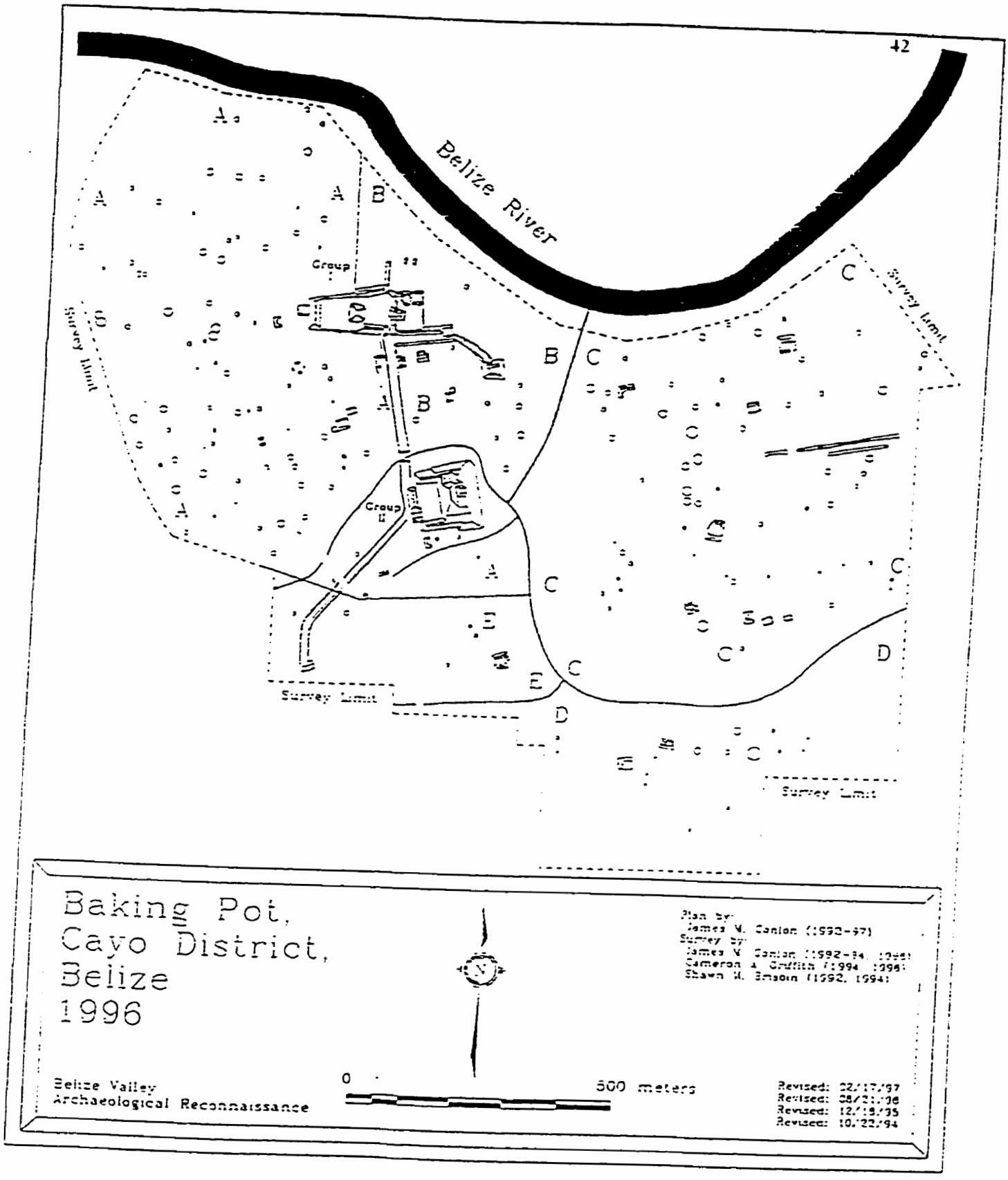

Figure 3
Site Map of Baking Pot (from Conlon 1997:9)

to postulate that they were often constructed together in a unified building effort (Keller 1994:4). They form two of the most important public ritual areas at a site, and may hold implications regarding how public ritual was structured at Maya sites. There is reportedly a second *sacbe* which runs from Mound 76 to the Atalaya Group, which does not show up on the maps for Baking Pot (Conlon 1995:94).

The peripheral group of North Caracol Farms has also been found to have a *sacbe* constructed in association with it. The largest mound at the NCF group (a range structure that is approximately 15 m by 10 m, and 8 m high) is NCF-M1. The *sacbe* runs from the western side of this structure to BP-M154 in an east-west direction. This was thought to have held particular significance in connecting North Caracol Farms visually to the main site of Baking Pot (Golden and Conlon 1996:20).

El Pilar

El Pilar is reported to have an approximately 950 m long *sacbe* that is 30 m wide, connecting the site core itself to Pilar Poniente to the west (Cheetham 1995:36). Although no excavations have been undertaken in association with the *sacbe*, it is further reported that there is a structure which sits astride the *sacbe* in a similar arrangement to structure 14C at X-ual-canil (Clark Wernecke, personal communication 1998).

Xunantunich

Two *sacbeob* have been identified at the site of Xunantunich (see Figure 4). *Sacbe* 1 is a 15 m wide construction which extends from the eastern side of the main plaza to an elite residential compound (Group D). Both ends of this *sacbe* are marked with stelae. The other *sacbe* at Xunantunich is a short, wide access-way which connects the site core on

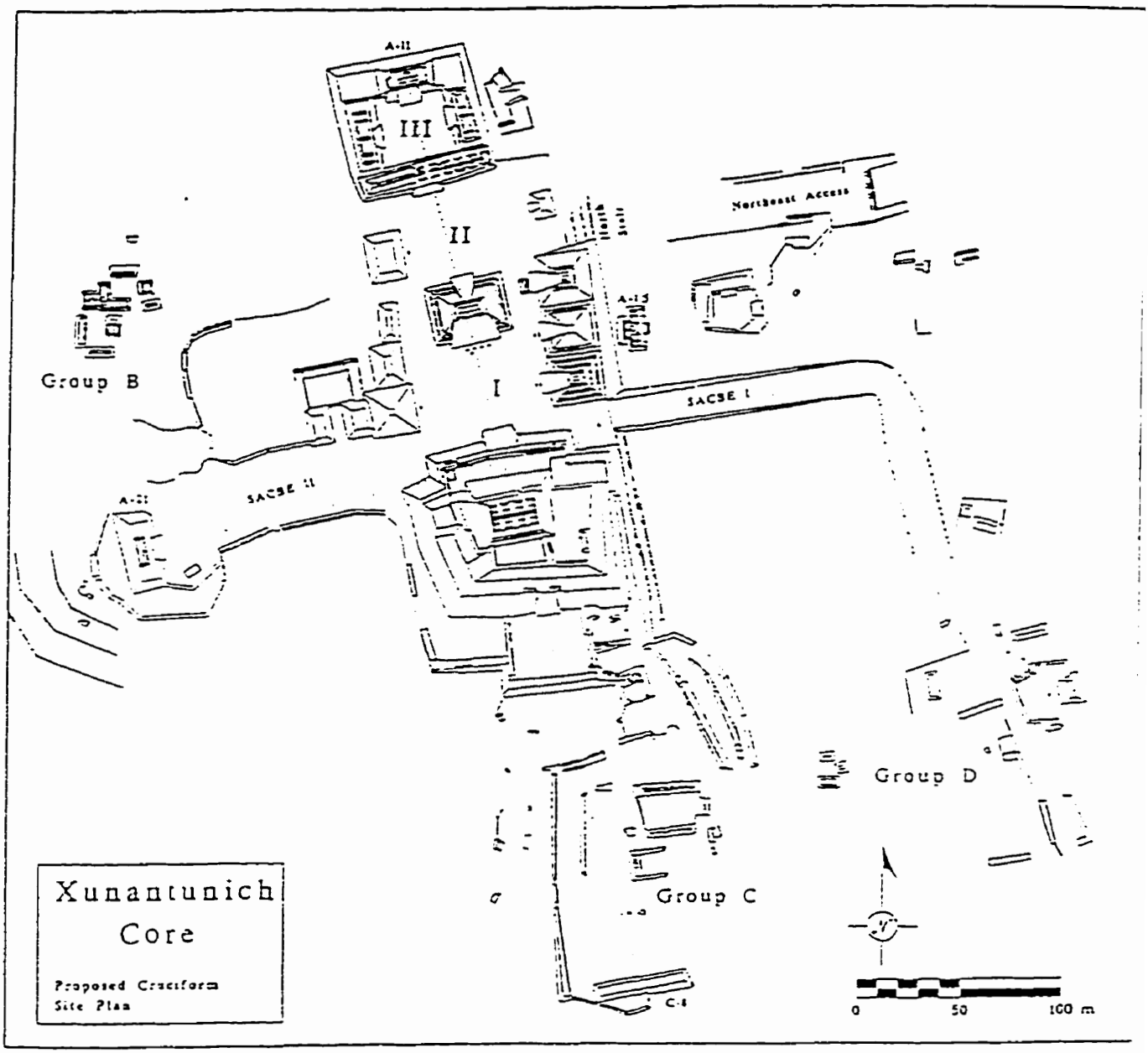

Figure 4
Site Map of Xunantunich (from Keller 1997:117)

the western side of the plaza with Structure A-21, a tall range-type structure which utilizes the natural hillslope to bolster its own size (although the purpose of this structure is not specified; Keller 1995:89). The access to these two *sacbeob* was felt to be different, with *Sache* I being for the exclusive use of the elite individuals occupying the Group A residential complex, while the western access formed an impressive public via into the main plaza (Keller 1994; 1995).

At Xunantunich, there does not appear to be a rectangular structure straddling one wall of the *sache* in a similar position to those discussed for Baking Pot and El Pilar, although, there is an interesting variation of this configuration. A ballcourt is located along the northern wall of *Sache* II, the public access *sache* at the site. This liminal space just outside the main plaza of the site would normally be where the small rectangular structure could be found. This placement seems to reinforce the union between the public architectural complexes of *sacbeob* and ballcourts

Caracol

The site of Caracol, to the south of X-ual-canil, has a reported 17 causeways, forming over 36 km of intrasite construction alone (see Figure 5, Chase and Chase 1994:2; 1996:31). Some of the termini consist of residential groups, considered to be for high status individuals, with the causeways serving as a visual linking symbol between the occupants of the residential complex and the site core (Chase and Chase 1996:31; Jaeger Liepins 1994:52). Several of the terminal complexes (such as the terminus of the *Conchita* causeway) were thought to have served as mortuary repositories for high status individuals (Jaeger Liepins 1994:49). In addition, the construction history at the site seems

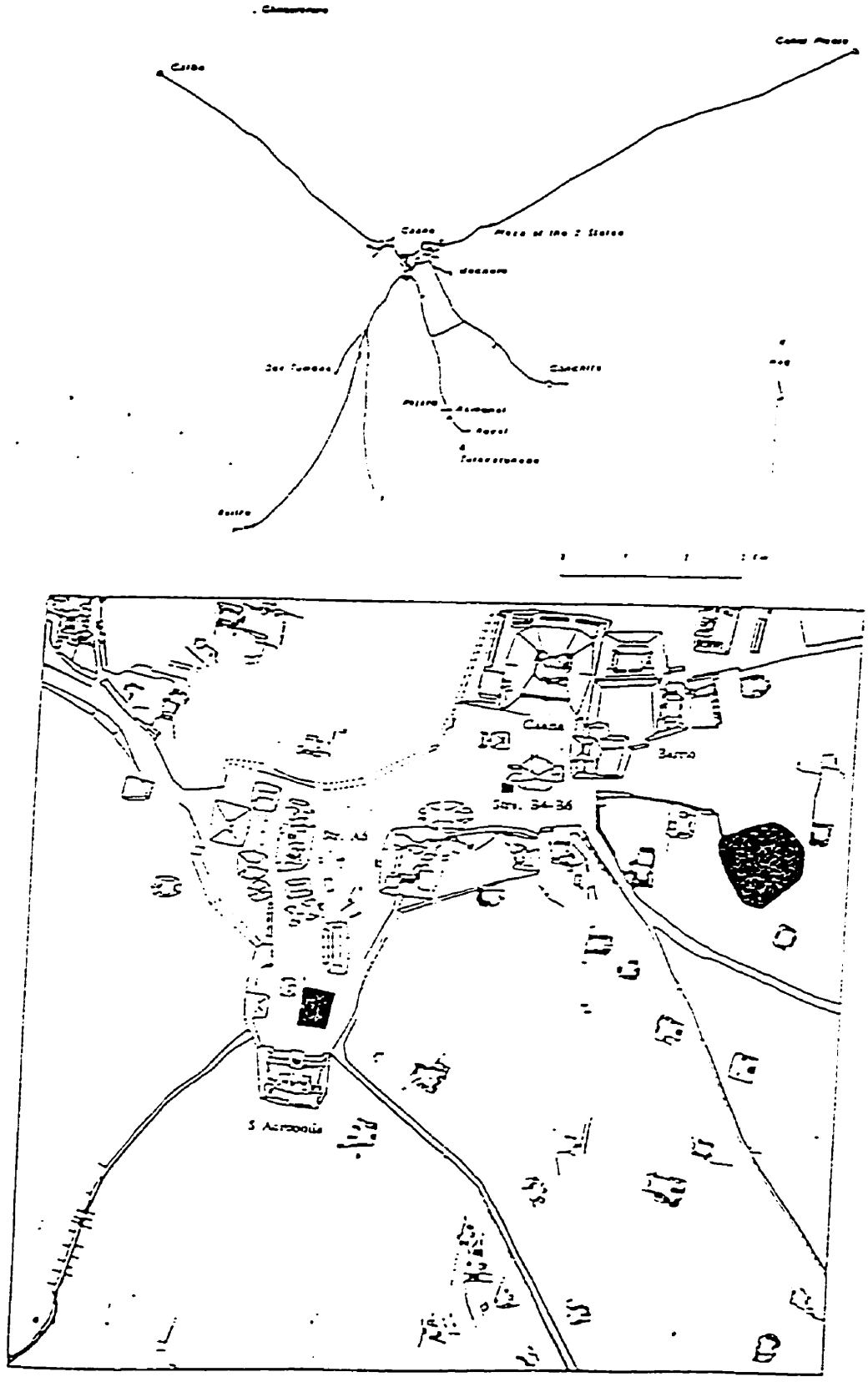

Figure 5
Site Map of Caracol (from Chase and Chase 1994:4)

to indicate that some of the termini originated as autonomous settlement groups or sites, and they were only later connected to the epicenter by causeways during expansion in the Late Classic Period (Chase and Chase 1998:5). There are also terminal groupings which are considered to have an administrative function as they are described as "embedded Caracol administrative nodes" (Chase and Chase 1998:6). Finally, the Chases (1998:7) indicate that there are special function plazas commonly found in association with the Caracol *sacbeob* which were thought to have housed market locales. Thus the causeways of Caracol have been reported to have held a multiplicity of different functions, all the while uniting the greater Caracol area.

Pachitun

The site of Pacbitun is located approximately 8 km to the south of X-ual-canil, towards the Mountain Pine Ridge area. Two causeways have been identified at the site, the first is the 230 m long *Mau* Causeway dated to the Late Classic Period (Paul Healy, personal communication 1999), that extends eastward from the main group towards Structure 10 (a temple-pyramid complex; see Figure 6). The other is the *Tzul* Causeway, which starts at a stela/altar monument complex to the south of the main plaza and extends about 1000 m in a southwesterly direction (Healy 1990:251). This is of particular interest considering that the *sacbe* at X-ual-canil is also associated with a stela and an altar.

Cahal Pech

The Martinez *Sacbe* connecting the site of Cahal Pech to the Zopilote Group provides one of the only examples of an excavated *sacbe* and terminus in the Belize Valley (see Figure 7). The *sacbe* is roughly 281 m by 6.5 m and runs north from the *Luuh Be* structure

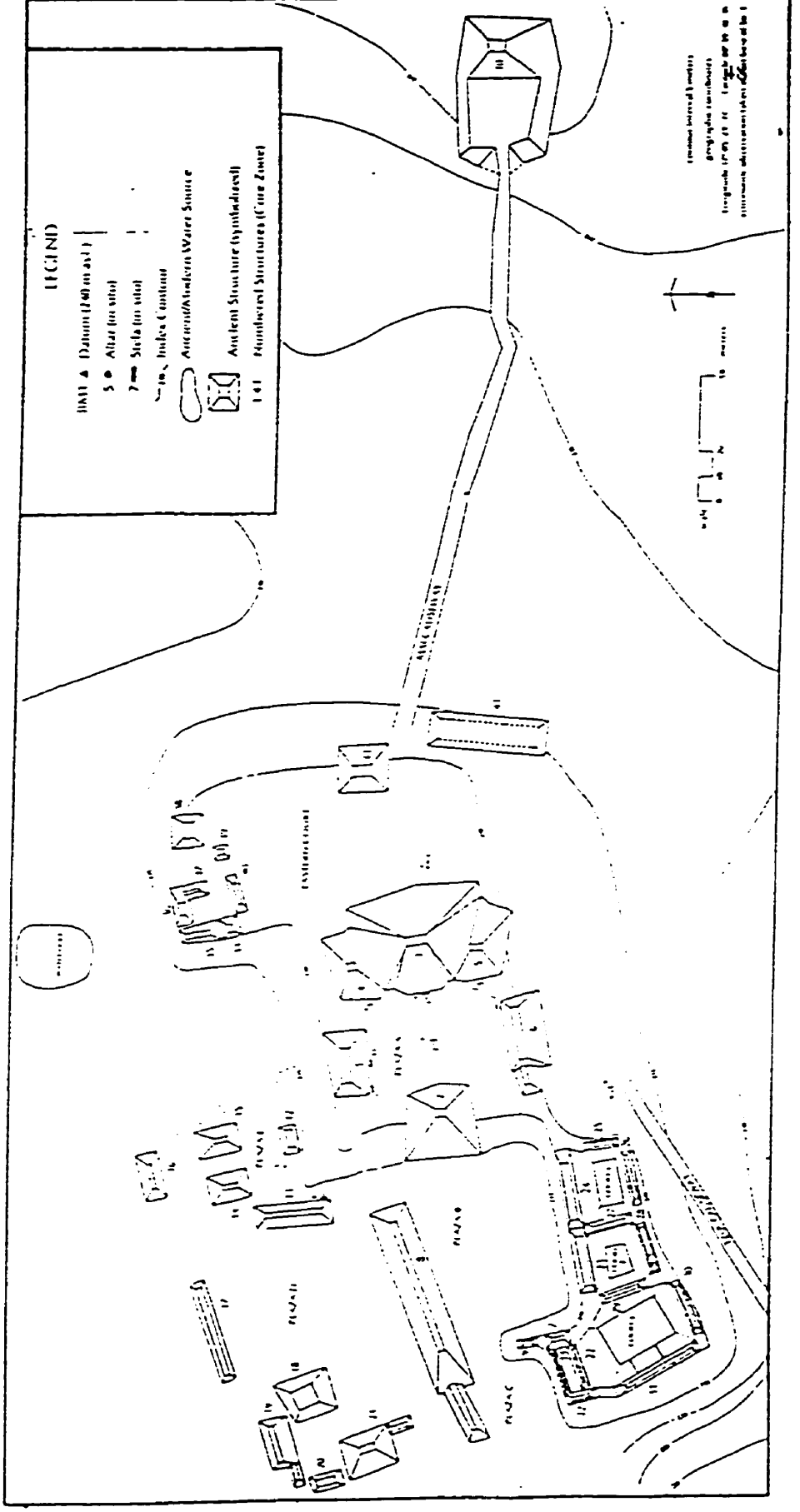

Figure 6
Site Map of Pacbitun (from Healy 1990:250)

Figure 7
Site Map of Cahal Pech (from Conlon 1997:10)

(close to the Cahal Pech site core) towards the Zopilote Group (Cheetham 1994:2). The *sache* was thought to have been built initially in the Late Formative Period, and used into the Late Classic. The Zopilote Group consists of an 11.5 m high pyramidal structure which contained an elite tomb as well as a stela chamber, which were both considered to be associated with high status individuals from Cahal Pech (Cheetham 1994:2). At the proximal end of the *sache* (280 m from Zopilote), a structure designated as *Luth Be* (Structure 3) was found in association with the east wall of the Martinez *Sache* (Cheetham et al. 1995:5-6). Though it was not excavated, the structure was tentatively assigned to a construction phase in the Late Classic Period, based on the assessment of ceramic sherds from an extensive looter's trench (Cheetham et al 1995:6). *Luth Be* is situated in what has become a familiar location for these small rectangular platforms, straddling one wall of the proximal end of a *sache*.

X-ual-canil

The site of X-ual-canil is located approximately 3 km east of the larger center of Cahal Pech in the Belize Valley region of west-central Belize. The site sits on a high ridge on the east side of the Macal River, above Monkey Falls. Previously referred to as Cayo Y, the site was redesignated as X-ual-canil, the Maya word for the dense fly brush that dominates the vegetation at the site. The site was visited in 1954 by a group led by Gordon Willey who classified X-ual-canil as a minor ceremonial center (Iannone 1995b:29). Subsequent visits by Dr. Jaime Awe did not result in excavation of the site until the Social Archaeology Research Program, under direction of Dr. Gyles Iannone, initiated systematic

investigations in the summer of 1996, after a preliminary season of mapping had been completed.

The site core consists of two courtyards, Xaman Nab, the larger plaza surrounded by significant-sized range type structures, and Nohol Nab, the main residential grouping at the site (see Figure 8). The main Xaman Nab courtyard has an adjacent ballcourt, and serves as the initiation point of the *Lahkin Sache* (see Figure 9). The *Lahkin Sache* or "east white road" stretches 363 m from the eastern side of the Xaman Nab plaza between structures 1A and 6A, along a natural ridge line in an east north-east direction (see Figure 10). The *sache* is 19 m wide, thus representing one of the widest features of this type in the Belize Valley region (Iannone 1997:10). The *sache* terminates in the *Te Tun Na* or "tree stone building" group consisting of a low lying platform, in front of which are located both an altar and a stela. Additional features associated with the *Lahkin Sache* include a small platform located approximately 60 meters east of the main courtyard, straddling the north wall of the *sache*, and a small reservoir about 5.4 m in diameter located 20 m northeast of this platform (the *Zuhuy Ha* Reservoir). These features formed the focus of the investigations completed along the *Lahkin Sache* at X-ual-canil.

