

INTERPRETING THE MEANING OF RITUAL SPACES:  
THE TEMPLE COMPLEX OF PUMAPUNKU, TIWANAKU, BOLIVIA

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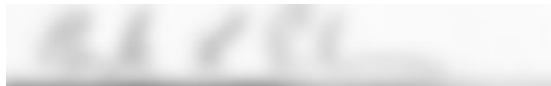
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## ABSTRACT

# INTERPRETING THE MEANING OF RITUAL SPACES: THE TEMPLE COMPLEX OF PUMAPUNKU, TIWANAKU, BOLIVIA

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The built environment embodies symbolic messages and helps transform human activity into meaningful experience. Anthropological archaeologists often study buildings from a materialist perspective, examining their functions, the labor investment they required, or their role in the political economy; they generally ignore important symbolic and phenomenological aspects of the built environment. This investigation addresses this lacuna through an examination of the Temple Complex of Pumapunku, one of the largest and most important ritual precincts in the pre-Columbian city of Tiwanaku. Architectural analysis of data from detailed mapping and selective excavation shows that the Pumapunku Complex is an extensive integrated compound consisting of platforms, buildings, plazas, courtyards, and stairways, measuring half a kilometer in length. Although this complex was modified several times, its formal plan remained unchanged.

Two interpretive approaches are used to understand the experience and meaning of the temple complex. The first is a phenomenological approach. The architectural spaces are interpreted from the point of view of a pilgrim walking through the complex,

examining the physical and emotional reactions he or she might have experienced. The Pumapunku Complex was designed to funnel groups of people across specially constructed architectural spaces, and to display a series of symbolically important and ritually charged images and activities. The pilgrim was thus exposed to the cosmological meanings imbedded in the architecture of the compound and indoctrinated into important aspects of Tiwanaku religion. The second interpretive approach is structuralist. A model of the axis mundi is developed based on historical and archaeological evidence of a specific architectural form used by the Inka. The material correlates of this model are compared to the Pumapunku Complex, and analysis suggests that the temple complex is an architectural representation of the center of the Andean world. Together the two complementary approaches provide a better understanding of the purpose and meaning of this complex to the people who built it and participated in rituals within it.

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## Chapter 1

### Interpreting Meaning of Ritual Space: The Temple of the Pumapunku Complex, Tiwanaku

#### 1.1 Introduction

My first visit to the site of Tiwanaku was one of the most disorienting archaeological experiences of my career. Though a veteran traveler with broad archaeological experience, I was overwhelmed by the expansive ruins. As an archaeologist and anthropologist, my goal is to comprehend an archaeological site in the same terms as its pre-Columbian builders and users; nevertheless, my initial vagaries around the ruins were simply that: wanderings unrelated to the architecture and form of a meticulously planned city and monumental core. My unease continued as I started work at the largest and most elaborate structure at the site, the Pumapunku Complex. It took me several days to comprehend fully that it was, in fact, not only a temple complex but an enormous one, several hundred meters long. Observing its present, lamentable state, I was fascinated by the realization that the Pumapunku Complex was, in its prime, unimaginably wondrous. The architecture is tumbled and shattered; the facing stones are nearly gone; the dazzling colors survive only as residue in the crevices of the stones; and empty drill holes evidence the brilliant metal plaques they once held. And all this was but the backdrop, a stage for the stately procession of costumed pilgrims, richly arrayed priests, and bejeweled elites that took part in the rituals at the Pumapunku Complex, no doubt instilling a sense of wonder and amazement in the onlookers. My own religious

upbringing in the austere brown and mahogany tones of the Protestant church, could not offer a point of reference that would allow me to comprehend a ritual experience contextualized by an architecture of clashing colors and brilliant metals.

My objectives became clear: to decipher how the architecture guided people through these carefully constructed ritual spaces, and to discover the meaning that the complex had for them. Were there multiple meanings, and did these change over time? Fortunately, archaeologists have moved beyond the vision of ruins as solely architectural creations that have suffered the ravages of time and destructive human behavior, and have become increasingly aware of the elusive mental constructs behind the building of these imposing edifices: what do they mean, what were the people like who created them, and how do they mirror their world? But specialists are still far from agreeing upon a methodology for addressing ancient cognition in architecture (Moore 1996b). Clearly, archaeologists recognize that the built environment is an essential element for understanding the nature of society; they do not, however, concur on which is the most productive or interesting way to study it. As Lawrence and Low state (1990: 454):

A variety of formulations have been used to conceptualize this relationship: accommodation, adaptation, expression, representation and, most recently, production and reproduction. Each of these conceptualizations represents a different theoretical perspective; each implies a different set of questions and distinct (though at times overlapping) sets of data corresponding to aspects of the built environment and human behavior.

The differences among investigators of the built environment do not stem from the fact that one approach is more valid than the other (though it may be); the diverse approaches simply explain different facets of meaning derived from a complex and multi-

vocal data set. With my own data set, the elaborate and monumental Pumapunku Complex at the site of Tiwanaku, I found that regardless of the approach that I took, the meaning I interpreted seemed one-dimensional. Presenting my interpretations at professional meetings, I discovered that critics were quick to point out how a different perspective could easily result in an alternate meaning. Clearly, I could never satisfy all, but their critique did galvanize my attempt to present at the very least a more holistic perspective.

I utilize two distinct and complementary approaches. In the first approach, my goal is to understand the direction and structure of human action across the architectural complex. Consequently, I consider the architectural spaces of the Pumapunku Complex from the perspective of a human being of the time. Using the available the archaeological data, I reconstruct the form of human action in the various architectural spaces. In simpler terms, I determine the location of the entrances, exits, and passageways. Were certain areas restricted or was the architecture meant to funnel people through the spaces? I then compare the architectural pattern and its effect on human action at the Pumapunku Complex with several other documented examples of Andean monumental sites. Through analogical reasoning, I propose a meaning for the Pumapunku Complex. In the second approach I explore whether the formal architectural layout of the Pumapunku Complex was symbolically representational; that is, was the Pumapunku Complex specifically designed to represent a symbolic or cosmological mental concept that the builders had in mind? Each approach sheds light on a different facet of the significance of what undoubtedly was a complex and multi-meaning structure. By combining both



perspectives, I examine how body motion, architectural space, spatial positioning of symbols, and architectural metaphor intersect to produce ritual and cosmological meaning.

The framework for this investigation is grounded principally in recognized studies of the built environment both within and outside South America. Archaeologists have borrowed freely from cultural anthropology and linguistics, which has resulted in theoretical innovations, analogical models, and interpretive frameworks. Before discussing the particulars of my own theoretical and methodological framework, I will examine succinctly some of the most notable anthropological approaches to the built environment that have informed my thinking.

## 1.2 The Built Environment and Human Action

The focus of my dissertation is the built environment, a term I broadly define as any human or mythical creation. This definition would include nearly everything ever affected by human presence, from the footprints at Laetoli to the Empire State Building. Elaborating my definition, the built environment consists of three basic elements (Rapoport 1990): fixed features-those aspects of the environment that are permanent or will change only very slowly over time; semi-fixed features-those elements in the built environment that can change position quickly and relatively easily such as furniture, and, for the archaeologist, artifacts; and non-fixed features-the human element, people walking around going about their lives. The interaction between the built environment and the roles and activities of people produces a setting, “a milieu with an ongoing

system of activities, where the milieu and the activities are linked by rules as to what is appropriate and expected in the setting” (Rapoport 1994: 462). When people interpret and understand the meaning and purpose of the built environment, a setting is established. The built environment consequently contains a series of rules understood by those acculturated to the values of that society. The meaning may be consciously known or, on the other hand, may be so ingrained in the fabric of the culture that even living informants have difficulty expressing the very rules that govern their use of space. Beyond this basic level of agreement on definition, studies on the built environment tend to vary because there is a multitude of exclusive yet valid approaches.

Amos Rapoport (1990) developed a “non-verbal communicative approach,” in which by observing and later interviewing people in the built environment, he identified elements (cues) that lead people to behave in a prescribed manner. Closely related is the field of Proxemics—a branch of semiotics that studies the tactile mode, such as interpersonal movement and touch activity, and employs a series of observations and interview techniques based on the ethnographic technique in cultural anthropology to define the parameters of unconscious rules of behavior (Hall 1968). On a more mentalist level, there are those who contend that these unconscious rules are based on linguistic rules. Therefore, if spatial organization is akin to “morphic languages,” complete with syntax and grammatical rules (Preucel and Hodder 1996), then architectural patterns can be read as text, and the rules that govern the syntactic arrangement of the architectural language may enable us to understand the greater spatial organizational rules (Hillier 1978; Hillier and Hanson 1984). This semiotic approach has been criticized by Leach

and Rapoport for producing, at best, nearly incomprehensible and unusable methodologies (Leach 1978; Rapoport 1982). I tend to agree that Rapoport's non-verbal communicative approach is easy to comprehend and produces viable results, while the linguistic-based approach is difficult to apply archaeologically.

Even a brief survey of the literature on the built environment reveals that a variety of other approaches all share the conviction that the relationship between society and the built environment is an important one. The major point of contention and the reason for the numerous approaches lie in the nature of this relationship. A functionalist approach contends that that environmental and technological factors govern the relationship between people and the structures they build (Kuper 1972; McGuire and Schiffer 1983). There is a much truth to such a position: we would not expect to find an igloo in the desert nor a thatch hut in the Arctic. We would expect to find a degree of cross-cultural similarity between societies living at the same level of social complexity in similar environmental zones. However, this functionalist approach fails to take into account the wide range of human variability; and, as those of a more symbolic and structuralist bent point out, not all societies build and organize themselves along our "rational" Western models. This is especially true in traditional societies where spatial organization more directly reflects social organization-the relationships between people (Horne 1991).

Symbolic and structuralist approaches consider the built environment to be a reflection of shared mental concepts. Structuralists propose that a collective, unconscious mental pattern can generate identifiable material patterns, and that architecture is one of the more important and visible manifestations of this mental structure (Lightfoot 1995;

Wheatley 1971; Tuan 1977). In viewing the place of their settlement, whether a monumental city or a modest village, as central to the order of the universe, people often build substantial structures and/or transform entire landscapes in order to ensure that the physical world conforms to their cosmological view. This representation of the cosmos is usually conveyed symbolically through images, oral histories, rituals, and architecture, which, taken as a whole, afford “a ritual paradigm of the ordering of social interaction at the same time as it disseminates the attitudes necessary to sustain it” (Wheatley 1971: 478). The same cosmological mind-set that draws up the blueprint for a ceremonial city may be also instrumental in informing a whole range of settlement and building types - from the largest temple to the humblest dwelling (Marcus 1976; Wilson 1988). It has even been proposed that in the symbolic organization of space, the use of a divine model may be universal in pre-industrial societies (Fritz and Mitchell 1984; Wheatley 1971; Eliade 1959; Tuan 1977).

Personally I find the structuralist approach to be quite interesting and valid in many cases, but I also recognize the limitations of this framework, in which people appear to be simply acting out unconscious, predetermined rules, without any personal initiative or ability for alternative action. There is an entire body of theory that has developed essentially as a reaction to the rigid framework of structuralism. Several of these studies (e.g., Bourdieu 1977; Yates 1989; H. L. Moore 1986) hold that quotidian occupations are a powerful and essential force that creates meaning in the environment. Within a ritual environment, the structured and formulaic movements of people function

to “turn on” the meaning of spatially located symbols at appropriate moments (Doxtater 1984).

### 1.3 The Andean Built Environment

It is indisputable that spatial organization in Andean societies has contained meaningful and symbolic expressions of social and ritual ideas since pre-Hispanic times (Farrington 1992; Niles 1987; Bauer 1991; Urton 1993). As a guiding framework for the creation of social space, cosmology is often expressed in the layout of entire cities and even in the floor plan of an individual house in the Andes and in the Americas in general. In fact, the organization of space along cosmological lines has been proposed as the basis for large monumental sites such as Cuzco and Tiwanaku (Kolata and Ponce 1992) as well as for more modest contemporary Quechua villages (Urton 1981).

Invariably, political and social order are expressed in the same venue as cosmological order. For example, access to the summit of a pyramid, perhaps conceptualized as a sacred place associated with the heavens, is limited by class or rank (Haas 1985; Manzanilla 1992), and, not surprisingly, elite residences are quite likely to be proximate to, or even directly on top of, important structures (Haas 1985; Niles 1987). In this way, the cosmological order and social and political order are presented as related and immutable, and consequently cosmology legitimizes-by implicit logic-social stratification. It is interesting to note that many modern Andean communities continue to perceive themselves and their surrounding landscape in coherent spatial terms (Urton and Aveni 1983). The form of a settlement can be related to a cosmological model by

perceiving it as an extension of body image (Bastien 1978), or considering its relationship to astronomical bodies (Urton 1981) or to natural and constructed sacred points on the landscape (B. J. Isbell 1978; Bastien 1978). Modern communities continue to reflect elements of social organization in spatial organization, such as dual organization, a particularly important and nearly ubiquitous manner of organizing social space in South America (Moore 1995). The organization of space along familial lines, or to use the Andean term, *ayllu*, may be seen in the arrangement of public space (Urton 1988), landscapes (Erickson 1993), and in settlement distribution (Albarracin 1996a, 1996b).

#### 1.4 Archaeological Approaches to the Study of Architecture in the Andes

Monumental architecture has attracted substantial attention for obvious reasons: it tends to be the most visible and the most spectacular evidence of past cultures. Public monuments have figured prominently in descriptions of South America since the period of Contact when early chroniclers first described the cities and temples of the Inka. Some observed that not all the monuments of the continent were built by the Inka; some ruins, such as Tiwanaku, they noted, must have belonged to a far earlier time (Cieza de León 1939). A learned Jesuit priest, Bernabé Cobo, visited many of the prominent ruins in the 17th century, taking accurate measurements and writing more detailed descriptions than his predecessors. Centuries later, travelers such as D'Orbigny (1845), Squier (1877), and Bandelier (1911), added drawings and maps of the monuments to their journals. More than just travel curios, these descriptions and drawings remain an important data set in archaeological studies of Andean architecture. The effects of time and vandalism on

these sites in the last century have rendered these early plans and descriptions priceless for present investigations.

Processualist approaches are a popular and productive framework in Andean archaeology, treating architecture as reflections of political power and social complexity. Invariably, questions revolve around how much human labor was necessary to build a structure, and how different sizes and forms of monumental architecture reflected power, authority, and degrees of stratification (Haas 1982; Haas et al. 1987; Isbell and Cook 1987; D'Altroy 1992; Earle and D'Altroy 1989; Pozorski 1980; Hastings and Moseley 1975). Accessibility to and from important spaces is another indicator of political economy and social order (Shimada 1978; Moore 1992); indeed, small ritual spaces, narrow and restricted entrances, and walls or moats that seal off areas suggest control and class differentiation (Donnan 1986; Haas 1985; Bawden 1982).

Symbolic and structuralist approaches in archaeology have benefited significantly from the ethnohistorical research of the last 30 years on Andean belief systems. Research at Inka sites such Huanaco Pampa (Morris and Thompson 1985), Inkawasi (Hyslop 1985), and imperial Cuzco (Bauer 1992; Bauer and Dearborn 1995) has profited handsomely from ethnohistorical studies and vice versa. Although the historical documents pinpoint only a brief moment in time, this information can be utilized for interpreting the remains from a wide range of pre-Colombian cultures. A fundamental tenet of structuralist studies is that Andean peoples past and present show a predilection for structuring thoughts in ways that maintain substantive meaning and consistency over time (Urton 1981; Dillehay 1992; Zuidema 1989). By demonstrating a continuity in the

spatial organization of the form of ritual or secular architecture, a case can be made for the continuity of fundamental mental concepts of spatial organization from prehistory to the historic period (Anders 1986; Isbell 1978).

Above, I briefly mentioned a general critique of functional and structuralist approaches, a critique that also resonates for research in the Andes. When interpretations of the built environment focus solely on labor, issues like social complexity, unconscious mental templates, and the actions, intentions, and machinations of the individual seem to get lost. Including the action of the individual in the creation and recreation of a meaningful built environment is a topic with which Andeanists will have to come to terms. I can think of ethno-archaeological studies that include the actions and decisions of individuals and groups in creating and forming the built environment (Urton 1988), but archaeological cases are more difficult. A recent publication by Jerry Moore (1996b) is perhaps the most notable and successful archaeological study to include the point of view of the individual as an important perspective for understanding meaning in an architectural setting.

### 1.5 Motion and Structure in Andean Architecture

In a recent analysis of Wari architecture, William Isbell (1991) divides architecture into three categories: form, technology, and concept. The definitions of form and technology are, in short, the physical description of the materials used and the manner in which they are shaped and placed. Concept is defined as “the ideas, emotions, and feelings that buildings communicate, in this case to the archaeologist, but which . . .



have been among the messages that the architects intended to communicate to the original residents” (Isbell 1991: 294). Building on this idea so aptly formulated by Isbell, I structure my approach on two explicit and simple premises: that all architecture is inherently three-dimensional, and that many choices involving the built environment in pre-industrial societies involve cosmology.

Firstly, architecture is three-dimensional space-and any architectural analysis should treat it as such. Such a statement seems obvious in our living built environment, but archaeological built environment is often a vestige of this previous form. The domed ceiling of the Pantheon in Rome is one of the more spectacular cases of survival of three-dimensional ancient architectural space. However, for most archaeologists, original three-dimensional buildings are reduced to mere shadows of their former selves. Great effort is necessary, and often done, to reconstruct the three dimensional form of the structure. Unfortunately, the two-dimensional site plans of architectural space, popular with architects and archaeologists, do little to acknowledge the human experience of three-dimensional space as an essential part of meaning in the built environment. They can even give rise to a more serious problem: when a two-dimensional plan becomes the principal source of architectural interpretation, analysis breaks down into a search for interesting two-dimensional patterns that can be represented by objective frameworks such as tree diagrams and mathematical models.

I recognize the value of such an approach (e.g., Moore 1996b), but I feel that the appreciation and understanding of meaning in three-dimensional architectural space is derived primarily from the perspective of our most developed sense of three-

dimensionality: the human body (Gibson 1966; Hall 1966; Rapoport 1982). A highly complex nervous system and a lifetime of sensory experiences of seeing, touching, smelling, hearing, and even tasting the environment, reaffirms our bodily position in relation to our surroundings. From these experiences, we develop our sense of body image and unconsciously locate ourselves inside a three-dimensional boundary.

Prior to James Gibson's (1966) pioneering study on sensory perception, the classification of the senses was based on cataloging nervous response to outside stimuli. Gibson more perceptively treated the sensory systems as dynamic and aggressive mechanisms that seek out information in the environment and classify them according to the types of environmental information to which the body is exposed: visual, auditory, taste-smell, the basic orientation system, and the haptic system (from the Greek "haptik," to be able to grasp or to perceive). Essential for the study of body motion across three-dimensional spaces, and for this dissertation, are the last two. The first, the basic orientation system relates to our body posture and our physical reaction to gravity, which endows us with the awareness of up and down and of the plane upon which we tread; the haptic system refers to all types of physical contact with the outside world and the sense of internal movement of the body or, in a word, "proprioception." The latter confronts directly "the three-dimensional world or similarly carries with it the possibility of altering the environment in the process of perceiving it; that is to say, no other sense engages in feeling and doing at the same time" (Bloomer and Moore 1977: 35). These two systems, the haptic and the basic-orientation system, position the entire body at the center of the

human perceptual experience. In sum, sensory input comes from two sources: from the external environment and from the motion of the body and the sense organs.

My second premise is that the built environment, especially for ritual structures in pre-industrial societies, is structured along religious and cosmological guidelines. In other words, the formal layout of the structure is a direct reflection of a cosmological mindset of the planners. R. Tom Zuidema's (1964) landmark structuralist study of the ethnohistorical records transformed our perception of Inka society, and also provided the theoretical framework for interpreting pre-Contact societies. Founded on the idea that the use of a cosmological model was the guiding framework for the creation of social space and that these models maintained a structural consistency over time, a series of researchers has tested, interpreted, and projected structuralist notions of Inka cosmology and space across a wide range of pre-Columbian cultures (e.g. Isbell 1978; Lathrap 1985; Anders 1986; Kolata and Ponce 1992) and contemporary societies (Urton 1981). Similarly, I compare the formal layout of the Pumapunku Complex to other documented examples of Andean ritual forms. This line of thought takes me directly in to the contentious, problematic, and highly necessary process of analogical reasoning in archaeology.

## 1.6 Analogical Reasoning

The use of analogical reasoning is highly contested method in archaeology; in fact, it is problematic and has acknowledged shortcomings. More specifically, it is the shortcomings of those using analogy that creates the problem, a situation clearly and

forcefully stated in a number of recent publications (Stahl 1993; Wylie 1985, 1989). Isbell (1995) persuasively demonstrates the misuse of analogy in the Andes and the questionable effect it has had on our perception of the past. However, even with this history of faulty utilization, he points out that analogical reasoning is not bound to failure if it follows certain guidelines in order to avoid imposing present value systems or those of an idealized past on the archaeological record (Stahl 1993; Wylie 1985, 1989).

Analogical reasoning utilizes subject-side materials and source-side materials to create the associations that illustrate or deduce an interpretation of the subject materials. The subject-side materials are the archaeological data-the stones, artifacts, architecture, topography, chemical analyses and other “hard” data that describe the physical remains recorded during the field or lab work. Source side materials-ethnographic references, ethnohistorical accounts, and even other archaeological data-are used to construct the analogs themselves and must have relevance to the subject matter. There are two types of analogy, distinguished by the standards employed to decide relevance (Ascher 1961): General Analogy, based on a principle of uniformitarianism, holds that it is feasible to make a generalized comparison across many cultural traditions because all human behavior is motivated by the same basic needs; and Specific Analogy, which refers to specific comparisons within a given cultural tradition and requires relevance in three areas: cultural continuity, comparability in environment, and similarity in cultural form (Sharer and Ashmore 1987).

Cultural continuity calls for the use of the Direct Historical Approach, which contends that uninterrupted connections or sequences exist between the archaeological

record and the ethnohistorically described populations (Flannery and Marcus 1994). In the best circumstances, the site where the archaeologist is working was described historically at one time (Flannery and Marcus 1996). Since societies tend to change, the further removed the archaeological data are from the historic records, the less likely it is that the ethnohistorical data describe the same behaviors or populations. In the case of Andean cultures, this specialized definition limits and restricts the use of analogy to those areas that were described before being substantially changed by colonial events and other forces. For the majority of the sites in the Americas, there will be little or no documentation for most areas that can relate directly to the archaeological population under study.

The other relevant factor that bolsters the strength of Specific Analogy is that the analogs be drawn from societies living in comparable environments, assuming that similar environmental conditions result in similar cultural responses. The third criterion of relevance is cultural form, which includes similarity in complexity. A stronger case can be made for comparing state level societies from the same environment; it is likely to be far more difficult to compare the ritual practices of a hunter-gatherer society with the activities related to the state religion of a large urban center. A case in point are the investigations of Kent Flannery and Joyce Marcus (1994), which demonstrate a convincing degree of continuity in form and meaning when comparing ethnohistorical descriptions of state-level rituals with the archaeological remains of a similarly complex society; but they encounter difficulties when interpreting the remains of an early and less complex society even from the same geographic and environmental region.

The third relevance factor, similarity in cultural form, assumes that cultures are “integrated and functioning systems and that if some aspects of an archaeologically known culture are similar to those of an ethnographically or historically described culture, then other aspects may also be similar, including behaviors that are difficult to detect in the archaeological record” (Isbell 1997: 304). A basic trend is that cultures of a similar level of complexity may organize themselves along broadly similar patterns. Gordon Willey (1977) demonstrates the benefits of creating alternate models of interpretation by comparing similarly complex, though widely culturally separate societies, from South East Asia and Mexico.

However, care must be taken to distinguish sources from different geographic regions and time periods. In order to avoid the common pitfall of creating a composite culture that is actually a construct of the investigator, temporal or geographic controls must be in place. By specifying each example temporally, culturally, and geographically (Stahl 1993), one avoids the “single point-in-time” model, in which centuries of references are collapsed into a composite timeless culture. For example, for the Andes, the result of conflating sources from the ethnographic present to the ethnohistorical past is the creation of an “Andean culture” or “lo Andino.” Recorded examples of Andean institutions such as the Inka labor tax system (*mita*), or social categories of family and clan (*ayllu*) are easily projected into the past, without the necessary archaeological supporting evidence (Isbell 1995). Diversity is obscured and change is ignored as every complex society becomes a version of the Inka empire, and smaller settlements are organized like contemporary Quechua or Aymara villages. However fragmented or

biased a source may be (for example, a colonial document with a few passing references to ritual life), the example should be treated as an integrated whole (Isbell, personal communication); that is, lacunae in the sources cannot be filled with more explicit or detailed other sources.

There is, however, an option between this limited use of analogy and the speculative subjectivism of the investigator's personal intuition (Wylie 1989). A case can be made that the culture-historical continuities of a set of fundamental ideas transcends ethnic boundaries (von Gernet 1993; DeBoer 1997). Willey (1977) defines the use of this form of analogy as "specific comparative analogy," where the source is one that is not necessarily directly related to those represented by the archaeological data, but demonstrates some degree of relevance such as social complexity. The results are not necessarily testable, but a strong case can be made that the analogical model may account for the distribution of the archaeological remains (Bell 1994). Even for a recognized processualist like Charles Redman (1991), the lack of testability should not be seen as a limitation but as a challenge since it seems that some of the best ideas in archaeology result in the absence of scientific validation. In a recent article, Warren DeBoer accepts such a challenge and, drawing on an intensive and complex treatment of ethnohistorical accounts from North America, proposes meaning for a series of North American earthworks separated from any historical accounts by several centuries (1997). The review from his peers ranged from the supportively insightful to the devastatingly critical, but overall, the response was clear: there is room for refinement and the potential for future research in this direction is great.

According to Alison Wylie (1985), there are two manners of using analogs in archaeological investigations: the illustrative approach and the comparative approach. The first essentially “fleshes out” the archaeological data by highlighting basic similarities between the archaeological data and the analog, filling in the gaps in the archaeological record with the information from the analog. Clearly, one objection to this method is the lack of testability of the conclusions. The data from the analog and the archaeological data may become so intertwined that it is difficult to distinguish one from the other. Alternate explanations are not considered; consequently, the conclusions and interpretations can neither be proven nor disproven. Wylie clearly favors the comparative method, which recommends instead the use of the analogs as models to be compared to the archaeological data. Within a deductive framework, the different analogical models are compared to the archaeological data, and produce examples of congruencies and dissimilarities. Of course, neither the analogical models nor the archaeological record is a perfect reflection of the past. The points of dissimilarity may lead to an alternate explanation of both the ethnohistorical and archaeological data (Stahl 1993). It is this comparative method that I will be using for this dissertation.

## 1.7 Methodology

My methodology involves two different approaches. The first approach is based on the idea that the spatial position and movement of people across three-dimensional space was a primary concern of architectural design in pre-industrial societies (and possibly post-industrial societies). The second approach considers the formal layout of



the site to be a representation of cosmological meaning. For both approaches, my research requires the construction of accurate maps of the Pumapunku Complex in order to develop an understanding of the form of the building, and structure of human action across these architectural spaces.

### 1.8 Description of Three Andean Monumental Ritual Sites

With a view to providing a series of models of Andean architecture and ritual that can be compared with the archaeological data from my excavations at Tiwanaku, I have selected for their analogical value three ethnohistorical references of state-level monumental architecture. I describe the three examples—an Inka palace, the pilgrimage route and complex of the Island of the Sun, and the Temple of Pachacamac at the site of Pachacamac—solely from the brief but informative ethnohistorical references from the time of European Contact. There is, of course, a substantial body of literature on Andean ritual and the built form, but my examples are among the last pre-Columbian monumental architectural complexes to have been used along indigenous lines. Drawing from these sources, I describe the architectural pattern of each site and the types of human action that occurred within it.

### 1.9 Description of the Archaeological Data from the Pumapunku Complex

Using the archaeological data, I establish the route and probable direction of motion across the Pumapunku Complex. Here I apply Gibson's theory that information about the environment and body position can be obtained without culturally specific

interpretations. His extensive treatment of the physical proprieties of sensory input and nervous response supports this proposition. My claims and goals for this study are modest. A strong case can be made for the existence of a certain level of associational meaning in perception across cultures; in other words, universal categories. Edward Hall (1966) and James Gibson (1966) both consider this possibility and attribute a degree of cross-cultural understanding to similarities in our sensory nervous system and a similar evolutionary history for Homo Sapiens. Aware of it or not, archaeologists frequently call upon universal meanings for interpretation, quickly identifying basic categories such as monumental and residential buildings (Trigger 1990), ritual and domestic structure (Isbell and McEwan 1991a), and entrances and exits (Leach 1983). For my investigation, I will describe the architectural pattern of the Pumapunku Complex, and based on the architecture, describe how people moved across the site.

#### 1.10 Comparison of Architectural Patterns and Human Actions from the Three Analogs with the Pumapunku Complex

In Chapter 4 I will be describing three ethnohistorical accounts of monumental Andean sites. I will be drawing forth from these descriptions the architectural patterns of each site and the form of human action that occurred within. In Chapter 9, I will compare and contrast these architectural patterns of the Pumapunku Complex and the type of human action within these three analogical models. I propose an experiential meaning for the Pumapunku Complex that takes into account the similarities and dissimilarities among these examples. I deduce that the experiential meaning for the Pumapunku

Complex was that of a procession, a pilgrimage, across the monumental architectural spaces.

### 1.11 Architecture and Cosmological Meaning

For my second approach, in Chapter 10, I will compare and contrast the formal architectural layout of the Pumapunku Complex with an important Inka ritual structure called an *ushnu*. In Chapter 10, I will be describing the formal qualities and meanings of the *ushnu*. We have a large corpus of information on the form of the *ushnu* and several convincing interpretations by ethnohistorians who have carefully considered the ethnohistorical record (Zuidema 1989; Hyslop 1990; Gasparini and Margolis 1980). My intent is explore the similarities between the architecture form of the *ushnu* and the Pumapunku Complex. Through this method, I suggest that the meaning of the Inka *ushnu* was similar to that of the Pumapunku Complex when it was designed and used by the Tiwanaku architect.

### 1.12 Conclusions

The importance of this investigation is multifaceted. First, there is the methodological component of the investigation. Through the selective use of excavations combined with a computer-enhanced methodology, I demonstrate that it is possible to accurately, inexpensively, and expeditiously investigate complex architecture forms. It is my hope that other investigators will adopt a similar strategy for their future excavations.

The second contribution relates specifically to the meaning of ritual architectural forms at the site of Tiwanaku. I demonstrate some of the ways the Pumapunku Complex functioned and some of the meanings it had for its builders and users. Through the aforementioned method and theory, I develop the conclusion that the Pumapunku Complex was a representation of an axis mundi-that is, the ritual center of the world. This concept of the center of the world was materialized at Tiwanaku with the construction of the Pumapunku Complex, and it was communicated to groups of pilgrims by physically passing them through the Pumapunku Complex and exposing them to all the symbolism and imagery that was essential to the Tiwanaku religion.

I have discussed a variety of theories and methods for interpreting meaning in the built environment, each of which has its own strengths and drawbacks. My analysis of the Pumapunku Complex is a combination of two opposing theoretical approaches: One approach, attributed to the work of Pierre Bourdieu (1977) and Anthony Giddens (1984), that emphasizes the action of people in the creation of meaning; and the Structuralist Approach, which posits unconscious mental structures as the source of meaning. Though typically considered at odds with each other, a combination of these perspectives allows for a more holistic view of the function of our human-built environment. In conclusion, I foresee that the results will not only be of interest to those investigating Andean architecture and ritual, but will also be applicable at any archaeological site where concepts of symbolic and ritual space were significant factors in the creation and transformation of complex architectural forms.

## Chapter 2

### Brief Overview of Public Architecture in the Andes and the Site of Tiwanaku

Ritual architecture in the Andean region dates as far back as 4000 BC (Aldenderfer 1993) and ranges from the huge adobe pyramids of the Moche to the dance floors of the Mapuche (Moseley 1985; Dillehay 1992). It is not my objective to present an overview of all ritual architectural sites in the Andes in this dissertation. I would instead refer the reader to a variety of competent studies (Moseley 1985; Moore 1996b). My intent is to place the focus of my work, the Pumapunku Complex, within a broader architectural context than just the other monumental structures at the site of Tiwanaku (Figure 2.1)

William Conklin and Michael Moseley (1988) maintain that the origins of highland ritual architecture are distantly based on a much earlier coastal ritual tradition. In turn, Shimada finds evidence of an active communication between the major ceremonial centers throughout the Andes that resulted in an exchange of people, ideas, artifacts, and architectural form (Shimada 1986). Richard Burger (1992) considers the form of the New Temple at Chavín de Huantar, a combination of a sunken court and a U-shaped platform, an intentional mimicry of the early ceremonial architectural tradition from the coast of Peru. He continues this line of thought and further proposes, along with several other investigators, that the architectural form of the New Temple Chavín de Huantar became the architectural prototype that would be elaborated in the highland

cultures of Chiripa, Pucara, and Tiwanaku (Moseley 1985, 1988; Williams 1982; Isbell 1988).

On a general level, I agree with the above authors: there is a strong continuity in certain architecture forms across time and space in the Andes. The frequent recurrence of certain features cannot be dismissed as mere coincidence. In fact, in a recent conference paper, I presented evidence in support of a conceptual unity of ritual architecture across the Andes, which received a rather subdued if not muted reception (Vranich 1997). Somewhat taken aback by such a reaction from the normally disputatious lot of Andeanists, I soon gathered that their passivity was not a rejection of my presentation *per se*, but rather a resigned indifference in the face of the lack of evidence either to prove or disprove such a proposition. Their caution is understandable: I can only think of a few articles that successfully establish, through a deductive approach, a conceptual unity of form and meaning of ritual architectural from prehistory through the Contact period to the present (Isbell 1977; Lathrap 1985; Anders 1986). A few other bold attempts to put forth a general declaration on the form of ritual architecture across the Andes have been met by a volley of criticism from the specialists of each respective culture area. Observing these debates from a respectful distance, the format is quite predictable: The advantage alternates between the structuralists' position that all ritual architectural forms are somehow related, and an equally radical and untenable position taken by the processualists that each separate geographic or cultural area developed its own architectural tradition *sui generis*. Between two well matched opponents, the winner, if one can actually be determined, tends to be the one with the greatest endurance rather

than the strongest position. For the purposes of this study, I will avoid the entire polemic and define my boundaries within the Lake Titicaca basin and discuss a ritual architectural tradition that has a clear and direct connection to the ritual structures at Tiwanaku.

## 2.1 Brief Ritual Architectural History of the Lake Titicaca Basin

A sunken court built on top of a revetted platform is the most common Tiwanaku architectural arrangement (Kolata 1993; Manzanilla 1992; Goldstein 1993; Berman 1997; Ponce 1972). Linda Manzanilla would add plazas to this architectural formula, a conclusion that I also reached at my own excavations. In the Altiplano, however, the ritual architecture tradition has more modest beginnings. A recent survey and excavation in the Lake Titicaca basin reveals a network of sunken slab lined courts that are some of the earlier known examples of public architecture in the highlands (S. Chávez 1997). Located on the summit of a hill, the sunken court at Ch'isi (220 BC), near Copacabana, measures 14 meters a side and consists of an excavated square depression in the bedrock, lined with undressed stone and surfaced with a floor of compacted earth. Its entrance was flanked by two large slabs. A clay model, possibly of the very same sunken court, features an ubiquitous double jamb gateway that is found at Chiripa, Pucara, and in later Tiwanaku style architecture. Excavations around the sunken court at Ch'isi likewise revealed a series of associated features such as offering pits, stone lined burial chambers, and oblong pits of unknown purpose (S. Chávez 1997). Karen Chávez (1988) considers this sunken court to be part of a potentially pan-Titicaca basin religious phenomenon referred to as the Yaya-mama tradition (600-100 BC).

A quick chronological glance at the site of Chiripa and the ritual structures at Tiwanaku leads us to draw some significant parallels. The occupation at Chiripa began around 1350 BC, but circa 850 BC a circle of semi-sunken structures were built around a patio or courtyard that probably contained a stone monolith in the center. Approximately 250 years later, 16 structures of stone (cut and uncut) and adobe were built around this patio. The entrances to these structures have the “double step fret” characteristic of the later Pucara and Tiwanaku gateways. Large stones faced the exterior of the platform, the final dimensions of which were 48.4 meters east-west/48.8 meters north/south. Christine Hastorf (1997) supposes that the use of the court, which measured 22 by 23.5 meters and 1.5 meters deep (Browman 1978a), was restricted to a select number. The buildings that surround the sunken court probably belonged to extended families or ethnic groups that habitually used the temple complex. The ashy remains behind these houses testify to the ritual activities that occurred inside the sunken court.

The twilight of Chiripa’s sunken court corresponds to and possibly overlaps the rise of the ceremonial center of Pukara (S. Chávez 1992; K. Chávez 1988). The monumental focus of the site of Pucara is a revetted natural hill where a series of structures skirt a sunken court on the top of the hill that measured 15 by 16 meters, 2.2 meters deep (Kidder 1948). The base of the walls of the buildings in the U-shaped plan are of dressed stone and the remainder would have been of adobe (K. Chávez 1988). In the sides of the sunken court, excavations unearthed several stone chambers containing mortuary remains (Kidder 1948). Sections of oversized jars that may have been utilized for serving or fermenting liquids were unearthed inside the sunken court. Interesting to



note is that bowls probably used for eating or drinking were found in the flat area in front of the revetted platform (S. Chávez 1992).

Sergio Chávez, undertaking the task of analyzing the ceramics from Kidder's excavations, drew a series of interesting conclusions (1992). The distribution of large jars and bowls led him to conclude that the sunken court and the surrounding structures in a U-shaped plan served as a preparation and storage area for ritual comestibles. It is evident that large-scale feasting and drinking occurred beyond the sunken court in the flat area in front of the revetted hillside. The ceramics as a whole display a co-occurrence of male and female related iconography, in which Chávez perceives the existence of a ritual concept of duality. He further suggests that the predominance of the male "feline" figure with the trophy head on the pottery of the sunken court attests to competition and ritualized warfare with other ceremonial centers. An interesting detail is the portrayal of a black bird — possibly the *Phoenicopterus chilensis* that migrates to the Lake Titicaca area during the dry season.

## 2.2 Overview of Early Ritual Architecture in the Lake Titicaca Basin

The tradition of a sunken court built on top of a revetted platform potentially spans a 2000-year period and includes the small simple Ch'isi sunken court on a sculpted hill as well as the huge and elaborate sunken court on the Akapana Pyramid (Figure 2.4). Is there, then, a coherent "cult of the sunken court" for the Lake Titicaca basin (Moseley 1985). Moseley offers us little on his personal perspective of the meaning of the "cult of

the sunken court,” deferring instead to the structuralist conclusions of Donald Lathrap (1985). The latter writes that the sunken court represents the contact point between the planes of the universe. The hydraulics drain the water from the sunken court, connecting the terrestrial world to the underworld, and the “ropes of smoke” from burnt offerings rise towards the heavenly plane. This downward passage of water and rising smoke transfixes the planes of the universe and directly associates the power of the supernatural with the ceremonial center (the state). For Lathrap (1985), the monoliths in the sunken courts act as shafts or bar magnets that fuse together the power of the axis mundi and the power of the state.

On a more specific level, there are several stylistic elements and constructive techniques that are distinguished early on, possibly at Chiripa (K. Chávez 1988), and that become the basic elements of the ritual architecture at Tiwanaku: the location of the sunken court on the revetted platform (both natural and human made), the use of large upright stone slabs, the double doorjamb, and the monolith in the center of the sunken court. There is also a continuity in several iconographic elements: The use of Yaya-mama iconography from the sunken court at Ch’isi and the Semi-Subterranean temple at Tiwanaku indicates a possible ideological coherence throughout the Middle Horizon (K. Chávez 1988). Other important iconography associated with the sunken court, such as the “Staff god” and the “Profile attendant” with the trophy head, persists as central themes, though with subtle transformations, from the rise of the ceremonial center of Pucara through Tiwanaku (Cook 1983; Isbell and Cook 1987).

## The Site of Tiwanaku

Any description of the site of Tiwanaku (Figures 2.2 and 2.3) must be tempered by the sober fact that all the monuments have suffered the constant ravages of time and human activities. Rain and wind erode and level edifices without human intervention, but human greed, malice, and neglect give a special destructive edge to the inevitable process.