Some of the preliminary research conclusions after 3 excavation seasons (1996-98), reflect attempts to reconcile the known features of the site with their possible significance, as well as comment on larger site function. One of the interesting features of the site core is the *Lakam Ha* reservoir, which was found in addition to the smaller *Zuhuy Ha* reservoir adjacent to the *Lahkin Sache*. The *Lakam Ha* reservoir is about 25 m in diameter and together with the *Zuhuy Ha* reservoir and the nearby Macal River (1.5 km distant), the

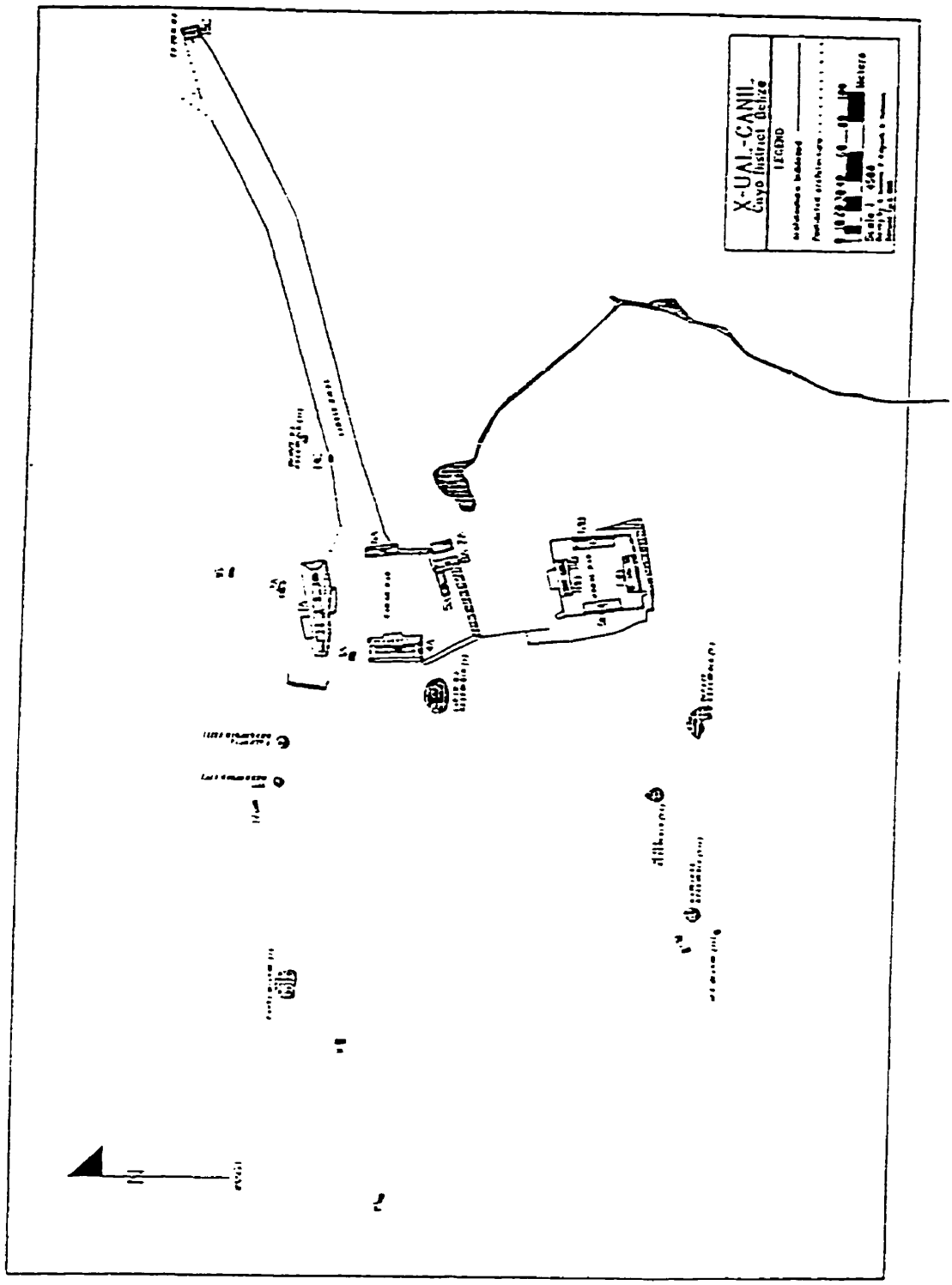

Figure 8

Site Map of X-ual-canil (provided by Gyles Iannone)

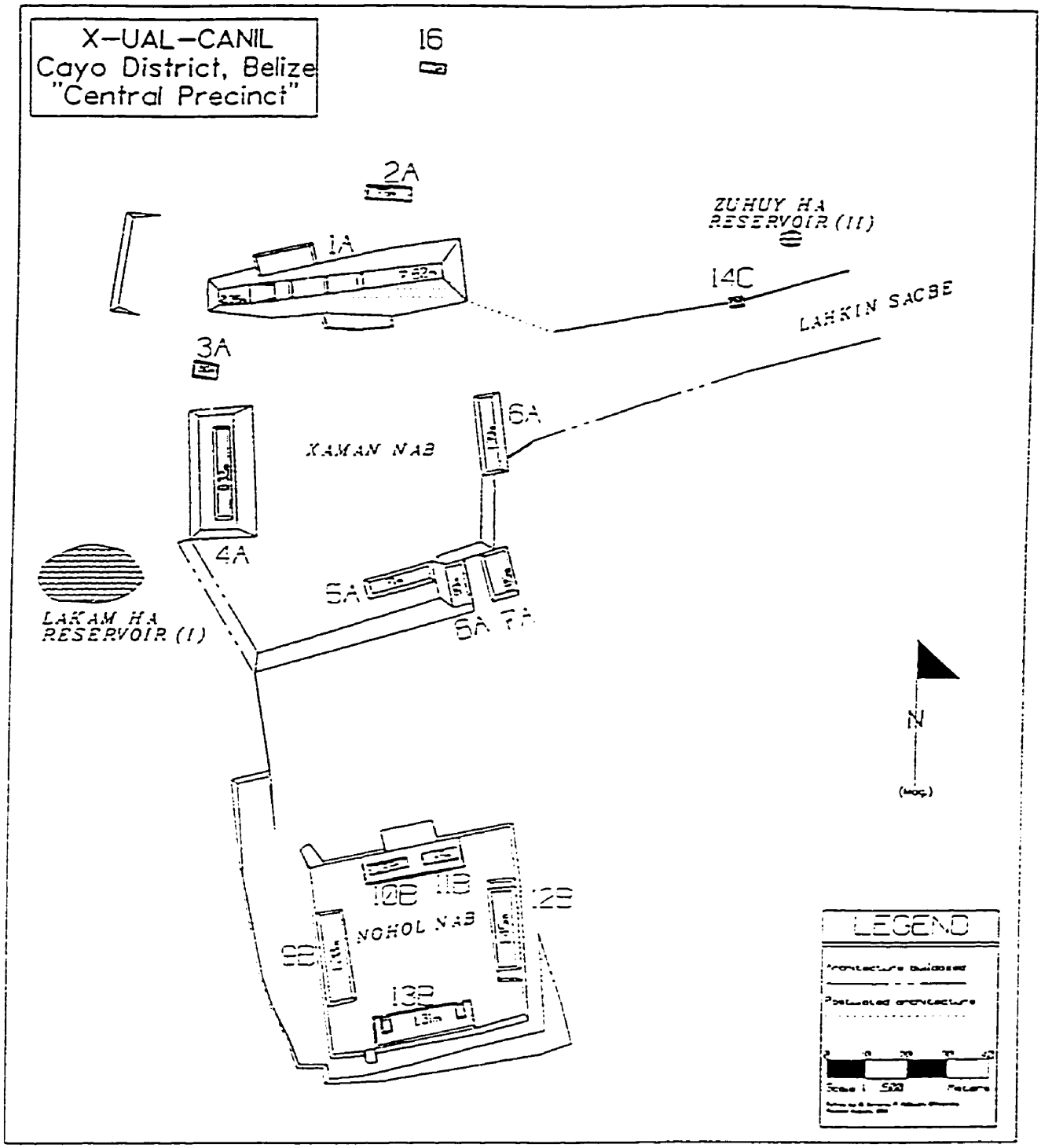

Figure 9

Map of the Site Core of X-ual-canil (provided by Gyles Iannone)

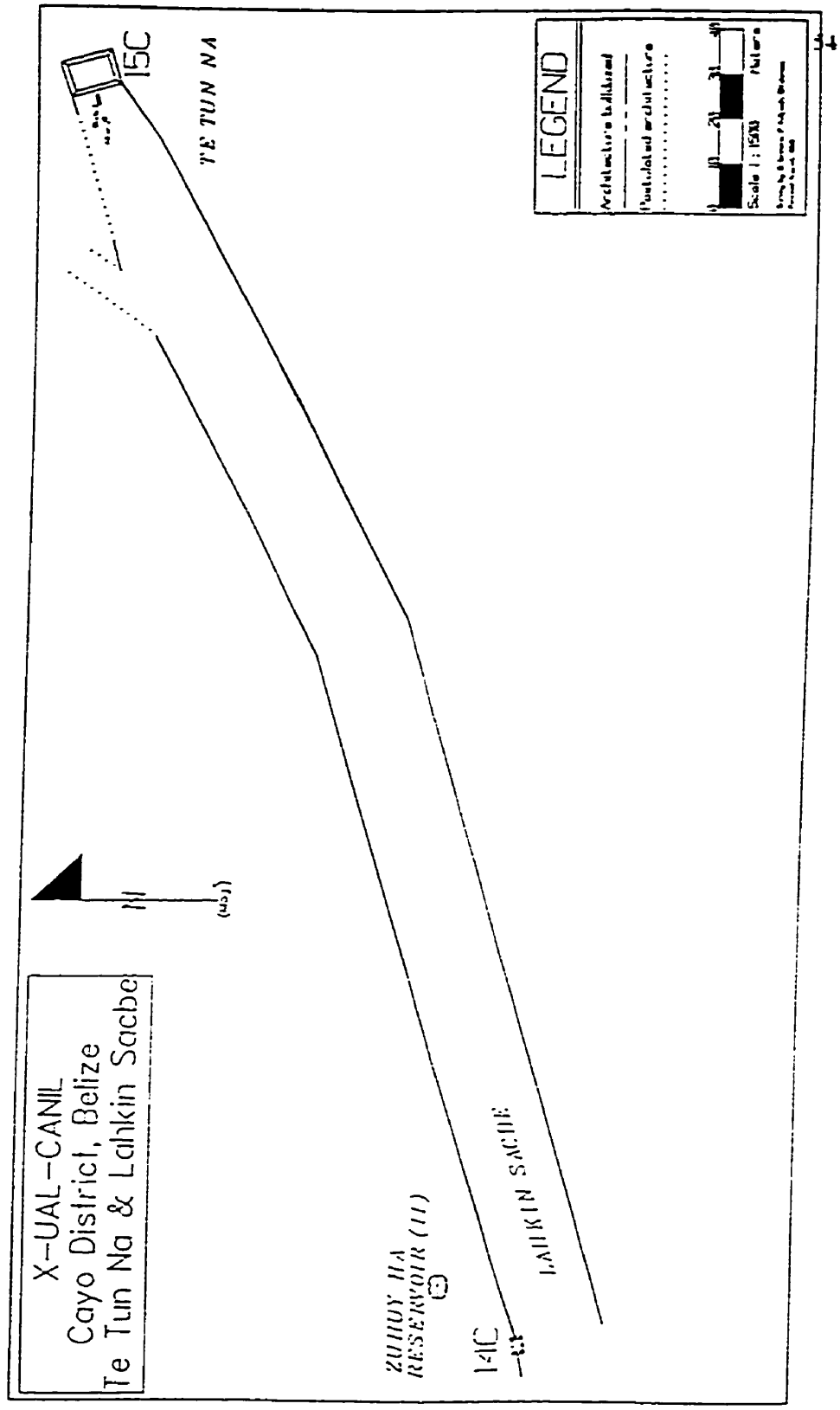

Figure 10

Map of Te Tun Na and the Lahkin Sacbe (provided by Gyles Iannone)

water requirements for the site core inhabitants could have been adequately met (Iannone 1996:17). However, these reservoirs were not the only ones found near the site. Approximately 100-200 m southwest of the site core, at least three reservoirs comparable in size to the *Lakam Ha* reservoir were located, as well as three reservoirs to the west of the Xaman Nab plaza. There were artificial modifications to facilitate the channeling of water into these reservoirs such as funnel channels carved into the bedrock at the head of each. Each of these reservoirs was located at the head of a natural gully which would drain water into a partially modified drainage ditch that runs from two branches near the site core to the fields below the site (generally in a southeast direction). The two main branches of this modified drainage ditch initiated at the ballcourt and near the *Te Tun Na* group respectively. It would seem to be more than coincidence that the two architectural constructions at the site most focused on ritual would be associated with the branches of the modified drainage system. The control of water was undoubtedly one of the major concerns and activities for the occupants of X-ual-canil (Iannone 1996:17).

Additional information which underlines the water control function for the site relates to the work undertaken by Patrick Killpack of the University of London. His investigations provided confirmation that the areas near the drainage system were in fact fields of deep organic soil, identified as being phosphate rich (Killpack 1996:79). This could be used as an indication of agricultural intensification as a result of population density, except in this case, there was sparse settlement in the periphery of the site core. In fact, only four solitary mound structures were located within a 350 m radius of the site core (Iannone 1996:17). Instead of the production of surplus subsistence resources,

Killpack postulates that the site was producing a specialized trade yield such as cacao or cotton (Killpack 1996:82).

This would provide an explanation for the puzzling lack of ancestor shrine on the eastern side of the main Xaman Nab plaza at X-ual-canil, the usual location for this type of construction. The interment of ancestors in a public place would sanction the legitimacy to rule of the lineage in charge of the site. In this case, however, the lack of ancestor shrine indicates that people were burying their ancestors somewhere else, nearby Cahal Pech or Pacbitun would be likely. The site functioned as an administrative center for the management of the water control features of the site, as well as for the agricultural yields. However, people at X-ual-canil did not find it necessary to make a connection between themselves and the land, perhaps because they came from another nearby site, such as Cahal Pech or Pacbitun, and still had ancestral ties there. The relatively late fluorescence of the X-ual-canil core can be understood as one of the larger, more established sites taking control of the hilltop and thus the related resources where X-ual-canil is situated. This is confirmed by the presence of relatively little settlement near the site core itself, although there is dispersed settlement at the bottom of the hill which dates to earlier periods, probably representing small corporate group farming efforts in the Late Formative and Early Classic periods (Iannone 1997:14, 16). The presence of the large range type structures in the Xaman Nab plaza as administrative loci for the management of the water control features of the site as they relate to the production of the agricultural fields below the site makes coherent sense. Thus the site housed administrators who managed the agricultural yields of the site through the integration of an extant farming population.

Although seemingly economic in nature, part of this integration was related to ritual and ideological life, as can be seen by the presence of ritual architecture at the site such as the ballcourt and the *Lahkin Sache* (Iannone 1997:16). The examination of the role that one of these ritual loci held was the purpose behind the excavations along the *Lahkin Sache*, a description of which follows.

EXCAVATION METHODOLOGY

The location of excavation units was non-random and selected on the basis of the reconnaissance of above-ground features. Units were located in areas which were thought to have the greatest potential to reveal data related to chronology, ritual activity and architectural construction. Excavation techniques consisted of the removal of natural and cultural levels with the use of hand trowels and hand picks. All materials were screened using 1/4 inch screens, and all culturally modified materials were collected for processing and later analysis in the field laboratory

TE TUN NA EXCAVATIONS

The 1996 field season focused on the excavation of the *Te Tun Na* Group, including Stela 1, Altar 1 and Structure 15C (see Figures 11 and 12). The desired outcome of these investigations was to solidify a chronological framework for the *Te Tun Na* group, as well as to further define the features associated with the terminus of the *Lahkin Sache* with regard to potential functional utility.

Stela 1

This monument, made of compact limestone, was lying just in front of Structure 15C at *Te Tun Na*. The stela was fragmented into several pieces (over 15 in number), many of which

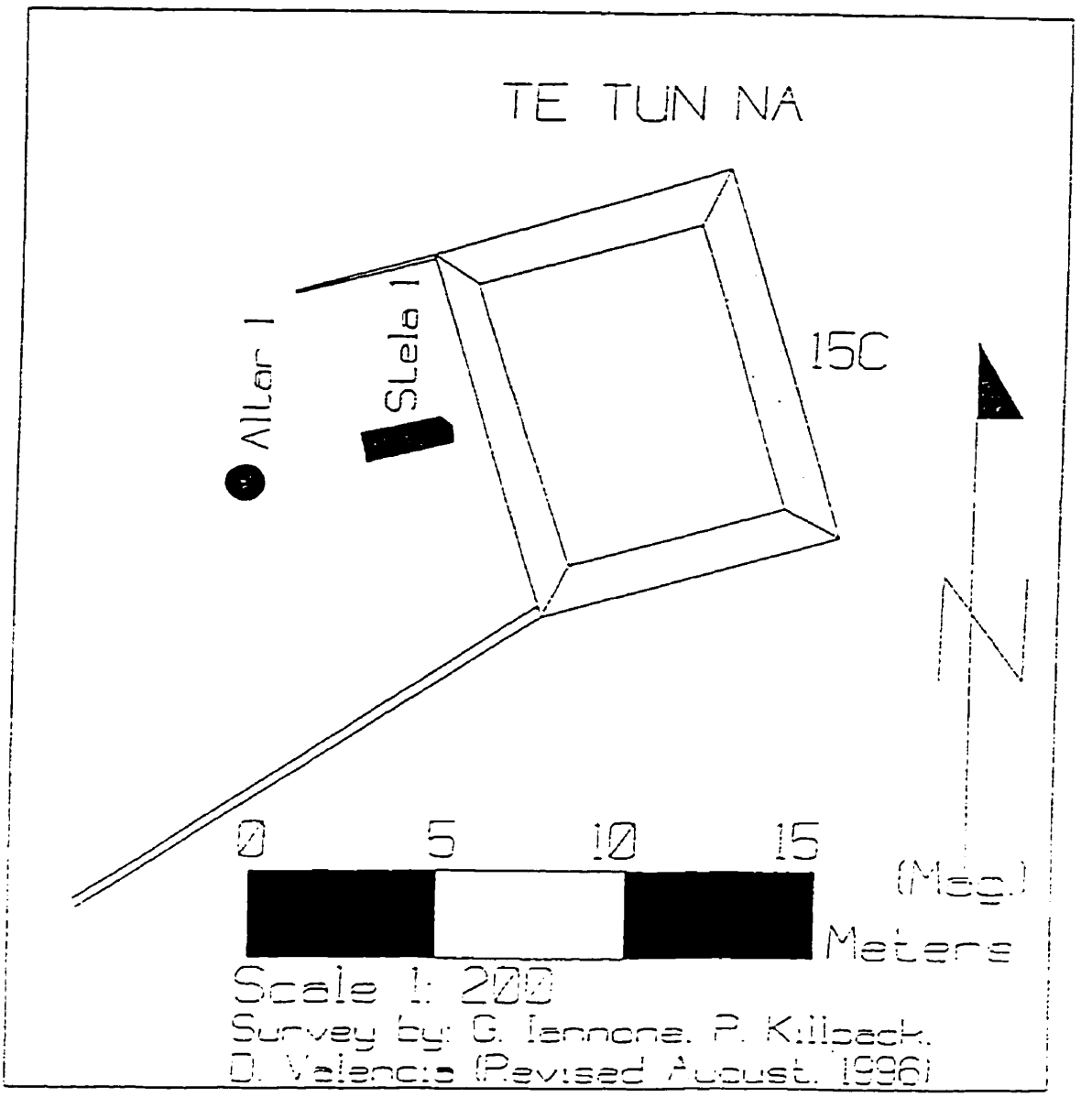

Figure 11

Map of Te Tun Na (provided by Gyles Iannone)

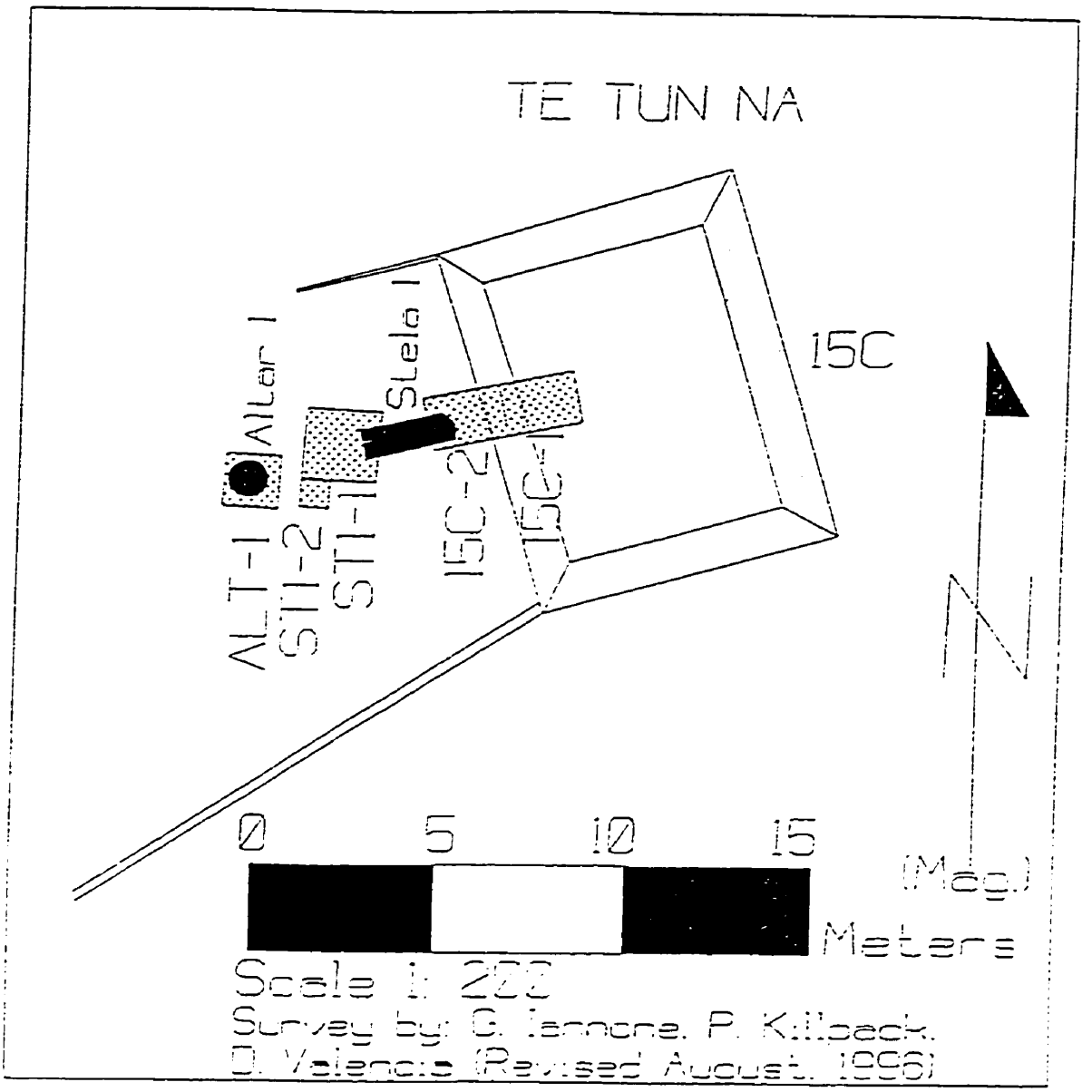

Figure 12

Map of Te Tun Na Showing Excavation Units (provided by Gyles Iannone)

were disturbed from their original placement. Some of the smaller pieces appear to have deteriorated somewhat as the limestone from which they are composed is more fragmentary and friable. The butt of the stela was still in position (although it was not vertical) and covered by humus. After excavation (and re-assembly), approximate dimensional measurements for the stela were determined to be about 223 cm long, between 87 and 93 cm wide and between 28 and 30 cm thick. The monument was plain (uncarved) on all sides, although it may have been painted at some point (however, there was no remnant of paint or plaster remaining upon its surface). Plain stelae are the expected variety for this monument type in the Upper Belize Valley region. They are found at the nearby sites of Pacbitun, Baking Pot, Cahal Pech and its outlying site, Tzinic (Cheetham 1994:12; Arendt et al. 1996:129; Healy 1990).

Unit ST1-1, a 2 m by 2 m unit, was set up to excavate the base of the stela; the intention was to expose the entire monument as well as to reveal any dedicatory cached materials placed beneath the monument (see Figure 13). Levels 1 and 2 were a mixed deposit of humus, rootlets and pebbles (0.4-6.4 cm) and cobbles (6.4-25.6 cm). The average depth of this deposit was between 11 cm and 19 cm thick. Level 3 consisted of a series of cobbles (approximately 15-25 cm), loosely interspersed with soil upon the bedrock. The bedrock itself was very friable, and appeared to be flaking off in sheets. The bedrock was very close to the surface, between 20 and 43 cm below surface level. There may have been a plastered surface above bedrock, that the monument was placed on, however no remnants of this were found. It would be logical to assume that the *xache* was paved with *xascab* up to the base of Structure 15C, including around the base of Stela 1. This lack of both a plastered surface and any

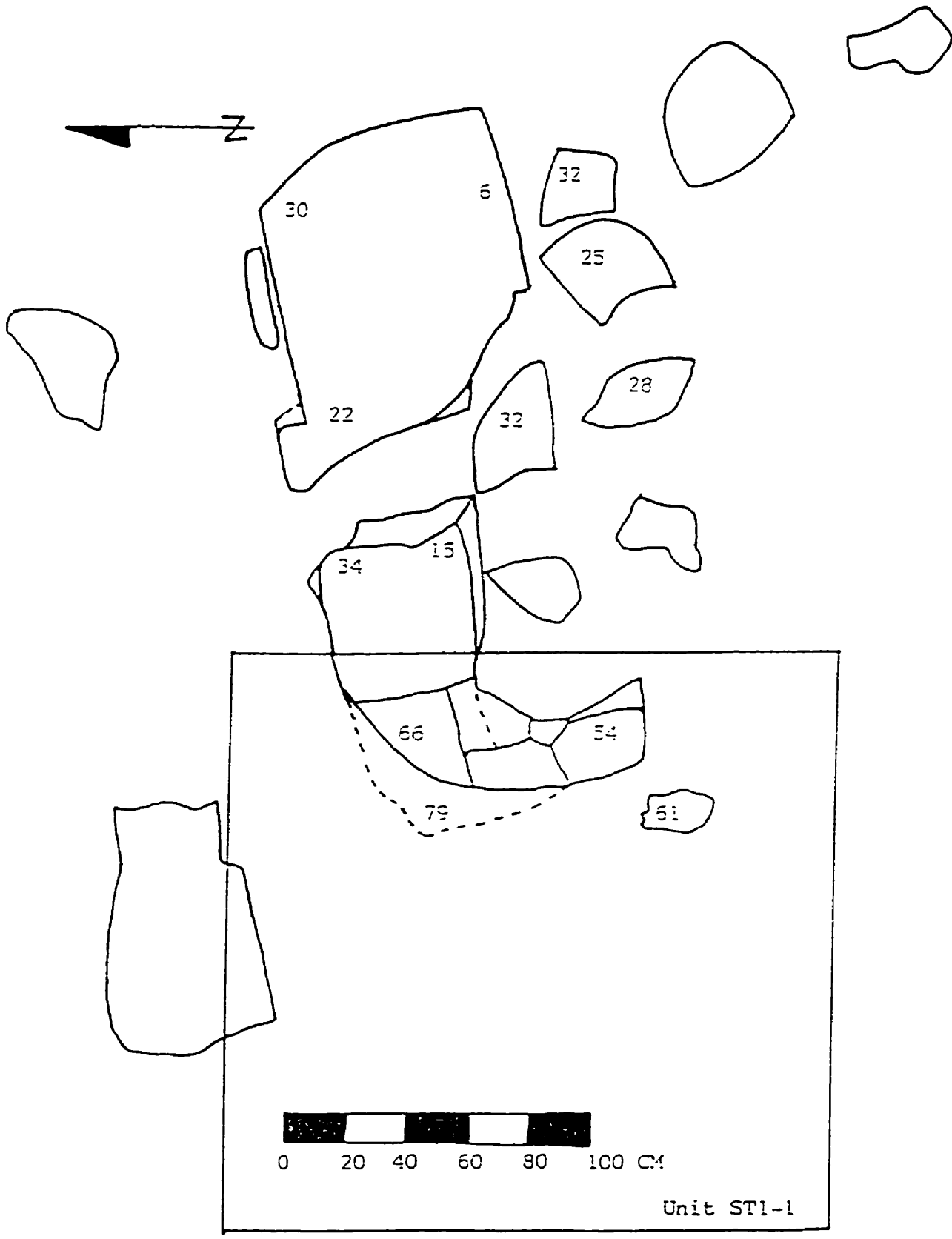

Figure 13
Top Plan of Stela 1 and Unit ST1-1

modification in the bedrock consistent with free-standing vertical monuments is puzzling and suggests that the monument may never have stood upright.

Artifactual remains in association with the stela were sparse. There was one pottery sherd recovered from the surface, an Alexander's Unslipped: Beaverdam Variety *olla* sherd. Level 1 and 2 had 176 sherds found within them, however, only 13 of those were diagnostic. They included varieties of the Belize Red, Alexander's Unslipped, Cayo Unslipped and Chunhuitz Orange ceramic groups (Gifford 1976). There were no sherds associated with Level 3. All of the above identified sherds were from the Spanish Lookout Ceramic Complex, dated to between 675 and 875 A.D. (Late Classic Period; Gifford 1976:46). The only lithic artifact associated with Unit ST1-1 was a small quartzite nodule removed near the surface in the southeast corner of the unit. There was a distinct lack of faunal remains associated with Stela 1, although there was a single apple snail shell, *Pomacea flagellata*, located within the humus layer beneath the disturbed stela base. There was a notable lack of any sort of dedicatory cache at the base of the stela.

The paucity of artifacts can be explained when the larger aspect of the function of Stela 1 is examined. Hammond and Bobo (1994) describe stelae at La Milpa which appear to have functioned as objects of veneration themselves. These stelae were often transported from their original position to places where they were reset and regarded as objects of veneration (Hammond and Bobo 1994:25). Stelae in other contexts were carved with inscriptions and portraits of kings, describing their lifetime accomplishments (Sharer 1994:307). An additional relevant function of stelae lies in the concept of their use as tools to make astronomical observations. The assemblages of features associated with stelae, as well as the stelae

themselves, can be seen to be tied into specific ritual events in the agricultural year (Cohodas 1985:56). Astronomical events could be sighted across stelae, including the movements of Venus, the Moon and the Sun. A plain stela, oriented to the east, is especially suited to viewing the line of sunrise on September 23 and March 21, important dates in the agricultural year (Sharer 1994:182). An individual would only have to stand in front of the monument, facing the east, to see the celestial body align with it along the horizon. If Stela 1 was being used as a sighting instrument in association with agricultural fertility rituals, rather than as an object of veneration in itself; the lack of associated artifacts becomes plausible.

During the excavation of the southwest corner of Unit ST1-1, a concentration of limestone cobbles was discovered. It was initially thought that this concentration could have once been monolithic, as although it was extremely fragmentary, it was aligned with the base of both Altar 1 and Stela 1. An 80 cm by 80 cm unit, designated ST1-2, was opened to further investigate this potential feature. A total of 158 pottery sherds were recovered in association with this feature (ST1-F/1), with representatives from the Belize Red and Alexander's Unslipped ceramic groups present (Gifford 1976). These are also representative of Late Classic Period, Spanish Lookout Phase ceramics. While it is difficult to state definitively what this concentration of defoliated limestone and pottery sherds represents, it could have been a repository or collection point of some sort for vessels used in association with ceremonies performed at the *Te Tun Na* Group.

Altar 1

This monument was situated to the west of Stela 1, in front of Structure 15C. Constructed of the same compact limestone as Stela 1, it was between 81 cm and 91 cm

across, 30-40 cm thick and roughly ovoid in shape. The altar was essentially *in situ*, but had sheared or been broken into two large halves, with several smaller pieces atop the two main ones.

Unit AL1-1, a 1.5 m by 1.5 m unit was placed around the altar to reveal any associated dedicatory cache offerings from below the altar (see Figure 14). Similar to Unit ST1-1, Levels 1 and 2 were a mixed deposit of humus, dense roots and rootlet networks as well as small and medium sized limestone pebbles (0.4-6.4 cm) and cobbles (6.4-25.6 cm) placed haphazardly. The stone in these levels represents quarried material. The matrix had a thickness of between 11 cm and 38 cm. Level 3 consisted of a dense layer of limestone cobbles and the occasional small boulder (>25.6 cm). This level was probably consistent with the fill of the *cache*, and is more prominent within this unit than in unit ST1-1 (see Figure 15). This level is situated directly above the bedrock, which is quite crumbly at the surface, with harder limestone nodules compressed within it. Level 3 had a thickness of between 7 cm and 34 cm.

Again, there was a distinct lack of artifacts associated with Altar 1. There were 3 sherds of the Belize Red type and 1 Garbutt Creek Red sherd recovered from the surface, near the altar. There were 235 small undiagnostic sherds recovered from Levels 1 and 2, and 23 undiagnostic sherds from Level 3. The few sherds that were identified belonged to the Late Classic Spanish Lookout Phase, similar to those found in proximity to Stela 1 (Gifford 1976). There were no lithic or faunal materials recovered from Unit AL1-1.

The lack of a dedicatory cache offering beneath Altar 1 could be a result of the function of the stela/altar complex of the *Te Tun Na* group. One explanation is that the individuals at X-ual-Canil simply could not access appropriate "elite" goods, suitable for deposition beneath

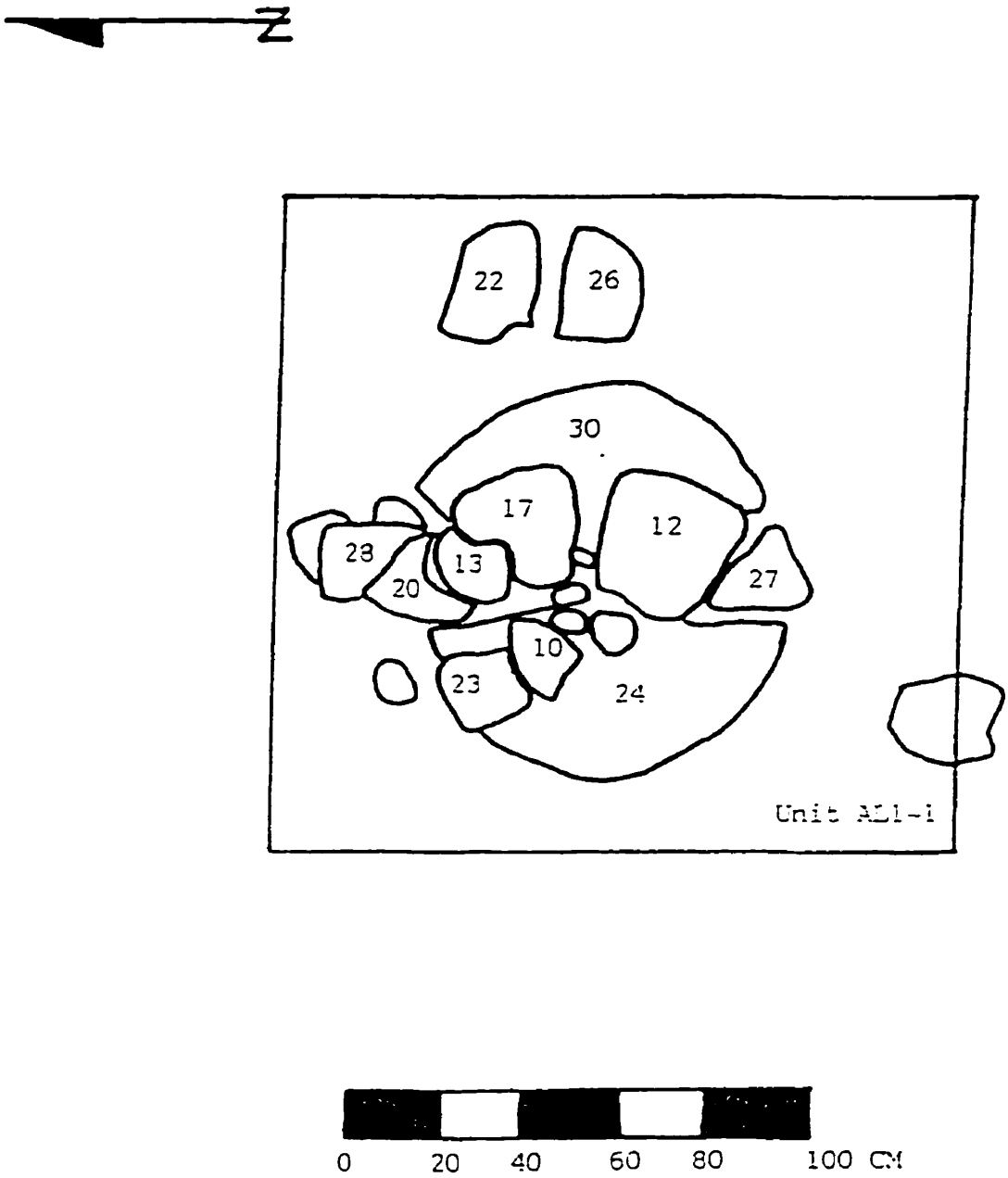

Figure 14

Top Plan of Altar 1 and Unit AL1-1

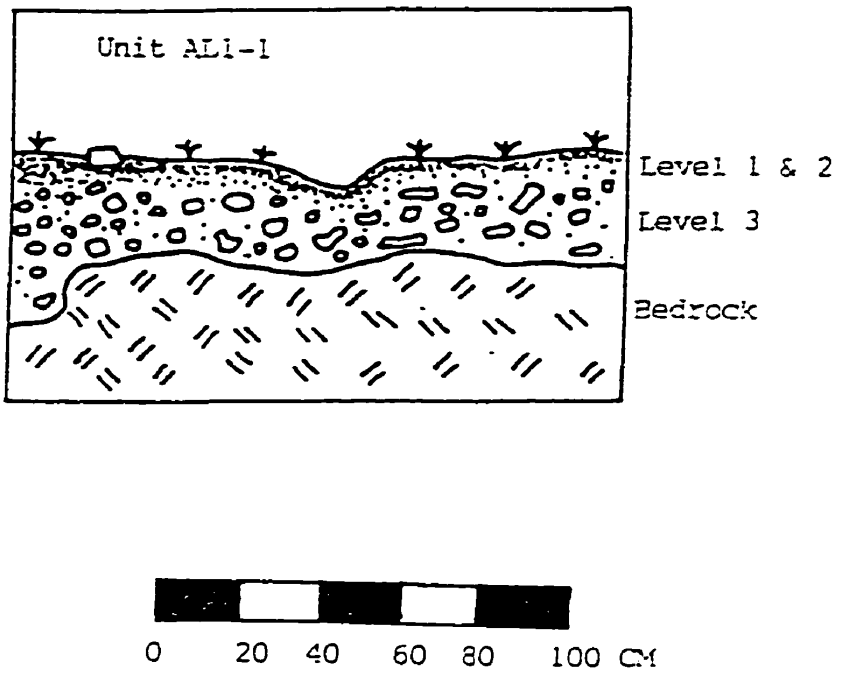

Figure 15

Profile Maps of Units AL1-1 and ST1-1 (north walls)

Altar 1. However, if we look at what the altar represented within the cosmological framework of the ancient Maya, another explanation emerges. Altars have been described as the focus for all prayer and ritual attention (Freidel, Schele and Parker 1993:55). The reason for this being that they were thought to be a point of contact with the supernatural: a portal to the underworld (Cohodas 1985:51). In a context where one would be viewing the movements of cosmic bodies in relation to an observational stela monument, an altar which would establish a link to the Underworld makes implicit sense. The two monuments could have functioned as a complementary pair in the celebration of agricultural fertility rituals. The monuments have functioned effectively within this scenario, regardless of whether there were cached offerings in association with them or not. The idea that the altar and the stela functioned as a set is a common one for the Maya area, as they were often thought to have been erected together to mark *Katun* ending periods (Beetz and Satterthwaite 1981). In this instance, they could have been erected to function in association with active ceremony, rather than serve as archival records of past events.

Structure 15C

The *Lahkin Sache* terminates with Structure 15C, the low-lying platform just to the east of Altar 1 and Stela 1. An axial trench, 1.5 m by 4 m was cut into the center of the platform in the hopes of exposing a central stair in front of the platform, as well as to determine the construction history of Structure 15C. This trench was divided into two units, Unit 15C-1 in the center of the platform, and Unit 15C-2 at the base of the platform, each unit had dimensions of 1.5 m by 2 m (see Figures 16 and 17).

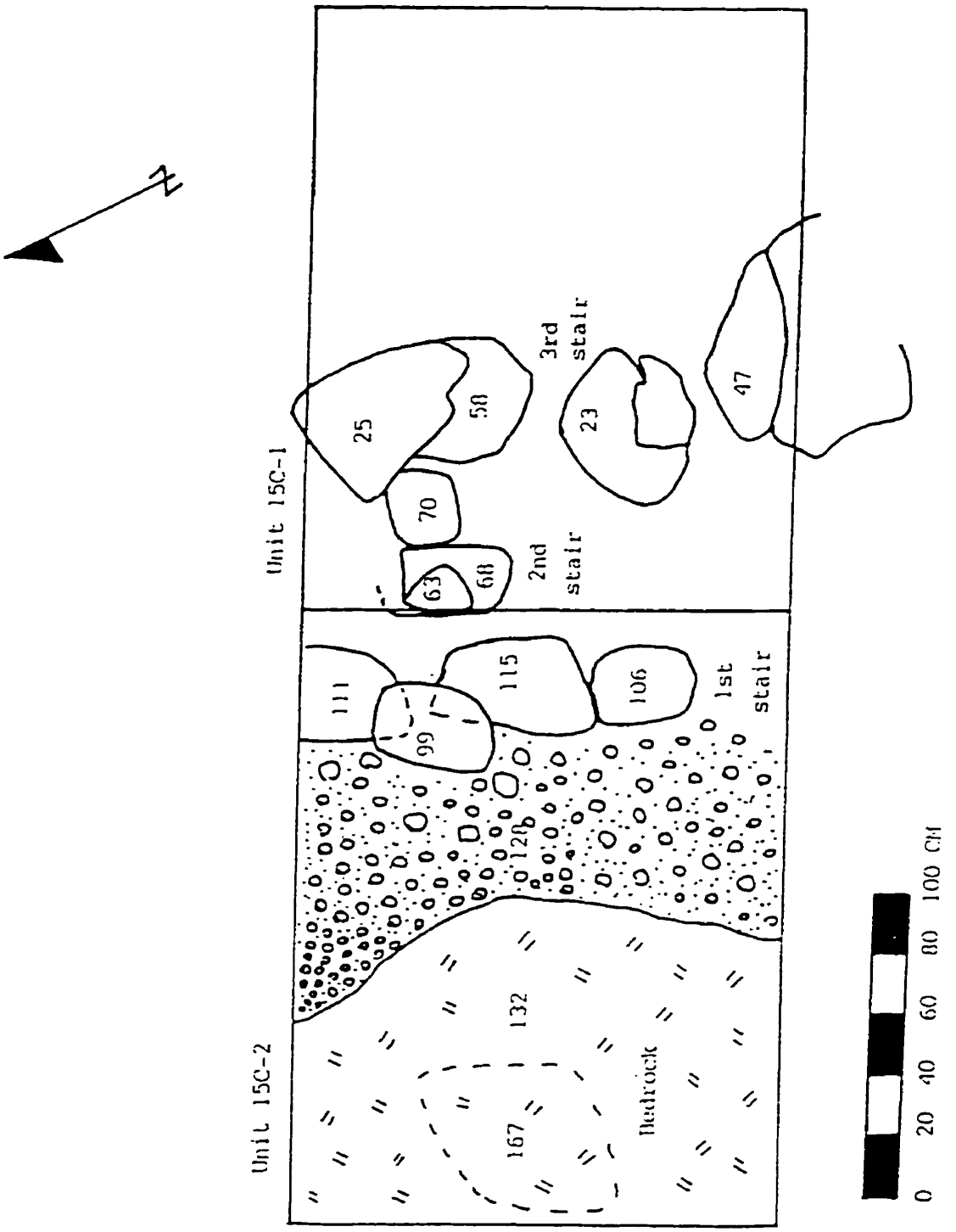

Figure 16
Top Plan of Units 15C-1 and 15C-2

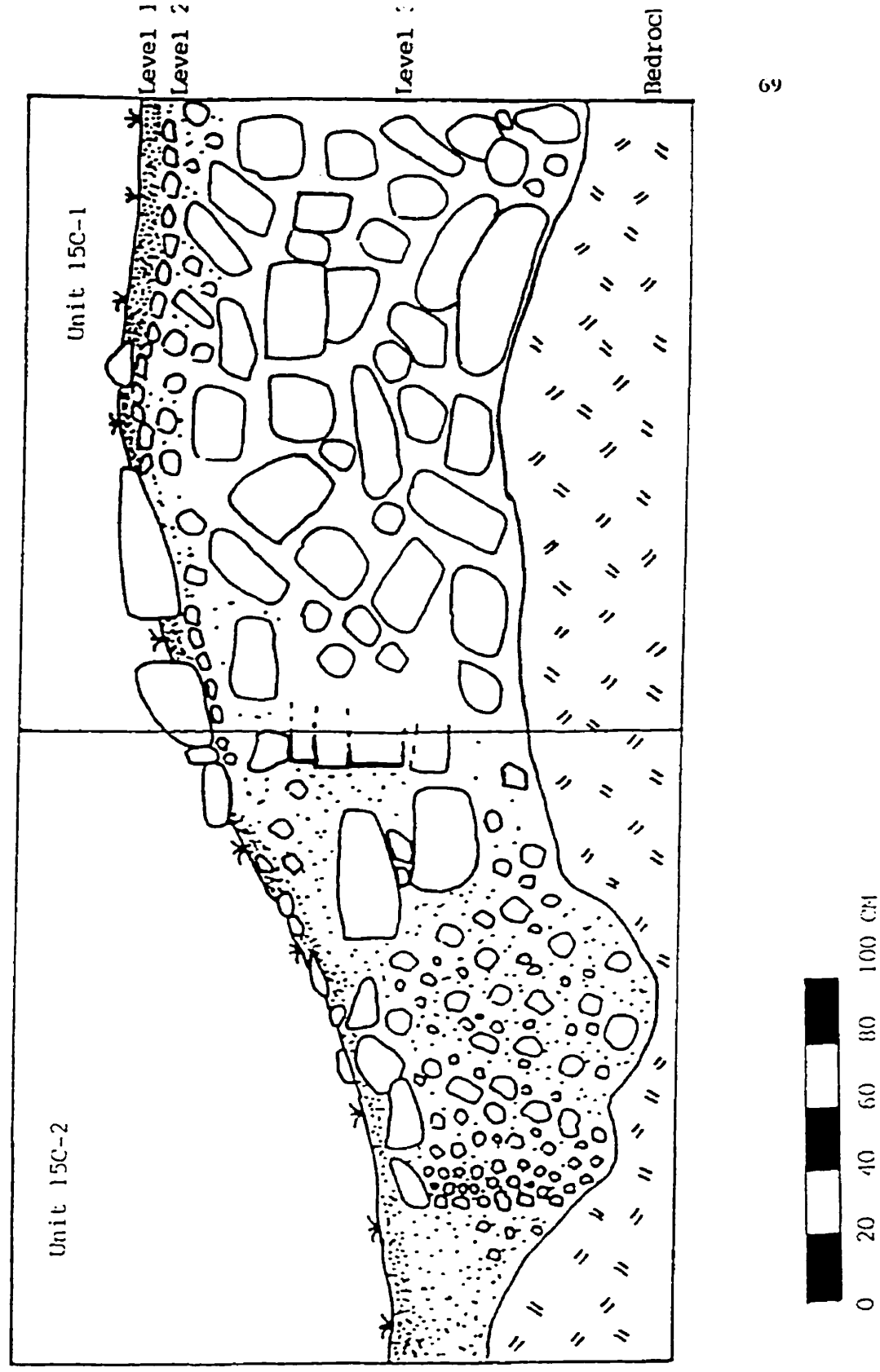

Figure 17
Profile Map of Units 15C-1 and 15C-2 (north wall)

Level 1 of Unit 15C-2 was a somewhat thin layer of humus soil, with roots and small rootlets interspersed throughout. This level was only 1 cm to 2 cm thick in the southern end of the unit; while it was between 12 cm and 16 cm thick in the center and northern end. Level 2 consisted of a fairly sandy soil matrix, with several large fallen cobbles (from higher up on the structure) and smaller pebble sized stones mixed in. This level had a thickness of between 13 cm and 29 cm. Level 3 within Unit 15C-2 was primarily made up of the faced limestone blocks which made up the stairs to the platform (terminal architecture). In the extreme western end of the unit, the natural bedrock level was quite elevated. Upon this bedrock, slightly to the east, was a ballast layer of compact limestone cobbles. Although there were no remnants of plaster, these could represent the ballast for a flattened, level area abutting the first step of the platform. Just east of this ballast layer, was an alignment of four large unilaterally faced cutstones which made up the basal step of the platform. This step consisted of at least two courses of cut stones. Level 3 had a depth of between 5 cm and 6 cm in the western end of the unit. The depth of Level 3 in the eastern end of the unit was between 61 cm and 64 cm. The bedrock itself in front of the platform had a marked circular depression, at least 167 cm below unit datum.