The high quality of the cut stones made Tiwanaku an attractive source of building material for houses, churches, plazas, bridges, even railways. Bernabé Cobo (1939) points out that quarrying the monuments for building materials was well under way when he passed through Tiwanaku in 1610, concluding wryly that if Tiwanaku were closer to a major Spanish settlement, not a single stone would remain. Its splendor undoubtedly has gone, never to be completely recovered, but the evidence of a more glorious past is recorded in written historical accounts and is still discernible in the archaeological remains. After a careful reading of the available texts and a reconstruction of the physical remains at Tiwanaku with modern methodologies, we can, with a high degree of certainty, recover a discrete part of Tiwanaku's past stature and even suggest the possible meaning and purpose of its monuments.

Descriptions of Tiwanaku as ruins of a past era begin with the Spanish conquest. As such, ruins were the object of the professional interest of two remarkable chroniclers: Pedro Cieza de León of the 16th century and Cobo, of the 17th. Insightful and eloquent, they stand out among rest, for they possess an eye for detail, and most importantly for this study, they describe Tiwanaku before it was substantially modified by commercial

looting and quarrying. Later visitors, most notably a host of European and American travelers in the 19th century, bring to the scene the knowledge of photography, architectural drawings, and survey equipment, which they add to the detailed notes they compile. Melancholy fascination or mere fanciful enjoyment, they all form part of a process which Rose Macaulay (1953) has termed the pleasure of ruins and Paul Zucker (1968), a “fascination of decay.”

### The Akapana Pyramid

Approaching Tiwanaku along the modern road from the direction of the city of La Paz, the massive shape of the Akapana Pyramid looms on the horizon. Measuring 194.14 meters wide by 182.4 meters long, with an approximate height of 18 meters, its imposing form dominates the site of Tiwanaku. There was, until recently, a debate as to whether the Akapana Pyramid was a natural hill that had been faced with stone (Arellano 1991) or whether it was entirely an artificial construction (Manzanilla 1992). The early descriptions, suffice it to say, were unambiguous in their conviction that the Akapana Pyramid was human made. Cieza de León (1939: 91) described the Akapana Pyramid as “un collado hecho a mano, armado sobre grandes cimientos de piedra,” a hill made by hand, built on large foundations of stone; and seventy years later Cobo (1939: 34) similarly depicts the Akapana Pyramid as “un terraplén”-literally an “earthfill” and by definition a human product. Cobo describes the Akapana as a terraplén “de cuatro o cinco estados en alto, que parece collado, fundado sobre grandes cimientos de piedra; su forma es cuadrada y tiene a trechos como traveses o cubos de fortaleza,” a platform about

four or five *estados* in height which appears to be a hill, erected upon a large stone foundation; its form is square, and it has at intervals what resembles the circular towers of a fortress (translation mine).

Lured by stories of treasures in the bowels of the large pyramids of the Moche and Chimu along the Peruvian coast, the Akapana Pyramid became a logical target for covetous treasure hunters. In the 18th century, a Basque miner carried out the single largest and most destructive looting operation at Tiwanaku, nearly emptying out the entire center of the pyramid. According to the records, he found no treasures and succeeded only in destroying the buildings on the summit and going bankrupt in the process (Ponce 1972). Centuries of scavenging for building materials and looting have blurred the original shape of the Akapana Pyramid, leaving a remnant of stone courses of the original facing in open view along its summit and sides (Squier 1877; Stübel and Uhle 1892). By the start of this century, the Akapana Pyramid was reduced to a shadow of its former self.

Excavations commenced at the turn of the century (Courty 1906) and have continued up to the present, most recently by Gregorio Cordero in 1972, Linda Manzanilla (1990) in the late 1980s and Oswaldo Rivera in 1995, yielding a more complete picture of the Akapana Pyramid. The pyramid consists of seven earth-filled revetted platforms (Manzanilla 1992), of which the first, topped by large sandstone blocks, is reminiscent of the revetments of the Kalisasaya Complex. Large vertical pillars, with finely cut stones well fitted between them, are spaced at regular intervals (3.5 meters). Broad stones that may have served as panels for metal plaques and textiles

(Kolata 1993) with small cut blocks between each, face the second platform. Tenoned human heads, recovered from these excavations near the summit of the Akapana Pyramid, suggest that the revetments on the upper platforms were decorated with projecting sculptures.

Two monumental stairways, flanked at the base by basalt sculptures representing stylized pumas holding severed human heads, rise on the west side of the Akapana Pyramid (Escalante 1994; Kolata 1993; Manzanilla 1992). Revealed in the 1989 excavations (Manzanilla 1992), they lead to the summit that was deformed by the large looter's hole in the 18th century. A magnetometer survey (Kolata and Kuljis 1978) demonstrates that the Basque's prospecting operation destroyed a large cross-shaped sunken court 26 meters wide, 40 meters long, and 6.5 meters deep. Stone conduits drained this sunken court down the sides of the pyramid by a complex system of hydraulics (Kolata 1993). Two sets of identical structures partly survived the predation of the colonial looters. On the west side, there are two square structures that Manzanilla (1992) labeled *Salas*, made of large stone blocks with a stone tiled floor. Their doorways face west. A small U-shaped stone structure and a clay platform with a hole in the middle — a likely installation for a pillar or beam — post-date the original construction of the *Salas*. Further east are two L-shaped structures (labeled as Residential Complexes by Manzanilla), a series of rooms (eight on the longest surviving side) arranged around a central tiled patio (Manzanilla 1992). This complex may have been U-shaped, but looting has obscured the original form.

A variety of depositional and post-depositional factors make the documentation of in situ artifacts associated with the monuments at Tiwanaku a rarity (Kolata 1993). The Akapana Pyramid is unique in that two different catches of ritual artifacts were uncovered in the 1989 excavations (Manzanilla 1992). On the summit the Salas were devoid of artifacts, but directly outside their entrance there were fragments of llama bones and ceramics that may have been an offering (Manzanilla 1992). Between the Salas and the Residential Complexes, two votive deposits in ceramic vessels were unearthed: the bulk of one consists of several kilograms of metal ore, the other of 5 kg of marine shell. The remains found in one of the rooms in the Residential Complex (Room 11) are also of ritual significance: The carbonized remains of llama skulls (face down), jaw bones, and long bones were placed in distinct areas of the room (north and east, southeast and south), along with some metal plating, the figurine of a fox, domestic pottery, carbonized wood, and the seeds of a tropical fruit (dated AD 860+-40 years). Other artifacts-bone awls, fish bones, and polychrome vessels-reflect a more domestic occupation. Below the patio, five burials were arranged in a line opposing the sixth burial of an individual (male) holding a puma shaped vessel (*incensario*) in his hands. The disarticulated remains of several incarnated or mummified humans were found along the west side of the pyramid, along the front of the revetment of the first platform, having been thrown or buried here (dated to AD 860 +- 85) (Manzanilla and Woodard 1992). Missing parts of the anatomy, most notably skulls, attest to acts of ritual dissection. Across the egress of one of the conduits along the base of the pyramid is the burial place of a canine (unknown species). Innumerable sherds from intentionally smashed keros, ritual beer cups, and llama bones

form a thick layer in front of the second stone-faced platform (dated to AD 585 +/-209, and AD 653 +/-105).

### The Ritual Nature of the Akapana Pyramid

Similarities between the multiple walls of the Saqsawaman in Cuzco and the revetments of the Akapana Pyramid led a few archaeologists, most notably Arthur Posnansky (1945), to propose that the Akapana Pyramid was a fortress. Recent reconstructions and interpretations that include a diachronic view on the use and changing form of the Akapana Pyramid are better grounded in fact. The complex hydraulics of water that cascades in and out of the revetted platforms and the presence of the green stones on the summit lead Alan Kolata (1993) to propose that the Akapana Pyramid was the principal emblem of the sacred mountain. The water that falls from the conduits from the sunken court over the sides of the pyramid mimics the waterfalls that form during rainstorms on the nearby mountain range. The canine burial at the head of the conduit at the base of the Pyramid signifies that the hydraulic system had fallen into disuse and with it, the original intention of the monument. At the base of the pyramid, the publicly destroyed remains of the mummified ancestors of the vanquished-the skulls having been removed for trophies as a final act of symbolic conquest-bear testimony to the fact that the Akapana Pyramid became a monument to a powerful elite class that orchestrated the aggressive expansion of the Tiwanaku state across the Andes.

Manzanilla takes a similar diachronic perspective of the meaning of the Akapana Pyramid (1992). Probably built during Tiwanaku Phase III, AD 300-500 (Figure 2.4 and



Ponce 1981), the structures that she excavated in 1989 on the summit of the pyramid were erected on an earlier sacred area during Phase Tiwanaku Phase IV (AD 500-800).

Manzanilla proposes that the Residential Complex housed the resident priests, and that the placement of ritual items there that were later burned marked the abandonment of the Complex. She suggests that a crisis, a drought perhaps, brought on such radical ritual action. The construction of a stone structure in one of the Salas evidences that the summit of the pyramid did continue on use. Manzanilla consequently draws a number of conclusions: 1) The carbonized artifacts in the room on the summit represent a ritual abandonment of these premises; 2) the distribution of the artifacts is reminiscent of modern Aymara rituals where offerings are placed in opposition to each other and burned; and 3) the distribution of decorated motifs on the ceramics bear witness to a fundamental division of the sacred space on the summit, with condor motifs in the south and puma motifs in the north. The double stairways on the west side the pyramid further separate the spaces and the groups (one represented by the condor, the other by the Puma) that climb the staircase to their respective half of the summit.

Sonia Alconini (1995), who conducted an intensive analysis of the ceramic materials from the excavations at the Akapana Pyramid, concluded that the majority of the ceramics-most notably the keru beer cups-were mass produced at Tiwanaku. Rituals, it is assumed, were sponsored by the state, which provided the both the vessels and the drink. A large component of domestic utensils supports a scenario of permanent living quarters for resident priests on the summit of the Akapana Pyramid. The festivals and ritual feasting, sponsored by the Tiwanaku state and directed by the resident elite, acted in

part to integrate outlying or foreign communities and ethnic groups into the Tiwanaku state (Alconini 1995; Kolata 1993; Janusek 1994; Manzanilla 1992). Drawing an analogy with the later Inka Empire, Alconini interprets the meaning of the pyramid as the meeting point of the forces of the cosmos. Through proper offerings these forces could be mediated. The cosmological result was the balance and harmony that would manifest itself in the form of a bountiful harvest; the social results were the integration of various diverse groups into the Tiwanaku state and the continued supremacy of the elite class of Tiwanaku (Alconini 1995).

### The Kantatallita Complex

The summit of the Akapana Pyramid provides a commanding view of the other monuments at Tiwanaku. To the southwest, nearly a kilometer away, lies the Pumapunku Complex, the focus of this study. Closer to the Akapana Pyramid and to the northeast is the Putuni Complex, to the right of which is the Kalisasaya Complex. Directly north is the Semi-subterranean Temple and to the northeast, the Kantatallita Complex (Figure 2.5). Bernabé Cobo saw the latter diminished and reduced to sad ruins even in his day, and glancing over to the northeast, pens this brief sketch:

Cincuenta pies al Oriente [from the Akapana Pyramid] ha quedado a pie una portada grande de solas piedras bien labradas, a cada lado la suya, y otra encima de ambas. No ha quedado de esta fábrica más obra sobre la tierra que el terraplén y algunas piedras labradas que salen de los cimientos. (1939: 34)

Fifty paces to the east of the mound [the Akapana Pyramid], a large gateway remains intact. Its consists of only three well-worked stones, one on each side and another on the top of them both. No other parts of this structure remain here on the ground except the mound [sic] and some worked stones that jut out from the foundations. (Cobo 1990: 102)

All other sources are silent on the Kantatallita Complex until Ephraim Squier (1877) takes a special interest in the Maqueta Stone—a large sandstone carving or model of a building complex with a sunken court and miniature stairways. He makes a drawing of the Maqueta Stone but, like the rest of his illustrations of Tiwanaku, depicts it slightly larger than it is in reality. Soon afterwards, Uhle and Stübel's 1892 publication presents an accurate architectural drawing. The doorway described by Cobo is no longer standing by this time, and, as he mentions in 1610, there is little else visible of the Kantatallita Complex. The majority of the carved stones visible on the surface during his visit were pillaged for construction or sale to collectors, a lamentable disregard for an historical heritage that elicits from Posnansky (1945) one of his more memorable rants against the despoilers of the town of Tiwanaku. In 1976 Gregorio Cordero conducts the first, and only, limited excavation at the Kantatallita Complex, an enterprise that boasts a notable find: an architrave carved in the form of an arch (Escalante 1994). In 1994 Javier Escalante publishes a topographic map of the Kantatallita Complex that pinpoints the location of the stones scattered around the area.

The Kantatallita Complex is an elevated courtyard on a platform enclosed by a wall 28.80 meters north-south and 35.40 meters east-west (Escalante 1994). A lintel, which in all probability is the one found by Cordero, belongs to the gateway described by Cobo that Escalante located on the east side of the courtyard. At this time we can only attempt to envision the semblance of the Maqueta Stone that forms a centerpiece in the interior of the courtyard. Little else can be said of these remains at present.

## The Semi-Subterranean Temple

A walk from the Kantatallita Complex to the Kalisasaya Complex takes one to the Semi-subterranean Temple. I would judge from Cobo's narrative that this is the stretch between the Kantatallita Complex and the Kalisasaya that he traversed during his visit to Tiwanaku.

Cerca de este terraplén [Kantatallita Complex] está otro también cuadrado [Kalisasaya Complex]; divídelos una calle de cincuenta pies de ancho, y así parecen ser ambos una misma obra. (1939: 34)

Close to this mound [sic] is another one which is also square. A street fifty feet wide separates the two mounds [sic]. Thus both of them seem to be part of a single structure. (1990: 102)

Could Cobo's street ("calle de cincuenta pies de ancho") be in fact the space marked by the upright pillars of the buried Semi-subterranean Temple that project above the ground? There is no other known structure between the Kalisasaya Complex and the Kantatallita Complex. Cieza de León describes two monoliths in front of the Akapana Pyramid and next to the Kalisasaya Complex, an area that corresponds to the location of the Semi-subterranean Temple.

Más adelante de este cerro están dos ídolos de piedra del talle y figura humana, muy primamente hechos y formadas las facciones; tanto, que parece que se hicieron por mano de grandes artifices y maestros; son tan grandes que parecen pequeños gigantes, y vese que tienen forma de vestimentas largas diferenciadas de las que vemos a los naturales de estas provincias; en las cabezas parece tener su ornamento. Cerca de estas estatuas de piedra está otro edificio . . . (1939: 91)

Beyond this hill [Akapana Pyramid] there are two very skillfully made idols of human shape and figure with well crafted features; so much indeed, that they appear to be made by the hand of great craftsmen and masters; they are so big that they look like small giants and one can see that the cut of their vestments is long

and unlike those we see on the natives of these provinces . . . Near these stone statues there is another building [Kalisasaya Complex] . . . (translation mine)

It comes as somewhat of a surprise that there is no allusion to the present touristic centerpiece of Tiwanaku until the start of this century. I could offer a simple explanation: The Semi-subterranean Temple lies, as the name implies, below the level of the ground, and such a structure would fill up quite quickly with sediment in face of the high winds and fierce rains of the Altiplano. Also, several centuries separate the cessation of monumental construction at Tiwanaku from the advent of the Spanish; therefore, it would not be unreasonable to suppose that the Semi-subterranean Temple itself was nearly or completely buried at the time of the arrival of the first chroniclers. Prior to excavations at the start of this century, the Semi-subterranean Temple was nearly hidden; only several large pillars projected above the level of the ground (Ponce 1969). Cieza de León may actually be describing the Bennett Monolith when it was still visible. Seventy years later, Cobo does not make any mention of this monolith nor, indeed, of any monolith. A logical explanation is that the anti-idolatry campaigns may have targeted the monuments of Tiwanaku between the visits of Cieza de León and Cobo. Those carvings offensive to Catholic sensibilities that were too large to destroy were buried, a fate that befell the Ponce Monolith (Ponce 1997, personal communication). Bennett does not leave us with any details of the stratigraphy surrounding the Bennett monolith; as a result, it is not possible to determine whether a similar occurrence took place.

Several centuries after Cieza de León's visit, Squier (1877) makes reference to standing stones near the Kalisasaya Complex, which suggests that he may have been

aware of the Semi-subterranean Temple; Uhle and Stübel (1892) also pen a brief note attesting to its existence. Courty (1906) receives credit-the only one for his excavations at Tiwanaku-for being the first archaeologist to leave us written testimony of the existence of the Semi-subterranean Temple. Excavated again in 1933 (Bennett 1934) and in 1960, the structure was completely restored between the years 1960-65 (Ponce 1969). Carlos Ponce, after publishing a study of the previous works and directing his own excavations of the Semi-subterranean Temple, establishes its dimensions: 28.47 meters north-south, 26 meters east-west, and 2 meters deep. On the south side, a monumental stairway of overlapping sandstone slabs gave access to the Semi-subterranean Temple. The 5.5 meters tall Bennett monolith, previously excavated and moved to the city of La Paz, had been situated in the center of the Semi-subterranean Temple. It was surrounded by several other smaller monoliths that, based on style, belong to a period prior to the rise of the urban center of Tiwanaku (S. Chávez 1976). The walls of the Semi-Subterranean Temple consist of 57 large vertical pillars interspersed among well fitted cut stone courses. One hundred and seventy-five carved tenoned human heads are stuck into these walls, each different in appearance and headgear.

#### Interpretations of the Ritual Nature of the Semi-Subterranean Temple

Many consider the Semi-subterranean Temple the earliest monumental structure at Tiwanaku (Posnansky 1945); some even insist that its final form is a renovation of an earlier sunken court that was built by the precursors to the Tiwanaku people (K. Chávez 1998, personal communication). Ponce proposes that the Semi-subterranean Temple

symbolizes the underworld with the tenoned heads representing the ancestors: the surface of the ground above is the terrestrial world, the summit of the Kalisasaya Complex is the heavens (Ponce 1997, personal communication). Kolata and Ponce (1992) believe that the Semi-subterranean Temple is the most important ritual space at Tiwanaku. The small space of the sunken court and the details of the carvings on the monoliths indicate that the Semi-subterranean Temple accommodated only small groups of people who could comprehend the detailed knowledge on the monoliths. Kolata concludes that the Semi-subterranean Temple was an oracle where the priestly class would receive divine wisdom and later disseminate it to the waiting masses outside. Lathrap (1985) further attempts to interpret the meaning of the monoliths through analogy with the documented Inka practice of *huaca* capture. The Inka practice of bringing the sacred idols (*huacas*) of other ethnic groups incorporated into the empire-through force or alliance-to Cuzco and placed them in the Temple of the Sun, symbolically incorporated the ancestral deities of other groups into the Inka cosmos. As hostages, they could be mistreated or destroyed if the respective population revolted, a strategy that Lathrap also attributes to the strategists of the Tiwanaku state. The Semi-subterranean Temple served, according to Lathrap, yet another programmatic purpose in the *huaca* capture: redirecting or reinforcing the axis mundi, the center of the world.

### The Kalisasaya Complex

Unlike those who visit the Kantatillata Complex, nearly every traveler to this site, unable to resist an involuntary pause, is moved to write down his/her impressions. Squier

(1877), who took the first photographs of the monument, was struck by its character and referred to it as the “American Stonehenge”. Centuries earlier both Cieza de León and Cobo dedicated a significant portion of their description of Tiwanaku to the stones of the Kalisasaya Complex. After mentioning the large monoliths that were located nearby, Cieza de León notes:

Cerca de estas estatuas de piedra está otro edificio, del cual la antigüedad suya y falta de letras es causa para que no sepa qué gentes hicieron tan grandes cimientos y fuerzas, y que tanto tiempo por ello ha pasado, porque de presente no se ve más que una muralla muy bien obrada y que debe de haber muchos tiempos y edades que se hizo; algunas de las piedras están muy gastadas y consumidas, y en esta parte hay piedras tan grandes y crecidas, que causa admiración cómo, siendo de tanta grandeza, bastaron fuerzas humanas a las traer donde las vemos; y muchas de estas piedras que digo, están labradas de diferentes maneras, y algunas de ellas tienen forma de cuerpos de hombres, que debieron ser ídolos. (1939: 91)

Near these stone statues stands another building, whose antiquity and lack of inscriptions is the reason that we do not know what people made creations of such structure and might, and over which so many centuries have rolled, because at present stands nothing but a well built wall that must have been raised a long time and ages ago; some stones are very worn down and consumed; on this side some stones are so big and voluminous that they cause us to wonder how, being of such magnitude, human force was equal to drag them to where we see them now; and many of these stones I am talking about are carved in different manners and some of them have the shape of men, who must have been idols, (translation mine)

Cieza de León’s description, penned around 1549, prior to any major despoliation of stones at Tiwanaku for Spanish buildings or churches, is brief though telling in that it highlights several important points: The building is quite old, only one wall (“una muralla muy bien obrada”) is standing and, of the rest of the stones, some are quite large while others are very worn down. To fully appreciate Cieza de León’s words, moreover, we need to leap 70 years to Cobo’s more lengthy and detailed observations, and then compare references. Approaching the Kalisasaya Complex from the east after inspecting



the Kantatillata Complex, Cobo describes the monument in two separate places in his

narrative:

Las paredes de este último edificio eran admirables, dado que ya están por tierra. De un pedazo de muralla que todavía se conserva en pie por la buena diligencia y cuidado de un cura que hubo en Tihuanacu, llamado Pedro del Castillo, que murió de mucha edad el año de mil seiscientos veinte (hombre curioso y que tenía bien considerada la grandeza y antigüedad de los edificios, por los muchos años que fue cura del dicho pueblo), se puede sacar su labor y traza. Es pues esta muralla de piedras cuadradas sin mezcla y tan ajustadas unas con otras como ajustan dos maderos cepillados. Las piedras son de mediana grandeza y puestas a trechos otras muy grandes a modo de ráfagas; de suerte, que como en nuestros edificios de tapia o adobes se suelen entremeter rafas de ladrillos de alto a bajo, así esta pared y muralla tiene a trechos en lugar de rafas, unas piedras a manera de columnas cuadradas de tan excesiva grandeza, que sube cada una del cimiento hasta lo alto y remate de la pared, que es de tres o cuatro estados, y no se sabe lo que de ellas entra en la tierra en que están hincadas. Por los rastros que de esta muralla se descubren, se echa de ver que eran una gran cerca que, saliendo de este edificio último, corría hacia el Oriente y ocupaba un grande espacio. Aquí se hallan rastros de otra acequia de piedra como la primera, y ésta parece venir de la Sierra que está enfrente y distante una legua. (1939: 34-36)

The walls of the last building were admirable. Although this building has fallen down to the ground now, its workmanship and form can be determined on the basis of one part of the wall that is still intact. This is because of the diligence and care of a priest who served in Tiaguanaco. His name was Pedro del Castillo (a conscientious man who made a careful study of the size and antiquity of the buildings during the many years that he was a priest in the above-mentioned town). He died in the year 1620. This wall is made of stone blocks without mortar, and the stones are as well fitted together as carefully finished pieces of wood. The stones are of medium size, and other very large stones are placed at intervals like buttresses. This is similar to our buildings of adobe walls in which brick buttresses which extend from top to bottom are usually inserted. Thus, this wall has at intervals, in place of buttresses, some stones like square columns that are so extraordinarily large that each one extends from the foundations up to the very top of the wall, which is three or four *estados* high. And it is not known how far these stones penetrate into the earth where they are placed. Judging by the visible traces of this wall that remain, evidently it was a large enclosure that extended to the east from this last building and covered a very large area. Here the remains of another stone canal like the first one are found, and this one seems to come from the mountain range that is in front of the building at a distance of one league. (Cobo 1990: 102-03)

In this paragraph, Cobo, contradicting nothing that Cieza de León said, adds several more details: The majority of the structures are fallen (“ya están por tierra”) but one wall that consists of precisely fitted medium-size stones (“De un pedazo de muralla que todavía se conserva . . . . de piedras cuadradas sin mezcla y tan ajustadas”), with large pillars or columns that rise to the top of the wall (“columnas cuadradas de tan excesiva grandeza, que sube cada una del cimiento hasta lo alto y remate de la pared”), remains standing. Cobo alternately refers to this admirable example of stonework as both a wall and a building (*edificio*). It stood to a height of four and a half to six and a half meters, but there is evidence of a fence or wall enclosing a large area to the east (“Por los rastros que de esta muralla se descubren, se echa de ver que eran una gran cerca”). Farther on in his description, Cobo describes in detail this “gran cerca”:

. . . las mismas piedras del edificio muestran [Kalisasaya Complex] que no pueden dejar de haber pasado largos tiempos, pues han bastado las lluvias a gastarlas y consumirlas en gran parte; porque por donde va el rastro de la muralla sobredicha, se ven hincadas en la tierra de aquellas piedras grandes que servían de rafas; y con haber sido todas de la grandeza que he dicho y labradas de cuatro esquinas, algunas de ellas están tan disminuidas y gastadas que no tienen de alto más de un estado, y otras menos; y eso que de ellas queda fuera de tierra, esta casi sin rastro de haber sido labradas, porque parecen toscas y puntiagudas; y se hecha de ver claramente que las lluvias las han desfigurado y consumido, porque por la parte alta están mucho mas gastadas, y hacia el cimiento se descubre la labor y forma que tuvieron; y no puede ser menos sino que han pasado por ellas muchísimos siglos, que de otra manera no hubieran podido las aguas hacerlas tanta mella. (1939:92)

These stones show that a long period of time certainly must have transpired. The rains have sufficed to wear them away to a great extent. Where the line of the wall I spoke of runs, one sees many of these large standing stones set in the earth that served as buttresses. And though all of them were of the size that I have stated and cut with four corners, some of them are so worn down that they are no more than one *estado* high, and some are even smaller. The part of them which has

remained above the ground hardly shows any signs of having been worked. They look rough and pointed. Moreover, it is evident that the rains have disfigured them and diminished them because they are much more worn on the top, but towards the base, the original workmanship that they can be observed. And this cannot have happened in a short time. Certainly these stones have endured for many centuries because the rains could not have damaged them so much in any other way. (Cobo 1990: 104)

Cobo notices that the stonework of the Kalisasaya Complex is made up of two elements: well fitted stone courses and large upright columns or pillars (*rafas* or *ráfagas*) interspersed at regular intervals. Only one wall, the western side of the Kalisasaya Complex, remained intact during his visit, thanks, Cobo says, to the diligence of Pedro del Castillo, the town priest. Cobo recognizes that the rest of the Kalisasaya Complex is just the traces of what had been a complete wall consisting of evenly spaced stones. These standing stones are heavily worn along the tops and sides, though along the base their original geometric forms are visible. Essentially, then, Cobo's and Cieza de León's descriptions are quite similar in that they concur that the Kalisasaya Complex was a rectangular structure that had: 1) a large well built western wall, or a building, to use Cobo's term; and 2) a row of evenly spaced standing stones or upright pillars representing the other three sides. Considering the early date of Cieza de León's visit-several decades before the construction of the colonial church in the Spanish town of Tiwanaku-it is unlikely that the stones between the large pillars had been quarried. Instead, they had fallen, were removed or buried during pre-Columbian times, sufficiently long ago that the tops and the sides of the upright pillars were exposed to the elements. The western wall remains virtually intact until some point after the priest Pedro del Castillo dies in 1620 and the Kalisasaya Complex is left without a protector.

This protracted discussion of the ethnohistorical references to the Kalisasaya Complex serves in part to define two essential architectural terms that Cobo uses to describe the structures at Tiwanaku: “muralla” and “cerca.” He refers to the intact western wall of the Kalisasaya Complex as a “muralla”: large upright stones interspersed between regular well fitted courses of smaller stones; and to the remaining three walls as a “cerca,” a fence, of which only the upright pillars evoke in his mind the image of a fence. He was sufficiently discriminating to realize that this alignment of stones at regular intervals was not an actual fence, but rather the vestiges, “rastros,” of a complete wall. More than a philological exercise to differentiate the semantics of two Spanish words used in colonial times, the proper contextual understanding of the word “cerca” will have a substantial effect on the reconstruction of one of the ceremonial spaces of the Pumapunku Complex.

At the time the first drawings were made and photographs taken of Tiwanaku, the Kalisasaya Complex consisted of a rectangular area of tall upright stones (D’Orbigny 1945; Squier 1877; Chalon 1882; Posnansky 1945). The ground inside and outside the area defined by the standing stones has been plowed for centuries. Although the 1903 French expedition (Courty 1906) conducted the first excavation of the Kalisasaya, a photograph in Uhle and Stübel’s 1892 publication shows a large, recently excavated trench along one of the large upright columns or pillars. The French expedition fully uncovered a large stairway on the eastern side noted by Uhle and Stübel , and revealed a paved surface between the Semi-subterranean Temple and the eastern side of the Kalisasaya Complex. These results, along with a topographic map made in 1904, were

published by Posnansky (1945). The results of intensive excavations and reconstructions conducted between 1965 and 1973 still await full publication by Ponce.

The Kalisasaya Complex is a rectangular stone-faced platform that measures 128.66 square meters north-south by 119.06 meters east-west with an approximate height of 4.2 meters, bounded by large upright pillars or columns (henceforth referred to as *orthostats*) evenly dispersed between well fitted ashlar stone. Along the western side an area projects slightly beyond the basic rectangular form, which Posnansky (1945) termed the “balcony”. The orthostats along the Balcony are the largest of the Kalisasaya Complex and are slightly slanted from outside in, the purpose being, according to Ponce (1972), to increase the illusion of height. Carved recesses along the tops of these orthostats suggest the existence of stone lintels.

Six stairways ascend to the 15,935 square meters space on top of this stone-faced platform. The largest and most elaborate one, made up of large overlapping stone slabs, escalates along the center of the east side. Under Ponce’s direction, the Kalisasaya Complex was reconstructed, including a monumental gateway on the eastern stairways—a personal initiative for which he received a sharp rebuke from Gasparini and Margolis (1980), who censured him for a speculative and unsupported reconstruction (see Ponce’s 1972 rebuttal to Gasparini and Margolis).

On the eastern half of the summit of the Kalisasaya Complex lies a walled sunken court or “atrium” (Kolata 1993) along the southern and northern side of which are sunken stone chambers. In the center is the Ponce Monolith, installed there during the reconstruction efforts of the late 1960’s. Noticing a dark circular depression in the middle

of the atrium, Ponce ordered excavations, and discovered a prepared hole with the face-down monolith. A Christian cross carved into the left shoulder of the monolith leaves little doubt that the burial was the work of colonial religious zealots.

Basing his conclusions on the results of deep excavations in the center of the Kalisasaya Complex, Ponce dates the construction of the Kalisasaya Complex to AD 300-500, or Tiwanaku Phase III. Likewise, Escalante (1994) dates the construction to Tiwanaku Phase III or early Tiwanaku Phase IV, which would make the Kalisasaya Complex one of the earliest major monuments at Tiwanaku (roughly contemporary with the Akapana Pyramid) after the Semi-subterranean Temple. It would be deceptive, nonetheless, to fix the construction of the Kalisasaya Complex to a single moment in time, for as in many monuments around the world, there was probably more than one building phase, and the meaning may have changed accordingly in each one. A case in point: According to Manzanilla (1992) and Kolata (1993), the Akapana Pyramid radically changed purpose and meaning during the height of the Tiwanaku urban phenomenon. Ponce observed that the revetment on the south and north side is distinct from that of the east side and posits that this represents different episodes of construction (1997, personal communication). The Balcony of the Kalisasaya Complex is probably the finest and most monumental example of Tiwanaku stonework and, assuming that the Tiwanaku stonemasonry became more refined over a period of time, it would, by logical inference, be a later addition to the Kalisasaya Complex. The ethnohistorical data permits an even more radical proposition: that the Balcony is not only a later addition, but an altogether separate building that was added to an abandoned Kalisasaya Complex. One should keep

in mind that Cobo refers to the Balcony as both a “muralla” (wall) in one part of his description and an “edificio” (building) in another. The complete Balcony stands in sharp contrast to the rest of the Kalisasaya Complex, where only the tallest orthostats remained; the surviving ashlar stones between them were already buried. As a point of contrast, the revetment on the Akapana Pyramid, the Pumapunku Complex, and even the Kantatallita Complex, survived in sufficiently good condition to attract the attention of the early chroniclers. Furthermore, there is no mention of a gateway on the eastern side that, had it resembled the present reconstruction, would have been the largest standing gateway at Tiwanaku. I am firm in the belief that such a towering monumental gateway would not have escaped the notice of Cobo and Cieza de León, both of whom dedicate nearly half of their descriptions of Tiwanaku to stone gateways.

Based on this combined archaeological and ethnohistorical evidence, one can conclude that the Kalisasaya Complex was built during the early period of the Tiwanaku urban phenomenon (Tiwanaku Phase III, AD 300-500). The original form of this revetted platform was that of a rectangle. After or during the time the Balcony is built, the rest of the Kalisasaya Complex is abandoned, and loses the upper courses of the revetment to degradation or even to recycling by the Tiwanaku builders themselves for other constructions. Spilling over, the fill behind the revetment covered the remaining ashlar stone so that by the time the first chroniclers arrive, only the orthostats remain above ground.

Unlike the Akapana Pyramid, there are no in situ artifacts that could attest to ritual activity held on the surface of the Kalisasaya Complex. In fact, the complete lack of

artifacts in the sunken stone chambers of the atrium leads Kolata (1993) to conclude that important mortuary remains were stored here at one time. However, during the collapse of Tiwanaku they were removed and placed elsewhere. Notwithstanding, Posnansky (1945) refers to the Kalisasaya Complex as the solar temple. Standing on the center line of the Kalisasaya in front of the Ponce Monolith, the first rays of the summer solstice shine through the reconstructed gateway. On the other side, the orthostats from the Balcony may have served as sighting posts for the setting sun (Posnansky 1945; Escalante 1994).

### The Putuni Complex

A few meters to the west of the Kalisasaya Complex lies the Putuni Complex. Unlike its more visible and monumental neighbor, the Putuni Complex received little mention until the start of this century. Cieza de León (1939: 91) makes a brief reference to an area “junto a la muralla [the Balcony of the Kalisasaya Complex] hay muchos huecos y concavidades debajo de la tierra”-near the west wall of the Kalisasaya Complex are many holes and concavities below the ground. This brief reference may refer to an undulating ground surface covering the architecture of the Putuni Complex.

The Putuni Complex was partially investigated 1903 by Courty (1906), which resulted in the clandestine export of several notable finds to the storage room of the Musée d’homme, in Paris, and the subsequent destruction of the architecture he exposed by the local population. A few of the photographs and finds from this excavation were



published by Posnansky in 1945. The Putuni Complex was subsequently excavated in 1974 by Cordero, and in 1989 by the Wila Jawira Project (Escalante 1994).

In its basic form, the Putuni Complex is a rectangular structure consisting of a revetted platform 1.2 meters high, 69 meters long, with a width of 55.2 meters, surrounding a central sunken courtyard with a monumental gateway on the east side. Two small stairways lead to the top of the revetted platform that defines the courtyard. Little remains on the summit, but it is hypothesized that adobe buildings and elite residences existed here (Ponce 1997, personal communication), or that it simply served as an elevated platform where people could stand during the ceremonies. On the north and south sides of this revetted platform there is a series of stone chambers sealed by a sliding stone. Kolata (1993) labeled a multi-room structure on the exterior northwest corner of the Putuni Complex courtyard, distinguished by fragmented remains of painted adobes, the “multicolored palace”. In the corners of the Multicolored Palace are shaft tombs, the best preserved of which had a flexed skeleton with offerings made of precious metals. To the south of the Multicolored Palace is an earthen platform revetted with decorated stone slabs. Shaft tombs were also found throughout this earthen platform, though their dating (before or after the earthen platform revetted with stone) is a matter of contention.

The extensive horizontal excavations by Cordero in 1974 combined with the strategic excavations of the Wila Jawira Project in 1989 provide a strong diachronic perspective on the construction and changing form of the Putuni Complex. An area of domestic structures was razed for the construction of the Putuni Complex, which dates between AD 780 and AD 900, a period that Kolata (1993) terms one of “urban

revitalization” when large areas around the Akapana Pyramid were being transformed into public ritual space.

The restricted entry into the central courtyard, and the close proximity of elite residences lead several researchers to speculate that ritual activities in the Putuni Complex were limited to a select few (Ponce 1981; Escalante 1994). Kolata (1993:163) considers the Putuni Complex one of the prime examples of the combination of elite interests and sacred space, a union between the elite class, the “interlocutors with the divine”, and the powers of the mystical world. This union was achieved through the prominent burial and display of ancestors of the elite. Buried throughout the platform or stored in the stone chambers surrounding the courtyard, these ancestors were the link between the terrestrial world and the divine.

### The Kerikala Complex

The Kerikala Complex, located 20 meters northwest of the Putuni Complex, was excavated in 1958, 1974, and 1976 by Cordero. Only brief references to the excavation appear in several overviews of Tiwanaku published by Bolivian archaeologists (Ponce 1981; Arellano 1991; Escalante 1994). The Kerikala Complex measures 74.7 meters east-west by 50 meters north-south. The stone foundations of small rooms that have yielded hearths, ash, and animal bones (Arellano 1991) surround a central courtyard bounded by stone pillars. Ponce (1961: 22) initially characterized this complex as a “poor indigenous palace, with small habitations,” but later, he considered it a possible elite residential complex (1997, personal communication). Arellano (1991), on the other hand, suggests

that the rooms gathered around the courtyard were utilized as storage areas or that the Kerikala Complex served as a locale for a period ritual market, although he does not provide any further explanation to what he means by this.

### The Pumapunku Complex

In his *Relaciones Geográficas de Indias*, Marcos Jiménez de la Espada (1939: 4) describes Tiwanaku as “divididos los edificios en dos partes, un tiro de arcabuz el uno de otro,” “the buildings are divided between two areas, an arcabuz-shot distant from one another” (translation mine). Cobo similarly divides the site into two areas (“fábricas”) and provides a more standardized unit of 300 paces. The chroniclers are, of course, referring to the above mentioned buildings as one group (the Akapana Pyramid, the Kantatallita Complex, the Semi-subterranean Temple, the Kalisasaya Complex, the Putuni Complex, the Kerikala Complex), and the Pumapunku Complex, a kilometer to the southwest, as another. Seen in its most basic form, the Pumapunku consists of a series of plazas aligned on either side of an enormous platform of artificial fill that is revetted with a number of progressively recessed stone facings. The Pumapunku Complex, due to its complexity and significance for this investigation, will be treated separately in the following chapter.

### 2.3 The Nature of the Site of Tiwanaku: Some Recent Interpretations

Surveying Tiwanaku in the late 19th century, Squier (1877) and his party were unexpectedly confronted by the town priest questioning their presence. Squier sought to

reassure him that they were not looking for treasure and were only interested in surveying the ruins. The priest, exasperated and unconvinced, pleaded that, should they find any gold, to please split it with him so that he go back to his ancestral home. His reaction, somewhat surprising coming from a man of the cloth, accurately sums up a common misperception of outsiders of life on the Altiplano: the climate is too harsh and the soil too poor to support anything other than the most basic subsistence, even for a man who has taken a vow of poverty. From his investigations of the stone monuments and his failure to locate any habitations, Squier concluded that Tiwanaku would not have been a large city, but rather a sacred shrine. Adolph Bandelier (1911) did not notice any habitations around the major monuments, but did raise the idea that Tiwanaku had a resident population that lived in stone buildings that were destroyed long ago. Until recently, most archaeologists have dismissed the urban quality of Tiwanaku. For example, Dorothy Menzel (1964) concluded that Tiwanaku was a pilgrimage site with a religious order, while the contemporary site of Wari in the Ayachuco valley supported a sizeable population occasionally organized for its predatory conquests of the south Andes. William Bennett's (1934) deep excavations at Tiwanaku failed to locate any signs of habitation and he similarly concluded that it was primarily an empty ceremonial center. Dwight Wallace (1980), based on his previous 1957 dissertation work on pottery from Tiwanaku, concluded that Tiwanaku was the center of a symbolic empire, or an empty though influential ceremonial site. Even recently, Richard Schaedel (1988) proposes a ceremonial quality for a Tiwanaku dominated by temples and expansive spaces, apparently devoid of dense population.

Instrumental in changing the perception of the site of Tiwanaku was the work of Carlos Ponce. Beginning with the 1958 foundation of the Center of Archaeological Investigations at Tiwanaku (CIAT), he sought to establish Tiwanaku as a major urban center of the Andes. Ponce (1981) charted the development of Tiwanaku from 1600 BC as a modest set of hamlets, to a large urban center around AD 600. Tiwanaku continued to grow as a large urban center for the next half millennium, surpassing Wari in size and strength. From North America, John Rowe (1963) included Tiwanaku as a prehispanic urban center, and E. P. Lanning (1967) similarly characterized Tiwanaku as an urban center with a resident population. Archaeological correlates to such claims were provided by a brief survey by Jeffrey Parsons (1968) who noted a dense scatter of ash and sherds. He estimated that the site of Tiwanaku spread of 2.4 square kilometers. Browman similarly suggests that Tiwanaku had an urban character although, dependent on long range trade to support its population, it was not as dense or powerful a center as proposed by Ponce (1980; also Browman 1980).