Levels 1 and 2 of Unit 15C-1 were a mix of humus, roots, rootlets and disturbed pebbles and cobbles. As this unit was placed atop the platform, Level 1 and 2 do not show great depth. The thickness varied from between 2 cm to 15 cm. Level 3 consisted of the large stones which make up the architectural fill of the platform as well as the top two stair risers of the three step central stairway. Close to the surface was an increased concentration of densely packed cobbles and pebbles, with the majority being between 8 cm and 20 cm. Several of these

appeared to have residual bits of mortar between them. The large uncut boulders beneath, however, appear to represent the dry core fill which made up the mass of the platform. The platform itself (Level 3) was between 97 cm and 128 cm high. The core fill which made up the platform, although closely packed, was haphazardly arranged. There was no evidence of any flooring events within the platform itself, thus it was built in one construction phase (see Figure 18). Within the western end of Unit 15C-1 were the top two steps of the central stairway. The second or middle riser was at least four courses high (the top course of the step may have been disturbed by root action/bioturbational forces). The uppermost step was almost flush with the surface, and had at least two courses.

The artifacts recovered in association with Structure 15C were sparse. Within Unit 15C-1, a total of 6 sherds were recovered from Level 3. Of these, 5 were identified as Belize Red: Belize Variety, while 1 was undiagnostic. Within Unit 15C-2, 143 sherds were recovered. Level 1 had a total of 1 Garbutt Creek Red: Garbutt Creek Variety sherd and 2 undiagnostic sherds. There were 4 Belize Red: Belize Variety, 1 Dolphin Head Red: Dolphin Head Variety, and 1 Alexander's Unslipped: Beaverdam Variety sherds associated with Level 2. Level 3 had 1 Alexander's Unslipped: Croja Variety sherd and 18 undiagnostic sherds. All of these types are part of the Spanish Lookout Ceramic Group, (675 to 875 A.D.; Gifford 1976:46). That these Late Classic Period sherds were found consistently through the levels confirms that Structure 15C was built during one construction event sometime between 675 and 875 A.D. There were no faunal remains recovered within Structure 15C. One unremarkable debitage lithic flake was found within Unit 15C-1.

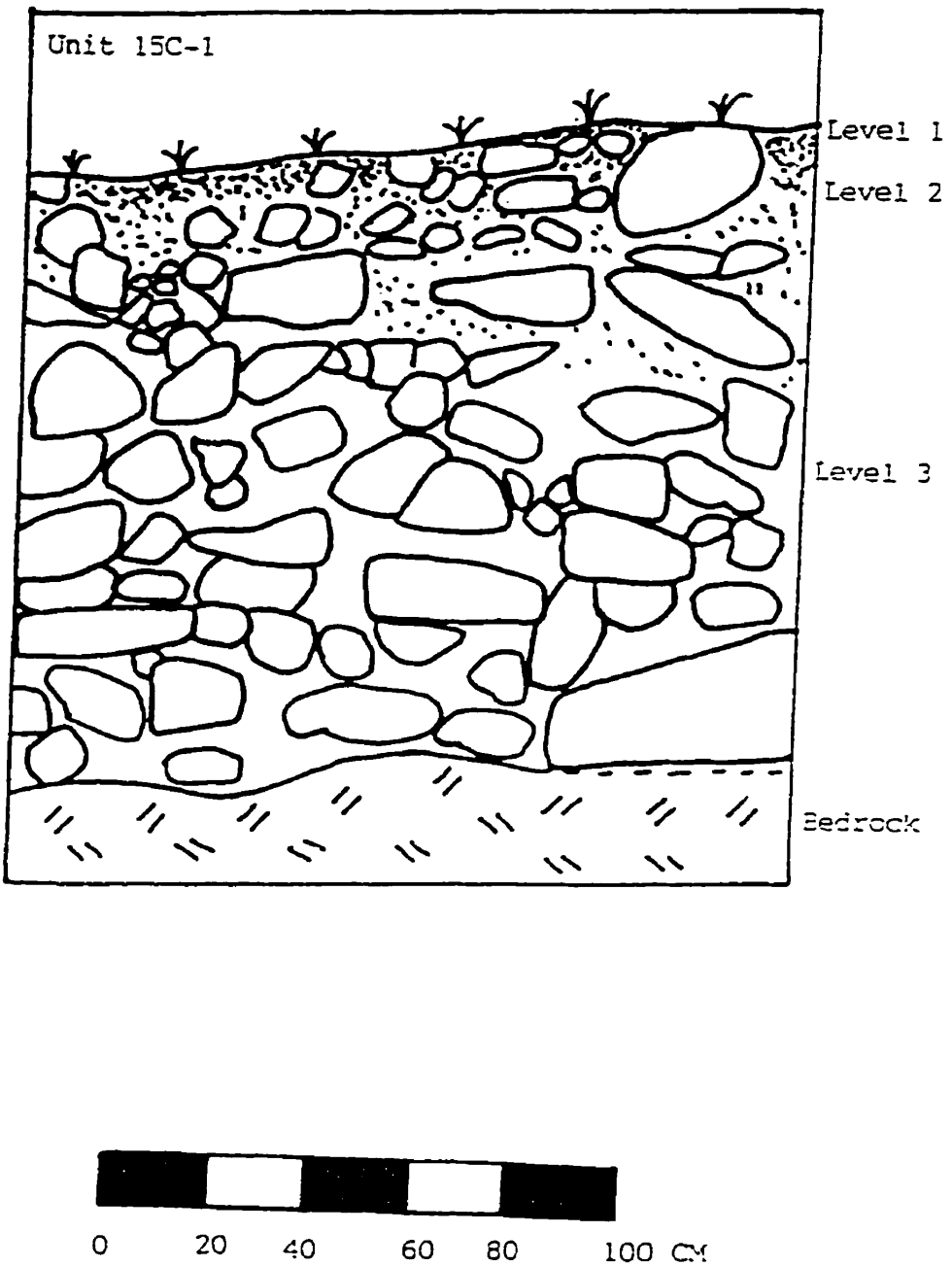

Figure 18

Profile Map of Unit 15C-1 (east wall)

LAHKIN SACBE EXCAVATIONS

Excavations during the 1997 field season focused on the proximal end of *the Lahkin Sacbe* and its associated features including Structure 14C, and the *Zuhuy Ha* Reservoir (see Figures 19 and 20). Units were placed to define the morphology of Structure 14C and to elucidate its function, to assess the chronological framework for construction at the western end of the *Lahkin Sacbe*, to establish the construction techniques utilized for the walls of the *sacbe* and to determine the extent to which the *Zuhuy Ha* Reservoir may have had a formalized architectural link connecting it to the *sacbe*.

Unit 14C-1

Unit 14C-1, a 4 m by 4 m unit, was placed atop Structure 14C, which straddles the north wall of the *Lahkin Sacbe* (see Figure 21). The purpose of the unit was to examine the features of the structure, and to determine something about its function.

The Level 1/2 layer consisted of the mixed humus and fall materials. Although initially removed from the entire unit, Level 1/2 was designated as the material that was outside of Structure 14C (atop the *Lahkin Sacbe* itself), while the material from on top of the structure was designated Level 1a/2a. The level was made up of soil, roots, and decayed organic matter, with several limestone pebbles intermixed within the matrix. There were also several large cutstone blocks which had fallen off the structure among the material adjacent to the structure.

The unit was initially excavated in the area where the northern *sacbe* wall abutted the structure's east wall. Three courses of the *sacbe* wall were preserved, and this construction abuts Structure 14C (suggesting that Structure 14C was built first). The

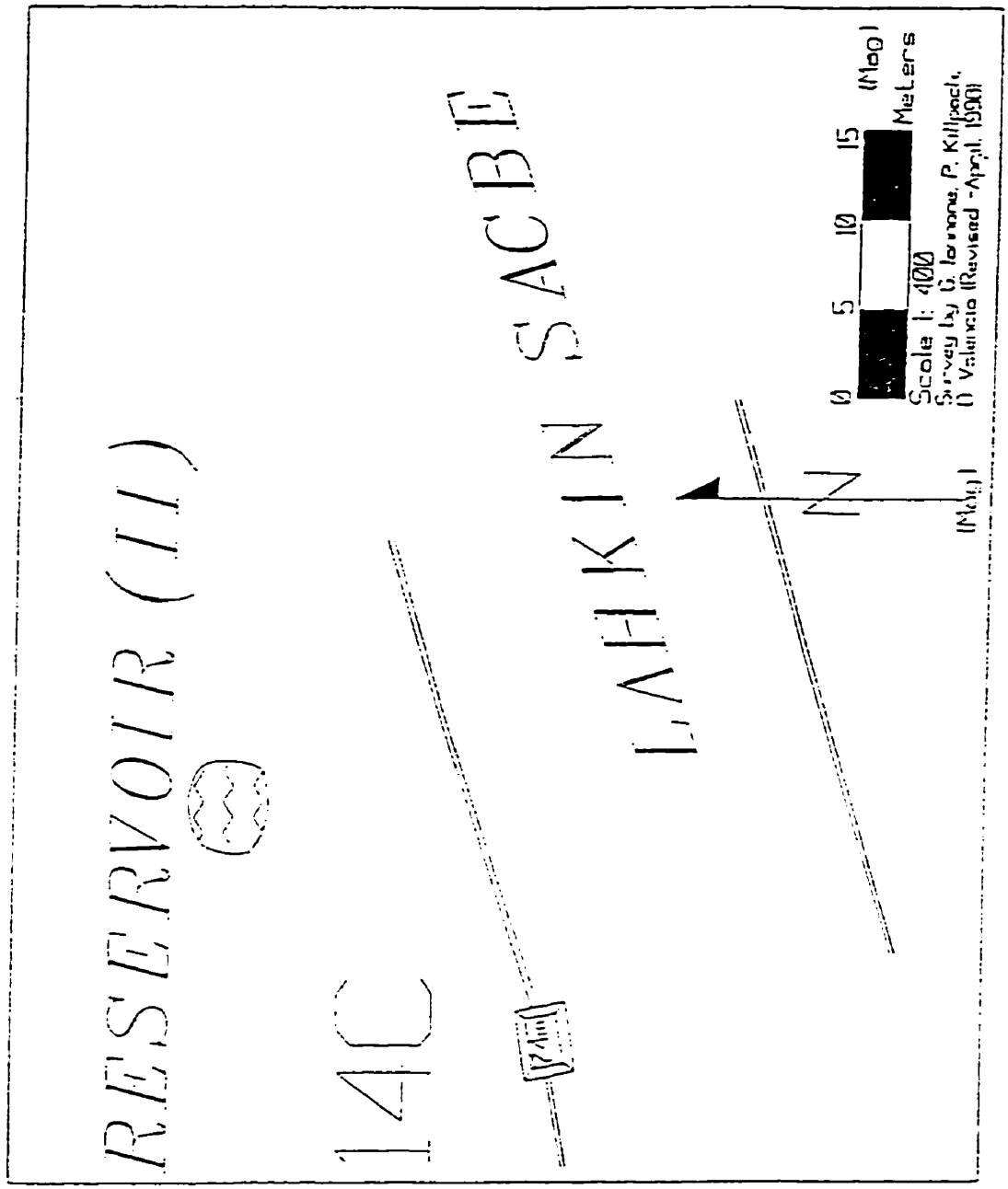

Figure 19

Map of the Proximal End of the Lahkin Sacbe
(provided by Gyles Iannone)

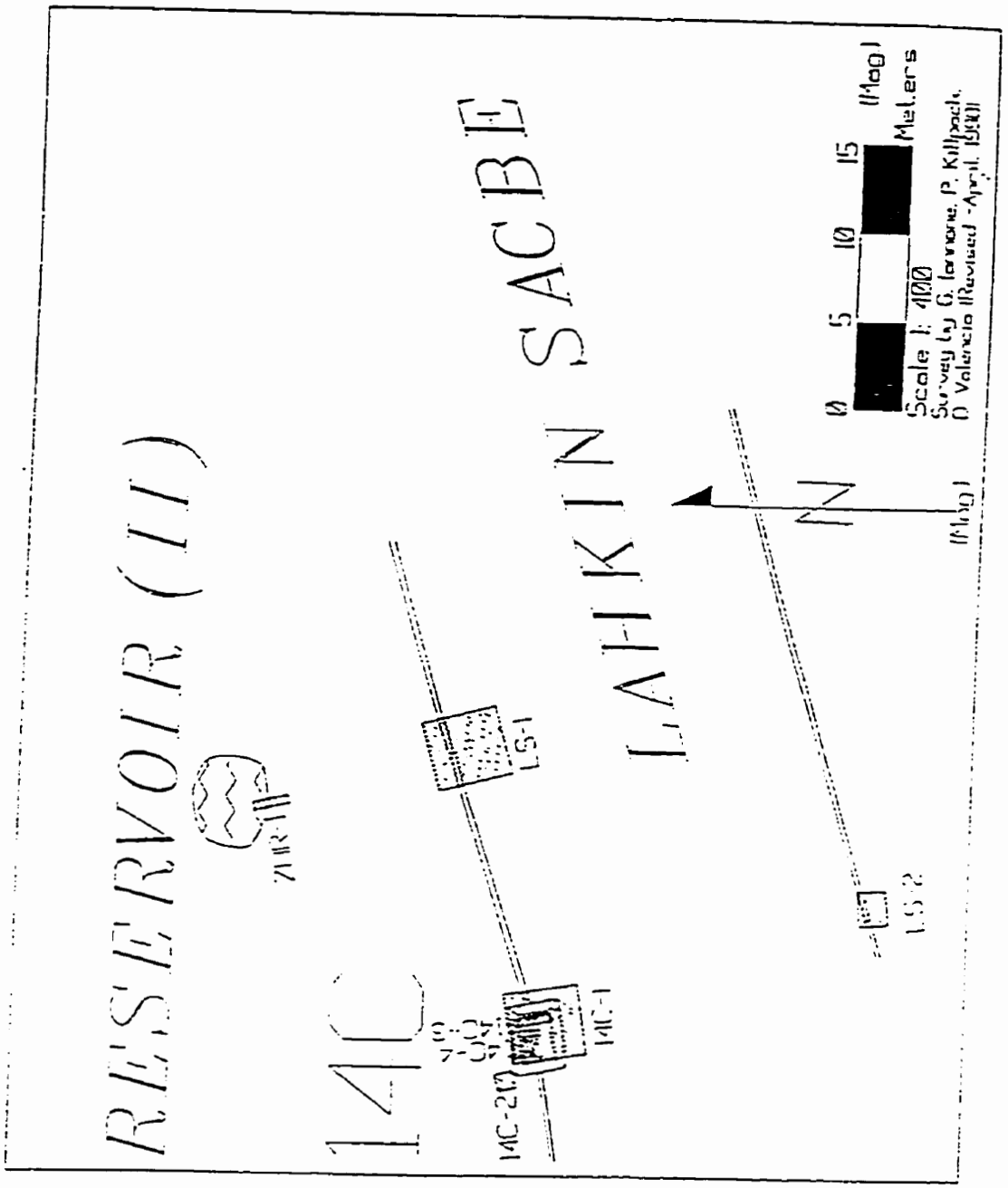

Figure 20

Map of the Proximal End of the Lahkin Sacbe Showing Excavation Units
(provided by Gyles Iannone)

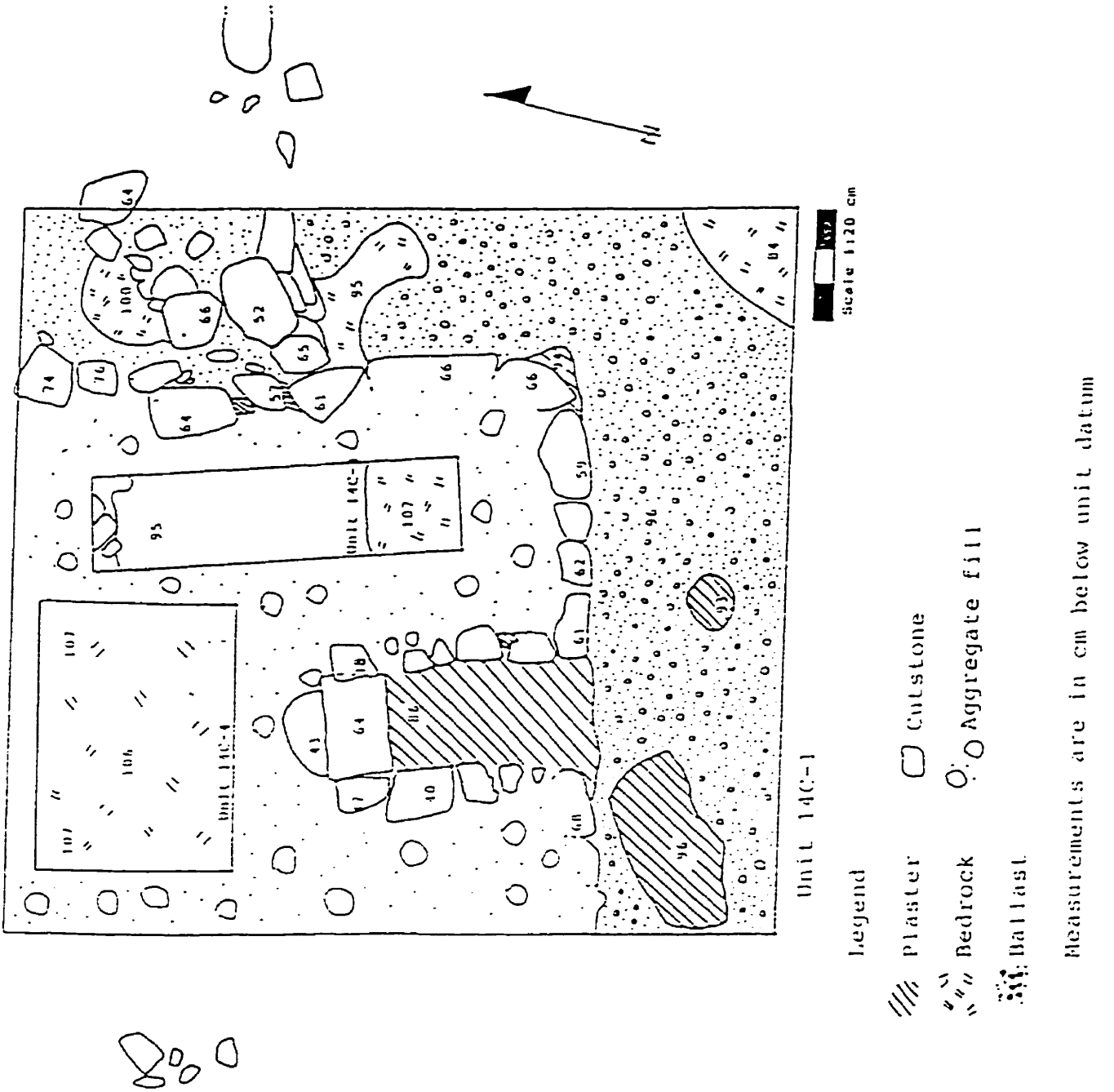

Figure 21

Top Plan of Unit 14C-1

structure itself was very well preserved, and had walls of two or three courses constructed from very large cut limestone blocks, all resting atop a plaster surface. This plaster surface is thought to correspond with the surface of the *sacbe*. The southeastern corner of the structure exhibited a rounded corner, consisting of large faced limestone blocks.

Artifacts from this level included 1 chert flake with retouch, 2 unremarkable chert flakes, 2 Alexander's Unslipped: Alexander's Variety; 2 Cayo Unslipped: Cayo Variety; 25 Belize Red: Belize Variety and 40 undiagnostic sherds. All identified ceramic types fall within the Spanish Lookout Ceramic Phase of the Late Classic Period (675-875 A.D.; Gifford 1976:46).

Level 1a/2a has similar humus and fall material to Level 1/2, only it is situated on top of the structure. The material removed varied in thickness between 2 cm and 65 cm. The 65 cm depth reflects a feature which was identified mid-way through the south wall of the structure - an inset step. The step is represented by a one course riser leading to the surface of the Structure 14C platform. The inset step had a nicely preserved, 2 cm plaster tread to the south, which extended approximately 1 m into the structure towards the stair riser. The level consisted of soil mixed with limestone cobble inclusions. Though deteriorated, there was enough plaster present on the top of the structure to suggest that it had been paved on the top. Coupled with a lack of evidence for a superstructure, this reinforces the idea that the structure was a platform to facilitate the viewing of people moving along the *sacbe*. Presumably (due to the restricted size of the platform), it would have only been a very limited number of people who could have stood or sat there at one

time. Because of the morphology of the structure, restrictive nature of this place and the preferred vantage point which Structure 14C provided, it is postulated to have been a reviewing stand for relatively higher status X-ual-Canilites.

Artifacts from this level included a heavily patinated white chert proximal blade fragment with possible use wear, 2 Chunhuitz Orange: Variety Unspecified; 7 Belize Red: Belize Variety; 6 Alexander's Unslipped: Alexander's Variety; 5 Cayo Unslipped: Cayo Variety and 18 undiagnostic sherds. All types are of the Spanish Lookout Phase of the Late Classic Period (675-875 A.D.; Gifford 1976:46).

Level 3 was removed from the top of the *Lahkin Sacbe* surface, adjacent to the east and south walls of Structure 14C. There was a well preserved plaster floor to the south of the inset step, which was removed as part of Level 3. The plaster was about 4 cm thick, as was the underlying compact ballast layer. As there was another plaster surface identified beneath the first. This plaster floor is thought to represent a re-flooring event. There was no core layer beneath the ballast, which did include mortar. The underlying plaster was also well preserved, and of an approximate thickness of 4 cm. Again, there was a ballast layer (with mortar) situated between the plaster and the bedrock of about 4 cm in depth.

Towards the east, the plaster surfaces deteriorate, and it is difficult to determine whether or not the re-flooring event (as seen adjacent to the inset step) had taken place. The ballast layer certainly gets deeper in response to the natural undulations of the bedrock, with measurements between 13 cm and 55 cm.

This level proved to have the most diverse ceramic assemblage of any of the excavations along the *Lahkin Sacbe*. The ceramic artifacts included 3 Meditation Black:

Meditation Variety; 2 Chunhuitz Orange: Variety Unspecified; 2 Belize Red: Belize Variety; 5 Garbutt Creek Red: Garbutt Creek Variety; 1 Tialipa Brown: Variety Unspecified, 1 Cayo Unslipped: Variety Unspecified; and 90 undiagnostic sherds. All of these types fall under the Spanish Lookout Phase of the Late Classic Period (Gifford 1976:46).

Unit 14C-2

This 1 m by 1 m unit was placed to the northwest of Unit 14C-1, to define the northwestern corner of Structure 14C (see Figure 22). By exposing this corner of the structure, it could be determined if more of the corners of Structure 14C had been constructed as rounded corners, or if it was only the south east corner which had this characteristic.

Level 1/2 consisted of the combined humus and fall. This layer was between 16 cm (on the south end of the unit; on top of the structure) and 52 cm thick (on the north end of the unit). The matrix consisted of a very loose, dark soil, with numerous roots interspersed throughout. Within the soil were several fallen cutstone boulders, as well as numerous limestone cobbles. The north wall of Structure 14C was found to have between 2 and 3 preserved courses which formed a rounded corner within Unit 14C-2. Artifacts from Level 1/2 consisted of 1 Chunhuitz Orange: Variety Unspecified sherd, 1 Cayo Unslipped: Cayo Variety sherd, 7 Dolphin Head Red; Dolphin Head Variety sherds (all Late Classic, Spanish Lookout Phase) and 9 undiagnostic sherds. The unit was not excavated further as the answer to whether or not the north west corner of Structure 14C had been rounded had been addressed. The preservation of the structure was excellent within this unit and it was desirable to preserve the construction in this condition.

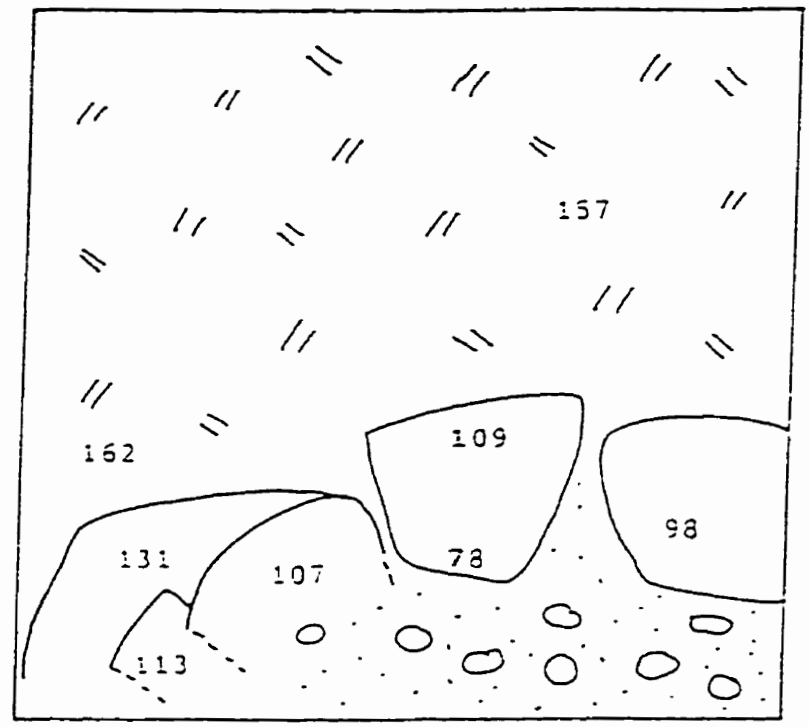

Figure 22

Top Plan of Unit 14C-2

Unit 14C-3

This 1 m by 0.5 m unit (a downsized area within Unit 14C-1) was set into the eastern side of the platform of Structure 14C. The unit was placed in order to clarify the temporal phase and construction history of the structure, as well as to determine any associated lower floors.

As Level 1/2 had previously been removed as part of Unit 14C-1, Level 3a consisted of the limestone fill of the platform. Between 57 cm and 75 cm of aggregate core fill was removed from within the unit, to bedrock. Near the surface of the bedrock, there was a denser layer of ballast stones. One undiagnostic ceramic sherd was recovered from this level. There was a good deal of mortar forming the matrix of the level, and it was only after the unit had been taken to the level of the bedrock that a linear alignment of plaster was noted in the western side-wall of the unit. To explore this feature, the unit was extended 90 cm to the north to make it 0.5 m by 1.9 m. This linear feature was revealed in the extension of Unit 14C-3 to be a plaster surface of varying thickness. The thickness of the platform's aggregate fill is more accurately described as being between 40 cm and 50 cm. The ballast stones underneath the aggregate fill in the initial 14C-3 unit were, in fact, the ballast layer which lay underneath the uneven plaster surface. The uneven thickness of the plaster, in addition to the fact that the walls of the building were sitting higher than the plaster surface, indicate that the ballast was placed to even out the bedrock. The ballast was then plastered over to create a level building surface for the platform. The plaster itself was poorly preserved in the southern end of Unit 14C-3.

Level 4a was excavated within the extension, and included the plaster surface and what lay beneath it. The thickness of the plaster varied greatly, as did the thickness of the underlying ballast layer. Together, the plaster and the ballast had a thickness of between 13 cm and 25 cm. There were no artifacts associated with this level.

Unit 14C-4

This 1 m by 1.5 m unit (a downsized area within Unit 14C-1) was set into the northern part of the platform of Structure 14C. The unit was intended to clarify the construction history of the structure, as well as to pinpoint the time period when the building was constructed. The unit was also dug to determine if the structure was indeed sitting atop a single platform, or if there were additional floors beneath the terminal surface.

Level 3a had a varied thickness (between 30 cm and 65 cm), and consisted of aggregate core fill. There were some pebbles near the top, which gave way to cobbles and boulders near the bottom of the level. The uneven plaster surface (seen in Unit 14C-3 and the extension of 14C-3) was beneath the aggregate fill layer. Artifacts from this level include 6 chert flakes, and 1 Belize Red: Belize Variety sherd (Late Classic Period, Spanish Lookout Phase, 675-875 A.D.; Gifford 1976:46).

The undulating plaster surface was removed as Level 4a. The thickness of the plaster ranged from 5 cm to 18 cm. There was a limestone ballast layer beneath the plaster which appeared to level the natural fluctuations in the bedrock. This ballast layer ranged from 0 cm to 20 cm in thickness. Thus the total thickness of the floor varied from about 25 cm to 48 cm in places. The uneven nature of this surface, in addition to the fact that the walls of Structure 14C sat on top of this floor surface contribute to its identification as a floor that

was constructed as a building surface for the structure. The floor was meant to level the bedrock so that the structure could be built on top, and it was not used as a living floor. There was a lobed chert biface fragment recovered from this level that had 9 flake scars on one end. There was also 3 chert flakes from this level, as well as 1 Belize Red: Belize Variety; 5 Dolphin Head Red: Dolphin Head Variety and 13 undiagnostic ceramic sherds. These types are both of the Spanish Lookout Phase of the Late Classic Period (Gifford 1976:46). With some certainty, Structure 14C can be said to have been built within one construction phase sometime during the Late Classic Period.

After excavation of Unit 14C-1, 14C-2 and the downsized units within Unit 14C-1 (14C-3, 14C-3 extension, and 14C-4), an estimate of the dimensions of Structure 14C was made. The structure was approximately 4 m long (east-west), and 3.4 m wide (north-south). These measurements were determined based upon a measured hypotenuse of 5.25 m from the southeast to the northwest corners (see Figures 23-26).

Unit LS-1

This 4 m by 4 m unit was set over the north wall of the *sacbe*, to determine the characteristics of the wall, as well as to investigate the potential for a constructed access off the *Lahkin Sacbe* towards the *Zuhuy Ha* Reservoir (see Figure 27).

The humus and slump layers were excavated together, but the material from the top of the *sacbe* was designated as Level 1a/2a, while the material that was off the north wall of the *sacbe* was designated as Level 1/2. This separation was made in case there was a differential artifact assemblage spatially (from what was on the *sacbe*, and what was sitting or discarded off the side).

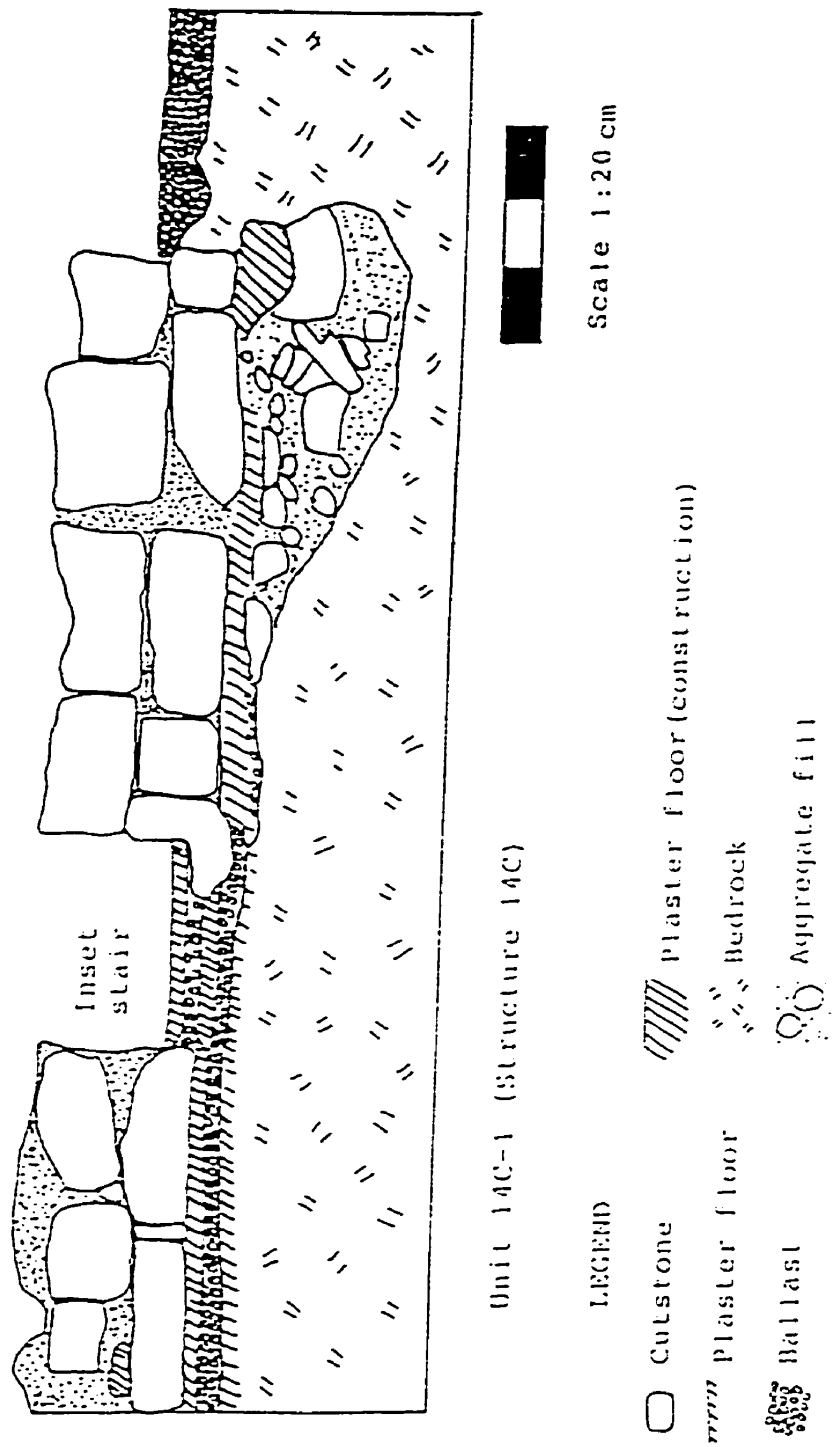

Figure 23

Profile Map of South Wall of Structure 14C

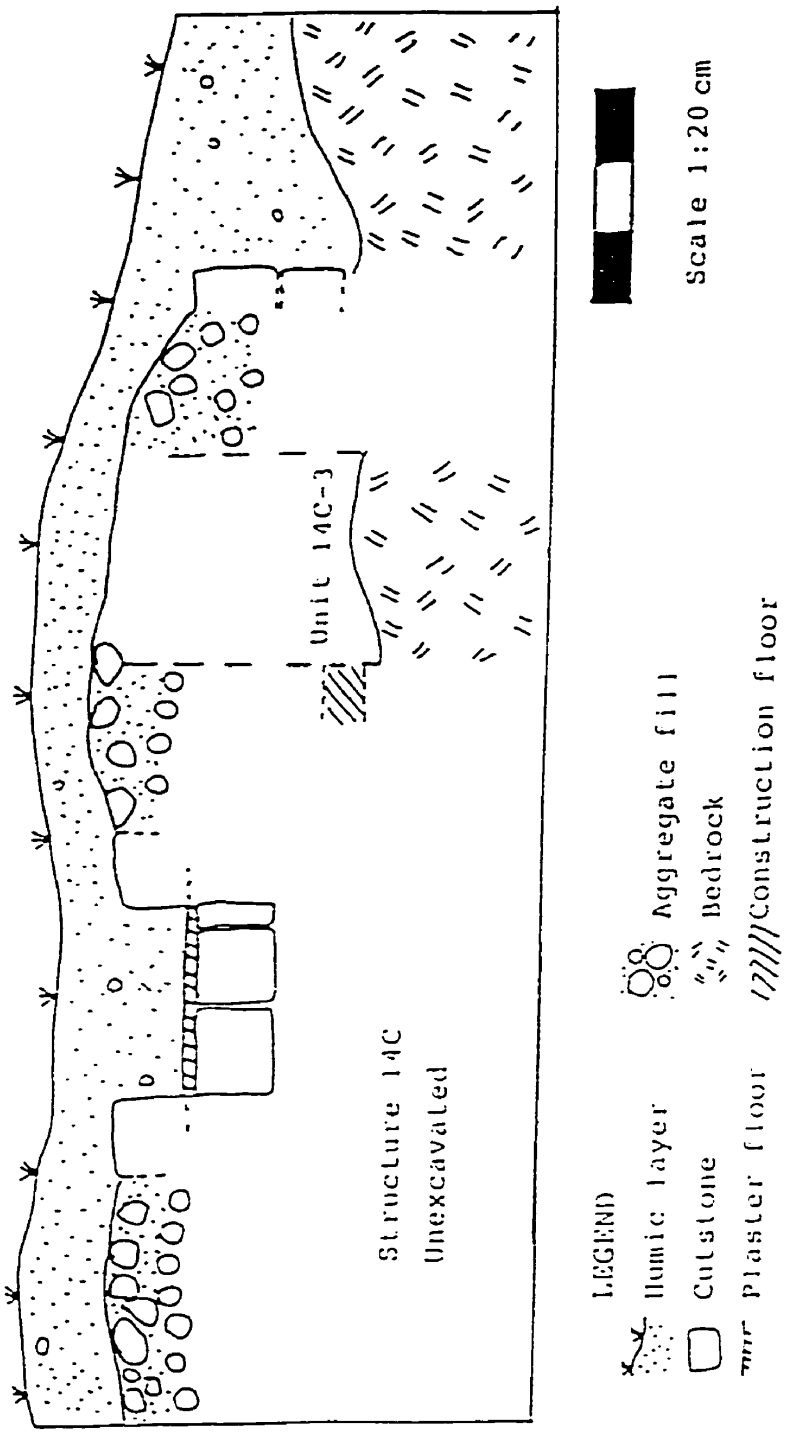

Figure 24

Profile Map Transecting Structure 14C (East-West View)

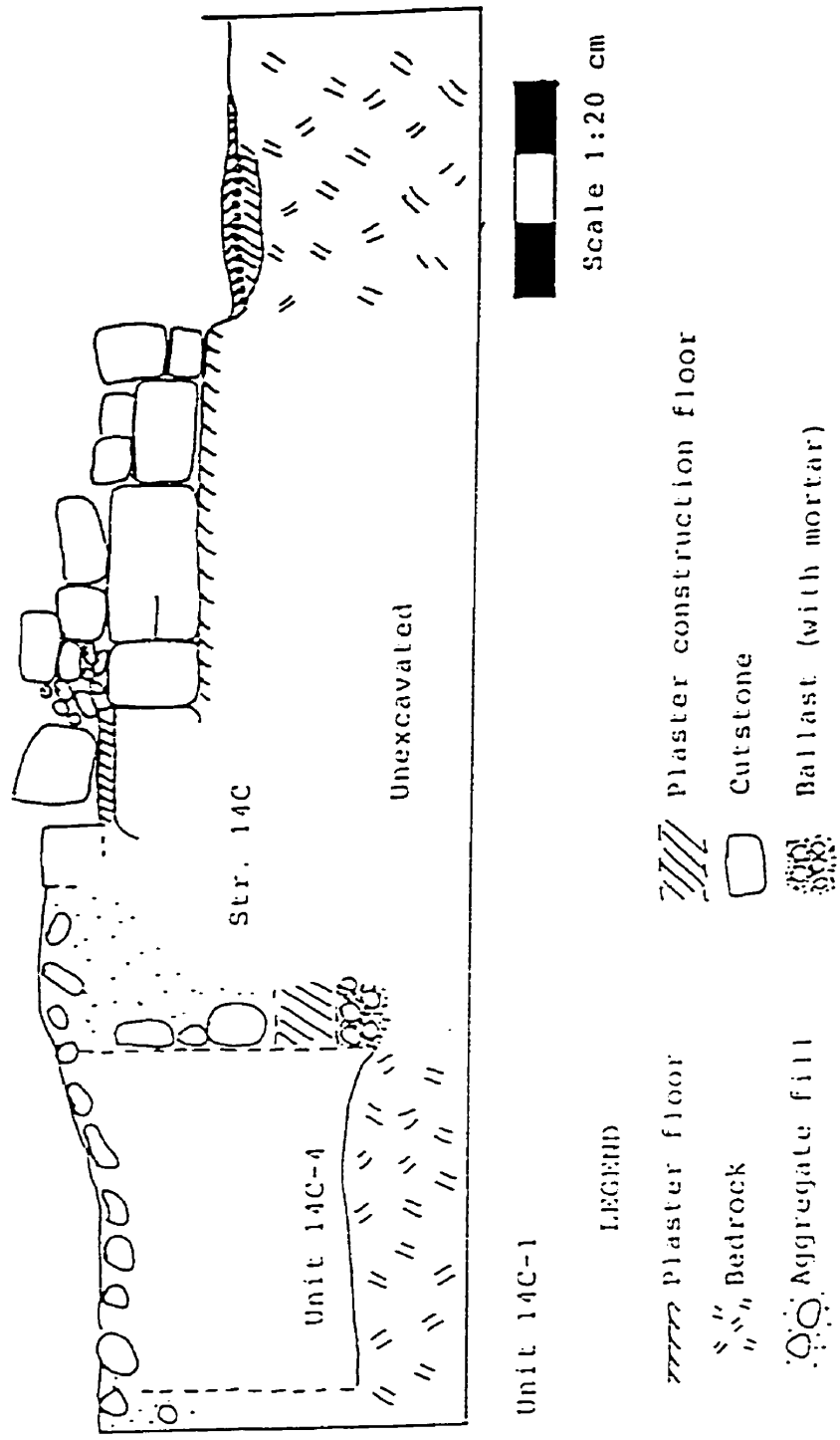

Figure 25

Profile Map Transecting Structure 14C (North-South View)