Kolata (1993) also believes that Tiwanaku supported a dense urban population, and envisions the area immediately around the public monuments occupied by an elite class living in palaces. Around the palaces and monuments are the smaller humbler residences of the urban population. Tiwanaku, then, supported a large population involved in aspects of bureaucracy, ritual, and eventual conquest and control. Janusek's (1994) large horizontal excavations at Tiwanaku uncovered several residential areas near the Akapana Pyramid. He proposes that Tiwanaku was less densely occupied than originally proposed by Ponce (who has since tempered his opinion) and occupied by a

multi-ethnic population. During special periods of ritual, it overflowed with great numbers of visiting pilgrims.

I tend towards this later explanation for the urban quality of Tiwanaku as most recently proposed by Janusek (1994) and also Albarracin (1996a). Clearly, Tiwanaku was not an empty ceremonial center. People were living at the site, either on the summit of the monuments (Manzanilla 1992) or in the environs of the monuments (Janusek 1994). The large horizontal excavations conducted by Janusek are, I feel, the most helpful for understanding the nature of the site of Tiwanaku. Some of these adobe residences were clearly residential, others, larger than single dwellings, may have been feasting halls for entertaining guests and arriving pilgrims. Janusek (1994) alludes to the site of Pachacamac on the coast of Peru as an analogous form of settlement where a small permanent population associated with important ritual buildings was in residence. Pachacamac was powerful and influential, but the population was not necessarily large. However, the influx of pilgrims increased the number of people at the site to high densities, though maybe only for brief moments.

The architecture and artifacts of Tiwanaku are found scattered throughout the southern Andes. The mechanism that resulted in this distribution is a matter of contention. There are those who claim that the presence of Tiwanaku style artifacts is primarily ritual or religious in nature (Wallace 1980; Bennett 1934; Menzel 1964, 1968; Schaedel 1988). Pilgrims and itinerant medicine-men are two proposed disseminators of Tiwanaku style artifacts (Isbell 1983, 1985; Lumbreras 1974; Menzel 1964, 1968; Wallace 1980); on the other hand, these ritual items may have been transported by

religious intermediaries or commercially as part of the cargo of llama caravans that traveled the extensive road system (Browman 1978b, 1980, 1981; Lynch 1983).

Ponce's (1972) early writings strongly argued for the military and conquest oriented nature of the Tiwanaku horizon, although as of late the more bellicose rhetoric has been tempered. Both Ponce and Kolata now believe that the distribution of Tiwanaku style artifacts reflects the activity of an organized state that did not exert the same level of control throughout the southern Andes (Kolata and Ponce 1992; Kolata 1993, 1996). Within the Titicaca basin, nevertheless, they do see evidence of direct military conquest and control; colonies were placed in temperate climates like Moquegua with a view to procuring needed resources, and, in distant areas such as the Atacama desert, the exchange of elite items maintained indirect state control (Kolata 1993, 1996). Charles Stanish (1999) concurs in part based on his settlement survey, finding evidence for state control within the immediate environs of Lake Titicaca and the distant valley of Moquegua. According to Stanish, the area of control by the Tiwanaku state was not continuous across the southern Andes, but where they did have interests (the Lake Titicaca basin, the valley of Moquegua), their control was absolute.

## 2.4 Conclusion

Approximately 500 years of references to and descriptions of Tiwanaku leave us a fair understanding of the form and composition of the site. The early chroniclers describe in awe the size and monumentality of the buildings; centuries later, the fame of the ruins attracts enlightened travelers and, in their wake, archaeologists who measure and pore

over the cyclopean stones, speculating on the nature of the society that built these monuments. This process continues, and will continue as long as there is an interest in archaeology, augmented by more complex theories. In Chapter 3 I describe the subject of this study, the Pumapunku Complex, from the time of Contact up to the present, which sets the groundwork for this investigation and gives credit to those fortunate enough to have had the privilege of being in the presence of such a magnificent creation.



## Chapter 3

### The Pumapunku Complex

The brutality and ignorance of the conquistadors is unquestionable. However, there were among their ranks men imbued with an humanistic interest in the past who did not fail to appreciate the beauty and importance of the New World monuments. The sixteenth is the greatest of the European Renaissance centuries, and Pedro Cieza de León is very much a man of his time. When in his journeys through what was then the Viceroyalty of Peru he came upon the ruins of Tiwanaku, he was not just a casual traveler or an innocent tourist of our days; he brought with him a long and deep interest in ruins that in Spain at the time had become not only objects of archeological research but a literary topic as well. Furthermore, he hailed from Spain's archaeologically most bountiful province, Andalusia, where his native Seville boasts the ruins of Rome's greatest Peninsular city, Italica, an urban center with an amphitheater that could accommodate 34,000 spectators. The Sevillian poets of Cieza de León's generation, both drawn and driven by the Ruinenlust of the Golden Age, traveled to Italica seeking inspiration and composing some of the most beautiful verses in the Spanish language.

When Cieza de León writes about the ruins of Tiwanaku, then, he communicates the unequivocal impression that he had been in their awesome presence before; and when he begins to describe the grandeur of their massive sculptured stones, his pen flows, and his eye perceives details that only a vision schooled in reverence for the past could notice.

His vocabulary is precise, his observations sharp and full of a rich humanistic respect for antiquity.

Apart from the knowledge he brings from the Old World, by the time Cieza de León arrives at Tiwanaku, he is already a seasoned traveler who has seen sights both strange and wonderful, natural and human-made, which explains his particular sense of wonder when faced by the Pumapunku Complex (Figures 3.1 and 3.2). I quote a passage from his description of the Pumapunku Complex at the end of his survey of the monuments of Tiwanaku:

en otro lugar más hacia el poniente de este edificio están otras mayores antiguallas porque hay muchas portales grandes con sus quicios, umbrales y portaletes, todo de una sola piedra. Lo que yo más noté cuando aduve mirando y escribiendo estas cosas fue, que de estas portadas tan grandes salían otras mayores piedras, sobre que estaban formadas, de las cuales tenían algunas treinta pies de ancho, y de largo quince y más, y de frente seis, y esto y la portada y sus quicios y umbrales eran una sola piedra, que es cosa de mucha grandeza, bien considerada esta obra la cual yo no alcanzo ni entiendo con qué instrumentos y herramienta se labró, porque bien se puede tener que antes que estas tan grandes piedras se labrasen ni pusiesen en perfección, mucho mayores debían estar para las dejar como vemos, y nótese por lo que se ve de estos edificios, que no se acabaron de hacer: porque en ellos no hay más que estas portadas y otras piedras de extraña grandeza, que yo vi labradas algunas y aderezadas para poner en el edificio, del cual estaba algo desviado un retrete pequeño, donde está puesto un gran ídolo de piedra donde debían de adorar, y aún es fama que junto a este ídolo se halló alguna cantidad de oro, y al rededor de este templo había otro número de piedras grandes y pequeñas, labradas y talladas como las ya dichas. (1939: 92-93)

in another place more toward the west of this building [Kalisasaya Complex] there are other important antiquities where there are many great porticoes with their frame jambs, thresholds and small doorways, all carved out of a single stone. What caught my attention as I went about looking and writing these things, was that from these huge portals protruded other even greater stones on which they were shaped, some of which were thirty feet wide [8.37 m] and 15 long [4.185 m] and more, and 6 [1.674 m] thick, and this and the facade, and frame jambs and the thresholds, were made of one single stone, which is of great size. Seriously considering this work I fail to grasp or understand with what instruments of tools it was carved, because it is obvious that before these huge stones were carved and

cut into perfect shape, they must have been much bigger to be as we see them [today], and it should be noted that from what can be seen of these ruins that they were not finished; because they contain only these facades and other stones of strange size, of which I saw some dressed and fitted to be placed on the building, from which, a little ways off there was a small enclosure where a big stone idol is placed for adoration, and moreover people say that near this idol some quantity of gold was found. Around this temple there was a number of large and small stones, dressed and cut, as I have said before, (translation mine)

In addition to communicating his sense of awe, the perspicacious Cieza de León makes several important observations that merit further examination and validation. He describes a large monolith within a niche that remains to be identified archaeologically, and walks around and through a building consisting of stone gateways set on ponderous large stone slabs. As impressed as he was by the size of the stones and the quality of workmanship, he notes that “no se acabaron de hacer”-they were not finished-a truly remarkable observation. As we shall see later on, it takes three chapters of detailed description and the use of the most recent computer technology to demonstrate that one side of the Main Platform of the Pumapunku Complex was, in effect, never finished. Cieza de León substantiates his claim with two pieces of evidence: 1) The building consists solely of stone gateways and Large Stone Slabs, and 2) surrounding the building are several carved stones prepared and ready to be set on the Large Stone Slabs.

At this point, we might ask ourselves, how much faith can we place in Cieza de León’s ability to distinguish between a building that appeared incomplete because it had fallen or been destroyed as opposed to one that was never finished? In his favor are years of travel and firsthand personal familiarity with the ruins of Spain and South America, an experience that surpasses that of all but the most senior present-day archaeologists. He

had an opportunity to view ruins dating from thousands of years ago to complexes such as the Saqsawaman that were in the process of being destroyed. In addition, during his stay in Cuzco, he was able to observe indigenous stonemasons forming the stones and setting the walls of the new colonial buildings of Cuzco. His stay at Tiwanaku was brief, although if his narrative follows the path of his explorations, he was already familiar with the quality and condition of the ruins and the stonework at Tiwanaku before he visited the Pumapunku. In his commentaries on the monuments of Tiwanaku, he draws on a wealth of experience that enables him to recognize ruinous but completed stonework, such as the west wall of the Kalisasaya Complex. Some of the stonework at the Pumapunku Complex does not appear out of place due to time and neglect, consequently, he concludes that its present state is because it was never finished. In view of his experience and acumen, his statement should hold as well as the claim of any present-day archaeologist or architect. Moreover, as we shall see later, his assertion is supported by the archaeological data.

Cieza de León adds one further comment that will have a telling effect on the interpretations of the Pumapunku Complex later on in the dissertation:

Apartados de estos edificios están los aposentos de los incas y la casa donde nació Manco inca, hijo de Huaynacapac, y están juntos a ellos dos sepulturas de los señores naturales de este pueblo, tan altas como torres anchas y esquinadas, las puertas al nacimiento del sol.(1939: 95)

Some distance from these buildings are the lodgings of the Inca and the house where Manco Inca, son of Huaynacapac, was born, and near them there are two tombs of the native lords of this town, as tall as wide and square towers, with doors facing the rising sun. (translation mine)

Several later chroniclers record that Tiwanaku occupied an essential place in Inka mythic history and that the Inka built several important buildings there (Cobo 1939; Cieza de León 1939; Betanzos 1987). It should be noted that Cieza de León describes the houses of the Inka and tombs of the local leaders, but does not mention the *ushnu*, an essential ritual Inka structure that I will describe in detail in a later chapter.

Bernabé Cobo, the second chronicler to whom we will turn our attention, belongs to the same tradition as Cieza de León. Steeped in the spirit of the Renaissance, Father Cobo is a cultured 17th-century Spanish Jesuit who studied, viewed, and developed a deep feeling for the ruins of South America. It should be kept in mind that during this period the preoccupation with the Imperial decadence at home and abroad had made the topic of ruins almost an obsession among the literati in Spain. Perceptive as Cieza de León is when confronting the ruins of Tiwanaku, Cobo is, at times, even more precise and eloquent. He offers a more detailed treatise on the Pumapunku Complex, and significantly expands his description to include the area around the impressive stone portals. Whereas Cieza de León mentions in passing that there are many more similar dressed stones around the “temple,” Cobo, on the other hand, gives a particularized description, and paces out several measurements.

The difference in detail between the chroniclers may be due not to their individual powers of observation and insight, but to the company that they were keeping during their visit. Cieza de León spoke with Juan de Varga, the encomendero at Tiwanaku whose principal involvement with the ruins was a moderately successful looting operation. In a story recorded by Cobo, Varga’s sudden death one night was taken by other treasure

seekers as a warning against unbridled greed. Cobo had better company in the person of the aforementioned Pedro del Castillo, who held the ruins in high esteem and protected sections from stone robbing. With an interest in preserving the ruins (in particular the west side of the Kalisasaya Complex) and time to wander around the site, his knowledge of the monuments must have been impressive. Delighted to receive a visit from a countryman whom he held in such high esteem and who shared an interest in the ruins, it would be unthinkable that Pedro del Castillo, with a reputation as a good host, did not accompany Cobo around the ruins. With such a cicerone, Cobo could expect to see the highlights and, in addition, have a companionable guide to converse with about what he observed and what conclusions he reached. It is also quite possible that the series of measurements taken by Cobo of the Pumapunku Complex were copied or based on those of Pedro del Castillo.

Cobo divides his description of the Pumapunku Complex into several sections:

Lo principal de la fábrica se llama Pumapuncu, que es tanto como “puerta de León”; es un terraplén o mogote hecho a mano, de altura de dos estados, fundado sobre grandes y bien labradas piedras, que tienen forma de las losas que nosotros ponemos sobre las sepulturas. Está el terraplén puesto en cuadro, con los cuatro lienzos iguales, que cada uno tiene cien pasos de esquina a esquina; remátase en dos andenes de grandes losas, muy parejas y llanas; entre el primero y segundo andén hay un espacio como una grande grada de seis pies de ancho, y eso tiene menos el segundo cuerpo que el primero. La haz o frente de este edificio es el lienzo que mira al Oriente y las otras grandes ruinas que luego diré. Deste lienzo delantero sale otra obra con la misma altura y paredes de piedra, veinticuatro pies de ancho y sesenta de largo, formando a los lados dos ángulos; y este pedazo que sobresale del cuadro parece haber sido alguna gran pieza o sala puesta en medio de la frente del edificio (1939: 31-32).

The main part of the stonework is called Pumapuncu which means “gate of the lions.” It is a mound [sic] or flat-topped hillock two *estados* high made by hand; it was erected on large, well-worked stones, which are in the form of the ones we put over graves. This made square, with four sections of equal size, and each one

is one hundred paces from corner to corner. At the top are two platforms of large stone slabs, very uniform and flat. Between the first and second platforms, there is a space six feet wide like a large step, and the second one has a smaller such space than the first one. The face or front of this building is a section that faces east towards other extensive ruins that I will tell about presently. From this front section the structure emerges with the same height and walls of stone, twenty-four feet wide and sixty feet long; two angles are formed at the sides. And this place that juts out from the square [platform] seems to have been some sort of large room or hall placed in the middle of the front of the structure. (Cobo 1990: 100-01)

He describes an artificial platform or hill set on a stone foundation further defined by two “andenes,” the Spanish term for a raised walkway used in South America to describe agricultural terraces. The platform, he tells us, is made up of four sections or sides of equal length (“cuatro lienzos iguales”) that measure 100 paces (91 meters) each. Along what Cobo considers the front of the building, there is another section (“obra”) that projects from the east-facing wall of the building. At this point Cobo describes what he considers to be the principal part of the Pumapunku Complex:

Algo más adentro de aquella parte que está sobresaliente, se ve entero el suelo enlosado de una muy capaz y suntuosa pieza, que debió ser el templo o la parte principal dél. Tiene de largo este enlosado ciento cincuenta y cuatro pies y de ancho cuarenta y seis; las losas son todas de extraña grandeza; yo las medí, y tiene la mayor de treinta y dos pies de largo, diez y seis de ancho y de grueso o canto seis; las otras son algo menores, unas de a treinta pies y otras de menos, pero todas de rara grandeza; están tan lisas y llanas como una tabla bien cepillada, y con muchas labores y molduras por los lados. No hay al presente paredes levantadas sobre este enlosado; pero de las muchas piedras bien labradas que hay caídas al redondel, en que se ven pedazos de puertas y ventanas, se colige haber estado cercado de paredes muy curiosas. Solamente está en pie sobre la losa mayor una parte que mira al Oriente cavada en una gran piedra muy labrada, la cual piedra es de siete pies de largo, y el ancho en proporción. Cerca de esta puerta está también pie una ventana que mira al Sur, toda de una sola piedra muy labrada. (1939:33)

Somewhat more inside the part that juts out, the entire ground is paved with large, magnificent stones. Therefore, this must have been the temple or the main part of it. This paved areas is one hundred fifty-four feet long and forty-six feet wide.

The stone slabs are surprisingly large. I measured them, and the biggest one is thirty-two feet long, sixteen feet wide, and six feet thick. The others are somewhat smaller; some thirty feet [long]; other smaller, but all of them are unusually large. They are smooth and flat like a well polished board, and they have many decorations and moldings on the sides. At the present time there are no walls still standing on this paved area, but judging from the many carefully worked stones that have fallen round it, among which pieces of doors and windows can be seen, the place must have been enclosed by well-made walls. The only thing that is still standing on the main stone slab is one part facing east that is dug out of a large, well-worked stone which is nine feet high and is the same width. And the door space is six feet high and its width is in proportion. Near this doorway there is also an intact window which faces south, made entirely of a single well worked stone. (Cobo 1990: 101)

Similarities with the description by Cieza de León leave little doubt that they are referring to the same spot. Cobo measures the largest stone and reports a set of measurements within a few centimeters of that taken by Cieza de León of the large stone 70 years earlier. In other places, significant changes had occurred in the years separating the visits. Whereas Cieza de León mentions several stone fragments of what he interprets to be doors and windows on the large stone slabs, Cobo records only one large standing doorway facing east, and a stone window facing south. The rest of the architecture seen by Cieza de León is scattered around the stone platforms, smashed to pieces; furthermore, there is no mention of the large monolith located nearby.

An essential point that Cobo records has not been considered deliberately by any other chronicler, traveler or archaeologist until this investigation:

Por la frente de este edificio se descubren los cimientos de una cerca de piedra labrada, que, naciendo de las esquinas de este lienzo delantero, ocupa otro tanto cuadrado como tiene el terraplén y cimiento de toda la fábrica. Dentro de esta cerca como treinta pies de la frontera del edificio, hacia la esquina del Sur, se ven los cimientos de dos piezas pequeñas cuadradas que se levantan del suelo tres pies, de piedras sillares muy pulidas, las cuales tienen talle de ser estanques o bancos o cimientos de algunas torres o sepulturas. Por medio del edificio terraplenado, a nivel del suelo de fuera dél, atraviesa un acueducto de caños y



tajeas de piedra de maravillosa labor: es una acequia de poco más de dos palmos de ancho, y otro tanto de alto, de piedras cuadradas bien labradas y ajustadas, que no les falta la mezcla; la piedra de encima tiene un encaje sobre las paredes de dicha acequia, que sobresale de sus bordes un dedo, y eso entra en el hueco de ella. (1939:33)

Along the front of this building the foundations of a dressed stone wall are found. It comes out of the corners of this front section and occupies another square space like the one for the mound and foundations of the whole edifice. Within this wall, about thirty feet from the edge of this building, towards the south corner, the foundations of two small, square rooms are seen. The foundations stand about three feet from the ground level, and they are made of well-polished ashlar stone. These rooms look like pools or baths or the foundation of a tower or burial place. An aqueduct of marvelous, worked stone channels goes across the middle of the mound structure at the found level outside. It is a canal a little more than two spans wide and about the same height, made of square, dressed stones which do not need mortar. The top stone fits into the walls of the above canal. Three grooves in the top stone overlap one finger width, and it fits into the space across space across the canal walls. (Cobo 1990:101-02)

Surprisingly, little has been made of this passage by other investigators of

Tiwanaku. In his 1955 reconstruction of Tiwanaku, D. E. Ibarra places a Kalisasaya

Complex-like structure on the east side of the Main Platform of the Pumapunku

Complex. Ponce (1971) severely criticizes Ibarra's reconstruction, taking a more cautious

approach and stating, without elaborating, that the referent of this passage in Cobo is

unknown at the present. To begin with, Cobo is clear that these remains are part of the

Pumapunku Complex and that the walls of this structure are "born" from the corners of

the east section [side of the platform] ("se descubren los cimientos de una cerca de piedra

labrada, que, *naciendo* de las esquinas de este lienzo delantero"). To his credit, it must be

said. Ibarra is on the right track when he reconstructs this "cerca" as if it were another

Kalisasaya Complex. Cobo uses the word "cerca" to describe both the north, east, and

south walls of the Kalisasaya Complex, and this structure at the Pumapunku Complex, so

it is logical to believe that both are similar in appearance. Ibarra's mistake, as I will demonstrate below, is to utilize a reconstruction of the Kalisasaya Complex as it would have appeared when it was in use, as opposed to what it was like when Cobo described it during the Colonial Period. Returning to Cobo's description of the Kalisasaya Complex, the north, east and west sides consist of the "rafas" (tall stone columns or pillars) placed at intervals between stone courses ("piedras cuadradas sin mezcla y tan ajustadas unas con otras") to which he refers as a "muralla," a wall. It is, in his own words (and those of Cieza de León's), complete. The other sides of the Kalisasaya Complex are simply remnants ("rastros") that consist solely of the "rafas." He does not term this section a wall ("muralla") but alludes to it metaphorically as a "cerca," a fence, with the large upright stones as the posts of this fence. Therefore, the use of the term "cerca" for the Pumapunku Complex would likewise refer to an alignment of upright stones that encircle a large area. Cobo mentions that this "cerca" occupies an area similar in size to the structure I call the Main Platform.

East of the Main Platform of the Pumapunku Complex there is a series of structures. Towards the southwest corner of the Main Platform are the bases of two square stones which Cobo surmises were either baths or the base of towers or sepulchres. He also depicts a finely built stone conduit at the base of the platform that is 30 centimeters wide and equally tall, capped with well fitted stones. Fortunately his description is sufficiently detailed to permit us to specify its location, which is key in the later analysis and interpretation of the Pumapunku Complex. Located within the "cerca," along the center east-west line of the Main Platform, this one end of the stone conduit is

set at ground level outside Main Platform the (“terrapienado”) area. Perhaps this finely crafted conduit leads to the ashlar stones Cobo describes to the east of the Main Platform.

### 3.1 After Cobo (1620) and Before Cordero (1977)

There is a paucity of references to Tiwanaku in the period following the visits of the early chroniclers. The few documents are primarily petitions to the crown requesting authority to search for treasure or quarry the site for building material (Ponce 1974). In the 19th century a medley of foreign travelers, D’Orbigny (1845), Castelnau (1850), and Squier (1877) visit Tiwanaku and leave us with descriptions, narratives, drawings, and even photographs of the monuments. For the purpose of this investigation, however, the usefulness of these references and drawings is minimal. Several centuries of looting, vandalism, and erosion leave the Pumapunku Complex in a lamentable state. With few exceptions, the architecture that was visible in last century is the same that can be seen today; the rest lies interred and will only yield up its archaeological secrets in the excavations of the next century.

Despite the dearth of later references, there are notable examples that deserve mention. Stübel and Uhle (1892) turned what was one of the shortest stays at the ruins into what has to be one of the most striking publications ever made on Tiwanaku. In an overview of all the monuments of Tiwanaku, they produce accurate and beautiful drawings of the visible carved stones of the Pumapunku Complex. Most of these are part of scatter of large, carved masonry blocks on the east side of the Main Platform of the Pumapunku Complex and are generally presumed to be the remains of shattered buildings

and gateways that sat on a platform made of large stone slabs. I use the term “Large Stone Slabs” to refer to the basal slabs and the associated fragments of masonry in this location, since the former comprise the only component of this architecture that remains in situ. Posnansky (1945) is the first to make an accurate topographic map of the Pumapunku Complex, in 1926, and a fellow German, Edmund Kiss (1937), draws up an interesting and suppositional reconstruction of the Pumapunku Complex, which likewise will be given due attention in the following chapters.

### 3.2 Archaeological Excavations at the Pumapunku Complex

Written in the vocabulary and jargon of priests, travelers, geographers, botanists, archaeologists, and architects, descriptions of the Pumapunku Complex cover a period of nearly half a millennium, and were published in several languages-Spanish, English, French, German. Spanish, of course, is both the language of the early chroniclers and the modern researchers; yet slight changes in the meaning of the lexicon over a 450-year period create a degree of confusion and misunderstanding.

The excavations from the last 25 years not only yield the greatest amount of information, they also result in an explosion of new terms and labels. Archaeologists are notorious for creating jargon or applying loaded terminology without sufficient justification or entomological consideration. For example, one construction that Cordero (1978), terms a “wall,” Estévez (1990) refers to as “wall #1,” Escalante (1994) labels the “facing on a platform,” and I call a “terrace” in an early field report (Vranich and Ticlla 1997). Cobo also details these features, but divides them into two separate categories:

stone foundations and terraces or walkways. The translations of these terms from Spanish are mine, and subject to alternate translations or meanings by other researchers. This situation creates both confusion and a challenge to correlate different terms to a single object, and can lead, without sufficient stylistic safeguards, to a text that is impossible for the general reader to follow. Since this is not a dissertation on the differential use of architectural terms across the centuries and disciplines-a tantalizing topic for a future study-the most direct and simple solution is to introduce and define each term succinctly and at the appropriate time. Therefore, all references to the Pumapunku Complex will be done using the terminology that I justify in Chapters 6 and 7.

Figure 3.1 is a reconstruction by Escalante (1994) that includes all the evidence available at the time. My investigation revealed additional details of the Pumapunku Complex not on this drawing, which will be elaborated in subsequent chapters. I will be using the term ‘Pumapunku Complex’ to refer to the Main Platform and the associated structures. The term *Main Platform* will come up frequently throughout this dissertation, but I will also be using other terms to describe specific areas of the Main Platform. I have found the terminology of Escalante (1994), an architect by training, to be quite useful and I have adopted several of his terms. While the other terms are of my own creation, I have endeavored to employ a language consistent with what is commonly used for architectural description in the Andean region.

### 3.3 The 1977-78, 1984, and 1989 Archaeological Excavations

The first archaeological excavations at the Pumapunku Complex were conducted in 1977 and 1978 by Cordero and formed part of the master plan of the Center for Archaeological Investigations at Tiwanaku (CIAT) to excavate and restore the major monuments. Cordero published a concise report in 1978 that covered only part of his finds although he excavated on every side of the Main Platform of the Pumapunku Complex. His most extensive excavations were on the south side of the Main Platform where he revealed the Revetment. The top course of the First Revetment is irregular and Cordero suggests that an adobe wall was built on it. The Second Revetment is preserved to a height of 5 stone courses (1 meter), and although nothing remains of the Revetment, Cordero assumes that it must have existed. A trench across the top of the Main Platform brought to light a section of the Red Surface that Cordero proposes was the original surface of the summit. Basing his conclusions on this information, he declares summarily that the Pumapunku Complex is an artificial hill stepped in three levels. Along the eastern part of this hill is a concentration of large symmetrical stone blocks that formed part of a temple.

The artifactual data from this investigation remain unpublished, but Cordero does record that most of the ceramics belong to Tiwanaku Phase IV (AD 600-800). Tiwanaku Phase III (AD 300-500) ceramics were found on the “east and to the center of the Pumapunku Complex,” and “imperial” Inka ceramics on the northeast side of the Main Platform; “regional” Inka ceramics were dispersed throughout the Main Platform (Cordero 1978).

Jorge Arellano conducted excavations at Tiwanaku and at the Pumapunku Complex in 1981. In an overview of the monuments of Tiwanaku in a volume on Wari, Arellano (1991) includes a few paragraphs on the excavations at the Pumapunku Complex, but his descriptions are terse and the excavations difficult to locate. He states that he investigated the north wall, the southeast sector, and the center part of the Main Platform of the Pumapunku Complex. Utilizing a map made in 1990 by Leocadio Ticlla of previous excavations at the Pumapunku Complex, I believe that Arellano conducted his excavations in the center part the Main Platform. Interviews with other archaeologists and excavators indicate that these excavations were discontinued after arriving at what Arellano had decided was sterile soil. The exact location of the other excavations is not known. Arellano describes several stratigraphic layers associated with the base of the First Revetment (Stratum 3 in his description) contained large cantos of ash and bone. He interprets the other layers covering the First Revetment as erosional in origin. The only conclusion that can be drawn from this brief reference is that Arellano assumes that the Pumapunku Complex was a Main Platform consisting of a natural hill that had been enlarged and revetted with stone.

The excavations in 1989, the most extensive ever conducted at the Pumapunku Complex, still await full publication. I was able to compile an overview of some of the findings, drawing on sources on the excavation on the south side of the Main Platform (Estévez 1990), an overview and reconstruction of the Pumapunku Complex based on previous descriptions and excavations (Escalante 1994), a number of unpublished drawings and profiles from the north side of the Main Platform provided by Leocadio

Ticlla, and interviews with the archaeologists, foremen and excavators that participated in the excavation (Faldín; Rivera; Escalante; Ticlla; Calisaya, personal communications). The picture that emerges from this data is that excavations on the south, west, and north sides of the Main Platform were divided into five separate sections, each headed by an archaeologist from the National Institute of Archaeology of Bolivia (INAR). The excavations were conducted in 5 by 5 meters units following the natural stratigraphy where possible.

Nearly the entire First Revetment was exposed along the south, west, and north sides. Installed on a solid base of compacted earth with river cobbles, the Revetment is placed on flat compacted earth with cobbles. The First and Second Revetments survive only on the south side of the Main Platform five stone courses high and three deep. Stone buttresses one meter high are found at regular intervals. The remains of the Third Revetted are minimal: the flattened surface of the compact earth with three examples of in situ stone blocks. The excavators found no vestiges of any additional Revetment above the Third. Estévez (1990) proposes that perhaps it was never built; Escalante (1994) suggests that the stones were furtively removed during the Colonial Period. The Red Surface recorded by Cordero in 1978 was reconfirmed in an excavation by Estévez (1990), who considered this not a floor per se, but rather a preparatory layer for a pavement that was never set down. Along the west side of the Main Platform, Juan Faldín found traces of a large sandstone stairway abutted against the Main Platform. As discussed in detail in Chapter 8, Estévez believes this to be the main exit to the Pumapunku Complex while Faldín and Escalante believe that this is the main entrance.



Along the north side of the Main Platform, the entire foundation of a rectangular structure was uncovered. Built of river cobbles with mud mortar, the structure was interpreted as Inka, based on the presence of high quality Inka ceramics.

The stratigraphy along the exterior of the Revetted Platforms was interpreted as erosional and looting debris (Estévez 1990; Ticlla, personal communication). On the southwest side of the Main Platform there was a thick layer of ash mixed with bone at the base of the First Revetted Platform (Stratum 3 according to Arellano's article [1991], Level 4 by Estévez's field report [1990]). There was no corresponding layer on the north side of the Main Platform, an important point to which I will return later. Based on stratigraphic positioning, Estévez identified the five flexed burials documented along the south side of the Main Platform. Other notable finds in the strata in front of the First Revetment of the south side of the Main Platform include the burial of a camelid cranium with a vessel (*keru*), an *escudilla*, a "lighter," and a pit with several human craniums.

According to Escalante's (1994) reconstruction of the Main Platform, the Pumapunku Complex is formed by three superimposed earth platforms faced with stone. The Red Surface on the summit surrounds a sunken court he estimates to be 2 meters deep, with each side 30 meters long. On the west side of the Main Platform he places a stairway that leads to the summit of the Main Platform, where another set of stairs accesses a sunken court.

#### 3.4 Previous Interpretations of the Pumapunku Complex

By the time the Inka arrived in the Lake Titicaca basin, the Pumapunku Complex had been abandoned for centuries. Confronting the monuments, they were faced with a dilemma, for before them stood undeniable evidence that an impressive civilization had preceded them. Their right to rule was justified in part by their claim to be the first inhabitants in the land and the harbingers of the trappings of civilization among the barbarous groups. Their solution, as recorded by the early Spanish chroniclers, was to believe that the ruins of Tiwanaku and the Pumapunku Complex marked the location where the first Inka was born (Betanzos 1996), and that from this point, the first Inka wandered until arriving in the Cuzco valley:

. . . tuvieron por templo célebre el sobredicho de Pumapuncu, y lo ilustraron y enriquecieron, acrecentando su ornato y el número de ministros y sacrificios; y edificaron junto a él palacios Reales en que dicen nació Manco-Capac, hijo de Guayna-Capac, cuyas ruinas se ven hoy; y era edificio muy grande y de muchas piezas y apartamentos. (Cobo 1939: 41-42)

They considered the above-mentioned temple of Pumapuncu to be remarkable, and they enhanced it by increasing the amount of decorations as well as the number of attendants and sacrifices. Next to it they constructed royal palaces where they say Guayna Capac's son Manco Capac was born. The ruins of this place are seen today, and it was a very big building with many rooms and apartments. (Cobo 1990: 105)

Neither Cieza de León nor Cobo, both with a good eye for recognizing and identifying ruined Inka buildings, mention any other Inka structures elsewhere at Tiwanaku. The excavations in 1977-78 and 1989, confirmed the presence of large Inka structures on the north side of the Main Platform, and the surface scatter of Inka ceramics extending for an additional 200 meters north (Escalante 1994). It would appear, then, that the Pumapunku Complex was the monumental focus of an Inka complex that marked the

sacred spot of creation. The Inka were aware of the political benefits of incorporating a renowned ceremonial center like Tiwanaku into their mythology (Sherbondy 1992; Zuidema, 1989; Bauer and Stanish 1998; Urton, 1990); yet in other cases imperial policy was to destroy the sacred locations of new conquered provinces (Hyslop 1990). But conceptually, what did the Inka consider the Pumapunku Complex to be? The ethnohistorical record does yield a clue. The 16th century priest Albornoz compiled an extensive list of indigenous sacred location and places, and described in great detail an Inka structure known as an *ushnu*, a ceremonial platform that was the focus of a variety of ritual activities for the Inka (Zuidema 1989; Hyslop 1990). Drawing on personal visits and interviews with native informants, Albornoz enumerates several large ushnus of the Inka Empire, including one at Tiwanaku. Both Cobo and Cieza de León describe ushnus in detail at other sites and were familiar with their form, but they do not mention seeing one at Tiwanaku. Could the Pumapunku Complex itself be the ushnu Albornoz's informants were referring to? Could a case be made that the Inka viewed the Pumapunku Complex as an ushnu? This is an interesting and plausible possibility that I will explore further in Chapter 9.

Posnansky-who in truth deserves a more generous recognition for his many years of seminal work at the site-proposed several interpretations for the Pumapunku Complex. He believed that the level of Lake Titicaca was much higher in the past and, consequently, that the Pumapunku Complex was essentially an island. It functioned partly as a port, with the passengers disembarking to the west of the Main Platform. For this reason, Posnansky occasionally referred to the Pumapunku Complex as the Uma punku

(water gateway or doorway in Aymara)-a gateway to the water. According to Posnansky (1945), the depression in the center of the Main Platform served as a fresh water reservoir and the buildings on the large stone slabs were seating areas where the indigenous chiefs would hear legal matters and dispense justice.

Another hypothesis put forth by Posnansky (1945) is that the Pumapunku Complex was an alignment point where worshipers observed and celebrated astral bodies. Bastien (1978), Reinhard (1985, 1991) and Escalante (1994) draw attention to the relationship between the position of the distant Illimani mountain to the west and the Pumapunku Complex, an idea also entertained (though not published) by Cordero (Bastien 1978). Drawing an analogy with the Inka practice of mountain worship, the Pumapunku Complex accordingly was dedicated to urging the mountain spirit to bring rain and grant agricultural and camelid fertility.

For Kolata and Ponce (1992) the Pumapunku Complex forms the monumental focus of the lower half of the symbolically bifurcated Tiwanaku; at the same time it emulates the Akapana Pyramid both in form and symbolic content. Like the Akapana Pyramid, the elaborate and overbuilt stone conduits make manifest a concern with water and, thus, agricultural fertility. Kolata and Ponce place the main entrance on the east side of the Main Platform, which would indicate a symbolic association between the Pumapunku Complex and the rising sun.

### 3.5 Conclusion

The Pumapunku Complex has attracted considerable attention since the Conquest, making it one of the most written about archaeological buildings in the Andes. The two Spanish chronicles of the 16th and 17th centuries that we examined in the preceding pages are only a sample of the abundance of historical references to Pumapunku Complex. These data are essential in that they allow us to trace with a certain accuracy the basic dimensions of some parts of the original structure that would otherwise have been lost to us. The excavations during the last 25 years, particularly those discussed in the following chapters, have built painstakingly on the data supplied by the early chroniclers, furnishing us with a wealth of detail and information about the original proportional and spatial qualities of the Pumapunku Complex. Combining both the ethnohistorical information and the results from the previous archaeological excavations, we can affirm that the final form of the Pumapunku Complex (there are, as we shall see in later chapters, several major modifications during its use-life) is a Main Platform revetted with stone on the exterior. On the summit is a sunken court similar to the fully excavated and reconstructed Semi-subterranean Temple that lies a kilometer to the northeast. On the east side of the Main Platform rise stone buildings that at one time had elaborately carved stone gateways. These gateways and other interesting architectural elements lie shattered around the large stone slabs. A finely built stone conduit emerges from the base of these Large Stone Slabs and extends into the large Eastern Plaza defined by a wall of large upright stones. To the west of the Main Platform there is an Earthen Esplanade that is part of the Pumapunku Complex.

Before I begin my discussion of the data from the Pumapunku Complex, I will describe in the following chapter three different, ethnohistorically described, monumental sites in the Andes. This will allow the reader to have an understanding some of the architectural forms of monumental sites and the types of human activities that occurred within. In Chapter 9, I will be comparing these three ethnohistorically described sites with the data from the Pumapunku Complex.

## Chapter 4

### Architecture and Motion in Andean Architecture

Many of the writings of the early chroniclers about Andean ritual life center on state-level functions within a highly structured built environment. It is from these writings that I chose three specific descriptions of human action within a structured setting. There are of course many other examples from which to choose. I recognize that the Spanish interest in Andean religious life did not lessen in the subsequent decades; quite the opposite, the fierce anti-idolatry campaigns of the 16th and 17th centuries resulted in an extensive compilation of Andean ritual practices. Soon after Contact, however, a change had taken place, because the massive demographic collapse and subsequent relocation severely affected Andean society. At the same time, European influences entered Andean social life, making it difficult to distinguish between pre-Columbian practices and later ones that represent a syncretism between the two (Selles-Reese 1997). Of greater importance to this investigation is the fact that after the initial Contact, Spanish persecution forced Andean ritual underground. State-level religious functions were the first to be affected through their destruction, abandonment, or transformation into Spanish structures (Gasparini and Margolis 1980; Low 1995). Although ritual of a pre-Columbian nature remained a coherent and structured event, it no longer took place within a high-profile built environment out of fear of Spanish repression. Therefore, descriptions from the early Colonial Period that record some of the last instances of ritual behavior within a monumental indigenous setting are the most

relevant for this study. Consequently, I will describe three examples of ritual behavior at the Temple of Pachacamac, a Royal Inka Palace, and the Sanctuary of the Island of the Sun.

#### 4.1 The Temple of Pachacamac

The ceremonial center of Pachacamac lies just south of the of the modern city of Lima. Its present state belies its past grandeur. At the time of Contact, the ceremonial center of Pachacamac had been a prominent, if not the most important, ceremonial center in Peru for over half a millennium. It bears a special significance for this study in that it is the only historically described site in South America that at one time had some form of contact with the ceremonial center of Tiwanaku (Shimada 1986). But Tiwanaku waned and was eventually abandoned, whereas the ceremonial center of Pachacamac continued to exist and, according to Patterson (1985), even thrived in the context of the imperial expansion of the Inka. It survived until the advent of the Spanish.