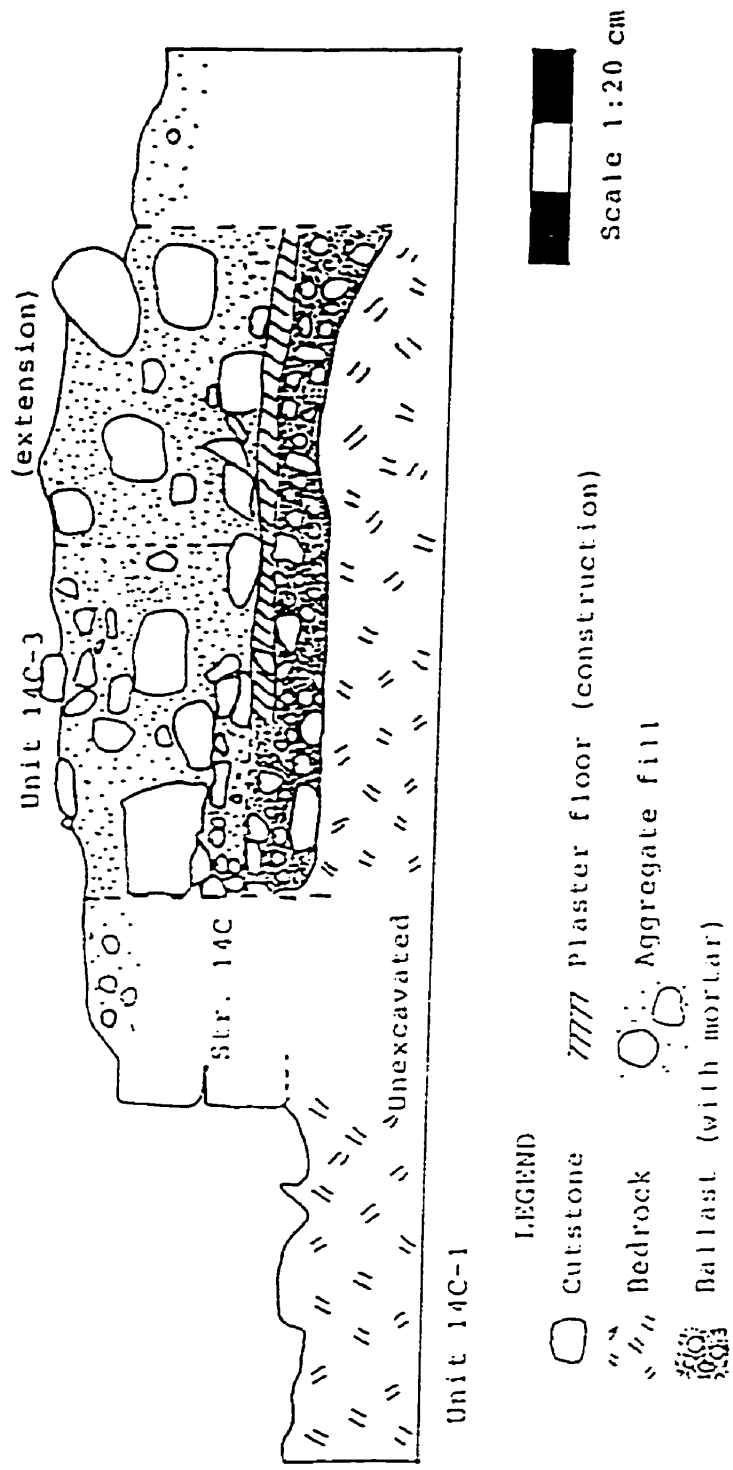

Figure 26

Profile Map Transecting Structure 14C (North-South) with Unit 14C-3

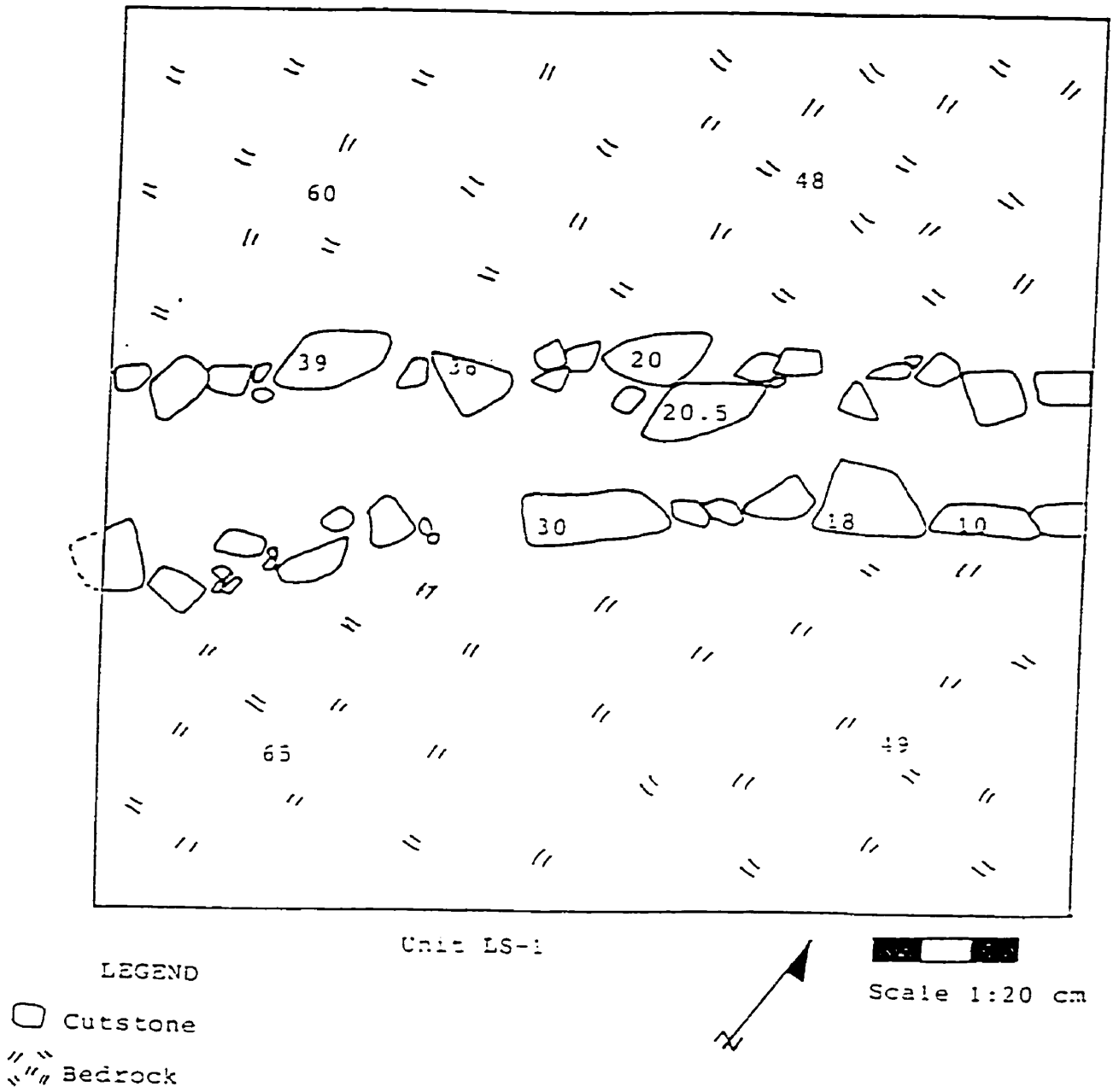

Figure 27

Top Plan of Unit LS-1

Level 1/2 was between 22 cm (along the northern edge of the unit) and 38 cm thick (along the northern edge of the *sacbe*). The level consisted of a dark soil with a high percentage of intermixed limestone pebbles and cobbles. There were also some larger (greater than 25 cm) limestone boulders which had probably fallen from the wall itself amongst this layer. These were initially thought to have been part of a perpendicular path running from the *Lahkin Sacbe* to the *Zuhuy Ha* Reservoir, but as the excavations progressed, these boulders were identified as wall collapse (as there was no alignment of stone beneath these, and humus material was beneath them). A small fragment (1.5 cm by 0.8 cm) of red ochre was recovered from the northwest corner of the unit from Level 1/2. A small (1.7 cm by 1.3 cm), rectangular fragment of quartz massive (vein quartz) was also recovered from this level. In addition, 9 chert flakes, 8 Belize Red: Belize Variety, 1 Alexander's Unslipped: Croja Variety and 55 undiagnostic ceramic sherds were identified.

Level 1a/2a was the corresponding humus and fall layer from atop the *sacbe* itself. The level varied in thickness between 3 cm and 7 cm in the south of the unit, and 12 cm and 30 cm along the south side of the *sacbe* wall. The layer consisted of dark loam-type soil with many small limestone pebbles and cobbles throughout. Directly beneath this layer was a denser layer of ballast stones which served to even out the bedrock beneath the *sacbe* surface. The bedrock was close to the surface, and there was no preserved plaster remaining atop the ballast layer due to its proximity to the surface. Artifacts associated with Level 1a/2a include 8 chert flakes, 1 unidentified marine shell, and 9 undiagnostic *olla* ceramic sherds (although these were undiagnostic to specific type, they resemble Late Classic Period, Spanish Lookout Phase ceramics).

This level was only removed from the area south of the *sache* wall and consisted of the ballast layer which had probably been plastered over to form the surface of the *sache* (although no plaster remained) and the *sache* wall itself. The level was between 3 cm and 13 cm thick, and was represented by compact limestone pebbles and cobbles. There was no evidence of mortar in the ballast itself. The ballast layer was level with the bottom of the one course *sache* wall, so the wall can be classified as a parapet wall. Artifacts recovered from this level included 12 undiagnostic sherds and 2 Belize Red: Belize Variety sherds (Late Classic Period, Spanish Lookout Phase 675-875 A.D.; Gifford 1976:46).

Unit I.S-2

This 1.45 m by 2.0 m unit was placed along the south wall of the *Lahkin Sache* to try to define the south side of the causeway, and to determine whether or not this wall was also constructed as a double faced parapet wall (see Figure 28).

The humus and fall layers were again combined, as they were too difficult to separate from one another. The material which was situated to the north of the *sache* wall was excavated as Level 1a/2a, simply to determine if there was a difference between what was sitting atop the *sache*, and what was sitting adjacent to the side wall (which was excavated as Level 1/2). Level 1a/2a was of a uniform 8 cm thickness and consisted of a layer of organic surface growth, roots and rootlets mixed with a dark brown soil. This layer was sitting directly atop a dense layer of compact cobbles which formed the ballast for the *sache* surface. No plaster remained atop this ballast layer which is probably a result of the proximity of the layer to the surface and consequent high degree of exposure. There were no artifacts recovered from Level 1a/2a.

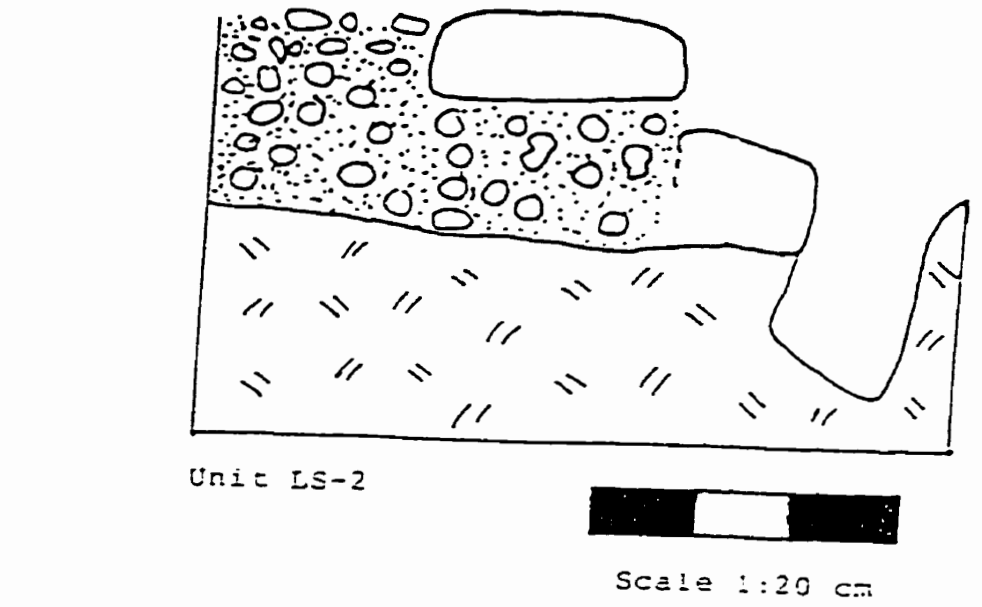

Figure 28

Profile Map of Unit LS-2 (Looking East)

Level 1/2 was the mixed humus and fall layer removed from the south side of the *sache* wall. The matrix of the level was similar to Level 1a/2a in that it consisted of a mix of surface growth, roots, rootlets, leaves and vines within a loose dark brown soil. This layer was of a thickness between 30 cm and 52 cm. Artifacts recovered from this level include 1 lithic flake, 5 undiagnostic ceramic sherds and 3 Belize Red: Belize Variety sherds (Late Classic Period, Spanish Lookout Phase; Gifford 1976:46).

After the removal of Level 1/2, it was evident that the *sache* wall was in fact a double faced masonry construction. Initially, only a single line of cut stone (faced towards the roadway) were evident on the surface. The outside layer was only revealed after Level 1/2 was removed, and it could be seen that the upper course of the two course outer edge of the wall had slumped to the south of the wall. This confirmed that the *sache* had double faced masonry walls on both sides.

Level 3a was the material removed from the north side of the *sache* wall (representing the ballast layer of the *sache* itself). The layer consisted of a thick concentration of limestone pebbles, cobbles and boulders mixed with many roots and rootlets. This ballast layer did not contain any mortar and had a depth of between 21 cm and 45 cm. The artifacts recovered from Level 3a include 8 lithics, 2 undiagnostic ceramic sherds and 4 Belize Red: Belize Variety sherds.

Unit ZHR-1

Unit ZHR-1, a 2 m by 0.5 m unit, was set into the south side of the *Zuhuy Ha* Reservoir, aligned with north (see Figure 29). The purpose of the unit was to explore this feature, including its artifact assemblage to determine a potential link to the *Lahkin Sache*. The reservoir is rather small (5.4 m in diameter) and is situated 20 m northeast of

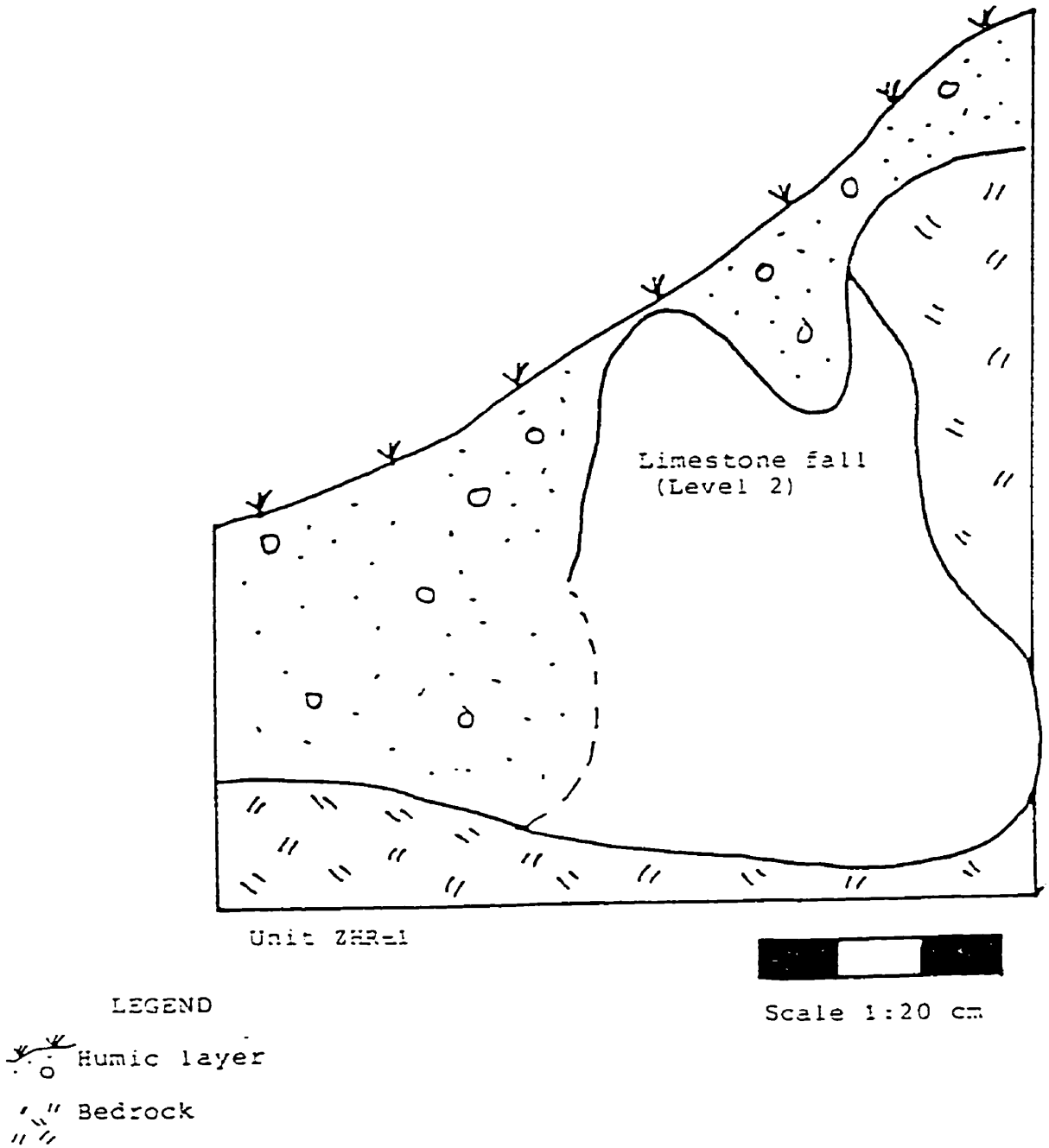

Figure 29

Profile Map of Unit ZHR-1 (Looking East)

Structure 14C, thus it may not have had a completely utilitarian function (such as collection of water for cooking, drinking, bathing etc.). Through excavation, the function of the *Zuhuy Ha* Reservoir would hopefully be clarified.

The humus layer (Level 1) consisted of very loose, reddish brown soil mixed with rotten organic matter (leaves, twigs) near the surface, giving way to a darker brown and more dense soil matrix interspersed with roots and occasional limestone pebbles and cobbles. This level was thinner at the south end of the unit (from being non-existent where the lip of the reservoir was present pre-excavation to about 20 cm) while it was quite deep (65 cm) at the north end of the unit and in the center (122 cm).

Ceramics recovered from this level consisted of 11 Belize Red: Belize Variety sherds, and 1 Cayo Unslipped: Cayo Variety sherd. These are both dated to the Spanish Lookout Phase of the Late Classic Period (675-875 A.D.; Gifford 1976:46). There was one small rudimentary fire-treated chert eccentric recovered from this level. The eccentric was approximately 3.3 cm by 2.1 cm by 0.9 cm in dimension and exhibited retouch on the distal side (to the bulb of percussion) with four tooth-like protrusions ranging from 2 mm to 3 mm in height. Three chert flakes represented the lithic assemblage for this level. The one faunal remain for this level consisted of an unidentified animal molar.

Level 2 consisted of fallen limestone (between 47 cm and 51 cm thick) which had previously made up the lip of the reservoir. Long term water erosion had undermined the foundation upon which the lip was situated, thus eventually it had fallen into the reservoir itself. This fallen limestone material was quite distinct, thus it was removed separately from the humus layer (unlike other areas of excavation along the *Lahkin Sacbe*). The level

almost appeared to form one continuous soft limestone block. Underneath was a mix of soil, pebble and cobble which properly should be referred to as Level 1 material (as it was deposited previous to the collapse of the reservoir lip), but it was removed as part of Level 2 (as it was situated beneath the Level 2 material).

Artifacts for Level 2 were recovered from the soil layer underlying the limestone fall (no artifacts were recovered from the fall itself). There were 2 limestone lithics. Sherds were identified as 2 Belize Red: Belize Variety; 3 Platon-punctated Incised: Platon Variety; 30 Chunhuitz Orange: Variety Unspecified and 5 undiagnostic sherds. All these fall within the Spanish Lookout Phase of the Late Classic Period (675-875 A.D.; Gifford 1976:58).

SUMMARY

The excavations along the *Lahkin Sacbe* and at the *Te Tun Na* Group terminal complex during the 1996 and 1997 field seasons have been discussed. The methodology and techniques of excavation were outlined. Excavation units were placed in order to estimate the time of construction for the various features associated with the *sacbe* as well as to define construction techniques and clarify the associations between the various features. From these excavations, general statements regarding the assemblage's greater significance and utility are a desired result. Recovered artifacts were analyzed to contribute to the achievement of the above goals.

More specifically, how this information relates to the greater site function can now be assessed. In the following chapter it will be proposed that the processions and ritual ceremonies that occurred along the Lahkin Sacbe were probably related to fertility and the

insurance of good agricultural yields for the fields associated with the site. An examination of agricultural rituals will emphasize that ritual was a pervasive element of ancient Maya life. Every activity was mediated through the performance of ritual, be it planting a field, or a public ballgame ceremony. The excavation results can be used to emphasize that the *Lahkin Sache* represents a collective attempt at place building for a very specific reason: to underline the importance of the site's greater purpose of agricultural production, through the appropriation of ideology and ritual.

CHAPTER IV

INTERPRETATIONS

Preliminary interpretations of the excavation results from the *Lahkin Sache* research will be discussed here. Attention will be paid to the significance of the specific architectural features that were found at the *Te Tun Na* group and along the *Lahkin Sache*. A discussion of Maya ritual associated with agriculture and fertility will be presented as a context to place the excavated architecture of this case study within the wider societal processes of the ancient Maya. Finally, the applicability of ideas related to cultural space and place and landscape archaeology, as they were discussed in Chapter II, will be assessed.

EXCAVATION RESULTS

Te Tun Na

The analysis of the ceramics that were recovered from the 15C platform indicate that the structure was constructed in one building effort during the Late Classic Period. That there was no superstructure evident indicates that the platform likely was utilized as an open area for performance or ritual ceremonies.

Excavations underneath Altar 1 and the butt of Stela 1 indicate that there were no ritually cached deposits present that were specific to the monuments at the *Te Tun Na* group. These monuments may have served as a marker for the prestige of the individuals or groups who utilized them as accoutrements of the ritual processes which occurred at the terminus of the *Lahkin Sache*. One question that arises, specifically in reference to Stela 1, is whether or not it ever stood erect in front of Structure 15C. The height

difference between the modern surface level and the top of the bedrock would intuitively not seem to be great enough to sustain the weight of the upright stela. There were no modifications of either the bedrock or the monument which indicate how it stood upright in such a shallow location. This could perhaps be explained if the stela had not stood erect, but had always been flat on the surface. In this position, it may have served in a similar way as the altar - as a surface upon which offerings had been placed during ritual ceremony.

Lahkin Sacbe

The excavations at the end of the *sacbe*, proximal to the site core, indicate that like the terminus, the *sacbe* and Structure 14C had been constructed in the Late Classic Period in one construction effort. With the exception of a series of re-plastering events immediately in front of the inset stair of Structure 14C, the *sacbe* appears to represent the final product of a single program of construction. The *sacbe* construction coincides with the other ritual architecture in the site core (the ballcourt), and is similarly associated with one branch of the modified natural drainage ditch which flows down to the agricultural fields below the site.

Structure 14C represents a unique example of the only excavated structure of its class in the Belize Valley. One interpretation is that the structure provided an ideal platform to view processions along the *sacbe*. It can accurately be referred to as a "reviewing stand" based on the morphology of the structure, the lack of superstructure, and the orientation of the inset step. The orientation of the step itself (fronting the structure on the *sacbe* side) reflects past patterns of movement atop the *sacbe* and its

associated structures. The evidence of re-flooring adjacent to the step indicates that this was an area of high traffic volume. This is one example of how architecture not only bounds culturally significant place, but funnels the movement of people through the landscape. One unique characteristic of Structure 14C is the purposefully rounded corners which it exhibits. This trait is not commonly seen at X-ual-canil, nor at other sites in the Belize Valley, with the exception of true round structures. An alternate, and not necessarily mutually exclusive interpretation of Structure 14C is that it was a focus for ritual ceremonial offerings. The high traffic volume previously mentioned is consistent with this interpretation, although the lack of preserved offertory artifacts is problematic.

The *sache* walls themselves were confirmed to be bilateral double-faced, parapet walls. This scale of elaboration (in addition to the dimensions of the *sache*) indicates that the *Lahkin Sache* was on the higher end of the continuum of *sache* construction as compared to other sites in the Belize Valley.

Although it was difficult to tie the *Zuhuy Ha* reservoir specifically to the *sache* (as there was no formal access diverted from the *sache* to the reservoir), the reservoir's spatial proximity indicates that it could have been used in the ritual processes that occurred along the *sache*. The small dimension of the reservoir (5.4 m in diameter) would seem to indicate its special function, in addition to the presence of the single rudimentary eccentric lithic - an artifact class associated with the ritual life of the ancient Maya.

The features related to the *Lahkin Sache* can be understood through a contextual discussion of their placement within the realm of ritual ceremony and procession devoted to agriculture and agricultural fertility. A discussion of ethnographic agricultural ritual will

allow for the confirmation of the idea that ritual was performed both on the private and public levels for the increase of abundance and fertility. Architecture built for ritual purposes (ritual procession in the case of the *Lahkin Sache*) may have been constructed at the site as part of the integrative agenda of the leading group at the site, or their sponsors from a nearby polity, for the facilitation of the administration of the agricultural products which the site produced.

MAYA AGRICULTURAL RITUAL

The idea that ritual pervaded the everyday lives of the ancient Maya is one which is prominent in the academic literature (Farriss 1984:288; Redfield and Villa Rojas 1962; Schele and Freidel 1990). Another common theme is the importance of agriculture (Marcus 1983:473). Farming was an activity which occupied much of the labor and energy of the ancient Maya; and has even been blamed for the "collapse" of the Maya civilization (Sharer 1994:344). Thus there is an implicit association between agricultural and ritual activities. A complete understanding of how these realms interact is only possible through the examination of both archaeological data and ethnohistoric reports. Although specific ethnohistoric accounts are focused on different Maya groups, the ritual and belief systems associated with agriculture can be seen to have a wide geographic scope. In fact, Pan-Mesoamerican traits, with only slight variations in regard to agricultural/ritual practice, are common. The utility of ethnohistoric accounts is as analogies for past behavior, which admittedly may have been manifested in somewhat different form before the Spanish conquest of the Americas, but are nonetheless useful tools to infer ancient ritual practices.

What follows is an investigation of the forms of agriculture practiced by the ancient Maya and how their system of agriculture alternately modified or was congruous with the surrounding landscape. Rituals associated specifically with agriculture will be examined, as will the concept of agency with regard to who practiced these rituals and where (public or private places). These ideas are contributed as one way of interpreting the significance of the *Lahkin Sache* within the wider societal context of the site of X-ual-canil.

FORMS OF AGRICULTURE PRACTICED BY THE ANCIENT MAYA

There has been an implicit expectation which states that civilizations move towards increasing levels of complexity through time. One hallmark of this increasing complexity is a transference from the use of shifting cultivation to permanent cropping (Wilk 1985:53; Wiseman 1983:157). This shift is usually accompanied by more intensive forms of land modification and use. The ancient Maya used a variety of agricultural techniques not only to produce enough food for survival, but also to create surplus yields and to exploit a wide variety of cultigens, in different microenvironments.

Non-intensive Agricultural Techniques

The most common form of non-intensive agriculture practiced by the ancient Maya was the swidden or 'slash and burn' method of agriculture (Wiseman 1983:148). This method involves a field being planted for 1-3 years, and then left to lie fallow for up to 12 years (Sharer 1994:442). There is a considerable amount of labor required initially to clear the field, to burn it, plant it, as well as weed the crops and then harvest them (Sharer 1994:443). This type of farming, also referred to as *milpa* farming, is still in use in much

of Central America today (Farriss 1984:125). Other non-extensive forms of agriculture which yield a variety of subsistence products include what are known as infield systems, or kitchen gardens (Wiseman 1983:149). The kitchen garden is commonly used to grow root crops such as manioc, sweet potato and jicama. An extension of the kitchen garden is to harvest some of the trees in close proximity to the residential compound, which includes the exploitation of such trees as avocado, annona and mameys (Wiseman 1983:149). Dennis Puleston (1971) conducted experimental work with ancient underground storage facilities, or ***chultunob***, to see if the fruit of the ramon tree could have been one such cultigen in an agroforestry exploitation model (see Peters 1983; Miksicek et al 1981; and Reina and Hill 1980; for a refutation of this subsistence alternative). The concept of multicropping, where "two or more cycles of herbaceous crops are raised on the same plot of land each year" (Wiseman 1983:151), also falls under the heading of non-intensive agricultural practice.

Intensive Agricultural Techniques

Intensive agricultural techniques are those which require a certain amount of large-scale mobilization and unification of labor to modify the landscape in such a way that its exploitation for agricultural purposes is maximized (Marcus 1983:474; Wiseman 1983:155). There are two main ways in which intensive agriculture is practiced in the Maya area: raised or ditched fields and terraced fields on hillslopes (Fedick 1994; Turner 1974; Wiseman 1983:157). Intensive agricultural techniques are also characterized by almost continuous cultivation, without longer fallow periods than a year, if at all (Wilk 1985:53).

Raised or ditched fields are employed in wetland areas, where channels are dug, and the fields are formed by mounding up the material from the channel (Turner and Harrison 1983:1). This system required considerable labor output at the beginning of the field formation process as well as annual input to maintain the fields by transplanting, weeding and applying 'muck' to the fields from the dug canals (Turner and Harrison 1983:2).

Terraces are architectural constructions found on sloped, hilly areas which serve as retaining walls to catch prime, fertile soil which is being washed down the slope of the hill, or channel of the natural valley (transverse terracing). Fedick (1994:124) has reported that the building of terraces appears to be an attempt to consolidate the best land resources in the face of an increasing density of upland settlement. Because terraces occur on slopes of only between 4 and 57 degrees, they seem to represent an attempt to bring marginalized land into productive agricultural use. Terraces may also have functioned to drain water, or alternately to retain moisture in soils (Turner 1974:120).

Hydraulic Landscape Modification Associated With Agriculture

As Beardsley has noted, "Land management unites the household, water management unites the community" (in Scarborough 1991:101). The manipulation of the hydraulic aspects of the landscape have been briefly addressed during the discussion of raised field and agricultural terrace systems, however, there are additional water management techniques which have been applied in the Maya area. These include the use of man-made reservoirs, drainage ditches and canals, check dams and irrigation systems. One definition of 'water management' is that it is "the interruption and redirection of the

natural movement of water by society" (Scarborough 1991:101), and the Maya certainly utilized labor at the community level to implement some of their modifications to the landscape.

Reservoirs in the Maya area were often created secondarily; following initial use as quarries for construction materials, and then becoming water catchment areas. The bell-shaped *chultunob* may also have been used as water storage areas (Scarborough 1991:111). These types of features were used for water storage; which is to say that they functioned to conserve water during times of less water abundance (the dry season). Their placement in the landscape is interesting in that they can be found associated with other water manipulation features, such as at the head of modified natural gravity-fed drainage channels (such as at X-ual-canil) or at the base of large naturally fed drainage canals where they could function to divert and capture rainwater (Scarborough 1983:727; 1986:82).

In addition to reservoirs, the Maya manipulated natural drainage channels and still-water resources to provide an outlet for excess water during the wet season (Scarborough 1991:113). To further refine their control over these features, they would sometimes construct 'check-dams' (Fedick 1994:110; Healy 1983; Turner 1974:119). Scarborough speaks of a particular drainage channel at Tikal's Perdido Group where the gradient of the slope is so steep that a series of at least three check dams can be found along its length to slow the movement of water (Scarborough et al. 1994:101).

In concert, these features of drainage and conservation could be manipulated such that greater control of the flow of water to the agricultural fields could be attained to maximize yields.

Agricultural Complexity and Levels of Social Variability

Intensive forms of agriculture have often been associated with societies which have a higher degree of social complexity (Healy 1983:147). Implicitly, it would seem that to undertake some of these labor intensive landscape modifications, some sort of centralized control of labor resources would be required to initiate the construction, and also to maintain it (for a quantitative discussion of the labor-expenditure required in large scale agricultural architecture, see Abrams 1994). In light of the integral importance of ritual and religion to the ancient Maya, it is not unreasonable to suggest that there would be an associated system of ritual advisors and practitioners who would ensure the respective deities were 'on side' for these large-scale endeavors.

Intensive agricultural practices also make the presence of agricultural surplus probable. A diversification of social strata can result when certain individuals of a population are no longer primarily concerned with agricultural production, but can pursue other occupational roles. These social distinctions are generally of an unequal nature, where social differentiation between individuals becomes more pronounced and conflict and contradiction results (McGuire 1992).

Ritual Associated With Agriculture

The varied practices which constitute the ritual life of the ancient Maya are also essential to the practice of agricultural ritual. The broad geographical scope of the Maya

area does account for some variation between regions, but many rituals and deities are Pan-Mesoamerican in distribution. The rituals may involve singing, whistling and prayer to invoke the various deities associated with agriculture (Redfield and Villa Rojas 1962:112). Material culture plays an important role in rituals via offerings of candles, incense and liquor. Also there are ceramic figurines, which are thought to embody a religious function as the focus of an agriculture-fertility cult (Sharer 1994:679). Performative dancing was also integral to ritual. Fasting, abstinence and the intake of alcoholic or other psychotropic substances may have been practiced in preparation for agricultural ritual by the immediate participants (Sharer 1994:540).

One dominant theme in the agricultural ritual of the Maya is sacrifice, ranging from the simple offering of food to the presentation of ornaments and valuables, to the killing of animals and humans (Sharer 1994:540). One special type of sacrifice is known as auto-sacrifice or bloodletting. The letting of blood, which was considered a sacred substance, had a strong association with rituals of agricultural fertility. This practice fluoresced during the Classic Period (Furst 1976:182). There was a belief that the gods of the earth required human blood and flesh for their sustenance, in return for which they would continue to provide the maize to sustain humanity (Furst 1976:184).

The Calendar and the Agricultural Year

The Maya developed one of the most amazing and accurate calendars that was ever utilized in either the Old or New World. It served to divide up time, and was the scale by which all events (agricultural included) were gauged. The control of the calendar was thought to have been the prerogative of the elite, who utilized the calendar as a tool to

reaffirm their communion with the supernatural, thereby reinforcing their own social power. The system was based on the movements of celestial entities, and predicted the appropriate time for all activities associated with agriculture to be undertaken (field clearing and burning, sowing, and harvesting as well as their concomitant ritual activities) (Sharer 1994:559). Restricted access to calendrical information reaffirmed the role of the elite in the performance of public agricultural rituals.

Agricultural Deities

Several gods found within the pantheon of Maya deities are associated with agriculture, seasonal change, fertility or the elements. They are the focus of ritual appeals and offerings made by both the village religious specialists, and the 'common' *milpero*.

The maize god is associated with agriculture, but specifically maize agriculture, and is often represented as a handsome Maya youth with corn sprouting from his headdress (Culbert 1974:79; Sharer 1994:534; Thompson 1960:11). He is alternately known as Yum Kaax or God E, and is associated with the glyph of the day sign for *Kan* (Sharer 1994:534). The maize deity is the patron of the harvest, husbandry and, in his benevolent aspect, is associated with life, prosperity and abundance (Kelley 1976:63; Sharer 1994:534). Depictions of Maya rulers or elite, wearing a corn headdress in the guise of the maize god, are frequent (Sharer 1994:540). The maize god is also seen to be associated with the older set of twins from the epic creation tale of the Popul Vuh (Schele and Freidel 1990:412).

Chac, an agricultural deity, but more specifically referred to as the Rain God or God B, is recognizable on the basis of a long, down-curling nose, a lolling tongue and

often a T-shaped eye, which is thought to be a link to Tlaloc (the Mexican rain god; Freidel et al. 1993:114; Kelley 1976:63; Sharer 1994:531). Representations of Chac may also have resembled a bearded old man (Culbert 1974:79). Chac was sometimes depicted as having four different aspects, or variations, which serve to emphasize the quadripartite division of the Maya cosmological view (Freidel et al. 1993). These include Chac Xib Chac, the Red Chac of the East; Sac Xib Chac, the White Chac of the North; Ek Xib Chac, the Black Chac of the West; and Kan Xib Chac, the Yellow Chac of the South (Sharer 1994:531). The colors associated with the different directions are replicated in the colors of corn: red, white, black and yellow: the two mutually enforce one another as being integral to the quadrilateral pattern of the cosmos (Vogt 1990:115). These directional Chacs were alternately referred to as the pahuatunob /kanpahuatun, zacpahuatun, ekpahuatun and chacpahuatun, Farriss 1984:288; Redfield and Villa Rojas 1962:116). The intimate association of the Chacs with water is often reflected in Maya iconography, where they are represented through an abundance of water symbolism (Puleston 1977:458). A regional variation of the chacs is the Tzotzil belief in Chauc or Anhel, who is "the rain god, god of water, owner of the thunderbolt, lord and owner of the mountains, protector of *milpas*, particularly those planted on the slopes of his mountain domain, and giver of maize" (Thompson 1970:268). The traits of several gods can be seen to be ascribed to the Chauc in Tzotzil belief.

The reptilian god Itzamna is sometimes associated with the earth and sky, and thus may have been responsible for rain, fertility and abundance. He has also been represented as being the creator of the world and mankind (Culbert 1974:79). There has also been the

suggestion that the Chacs were simply different manifestations of Itzamna (Thompson 1960:11).

A god who seemed to be a focus of ritual only during the Classic Period was Ah Kin. The common representation of this god was as an old man, who was responsible for drought and bad weather and thus the fate of the corn (Culbert 1974:79; Oakes 1951:39). A logical focus for ritual dedicated to Ah Kin was that of seeking to avoid his wrath: as a sort of preventative measure (Culbert 1974:79).

The deities of the field or soil, referred to as Yuntzilob, serve as guardians of the *milpa* (Redfield and Villa Rojas 1962:76). These gods of the *milpa* (balams) are closely tied to nature, and are similar to the gods of the forest (Kuilob Kaaxob), as well as the 'great-men' of the *milpa* (Nucuch Uincob) and the 'lord of the *milpa*' (Yum-i-col) (Redfield and Villa Rojas 1962:112-113). They are often associated with one specific feature in the landscape, such as prominent mountains, springs, or rivers (Thompson 1960:11).

Maize - the Sacred Product of Agriculture

Although Pre-Hispanic Maya agriculture produced a variety of products, none was more essential to the activities of daily life, as well as the ritual life, of the Maya than maize (Bierhorst 1990; Crane 1986:147; Culbert 1974:48; Rosaldo Jr. 1968:525). In the creation myth of the Quiche Maya (set out in the Popul Vuh), humans themselves are made out of corn, "There were four animals who brought the news of the ears of yellow corn and white corn...And these were the ingredients for the flesh of the human work, the human design, and the water was for the blood" (Tedlock 1985:163).

Maize itself was sacred; it was seen to have an 'inner-soul', and it is also the main ingredient of *atole*. This 'gruel' is utilized in sacred contexts, and served during feasting and times of prayer (Vogt 1990:67). The maize tree is depicted as the foliated cross in Maya art, representative of the original act of creation, sacrifice and rebirth (Freidel et al. 1993:55). It is seen as the "central axis of the world in the symbolism of cultivated nature (Schele and Freidel 1990:409).

Private Agricultural Ritual

Private agricultural ritual consists of those appeals which the *milpa* farmer makes within his own field. The services of a full-time religious specialist from the village is not required. Each *milpero* performs specific ceremonies in association with the tasks of clearing, burning, planting and harvesting his fields (Farriss 1984:288; Redfield and Villa Rojas 1962:42). During the clearing stage, the farmer asks the Kuilob Kaaxob or gods of the forest for their permission to cut down the trees (Redfield and Villa Rojas 1962:112-113). He views his *milpa* as having four sides and a center, which emphasizes the Maya view of the importance of the quincunx pattern (Thompson 1970:166). Often, field rituals will be performed by first establishing the four sides and the center of the *milpa*, by demarcating these with piles of stones (Freidel et al 1993:129).

As the farmer sets his *milpa* alight, he whistles up the spirits of the winds to allow him to have a good burn (Redfield and Villa Rojas 1962:44). After planting, the farmer asks the spirits of the *milpa* (the chacs, balams and Yuntzilob) to protect his fields, in association with his offering prayer, candles, *copal* incense, and liquor (Redfield and Villa Rojas 1962:45).

Public Agricultural Ritual

Public agricultural ritual is usually performed by village religious specialists sometimes known as h-men (Redfield and Villa Rojas 1962:84). The aspects of agriculture which seem to affect all members of a community are those addressed by these public rituals. One example is drought, which affects all members of the community equally, and thus also inspires the most important communal religious ceremonies. The h-men also serve as consultants as to when the proper time is for individual farmers to go out and clear, burn and plant their *milpas* (Redfield and Villa Rojas 1962:82). The larger forces which act upon the community are the realm or interaction sphere of these village religious specialists (including the fates of all the people and animals of the community, as well as the success of the crops and the control of the weather) (Oakes 1951:56).

An example of one communal ritual is a ceremony dedicated to the chacs to bring rain for the corn. The ceremony occurs during the thirteenth month and starts by offering sacrificed animals at the temple, including the consumption of their hearts. The ceremony then moves outdoors to where an altar serves as the focal gathering point for people viewing the proceedings. Incense was burned, while the chacs were invoked by prayers and offerings, and finally the participants engaged in eating and drinking. This ceremony, known as the *tup 'kak*, or the 'killing of the fire' was held to ensure plentiful rain for the corn (Sharer 1994:554).

Farriss (1984:288) makes an interesting point regarding the utility of historic accounts of agricultural ritual. She asserts that the realm of private ritual, performed in the fields and primarily dedicated to nature and 'earth gods', was not as deeply affected by the

Spanish conquest as was the realm of public ritual. When the Spanish came, they vigorously eradicated the public or communal agricultural rituals and replaced these with their own Christian ceremonies, but they were not as concerned about the realm of private ritual, as practiced in the fields, which were considered to be less dangerous (Farriss 1984:289). This would seem to suggest that historic accounts of private agricultural ritual are fairly close to being what they were in antiquity, but also that the realm of public agricultural ritual did not survive into the present day. This does not mean that public ritual did not exist or was not integral to the exchanges which resulted in the smooth functioning of the community social group. At a site where the maintenance of common agricultural lands was a collective enterprise, it follows that there would have been a ceremonial aspect of the group's production activities.

One postulated function of the *Lahkin Sache* at X-ual-canil was that it was utilized as a forum for the enactment of procession, performance and ritual devoted to ensuring good agricultural yields and continued agricultural fertility for the community. Although there are no good ethnographic accounts of agricultural rituals that incorporate processions for the Maya, it has been established that the elements of ritual ceremony, offering and sacrifice occurred as a means to ensure continued agricultural fertility. The rituals that were focused on agricultural fertility may have originally been done by the dispersed farming populations along the bottom of the hill upon which X-ual-canil sits, in a private forum. When a group from a more distant site attempted to integrate this population through the establishment of the X-ual-canil, they used public agricultural ritual as a way to unify the population in their purpose of administering the water control system

and agricultural yields from the site. Aside from this function of the architectural assemblage, it exemplifies how the natural landscape can be appropriated into the culturally built environment for a particular end. Integrating the X-ual-canil population to this purpose relied on the public control of aspects of ideology as they related to the performance of ritual atop the *Lahkin Sache* and at the ballcourt as well.

THE RITUAL LANDSCAPE

How do ideas related to the description of Maya agricultural ritual fit with some of the previously discussed ideas of space, place and the cultural landscape? It is fruitful to review how architecture as an artifact can be conceptualized. Hillier and Hanson (1984:1-2) describe architecture as an artifact that serves both functional and stylistic purposes, "decoration, embellishments, or even modifications of shape, can give the artifact a significance over and above its practical uses, one belonging to the realm of cultural identity or 'meaning'". This duality which architecture holds is exemplified in the *sacbeob* of the ancient Maya. The roadways serve to link discreet parts of the site physically and visually, but they also provide places, in and of themselves, for the performance of ritual. Taken together, their functional and symbolic multiplicity exemplifies the nested levels of hierarchy amongst the individuals who created them, and integrates members of this social system. Architecture is different from any other artifact class because of its contribution to the ordering of space to encompass culturally significant place (Hillier and Hanson 1984:1). People are influenced by the way in which architecture funnels their movement, and *sacbeob* offer ultimate testimony to the movement and motion of people; they provide a static record of a complex and non-static series of events which were enacted upon their

length (Keller 1997:97; Thompson 1983:116). In examining the greater site function postulated for X-ual-canil, that of administrative center for the agricultural yields of the nearby fields, the connection to ritual associated with agriculture emerges for the activities which occurred upon the *Lahkin Sache*. The excavation and analysis of the *sache* and its associated features led to a connection between those characteristics and the primary ritual/performative function of this architecture. Specifically, the spatial association between the *Te Tun Na* Group and one branch of the modified natural drainage at the site, the open performative platform at the *Te Tun Na* Group (Structure 15C), and the reviewing stand (Structure 14C) at the proximal end of the *Lahkin Sache* provide concrete evidence to verify that this architecture served some purpose other than the transportation of goods or people. The builders of the *Lahkin Sache* took advantage of the natural characteristics of the landscape to bound the environment into cultural place. This is evidenced by the characteristics of the architecture itself. The *Lahkin Sache* in width takes up almost the span of the natural east running ridge line upon which it was constructed. The terminus of the *sache* coincides directly with one branch of the naturally occurring drainage ditch which carries water to the fields below. The confluence of these aspects of the landscape make situating the *Lahkin Sache* and *Te Tun Na* group more than coincidence. The morphology of the architecture leaves evidence of the past movement of people through this landscape. The presence of an altar implies that sacrifice or offering was part of the ritual processions atop the *sache*. That agricultural ritual associated with fertility and abundance do and did in fact occur has already been established. It is through the examination of all these variables in light of the overarching administrative function of

X-ual-canil that leads to this interpretation of the significance of the *Lahkin Sache*. The cultural context of any artifact provides essential information regarding its placement within the social, symbolic and functional life of a group of people. The *sacbeob* of the ancient Maya are no different in this respect and must be examined for a variety of potential significations.

SUMMARY

The excavation results have been examined, specifically with respect to how they fit into a more general cultural context. A discussion of the pervasive nature with which agricultural ritual was and is practiced in the Maya area provides a framework to understand the specific potential of the *Lahkin Sache* at X-ual-canil. This is not to say that all *sacbeob* held this function, but that all *sacbeob* held a variety of functions in a site specific and region specific context. The part of this discussion which is transferable to many examinations of architecture relates to the broad-based ideas that describe how architecture divides undifferentiated space into culturally significant place. Large scale public architecture presents a tracing of how past peoples moved through their space and how they negotiated their cultural fusion and adaptation to the natural environment through the ordering of the built environment. Experience played a role in the significance of the *Lahkin Sache* as its very nature requires the participation of people in processional movement, performance and sacrifice or offering. This was undertaken in a liminal place, or threshold, where perhaps the separation between the corporeal world and the supernatural world was not so great. Ultimately, the *Lahkin Sache* functioned as a place for social action, as it maintained and reified the relationships between community

members, each of whom had a role to play in the collective control of the water and agricultural resources at X-ual-canil.