The ceremonial center of Pachacamac consists of enclosures, patios, plazas, stepped pyramidal structures, well-defined streets, and surface artifact scatter that extends well beyond the present visible architecture (Tello 1940; Shimada 1991). It was, at one time, a large and extensive city that shrank considerably after the arrival of the Inka (Hyslop 1990). I will concentrate on one particularly important structure, the Temple of Pachacamac, the religious focus of the ceremonial center that housed the idol of Pachacamac. Within moments of the arrival of Pizarro's looting party, the idol of Pachacamac lay shattered on the ground before a stupefied audience of local leaders and



priests. We have a few brief references to its destruction by the Spanish written by Hernán Pizarro (Barrenchea 1986); in fact, they are the only written descriptions of the workings of an active oracle-pilgrimage site of the pre-Columbian era. To view the Temple of Pachacamac, we will travel back to the 16th century and see the site through the eyes of the brutal conqueror of Peru:

This town of the mosque is very large, and contains spacious edifices and courts. Outside, there is another great space surrounded by a wall, with a door opening onto the mosque. In this space there are the houses of the women, who, they say, are the women of the devil. Here, also, are the storerooms, where the stores of gold are kept. There is no one in the place where these women are kept. Their sacrifices are those to the sun [i.e., of llamas and chicha], which I have already described. Before entering the first court of the mosque, a man must fast for twenty days; before ascending to the court above, he must fast for a year. In the upper court the bishop used to be. When messengers of the chiefs, who had fasted for a year, went to pray to God that he would give them a good harvest, they found the bishop seated, with his head covered. There are other Indians who they call pages of the Sun. When these messengers of the chief delivered their messages to the bishop, the pages of the devil went into a chamber where they said that he speaks to them; and that the devil said that he was enraged with the chiefs, with the sacrifices they had to offer, and with the presents they wished to bring. (Barrenchea 1986: 82)

Accompanying Pizarro was Miguel de Estete (Barrenchea 1986: 124-25), who also leaves us with this description:

Having arrived at the town, we started to walk straight to the mosque, which was something to see and of great size. It had two doormen at the outer door, where we went to ask them to let us go up, because we wanted to see Pachacama. They responded that no one got to see him; that if we wanted something, they would communicate it to the priest who would tell him. Hernando Pizarro told them certain things, and that in any case he was to go up where he was because he and those Spaniards came from very far to see him; and so, against their will and listlessly they led us there, going through many doors, until we reached the top of the mosque which was surrounded by three or four spiraled walls, in the manner of a snail shell, which was the way to get to the top of it; for certainly they looked more fit for strong fortresses than for the temple of the devil. On the top there was a small patio in front of the vault or cave of the idol, made out of a network of branches, with some pillars decorated with gold and silver leaf, and on the ceiling

there were woven cloths, like matting, for protection against the sun, because that is the way all the houses of that country are, where, as it never rains, they do not use any other type of covering. Beyond the patio there was a closed door, by which stood the usual guards, and which neither of them wanted to open. This door was elaborately decorated with different things: coral beads and turquoise and crystals and other things. Finally it was opened, and as it was a very beautiful door, so we were sure that the inside would be the same; it turned out to be the opposite, and certainly seemed to be a den of the devil, who always lodges in dirty places. When the door was opened and we started to enter, a man hardly could fit through, and it was very dark and it did not smell too good either. In view of this, they brought some light and so we entered with it a very small, coarse cave, without any decoration; and in the middle of it there was a beam sunk into the ground, with a human figure, poorly cut and formed, carved at the top of it, and at the foot and around it many little gold and silver things, offerings of bygone times and buried there. (translation mine)

These memorable descriptions offer sufficient proof that a series of bounded horizontal places, linked by stairways that led to the chamber containing the sacred oracle, constituted the ceremonial arrangement of the Temple of Pachacamac. Each bounded area was differentially sacred from the previous one; that is, the time spent fasting and observing proper rituals determined how closely a pilgrim might approach the shrine containing the oracle. A winding stairway, punctuated by doorways, gave access to the shrine itself, a sealed, richly decorated room where the idol was kept, and where only the highest members of the Temple of Pachacamac religious order could actually enter.

Breaking down the description, I find four essential defining qualities of the Temple of Pachacamac. First is the hidden and restrictive nature of the actual structure that housed the sacred idol. Few could approach the building that contained the sacred idol of Pachacamac, and even fewer could, with a lowered gaze, draw near to the idol itself. The second feature is that though the idol itself was hidden, the building that

housed it rose prominently on the summit of the pyramid. Thirdly, the use of decorated and restricted doors marks the various stages of movement across the temple complex towards the sacred idol. The spacious plazas, which constitute the fourth feature, dominated the space of the complex and provided the numerous groups of pilgrims with space for festivities and fasting. Tello's Plaza de los Peregrinos (Plaza of the Pilgrims), quite possibly the first court described by Estete, measures 42,336 square meters; a second courtyard covered 5,880 square meters (Shimada 1991). The large plazas reflect the fact that not only did the temple complex accommodate a large number of people, the time each pilgrim spent at the Temple of Pachacamac was, by Western standards, remarkable. In order to gain entry into the first plaza, a pilgrim had to complete twenty days of fasting; entry into the second, a full year; and any further movement towards the structure that housed the idol could entail acts of penance that consumed several years. Most pilgrims would never reach this final point, but rather remain in one of the first two plazas. Therefore, these plazas were capacious and surrounded by many compartments that perhaps served as storage places. The plazas accommodated the great number of people who partook in the ritual activities that accompanied the fasting.

For the majority of those visiting the site, the spatial experience involved linear movement from one well-defined large space to another. Always under the shadow of the towering mass of pyramid that housed the idol of Pachacamac, the pilgrims would fast and take part in rituals in the open plazas. The use of spacious open forecourts and enclosures located in front of a steeply inclined principal pyramid increased the dramatic effect of moving across the complex. Gateways marked the transition from one area of

the temple complex to the next, architecturally marking a pilgrim's completion of a segment of the pious routine of fasting and ritual. Though accessibility to the different areas of the temple complex was restricted according to the pilgrim's status and displays of piety, the route was direct and well marked, leaving little chance of making a wrong turn or getting lost. Even Pizarro's looting party, unfamiliar with Andean architectural patterns, had no difficulty discovering the most direct route to the sacred shrine.

#### 4.2 The Royal Inka Palace

The culture for which we have the most information is the Inka, thanks to the Spanish chroniclers, who lavished their attention on Inka rituals and buildings throughout the empire, among which Cuzco was, understandably, the favorite (Betanzos 1987; Garcilaso de la Vega 1987; Molina 1988; Sarmiento de Gamboa 1907). The Inka Garcilaso (1961), with a certain flair for the literary borrowed from his more famous Castilian predecessor, wrote that everything that originated in Cuzco was considered special: the corn that grew on the agricultural terraces was the best and most sacred, and the sand from the main plaza was taken to new settlements to initiate a new building or plaza. Even a person returning from Cuzco was treated as someone of higher rank and stature by those walking towards Cuzco for the first time, as pilgrims from Mecca are today. Garcilaso's reminiscences highlight the idea that Cuzco was the premier ceremonial center, where nearly everything had a sacred and ritual quality. Hundreds of *huacas* were scattered throughout Cuzco and the surrounding valley. Several investigations have focused on specific aspects of the built environment of Inka Cuzco:

water and irrigation canals (Sherbondy 1982), carved rock outcrops (Van de Guchte 1990), the royal roads (Hyslop 1990), astronomical markers (Bauer and Dearborn 1995), specific structures such as the Saqsawaman Complex (Valcárcel 1934-35), the Coricancha Temple (Gasparini and Margolis 1980), and the buildings and palaces associated with the royal mummy cults (Isbell 1998). William Isbell (1998) makes an interesting comparison between Inka palaces and Tiwanaku monuments and, finding certain formal similarities, raises the possibility that the latter may have served as elite residences. I find this idea stimulating, and I would like to explore the possible relationship between Tiwanaku buildings and form of the Inka palace. While the Inka remains within Cuzco are too ruinous to permit a direct comparison with the architecture of the Pumapunku Complex, an ethnohistorical description by the chronicler Martin Murúa (1987) is precise and telling. His description is extensive, but I include it in its entirety since his description follows the route one would take through the entire palace.

. . . so each [Inka] went extending and enlarging his house and royal palace with magnificent and sumptuous buildings, adding to his personal guard, giving them more privileges and charters, elaborating patrol and order, and making bigger show of his greatness. The royal palace, that among them was called Cuusmanco, had two magnificent gateways, one at the entrance to the palace, and another farther inside where the finest and most impressive of these portals made its appearance — of admirably crafted stonework. . . .

In the entrance of the first doorway there were two thousand Indian guards with their captain of the day, who were periodically rotated within the multitude of Cañares and Chachapoyas. These soldiers had privileges and were exempted from personal services; the captains who governed them were Indian leaders of authority, and when the Inca traveled they accompanied his person, receiving full rations and high payments, and they ordinarily walked accompanied by the sons of curacas and leaders, very elegantly dressed.

This first gateway where the guards were located opened into a plaza. Here all those who accompanied the Inca from outside entered and stopped. The Inca and the four orejones of his cabinet entered the second gate, where there was another guard, composed of natives of Cuzco, orejones, kinsmen of confidence

and descendants of the Inca, who were the ones who raised and instructed the sons of the governors and leaders of the entire kingdom, and who went to serve with the Inca and attend court with him when they were boys.

Beside the second gateway was the armory of the Inca, containing every different kind of weapon they used — arrows, bows, lances, clubs, shields, swords, celadas, slings, and strong armor, all very carefully organized. At this second door were one hundred captains of the most experienced and outstanding in warfare, who waited there for battle orders, or any other commission so that nothing important would be overlooked.

Beyond this second gateway was another great plaza or patio for the officials of the palace, and those who had regular jobs were there conducting the tasks assigned them according to their responsibilities. Continuing on, one enters the quarters, apartments and buildings where the Inca lived that were filled with pleasures and delights for there were trees, gardens with a thousand varieties of birds that went about singing; lions, tigers and pumas; and every species of beast and animal found in this kingdom. The buildings were large and spacious and worked with great skill, and among them they do not treat the walls as in Europe for these walls were richly adorned with much gold and decorative representations of their ancestors performing heroic deeds, and also the skylights and windows were garnished with gold and silver, and precious stones, so all that is of value in this kingdom is counted within the house of the Inca.

Within the house of the Inca was a treasure room called *capac marca huasi*, that means the wealthy room of treasure, that functioned as our *Recámara Real* where the gold and jewels of the king were kept. In it was the sumptuous clothing of the Inca, the finest *cumbi*, and all the things that constituted his adornments. There were rich jewels of inestimable value, and gold and silver service pieces for the Inca's tables. All this wealth was looked after by 50 stewards whose boss was the *tucuricuc*, or *cuipucamayoc* who was the overseer and accountant of the Inca, who had the keys to certain doors — although of wood in their fashion — that could not be opened unless the second person was there with the other, different key. This treasurer or accountant had a very high salary and many benefits, for the Inca gave him much of his own clothing, herd animals, and fields, and of these gifts he took two thirds while the remainder went to his helpers. In addition to these treasure stewards there were 25 valets, youths of 12 to 15 years age, sons of curacas and chiefs who were very well treated and richly dressed. Each week they were given a *mayordomo* who received payment as well as the privilege of being carried in a hammock. These valets cleaned the daily clothing of the Inca, and prepared his attire according to instructions, and they brought him his meals when he ate. (Murúa 1987: 58-59; translation Isbell)

Clearly the Inka palace in Cuzco was primarily a place of residence and storage although I recognize the presence of some distinctly ritual overtone to the complex. For

example, the palace was located on the main plaza of Cuzco, closely associated with an important ritual structure (the ushnu) that I will describe in detail in Chapter 10.

Furthermore, after the death of the Inka emperor, the palace became the focus of his mummy cult (Isbell 1997). However, as the above description is of a palace during its use by a living emperor, I will concentrate my analysis on this stage of use-life of the palace.

Aligned monumental gateways characterize the architectural pattern of the Inka palace. The other main components of the palace are the rooms and buildings surrounding the plazas that serve specialized functions such as barracks, storage facilities, and residences. At the far end of this plaza is a complex of rooms that include the Inka emperor's personal residence, a zoological collection, and a storage room for the most valuable imperial items.

Passage from outside the palace to the innermost rooms was a clearly defined linear process, but few would have the privilege of completing it. It would be an understatement to say that access across the palace was restricted. Heavily guarded single gateways highlight the restricted and defensive qualities of the palace. The palace was, except for the Inka and the highest members of his royal court, a static space that barred the gaze of the vast majority of the population. Even those inside were relegated to specialized areas and most likely could not pass from one gated area to the next. Only a limited few could ever approach and actually enter the rooms of the Inka at the end of the second plaza.

### 4.3 The Sanctuary of the Island of the Sun

The Island of the Sun is located on Lake Titicaca near the Copacabana Peninsula. At the northern end of the island an exposed bedrock formation became the focus of intense veneration by the Inka and earlier peoples (Cobo 1939). The religious importance of the island was recorded in several versions of a creation myth. Early chroniclers based in Cuzco write how the creator god of the Inka Viracocha rose either from Lake Titicaca, the Island of the Sun itself, or from the ruins of Tiwanaku (Betanzos 1987; Calancha 1972; Garcilaso de la Vega 1987; Molina 1988; Sarmiento de Gamboa 1907). The offspring of Viracocha then founded Cuzco. Other versions of the myth highlight the island of the Sun as the birthplace of the sun (Calancha 1972; Cobo 1990; Ramos Gavilán 1988). I would urge caution when reading these historical documents since a recent analysis of Pedro Sarmiento de Gamboa's history of the Inka demonstrates the degree to which local politics and personal interests influenced the writings of the early chroniclers (Urton 1990). Quite possibly, one myth was promoted by a political faction representing Cuzco, and associated genesis with the mythic Inka god-hero Viracocha. The implications of this version are clear: the Inka are by birthright legitimate rulers. Another set of informants to the chroniclers seems to come from the Lake Titicaca area and, as one might expect, emphasizes the exclusive sacredness of the Island of the Sun as the birthplace of the sun, and a previously existing Tiwanaku ceremonial center that was usurped by the Inka (Seddon 1998; Stanish 1999). Either way, both versions give prominence to the sacredness of the island and its association with the sun as a place of creation.



Though Bernabé Cobo, Alonso Ramos Gavilán, and Antonio Calancha visited the ritual complex on Island of the Sun, they did so several decades after it had been ravaged by time and the European invaders. They augment their observations of the ruins through interviews with older local residents and by referring to the writings of earlier chroniclers, many of which are now lost. Their description commences at the isthmus of the Copacabana peninsula where a wall blocked further movement towards the sanctuary. It would appear that this wall is the first architecture one encounters with the sanctuary at the Island of the Sun, though Stanish cites other ethnohistorical references to ritual fasting beginning well before the arrival at this point (Stanish, personal communication). Guards monitored the few entrances through this wall, and nearby priests would receive confession and assign a painful act of penance. At this point, according to Cobo (1939), the pilgrims would abstain from imbibing salt, chili, and meat. The journey would continue to the Inka settlement at Copacabana that, judging from historical descriptions, boasted buildings for ceremonies, facilities for storing offerings and foodstuffs, and residences for the pilgrims who arrived in large numbers. A large plaza, possibly in the location of the present town plaza, dominated the space of Inka settlement and was perhaps the primary locale for those fasting and preparing for the pilgrims' departure to the Island of the Sun.

Arriving on the southern tip on the island of the Sun, the route to the sacred rock on the north was clearly defined and walled. I turn now to some passages from Calancha and Cobo who both describe in detail the route across the island.

Antes de llegar al adoratorio se había de pasar por tres puertas, que distaban las unas de las otras poco más de veinte pasos. La primera se llamaba Pumapuncu,

que suena lo mismo que puerta del león, porque había allí un león de piedra que decían guardaba la entrada; y en ésta, antes de pasar, se hacía una expiación de pecados, confesándolos a un sacerdote que allí residía. La segunda puerta tenía por nombre Kentipuncu (diferente de la que se labró por la entrada del Inga cuando se descalzó); llamábase así por estar macizada toda de plumas de Tominejos, avecillas quienes ellos llamaban Kenti. Aquí volvían de nuevo a confesarse con otro sacerdote que guardaba aquella puerta. Este aconsejaba a los peregrinos fuesen con devoción si querían ser favorecidos del Sol a quien iban a adorar. De la tercera puerta era el nombre Pillcopuncu, que suena puerta de esperanza. Estaba adornada con plumas verdes de un párajo muy estimado que se trae de los Chuncos, llamado Pillco, que hace muchos visos. En esta puerta, que era la última, el sacerdote custodio de ella persuadía con gran eficacia al peregrino hiciese muy riguroso examen de conciencia, porque no había de pasar teniéndola agravada, y así hacía otra reconciliación con el sacerdote para este dedicado. (Calancha 1972: 123).

Before arriving at the sanctuary, one had to pass under three doors [I refer to these as *gateways* below, though the Spanish translation of “puerta” is door], placed a little more than twenty paces [16.7 meters] apart. The first doorway was called Pumapuncu, or doorway of the lion, because there was there a lion made of stone that, it was said, guarded the doorway; and at this doorway, before entering, a confession was made to the priest who resided there. The second doorway bore the name of Kentipuncu (different from the door that was made for the Inka’s entry when he took his shoes off); it was called such because it was completely covered in feathers of Tominejos, small birds that they called Kenti. Here confession was made again to the priest who guarded this doorway. This priest would advise the pilgrims to proceed with devotion if they wanted to be favored by the sun to whom they were about to pray. The third doorway was called Pilcopuncu, which means doorway of hope. This doorway was adorned with iridescent green feathers from a highly valued bird that is brought from Chuncu, called Pillco. At this last doorway the custodial priest was skilled at persuading to the pilgrims to search deep into their soul because they could not pass with any sin, and in this way another confession was made to the priest dedicated at doing this, (translation mine)

Earlier in his description of the sanctuary, Calancha depicts in detail the fourth gateway. This gateway, called Kentipuncu, or Intipuncu according to Cobo, commemorated the place where the visiting Inka took off his shoes in order to approach the sacred rock (Calancha 1972; Cobo 1990). Built into a wall that sealed the ritual

precinct surrounding the sacred rock, the Kentipunco or Intipunco gateway was the final stop for many of the pilgrims. Observing the sacred rock through the gateway, they could then continue their pilgrimage to the Island of the Moon (Cobo 1990). Cobo visited the island during his rounds of the highlands and describes the ruins located at the northern end of the island beyond the final wall:

The crag that was so venerated was out in the open, and the temple was next to it, located in such a way that this crag was about where the cemetery would be, or to put it more properly, within the main chapel, even though it was out in the open; actually it was the most sacred place. The front of it faces north, and the back faces south; there is not much to this concave part of it, which was where they worshiped. The altar of the Sun was inside. The convex part is the living stone, whose slopes reach out as far as the water, where there is a cove made by the lake. The adornment was covering over the convex part, a curtain of *cumbi*, which was the finest and most delicate piece [of this cloth] that has ever been seen. And the entire concave part of it was covered with sheets of gold, and they threw offerings into some holes that can still be seen now. Ahead of this crag and altar a round stone can be seen which is like a basin, admirably wrought, about as large as a medium-sized millstone, with its orifice; the stone is used as the foot of the cross now. The *chicha* for the Sun to drink was tossed into this orifice. (1990: 96-97)

Both chroniclers describe several buildings surrounding the sacred rock: storage structures; the Mamacona, a large house for the women attending the ritual complex; an elaborate bath; several other temples; and a series of buildings whose purpose had already passed from memory (Cobo 1990). The area directly to the north of the sacred rock was a plaza leveled with fill brought by order of the Inka from somewhere else (Calancha 1972). The chroniclers attribute most of the constructions to the Inka who enlarged the existing ritual structures and added several more to aggrandize the ritual complex and make facilities for the thousands of pilgrims who would arrive (Calancha 1972).

Ramos Gavilán details two Inka ceremonies held on the Island of the Sun, Capac Raymi and Inti Raymi. Finely dressed participants formed a procession and danced towards the sacred rock, where a series of rituals were celebrated around the ushnu. Before the sacred rock, each group would dance according to the custom of its region and drink copious quantities of corn beer (Ramos Gavilán 1988). Fine textiles were offered up, along with chosen children and llamas, though not guinea pigs, according to Ramos Gavilán. Large quantities of com beer specially prepared by the women attending the ritual complex were poured into the basin described by Cobo (1990; Ramos Gavilán 1988).

In his comprehensive overview of Inka settlement patterns, John Hyslop (1990) distinguishes a particular form of Inka site with the term *sanctuary*. According to Hyslop, there are two distinguishing qualities of the sanctuary. First is an overwhelming concern for ritual matters over military, economic or any other forms of activity. The second is the dispersed nature of the architecture, which often stretches for kilometers in front of the focus of veneration. In this case, the pilgrimage began on the peninsula of Copacabana, kilometers from the sacred rock, and a variety of structures including plazas, carved stones, and baths punctuated this route. Although long, the route was direct and well marked by elaborate gateways and walls.

I agree with Hyslop's generalizations, and I would add two of my own. The first is that the ritual infrastructure was built with the purpose of funneling and controlling a large number of pilgrims. Though the route is confined, restrictive, and at times reduced to the passage of a single person, the expansive plazas indicate that a large number of

people were expected and, in fact, necessary to complete the proper rituals. The chroniclers concur that the sanctuary attracted thousands of pilgrims, and the efforts of the Inka to enlarge the ceremonial complex and facilities related to feeding and housing pilgrims further suggest that large numbers of people came to attend ceremonies that spanned several days.

The second is the varied nature of the ritual experience, as suggested by the architectural arrangement. In the course of the pilgrimage, the ritual space alternated from the large plaza areas where fasting and feasting must have occurred to a restricted gateway where personal acts of penance and confessions to a priest were rendered. The guarded gateways and walled walkways were the location of acts of penance and repeated confessions. Hyslop refers to these gateways as “stages of entry” - that is, as I interpret it, the architectural delimitation of one level of a spiritual journey from the next. At the other extreme, the large plazas form built environments that facilitate large scale interaction.

In summary, the architectural patterns of the sanctuary exposed the pilgrim to a variety of built forms, resulting in a varied and multidimensional spatial experience.

#### 4.4 Conclusion

The three examples represent only a sample of ethnohistorical description of Andean architecture; however, they do represent, in my opinion, some of the best descriptions we have of pre-Contact human action in a monumental constructed setting. I will leave the reader with these examples of human action and the built environment, and

begin my own detailed description of the investigations at the Pumapunku Complex (Chapters 5-8). Based on my reconstruction of the architectural form of the complex, I propose in Chapter 9 the structure of human action across this impressive site. I will then return to the information from this chapter and ask: what are the similarities or dissimilarities between the Pumapunku Complex and the above described sites? Would it be logical and plausible to argue that similarity in architectural pattern and human action also represents similarity in meanings?

## Chapter 5

### Data Description

#### 5.1. Overview of Site Formation Processes at Tiwanaku

Minimal vegetation cover, compact earth, a predictable rainy season, and highly trained local excavators make Tiwanaku an ideal site to excavate. The trenches are well defined, and the side walls are plumb-bob straight, giving the illusion of Wheeleresque methodological precision. However, the experiences of centuries of archaeological excavations at Tiwanaku and the documentary references to nearly 500 years of looting and vandalism and decay should alarm cautious archaeologists and alert them to the quantity of depositional variables and transformation processes that need to be defined and accounted for when conducting excavations in the monumental core.

Drawing on archaeological and historical accounts, I can generate, in chronological order, a basic list of processes and disturbances, both natural and human, that have occurred. To begin with, the area that became the monumental core was artificially leveled, and deep foundation trenches were excavated to create stable bases for the heavy buildings. The volume of the monuments in great part consists of artificial fill that was excavated and brought to the site. In fact, Alan Kolata (1993) suggests this very excavation of fill created the “moat” that surrounds the monumental core. Areas of previous occupation have been prime locations to dig for the earth for the manufacture of adobe, a major construction material in both monumental and residential structures of the

pre-Columbian, Colonial, and post-Colonial periods. Adobe borrow pits pull up artifacts such as ceramics from deep in the ground, and the eventual decay of the adobe and the collapse of walls redeposit the materials near the surface. Nearly every structure excavated by John Janusek (1994) within the monumental core had been affected to a degree by adobe borrow pits.

The buildings underwent a series of changes, and, judging from the fact that several public buildings remained unfinished and temporary constructions were left in place, the process of construction and modification must have been continuous. Often earlier structures that had fallen out of use were cannibalized for building material. In some cases, fill was then placed over the “retired” structure (Manzanilla 1992), and a new structure was erected in its place. After the cessation of monumental construction, some buildings may have been intentionally destroyed (Goldstein 1993) or burned (Kolata 1993).

The site continued to attract pilgrims, and intrusive deposits and artifacts were introduced through funerary and votive activities (Cordero 1978; Estévez 1990, Manzanilla 1992; Kolata 1993; Alconini 1995). The arrival of the Inka to the Lake Titicaca basin resulted in the establishment of new settlements. New buildings were constructed, monuments refurbished and modified, and old surfaces swept clean (Cieza de León (1939); Cobo 1990; Escalante 1994). Much of the earlier adobe had melted under the onslaught of wind and rain; facing stones of the large monuments had become dislodged, spilling the fill contents of the monuments. Nevertheless, the disturbances up to that point were minor compared to those that occurred in the wake of the Conquest.



Seeking treasure, the Spaniards excavated large and small holes into the architecture and fill of the visible monuments. Looters fired by stories of treasure and wealth churned over spoil heaps. Stones were removed for the construction of Colonial, Republican, and later buildings, exposing the fill of buildings to erosion (Ponce 1971). Colorful soluble material, such as red ochre, was actively sought as a paint base, and abode pits continued to be excavated throughout the site for buildings of the colonial Spanish settlement of Tiwanaku. The effects of agriculture, wind, and rain have blurred the original dimensions of the monuments, filling and leveling all but the largest of looters' holes. Compacted by the llamas and cattle and later by the feet of tourists, the ground of the monumental core of Tiwanaku has the appearance of a flat plain with the occasional gently contoured mound. Archaeologists know that underneath the present surface lies the record of over a millennium of deposition and disturbance, both natural and human. Nevertheless, the situation is not as dire as it appears. The quantity of possible information is immense, and the potential for understanding Tiwanaku is great. The problems archaeologists must solve are how to identify and isolate the fills and sediments and artifacts that are a result of each different process and how to treat analytically each of these contexts and their contents in a productive manner.

## 5.2. Surface Features

I will be using several terms when describing the location of trenches. The prominent landmarks on the topographic map (Figure 5.1) to which I will be referring in the text are as follows: Main Platform, Wings, Circular Depression, Nested Circular

Depression, Western Depression. These are surface features that I assume related to sub-surface cultural features. Hence, they guided the placement of my trenches.

### 5.3 Field Methodology

The data for this investigation were collected in two distinct phases: cleaning and recording the open trenches from the previous excavations; and new archaeological excavations.

#### Cleaning and Recording the Open Trenches

Located 20 meters west, 6.026 meters north of the Wila Jawira benchmark in the southeast corner of the Main Platform, a new bench mark was established for the 1996 field season that provided a clear view of most of the earlier trenches (Figures 5.2 and 5.3). It approximates the location of Arthur Posnansky's (1945) benchmark for his 1926 topographic map. A laser theodolite with attached Hewlett Packard 95 palm-top computer allowed for the translation of measurements into a three-dimensional grid and the computer-aided generation of a topographic map.

Open trenches from the previous excavations were cleared of sediment in order to expose architecture and record the stratigraphy from the eroding profiles. Select profiles were drawn of the trenches along the perimeter of the Main Platform, the largest and the most heavily eroded area (Figure 5.4). I also recorded the exposed architecture in all of the earlier excavations along the perimeter of the Main Platform. In certain places, such

as the northwest corner of the Main Platform, the finer details were obscured by the large amounts of erosion and tumbled stone from the baulks of the 1989 excavations.

The effort required to clear the trenches in the northwest corner of the Main Platform was completely beyond the reach of my present capabilities; as a result, I recorded the general dimensions and characteristics of the visible architecture. Other trenches from the perimeter of the Main Platform were free of baulks and thus clear enough to allow the recording of every detail. With the exception of the 1984 excavations that had been backfilled, several other trenches that had been excavated along the sides, summit, and interior of the Main Platform were cleaned and their profiles recorded.

I recorded the exposed architecture, stratigraphy, and features, using scale drawings and photography. I then utilized the laser theodolite to take measurements of prominent landmarks on the exposed architecture. The ID number of each measurement was marked on the field drawings. Field drawings were scanned and vectorized on the computer. The theodolite points taken on the architectural elements were plotted on the computer on a 1:20 scale. The vector images were layered over these theodolite points and digitally stretched until the points marked on the field drawing corresponded with the more precise theodolite measurements.

#### New Archaeological Excavations

Based on previously published information and the new data from unpublished open trenches, I planned a series of new trenches (shown in Figure 5.5; locational data

also given in Table 5.1). However, the sensitive nature of excavations on such a prominent monumental site did not allow me to proceed as I would have wished. The site had been heavily looted, which, while unfortunate, was put to good use during the excavation. Removing any fill from the looter's pits was politically unproblematic and provided an opportunity to clean and examine their profiles.

The excavations began with one crew or *cuadrilla* of five professional excavators from Tiwanaku. This highly experienced crew consisted of members of the local archaeologists union who occupied distinct roles that were named in accordance with local practice; there was a *maestro* (crew chief), a *contra-maestro* (assistant crew chief), and three *peones* (excavators). All were adept at excavating in natural and arbitrary levels, recovering and identifying finds, taking measurements, and making scale drawings. As the excavation progressed, a second *cuadrilla* was added, and, for the final stage, a third. An archaeologist from the National Institute of Archaeology of Bolivia (INAR) was present to supervise the crews.

Excavations were effected using natural levels when possible. Conforming with Bolivian norms of excavation, arbitrary levels within natural stratum were excavated at 10 centimeter intervals. Each of these arbitrary levels was labeled, top and bottom elevations were taken for the four corners of each level, and artifacts from each level were bagged.

#### 5.4 Analytic Terms and Data Description

In organizing the data, I am indebted to the excavation and analytic methodology of Edward Harris (1979). Though this methodology was developed for the complex stratigraphy of urban sites in Europe, it has been successfully applied and modified for other parts of the world (Harris 1993). Norman Hammond (1991) was the first to apply this method in the New World at the site of Cuello in Mesoamerica in 1974, modifying this system several times in order to contend with the increasing size and complexity of the excavation. The ability of Harris' methodology to adapt while maintaining basic principles is a testament to its applicability to radically different archaeological sites. Although I will be abiding by Harris' basic principles of stratigraphy, there are a few modifications that I will describe below.

Chapters 5-8 divide the excavation data into four sections. Each chapter combines descriptive units into ever larger categories, culminating in the final level of description that represents my interpretation of the site. Using the terminology defined below, the process of data interpretation will follow this sequence: Chapter 5 is a detailed description of the levels and features of each excavation unit; Chapter 6 examines the relatedness or non-relatedness of archaeological finds between the excavation units and combines them into loci; Chapter 7 delimits and defines of the architectural structures; Chapter 8 lays out the construction sequence for the entire complex.

The presentation in this chapter is organized according to two units: level and feature. I define *level* as a stratigraphically distinct unit, either natural or human-made, that is recognizable and distinct from other levels by its composition, color, and texture, and/or is separated from other levels by a recognizable interface, which can be its own

stratigraphic unit (Harris 1979, 1993). Harris defines two types of interfaces. The first type, the horizontal layer interface, is the contact between two levels. This type of interface will be not recorded as a separate unit from the strata on either side of the interface. The second type of interface, the feature interface, is especially relevant to excavations at Tiwanaku. It is “formed by the destruction of accretions to the archaeological record, and must therefore be treated differently in stratigraphic studies” (Harris 1979: 57). Feature interfaces have their own set of stratigraphic relationships with other units of stratification and their own boundaries and surface contours. The most common form of feature interfaces are pits and foundation trenches excavated into existing earth. Section 5.1 above discusses the disturbances and destructive elements documented historically and archaeologically at Tiwanaku that may result in the creation of recognizable interfaces. Also, later constructions, both pre-Columbian and post-Contact, may result in an interface. For this investigation, both horizontal deposits and interfaces are termed *levels*, the basic unit of stratigraphic analysis and description. Several of the levels I encountered were particularly thick, ranging up to 3 meters. Conforming with Bolivian standards of excavation, arbitrary units of excavation were used within natural stratigraphic units. These arbitrary units, ranging in thickness between 10 and 20 centimeters, are labeled *lots*.

A *feature* is a minimal excavation unit of analysis equivalent to the level in analytical scale. The two terms are distinct; in this investigation, features are architectural elements and levels relate to fill. A feature can be as diverse as a series of aligned stones or a horizontal layer of fine clay mixed with red ochre.

The levels or features in the profile drawings that accompany this chapter are generally arranged stratigraphically, numbered sequentially from the lowest to the highest. Table 5.2 provides a list of the features and levels found in each trench. In the following chapters, the levels and features will be combined into the larger categories of locus, and then structure. These terms and their meanings are described at the start of the relevant chapters.

## 5.5 Descriptions of Selected Profiles and Plans of Excavation Trenches

### Trench P1

The southern side of the Main Platform was excavated in the 1978 and 1989 field seasons. This trench is 5 meters wide and runs along the entire length of the Main Platform. Figure 5.4 shows the location of these excavation trenches; Figures 5.6, 5.7, and 5.8 show an overview of this trench.

1. Feature 1 : Feature 1 is a surface of compacted earth and elongated river cobbles that are exposed to varying heights. Oval or baton shaped river cobbles project from the surface of this feature (Figure 5.9). The edge of this feature extends an average of 3.5 meters from the face of Feature 2.

In most places, the elevation of the upper surface of Feature 1 is equal to the base of Feature 2. A few of the cobbles project above the base of Feature 1. Along the 115.88 meter-long east-west segment of Feature 2, the elevation of Feature 1 rises slightly from east to west, and at the western end of Feature 2, nearly all the courses lie below the surface of Feature 1.

2. Feature 2: Embedded within Feature 1 is a line of stones with flat horizontal surfaces.

These stones are laid to form a nearly horizontal plane upon which sits the first course of Feature 3. These stones were clearly visible in the area immediately south of the first 9.34 meter-long east-west segment of Feature 2. In several places, the Feature 2 stones were directly under the first course of Feature 3. One example was fully excavated in Trench 6P (see below).

3. Feature 3: Feature 3 consists of four stone courses and is 98 centimeters high. The first three courses are made up of square andesite blocks that are fairly consistent in their dimensions. They measure 30 centimeters long, 30 centimeters wide, and 25 centimeters high, although there is an occasional stone that measures as little as 10 centimeters wide. The first and second courses are vertically aligned with each other; the third course is recessed 11 centimeters from the faces of the first two and some of these blocks jut out seemingly at random (Figure 5.10). The fourth course, recessed 14 centimeters from the third course, consists of red sandstone blocks averaging 120 centimeters long, 120 centimeters wide, and 31 centimeters high (Figures 5.11 and 5.12). A geometrically carved recess that measures 40 centimeters wide and 20 centimeters high is carved into the front of this sandstone block. In certain locations, andesite blocks 40 centimeters wide, 20 centimeters high, and averaging 30 centimeters in length are found on this carved step. Along most of Feature 3, the surface of the sandstone blocks is bumpy and irregular, and approximately rectangular depressions occasionally pock the surface (Figure 5.12 and 5.13).



In plan view, Feature 3 has four segments (Figure 5.6). The angle between segments is 90 degrees. Starting in the southeast corner, the eastern segment of this feature measures 9.34 meters. The eastern end of Feature 3 is irregular in shape and several stones jut out at random. The next segment is oriented north-south, measures 28.06 meters, and slopes at an angle of .9 degrees south. The longest segment running east-west measures 115.88 meters and has a slope .9 degrees from east to west. The final segment runs north-south for 20.9 meters, sloped at an angle of .9 degrees. The northern end of this segment is irregular, consisting of stone blocks that jut out at random. The top surface of the northern end of this segment of Feature 3 is 6.96 meters below datum. The top surface of the southern end of Feature 3 on the west side is 7.24 meters below datum. On the final segment described above along the western side of the Main Platform, the surface of the red sandstone blocks is completely smooth; the stone courses below the course of sandstone blocks meet precisely.

4. Feature 4: Feature 4 consists of three courses of stone lying in a stepped formation, sitting on brown earth that is visible along the north and south side of this feature (Figures 5.11 and 5.14). The exterior, stepped side faces the west. The first course of stone of Feature 4 is placed on the level of the fourth course of Feature 3, level with the top of Feature 5.
5. Feature 5: The area behind Feature 3 is level with the surface of the red sandstone blocks that form the top course of Feature 3. Feature 5 consists of a cobble and compacted earth matrix in this case (Figures 5.8, 5.9, and 5.14). The tips of river cobbles project from this compacted earth matrix.

6. Feature 6: Nearly three meters (2.81 to 2.93 meters) behind the face of Feature 3 is Feature 6, a course of regularly shaped andesite blocks (Figure 5.6). Feature 6, composed of four rows of stones in its basal course and three rows of stones in its second and third courses that total 1.65 meters in width (Figures 5.15 and 5.16), lies directly on top of Feature 5. Several of the blocks, especially those above the first stone course, jut out at random intervals along its lengths. The dimensions of the stone blocks are regular, averaging 25 centimeters tall, 40 centimeters wide, and 40 to 57 centimeters long. This feature is preserved along a 68.50-meter section, reaching a height of one meter in places where five courses of andesite blocks are preserved (Figures 5.8 and 5.12). The third course, though, is consistently recessed a few centimeters from the face of the second (Figures 5.8 and 5.15). Several stones from the uppermost course are modified on their top surface and are completely smooth, with the exception of the edge of the southern side that remains rough and higher than the smooth area. Along the Wings of the Main Platform there is another section of Feature 6 that consists of a row of single vertical stones, three courses deep, facing a compacted earth and cobble core.

At regular intervals of 2.45 meters along Feature 6 are several cut stones in a stepped formation that extend out from the face of the feature (Figure 5.17). Their first and third courses abut the feature's face; the second and fourth courses fit into the recesses in the face of the feature. The height of the courses in the best preserved segment of this feature are: first step, 23 centimeters; second, 27.; third, 26 centimeters; fourth, 25 centimeters. Together the four courses comprise a stepped

formation 0.50 meters wide with a total height of 1.01 meters, extending 1.82 meters from the face of Feature 6 at its base.

7. Feature 7: The area directly north of Feature 6 is compacted earth with projecting river cobbles, sections of which are exposed along the south side of the Main Platform (Figure 5.16). Feature 7 does not extend to the present surface of the Main Platform.

The 5 by 25-meter area was cleared of topsoil by José Estévez in 1989 and Leocadio Tiella in 1995, revealing a 5 by 8-meter section of Feature 7 (Figure 5.15). The highest point of Feature 7 in this trench is 2.66 meters below datum, 4.25 meters above the base of Feature 1.

8. Feature 8: Embedded in Feature 7 are fourteen stones with flat surfaces that form a horizontal plane, 1.55 meters north of Feature 6 (2.65 meters north of the face of Feature 6), and 0.91 meters above the surviving stone course of Feature 6 (1.87 meters above the base of Feature 6). Taken as a whole, these stones form a horizontal plane 1.40 wide, sloping 0.9 degrees to the west.
9. Feature 9: Feature 9 is a closed conduit of stone at the southeast corner of the Main Platform, oriented 6.8 degrees east of north compared to 4.5 degrees east of north for Features 3 and 6, set at a vertical angle of inclination of 10 to 12 degrees (Figures 5.6 and 5.7). The conduit measures 14.4 by 1.26 meters. Sandstone blocks cap two rows of lateral andesite cut stones that stand on a stone base (Figure 5.18). The area between the lateral rows is carved to form a gentle trough. The tops of the lateral stones are marked by 'T'-shaped notches that span adjacent stones. At the southern

end of the conduit, a metal clamp was found in situ inside the notch. The closed conduit is surrounded by the compacted earth and river cobble matrix of Feature 7. The lower end of the conduit projects 1.69 meters beyond the south edge of Feature 6 (Figure 5.7).

10. Feature 10: Feature 10 is located on the east side of the Main Platform. An alignment of stones 6 meters long projected east from the side of the Main Platform at 4 degrees east of north. This alignment consisted of a single, large upright sandstone block with smaller stone blocks on either side.

#### Trench P2

The west side of the Main Platform was excavated by Juan Faldin in 1989 (Figure 5.4). The excavation plan of the 1989 excavations shows that a series of 5 by 5-meter trenches were planned across this area. Most of the baulks remain in place but are heavily eroded, making it difficult to determine the original dimensions.

1. Feature 1 : A 20.9-meter section of Feature 1 excavated by Faldin is described above as Feature 3 of Trench P1. To recap, Feature 1 consists of four stone courses 98 centimeters high. The first three courses are made up of square andesite blocks that are fairly consistent in their dimensions. They measure 30 centimeters long, 30 centimeters wide, and 25 centimeters high, although there is an occasional stone that measures as little as 10 centimeters wide. The first and second courses are vertically aligned with each other; the third course is recessed 11 centimeters from the faces of the first two, and some of these blocks jut out seemingly at random. The fourth

course, recessed 14 centimeters from the face of third course, consists of red sandstone blocks averaging 120 centimeters long, 120 centimeters wide, and 31 centimeters high. A rectangular recess that measures 40 centimeters wide and 20 centimeters high is carved into the front of some sandstone blocks. This segment runs north-south for 20.9 meters, sloped at an angle of roughly 2 degrees. The northern end of this segment is irregular, consisting of stone blocks that jut out at random. The top surface of the northern end of this segment of Feature 3 is 6.96 meters below datum. The top preserved course at the southern end of Feature 3 on the west side is 7.24 meters below datum. In the final segment, along the western side of the Main Platform, the surface of the red sandstone blocks is completely smooth; the stone courses below the sandstone block meet precisely.

2. Feature 2: Three meters east of Feature 1 is a mass of compacted earth with projecting river cobbles exposed to varying heights. Several of the cobbles were found strewn across the surface of this feature. Feature 2 extends on either side of the Western Depression and has a vertical height of 3.75 meters from the top of Feature 1 and 4.85 meters from the base of Feature 1. The uppermost extent of Feature 2 is approximately 2.50 meters below the modern surface of the Main Platform.
3. Feature 3: Fifty-eight flat stones are embedded in Feature 2, 3 meters east of Feature 1. These stones are at the same elevation as the top of Feature 1, forming a horizontal plane inclined at 2.0 degrees to the south.

4. Feature 4: Feature 4 is a cluster of 29 flat stones that are embedded into Feature 2.  
Located 1.80 meters above Feature 3, Feature 4 also forms a horizontal plane slightly inclined at 0.4 degrees to the south.
5. Feature 5: Above Feature 3 is a cluster of 46 flat stones embedded into Feature 2.  
This feature is located 1.99 meters above Feature 4. These stones form a horizontal plane slightly sloped at 0.7 degrees to the south. The two northern most stones are set slightly below the tops of the 44 other stones.
6. Feature 6: Feature 6 is a 2-centimeter strata of fine clay colored with red ochre, visibly eroding out of the western side of the Main Platform. Shallow trowel scrapings revealed that it was continuous across the west side of the Main Platform, broken only by the Western Depression. From the northwest corner of the Main Platform to the Western Depression, a distance of 47.3 meters, the surface of Feature 6 slopes slightly from 2.33 meters below datum to 2.40 meters below datum. On the southern side of the Main Platform, this same surface shows a similar difference in elevation from 2.40 meters below datum at its southern end to 2.33 below datum in the north.

### Trench P3

Trench P3 is a block of 5 by 5-meter excavations on the northwest corner of the Main Platform (Figures 5.4 and 5.19). This area was excavated in 1989 by Max Portugal. Because the trench is heavily eroded, I could not document its exact original dimensions. Instead I recorded the visible features that I noted after cleaning the base of the trench.

1. Feature 1 : Feature 1 consists of four courses of faced blocks totaling 98 centimeters in height. Feature 1 is sloped 0.9 degrees down to the west and oriented 4.5 degrees east of north. The first three courses are carefully laid, square stone blocks. The faces of the stones meet precisely; none of the blocks jut out. The first and second courses are vertically aligned with each other, whereas the third course is set back 11 centimeters (Figure 5.20). These stones are consistent in their dimensions; they average 30 centimeters long, 30 centimeters wide, and 25 centimeters high, although there is an occasional stone as small 10 centimeters wide. The fourth course is recessed 14 centimeters behind the third, and consists of red sandstone blocks averaging 120 centimeters long, 120 centimeters wide, and 31 centimeters high. A rectangular area 40 centimeters wide and 20 centimeters high is carved into the front of these blocks; otherwise, their surfaces are smooth.
2. Feature 2: Feature 2 consists of a well-fitted line of cut stone that extends for 16.5 meters, 85 centimeters wide, with a slope down of 12 degrees from north to south. This feature is oriented 6.8 west of north. In places, these stones are complemented by lateral walls of cut stone (Figure 5.21). The area between the lateral rows was carved into a trough that measures 42 centimeters wide. A carved “F”-shaped notch crosses the joints of these lateral blocks; large sandstone slabs cap the lateral walls in places.

Trench P4

Trench P4 is located near the middle of the central-north side of the Main Platform (Figure 5.4). This area was excavated by Gregorio Cordero in 1978, and the dimensions of the excavated area were significantly expanded during the 1989 excavation. This trench was completely cleaned of recent erosional debris for this investigation.

1. Feature 1 : Feature 1, oriented 4 degrees east of north and sloped 0.9 degrees to the west, consists of four courses of stone blocks, 98 centimeters high (Figures 5.19 and 5.22). The first three courses are square stone blocks that meet precisely. The first and second courses are vertically aligned; the third is recessed 11 centimeters to the south. These stones are consistently 30 centimeters long, 30 centimeters wide, and 25 centimeters high with an occasional stone that measures much less. The fourth course is set back 14 centimeters from the third course; it is made of well-smoothed red sandstone blocks averaging 120 centimeters long, 120 centimeters wide, and 31 centimeters high. A notch 40 centimeters wide and 20 centimeters high is carved into the front of these sandstone blocks.
2. Feature 2: Scattered across the southern part of the trench are large sandstone blocks of two different sizes: 116 centimeters by 130 centimeters by 31 centimeters, and 80 centimeters by 130 centimeters by 32 centimeters (Figures 5.22 and 5.23). Their orientation was apparently random; several had extensive fractures and square notches at the corners.
3. Feature 3: Feature 3 is an alignment of 78 stones that, taken as a whole, form a horizontal plane that slopes to the west at an incline of 0.9 degrees.



4. Feature 4: A thin strata of fine clay mixed with red ochre was visible in the eroding side of the Main Platform. Feature 4 is located slightly above Feature 2 and runs nearly continuously along the north side of the Main Platform, sloping at 0.6 degrees down to the west.
5. Feature 5: Feature 5 is located 1.7 meters north of Feature 1 (Figures 5.19, 5.22, and 5.24). The exterior of this feature consists of several courses of square stones. Earth is visible between the stones. A similar arrangement characterizes the interior of this feature, although the joints between the stones tend to be less precise. Between these two stone faces there is a mixture of earth and irregular cobbles. This feature measures 12.97 meters by 4.30 meters, and the walls are 0.74 meters thick.
6. Feature 6: Feature 6 is located 1.7 meters north of Feature 1 (Figures 5.19 and 5.22). This feature consists of a 4.45-meter extension of cobbles set in a mud mortar. This feature is 0.65 meters thick, though I suspect it continues into the north profile of this trench.
7. Feature 7: Feature 7 is located 1.7 meters north of Feature 1, in the north profile of Trench P4 (Figures 5.14 and 5.22). This feature consists a 1.28-meter length of two rows of cobbles set in a mud mortar.
8. Feature 8: The area south of Feature 1 consists of a compacted earth and cobble matrix. River cobbles project from this feature, and several are found in random positions on its surface. Feature 3 is located near the level of Feature 4.

Trench P5

## Trench P6

Trench P6 was an excavation I conducted for this investigation. This excavation began at the base of Trench 39P that was excavated by José Estévez in 1990. Measuring 1 meter by 5 meters, the purpose of this excavation was to clear the face and investigate the nature of Feature 2 of Trench P1 (Figures 5.25 and 5.26). In this trench, I was able to identify eight levels (Figure 5.27).

1. Level 1: Level 1 is 33 centimeters thick and consists of highly compacted brown (10YR3/4) earth with 11 river cobbles of amorphous shapes (Figures 5.28). The base of this level is located 8.40 meters below datum. The cobbles are separated by 15 to 20 centimeters. The matrix is a combination of sand with fine clay.
2. Level 2: Level 2 is 26 centimeters thick and consists of highly compacted brown (10YR3/4) earth with ten river cobbles of amorphous shapes. Each cobble is 15 to 20 centimeters from the next. The matrix is a combination of sand and fine clay. Level 2 lies directly above Level 1.
3. Level 3: Level 3 is 19 centimeters thick. It consists of highly compacted brown (10YR3/4) earth with 12 river cobbles of amorphous shapes, spaced at roughly 15 to 20 centimeters (Figure 5.28). The matrix is a combination of sand and fine clay. Level 3 lies directly on Level 2.
4. Level 4: Level 4 is 25 centimeters thick and consists of highly compacted brown (10YR4/6) earth with 11 river cobbles of an elongated or baton shape. Unlike the previous levels, the cobbles here are in a “standing position,” with their longest sides

Trench P5 is located at the juncture between the Northern Wing and the Main Platform. This trench was excavated in 1989 (Figures 5.4 and 5.19).

1. Feature 1 : Feature 1, oriented 4.5 degrees east of north, is an “L”-shaped arrangement of stone four courses high, 98 centimeters in height. The first three courses are square stone blocks that meet precisely. The first and second courses are vertically aligned with each other, but the third course is recessed 11 centimeters from the second. These stones are generally 30 centimeters long, 30 centimeters wide, and 25 centimeters high. There is an occasional stone that measures much less, averaging 10 centimeters wide. The fourth course is recessed 14 centimeters from the third course and consists of red sandstone blocks that average 120 centimeters long, 120 centimeters wide, and 31 centimeters high. Rectangles 40 centimeters wide and 20 centimeters high are carved into the fronts of these blocks, all surfaces of which are smooth. The northern leg of the “L” of Feature 1 slopes from 5.52 meters below datum at its north end to 5.45 meters below datum at the south.
2. Feature 2: East of and above Feature 1 is a zone of compact earth and cobble matrix that covers the Wing entirely. River cobbles, exposed to varying heights, project the compacted earth matrix.
3. Feature 3: Embedded in Feature 2 are 16 stones with flat surfaces that form a line with a surface sloping to the north at 0.7 degrees.
4. Feature 4: On the top surface of Feature 2 are nine embedded stones with flat surfaces. Unlike Feature 2, these stones do not form a recognizable pattern or line. The tops of these stones average 2.30 meters below datum.

vertical. The cobbles are separated by 15 to 20 centimeters. The matrix is a combination of sand and fine clay, though there is a noticeable change from the previous three levels in that the proportion of clay is lower. Level 4 lies directly on the surface of Level 3.

5. Level 5: Level 5 is 19 centimeters thick, and consists of highly compacted brown (10YR4/6) earth with 18 river cobbles of an elongated or baton shape. Each cobble is in a “standing position,” separated by 15 to 20 centimeters from the next. The cobbles end 42 centimeters before the southern edge of Feature 3 in Trench P1. The matrix is a combination of sand and fine clay. Level 5 lies directly on the surface of Level 4. One rectangular stone with a smooth horizontal surface is embedded in the compacted earth of Level 5 and cobble mixture and is in direct contact with the first course of the Feature 3 of Trench P1. This stone was labeled as Feature 2 in Trench P1.
6. Level 6: Level 6 is 20 centimeters thick, and consists of highly compacted earth with river cobbles (Figure 5.29). The matrix is a combination of sand and fine clay. Level 6 lies directly on the surface of Level 5.
7. Level 7: Level 7 is located south of the Levels 1 to 5 and extends from below Level 1 to 22 centimeters above the elevation of Level 5. Level 6 consists of reddish sand with calcareous inclusions.
8. Level 8: Level 8 is the interface between Level 1 to 6 and 7. This interface is clear and precisely defined (Figures 5.26 and 5.27). The base of this interface is 8.40

meters below datum. The highest elevation of this interface is 6.80 meters below datum, the elevation of the first stone course of Feature 3 in Trench P1.

#### Trench P7

Trench P7 measures 5 by 3 meters and is located on the southern side of the Main Platform (Figure 5.5). This trench corresponds to Trench 36Q from the 1989 excavation season (Estévez 1990). Located south of an alignment of stones identified by Estévez in 1989 (Trench P8, Feature 2), this trench was excavated in 1995 by Ticlla. I returned with Ticlla to clean the profiles of this trench. Based on my conversations with him and my own observations of the profile, I noted eighteen different levels and features, a very complicated profile that has proven essential to this investigation (Figure 5.30).

1. Feature 1 : This is thin layer of plaster colored with green malachite, with a perfectly smooth upper surface. The elevation of this feature is 3.38 meters below datum. The southern edge of Feature 1 meets against Level 2 described below.
2. Level 2: Level 2 is 25 centimeters thick, and it consists of highly compacted brown (10YR4/6) earth with elongated river cobbles.
3. Level 3: Level 3 is 12 centimeters thick, and it consists of light brown (10YR7/4) sand. No artifacts were found. The surface is compacted and easily distinguishable from the loosely compacted sand from Level 4. Level 3 is nearly horizontal; the contact between Level 3 and Level 2 is clear and nearly vertical.
4. Level 4: Level 4 is 16 centimeters thick, and it consists of light brown (10YR7/4) sand. No artifacts were found. The top surface is compacted and easily

distinguishable from the loosely compacted sand from the base of Level 5. Level 4 is nearly horizontal; the division between Level 4 and Level 2 is nearly vertical.

5. Level 5: Level 5 is 25 centimeters thick; it consists of light brown (10YR7/4) sand without any artifacts. The surface is compacted and clearly distinct from the loose sand at the base of the level above it. The northern half of this level is approximately horizontal; the southern half slopes down at 18 degrees to the top of Level 2.
6. Level 6: Level 6 is 36 centimeters thick; it consists of highly compacted brown (10YR4/6) earth with elongated river cobbles. No artifacts were found. The northern end extends south between Levels 2 and 6.
7. Level 7: Level 7 is 18 centimeters thick; it consists of light brown (10YR7/4) sand. No artifacts were found. The surface is compacted and clearly distinct from the loose sand at the base of the level above it. The northern half is approximately horizontal; the southern half slopes down at 26 degrees. The contact between Levels 7 and 6 is well defined.
8. Level 8: Level 8 is 23 centimeters thick; it consists of light brown (10YR7/4) sand. No artifacts were found. The surface is compacted and clearly distinct from the loose sand at the base of the level above it. The northern half is approximately horizontal; the southern half slopes at 20 degrees, ultimately becoming only 9 centimeters. The division between Levels 8 and 6 is well defined.
9. Level 9: Level 9 is 1 to 2 centimeters thick; it consists of thin layers of fine brown (7.5YR6/3) earth. Level 9 sits on top of Level 6, and the contact between Levels 9 and 6 is sharp and well defined.

10. Level 10: Level 10 is 22 to 24 centimeters thick; it consists of light brown (10YR7/4) sand. No artifacts were found. The surface is compacted and clearly distinct from the loose sand at the base of the level above it. The northern half is approximately horizontal; the southern half slopes at 20 degrees and then becomes horizontal again.
11. Level 11: Level 11 is 14 centimeters thick; it consists of highly compacted brown (10YR4/6) earth. No artifacts were found. The bottom surface of this level rises in elevation to the north.
12. Level 12: Level 12 is 13 centimeters thick; it consists of highly compacted brown (10YR4/6) earth. No artifacts were found. The base of this level rises in elevation to the north. A small finger of matrix from Level 10 intrudes between Levels 11 and 12.
13. Level 13: Level 13 is 11 centimeters thick; it consists of highly compacted brown (10YR4/6) earth. No artifacts were found. The bottom surface of this level rises to the north.
14. Level 14: Level 14 is 28 centimeters thick at its thickest point; it consists of light brown (10YR7/4) sand. Although it was not compacted, the surface of this level was clearly visible.
15. Level 15: Level 15 is 7 centimeters thick; it consists of highly compacted brown (10YR4/6) earth. No artifacts were found. The bottom surface of this level rises to the north. The surface is the modern surface of the south side of the Main Platform.
16. Level 16: Level 16 is 21 centimeters thick; it consists of light brown (10YR7/4) sand. No artifacts were found. The surface is compacted and clearly distinct from the

loose sand at the base of the level above it. The southern end of this level terminates in a vertical face as if it were squared off.

17. Level 17: Level 17 is 29 centimeter thick; it consists of light brown (10YR7/4) sand. The southern end of the level terminates in a vertical, slightly rounded face.
18. Level 18: Level 18 is 18 centimeters thick as its thickest point; it consists of brown (10YR5/2) earth, fine grains of andesite, flakes of stone, and modified river cobbles.
19. Level 19: Level 19 varies from 2 to 18 centimeters in thickness; it consists of loose brown (7.5Y3/4) earth with small fragments of sherds, stones, and bones. The bones may be camelid, but they have not been examined by a faunal specialist.

#### Trench P8

Located on the southern half of the Main Platform, Trench P8 measures 1 by 48 meters (Figure 5.5). Twenty-two meters north of the south side of the trench, there is a 1.60 meter thick mass of compacted brown earth with river cobbles. Ticlla excavated the majority of this trench in 1995; I was present for part of this excavation. Through conversations with Ticlla and a careful cleaning and recording of the profiles, I was able to document the stratigraphy of this trench. Careful analysis revealed differences between the east and west profiles of Trench P8. First, I will describe the west profile from bottom to top (Figures 5.31 and 5.32).

#### *West Profile of Trench P8*



1. Feature 1 : This is a layer of fine clay with red (10R3/6) ochre, 2 centimeters thick. It continues from the southern end of the trench for 22.50 meters before ending abruptly at Level 15. At its southernmost point, Feature 1 is 1.718 meters below datum; twenty-two meters farther north, it is 1.829 below datum. Consequently, Feature 1 slopes toward the east-west axis of the Main Platform.
2. Feature 2: The southern end of Feature 1 is defined by a row of rectangular stones aligned at 4 degrees west of north. This alignment of stones continues to the east and west and was also exposed in Trenches P16, P17, and P18 (Figure 5.50).
3. Level 3: Level 3 consists of 8 to 10 centimeters of light brown (10YR7/4) sand with calcareous inclusions. This level was clean of any artifacts or organic material, and its surface was lightly compacted.
4. Level 4: Level 4 consists of 9 to 11 centimeters of light brown (10YR7/4) sand with calcareous inclusions. This level was free of artifacts or organic material, and the surface was compacted and easily distinguished from the level above. Under close inspection, four internal strata were visible below the compacted surface of this level, but I have not separated these into distinct levels.
5. Level 5: Level 5 consists of 15 to 20 centimeters of light brown (10YR7/4) sand with calcareous inclusions. This level was clean of any artifacts or organic material. The surface of this level was compacted and contained minute traces of red ochre, making it easily distinguishable from the level above. Under close inspection, six internal strata were discernible below the compacted surface of this level, but they are all grouped together as Level 5.

6. Level 6: Level 6 consists of 20 centimeters of heavily compacted brown (10YR4/6) earth. The surface of this level is even with the top of Level 5; the bottom of the level gradually rises on the north and south side until meeting with the top of Level 5 as if it were placed in a depression in Level 5. Four river cobbles are evenly spaced along the length of this level, extending from the base of Level 6 into Level 8 directly above.
7. Level 7: Level 7 consists of 16 to 20 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were noted in this level. The compacted surface of this level was easily distinguishable from the level above. As with Level 5, minute traces of red ochre were visible in this compacted surface. Under close inspection, four internal divisions were discernible below the compacted surface of this level, but I have not defined them as distinct levels.
8. Level 8: Level 8 consists of 12 centimeters of heavily compacted brown (10YR4/6) earth. The surface of this level is horizontal with the top of Level 7; the bottom of the level gradually rises on the north and south side until meeting with the top of Level 7.
9. Level 9: Level 9 consists of 18 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were noted in this level. The compacted surface of this level was easily distinguishable from the level above; minute traces of red ochre were visible in this compacted surface.
10. Level 10: Level 10 consists of 17 centimeters of heavily compacted brown (10YR4/6) earth. The surface of this level is horizontal with the top of Level 9; the

bottom of the level gradually rises on the north and south side until meeting with the top of Level 9.

11. Level 11 : Level 11 consists of 18 to 25 centimeters of light brown (10YR7/4) sand with calcareous inclusions. This level was devoid of any artifacts or organic material. It was difficult to distinguish the surface of this level from Level 14.
12. Level 12: Level 12 consists of 22 centimeters of heavily compacted brown (10YR4/6) earth. The surface of this level is even with the top with Level 11 ; the bottom of the level gradually rises on the north and south side until meeting with the top of Level 11.
13. Level 13: Level 13 consists of 26 centimeters of heavily compacted brown (10YR4/6) earth. The surface of this level is horizontal; the bottom of the level gradually rises on the north and south side until the sides of the level feather out.
14. Level 14: Level 14 consists of undifferentiated brown (7.5 Y3/4) earth with no visible internal stratigraphy. The matrix contained several artifacts including sherds, bones, artifacts, stones, and small pieces of red ochre.
15. Level 15: Level 15 consists of brown (10YR4/3) earth with a mixture of cultural debris such as highly fragmented pieces of sherds, stones, and bones. In the section of trench where Level 15 was found, Feature 1 was absent.

*East Profile of Trench P8*

Most of the east profile was the mirror image of the west profile. Therefore I will only present a drawing for that section of the profile that contains the compacted earth and cobble mass 22 meters from the southern extension of the trench (Figure 5.33).

1. Feature 1 : Feature 1 is a layer of fine clay with red (10R3/6) ochre, 2 centimeters thick. It extends 22.50 meters from the southern end of the trench before ending abruptly in a looter's pit beyond the edge of profile illustrated in Figure 5.33. At its southern end, Feature 1 is 1.718 meters below datum; twenty-two meters to the north, it is 1.829 below datum. Feature 1 clearly slopes toward the east-west axis of the Main Platform.
2. Level 2: Level 2 is 8 to 10 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were noted in this level, and the surface of this level was lightly compacted.
3. Level 3: Level 3 is 9 to 11 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were noted in this level. The compacted surface of this level was easily distinguishable from the level above.
4. Level 4: Level 4 is 15 to 20 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were noted in this level. The top of this layer consisted of approximately 1 centimeter of compacted sand with minute traces of red ochre, making it easily distinguishable from the level above.
5. Level 5: Level 5 is 2 to 25 centimeters of heavily compacted brown (10YR4/6) earth. The ends of this level are 25 centimeters thick, but it basins out to a thickness of 2 centimeters at the center of the trench.

6. Level 6: Level 6 is 10 to 19 centimeters of light brown (10YR7/4) sand with calcareous inclusions. This level was clear of any artifacts or organic material. The top of this layer consisted of approximately 1 centimeter of compacted sand. Minute traces of red ochre were visible in this compacted surface.
7. Level 7: Level 7 is a lens of heavily compacted brown (10YR4/6) earth.
8. Level 8: Level 8 is 19 centimeters of light brown (10YR7/4) sand with calcareous inclusions. This level was clear of any artifacts or organic material. The top of this layer consisted of approximately 1 centimeter of compacted sand containing minute traces of red ochre.
9. Level 9: Level 9 is a layer, 35 centimeters thick, of heavily compacted brown (10YR4/6) earth.
10. Level 10: Level 10 is 25 centimeters of light brown (10YR7/4) sand with calcareous inclusions with no artifacts or organic material. The top of this layer consisted of approximately 1 centimeter of compacted sand. Minute traces of red ochre were visible in this compacted surface.
11. Level 11 : Level 11 is a lens of heavily compacted brown (10YR4/6) earth.
12. Level 12: Level 12 is 23 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were noted in this level. The top of this layer consisted of approximately 1 centimeter of compacted sand.
13. Level 13: Level 13 is a lens of light brown (10YR7/4) sand with calcareous inclusions, clear of any artifacts or organic material.
14. Level 14: Level 14 is 22 centimeters of heavily compacted brown (10YR4/6) earth.

15. Level 15: Level 15 is light brown (10YR7/4) sand with calcareous inclusions. This level was clear of any artifacts or organic material.
15. Level 16: Level 16 is 23 centimeters of heavily compacted brown (10YR4/6) earth. Elongated river cobbles are embedded in this level, standing with the longest sides set vertically.
17. Level 17: Level 17 is 24 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were noted in this level.

#### Trench P9

Trench P9 measures 1 by 2 meters. The trench was placed by Tiella just north of Trench P8, and he excavated it to a total depth of 1.80 meters (Figure 5.5). I was not present for this excavation, but through conversations with Tiella and my own cleaning and recording of the profiles of the trench, I was able to document the stratigraphy (Figure 5.34). The level of fine clay with red ochre called Feature 1 in Trench P8 was not present here.

1. Feature 1 : Feature 1 is a very smooth, hard, green layer of plaster mixed with malachite that slopes gently down to the north and to the west. This feature is located 3.57 meters below datum.
2. Level 2: Level 2 consists of 13 centimeters of light brown (10YR7/4) sand with calcareous inclusions, lacking artifacts or organic material. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.

3. Level 3: Level 3 consists of 15 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were noted. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
4. Level 4: Level 4 is 22 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were noted. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
5. Level 5: Level 5 is 20 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were noted. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
6. Level 6: Level 6 is 18 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were noted. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
7. Level 7: Level 7 is 23 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were noted. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
8. Level 8: Level 8 is 21 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were noted. The surface of this level was

easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.

9. Level 9: Level 9 is 22 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were noted. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
10. Level 10: Level 10 is 19 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were noted. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
11. Level 11 : Level 11 is 56 centimeters of light brown (7.5 Y3/4) earth with no internal stratigraphy. Roots are visible in the upper portion of this stratum, along with fragments of bone, stone, and the occasional sherd.

#### Trench P10

Trench P10 is located 17 meters north of Trench P9 on the upper part of the western side of the Circular Depression in the Main Platform, just north of the central east-west axis (Figure 5.5). This trench is aligned with Trench P9.

1. Feature 1 : This is a 2-centimeter thick layer of fine clay with red (10R3/6) ochre, completely smooth and level.
2. Level 2: Level 2 is 15 centimeters of light brown earth with inclusions of bone, stone, sherds, and organic material.



## Trench P11

Trench P11 is located in the southwest corner of the Circular Depression in the center of the Main Platform (Figure 5.5). Trench P11 measures 1 by 3 meters. I placed this trench with the intent of locating the corner of the Inner Courtyard. The results were negative in this regard, but I noted several different levels and features (Figures 5.35 and 5.36).

1. Feature 1 : This is a smooth layer of plaster mixed with green malachite, slanted slightly down to the north and to the west.
2. Level 2: Level 2 consists of 11 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were found in this level. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
3. Level 3: Level 3 consists of 13 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were found in this level. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
4. Level 4: Level 4 consists of 25 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were found in this level. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.

5. Level 5: Level 5 consists of 20 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were found in this level. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
6. Level 6: Level 6 consists of 17 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were found in this level. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
7. Level 7: Level 7 consists of 25 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were found in this level. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
8. Level 8: Level 8 consists of 17 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were found in this level. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
9. Level 9: Level 9 consists of 22 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were found in this level. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
10. Level 10: Level 10 consists of 17 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were found in this level. The

surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.

11. Level 11 : Level 11 consists of 11 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts or organic material were found in this level. The surface of this level was diffuse and difficult to distinguish from the level above.
12. Feature 12: This feature is an irregular patch of fine clay with red (10R3/6) ochre, 2 centimeters thick, located 1.80 meters above Feature 1 (Figure 5.36).
13. Level 13: Level 13 is 13 centimeters of light brown (7.5Y3/4) earth with no internal stratigraphy. Roots are visible in the upper portion of this stratum, along with fragments of bone, stone, and the occasional sherd.

#### Trench P12

The closed conduit found in the 1989 excavation by Estévez (1990) was only partially exposed. It was designated in Trench P1 as Feature 9. I placed Trench P12 to determine the relationship between the closed conduit and the features on the top of the Main Platform. The excavation trench is “L”-shaped with two arms, one set at the northern terminus of the conduit, the other running approximately parallel to the conduit (Figures 5.37, 5.38, 5.39, and 5.40).

#### *North Profile of Trench P12*

1. Feature 1 : This feature is a thin layer of plaster mixed with green malachite. It is hard, completely level, and smooth, with no evidence of wear or damage on the surface. Its eastern edge is irregular and rough (Figure 5.37).
2. Feature 2: This is another layer of plaster mixed with green malachite. It is hard, completely level, and smooth, with the exception of marks that appear to be fingerprints embedded deep into its surface. There is no evidence of wear or damage on the surface, but the western edge is irregular and rough. Feature 10 seems to bound Feature 2 on its western edge, too.
3. Level 3: Level 3 is a level of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. This level lies between Feature 1 and Feature 10.
4. Level 4: Level 4 is 14 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. The surface of this level consisted of approximately 1 centimeter of compacted sand and was easily distinguishable from the level above.
5. Level 5: Level 5 is 14 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. The surface of this level consisted of approximately 1 centimeter of compacted sand and was easily distinguishable from the level above.
6. Level 6: Level 6 is 18 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. The surface of this level consisted of

approximately 1 centimeter of compacted sand and was easily distinguishable from the level above.

7. Level 7: Level 7 is 14 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. The surface was evident, but it had not been compacted.
8. Level 8: Level 8 is the interface between Levels 4 through 7 and Level 13.
9. Feature 9: This feature is a row of stones that runs 4 degrees west of north and then turns roughly northward. The stones in the east-west leg of this alignment are cut and generally rectangular.
10. Feature 10. The west edge of Feature 1 is defined by a line of irregular, unmodified stones. These irregular stones are set in two courses, the basal course resting on Feature 12.
11. Feature 11 : This feature consists of two cut stones in a stepped arrangement. The level below this feature is Level 3; the level above it is Level 13.
12. Feature 12: This is a single cut stone, 11 centimeters below Features 1 and 2. The center of the stone was worked to form a gentle trough, bounded by level, rectangular areas on either side. This stone looks like the base of a conduit, and a complete conduit abuts it, confirming that. Interestingly, this seems to be the last preserved stone in the conduit, which does not extend north of this stone.
13. Level 13: Level 13 is a layer of light brown (10YR6/3) matrix with multiple thin strata. The matrix is fine-grained and contains small fragments of bone, stone, and red

ochre. The thin layers within the level slope steeply toward the center of the profile, forming a series of basin-like strata that begin directly above Feature 12.

14. Level 14: Level 14 is a brown (7.5YR3/3) hardened mass of earth.

15. Level 15: Level 15 is a brown (7.5YR3/3) hardened mass of earth.

16. Level 16: Level 16 is a layer of brown (10YR4/3) earth with no internal stratigraphy.

Sherds, bones, and stones are scattered throughout this level.

17. Level 17: Level 17 is a brown (7.5YR3/3) hardened mass of earth.

18. Level 18: Level 18 is a layer of light brown (7.5Y3/4) earth with no internal stratigraphy. Pieces of bone and stone were visible in the profile.

#### *West Profile of Trench P12*

1. Feature 1 : This feature is a thin layer of plaster mixed with green malachite. It is hard, completely level, and smooth, with no evidence of wear or damage on the surface.
2. Level 2: Level 2 is 12 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. The surface of this level was not compacted.
3. Level 3: Level 3 is 10 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. The visible surface of this level was not compacted.
4. Level 4: Level 4 is 5 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. The surface of this level was easy to

distinguish from the level above because it consisted of approximately 1 centimeter of compacted sand.

5. Level 5: Level 5 is 19 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. The surface of this level was easy to distinguish from the level above because it consisted of approximately 1 centimeter of compacted sand.
6. Level 6: Level 6 is 22 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. The surface of this level was easy to distinguish from the level above because it consisted of approximately 1 centimeter of compacted sand.
7. Level 7: Level 7 is 19 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. The surface of this level was easy to distinguish from the level above because it consisted of approximately 1 centimeter of compacted sand.
8. Level 8: Level 8 is 19 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. The surface of this level was easy to distinguish from the level above because it consisted of approximately 1 centimeter of compacted sand.
9. Level 9: Level 9 is 24 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. The surface of this level was easy to distinguish from the level above because it consisted of approximately 1 centimeter of compacted sand.

10. Level 10: Level 10 is 7 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. The surface of this level was obvious but not compacted.
11. Level 11 : Level 11 is a layer of brown (10YR4/3) earth with a mixture of fragmented and whole stones and bones and sherds.
12. Feature 12: This is a single cut stone block.
13. Level 13: Level 13 is a layer of hard brown (7.5YR3/3) earth. No artifacts were found in this level.
14. Level 14: Level 14 is a layer of hard brown (7.5YR3/3) earth. No artifacts were found in this level.
15. Level 15: Three adobe blocks (7.5YR3/3 in color) that averaged 9 by 40 centimeters were noted in the profile.
16. Level 16: Level 16 is a layer of light brown (7.5Y3/4) earth with no internal stratigraphy. Roots are visible in the upper portion of this stratum, and fragments of bone, stone, and the occasional sherd were noted.

### Trench P13

Trench P13 is located below the Western Depression on the Main Platform (Figure 5.5). The area that was cleaned and recorded measures 10 by 14.5 meters. Several pedestalled architectural elements remained in place from the 1989 excavations (Figure 5.41). In the eight years since the excavation, several of these stones had fallen over as their pedestals slowly eroded, substantially obscuring the finds below. For this



excavation, pedestalled architectural elements and their pedestals were removed to reveal the in situ architecture below (Figure 5.42).

1. Feature 1 : This feature consists of three “totora reed” stones, stones carved to resemble totora or thatch roofing (Escalante 1994). Several other finely cut andesite stones were noted on the earth pedestals from the 1989 excavations (Figure 5.41).
2. Feature 2: Eight large sandstone slabs placed one atop the other form a feature 6.23 meters wide, 2.08 meters long, and 0.95 meters high. Each successive slab is offset approximately 40 centimeters east of the slab below (Figure 5.43). The top of the last sandstone slab is worn on the front portion, but the eastern half is pristine. The edge between the worn section and the smooth section is striking. On top of the lowest stone slab is a row of cut andesite stones of the same width, precisely placed against each other.
3. Feature 3: East of Feature 2 are several large red sandstone slabs set into the ground, forming a broad horizontal surface (Figures 5.43 and 5.44). Smaller cut pieces of sandstone are found between the larger ones. The top of Feature 3 is slightly higher than the top of Feature 2, permitting the erosion of brown earth and white clay over the front of Feature 2.
4. Feature 4: Directly north of and at the same elevation as Feature 3 is an area of heavily compacted earth with river cobbles.
5. Feature 5: Directly northwest of Feature 3 is Feature 5, a cluster of flat stones embedded into the compacted earth of Feature 4..

6. Feature 6: An eroding finger of compacted earth and cobble matrix, 2 meters wide, defines the eastern edge of Feature 5. This eroding mass abuts the north side of Feature 3 (Figure 5.45).
7. Feature 7: Feature 7 consists of three courses of cut andesite blocks set in a stepped formation, faced on each side by a row of stones (Figure 5.43 and 5.46). Feature 7 is preserved to a height of three courses on the northern side, but to only one on the southern side. The andesite stones average about 35 centimeters in width and 45 centimeters in length. The upper two courses do not overlap; rather, the front face of the third course is even with the rear face of the second course and thus rests directly on the compacted earth fill below. An exception is the second course because the first course is located directly under and flush with the face of the second course. The stones facing the sides of these stepped courses extend 2 meters in front of the face of the first course. Set directly on the ground, they do not appear to have a specially prepared base.
8. Feature 8: In the area behind Feature 7, there are twelve adobe blocks ranging in size from 78 by 120 centimeters to 40 by 19 centimeters. These adobe blocks are well fitted against each other, and form a horizontal surface in contact with Feature 7. Several more adobe blocks are visible higher up in the eastern profile of Trench P13.
9. Feature 9: Feature 9 is located north of Feature 8 and consists of several cut blocks in a stepped formation that form a line that abuts Feature 7. The first step consists of a large block of cut stone; directly below this block is a compacted surface of brown earth that bulges slightly in front of this course of stones.

## Trench P14

There are several large areas of river cobbles standing in compacted matrix that are exposed and visible on the top of the Main Platform, surrounding the Circular Depression (Figures 5.5 and 5.47). In order to define these features better, I carried out several surface scrapings to remove some of the topsoil disturbed by recent agriculture. The removed matrix generally consisted of light brown earth with organic material and the occasional sherd, stone, or bone. Although this is not a formal excavation trench, I will describe the five features found under the designation Trench P14.

1. Feature 1 : This is a rectangular area of compacted brown (10YR4/6) earth with projecting river cobbles that measures 13.15 by 8.83 meters. I was able to examine the internal stratigraphy of this feature by cleaning the profile of Trench P15, described below (Figures 5.48 and 5.49).
2. Feature 2: This is an “H”-shaped area of compacted brown (10YR4/6) earth with projecting river cobbles, occupying a total area 11.49 by 25.81 meters.
3. Feature 3: This is an “L”-shaped area of compacted brown (10YR4/6) earth with projecting river cobbles. It runs in an east-west arm measuring 1.64 by 48 meters, then turns north at its eastern end in a second, much shorter arm. The river cobbles and compacted matrix of this feature are exposed in the eroding west side of the Main Platform. Trench P8 sectioned this feature, showing it to be 1.20 meters thick (Figures 5.31, 5.32, and 5.33).

4. Feature 4: This is a linear area of compacted brown (10YR4/6) earth with projecting river cobbles. Feature 4 is 1.60 by 48 meters. The feature is eroding out on the west side of the Main Platform.
5. Feature 5: This is a large rectangular area of compacted brown (10YR4/6) earth with projecting river cobbles, occupying an area of 20 by 36 meters. It is eroding out on the north side of the Main Platform.

#### Trench P15

Trench P15 is a segment of a larger and more extensive excavation placed by Cordero in 1977 or 1978. The trench, 1 meter in width, extended an estimated 45 meters from the base of the south side of the Main Platform up to the present surface of the Main Platform. The outline of this trench was visible on the surface, but erosion had completely obscured its original profiles. Unfortunately, there was little documentation of the excavation, though a mention by Cordero (1978) of a red surface may in fact relate to this trench. In view of the fact that this trench was too extensive and eroded to clean and profile in its entirety, I concentrated my efforts on that segment of the trench that runs along the present surface of the Main Platform. There I shaved back a 9-meter section of the west profile until the stratigraphy was clear (Figure 5.5). This profile revealed in section Feature 1 of Trench P14, permitting me to understand the internal composition of this feature (Figure 5.48 and 5.49).

1. Feature 1 : This feature is a thin layer of fine clay with red (10R3/6) ochre that is continuous across the base of the new excavation. The smooth surface bore no markings but began to crack when exposed to sunlight.
2. Level 2: Level 2 consists of 8 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were noted in this level. The surface of this level was easily distinguishable from the level above although it was though not very compact.
3. Level 3: Level 3 consists of 13 centimeters of light brown (10YR7/4) sand with calcareous inclusions. This level was clear of any artifacts or organic material. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
4. Level 4: Level 4 consists of 18 centimeters of light brown (10YR7/4) sand with calcareous inclusions. This level was clear of any artifacts or organic material. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
5. Level 5: Level 5 consists of 17 centimeters of light brown (10YR7/4) sand with calcareous inclusions. This level was clear of any artifacts or organic material. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
6. Level 6: Level 6 consists of 63 centimeters of very compact brown (10YR4/6) earth with upright river cobbles. The top of this level sits at the modern surface of the Main Platform where it forms the surface of Feature 1 in Trench P14.

7. Level 7: Level 7 consists of 25 centimeters of light brown (10YR7/4) sand with calcareous inclusions. This level was clear of any artifacts or organic material. The surface of this level was easily distinguishable from the level above because it consisted of approximately 1 centimeter of compacted sand.
8. Level 8: Level 8 consists of light brown (10YR7/4) sand with calcareous inclusions. This level was clear of any artifacts or organic material. The surface of this level was compacted and easily distinguishable from the level above.
9. Level 9: Level 9 consists of 18 centimeters of light brown (10YR7/4) sand with calcareous inclusions. This level was clear of any artifacts or organic material. Its top surface forms the present surface of the Main Platform.

#### Trench P16

Visible along the slope of the south side of the Main Platform was an alignment of stones. I had previously noted a few stones of this alignment in Trench P8. In order to investigate further this alignment of stones, five trenches were placed to cut across it (Figure 5.50). The first of these, Trench P16, measured 0.50 meters by 27 meters.

1. Feature 1 : Forty-one irregular stones were found in a line with an orientation of 4.5 degrees east of north. Some of these stones were unmodified; others had been cut into rectangular forms.
2. Feature 2: North of and near the level of the base of Feature 1 was a thin layer of red (10R3/6) ochre mixed with clay that spread across a compacted sandy layer.

3. Level 3: Level 3 is a layer of light brown (7.5Y3/4) earth with sand that covers Feature 2. Also visible noted were roots, organic material, and an occasional sherd and stone.

#### Trench P17

Trench P17 is located near the surface of the south side of the Main Platform (Figure 5.50). Trench P17 is 0.50 meters by 33 meters; 7.40 meters from the eastern end of the trench, a small southern extension, 0.50 meters by 0.90 meters, follows a jog in the alignment of stones.

1. Feature 1 : Sixty-five stones run in a straight line 4.50 degree east of north. At its eastern end, this alignment turns in a right angle and then continues for another 1.05 meters to the south before ending abruptly. Some of these stones were unmodified; others had been cut into rectangular forms.
2. Feature 2: To the north of Feature 1 was a thin layer of red (10R3/6) ochre on a layer of compacted sand.
3. Level 3: Level 3 is a light brown (7.5Y3/4) mixture of organic material and sand overlying the area immediately north of Feature 1.
4. Level 4: A layer of black (2.5YN3/) ash with non-human bones that casual inspection suggested to be camelid was also found to the south of Feature 1.

#### Trench P18

Trench P18 is located near the surface of the south side of the Main Platform, 8.5 meters east of Trench P17 (Figure 5.50). Trench P18 measures 2 by 1.5 meters.