CHAPTER 5

SUMMARY AND CONCLUSIONS

The work presented here has tried to combine a scientific methodology with a non-traditional way of interpreting the excavation results. The *sacbeob* of the ancient Maya have not been the focus of intensive study, thus this represents one of the few complete examinations of these public monumental features. A definition of *sacbeob* was presented along with an inventory of their potential functions as a background with which to understand the research. A theoretical framework reliant upon how the cultural world meshes with and gives significance to the natural world through the definition of space was offered as a way to come to a full appreciation of what role the *sacbeob* held for the ancient Maya. The region of the Upper Belize River Valley and the sites within the immediate area of X-ual-canil with similar configurations of architecture such as *sacbeob*, reviewing stands, stelae and altar monuments were described. That these features recur with some regularity in the micro region indicates that they were probably serving the same set of functions, and establishes that the architecture at X-ual-canil did not exist within an exceptional cultural context. The excavations undertaken at X-ual-canil during the 1996 and 1997 field seasons provided the information to test the viability of some of the proposed ideas related to the importance of the symbolic and culturally specific aspects of monumental public architecture. Finally, a framework for a potential ritual usage of this assemblage of features was proposed. This framework focused on the centrality among the Maya of public ritual related to agricultural pursuits, which fits with the overall proposed function of the site of X-ual-canil.

This interpretation of the excavation results is reliant on the underlying premise that in addition to purely functional usage, architecture defines aspects of cosmological symbolism. Ultimately, architecture is reflective of the social relationships which were played out within the boundaries that it defines. Social contacts were negotiated within, over and around public edifices such as *sacbeob*. Further, they functioned as a medium upon which the society's members ensured their continued successful integration with the natural landscape.

To say that *sacbeob* were simply roadways for the transportation of goods and people is to minimize the wide range of significance which they held to the people that constructed them. If nothing else, they provide today a permanent and static record of a dynamic series of ancient events.

REFERENCES CITED

Abrams, E.M.
1994 *How the Maya Built Their World: Energetics and Ancient Architecture.* University of Texas Press, Austin.

Arendt, C., R. Song and P.F. Healy
1996 The 1995 Excavations in Plaza C, Pacbitun, Belize: A Middle Preclassic Burial and a Late Classic Stela. In *Belize Valley Preclassic Maya Project: Report on the 1995 Field Season*, edited by P. F. Healy and J. J. Awe, pp.128-138. Trent University Occasional Papers in Anthropology No. 12. Peterborough, Ontario, Canada.

Ashmore, W.
1991 Site Planning Principles and Concepts of Directionality Among the Ancient Maya. *Latin American Antiquity* 2 (3):199-226.

1992 Deciphering Maya Architectural Plans. In *New Theories on the Ancient Maya*, edited by E. Danien and R.J. Sharer, pp. 173-184. University Museum, University of Pennsylvania, Philadelphia.

Awe, J., and M. Campbell
1989 Preliminary Spatial Analysis of the Site Core at Cahal Pech, Belize and Its Implication to Lowland Maya Social Organization. In *The Cahal Pech, Belize Project: A Progress Report of the Second (1989) Season of Investigations*, edited by J. J. Awe, C. Bill and M. D. Campbell, pp. 1-21. Trent University, Peterborough, Ontario.

Awe, J., C. Griffith, and S. Gibbs
1997 Stelae and Megalithic Monuments in the Caves of Western Belize. In *Belize Valley Archaeological Reconnaissance Project: Progress Report of the 1996 Field Season*, edited by J. Awe and J. Conlon, pp. 81-104. Department of Anthropology, Trent University, Peterborough, Ontario.

Beetz, C. P. and L. Satterthwaite
1981 *The Monuments and Inscriptions of Caracol, Belize.* The University Museum, University of Pennsylvania, Philadelphia.

Bierhorst, J.
1990 *The Mythology of Mexico and Central America.* William Morrow and Company Inc., New York.

Buttimer, A.
1980 Social Space and the Planning of Residential Areas. In *The Human Experience of Space and Place*, edited by A. Buttimer and D. Seamon, pp. 21-54. Croom Helm, London.

Chase, A. F., and D.Z. Chase

1994 Details in the Archaeology of Caracol, Belize: An Introduction. In *Studies in the Archaeology of Caracol, Belize*, edited by D.Z. Chase and A.F. Chase, pp. 1-11. Pre-Colombian Art Research Institute, San Francisco.

1996 The Causeways of Caracol. *Belize Today* 2:31-32.

1998 Tilting With Windmills: Minor Centers, Social Complexity, and Lowland Maya Settlement Archaeology. Paper presented at the 63rd Annual Meeting of the Society for American Archaeology, Seattle.

Cheetham, D.

1994 Ancient Causeways, Elite Ritual and Settlement Patterns of the Maya: Recent Evidence from Cahal Pech, Cayo, Belize. Paper presented at the 59th Annual Meeting of the Society for American Archaeology, Anaheim, CA.

1995 Excavations on the Main Causeway at Baking Pot: A Brief Note. In *Belize Valley Archaeological Reconnaissance Project: Progress Report of the 1994 Field Season, Volume 2*, edited by J.M. Conlon and J.J. Awe, pp. 33-40. Institute of Archaeology, University College London.

Cheetham, D., G. Trainor, J. Mower, E. Pozzani, S. Duggan, A. Hassan and P. Amin

1995 On the Road Again: The Third Season of Excavations at the Zopilote Group, Cahal Pech, Belize. In *Belize Valley Archaeological Reconnaissance Project: Progress Report of the 1994 Field Season, Volume 2*, edited by J.M. Conlon and J.J Awe, pp. 1-10. Institute of Archaeology, University College London.

Cohodas, M.

1985 Public Architecture of the Maya Lowlands. *Cuadernos de Arquitectura Mesoamericana* 6:51-58.

Conlon, J.M.

1995 The Final Frontier: Settlement Survey at the Ancient Maya Site of Baking Pot. In *Belize Valley Archaeological Reconnaissance Project: Progress Report of the 1994 Field Season, Volume 2*, edited by J.M. Conlon and J.J. Awe, pp. 81-102. Institute of Archaeology, University College London.

1997 An Analysis of Ancient Maya Consumption Requirements and Agricultural Production Potential at Baking Pot, Belize. In *Belize Valley Archaeological Reconnaissance Project: Progress Report of the 1996 Field Season*, edited by J. Awe and J. Conlon, pp. 7-20. Department of Anthropology, Trent University, Peterborough, Ontario.

Cosgrove, D.
1984 *Social Formation and Symbolic Landscape*. Croom Helm, London.

Crane, C.
1986 Late Preclassic Maya Agriculture, Wild Plant Utilization, and Land-Use Practices. In *Archaeology at Cerros, Belize, Central America, Vol. I*, edited by R.A. Robertson and D.A. Freidel, pp.147-151. Southern Methodist University Press, Dallas.

Culbert, P.T.
1974 *The Lost Civilization: The Story of the Classic Maya*. Harper and Row, New York.

Daniels, S., and Cosgrove, D.
1988 Introduction: Iconography and Landscape. In *The Iconography of Landscape: Essays on the Symbolic Representation, Design and Use of Past Environments*, edited by D. Cosgrove and S. Daniels, pp. 1-10. Cambridge University Press, Cambridge.

Denevan, W.M.
1991 Prehistoric Roads and Causeways of Lowland Tropical America. In *Ancient Road Networks and Settlement Hierarchies in the New World*, edited by C.D. Trombold, pp. 230-242. Cambridge University Press, Cambridge.

Devereux, P.
1997 *The Long Trip: A Prehistory of Psychedelia*. Penguin, Arkana.

Dobkin de Rios, M.
1977 Plant Hallucinogens, Out-of-Body Experiences and New World Monumental Earthworks. In *Drugs, Rituals and Altered States of Consciousness*, edited by B.M. Du Toit, pp. 237-247. A.A. Balkema, Rotterdam.

Earle, T.
1991 Paths and Roads in Evolutionary Perspective. In *Ancient Road Networks and Settlement Hierarchies in the New World*, edited by C.D. Trombold, pp. 10-16. Cambridge University Press, Cambridge.

Eliade, M.
1959 *The Sacred and the Profane: The Nature of Religion*. Harcourt Brace Jovanovich, San Diego.

Fagan, B.M.
1992 *People of the Earth: An Introduction to World Prehistory*. Seventh Edition, Harper Collins, New York.

Farriss, N.M.
1984 *Maya Society Under Colonial Rule: The Collective Enterprise of Survival.* Princeton University Press, Princeton.

Fedick, S.L.
1994 Ancient Maya Agricultural Terracing in the Upper Belize River Area. *Ancient Mesoamerica* 5:107-127.

Ferguson, J.
1999 *The Ballcourts at Baking Pot: An Analysis of the Ballgame at a Maya Civic Centre.* Unpublished M.A. thesis, Department of Anthropology, Trent University, Peterborough.

Fletcher, L. A.
1983 Linear Features in Zone I: Description and Classification. In *Coba: A Classic Maya Metropolis*, edited by W.J. Folan, E.R. Kintz and L.A. Fletcher, pp. 898-102. Academic Press, New York.

Folan, W.J.
1983 The Ruins of Coba. In *Coba: A Classic Maya Metropolis*, edited by W.J. Folan, E.R. Kintz and L.A. Fletcher, pp. 65-87. Academic Press, New York.

1991 Sacbes of the Northern Maya. In *Ancient Road Networks and Settlement Hierarchies in the New World*, edited by C.D. Trombold, pp. 222-229. Cambridge University Press, Cambridge.

Freidel, D.A. and J.A. Sabloff
1984 Substructures, *Sacbes*, and Fieldwalls. In *Cozumel: Late Maya Settlement Patterns*, edited by D.A. Freidel and J.A. Sabloff, pp. 78-90. Academic Press, New York.

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

Furst, P.T.
1976 Fertility, Vision Quest and Auto-Sacrifice: Some Thoughts on Ritual Blood-Letting Among the Maya. In *The Art, Iconography and Dynastic History of Palenque, Part III. Mesa Redonda de Palenque*, edited by M. Greene-Robertson, pp. 181-193. Palenque, Mexico.

Giddens, A.
1979 *Central Problems in Social Theory.* MacMillan Press Ltd., London.

Gifford, J.C.
1976 *Prehistoric Pottery Analysis and the Ceramics of Barton Ramie in the Belize Valley*. Memoirs of the Peabody Museum of Archaeology and Ethnology. Vol. 18, Peabody Museum, Harvard University, Cambridge, MA.

Godkin, M.A.
1980 Identity and Place: Clinical Applications Based on Notions of Rootedness and Uprootedness. In *The Human Experience of Space and Place*, edited by A. Buttimer and D. Seamon, pp. 73-85. Croom Helm, London.

Golden, C.W. and J. M. Conlon
1996 Archaeology in the Plow Zone: Results of Salvage Operations at the North Caracol Farm Settlement Cluster, Cayo, Belize. In *Belize Valley Archaeological Reconnaissance Project: Progress Report of the 1995 Field Season*, edited by J.M. Conlon, pp. 19-36. Institute of Archaeology, University College London.

Haggett, P., A. Cliff and A. Frey
1977 *Locational Analysis in Human Geography I: Locational Models*. Edward Arnold, London.

Hammond, N., and M. Bobo
1994 Pilgrimage's Last Mile: Late Maya Monument Veneration at La Milpa, Belize. *Archaeology of Pilgrimage* 26 (1): 19-34.

Hassig, R.
1991 Roads, Routes, and Ties that Bind. In *Ancient Road Networks and Settlement Hierarchies in the New World*, edited by C.D. Trombold, pp. 17-27. Cambridge University Press, Cambridge.

Healy, P. F.
1983 An Ancient Maya Dam in the Cayo District, Belize. *Journal of Field Archaeology* 10: 147-154.

1990 Excavations at Pacbitun, Belize: Preliminary Report on the 1986 and 1987 Investigations. *Journal of Field Archaeology* 17(3): 247-262.

Hillier, B. and J. Hanson
1984 *The Social Logic of Space*. Cambridge University Press, Cambridge.

Hirsch, E.
1995 Landscape: Between Place and Space. In *The Anthropology of Landscape: Perspectives on Place and Space*, edited by E. Hirsch and M. O'Hanlon, pp. 1-30. Clarendon Press, Oxford.

Iannone, G.

1995a An Assemblage of Ancient Maya Ritual Enema Paraphernalia from Zubin, Cayo District, Belize. Paper presented at the 60th Annual Meeting of the Society for American Archaeology, Minneapolis.

1995b The 1995 Field Season at X-ual-canil, Cayo District, Belize. In *The Social Archaeology Research Program: Progress Report of the First (1995) Field Season*, edited by G. Iannone, pp. 26-39. Institute of Archaeology, University of London, London.

1996 Introduction. In *The Social Archaeology Research Program: Progress Report of the Second (1996) Season*, edited by G. Iannone, pp. 2-26. Department of Anthropology, Trent University, Peterborough.

1997 Exploring Ancient Maya Rural Complexity: Continuing Investigations in the Upper Belize River Region. In *The Social Archaeology Research Program: Progress Report of the Third (1997) Field Season*, edited by G. Iannone, pp. 3-20. Department of Anthropology, Trent University, Peterborough.

Jaeger Liepens, S.

1994 The Conchita Causeway Settlement Subprogram. In *Studies in the Archaeology of Caracol, Belize*, edited by D. Z. Chase and A. F. Chase, pp.47-63. Pre-Colombian Art Research Institute, Monograph 7. San Francisco, CA.

Keller, A.H.

1994 The Xunantunich Sacbe Project 1994. In *Xunantunich Archaeological Project 1994 Field Season.*

1995 Getting into Xunantunich: The 1995 Investigations of the Access Points and Accessibility of Xunantunich. In *Xunantunich Archaeological Project 1995 Field Season.*

1997 Testing and Excavation Around Sacbe II and Group C. In *Xunantunich Archaeological Project 1997: The Final Field Season*, pp.97-127.

Kelley, D.H.

1976 *Deciphering the Maya Script*. University of Texas Press, Austin.

Killpack, P.

1996 Drainage Systems, Anthropogenic Fields, and Dispersed Households: The 1996 Field Season at X-ual-canil. In *The Social Archaeology Research Program: Progress Report of the Second (1996) Season*, edited by G. Iannone, pp. 79-83. Department of Anthropology, Trent University, Peterborough.

Lang, R.
1989 The Dwelling Door: Towards a Phenomenology of Transition. In *Dwelling, Place and Environment: Towards a Phenomenology of Person and World*, edited by D. Seamon and R. Mugerauer, pp. 201-213. Columbia University Press, New York.

Lawrence, D.L. and S.M. Low
1990 The Built Environment and Spatial Form. *Annual Review of Anthropology* 19:453-505.

Leach, E.R.
1983 The Gatekeepers of Heaven: Anthropological Aspects of Grandiose Architecture. *Journal of Anthropological Research* 39(3):243-263.

Leighly, J.
1963 *Land and Life: A Selection from the Writings of Carl Ortwin Sauer.* University of California Press: Berkeley and Los Angeles.

MacLeod, B., and D. Puleston
1978 Pathways into Darkness: The Search for the Road to Xibalba. In *Tercera Mesa Redonda de Palenque, Vol. IV*, edited by M.G. Robertson and D.C. Jeffers, pp. 71-77. Pre-Colombian Art Research Center, Monteray, CA.

Marcus, J.
1983 Lowland Maya Archaeology at the Crossroads. *American Antiquity* 48:454-482.

Mathien, F.
1991 Political, Economic, and Demographic Implications of the Chaco Road Network. In *Ancient Road Networks and Settlement Hierarchies in the New World*, edited by C. Trombold, pp. 99-110.Cambridge University Press, Cambridge.

McGuire, R.H.
1992 *A Marxist Archaeology*. Academic Press Inc. San Diego.

Miksicek, C., K. Elsesser, I. Wuebber, K. Olsen Bruhns, and N. Hammond
1981 Rethinking Ramon: A Commentary of Reina and Hill's Lowland Maya Subsistence. *American Antiquity* 46(4):916-919.

Morrill, R.L.
1970 *The Spatial Organization of Society*. Wadsworth Publishing Company, Belmont, CA.

Oakes, M.
1951 *The Two Crosses of Todos Santos: Survivals of Mayan Religious Ritual.* Princeton University Press, Princeton.

Peters, C.
1983 Observations on Maya Subsistence and the Etiology of a Tropical Tree. *American Antiquity* 46:610-615.

Puleston, D.E.
1971 An Experimental Approach to the Function of Classic Maya Chultuns. In *American Antiquity* 36:322-355.

1977 The Art and Archaeology of Hydraulic Agriculture in the Maya Lowlands. In *Social Process in Maya Prehistory: Studies in Honour of Sir Eric Thompson,* edited by N. Hammond, pp. 449-467. Academic Press, London.

Redfield, R. and A. Villa Rojas
1962 *Chan Kom: A Maya Village.* The University of Chicago Press, Chicago and London.

Reina, R.E. and R.M. Hill II
1980 Lowland Maya Subsistence: Notes from Ethnohistory and Ethnography. *American Antiquity* 45:74-79.

Relph, E.
1989 Geographical Experiences and Being-in-the-World: The Phenomenological Origins of Geography. In *Dwelling, Place and Environment: Towards a Phenomenology of Person and World,* edited by D. Seamon and R. Mugerauer, pp. 15-31. Columbia University Press, New York.

Renfrew, C.
1984 *Approaches to Social Archaeology.* Edinburgh University Press, Edinburgh.

Romanov, M.A.
1973 *Yucatec Roads and the Orientation of the Maya World.* Doctoral Dissertation, University of Oregon, University Microfilms International, Ann Arbor.

Rosaldo Jr., R.I.
1968 Metaphors of Hierarchy in a Mayan Ritual. *American Anthropologist* 70:524-536.

Rose, C.

1980 Human Geography as Text Interpretation. In *The Human Experience of Space and Place*, edited by A. Buttimer and D. Seamon, pp. 123-134. Croom Helm, London.

Scarborough, V.L.

1983 A Preclassic Maya Water System. *American Antiquity* 48(4):720-744.

1986 Drainage Canal and Raised Field Excavations. In *Archaeology at Cerros, Belize, Central America*, edited by D. Freidel, pp 75-87. Southern Methodist University Press, Dallas.

1991 Water Management Adaptations in Nonindustrial Complex Societies: An Archaeological Perspective. In *Archaeological Method and Theory, Volume 3*, edited by M.B. Schiffer, pp. 101-140. University of Arizona Press, Tucson.

Schele, L.

1987 Sacred Landscape and Maya Kingship. *Symbols:* 12-16.

Schele, L. and D. Freidel

1990 *A Forest of Kings: The Untold Story of the Ancient Maya*. William Morrow, New York.

Schwake, S.

1996 Ritual at the Road's End: Preliminary Excavations at the Te Tun Na Group, X-ual-canil, Cayo District, Belize. In *The Social Archaeology Research Program: Progress Report on the Second (1996) Field Season*, edited by G. Iannone, pp. 62-78. Department of Anthropology, Trent University, Peterborough, Ontario.

Seamon, D. and R. Mugerauer

1989 Dwelling, Place and Environment: An Introduction. In *Dwelling, Place and Environment: Towards a Phenomenology of Person and World*, edited by D. Seamon and R. Mugerauer, pp. 1-12. Columbia University Press, New York.

Shanks, M. and C. Tilley

1987 *Social Theory and Archaeology*. Polity Press, Cambridge.

Sharer, R.

1994 *The Ancient Maya*. Fifth edition. Stanford University Press, Stanford.

Stone, A.

1992 From Ritual in the Landscape to Capture in the Urban Center: The Recreation of Ritual Environments in Mesoamerica. *Journal of Ritual Studies* 6(1):109-132.

Tedlock, D.

1985 *Popul Vuh: The Definitive Edition of the Mayan Book of the Dawn of Life and the Glories of Gods and Kings.* Simon and Schuster, New York.

Thompson, D.

1983 Buildings are for People: Speculations on the Aesthetics and Cultural Impact of Structures and Their Arrangement. In *Prehistoric Settlement Patterns: Essays in Honour of Gordon R. Willey*, edited by E.Z. Vogt and R. Leventhal, pp. 115-127. University of New Mexico Press, Albuquerque.

Thompson, J.E.S.

1960 *Maya Hieroglyphic Writing: An Introduction.* University of Oklahoma Press, Norman.

1970 *Maya History and Religion.* University of Oklahoma Press. Norman and London.

Tilley, C.

1991 *Material Culture and Text: The Art of Ambiguity.* Routledge, London and New York.

1994 *A Phenomenology of Landscape: Places, Paths and Monuments.* Berg, London.

Topic, J.R.

1992 Hoisting the Pennant in Huamachuco. A translation of El Izamiento del Gallardete en Huamachuco. En: *En el nombre del Senor: Shamanes, demonios, y curanderos del norte del Peru.* Luis Millones y Moises Lemlij, editores. Biblioteca Peruana de Psicoanalisis/ Seminario Interdisciplinaria de Estudios Andinos. Lima (1994).

Topic, J.R. and T.L. Topic

1983 Coast-Highland Relations in Northern Peru: Some Observations on Routes, Networks, and Scales of Interaction. In *Civilization in the Ancient Americas: Essays in Honor of Gordon R. Willey*, edited by R.M. Leventhal and A.L. Kolata, pp. 237-259. University of New Mexico Press and the Peabody Museum of Archaeology and Ethnology, Cambridge, MA.

Tourtellot, G.

1993 A View of Ancient Maya Settlements in the Eighth Century. In *Lowland Maya Civilization in the Eighth Century A.D.*, edited by J.A. Sabloff and J.S. Henderson, pp. 219-241. Dumbarton Oaks, Washington.

Trigger, B.
1990 Monumental Architecture: A Thermodynamic Explanation of Symbolic Behaviour. *World Archaeology* 22 (2):119-129.

Trombold, C.D.
1991 An Introduction to the Study of Ancient New World Road Networks. In *Ancient Road Networks and Settlement Hierarchies in the New World*, edited by C.D. Trombold, pp.1-9. Cambridge University Press, Cambridge.

Tuan, Y.
1977 *Space and Place: The Perspective of Experience.* University of Minnesota Press, Minneapolis.

Turner II, B. L.
1974 Prehistoric Intensive Agriculture in the Mayan Lowlands. *Science* 185:118-124.

Turner II, B.L. and P.D. Harrison
1983 Wetlands and the Maya: An Overview of the Problem and the Pulltrouser Swamp Project. In *Pulltrouser Swamp: Ancient Maya Habitat, Agriculture, and Settlement in Northern Belize*, edited by B.L. Turner II and P.D. Harrison. University of Texas Press, Austin.

Vogt, E.Z.
1990 *The Zinacantecos of Mexico: A Modern Way of Life*, 2nd edition. Harcourt Brace Jovanovich College Publishers.

Wallace, D.
1991 The Chincha Roads: Economics and Symbolism. In *Ancient Road Networks and Settlement Hierarchies in the New World*, edited by C. Trombold, pp. 253-263. Cambridge University Press, Cambridge.

Wilk, R.R.
1985 Dry Season Agriculture Among the Kekchi Maya and its Implications for Prehistory. In *Prehistoric Lowland Maya Environment and Subsistence Economy*, edited by M. Pohl, pp. 47-57. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, MA.

Wilson, B.
1980 Social Space and Symbolic Interaction. In *The Human Experience of Space and Place*, edited by A. Buttimer and D. Seamon, pp. 135-147. Croom Helm, London.

Wiseman, F.M.

1983 Subsistence and Complex Societies: The Case of the Maya. In *Advances in Archaeological Method and Theory, Vol. 6*, edited by M. B. Schiffer, pp. 143-189. Academic Press, New York.