1. Feature 1 : An alignment of five stones was found in the approximate center of the trench. Some of these stones were unmodified, other had been cut into rectangular forms. This alignment of stones was set at 4.5 degrees east of north.
2. Level 2: Level 2 consists of 15 centimeters of a light brown (7.5Y3/4) mixture of organic material and sand to the north and south of Feature 1.
3. Feature 3: Feature 3 is a thin layer of red (10R3/6) ochre on a layer of compacted sand.

#### Trench P19

Trench P19, located 6 meters east of and aligned with Trench P17, measures 1 by 1.5 meters (Figure 5.50).

1. Feature 1 : The northern part of the trench consisted of a thin layer of red (10R3/6) ochre mixed with clay. The edge of the feature runs east-west with an orientation of 4.5 degrees east of north.
2. Level 2: Above the red surface, the excavated matrix was a light brown (7.5Y3/4) mixture of organic material and sand.

#### Trench P20

Trench P20 is located 5 meters east of Trench P19 along the same alignment; it measures 1 by 1.5 meters (Figure 5.50).



1. Level 1: Level 1 consists of 70 centimeters of light brown (7.5Y3/4) earth and sand.

No additional features were noted.

#### Trench P21

Trench P21 measures 1 meter by 27 meters and was excavated in 1996 by Ticlla.

This trench is located along the approximate east-west axis of the Main Platform and extends from the western slope of the Circular Depression in the center of the Main Platform to the edge of the Nested Circular Depression in the center of the Main Platform (Figure 5.5). Two segments on the ends of this trench, a 3-meter long section on the west and a 14-meter section on the east, are described below (Figure 5.51). Another 10-meter section near the center of Trench P21 was significantly expanded for my investigation, and the levels and features found in these additional excavations will be described in detail in Trenches P22 through 24.

#### *West End of Trench P21*

1. Feature 1 : This feature is a nearly horizontal surface of plaster mixed with malachite, completely smooth with two notable exceptions. A roughly circular break approximately one meter in diameter occurs in the western end of Trench P21. The edges of this break are irregular. Deep indentations in this green surface, resembling deep fingerprints, are noticeable along the eastern extension of the green surface, which slopes to the west at an inclination of 0.9 degrees.

2. Level 2: Level 2 consists of 13 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were noted in this level. This level was easily distinguishable from the level above because its surface consisted of approximately 1 centimeter of compacted sand.
3. Level 3: Level 3 consists of 10 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were noted in this level. This level was easily distinguishable from the level above because its surface consisted of approximately 1 centimeter of compacted sand.
4. Level 4: Level 4 consists of 24 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were noted in this level. This level was easily distinguishable from the level above because its surface consisted of approximately 1 centimeter of compacted sand.
5. Level 5: Level 5 consists of 17 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were noted in this level. This level was easily distinguishable from the level above because its surface consisted of approximately 1 centimeter of compacted sand.
6. Level 6: Level 6 consists of 21 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were noted in this level. This level was easily distinguishable from the level above because its surface consisted of approximately 1 centimeter of compacted sand.
7. Level 7: Level 7 consists of 21 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were noted in this level. This level was easily

distinguishable from the level above because its surface consisted of approximately 1 centimeter of compacted sand.

8. Level 8: Level 8 consists of 20 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were noted in this level. The surface of this level was easily distinguishable from the levels above, although its surface was not compacted.
9. Level 9: Level 9 consists of 1 to 19 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were noted in this level. The surface of this level was easily distinguishable from the levels above although its surface was not compacted and undulated.
10. Level 10: Level 10 consists of brown (10YR4/3) earth with many fragments of stone and bone, sherds, pieces of red ochre and green malachite, and several large pieces of carved andesite. One notable element in the fill was a single block from a conduit; it was not in situ. With the exception of the east end of the trench discussed below, this stratum runs throughout the entire trench.

#### *East End of Trench P21*

11. Feature 11 : At the eastern end of the trench is Feature 11, a vertical conduit located near the center of the Circular Depression, in the center of the Main Platform on the western edge of the Nested Circular Depression. The aperture of the conduit was 90 centimeters in diameter, and the conduit dropped 4 meters before making a right-angle turn toward the east. This conduit was excavated prior to this study; according

to interviews, the matrix surrounding it consisted of light brown sand with no artifacts.

## Trench P22

The irregular break in the plaster and green malachite surface described in Trench P21 was sufficiently large to place a 1 by 1.75 meter trench in order to investigate the area below Feature 1 of Trench P21. The northern profile was the best preserved and most informative. In that profile I noted several different levels and features (Figure 5.52).

1. Level 1 : The surface of this level was found 7.698 meters below datum, 4.11 meters below Feature 1 in Trench P21. Twenty centimeters of this level were excavated and found to consist of moist red-brown (5YR4/6) sand. No cultural remains were found. The excavation was discontinued, and the bottom of this level is unknown.
2. Level 2: Level 2 consists of some three meters (2.84 to 3.20 meters) of nearly pure, moist, brown (5YR4/6) clay. The surface of this clay layer is uneven, varying from 4.62 meters below datum in the west to 4.97 below datum in the east. No artifacts or any other remains were found in this layer. A very thin stratum of blackened earth, possibly caused by the presence of carbon, defines the surface of this level. A carbon sample was taken here, which yielded a date of 1510+/-25BP, calibrated to AD 550 with a one-sigma range of AD 535 to AD 600.

3. Level 3: Level 3 consists of 0 to 21 centimeters of brown (7.5YR4/6) sand with brown clay. The surface of this level was visible when the surface had partially dried out.
4. Level 4: Level 4 consists of 9 to 20 centimeters of brown (7.5YR4/6) sand with brown clay. The surface of this level was visible when the surface had partially dried out.
5. Level 5: Level 5 consists of 12 to 18 centimeters of brown (7.5YR4/6) sand with brown clay. The surface of this level was visible when the surface had partially dried out.
6. Level 6: Level 6 consists of 23 to 29 centimeters of brown (7.5YR4/6) sand with brown clay. The surface of this level was visible when the surface had partially dried out.
7. Level 7: Level 7 consists of 18 centimeters of brown (7.5YR4/6) sand with brown clay. The surface of this level was visible when the surface had partially dried out.
8. Level 8: Level 8 consists of 19 to 23 centimeters of brown (7.5YR4/6) sand with brown clay. The surface of this level was visible when the surface had partially dried out.
9. Level 9: Level 9 consists of 13 centimeters of brown (7.5YR4/6) sand with brown clay. The surface of this level was visible when the surface had partially dried out.
10. Level 10: Level 10 consists of undifferentiated brown (7.5YR4/4) earth with chunks of green malachite, bones, sherds, and large pieces of carved andesite. Level 10 was

found only in the southern side of Trench P22 and is not visible. At its deepest part, Level 10 sat 1.03 meters below Feature 1.

11. Feature 11 : This was described as Feature 1 in Trench P21. It is a nearly horizontal plane of plaster with malachite.

### Trench P23

The eastern end of Trench P23 measures 1 by 3.5 meters; it is located at the border of the Nested Circular Depression found in the central part of the Main Platform (Figure 5.5). With a few exceptions, the matrix excavated consisted of moist, undifferentiated brown earth with a high clay content. Careful analysis of the south and east profiles after the trench had dried out resulted in the identification of several levels (Figure 5.53).

1. Level 1 : This level consists of a nearly pure, brown (5YR4/6), very fine clay. The base of this level was not reached.
2. Level 2: This level is a thin, horizontal band of white (10YR8/2) clay, 3 to 5 centimeters thick, 4.69 meters below datum. This level sits on top of Level 1.
3. Level 3: Level 3 is a dark brown (7.5YR4/4) clay with small quantities of light brown sand. Small irregular chunks of white clay were also present. In the southern profile, this stratum has a rounded lower edge, as if filling in a basin or trench. A few sherds were found in the first 20 centimeters of this level. In the northeast corner of trench, near the base of this level, was a random scatter of 16 andesite cut stones that averaged 30 by 25 centimeters and 15 centimeters thick.

4. Level 4: Level 4 consists of 17 centimeters of light brown (7.5YR4/6) sand with fine clay. The surface of this level is approximately horizontal and slightly compacted.
5. Level 5: Level 5 consists of 15 centimeters of light brown (7.5YR4/6) sand with fine clay. The surface of this level is distinguishable from the level above but it is not compacted.
6. Level 6: Level 6 consists of a thin horizontal band of white (10YR8/2) clay, 3.84 meters below datum.
7. Level 7: Level 7 consists of brown (7.5Y3/4) earth with no observable internal stratigraphy. Roots and other organic material were found, in addition to small fragments of sherds and bone.

#### Trench P24

Trench P24 is located along the east-west axis of the Main Platform and measures 5 by 5 meters. It was placed along the west side of the Circular Depression in the middle of the Main Platform (Figures 5.5 and 5.54). Trench P21, excavated by Ticlla in 1996, forms the southern edge of Trench P24. The profiles of Trench P21 consisted of brown undifferentiated earth that was thought to consist solely of post-Contact disturbance. As a result, they were not recorded in detail. Later analysis demonstrated that not all the excavated earth was disturbed. Furthermore, an important feature was noticed in the northern profile. In order to investigate these notable finds, I placed Trench P24 as an extension off the middle of Trench P21. Above, I described some of the features from the east and west ends of Trench P21 ; here I will describe the levels and features from

Trench P21 that extend into Trench P22. The description is not of the trench's profile, but describes the plan view of this trench (Figures 5.54 and 5.55).

1. Feature 1 : This is a nearly horizontal plane of plaster with green malachite showing no evidence of wear. The western edge of this feature is molded around the stones of Feature 2 (Figure 5.56), and the edge runs approximately east-west. In places the edge is rough, and in others it is raised in lip-like fashion.
2. Feature 2: This is a double row of rectangular stones running north-south. The eastern side of this row consists of precisely placed stones; the western side consists of irregularly placed cut stones (Figure 5.56).
3. Feature 3: Along the northern edge of Feature 1 is a stone embedded below the surface of Feature 1 (Figure 5.57). It is not squared off, but there is a rectangular recess carved on its face. This recessed area is less than a centimeter deep, and its south and west sides join in a right angle. The other sides are not found on this stone; presumably they were on adjacent stones.
4. Feature 4: This feature consists of cut andesite stones arranged in eight rows. In certain places, more than one stone was used to complete the width of a row, but on no occasion does a stone from one row extend into the next row. The eastern and northern edges of this feature are irregular.
5. Feature 5: This is a rectangular paved area, 2.59 by 0.94 meters, made of five precisely placed stones. The largest stone measure 98 by 170 centimeters; the smallest is 24 by 33 centimeters. The southernmost stone is the largest, and it slopes into the ground.



6. Feature 6: This is a white patch of fine clay located just north of and a few centimeters below the surface of Feature 1.
7. Feature 7: This feature consists of two carved andesite stones aligned 4 degrees east of north (Figure 5.57). These stones lie on top of Feature 1.
8. Feature 8: Feature 8 is a line of stone blocks that sits on top of the southern section of Feature 4. These stone blocks are of different shapes and are generally rectangular, although their edges and corners are slightly rounded. In some places, they are stacked two courses high. The joints between the stones are wide and filled with a mud mortar.
9. Level 9: This level is a light brown (10YR4/3) loose earth with sherds, bone, stone, and pieces of red ochre. A distinguishing quality of this stratum is the conspicuous presence of flat-lying stones evenly spread throughout the matrix. Fifty-four stones were removed during the course of excavation of this stratum, forty-six of which were roughly shaped and flat. Their average thickness was 5 centimeters, with an average width of 20 centimeters and length of 60 centimeters, the latter ranging from 47 to 84 centimeters. Between three and five of these stones were found in each arbitrary 10-centimeter level, but at the lots that ended at 2.85 meters and 3.05 meters below datum, these flat stones were found in greater numbers. In the eastern portion of the lot ending at 2.85 meters below datum, 15 of these flat stones were aligned approximately east-west. All but one of them were evenly spaced at an average distance of 15 centimeters. In the lot ending at 3.05 meters below datum, 19 of these

flat stones were found in similar formation, aligned east-west and spaced at an average of 15 centimeters.

10. Feature 10: Located on the eastern side of the northern profile, this feature consists of four cut stones placed to overlap slightly so that they rise to the west at a 33 degree angle. The total height of this feature is 0.80 meters. This feature continues into Trench P24 and 25. It will be described more fully in Trench P25 as Feature 3.
11. Level 11: Level 11 consists of 13 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were noted in this level. This level was easily distinguishable from the level above because its surface consisted of approximately 1 centimeter of compacted sand. See Figure 5.55 for Levels 11 through 17.
12. Level 12: Level 12 consists of 10 centimeters of light brown sand with calcareous inclusions. No artifacts were noted in this level. This level was easily distinguishable from the level above because its surface consisted of approximately 1 centimeter of compacted sand.
13. Level 13: Level 13 consists of 24 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were noted in this level. This level was easily distinguishable from the level above because its surface consisted of approximately 1 centimeter of compacted sand.
14. Level 14: Level 14 consists of 17 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were noted in this level. This level was easily distinguishable from the level above because its surface consisted of approximately 1 centimeter of compacted sand.

15. Level 15: Level 15 consists of 21 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were noted in this level. This level was easily distinguishable from the level above because its surface consisted of approximately 1 centimeter of compacted sand.
16. Level 16: Level 16 consists of 21 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were noted in this level. This level was easily distinguishable from the level above because its surface consisted of approximately 1 centimeter of compacted sand.
17. Level 17: Level 17 is a zone of light brown (10YR4/3) earth with sherds, bone, stone, pieces of red ochre, and occasional pieces of green malachite mixed with plaster. This level was difficult to define, but was, for the most part, restricted to the eastern portion of the trench. Six large rectangular cut stones that averaged 60 by 70 centimeters and 20 centimeters thick were found scattered in this level along the western part of the trench.

#### Trench P25

Trench P25 measures 5 by 5 meters. It is located directly east of Trench P24 (Figures 5.5 and 5.54). Many of features found in Trench P24 were thought provoking, but they were difficult to interpret. Therefore, Trench P25 was excavated to shed further light on these features. Trench P25 was excavated in six arbitrary 10 centimeter lots and the excavated matrix was found to consist of a single level.

1. Feature 1 : Feature 1 is located in the south and the west parts of the trench. This feature measures 1 by 3.7 meters and consists of 30 cut andesite stones with average dimensions of 25 by 27 centimeters that are placed in rows. One or two stones are used to fill the width of each row; in no case does a stone from one row extend into the next.
2. Feature 2: Feature 2 measures 1.5 by 3.7 meters and consists of 63 cut andesite stones, approximately 25 by 27 centimeters each, placed in rows. One or two stones are used to fill the width of each row, but in no case does the stone from one row extend into the next.
3. Feature 3: Feature 3 was partially uncovered in Trench P24 and fully revealed in this trench (Figures 5.55, 5.58, and 5.59). This feature consists of a rectangular block, 3.87 meters long. Two rectangular panels are carved into its face. Smooth flat areas are located on either side of the carved panels.
4. Level 4: This is a thick level of light brown (10YR4/3) earth with sherds, bones, stones, pieces of red ochre, and the occasional piece of green malachite with plaster. A large mass of cut stones of different sizes sits in the center of the trench. These stones were in random positions. The excavation was discontinued at the level of Features 1 and 2. The matrix surrounding these features was still Level 4, the thickness of which is unknown.
5. Feature 5: This is an alignment of stones that extended into Trench P26, where it is Feature 3. It is a line of andesite blocks, two courses high.

## Trench P26

Trench P26 measures 5 by 5 meters. It is located immediately north of Trench P25 (Figures 5.5, 5.54, and 5.60). This trench was the last to be excavated in this very interesting area along the east-west axis of the Main Platform.

1. Feature 1 : Feature 1 is located in the eastern and northern portions of the trench. It consists of 169 cut andesite stones with an average size of 25 by 25 centimeters that are placed in rows. One or two stones are used to fill the width of each row. In no case does the stone from one row extend into the next. The edges of this feature were irregular, 2.60 by 5.40 meters at its widest points.
2. Feature 2: Feature 2 has irregular edges similar to Feature 1, measuring 1.30 meters and 1.60 meters at its widest points. It consists of 17 cut andesite stones with average dimensions of 25 by 27 centimeters, placed in rows. One or two stones fill the width of each row, but in no case does the stone from one row extend into the next (Figure 5.60).
3. Feature 3: Feature 3 is located in the western portion of the trench. Two courses of cut andesite stone are visible. A large square block at the height of the second course defines the northern extent of these courses. The second course is set back 30 centimeters from the east face of the first course. The first course extends across nearly the entire width of Trench P25. In Trench P24, this feature is labeled Feature 5 and is preserved to a height of four courses.
4. Level 4: This is a stratum of brown earth (10YR4/3) with sherds, bones, stones, pieces of red ochre, and the occasional piece of green malachite mixed with plaster,

and a mass of cut andesite stones of different shapes. This jumble of stones covers approximately the entire surface of the trench, and it was first noted a few centimeters below the surface of the trench at the start of Feature 1 and 2.

#### Trench P27

Trench P27 measures 1 by 9 meters (Figures 5.5 and 5.61) and is located on the northwestern corner of the Circular Depression in the Main Platform. The purpose of this trench was to locate the hypothesized corner of the Wall of the Inner Courtyard. Several strata and architectural features were revealed (Figure 5.62).

1. Feature 1 : This feature is a large block of carved andesite and several smaller cut andesite stones. The block is 146 centimeters long, 60 centimeters wide, and 87 centimeters tall. Two rows of precisely fitted andesite stones abut directly against the south face of this large block. They continue out of this trench to the stones of Feature 2 in Trench P28. Above the second course of smaller cut stones, the large block has a carved recess 25 centimeters deep.
2. Feature 2: Feature 2 is a nearly horizontal, smooth plane of plaster with green malachite. This surface abuts against Feature 1, which it rises to meet with a small lip. The elevation of the surface of Feature 2 is 3.52 meters below datum.
3. Level 3: Level 3 is 181 centimeters of brown (10YR4/3) earth with sherds, bones, stones, pieces of red ochre, and cut andesite blocks. Fifty-five cut stones were removed from this stratum. Most of these stones were rectangular or square,

averaging 30 centimeters on side and 15 centimeters in thickness. The bottom of this level was not reached.

4. Level 4: Level 4 is 10 centimeters of light brown (7.5Y3/4) earth with no internal stratigraphy. Roots are visible in the upper portion of this stratum, and fragments of bone and stone and the occasional sherd were noted.
5. Level 5: Level 5 is located north of Feature 1, and it consists of 9 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. Because the top of this layer consisted of approximately 1 centimeter of compacted sand, it was easily distinguished from the level above.
6. Level 6: Located north of Feature 1, Level 6 consists of 17 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. Because the top of this layer consisted of approximately 1 centimeter of compacted sand, it was easily distinguished from the level above. The bottom of this level was on the surface of Feature 1, 3.52 meters below datum.
7. Level 7: Level 7 is located north of Feature 1 and consists of 15 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. Because the top of this layer consisted of approximately 1 centimeter of compacted sand, it was easily distinguished from the level above.
8. Level 8: Level 8 is located north of Feature 1 and it consists of 17 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. Because the top of this layer consisted of approximately 1 centimeter of compacted sand, it was easily distinguished from the level above.

9. Level 9: Level 9 is located north of Feature 1, and it consists of 13 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. Because the top of this layer consisted of approximately 1 centimeter of compacted sand, it was easily distinguished from the level above.
10. Level 10: Level 10 is located north of Feature 1, and it consists of 17 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. Because the top of this layer consisted of approximately 1 centimeter of compacted sand, it was easily distinguished from the level above.
11. Level 11 : Level 11 is located north of Feature 1, and it consists of 19 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. Because the top of this layer consisted of approximately 1 centimeter of compacted sand, it was easily distinguished from the level above.
12. Level 12: Level 12 is located north of Feature 1, and it consists of 19 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. Because the top of this layer consisted of approximately 1 centimeter of compacted sand, it was easily distinguished from the level above.
13. Level 13: Level 13 is located north of Feature 1, and it consists of 19 centimeters of light brown (10YR7/4) sand with calcareous inclusions. No artifacts were found in this level. The compacted surface of this level was easily distinguishable from the level above, although it was not compacted like the surfaces of the previous seven levels.



## Trench P28

Trench P28 measures 5 by 5 meters and is located on the northwestern corner of the Circular Depression in the Main Platform (Figures 5.5 and 5.61). This trench was excavated after Trench P27 with the purpose of locating the corner of the Wall of the Inner Courtyard.

1. Level 1 : Level 1 consists of 181 centimeters of undifferentiated brown (7.5Y3/4) earth with several types of artifacts such as sherds, bones, stones, and small pieces of red ochre. This level covered Features 2, 3, and 4, but its bottom surface was not reached. The excavation was stopped at the base of Feature 2.
2. Feature 2: This feature consists of four courses of square andesite blocks precisely placed against each other (Figures 5.63 and 5.64). The first course is placed with the longest side vertical. The second course is placed with the longest side horizontal. The third course is set back 15 centimeters from the east face of the first two courses. The fourth course is placed with the largest surface horizontal. Several roughly rectangular worked areas are visible on the surfaces of the stones in this stone course. This entire feature is 0.85 meters high. The cut stones from Feature 1 in Trench P27 meet this feature at a right angle to form a corner.
3. Feature 3: Feature 3 is a 53 centimeter thick mass of unworked cobbles in a grayish green clay. This feature is sandwiched between Features 2 and 4 (Figures 5.63 and 5.64).
4. Feature 4: Feature 4 is a wall of irregularly shaped stones, 63 centimeters thick. Several of the stones appear to be shaped into rough squares and rectangles (Figures

5.63 and 5.64). A mortar of mud and clay is visible between the stones. This feature extends 90 centimeters above Feature 2. The elevation of this feature is 1.65 meters below datum, slightly below the elevation of Feature 5.

5. Feature 5: Feature 5 is nine stones set in roughly in a right angle formation with the corner pointing northwest and the sides oriented 4 degrees east of north. Some of the stones are cut; others are unmodified.
6. Feature 6: The ground north and west of Feature 5 is a compacted light brown sand (10R3/6) with a residue of red ochre.
7. Feature 7: Slightly below the northern arm of Feature 5 are three badly decomposed yet recognizably rectangular pieces of adobe.
8. Level 8: This is a layer of light brown (7.5Y3/4) earth with no internal stratigraphy. Roots are visible in the upper portion of this stratum, and fragments of bones, stones, and the occasional sherd were noted. This level sits on Feature 5.

#### Trench P29

Trench P29 is an eastern extension of Trench P21 (Figure 5.5). Trench P29 is located against the northern slope of the Circular Depression in the center of the Main Platform. This trench was excavated by Tiella before this investigation began. From my conversations with him and an investigation of the bottom and profiles of this trench, I documented two things of note.

1. Feature 1 : Feature 1 is thin layer of white (10YR8/2) clay located 3.81 meters below datum.

2. Level 2: Level 2 is a layer of brown (7.5Y3/4) undifferentiated earth with sherds, chipped stone, and cut andesite stones.

## 5.6 Conclusions

The methodology of this investigation began with the recovery of information from previously excavated, open trenches. I was able to record much, though not all, of the information available from these open trenches. Based on this information, I planned 23 strategic small-scale excavations in order to complement the information from those previous excavations. I documented 262 separate features and levels. This information will form the basis of my analysis in the following chapters. In the next chapter, I will combine these levels and features into a larger unit of analysis, the locus, and begin the process of reconstructing the form of this elaborate and complicated building.

The difficulties encountered when recording information from previous excavations are many. The original form of the trench may no longer be observable due to erosion. Several different excavators may have expanded or deepened earlier trenches, making it difficult to distinguish the work of one field season from that of the next. Erosion may damage or obscure features, and profiles may be irrevocably damaged. Therefore, I am firm in the belief that it is an ethical necessity to record all available information on the surface prior to commencing additional excavations. Though the difficulties are numerous, the benefits are great. The trenches are already excavated and require that only the recently eroded earth be removed. Though potentially very time consuming, the amount of effort required is much less than that needed to carry out a new

excavation. These open trenches provide a large quantity of information that can be collected in a relatively short amount of time and at relatively little expense.

## Chapter 6

### Levels, Features, and Loci

#### 6.1 Introduction

In the previous chapter, I described the features and levels of the Pumapunku Complex. In this chapter, I will combine these features and levels into a larger units called *loci*. The concept of the *locus* involves a certain level of interpretation. Several different features and/or levels from separate trenches may be similar enough in form, composition, elevation, angle of inclination, orientation, and/or spatial relation to suggest they can be grouped together. The last criterion, spatial relation, is especially significant for this study.

The purpose of utilizing the locus as a label at this stage is to show the relationships between features and levels. With a view to utilizing more manageable terms for the reader, each locus will be defined by its most evident characteristic, and then numbered. For example, the series of cut stone blocks arranged in a vertical stepped formation above the First Revetment is named the “Stairway of the First Revetment” and is given the label “Locus 34.” It may be the main entrance, a secondary access, or the principal exit; this level of interpretation will come at a later point in the data description.

Classifying the various finds at the Pumapunku Complex into a series of features and loci might seem to stress the details of the complex at the expense of a more comprehensive vision of what is one of the most impressive accomplishments in pre-Columbian architecture. At this stage of description, the impressive Large Stone Slabs

that have attracted travelers and scholars alike for centuries and the Brown Fill in the center of the Main Platform become for the moment qualitatively equal: one is Locus 25, the other is Locus 21 ; but the former is a much more salient component as we experience it today and, almost certainly, as it was experienced in the past. The format of the dissertation requires that I describe, in the most neutral and of terms, data that I have compiled during the excavation and analysis. With apologies to Pedro Cieza de León (1939) and Bernabé Cobo (1939), whose writings captured the sense of awe these structures inspired before they were so ruthlessly despoiled, and to Ephraim Squier (1877) who presents his research at Tiwanaku in a style that actually appeals to those outside the field of archaeology, I will now describe the Pumapunku Complex as a series of loci, each with its own number (Table 6.1). Where appropriate, I will refer to specific features and levels in the description of the locus. However, the number of levels and features that make up each locus is too large to present here, and I refer the interested reader to Table 6.2 which lists the locations of all the features and levels of each loci. Figure 6.1 shows many of these loci and the relationships among them.

## 6.2 Loci

### Locus 1 : Natural Soil

The site of Tiwanaku is located on a large lake terrace. The surface elevation of the Natural Soil (Locus 1) as noted in the trenches on the south side of the Main Platform is 6.90 meters below datum; in Trench P6, I found the surface elevation of the Natural Soil at 8.40 meters below datum, at the base of the Foundation Pit described below; and

in Trench P22, I noted the surface of Natural Soil at 7.69 meters below datum at the approximate center of the Main Platform.

#### Locus 2: Foundation Pit

A Foundation Pit (Locus 2) was excavated into the Natural Soil by the ancient Tiwanaku people. This Foundation Pit begins an average of 3 meters in front of the First Revetment and extends below the entire Main Platform. I detected the interface of this Foundation Pit in Trench P6. The fill of this Foundation Pit was Compacted Earth and Cobble Fill that I noted around the entire perimeter of the First Revetment. From data recovered in my excavations, I estimate the Foundation Pit to be 1.60 meters deep underlying the entire Main Platform. If so, I estimate 31,500 cubic meters of soil were removed for this Foundation Pit.

#### Locus 3: Compacted Earth and Cobble Fill

A Compacted Earth and Cobble Fill (Locus 3), placed in even layers, is closely associated with the revetments of the Main Platform. This Compacted Earth and Cobble Fill is continuous from the Foundation Pit up to the projected height of the Third Revetment (Locus 9), 2.42 meters above the top course of the First Revetment on the south side of the Main Platform. On the north and west sides, I recorded that this fill is found up to 3.90 meters above the top course of the First Revetment. This Compacted Earth and Cobble Fill forms the base upon which the revetments sit, and the revetments also retain this fill.

#### Locus 4: Clay Fill

Clay Fill (Locus 4), 3 meters thick, extends from 7.69 meters below datum to an average elevation of 4.72 meters below datum. This fill is located on Natural Soil (Locus 1). I could not observe directly the boundaries of this Clay Fill, but I suspect that it forms a contact with Compacted Earth and Cobble Fill (Locus 3).

At the top of this clay fill is a very thin layer of blackened earth. A carbon sample was taken from this layer. The date of 1510 $\pm$ 25BP, calibrated using the Oxcal 3.0 program to AD 550 with a one-sigma range of AD 535 to AD 600, suggests that the initial construction of the Main Platform began at or prior to AD 550 (sample OS-17860).

#### Locus 5: Clay and Sand Fill

Above Locus 4, the Clay Fill, are several definable layers of clay mixed with sand called the Clay and Sand Fill-Locus 5. In Trench P22 I identified seven individual layers and compared them to the three layers in Trench P23, 22 meters to the west. I infer that these two fills are related based on their similar composition and location directly on the surface of Locus 4. The top of Locus 5 is approximately level. I do not know the exact boundaries of this Clay and Sand Fill, but, like the locus below it (Locus 4) I estimate that it extends up to the Compacted Earth and Cobble Fill (Locus 3).

#### Locus 6: First Revetment



The revetments on the Main Platform were, like nearly all the architecture at Tiwanaku, heavily damaged during the Colonial and Republican periods. The finely cut stone blocks were an enticing source of building material, and much of the revetments of the Main Platform were systematically dismantled for the construction of buildings. Interrupted by the Western Stairway, the First Revetment (Locus 6) that defines the base of the Main Platform is the best preserved (Figures 6.2 and 6.3). We should keep in mind that Cobo (1939: 101) describes the Pumapunku as a “*terraplen*” built on a large stone foundation. It seems likely that the stone foundation he was referring to was this First Revetment. There are significant differences between the north, west, and south sides of the First Revetment. The surviving sections on the north and west sides are completely finished; the capstones are smooth and all the stone courses below are precisely fitted and level. The surface of the capstones and the face of the First Revetment on south side of the Main Platform are irregular. The fill behind the First Revetment consists of Compacted Earth and Cobble Fill (Locus 3).

#### Locus 7: Stairway on the First Revetment

Three courses of a stairway (Locus 7) are situated on the First Revetment along the south side of the Main Platform. The fill of the stairway is compacted brown earth, which is visible along the sides of the stairs. I noted no such stairs in the corresponding location on the north side of the Main Platform.

#### Locus 8: Second Revetment

The state of preservation of the revetment above the First Revetment is not very good, making it difficult to reconstruct its configuration and appearance. The flat stones (cimentation stones) that underlie the first course of each Revetment furnish a critical piece of evidence. These flat stones provided a solid and stable base for the revetments, preventing any sinking or slumping, and attest to the existence of revetments that disappeared centuries ago. As I mentioned earlier, the cut stones of the revetments were a ready source of building materials after Contact; except in those cases where erosion or intensive looting destroyed them, these cimentation stones remained in place.

This Second Revetment (Locus 8) is best preserved along the south side of the Main Platform. The Second Revetment is set back nearly 3 meters from the face of the First Revetment. The presence of the cimentation stones nearly 3 meters behind the First Revetment clearly indicates that the Second Revetment, broken only by the Western Stairway, continued around the west and north sides of the Main Platform.

The faces of the first stone course and, for the most part, the second are flush with each other, whereas the following courses contain blocks that jut out randomly. At regular intervals of 2.45 meters, buttresses that consist of four courses of stone, one meter in length at the base, are built into the Second Revetment. The second and fourth courses are fitted into prepared sockets in the revetment. Although only five buttresses survive intact, empty sockets at regular intervals of 2.45 meters in the second and fourth courses of the Second demonstrate that the buttresses continued along the entire south side of the Main Platform.

On the north side of the Main Platform, numerous red sandstone blocks are scattered about; only a few such stones are found on the south side of the Main Platform. Stones of this type were utilized for the capstones of the revetments on the Akapana Pyramid (Kolata 1993) and on the First Revetment at the Pumapunku Complex. It is my opinion that these jumbled red sandstone blocks on the north side are the discards of colonial quarrying. Cumbersome and large, these stones were pushed off the Second Revetment in order to provide access to the smaller and more easily transported cut stones below. The west side of the Main Platform may have suffered the same depredation; the portion that was excavated in the 1989 field season does confirm it. The south side of the Main Platform, fully excavated, demonstrates that few if any of the revetments beyond the First Revetment were capped with red sandstone.

The fill behind this Second Revetment is Compacted Earth and Cobbles that extends underneath the Third Revetment I describe below. Nowhere is the Second Revetment preserved to its original height. The cimentation stones of the Third Revetment, however, are located 1.80 meters above those of the Second Revetment, indicating that it was originally that tall. In surviving examples at the Pumapunku Complex and at the Akapana Pyramid, the top of one revetment is the same elevation as the base of the next revetment.

#### Locus 9: Third Revetment

A cluster of cimentation stones marks the base of the Third Revetment (Locus 9). By measuring the difference between the third and fourth lines of cimentation stones on

the west side of the Main Platform (Figure 6.2), I calculate the height of this Third Revetment to be 1.99 meters.

#### Locus 10: Fourth Revetment

Heavy erosion and substantial stone removal hindered attempts to reconstruct the location of the Fourth Revetment (Locus 10). Along the west side of the Main Platform, the cimentation stones associated with the Fourth Revetment are 1.99 meters above the cimentation stones of the Third Revetment. Though better preserved, the south side of the Main Platform lacks a corresponding set of cimentation stones. I posit that they have not eroded away; rather, they were never built in the first place. I will review the evidence for, and the ramifications of that claim in Chapter 7. In the place of cimentation stones and a Fourth Revetment on the south side of the Main Platform, there is an Adobe Wall (Locus 11). There are no cimentation stones along the badly eroded and looted north side of the Main Platform. However, the height of the Compacted Earth and Cobble Fill (Locus 3) upon which these stones would have sat is 2 meters above the cimentation stones of the Third Revetment, similar to the situation on the west side of the Main Platform, and distinct from that on the south, where Locus 3 ends only 0.62 meters above the base of the Third Revetment.

#### Locus 11 : Adobe Wall I

Along the south side of the Main Platform there is an alignment of stones bordering the Red Surface which abuts the stones (Figure 6.4). I interpret this alignment

of stones to be the base of an Adobe Wall (Locus 11) that formed the entire southern edge of the Red Surface. Several preserved adobes were found near the wall, and something had to retain the fill that was later placed on top of the Red Surface.

#### Locus 12: Adobe Wall II

An alignment of stones also bordered the interior edge of the Red Surface. I interpret this alignment of stones to be the base of an Adobe wall (Locus 12) that separated the area with the Red Surface from the interior edge of the Inner Courtyard.

#### Locus 13: Wall of the Inner Courtyard

The presence of the Circular Depression in the middle of the Main Platform has led previous researchers to propose the existence of a sunken court. Both Ponce (1971) and Escalante (1994) estimated that a sunken court existed here 30 meters a side and 2 meters deep. My excavations demonstrated the validity of their insight and added a greater degree of precision to the reconstruction of the configuration and appearance of this structure.

For my study, I have opted to utilize the alternative term of *Inner Courtyard*. This new designation takes into account the fact this Inner Courtyard was not originally a sunken court like that of the Semi-Subterranean Temple or earlier examples seen at Chiripa and Pukara, but a walled courtyard on the summit of an artificial platform. Later, the height of the Main Platform was substantially increased with the addition of fill, thus converting the Inner Courtyard into a sunken court, in relation to the summit of the Main

Platform. For terminological consistency, I use the term *Inner Courtyard* throughout the use-life of the Pumapunku Complex.

I documented the Wall of the Inner Courtyard (Locus 13) in two locations (Figure 6.5). Only the first course of the section by the Passageway to the Inner Courtyard is preserved, but it does demonstrate that the wall was two stones wide at the base. A second wall segment, found 26 meters to the north, is better preserved and is the northwest corner of the Inner Courtyard. With these two wall segments, I am able to offer an accurate estimate of its size. The section of the wall excavated in Trenches P22 and P28 is the northwest corner of the Inner Courtyard, and it is located 52.50 meters from the First Revetment of the north side of the Main Platform. I infer that the southern wall is at a similar distance and orientation from the First Revetment on the south side of the Main Platform. With two known corners oriented 4 degrees east of north, reconstructing the rest of the Inner Courtyard is a matter of simple Euclidean geometry: Extending the west wall south from the northwest corner leads across the surviving wall segment at the Passageway and connects with the projected location of the southwest corner. The northwest corner also preserves a small piece of the north Wall of the Inner Courtyard, which can be projected east. I based the location of the east wall on the dramatic boundary between the Large Stone Slabs and the Circular Depression in the middle of the Main Platform. At this point, the ground surface drops abruptly from the Large Stone Slabs to the present level of the Inner Courtyard. One small excavation, 2 meters to the west, located the remains of a stone paved surface (Trench 29). Incorporating this data, I can approximate the location of the west Inner Courtyard wall to within one meter and

reconstruct the dimensions of the Inner Courtyard as approximately 52.3 meters on a side, for a total area of roughly 2,735 square meters.

As for appearance, the northwest corner of the Wall of the Inner Courtyard is preserved to a height of 0.9 meters. The surface of the last surviving course is rough and has worked areas that would have accommodated another row of stones. On the north side of the Inner Courtyard, the wall has a one-stone thick veneer of finely cut stone masonry with a projecting ledge or bench facing a large cut stone. The trench extends only a few more centimeters east of this wall section; evidently the next section of wall was vandalized. One of the workers remembers in his youth that large fine cut stones were removed from this general area for a building in the village, which confirms that the north wall originally consisted of these large stone blocks.

I deduced the original height of the Wall of the Inner Courtyard from the height of a Reinforcing Wall (Locus 22) built directly behind it; this Reinforcing Wall is well-preserved to its probable original height. This evidence leads me to conclude that the Wall of the Inner Courtyard had a total height of 1.80 meters. I found the above mentioned Reinforcing Wall (Locus 22) only on the west side of the Wall of the Inner Courtyard. Its purpose, as I will elaborate in Chapter 8, was to retain the fill that was placed on the Green Surface. The north wall of the Inner Courtyard, which consists of large stone slabs, may have been strong enough to withstand the pressure of the fill without needing any additional support.

Locus 14: Pavement of the Inner Courtyard

The floor of the Inner Courtyard was finely paved with rectangular andesite stones of an average size of 25 by 30 centimeters (Locus 14). The rows vary in width, but once set, each maintained a fixed direction (4 degrees east of north) and a constant width. Several of the looters' holes extend to an unknown depth below the Pavement, but the futility of excavating through compacted clay must have eventually convinced the despoilers to stop at the level of the paved surface. The exposed Pavement was probably removed for the churches or patios of the colonial houses; in fact, the house where I stayed at was completely paved with stones that quite possibly came from the Pumapunku Complex. What remained under the Pavement was a very fine-grained white clay that was prepared for the placement of the stones. Spread over the compacted Clay and Sand Fill that had leveled out the Clay Fill, it was sufficiently viscous to allow a small amount of movement once the Pavement was positioned. It also acted as a glue and a sealant against any water that might have collected in the Inner Courtyard during the rainy season. This white clay is still used today in the village for patio floors. In several instances, such as in the Passageway, the presence of this white clay was the only evidence for the presence of a stone Pavement.

#### Locus 15: Vertical Conduit

At the eastern end of Trench 21, at the border between the Inner Courtyard and the Sunken Court, a vertical conduit was located (Locus 15). I recorded a hole 90 centimeters in diameter that dropped to a depth of 4 meters below the Pavement of the Inner Courtyard Surface before making a right-angle turn toward the east.



#### Locus 16: Stone Slabs of the Inner Courtyard

Another architectural element, located 1.60 meters east of the Wall of the Inner Courtyard, is a 2.63-meter wide platform consisting of five finely carved and well-fitted andesite stones (Locus 16). The northern and southern extent of this locus is unknown: it continues north into the unexcavated profile and the southern edge was removed by a looter's pit. I would suppose that this well-built stone platform formed the base of a structure that was associated with the Passageway of the Inner Courtyard (Figure 6.5).

#### Locus 17: Sunken Court

The center of the Inner Courtyard was heavily disturbed. The Nested Circular Depression, the central area of the Inner Courtyard, appears on Posnansky's map (1945). The earth was so disturbed that the 1981 excavation along the border of the Nested Circular Depression was discontinued because of the belief that natural earth had been reached (Arellano 1991). In reality, I documented that the Clay Fill of the Main Platform continues for another three meters. Though I excavated only a single trench (1 by 2.5 meters and 2.55 meters deep) along the border of the Nested Circular Depression, I can with certainty propose the existence of the Sunken Court (Locus 16).

In several excavations across the Inner Courtyard, I recorded that the white clay, the base for the Pavement of the Inner Courtyard, averaged 3.8 meters below datum. Since the Pavement of the Inner Courtyard slopes gently towards the center, there was a predictable difference in elevation from one end of the Inner Courtyard to the next. Along

the western border of the Nested Circular Depression, at 4.69 meters below datum, nearly a meter below the white clay of the Pavement of the Inner Courtyard (Trench 23), there is another layer of in situ white clay. In the northwest corner of this trench I found a disordered pile of 16 paving stone similar to those used for the Pavement of the Inner Courtyard. Evidently, they were discarded by the looters who were systematically tunneling through the border area between the Inner Courtyard and the Sunken Court. Clearly, then, a second pavement, roughly 1 meter lower than that of the Inner Courtyard, existed in the approximate center of the Inner Courtyard. The fill below and to the west of this white clay is the Clay Fill that makes up the core of the Main Platform. It would seem that this white clay is at or near the western edge of the paved surface. The distance from this point to the west side Wall of the Inner Courtyard, is 21.04 meters. Lines drawn at a similar distance from the north, south, and east Walls of the Inner Courtyard create a square with sides that measure 9.68 meters, the size I propose for the Sunken Court. In the course of my limited excavations I discovered no access from the Inner Courtyard to the Sunken Court nor any walls demarcating the edge of the Sunken Court.

There is more information to consider. As I mentioned before, the slope of the Inner Courtyard directs water toward the Sunken Court. As a point of comparison, during the rainy season the cavernous looter's pit in the middle of the Akapana Pyramid becomes a lagoon. The Nested Circular Depression in the Main Platform of the Pumapunku Complex on the other hand, accumulates water during the rainy season. The fact that water drains so well despite the underlying Clay Fill, while every other depression in the valley turns into a pond during the rainy season, is witness to the

presence of a drainage system with prepared conduits, probably similar to that documented for the Putuni Complex (Kolata 1993).

#### Locus 18: Passageway

A walled Passageway (Locus 17) connected the west side of the Main Platform to the Inner Courtyard (Figure 6.6). The walls of the Passageway are essentially identical to the Wall of the Inner Courtyard. For the purpose of clarity, however, I distinguish the Wall of the Inner Courtyard from the Passageway. Although 77 meters of unexcavated fill separate the exterior of the Main Platform from the Inner Courtyard, the evidence permits a convincing reconstruction of a route between the west side the Main Platform and the Inner Courtyard that was delimited by walls and corbeled vaulting. For the reconstruction of the relationship between the Western Stairway and the Inner Courtyard, I rely on demonstrable proof of the existence of walls, gateways, and floors in the Western Stairway and the Inner Courtyard. I also depend on the extrapolation of the known archeological remains across unexcavated or disturbed areas based on the regularity of orientation, elevations, and distances that I documented for architecture at the Pumapunku Complex.

The center of the west Wall of the Inner Courtyard is poorly preserved. Fortunately, the Green Surface confirms the location of the missing wall segments. The Green Surface was laid down wet, after the Wall of the Inner Courtyard, and there was a lip in the surface where the two joined. This lip remained even after the wall was looted. The remains of this lip on the Green Surface confirms that the Wall of the Inner

Courtyard turned west in a stepped fashion-that is, the north-south running wall made a right angle, turned west, then north, then west again (Figure 6.4). In the right-angle notch formed by this stepped outline, there is a cimentation stone (Trench P24, Feature 3) embedded in the ground just below the elevation of the Green Surface, with a carved recess on its top surface. Based on this preserved segment of wall and the impression on the Green Surface, I can state that the Wall of the Inner Courtyard continues west and, as I justify below, eventually meets with the Western Stairway. Directly north of this wall segment there lies a layer of white clay, attesting that the Passageway was paved with cut stone.

There are several pieces of evidence that permit me to make a fairly precise approximation of the location of the wall on the north side of the Passageway. The distance from the preserved impression of the Wall of the Inner Courtyard on the Green Surface to the exterior of the First Revetment on the south side of the Main platform is 76.4 meters. Taking a similar measurement from the First Revetment on the north side of the Main Platform places the stepped corner of north wall of the Passageway just beyond the profile of my excavation trench. The result is a passageway a little over three meters wide (3.56 meters), though it is possible that it was smaller.

I extrapolate the size and appearance of the intersection of the Passageway and the Inner Courtyard from the above mentioned stone with the carved recess (Trench P24, Feature 3). I interpret this stone to be a cimentation stone, and the carved recess the prepared surface for the mortarless placement of a standing stone that would have served as a doorway jamb.

A large rectangular stone 4.5 meters long, with two closely-placed recessed rectangular panels on one side, sits a few meters from this cimentation stone (Figure 5.59). On either side of these panels there are smooth square areas. Conklin (1991) proposes that a stone similar in appearance was a lintel, and that the smooth surfaces were the contact points for the supporting pillars. The Pumapunku Complex example has smooth, flat areas on either side of the recessed panels, a perfect surface for a mortarless contact point with other stones. If these smooth surfaces are indeed the contact points for supporting pillars, then the recessed panels would have faced downward. A photograph in the Archives of the University of Pennsylvania Museum of Archaeology and Anthropology, taken by Max Uhle in the late 19th century, shows a similar stone on the Kalisasaya Complex with a single recessed panel in which are carved five figures similar to the “Staff God” on the Gateway of the Sun (Figure 6.7). It is then possible that these recessed panels on the stone in the Inner Courtyard of the Pumapunku Complex were carved with iconography.

The architecture of the Wall of the Inner Courtyard supports this reconstruction. While the Wall of the Inner Courtyard is well built, it is more a facade than a load-bearing structure. In contrast to the revetments of the Main Platform, no prepared compacted base was made for the Wall of the Inner Courtyard. Rather, the stones were simply placed on the Clay and Sand Fill. A stone lintel across the opening of the Passageway would have been too heavy to rely on the Wall of the Inner Courtyard for support. Instead, the supporting pillars would have been positioned on something more secure, such as the deeply embedded cimentation stone just described. The result is that

the jamb would have formed part of the courtyard wall aesthetically, but structurally it would have stood alone. Presuming a second cimentation stone sat in the right-angle notch of the reconstructed north wall of the Passageway, the gateway would have been 3.16 meters, a distance that could be comfortably spanned by the large rectangular stone found a few meters to the east.

I propose that the wall of the Inner Courtyard extends west from the gateway to form a walled Passageway from the Inner Courtyard to the west edge of the Main Platform. Besides the direct evidence of the gateway suggested above, there are two pieces of individual evidence for the existence of this Passageway. First, the Green Surface (Locus 20) was never trod upon: it is perfectly preserved and bears evidence of the fingerprints from the finishing touches applied on its wet surface. The second piece of evidence is the placement of the Western Stairway at the very location where I extrapolate the walled Passageway to end. The pristine condition of the Green Surface stands in sharp contrast to the heavily worn and repaired Western Stairway. Evidently, a large number of people climbed the west side of the Main Platform and somehow had to reach the Inner Courtyard. Paving this well-traveled route with wear-resistant stone makes sense from an engineering point of view, and, as mentioned, the white clay extends into the Passageway. Walls not only would have served to maintain people within the confines of the paved area, they could have held up a corbeled roof. Later, these walls would have served to retain the Sand Fill I that covers the Green Surface, upon which the Red Surface was laid. At this later point in the construction sequence of the Main Platform, it would be an understatement to say that the Passageway was well

defined. It remained in use, apparently unchanged, until it was filled with the Brown Fill (Locus 25) and the Red Surface was covered with Sand Fill II (Locus 26) at the same elevation.

Earlier, I alluded to the idea that the Passageway was walled and roofed. This is suggested by the large number of evenly spaced, flat stones found in the fill excavated within the Passageway. Given their form and size, I propose that these stones formed part of a corbeled vaulting. There is a pre-Columbian precedent for this type of construction on the Island of the Sun (Squier 1877; Bandelier 1911). I found no *in situ* corbeled vaulting, but the location of the Brown Fill with these flat stones and its place in the rest of the construction sequence of the Main Platform suggest to me the strong possibility that the Passageway was roofed. As I will discuss in detail in Chapter 8, the Passageway was intentionally dismantled and filled in late in the construction sequence of the Main Platform, and it seems that the roofing material was reused for this Brown Fill (Locus 25). Likewise, anything in the original gateway to the Inner Courtyard that could be was either reset or reused in another context.

#### Locus 19: Western Stairway

The Western Stairway (Locus 19) consists of an alignment of two sets of stairs that are set into and thus break the First and Second Revetments. Above the *in situ* elements of the lower stairway in erosional or disturbed context were several examples of uniquely cut stones: two highly decorated andesite blocks and three aptly named “totora reed stones,” carved to resemble totora roofing. The area south of the Western Stairway

was completely excavated by Juan Faldín in 1989, but no similar dressed stones were found (Faldín, personal communication). The clustering of so many decorated elements in a limited area is more than coincidental and suggests the existence of some form of decorated gateway.

The second set of stairs is preserved to a height of three steps. The presence of the Western Depression just above the Western Stairway indicates that these steps ultimately continued to the summit of the Main Platform, cutting through the Third and Fourth Revetments. It is clear that the steps continued, but they were placed in two construction phases.

#### Locus 20: Green Surface

I exposed 19 square meters of a Green Surface (Locus 20) in the course of the excavations. The Green Surface is consistent in form and composition across the various trenches. It is a bright green mix of green malachite and plaster, 5 centimeters thick, with a hard surface and no evidence of wear. It was thoroughly covered by Sand Fill.

I have documented the border of the Green Surface in two locations: along the south side of the Main Platform and where it abuts the stones of the Wall of the Inner Courtyard. I utilized the distance from the southern border of the Green Surface to the First Revetment on the south side of the Main Platform (15 meters) to position the hypothetical exterior edge of the Green Surface on the north and west sides of the Main Platform. The interior edge of the Green Surface follows the Wall of the Inner Courtyard.



Given that no evidence of the Green Surface was found within the Passageway, I contend that the Green Surface had edges on either side of the paved and walled Passageway.

I distinguish a difference in elevation between the two examples of Green Surface that I exposed on the south side of the Main Platform. There is a slope of 0.8 degrees towards the west, virtually the same as that of the First Revetment on the south side of the Main Platform. Internally, the difference in elevation from the Green Surface in Trench P7 to P12 clearly indicates a slight slope of 1.0 degree toward the center east-west axis of the Main Platform.

#### Locus 21 : Large Stone Slabs

The top surfaces of the Large Stone Slabs (Locus 21) are 2.05 meters below datum, at the same approximate level as the top of the Wall of the Inner Courtyard Wall, covering an area of 6.75 by 38.72 meters (Figure 6.8). These massive stones have been recorded, measured, and photographed so often in the course of the last few centuries that I hesitated to scrutinize them. Moreover, Pierre Protzen had meticulously measured each of the stones and was in the process of reconstructing their original form (Protzen and Nair 1996). His publication should provide detailed data of the appearance of this impressive stone construction. I made two important observations relevant to my own investigation. The first was the lack of wear on the Large Stone Slabs. As a point of comparison, the first stairs of the Western Stairway is of a similar material and heavily worn. The second observation is that Large Stone Slabs, as large as they are, do not span the entire side of the Inner Courtyard. There are spaces over 6 meters wide to the north

and south of the Large Stone Slabs, which I propose in Chapter 9 was the access between the Inner Courtyard and the Eastern Plaza.

I would like to return to and comment on the observations of Cieza de León (1939) and Cobo (1939), both of whom mentioned the stone gateways that stood on the Large Stone Slabs. Cobo refers to only one that is still standing, which faced to the east. Today all of these gateways lie shattered around the Large Stone Slabs, but clearly they were highly decorated on both their front and back sides with carvings and would have been visible to those standing in the Inner Courtyard or the Eastern Plaza. I will return to this point when I reconstruct the route of access and structure of activities across the Pumapunku in Chapter 9.

#### Locus 22: Reinforcing Wall

I noted above that there is a Reinforcing Wall (Locus 22) just exterior to and in contact with the west Wall of the Inner Courtyard. This Reinforcing Wall consists of reused cut stone. It retains the Sand Fill I (Locus 23) located on top of the Green Surface.

#### Locus 23: Sand Fill I

The Sand Fill I (Locus 23) consists of 1.80 meters of compacted sand in ten separate levels, the composition, color, and appearance of which was nearly identical. This Sand Fill I was only found above the Green Surface. A Reinforcing Wall (Locus 22) retains this mass of fill along the west side of the Inner Courtyard, and similar walls presumably reinforced the walls of the Passageway. This fill is retained along the

exterior of the Main Platform by the Third Revetment and the Compacted Earth and Cobble Fill just interior to the Third Revetment. On the south side of the Main Platform, however, the top of the Sand Fill I slopes down to meet Compacted Earth and Cobble Fill. Thus, on this south side, neither the Sand Fill I nor the Compacted Earth and Cobble Fill were built up to the level of the Red Surface. This sloping surfaces is covered by a layer of ash and bones (Locus 27), probably refuse from rituals held in the Inner Courtyard.

#### Locus 24: Red Surface

The Red Surface (Locus 24) consisted of fine clay mixed with red ochre to a thickness of 2 centimeters. I documented the exterior border of the Red Surface across the north, west, and south sides of the Main Platform (Figures 6.9 and 6.10). The southern exterior edge of the Red Surface was a free-standing Adobe Wall I (Locus 11). The distance from the southern edge of the Red Surface to the First Revetment is 17.55 meters, and, considering the symmetry and precision of Tiwanaku architecture, I anticipated that the exterior west and north boundaries of the Red Surface would be similar. The western edge of the Red Surface is well preserved, though its proximity to the surface and the roots of grasses and shrubs have blurred the sharp edge. It meets the Compacted Earth and Cobble Fill slightly below the Fourth Revetment. Surprisingly, considering that symmetry is considered to be a guiding rule of Tiwanaku architecture, the distance from this edge of the Red Surface to the First Revetment is 12.25 meters, not the expected 17.55 meters.

On the heavily eroded north side of the Main Platform, a distance of 13.34 meters separates the Red Surface from the First Revetment. However, even though the north side edge of the Red Surface is damaged, it is 4.21 meters closer to the First Revetment than is the case on the well preserved south edge of the Red Surface. Clearly then, the Red Surface is asymmetrical. I documented the interior edge of the Red Surface where it meets the northwest corner of the Inner Courtyard. Similar to the south exterior side of the Red Surface, it ends in a row of irregular stones that forms the base of what I interpret to be another free-standing Adobe Wall II (Locus 12). This wall sits on the Sand Fill I, set back 2.8 meters from the Wall of the Inner Courtyard, which would have become a sunken court at this point. I assume that the southwest interior border of the Red Surface was set back the same distance from the reconstructed southwest corner of the Wall of the Inner Courtyard. The form of the Red Surface is consequently a “like a U” bisected by the walled, roofed Passageway (Figure 6.9).

There is one additional observation that has important repercussions for my interpretation of the symbolic meaning of the Main Platform. At 82.30 meters east of the First Revetment on the west side of the Main Platform, the Adobe Wall turns at a right angle to the south, and runs for a meter and half before making another right-angle turn to the east (Figure 6.4). The rest of the southern edge is too damaged to allow us to determine if there is a second “step”; surprisingly, the heavily damaged north side indicates that there almost certainly was a second step. Measuring from the better preserved west side, I estimate that the preserved edge of the Red Surface should be 12.25 meters from the First Revetment, assuming that a little more than a meter was lost to

erosion and looting. Bearing in mind that the step in the Red Surface on the south side of the Main Platform was 1.59 meters wide, a similar step on the north side would reduce the distance between the Red Surface and the First Revetment to 10.66. However, where the Red Surface is best preserved, close to the eastern side of the Main Platform, the distance between the Red Surface and the First Revetment was 10.3 meters, even closer than I expected. I conclude that a second step existed, extending the edge of the Red Surface this far north.

As for the inclination of the Red Surface, the extensive exposure on the summit of the Main Platform demonstrates that this surface is sloped 0.5 degrees to the west, the same angle as the Revetments on the north and south sides of the Main Platform. The difference in elevation across the 22-meter exposure of the Red Surface in Trench P8 indicates that the Red Surface also slopes slightly at 0.2 degrees towards the central east-west axis of the Main Platform, just like the Green Surface.

To recapitulate: the U-shaped Red Surface is bisected by the walled and paved Passageway. At its widest point, the north side, or arm, of the “U” measures 42.2 meters; the south arm, 37 meters. The precise extension and appearance of the eastern edge is unknown, stretching to approximately the mid-point of the Wings of the Main Platform, or 15 meters beyond the eastern boundary of the Wall of the Inner Courtyard. In plan view, the form of the Red Surface resembles the ubiquitous Tiwanaku doorway motif (Posnansky 1945); that is, the southern and northern exterior sides are double fretted. On the west and possibly the north sides, the Red Surface is defined and bounded by the stone wall of the Fourth Revetment, the southern exterior edge by an Adobe wall I (Locus

11) on a stone foundation. The interior border surrounding the Inner Courtyard is formed by Adobe Wall II.

#### Locus 25: Brown Fill

Brown Fill (Locus 25) is placed within the walled Passageway extending up to the level of the Red Surface. Throughout this fill there were several layers of evenly spaced stone slabs, nearly all lying flat and oriented in the same direction. A total of 54 slabs were removed from fill that contained pieces of pottery, fragments of red and green floor, bone, charcoal, and clumps of white clay.

#### Locus 26: Sand Fill II

Sand Fill II (Locus 26) is compacted light brown sand placed on the Red Surface in individually distinguishable layers and over the Passageway. This Sand Fill II extends out to the walls that once defined the Red Surface, the Fourth Revetment on the west side, and possibly the north and east sides of the Main Platform and Adobe Wall I along the south side of the Main Platform. It is also bounded by Adobe Wall II, which surrounds the Inner Courtyard.

#### Locus 27: Refuse I

On the south side of the Adobe Wall I (Locus 11) there was a collection of black fine ash and bones that are possibly camelid (Locus 27).

#### Locus 28: Compacted Earth and Cobble Foundation I

Locus 28 is located on the southeast corner of the Main Platform. The Main Platform was under cultivation until recently, and as a result, erosional gullies formed during the seasonal rains, and high winds blew away the topsoil during the dry season. The surface of this locus has been lost. Its dimensions are 13.15 by 8.83 meters. Trench P15 demonstrates that this locus was made of several levels of compacted earth and cobbles that were placed simultaneously with the Sand Fill II.

I assume that the Compacted Earth and Cobble Foundation I supported a stone superstructure. Due to the loss of at least 30 centimeters from the summit of the Main Platform, however, I cannot determine the use and or form of any structure that may have existed on this Compacted Earth and Cobble Foundation I. Its purpose remains enigmatic.

#### Locus 29: Compacted Earth and Cobble Foundation II

Locus 29 is located on the center south side of the Main Platform. As in Locus 28, gullies and high winds have eroded the surface of this locus, which is "H"-shaped, and measures 11.49 by 25.81 meters. As with the previous locus, I assume that this locus supported a stone superstructure, but evidence is lacking.

#### Locus 30: Compacted Earth and Cobble Foundation III

Locus 30 is located on the southwest corner of the Main Platform. Although the surface was damaged by agriculture and erosion, Trench P8 demonstrates that this locus

was made of several layers of compacted earth and cobbles placed at the same time as the Sand Fill II. This locus is “L”-shaped, 1.64 meters wide and 48 meters long, and it extends from the west side of the Main Platform. It ends near the southwest corner of the Inner Courtyard. I found no evidence of a stone superstructure that I assume once sat on this locus.

#### Locus 31 : Compacted Earth and Cobble Foundation IV

This locus (Locus 31) is located on the northwest corner of the Main Platform. It is linear in form, 1.60 meters wide and 48 long, extending east from the west side of the Main Platform toward the southwest corner of the Inner Courtyard.

#### Locus 32: Compacted Earth and Cobble Foundation V

This locus (Locus 32) is located on the northeast corner of the Main Platform. The surface has been lost, but it was rectangular, 20 meters wide, and 36 meters long.

#### Locus 33: Yellow Surface

As the Main Platform was under cultivation until recently, its surface has been disturbed by cultivation. Nevertheless, the fill, walls, and other architectural elements provide clues about the final surface of the Main Platform. The Sand Fill II is located within the boundaries of the walls that surrounded the Red Surface; therefore, I assume that the surface that sat on top of it had a similar form to that of the Red Surface. A



principal difference is that the Sand Fill II covers the area previously defined by the Passageway.

Though the surface is not preserved today, I could distinguish small fragments of yellow pigment around the Main Platform. I tentatively propose that the top of Sand Fill 11 was covered by a Yellow Surface (Locus 33).

#### Locus 34: Stairway of the Inner Courtyard

Near the eastern end of the Passageway are the remains of the Stairway of the Inner Courtyard (Locus 34). It is built upon the Brown Fill within the Passageway. It steps up to the west and is preserved only to the third step (Figure 6.11). Projecting up from this preserved portion, however, the stairways pass 1 meter east of the Wall of the Inner Courtyard and the edge of the Red Surface. I infer, then, that these stairs continued upward to a surface above the Red Surface, presumably the Yellow Surface (Locus 33)

#### Locus 35: Southern Stone Conduit

The conduit on the southern side of the Main Platform (Locus 35) consists of two types of construction material. The conduit base and lateral walls are made of regular, well-shaped cut stone. The capstones are larger and roughly square in form. Metal clamps hold the stones of the lateral walls tightly together, and the channel slopes at 10-12 degrees. The section of the conduit nearest to the upper orifice is more roughly made, consisting of reused stone retaining the Sand Fill I that covers the Green Surface, and

natural cobbles bordering the Green Surface where it was cut through by the trench in which the conduit place placed (Figure 6.12).

#### Locus 36: Northern Stone Conduit

The Northern Stone Conduit (Locus 36) was completely excavated prior to this investigation, but it remains unpublished. This conduit is in most regards identical to the Southern Stone Conduit, but I found no rougher construction around the upper orifice.

#### Locus 37: Eastern Plaza

I believe that Cobo's (1939) little understood allusion to a "cerca" (fence or wall) east of the Main Platform refers to the largest unbroken public space at Tiwanaku, the Eastern Plaza—Locus 37. A series of 26 upright large stones extend east from the Main Platform to define a rectangular area of approximately 192.5 by 143.5 meters, a total of 27,653.75 square meters (Figure 6.13). As a point of comparison, the summit of the Kalisasaya Complex is approximately 15,565 square meters, notwithstanding that the interior is divided into two distinct areas. The previous excavation by Gregorio Cordero shows that this wall consists of long sections of masonry made of smaller stones placed between large upright stones, typical in Tiwanaku constructions. The smaller stones were probably early victims of the quarrying of the ruins for building material. Max Uhle's photographs from the turn of the century, now in the Archives of the University of Pennsylvania Museum of Archaeology and Anthropology, show an adobe wall in line with the remains the southern wall of the Eastern Plaza, and fragments of an adobe wall

are still visible where the northern wall was. These are possible Colonial constructions that filled the gaps between the fragments of the pre-Columbian walls. Vegetation across the plaza area suggests that the stone walls were relatively continuous. The grass is much more lush on the southern side of the line of upright stones, indicating that water flow is affected by the presence of buried portions of the wall or a foundation even where no visible wall stones remain.

Cobo (1939) describes a stone conduit that emerges from the base of the Main Platform. Although I did not actually locate this stone conduit, I noticed in the open trenches of Cordero's 1978 excavation several carved stones that were adjoining segments of a conduit that could have been the one described by Cobo. The source of the liquids that would have passed through the stone conduit is unknown at present. I do not believe that this conduit serviced the Red, Green, or Yellow Surfaces (Loci 24, 20, and 33), for they slope to the west, which leaves two possibilities. The Inner Courtyard slopes toward the Sunken Court and leads to a drainage system that continues to function to this day. It is conceivable, from an engineering point of view, that the water that accumulated in the Sunken Court drained to the east through this stone conduit. However, conduits that do serve as drainage for rain water, such as those described by Alan Kolata (1993) at the Akapana Pyramid, and the Southern and Northern Stone Conduits of the Pumapunku Complex, are much larger and consist of precisely fitted stones held together with copper clamps. This leads me to conclude that this much smaller conduit, carved from a single stone, had a more specialized function, perhaps carrying liquids in smaller amounts such as libations. The liquids were poured through an undiscovered hole either

on the Large Stone Slabs or elsewhere in the Inner Courtyard, and then ran toward the Eastern Plaza. Alternately, there was a structure in the Eastern Plaza where liquids were poured. Cobo does mention two stones directly east of the Main Platform, one shaped like a bath or a coffin. Perhaps liquids were poured into this stone in the Eastern Plaza and drained through the conduit.

#### Locus 38: Earthen Esplanade

Several reconstructions place an “E”-shaped structure west of the Main Platform (Posnansky 1945; Kiss 1937; Ibarra et al. 1955). Arthur Posnansky (1945) referred to this structure as a port or dock, believing that the water level of Lake Titicaca was much higher in the past. Edmund Kiss (1937), with broad artistic license, reconstructed a port complete with a mooring bay. The geological fact, however, is that the level of the lake was not higher during the Middle Horizon; therefore, the structure could not have functioned as a port. I will refer to this structure as the Earthen Esplanade (Locus 38), a level piece of ground used for a public promenade.

Although I differ with Posnansky on terminology and interpretation, I concur with the idea that the Earthen Esplanade formed part of the Pumapunku Complex. There are several pieces of evidence: in a valley bottom of soft contours, a geometric shape abutting a known ritual structure warrants at least a second look. From the topographic map, the Earthen Esplanade is a rectangular structure aligned on the Western Stairway (Figure 6.14). Another piece of evidence comes from César Calisaya, a second-generation site supervisor at Tiwanaku. He remembers a stone wall at the base of the central Earthen

Esplanade that was dismantled several years earlier to build a nearby house.

Consequently, it would seem logical to propose that this Earthen Esplanade was revetted with stone at one time.

The central arm of the Earthen Esplanade is the best location from which to view the Main Platform. Such a view could not have gone unnoticed by the Tiwanaku architect, so concerned with creating precise surfaces and lines of sight (Conklin 1991). Viewed from the east, the Main Platform of the Pumapunku Complex is nearly indistinguishable to the untrained eye from a slight natural rise in the landscape; but seen from the west, when the viewer is standing on the edge of the central arm of the Esplanade, the rising mass of the Main Platform is prominent.

Interestingly enough, the central arm of the Earthen Esplanade may be a case of non-intentional monumentality; that is, its form is the product of quarrying building material for the Main Platform. Posnansky (1945) calculates that the amount of soil that was removed to carve this area into his three-pronged port is equal to the fill used to raise the Main Platform. He did not publish his calculations, but the soil I examined in the sides of the arms is indeed similar in color and grain size to the Sandy Fill I and II described in the Main Platform.

#### Locus 39: Western Plaza

There is a relatively unassuming and unspectacular flat surface about 200 meters to the west side of the Main Platform called the Western Plaza (Locus 39). This flat area is not bounded by any natural or artificial constructions that would clearly indicate that it

was a formally bounded space. Though I conducted no excavations here, there are several convincing pieces of evidence that it was an integral part of the Pumapunku Complex. This area is flat and is situated directly in front of the Main Platform (Figure 6.14). Perhaps it was artificially leveled and defined by a now missing wall or revetment. The other piece of evidence I noted is the lack of cultural material in this space. The ground surface at Tiwanaku is characterized by a dense scatter of ceramics and ash (Ponce 1981; Parson 1968) extending for kilometers around the Akapana Pyramid (Parsons 1968). I conducted a surface inspection of the area of the Western Plaza, which local framers had recently plowed, to determine the presence or absence of ceramics or other artifacts. To my surprise, I found few archaeological materials in the entire area. The lack of artifacts, according to Silverman (1994), can serve as an identifying marker of a specific kind of cultural space. Modern Peruvian pilgrimage sites are characterized by their refuse-free environment during the off season. Helaine Silverman considers the lack of artifacts in flat areas between structures at the site of Cauhachi to be indicative of plaza areas that would have been swept clean after the departure of successive avalanches of large groups of pilgrims (1993). I propose that the Western Plaza similarly served as space where people congregated before moving on to the Earthen Esplanade and the Main Platform.

#### Locus 40: Cobble Building I

A Cobble Building I (Locus 40) that measures 13 by 4.50 meters is located 1.70 meters north of the First Revetment on the north side of the Main Platform. The walls of

this structure were 0.84 meters thick, built with unmodified cobbles set in a mud mortar. High quality Inka ceramics were found inside this locus (Kolata, personal communication).

#### Locus 41 : Cobble Wall I

A wall of cobbles, Cobble Wall I (Locus 41), set in mud mortar, begins just 2.96 meters east of Cobble Building I. Only the south face of this wall was exposed in the north profile of Trench P4. I suspect, notwithstanding, that it is the south wall of another rectangular structure like Cobble Building I. Like the south wall of Cobble Building I, it is 1.70 meters north of the First Revetment of the Main Platform.

#### Locus 42: Cobble Wall II

East of Locus 41 at a distance of 14.30 meters there is another example of a cobble and mud mortar wall, Cobble Wall II (Locus 42). It is in the northern profile of Trench P4. I also suspect that this is the south wall of a third cobble building.

#### Locus 43: Refuse II

Along the south side of the Main Platform, between the Third Revetment and the Adobe Wall I surrounding the Red Surface, on the surface of the Sand Fill I, is a level (Locus 43) that consists of battered cobbles, andesite dust, and lithic flakes.

#### Locus 44: Topsoil

A level of Topsoil was found across nearly the entire Pumapunku Complex. I should note that until relatively recently, nearly the entire Pumapunku Complex was under cultivation. This locus contained organic material and artifacts from different time periods.

#### Locus 45: Disturbances

A common aspect of excavations at Tiwanaku is disturbed contexts (Locus 45). Tiwanaku may have been looted prior to Contact; however, the Inka seemed to respect the buildings of the site, and those buildings of clear Inka origin do not use Tiwanaku blocks. Looting during the Colonial and Republican periods probably accounts for a large majority of these disturbances. A future line of research could be careful excavations to differentiate pre- and post-Contact disturbances, but for my purposes, I have treated all these disturbed contexts as a single locus.

#### Locus 46: Erosional Accumulation

In one example, I was able to notice the gradual accumulation of earth (Locus 46) within the Southern Stone Conduit. Nevertheless, it is difficult to place the time of this accumulation.

#### Locus 47: Sides of the Stairway of the Inner Courtyard

Slightly southeast of the Stairway of the Inner Courtyard (Locus 34) is a collection of stone blocks (Locus 47) lying on the Pavement of the Inner Courtyard.



These stones are regularly laid, but there are clearly reused from another context. A mud mortar is visible between these stone blocks.

### 6.3 Conclusions

In this chapter, I condensed 260 different levels and features into 47 loci.

Similarity in composition and appearance was one criteria for aggregating different levels and features into a single locus; another was the precise nature of the spatial relations between different elements and features. These criteria allowed for levels and features of different composition and appearance to be convincingly collapsed into a single locus, and for features visible on the surface to be combined with the levels and features found in the excavations. In Chapter 7, I will condense the different loci into a larger unit: *structures*. The progression from loci to structure in my exposition allows the readers to retrace my steps, examine the links in my chain of reasoning, and join me in my judgment or reach their own conclusions.

## Chapter 7

### Architectural Structures

In Chapter 6, the various features and levels of the Pumapunku Complex were combined into 47 loci (Table 7.1). These loci represent an interpretation of the original form as reconstructed from the archaeological materials. Now I will utilize a larger unit of analysis, the *structure*, which is a combination of one or more loci into a united architectural space. The dismantling, reuse of building materials, and later modifications complicate this level of description of the Pumapunku Complex. In this chapter, I will describe the form and appearance of the structures of the Pumapunku Complex in chronological sequence followed by a discussion of the reasons why I grouped them loci together.

The Pumapunku Complex consists of two plazas aligned on either side of a stepped platform of artificial fill that is revetted with four revetments (Figure 7.1). An unintended consequence of my research and excavation strategy was that the Main Platform received the lion's share of mapping, recording, excavation, and in these chapters, the longest and most detailed descriptions. It is not my intent to reduce the significance of the adjoining structures to mere peripherals. The Main Platform is the most monumental and complicated area of the Pumapunku Complex; logically, then, it requires more discussion. I would only point out that the length of an area's description should not be confused with its significance.

## 7.1 Western Plaza

The Western Plaza (Locus 39) is level, aligned with the Main Platform, and fairly free of artifacts. I was not able to identify any type of formal boundaries to the Western Plaza (Figure 7.1). With the exception of the Earthen Esplanade to the east, there are no natural or constructed boundaries demarcating this area, and the Western Plaza stretches out toward the west into what is a perennially marshy field.

Its alignment with the Main Platform suggests that the Western Plaza may have served as a holding area for the pilgrims waiting to cross the complex. This large open space may also have served as a campground for pilgrims arriving at Tiwanaku who spent several days at the site. These observations are based on analogy from the previously mentioned study by Helaine Silverman (1994). I could also reference other modern pilgrimage sites where the open spaces around the focus of veneration are crowded with people for a short period of time (Sallanow 1987). During the rest of the year, these pilgrimage centers are sparsely populated and the large spaces previously crowded with people are empty. After a few months of wind and rain, these areas are nearly devoid of the refuse and temporary structures that were so evident during the pilgrimage. Further archaeological investigations would be necessary to confirm my proposal. Supporting evidence might be refuse accumulated in certain areas around the boundaries of the plaza and postholes from temporary structures.

## 7.2 Earthen Esplanade

The surface of the Earthen Esplanade (Locus 38) is 24 meters wide by 200 meters long (Figure 7.1). It served as walkway between the Western Plaza and the Main Platform. Wide and broad, the Earthen Esplanade could have also served as a plaza, accommodating a large number of people gathered before the Main Platform.

### 7.3 Main Platform

The Main Platform is a complicated structure, challenging to interpret and describe. One of its foremost qualities is that it was a dynamic structure that was changed several times during its use life. I find that the best way to visualize the Main Platform is as an elaborate surface built on a mass of artificial fill revetted with stone (Figure 7.2). On two different occasions, this surface was modified and raised. I will describe each of these distinct surfaces in chronological order. I divide the Main Platform into a sequence of Main Platforms (labeled I, II, and III), and detail for each the fill, walls, and other architectural elements that comprised it.

#### Main Platform I

The Main Platform has the form of a “T,” with the pedestal measuring 167.36 meters along the west side, and 116.7 meters along the south side corners of the First Revetment. The Wings extend out 27.6 meters and are estimated to be 20 meters wide. The total surface area of the Main Platform would be 23,982 square meters, and I estimate that a total mass of 97,661 cubic meters of earth and stone were moved to build Main Platform I.

The initial form of the Main Platform was a mass of carefully placed fill-Foundation Pit (Locus 2); Compacted Earth and Cobble Fill (Locus 3); Clay Fill (Locus 4); and Clay and Sand Fill (Locus 5)-defined along the exterior by three stone revetments: First Revetment (Locus 6); Second Revetment (Locus 8); and Third Revetment (Locus 9). The Third Revetment projected above the surface of the Main Platform, forming a free-standing wall. On the compacted surface of the Main Platform were several different constructed spaces. There was the Inner Courtyard, which consisted of the Wall of the Inner Courtyard (Locus 13); Pavement of the Inner Courtyard (Locus 14); Vertical Conduit (Locus 15); and Stone Slabs of the Inner Courtyard (Locus 16). The Sunken Court (Locus 17) was located in the center of the Inner Courtyard. The Large Stone Slabs (Locus 21) were located just east of the Inner Courtyard. The Green Surface (Locus 20) surrounded the Inner Courtyard. The Western Stairway (Locus 19) was connected to the Inner Courtyard via the walled Passageway (Locus 18). On the top of the First Revetment on the south side is a small stairway, the Stairway on the First Revetment (Locus 7) that leads to the top of the Second Revetment.

#### *Relationships of the Loci of Main Platform I*

The initial construction of the Main Platform involved a staggering expenditure of energy and materials. The initial preparatory steps for the construction centered on the removal of Natural Soil from the location that the Main Platform would occupy. I estimate that 31,500 square meters of fill was removed for this purpose from a Foundation Pit (Locus 2).

The Main Platform consists of three types of fill: a central mass of Clay Fill, consisting of nearly pure clay, surrounded by Compacted Earth and Cobble Fill. A fill of clay and sand is placed on the Clay Fill in preparation for the first surface of the Main Platform. Together, these three fills form the core of the Main Platform, and they were retained by the stone revetments, discussed below.

I could not distinguish any internal divisions or surfaces within the Clay Fill that would indicate the unit of application, such as layers or basket loads. As for the Compacted Earth and Cobble Fill, I could distinguish internal composition and suggest a construction method. Seven separate layers make up the Compacted Earth and Cobble Fill. The lowest four layers contain irregularly shaped cobbles that were laid flat; the subsequent three layers contain elongated cobbles, placed vertically. The cobbles from one layer extended into the next layer, which leaves us with two possibilities: either the wet earth was pressed around the cobbles, or the cobbles were pressed into the wet soil. After the wet soil had dried, the area between the cobbles was filled with more wet soil and compacted. The Tiwanaku engineers developed a remarkable technique that provided their buildings with great stability. To this day, the entire Main Platform has remained stable. Had any type of movement or slumping occurred, the precisely placed joints between the stones that comprise the platform's revetments would have buckled, affecting the structural integrity of the Main Platform.

*Revetments and Structures on the Summit*

Three stone revetments retain the core fill of the Main Platform I. Save where it is pierced by the Western Stairway, the entire exterior facade of the Main Platform is faced, giving it a stepped form. The lowest, the First Revetment, is three rows of stone thick and four courses high, the uppermost course being large sandstone blocks with rectangular notches. The Western Stairway consists of six large slabs of red sandstone placed as steps one on top of the other that rise to a level surface at the top of the First Revetment.

Based on stratigraphic associations, I conclude that there could have been only two possible basic methods of erecting the revetments: 1) each revetment was built as a free-standing wall, after which the fill was placed behind it; or 2) fill was placed in levels concomitant with the placement of each course of stones that comprises the revetments. There is, at this time, no way to answer this rather minor puzzle.

The Second Revetment was constructed on the horizontal surface of Compacted Earth and Cobble Fill that lies behind the top of the First Revetment (Figure 7.2). This Second Revetment is nearly identical to the first-three rows of stone wide and seven or eight courses high. Unlike the First Revetment, buttresses are evenly spaced around the entire exterior of the Second Revetment. Similar to First Revetment, large sandstone blocks with small rectangular notches cap the top of the Second Revetment. I interpret a small stairway on the First Revetment that connects the top of the First Revetment and the top of the Second Revetments to be a temporary accessway that was built in order to facilitate transport of construction materials up the sides of the Main Platform.

The fill behind the Second Revetment consists of the Compacted Earth and Cobble Fill mentioned above. The projected height of the top of the Second Revetment is 3.95 meters below datum; the base of the Sunken Court is 4.69 meters below datum. It seems probable that the Sunken Court was laid out while the Second Revetment was being placed. An alternative sequence would be that the Sunken Court was later excavated into the fill behind the Second Revetment. Furthermore, it is also likely that the Large Stone Slabs were placed at this point. The base of the Large Stone Slabs at 3.85 meters below datum corresponds roughly to the height of the Second Revetment. There is, however, no stratigraphic evidence to support this association at present. The face of the Second Revetment, like that of the First Revetment, was broken by the Western Stairway (Figure 7.3). The Western Stairway did not extend further up the platform in this phase because the Passageway to the Inner Courtyard pierced the Third Revetment just above the Western Stairway.

The Third Revetment is similar in many regards to the previous two. Erected on the horizontal surface at the level of the top of the Second Revetment, it consists of a wall of precisely set stone blocks. The distinguishing aspect of this Third Revetment is that it retains a Clay and Sand Fill that forms the base for the Green Surface and the stone Pavement of the Inner Courtyard. I hypothesize that the Third Revetment extends 1.75 meters above the Green Surface, which makes it a free-standing wall (Figure 7.2).

Once the Clay and Sand Fill had been leveled and prepared, the Green Surface was laid down, covering a total of 10,827 square meters. It is molded around the exterior face of the Wall of the Inner Courtyard, suggesting that it postdates the Inner Courtyard



and that the latter construction was built prior to the placement of the Green Surface. Furthermore, it is evident that the Pavement of the Inner Courtyard antedates the Inner Courtyard Wall, for the stones are set a bit higher than the Wall of the Inner Courtyard, probably because it is easier to pave a surface after the walls are built than the other way around. The Wall of the Inner Courtyard, as its name implies, bounds the Inner Courtyard, but it also extends and defines the Passageway out to the Western Stairway (Figure 7.2).

Several architectural elements in the eastern half of the Inner Courtyard, near the mouth of the Passageway to the Western Stairway, suggest an elaborate gateway. The most notable is a large lintel and several andesite stone blocks with elaborate carvings. Though several of these pieces are in the process of construction, they may have been erected at this time. Furthermore, I argue that the multitude of shaped stones slabs in the Brown Fill (Locus 25), belonged to a corbeled roof that covered the Passageway from the Western Stairway to the Inner Courtyard. Finally, several pieces of cut stone found around the point where the Passageway opened up to the Western Stairway suggest a second elaborate gateway existed there.

## Main Platform II

The Main Platform was enlarged with the addition of an estimated 19,368 cubic meters of earth and stone to create a new surface in the area surrounding the Inner Courtyard. The first three revetments remained visible-only the area previously occupied by the Green Surface is substantially modified. This new surface consisted of the

Reinforcing Wall (Locus 22), the Sand Fill I (Locus 23), and the Red Surface (Locus 24) (Figure 7.2 and 7.3). Along the south side of the Main Platform, the Red Surface is defined by Adobe Wall I (Locus 11). A free standing wall, the Fourth Revetment (Locus 10), defines the Red Surface on the west, north, and possibly east sides of the Main Platform. Adobe Wall II (Locus 12) was built around the Inner Courtyard. The Inner Courtyard maintains the same dimensions, but it is now a sunken in relation to the Red Surface.

#### *Relationships of the Loci of Main Platform II*

The first major modification to the Main Platform involved raising the height of its summit 1.80 meters with ten layers of Sand Fill I that covered the area above the Green Surface, placing a new surface on the summit of the Main Platform, and demarcating it with walls of rock and adobe.

By raising the Main Platform nearly two meters above the previous surface, the Inner Courtyard was, in effect, turned into a sunken court, although I continue to refer to it as the Inner Courtyard for consistency. Several additions, both structural and aesthetic, were made to this Inner Courtyard as a consequence of this fill (Figure 7.3). A Reinforcing Wall was placed behind the Wall of the Inner Courtyard to withstand the pressure of the fill. This Reinforcing Wall was built on top of the Green Surface, separated by 60 centimeters from the exterior face of the Wall of the Inner Courtyard. Although built of reused stones, this wall was well constructed and included a fine example of a table or a bench. The area between the Reinforcing Wall and the Wall of the

Inner Courtyard was packed with a matrix of irregular stones set in a dense gray-green clay. No such Reinforcing Wall exists along the north Wall of the Inner Courtyard, perhaps because the north Wall of the Inner Courtyard was built of large uprights stone blocks and consequently was considered strong enough to withstand the weight of the fill without reinforcement.

During this process, the Green Surface was carefully covered. Deference to this surface is evident by its clean and perfect condition and the fact that no damage occurred during this phase of modifications. The initial levels of Sand Fill I laid onto the Green Surface consisted of two separate deposits. First, a thin sand layer of Sand Fill I was carefully spread to cover the entire Green Surface, thereby protecting it from the series of modifications that would completely cover it and from the increased human traffic during construction. A second layer of sand, approximately 10 centimeters thick, was then put in place. All the subsequent layers are of a relatively even thickness of 18-24 centimeters-about the width of a splayed hand, a common mode of measurement in traditional societies-and required only a single episode of construction. I could not detect any internal construction sequences; the compacted surface of each layer is free of any inclusions as compared with the next phase of encasement. In all the excavations, I found only one small piece of carbon in association with this construction phase, from which I deduce that the fill was sieved to remove contaminants, and that activities such as impromptu fires for cooking or heat were forbidden. Flattened and compacted sand made up the final layer of this fill.

The sandy fill I just described runs out to the Third Revetment, and it is possible that the Third Revetment was raised somewhat during this phase. The western profile from Trench P7 manifests the relationship between the Compacted Earth and Cobble Fill near the Third Revetment and the Sand Fill I that covers the Green Surface. The first two sand layers meet but do not mix with the 27-centimeter high ledge of Compacted Earth and Cobble Fill that defines the edges of the Green Surface. However, the four following sand layers are interdigitated with this compact fill, proof that the Sand Fill I and the later layers of Compacted Earth and Cobble Fill were placed at the same time.

On the south side of the Main Platform, the Third Revetment was never finished. The first four layers of Sand Fill I horizontally interlace with the Compacted Earth and Cobble Fill, whereas the following two or three layers slope down to the Compacted Earth and Cobble Fill. In the depression of the sixth sloping layer of the Sand Fill I, a small amount of water-deposited or wind-blown earth accumulated, evidence that some amount of time passed before work was resumed. Eventually, the placement of the Compacted Earth and Cobble Fill against the Third Revetment was initiated once more, elevating it to a height sufficient for the sixth layer of Sand Fill I to be leveled off. The following three or four layers of Sand Fill I did not extend out to meet the Compacted Earth and Cobble Fill, but sloped down to end on the surface of the sixth layer of sand. Unlike the sixth layer of Sand Fill I, which eventually leveled out and connected to the Compacted Earth and Cobble Fill, these later layers formed a sloping mass of construction fill that was left exposed and shows signs of erosion during pre-Columbian times (Figures 7.4 and 7.5). The upper lenses of Sand Fill I, then, never extended south to

meet the Third Revetment or the compact fill behind it. Consequently, the southern border of the Red Surface was located several meters north of the Third Revetment, and the southern arm of the “U”-shaped surface of the Main Platform was 4.40 meters narrower than the northern arm.

Along the west side, the Compacted Earth and Cobble Fill rises to the level of the Red Surface. A row of cimentation stones that supported the Fourth Revetment are embedded in the Compacted Earth and Cobble Fill at an elevation higher than the Red Surface. The erosion and looting on the north side was particularly damaging, but the level of the Compacted Earth and Cobble Fill almost reaches the elevation of the Red Surface. Therefore, unlike the south side of the Main Platform just described, the Compacted Earth and Cobble Fill was fully built up. The Sand Fill I was placed to reach the height of the top of the Third Revetment and leveled off. This indicates that the north and west sides of the Red Surface were surrounded by a stone wall, the Fourth Revetment.

Along the west side of the Main Platform, the Red Surface and the cimentation stones of the Fourth Revetment run along either side of a large, unexcavated Western Depression above from the point where the Western Stairway passes through the Second Revetment. I can offer two explanations for this. First, the Western Stairs and Passageway continued unaltered at the same elevation as in Main Platform I, or the Western Stairway was built to the summit of the Main Platform and down into the Inner Courtyard. At one point in the use of the Main Platform, the Passageway and the Inner Courtyard were filled in, but evidence indicates that this did not occur at this time and

that the Passageway remained essentially unaltered. The Brown Fill inside the Passageway is dark brown with inclusions of artifacts, pigments, and wide flat stones that are evenly spaced; it is very different from the clean and sieved sand that covers the Green Surface. These two distinct types of fill suggest two different construction episodes, and the presence of pieces of the Red Surface in the Brown Fill suggest it was placed after the Red Surface fell into disuse, probably in relation Main Platform III. Furthermore, the Brown Fill served as the base for the wide Stairway of the Inner Courtyard, the top of which is projected to have passed a full meter in front of the edge of the Red Surface.

The Red Surface itself is rather simple compared to the earlier Green Surface. Red ochre mixed with fine clay was laid to a thickness of 2 centimeters in a single episode. It covers a total area of some 10,760 square meters. A row of stones, the base of an adobe wall, defines the border of the Red Surface around the Inner Courtyard. As noted, the exterior north and west borders of the Red Surface are defined by the stone wall of the Fourth Revetment (Locus 10).

### Main Platform III

The third surface was built up with several different types of fill (Figure 7.6). Brown Fill (Locus 25) was placed in the Passageway up to the level of the Red Surface. Sand Fill II (Locus 26) was placed on the Red Surface, within the boundaries of the Fourth Revetment (Locus 10), and Adobe Wall I (Locus 11) on the south side and Adobe Wall II (Locus 12) on the interior border of the Red Surface. The total volume of

construction was approximately 22,121 cubic meters. The Western Stairway (Locus 19) was raised to the level of this new surface, and the Stairway of the Inner Courtyard (Locus 34) was built on the Brown Fill (Locus 25). Reused stones in the Sides of the Stairway of the Inner Courtyard (Locus 47) face the Brown Fill on the south and north sides of the Stairway to the Inner Courtyard. Conduits (Northern Stone Conduit [Locus 36]; Southern Stone Conduit [Locus 35]) were placed in trenches excavated into the northwest and southwest corners of the Main Platform. The appearance of the third surface of the Main Platform is difficult to ascertain because it has been heavily eroded, but I postulate that it was yellow in color (Locus 33). The location of the stone conduits (Loci 35 and 36) indicate that this surface sloped down toward the northwest and southwest. Along the south side of the Main Platform, directly in contact with the Adobe Wall I (Locus 11) that borders the Red surface, is a collection of refuse (Locus 27).

Five Compacted Earth and Cobble Foundations I through V (Loci 28, 29, 30, 31, 32) form part of this surface (Figure 5.47). The surface is thoroughly eroded and, as a result, it would be difficult to pinpoint the purpose of these Foundations; however, it is possible to imagine that they supported constructions now long gone. Loci 28, 29, and 32 are large enough to have been the bases of house-like structures. Loci 30 and 31 are long and linear and perhaps supported walls or walkways. Examples of buildings surrounding a sunken court are found at Chiripa (K. Chávez 1988), Pucara (S. Chávez 1992), the sunken court on the Akapana Pyramid (Manzanilla 1992), and, according to some interpretations, the Putuni Complex (Escalante 1994). In these examples, the buildings surrounding the sunken court are at least partially preserved, and interpretations of the

structures range from residences to storage areas for sumptuary goods or sacred items.

Unfortunately, the preservation is not as good at the Pumapunku Complex and these compacted earth and cobble foundations remain enigmatic.

### *Relationships between the Loci of Main Platform III*

The first act in this phase of construction seems to have been the filling in of the Passageway to the level of the Red Surface (Figure 7.6). The stones that paved the passageway were removed and the corbeled vaulting was dismantled and set aside, as were carved architecture elements such as the large stone lintel. The Passageway was presumably sealed on either end before the placement of the fill, which consists of Brown Fill with a variety of artifacts and the slabs from the corbeled vaulting. On the east end of the Passageway, the monumental Stairway to the Inner Courtyard was erected against the fill. The cut stones, made of wear-resistant andesite, rest on one another and were worked so that each step fits precisely with the next. Reused stones face the sides of the stairway.

Once the Passageway was filled to the level of the Red Surface, Sand Fill II was placed on the Red Surface to create a new surface on the summit of Main Platform. The Fourth Revetment may have been raised in height from the level of the previous phase. Thus, it is unknown if the Sand Fill II placed on the Red Surface was placed within the boundaries of existing walls or if the Fourth Revetment and Adobe Walls I and II were built concomitant with the placement of the fill.

The dimensions of this final encasement are the same as the borders of the Red Surface. The excavation along the southern border of the Red Surface attests to the fact



that the final clean Sand Fill II extends only to the interior of the stone base of the Adobe Wall I that surrounded the Red Surface. At least six layers of Sand Fill II were set down, but their total number and thickness cannot be ascertained due to the severe damage in this area. The first layer, thinner than the subsequent layers, is similar to that of the encasement of the Green Surface; the following layers are thicker, and internal divisions, probably a result of the episodic deposition of fill material, are visible within each layer. When the desired height of fill was reached, it was leveled and compacted. On the surface of three of the construction layers a small quantity of red ochre was found. The appearance of the summit of the Main Platform was apparently red throughout this construction process.

After the summit of the Main Platform was raised to its desired level, the Western Stairway and the Stairway of the Inner Courtyard were extended to the summit, and the gateways, lintels, and other decorative architecture were removed from the earlier entrance to the Inner Courtyard and probably reset across this new route. The final surface of the summit of the Main Platform apparently has been lost in its entirety; nevertheless, the locations of the Southern and Northern Stone Conduits on the northwest and southwest corners of the Main Platform unmistakably indicate that the surface was inclined to the west and away from the central axis of the Main Platform. This contrasts with the prior inclinations of both the Green and Red Surfaces, which resulted in drainage of water through the center and west of the Main Platform to an undiscovered conduit or down the Western Stairway.

Five Compacted Earth and Cobble Foundations I to V were built as part of the fill placed on the Red Surface. River cobbles were placed in standing position and covered by layers of the compacted earth and cobble fill. This process was repeated until the desired height was attained. Unfortunately, the original surface of these foundations and any potential evidence of the structures that crowned them are now lost.

The drainage system for this new surface underwent an alteration during this use of the Main Platform. To build the Southern and Northern Stone Conduits in the northwest and southwest corners of the Main Platform, trenches were excavated from the Second Revetment to the summit of the Main Platform, piercing the Green Surface and cutting through the Sand Fill I above it. Then the base of the conduits were set, followed by lateral stone walls that were clamped together with metal clamps. Finally, capstones were placed on top of the walls. The spaces between the stone conduits and the excavated trenches were packed with a fill similar to the Compacted Earth and Cobble Fill retained by the first three revetments. The Southern Stone Conduit was apparently never finished. Sections of the Second and Third Revetment and the Adobe Wall I were removed and a buttress from the Second Revetment dismantled in the process of its construction.

The Refuse I (Locus 27) along the Adobe Wall I (Locus 11) along the south side of the Main Platform is an important clue for recreating the activities that went on in Inner Courtyard on the summit of the Main Platform. The refuse consists of fine black ash and camelid bones. I interpret from their location that they are refuse that was swept from the Inner Courtyard and dumped onto the unseen and unfinished southern side of the

Main Platform. Refuse II (Locus 43) may also be discarded from either the Inner Courtyard or constructions that were ongoing when work at the complex ended.

#### 7.4 Eastern Plaza

The primary defining component of the Eastern Plaza (Figure 7.1) is the remnants of the wall that surrounded this large area (Locus 37). The other important elements are those mentioned by Cobo: a well-crafted stone conduit leading from the Main Platform towards the center of the plaza, and two stones shaped like baths or coffins. While the plaza could have been the venue for a multitude of activities including perhaps feasting, dancing, and ritual battles, these carved stones and associated drain may have formed the centerpiece of these activities.

#### 7.5 Inka Structures

The Inka Structures on the north side of the Main Platform consists of at least one large rectangular building (Locus 40). The remains of cobble walls (Loci 41 and 42) suggest that there may have been at least two more buildings (Figures 5.22 and 5.23). These Inka buildings were clearly ritual in purpose. A large quantity of ritual Inka ceramics were found in the fully excavated building (Kolata, personal communication), and the buildings themselves are well built with massive thick walls. The ethnohistorical accounts highlight the importance of Tiwanaku as a sacred site, considered to be the origin place of the peoples of the earth (Betanzos 1987). Cieza de León (1939) and Cobo (1939), who passed through Tiwanaku shortly after Contact, remark on the large Inka

settlement built for the purpose of venerating and maintaining the Pumapunku Complex. The large size of these structures, and their regular form and spacing indicate that they were part of a planned Inka settlement (Hyslop 1990).

## 7.6 Conclusion

Previous studies of the Pumapunku Complex have either emphasized the Large Stone Slabs or the Main Platform. The reasons for this are obvious: they are the most visible remains and the most likely to produce spectacular results during excavation. In part, because my methodology stressed the re-examination of previous trenches, the majority of my excavations concentrated on the Main Platform; I was able to conduct only a brief surface reconnaissance and topographic mapping of the other sections of the Pumapunku Complex. Nevertheless, I was able to incorporate the several additional structures to the east and west of the Main Platform into my interpretations, converting what had already been considered one of the most elaborate buildings at Tiwanaku into a tremendous linear complex half a kilometer long that includes the largest public space at Tiwanaku, the Western Plaza.

To recapitulate before continuing, in Chapter 6, a multitude of levels and features were condensed into a series of loci that comprise the structures described in this chapter. In the following chapter, I will discuss the construction phases of the Pumapunku Complex with a view to giving the reader a sense of the magnitude of the material and effort that went into construction the of Pumapunku Complex.

## Chapter 8

### Construction Phases of the Main Platform

In the previous chapter, I described the structures of the Pumapunku Complex: the Western Plaza, the Earthen Esplanade, the Main Platform (I-III), and the Eastern Plaza. The Main Platform is a complicated structure that can be broken down into smaller components such as the revetments, the Passageway, the Inner Courtyard, the colored surfaces that surround the Inner Courtyard, and the Large Stone Slabs. One immediate conclusion that I draw from the data in the preceding three chapters is that there was more than one construction phase in the long history of use of this extensive complex (Table 8.1).

My excavations concentrated almost exclusively on the Main Platform, due in part to the limited time and resources available for the excavation. I ask the reader to keep in mind that during each construction phase the Main Platform was just one element, though an important one, in an extensive linear complex, and that all construction on the Main Platform took place within this larger context. The superposition of the different features and fill provides a clear and reliable guide to the relative chronological sequence of the Main Platform, within which I have detected three major phases. There is but one absolute date associated with these phases, a radiocarbon date from the initial construction fill (1510 $\pm$  25 BP, calibrated to AD 550 with a 1-sigma range of AD 535 to AD 600).

I have divided the structures of the Main Platform into the aforementioned three construction phases according to the relative sequence of construction and use of the structures defined in the previous chapter. After the third phase, the Pumapunku Complex was abandoned: organized monumental work ceases and certain aspects of the complex remain unfinished. Several centuries elapse before the arrival of the armies of Inka in the Titicaca Basin and the fourth construction phase of the Pumapunku Complex commences.

### 8.1 Phase 1: Initial Construction

I strongly suspect, although I cannot offer proof with the available data, that the entire Pumapunku Complex was originally conceived of as the linear arrangement of spaces seen today, and that the earliest phases of the Western and Eastern Plazas and the Eastern Esplanade are coeval with the initial form of the Main Platform (Figure 8.1). The part of the Pumapunku Complex for which I have the most information is the Main Platform. At the end of the first construction phase, the Main Platform consisted of a large platform faced with three revetments. Only the revetments on the north and west sides of the Main Platform were finely finished; on the south side, the faces of the stone blocks of the revetments were roughly cut. The Third Revetment projected above the fill it faced, forming a wall around the summit of the Main Platform. The summit consisted of a Green Surface surrounding an enclosed Inner Courtyard. A walled and corbel vaulted Passageway traversed the Green Surface from the Western Stairway to the Inner Courtyard and Sunken Court. I infer that the gateways and the stone buildings on the

Large Stone Slabs date to this phase and remained incomplete, looming over the Inner Courtyard.

Two important and seemingly contradictory observations can be made about the Pumapunku Complex at this stage. First, the Main Platform is solidly built, if not over-engineered. The Large Stone Slabs are the most extreme example of the conspicuous use of resources. The metal clamps between the blocks, clearly unnecessary, are the final piece of what has to be the most elaborate and labor-intensive flooring in pre-Columbian South America. It is quite possible that the lessons learned in the construction of the Akapana Pyramid, an earlier structure, were applied to the Pumapunku Complex. Early in the use-life of the Akapana pyramid, probably prior to the construction of the Pumapunku Complex, settling of the pyramid's core resulted in the buckling and collapse of sections of its revetments. The Main Platform of the Pumapunku Complex, on the other hand, has proven impervious to such deformations even after centuries of settling and extensive quarrying for building material. The foundation of the Main Platform is solid; in fact, the 1.60 meters of compacted earth and fill is more solid than necessary to prevent post-construction movement. The stones of the revetments are precisely placed, and the use of a thin mortar on the capstones solidified the revetments into an inert stone mass (Escalante 1994). According to Juan Faldín (1996, personal communication), the excavator of the completely looted section of the west side of the Main Platform, colonial stone-robbers actually had to undermine the revetments to cause their collapse.

In light of these safeguards, the buttresses along the Second Revetment would seem to be unnecessary. All the buttresses along a 51-meter exposure of the Second

Revetment disappeared during post-Contact times, yet the structural integrity of the Main Platform was not compromised. The small buttresses found along the Akapana Pyramid probably served as a post-hoc and impromptu support for the sagging pyramid. At the Pumapunku Complex, the buttresses appear to be less of a support than an aesthetic addition to a monumental structure.

Water damage is the greatest threat to the structural integrity of a large monument. The top of the Main Platform was walled in, forming a rainwater collection surface that could have precipitated a veritable calamity, but for several ingenious safeguards. Were water to seep through the Green Surface or the Pavement, the underlying fill would have begun a process of expansion and contraction that ultimately would have cracked the plastered Green Surface and pushed the blocks of the revetments out of place. The fact that this never happened highlights the success of the Tiwanaku architects.

From a hydraulic perspective, multiple surfaces serviced by separate drains are less likely to overwhelm a hydraulic system during a sudden downpour than a single drain. Accordingly, the summit of the Main Platform consists of two differentially inclined surfaces: the colored surfaces (Green, Red, and Yellow) inclined towards the west, and the Pavement of the Inner Courtyard inclined towards the Sunken Court. Should the entire hydraulic system of the Main Platform fail, the construction of the surfaces and the type of fill below would still prevent the absorption of water and resulting damage: The Pavement is placed on a viscous layer of white clay, which is impermeable, and the Green Surface is continuous with no breaks through which water can seep. The separation of the drainage systems of the Green Surface from those of the



Inner Courtyard probably had symbolic value, a topic which will be explored in Chapter 10.

Nevertheless, these safeguards are minor compared to the ingenuity of the fill below. A full 4 meters of nearly pure clay, small grained and compact, creates a nearly impregnable mass. Moreover, this clay can absorb no more water because it is already saturated, and the moisture that is present is sealed between the Natural Soil and the water-tight Green Surface and Pavement of the Inner Courtyard. In sum, the fill is inert, and it will not expand because it cannot absorb water nor will it contract because it is sealed and the water cannot evaporate.

The second interesting observation is that areas remained unfinished despite the fact that the Main Platform is firmly built and has an overabundance of safeguards designed to ensure its permanence. The amount of work necessary to complete the revetments on the south side would have been minimal compared to the effort expended for its initial placement. Nearly all the stones are in place, especially in the First Revetment. My own crew of 15 Aymara professional excavators agreed that it would take them no more than a month to put the finishing touches on the south side's First Revetment; yet the south side remained unfinished throughout the use of the complex, even when there was a considerable amount of labor available for monumental construction on the Pumapunku Complex in later phases. The Stairway on the First Revetment on the south side of the Main Platform is a temporary structure, made for facilitating the movement of workers from the First to the Second Revetment.

Nearly every monumental complex in South America and throughout the world has some aspect that is incomplete. However, the Pumapunku Complex is unusual in that the south side of the Main Platform remained incomplete through various construction phases. Little effort was expended to finish these initial constructions; any additions to the south side were always of inferior quality, both aesthetically and structurally. Eventually, the incomplete nature of the south side affected the form of the Main Platform, a point that will be developed further below.

## 8.2 Phase 2: Raising the Main Platform and Placing the Red Surface

At the end of Phase 2, the Main Platform had three revetments, and the summit was formed by the Red Surface, which was defined by stone and adobe walls (Figure 8.2). The Passageway from the Western Stairway to the Inner Courtyard remained unmodified, although the Passageway to the Inner Courtyard had become a tunnel with the addition of fill on either side of and above it. Two significant observations can be made about the complex at this stage: the volume and mass of the Main Platform was increased by carefully covering the Green Surface with Sand Fill II, and the revetments on the south side of the Main Platform remained unfinished.

The modification and transformation of monuments after their initial construction is not uncommon. Normal wear and tear require periodic modifications and repair, and changes in imperial fortunes and dynastic changes can instigate new public works and building campaigns. In addition, there is a construction tradition in South America and across the Americas, especially in Mesoamerica, of ritual entombment that carries

significant symbolic meaning and is readily distinguishable other forms of modifications. Referring to his excavations at Batan Grande, Izumi Shimada (1986) defines ritual entombment as the careful burial of part or all of a religious structure with a minimum of destruction, which indicates a high degree of deference to the structure. In South America, this form of construction is found in the Initial Period monuments and, along the northern coast of Peru at Batan Grande, a site contemporary with Tiwanaku. The Sunken Court at Wari seems to have been retired from use through a careful entombment (Isbell, personal communication), but no other examples of this process of ritual encasement are known in the highlands.

In Mesoamerica the epigraphic record correlates dynastic changes with episodes of ritual entombment (Culbert, ed., 1991; Scheie and Mathews 1998). Furthermore, the completion of a ritual calendric cycle could initiate a period of ritual entombment. In South America, the entombment tradition had either ceased by the time of the conquest or was not recorded by the chroniclers. Shimada offers a cursory list of possible reasons for ritual entombment in South America, ranging from reactions to astronomical events to invasion by a foreign population. The archaeological correlates for such reasons have yet to be specified.

At the Pumapunku Complex, the treatment of the Green Surface would qualify as a selective ritual entombment. The first act of encasement assured the least amount of damage by covering the Green Surface with a thin layer of sand. The Reinforcing Wall of the Inner Courtyard wall was raised on the Green Surface without any resulting damage. The placement of cleaned and specially selected fill in measured layers may also be

indicative of a division of labor, but this interesting and potentially informative topic falls outside the scope of this dissertation.

The second observation is that the data from this phase of construction effectively rule out any hypothesis that the south side of the Main Platform of the Pumapunku Complex was unfinished due to lack of labor or a sudden collapse of the Tiwanaku state. The Main Platform is the product of three major construction phases, and, although sufficient labor was available for major construction efforts throughout its use-life, the south side remained incomplete. This is clearly the result of a policy decision and not an accident of planning or a shortage of resources.

### 8.3 Phase 3: Raising the Main Platform and Placing the Yellow Surface

The modifications to the Main Platform effected during Phase 3 are the most eroded and affected by looting. Even so, several defining aspects of this phase are distinguishable despite the loss of some of the finer details: The Passageway from the Western Stairway to the Inner Courtyard was filled in; the surface of the Main Platform was raised and resurfaced (Figure 8.3); five compacted Earth and Cobble Foundations were placed with this new surface; the Western Stairway was raised to reach the new summit of the Main Platform; a monumental stairway was built down into the Inner Courtyard; and Stone Conduits were added to the northeast and southeast corners of the Main Platform.

Monumental and labor intensive constructions continue on the Pumapunku Complex until the eventual abandonment of the complex by the residents of Tiwanaku.

An elaborate and over-designed drainage system was built, along with the finest example of a stairway at Tiwanaku, the Stairway to the Inner Courtyard. Despite this, the south side of the Main Platform, a dumping ground for refuse from ceremonies held in the Inner Courtyard, was left unfinished throughout the use of the complex. The Pumapunku Complex remains, until the end of the urban phenomena at Tiwanaku, a monumental contradiction: over-engineered yet unfinished, monumental in appearance, facade-like in reality.

#### 8.4 Phase 4: Inka Construction

At present we have no absolute dates for the cessation of monumental constructions on the Pumapunku Complex. Although certain components of the Main Platform remained incomplete at the end of the Phase 3, the solid construction prevented any major collapse. It would seem that several centuries separate the end of monumental constructions at Tiwanaku from the arrival of the conquering Inka armies. I disagree with John Hyslop (1990) that little of the buildings of Tiwanaku remained standing when the armies of the Inka arrived in the Titicaca Basin.

We have two sources of evidence for the Inka presence at Tiwanaku and the Pumapunku Complex. The ethnohistorical evidence indicates that the Inka considered Tiwanaku a sacred location and the place where the creator god (Viracocha) created the peoples of the world, the Inka of course being the chosen ones (Cobo 1939; Betanzos 1987; Sarmiento de Gamboa 1907). Tiwanaku was also incorporated into the radial ritual network of the Inka capital of Cuzco, becoming an important point on a *ceque* line

(Zuidema 1989). Both Bernabé Cobo (1939) and Pedro Cieza de León (1939) describe a series of substantial Inka buildings next to the Pumapunku Complex. The purpose of the Inka buildings was to maintain and venerate the Pumapunku Complex (Cobo 1939) and mark the spot where Manco Capac was born. Juan de Betanzos (1987) mentions that Paolo, son of Huayna Capac was born at Tiwanaku and that a series of elaborate rituals followed this regal occasion.

We do not have archaeological evidence of the embellishments that Cobo says the Inka ordered on the Main Platform of the Pumapunku Complex, but his account of Inka buildings built around the Main Platform is clearly supported by the data. There is one large rectangular structure with cobble walls just north of the Main Platform, and similar cobble walls in the edge of the same excavation trench suggest the presence of at least two more. High quality Inka ceramics were associated with the large building, and the surface distribution of Inka ceramic material suggests that the Inka occupation extended further north. Though much smaller than other Inka sites in the Titicaca Basin (Stanish 1992; Hyslop 1990), the Inka settlement next to the Pumapunku was apparently of a planned nature and geared toward ritual activities. Knowledge of the full extent of this settlement and a more detailed understanding of its nature require further investigation, however.

The collapse of the Inka Empire brings to an end the official ceremonies at the Pumapunku Complex. This is not to say that the Pumapunku Complex did not remain an important and sacred place for the indigenous population. Repression by Spanish authorities drove indigenous religions underground, but the local population probably

continued to visit the site and covertly leave offerings. Careful excavations in the future might reveal evidence of such offerings and rituals, which continue today. The series of modifications that I have been able to detect on the Pumapunku Complex after Contact are primarily destructive (looting, quarrying, reuse of stone).

## 8.5 Conclusion

One of the conclusions that can be drawn from this chapter is that the Pumapunku Complex was a dynamic center of ritual activity that was intentionally and substantially transformed over time. The height and volume of the Main Platform was significantly increased, creating an impressive building, especially when viewed from the west. A challenge for further research will be to correlate the building phases of the Pumapunku Complex with the other social transformations of the site and state of Tiwanaku (Janusek 1994). It would be difficult to determine whether these different construction phases followed one another closely or several centuries separated one construction phase from the next. The ramifications are many: Was the Pumapunku Complex in use for several centuries and were these changes effected every so many generations, or was there concerted effort to transform the appearance of Pumapunku Complex in a short but intense burst of activity? The fact that during each phase of the Pumapunku Complex could have functioned as integrated complex suggests to me that the Pumapunku Complex was in use for a great length of time, and that, the surface of the Main Platform was raised periodically. However, this interesting topic will have to be the focus of future work.

In the following chapter, I will explore the effect of the architecture of the Pumapunku Complex on human action. My intent is to interpret the direction and structure of human movement and, through analogy, suggest a possible meaning of the use of this spectacular building.



## Chapter 9

### The Structure and Meaning of Human Action at the Pumapunku Complex

#### 9.1 Entrances, Exits, and the Reconstruction of the Procession through the Temple Complex

Physical evidence, architectural logic, and some historical data allow us to envision with a fair degree of confidence three potential points of access through the complex: The Western Stairway and Passageway to the Inner Courtyard, the small stairway that leads from the First Revetment to the Second, and an access across the Large Stone Slabs. Although not supported by any archaeological evidence at the present time, a fourth point of access along the eastern side of the Eastern Plaza is likely. The challenge is to determine which of these accesses were entrances, exits, or both. Recent studies and historical records fail to resolve this issue, which, in turn, has a serious impact on the reconstruction of activities within the Pumapunku Complex. In this chapter I will review the evidence for possible paths of movement through the architectural spaces and suggest a meaning for the path of ritual motion.

#### Entrance and Exit on the East Side of the Main Platform

Prior to any scientific excavations of the Pumapunku Complex, the generally held view was that the entrance to the complex was from the east. Carlos Ponce's 1971 publication reviews a series of reconstructions that range from the fanciful to the sublime. The common thread that runs through all the reconstructions is the assumption that the

Large Stone Slabs were the main access to the Main Platform (Figure 9.1). All show the Pumapunku Complex at an oblique angle from the east, with one or more stairways giving access to the stone buildings on the Large Stone Slabs and the spaces to the west. Edmund Kiss' 1937 reconstruction of the Pumapunku Complex is one of the few that differs. His western oblique view shows the "port" with a small stairway, presumably for passengers disembarking from moored boats. His reconstruction of the west side of the Main Platform, however, shows no means of access. His whimsical reconstruction of the stone buildings on the Large Stone Slabs includes several stairways, complete with banisters. Kiss' drawings are based on the works of Arthur Posnansky (1945) who, interestingly enough, mentions in a single line an access on the west side of the Main Platform, but does not elaborate further. The significance of this reference has been ignored, and, instead, emphasis has remained on the Large Stone Slabs on the east side of the Main Platform for an obvious reason: they are the most impressive architectural component of the Pumapunku Complex and, for many years, were the only visible part of the entire architectural complex. Furthermore, modern visitors arriving at Tiwanaku rarely approach the Pumapunku Complex from the west; the present center of Tiwanaku—the train station, the principal roads, and the museum—is to the north east of the Pumapunku Complex.

However, there is no archaeological evidence of a stairway to or from the Large Stone Slabs. A small excavation to the east of these Large Stone Slabs by Gregorio Cordero (1978) in 1977-78 unearthed no stairs, though one should mention that this area has been severely damaged by looters and even dynamited by treasure seekers. One piece

of supporting evidence is a remark by Bernabé Cobo (1990) that refers to a monumental gateway facing east on the Large Stone Slabs. At present, the ground at the northeast and southeast corners of the Large Stone Slabs forms a slight incline that visitors climb in order to stand on the Large Stone Slabs. In these unexcavated areas, Ponce (1971) hypothesized the existence of two stairways, a proposition that received a sharp rebuke from Graziano Gasparini and Luis Margolis (1980) because it lacks both precedent in any other Tiwanaku monument and any supporting archaeological evidence.

According to these reconstructions, participants in the ceremonies arrived from the east, from the center of the city (Kolata 1993), and entered the Inner Courtyard through stairways that abutted the Large Stone Slabs. The focus of the ceremonies was either the stone buildings there or the Inner Courtyard farther west. The revetments and the summit of the Main Platform offered another site in which the milling participants could await the commencement of the ceremonies.

#### Entrance and Exit on the West Side of the Main Platform

The 1977-78 excavations by Cordero revealed a stairway connecting the surface at the top of the First Revetment with that above the second, and in the 1989 excavations, Juan Faldín uncovered another set of stairs at the base of the west side of the Main Platform. Based on data from the new excavations, architect Javier Escalante proposed a new form for the Main Platform in his 1994 reconstruction (Figure 9.2), one which he subsequently refined in a scale model at the museum of Tiwanaku. In this version, the Pumapunku Complex is only a Main Platform with no adjoining plazas, and the principal

access is an ascending stairway on the western side that reaches the summit of the Main Platform. A descending set of stairways leads from the summit of the Main Platform to the Pavement of the Inner Courtyard. There are no stairways from the Inner Courtyard to the Large Stone Slabs, nor any form of approach to or from the Large Stone Slabs to the area east of the Main Platform. Access to the summit of the Main Platform and the spaces there like the Inner Courtyard was from the Western Stairway, and, presumably, the exit was the same.

The basis for this reconstruction was the discovery of the Western Stairway. The central location of the Western Stairway, its monumental form, and its heavy wear suggest that the west side was indeed the principal access to the Main Platform. The Inner Courtyard and the stone buildings on the Large Stone Slabs were the focus of ritual activities. The small spaces available for buildings on the Large Stone Slabs were perhaps restricted spaces where elite priests conducted rituals and then presented themselves before the masses gathered in the Inner Courtyard (Rivera, personal communication). The summit of the Main Platform was another open area for the standing and vagarious public who took part in or observed ritual activities. Participants left the same way they entered-via the Western Stairway. With no definitive archaeological evidence for access from the area east of the Main Platform to the Inner Courtyard, Escalante, taking caution as his guide, does not venture to propose one.

Entrance on the East Side, Exit over the Sides of Main Platform to the Western Stairway

Based on the same 1977 and 1989 excavation data, José Estévez (1990) proposes a radically different manner of entry and use, in which the approach and entrance was on the east side of the Main Platform (Figure 9.3). The entrance was across the Large Stone Slabs, and the principal area of ritual activities was the Inner Courtyard. In his view, the exit was located “over the sides” of the Main Platform from the Second to the First Revetment, which circumvallated the Western Stairway.

This reconstruction incorporates the Western Stairway in 1989, but it does not regard it as an entrance. Instead, like the first reconstruction above, it emphasizes the importance of the Large Stone Slabs on the east side of the Main Platform and repeats the conviction that this was the entrance. The logic supporting this is analogical in part. Monumental gateways, considered indicative of principal points of access, have been found on the east side of the Kalisasaya Complex and the Putuni Complex. The Pumapunku Complex would appear to follow this architectural format with a monumental east side. The route of egress runs from the Inner Courtyard, up to the summit of the Main Platform, and then down the Revetments to the Western Stairway. The principal piece of supporting evidence for this reconstruction is the partially preserved Stairway on the First Revetment that leads to into the Second Revetment. Presumably, a similar stairway connected the Second and Third Revetments.

According to this reconstruction, participants arrived from the east and entered the Inner Courtyard, where the main ritual activities took place. In order to leave the Inner Courtyard, they had a choice of two exits: Either the north route over the summit of the Main Platform and down the revetments, or over the south side. The choice might have

been determined by gender or perhaps some form of dual organization. Snaking their way around the sides of the Main Platform, the participants would pass by and through important monoliths and sculptures before exiting via the Western Stairway.

#### East and West Sides Were Both Entrances and Exits

Another possibility is that the east and west sides of the Main Platform were both entrances and exits, but for different classes of people (Figure 9.4). Such a reconstruction is not explicitly stated in published form, although Alan Kolata and Carlos Ponce (1992) mention that the east entrance, more elaborate and facing the rising sun, was of a higher status than the west entrance. William Isbell (1998), in a discussion of Inka palaces, briefly considers the possibility that the entrance to the Pumapunku Complex was originally on the east and then became increasingly restricted and reserved for elites as the spaces became smaller. The idea that the separate entrances served different classes of people is rooted in a pervasive concept in Andean archaeology that small areas are equated with the elite and large areas with the non-elite (Moore 1992). A recent article by Jerry Moore (1996a) compares the size and form of pre-Columbian plazas across several Andean cultures and, while not specifically mentioning the entire Pumapunku Complex, concludes that the Sunken Court was the principal ritual space at Tiwanaku. The spaces are very small in comparison to the projected population of the site, not to mention incoming pilgrims; hence, the Inner Courtyard was probably reserved for a select group of people. Moore quotes Kolata (1993), who argues that artifactual evidence attests to

ritual activities that could only be appreciated from a short distance and by a small group of people.

Applying this framework to the Pumapunku Complex, the spaces on and inside the Main Platform were reserved for the select "interlocutors with the divine" (Kolata 1993: 164) who carried out specialized rituals. Prohibited from entry from the Inner Courtyard space, the rest of the population waited in the Eastern Plaza. Consequently, there are two possible scenarios for ritual motion in the complex: (1) Elite members entered the Main Platform from the west, while non-elite entered the Eastern Plaza from the east and waited for those involved in the rituals in the Inner Courtyard to emerge with the results; and 2) the procession of elite and non-elite began in the east and moved through the Eastern Plaza, at which point the elite continued into the Inner Courtyard across the buildings on the Large Stone Slabs while the rest of the populace remained in the Eastern Plaza.

## 9.2 Review of the Evidence for Access and Flow

There are several pieces of evidence, both new and old, described in detail in Chapters 5-7, that directly touch on the issue of establishing the entrance, exits, and manner of passage to and from the Main Platform. I will restate them in the context of this issue.

1. The Western Stairway, uncovered in 1989, and the associated Passageway to the Inner Courtyard, documented in 1997, demonstrate a viable route to the spaces inside the Main Platform. Neither a minor entrance nor less monumental than the east side of Main

Platform, the Western Stairway had a large decorated gateway, and at least one more monumental lintel spanned the width of the walled Passageway to the Inner Courtyard.

2. The Western Stairway is built into the Main Platform. With the exception of the First Revetment, these stairs are below the tops of all the other Revetments. During Phase 3, the final phase of modifications during Tiwanaku times, these stairs reached the top of the Main Platform.

3. The Western Stairway shows signs of heavy wear and repeated repairs. The small Stairway on the First Revetment on the south side of the Main Platform, however, bears no such marks. The route to these secondary stairs passes across the red sandstone capstones of the First Revetment, and there is no evidence of wear on these stones to indicate the passage of a large number people such as we see on the stairs of the Kalisasaya Complex. In fact, the case is quite the opposite; stonemason marks are still evident on most of these stones.

4. The Red and Green Surfaces on the summit of the Main Platform likewise do not show any evidence of the wear associated with the passage of a significant number of people. In addition, the Passageway connecting the Inner Courtyard to the Western Stairway was walled and roofed, restricting human traffic across the Main Platform to a single narrow corridor.

5. The Main Platform is only one element of a larger temple complex. The area to the west contains the substantial earthen structure that I have termed the Earthen Esplanade, which Posnansky (1945) and Kiss (1937) refer to as the port. West of this is the large Eastern Plaza described by Cobo during his early 17th century visit to



Tiwanaku, and mapped out for this first time by this investigation. The Eastern Plaza represents the largest unbroken, formally defined space at Tiwanaku. Taken as a whole, including the Western Plaza, the Earthen Esplanade, the Main Platform, and the Eastern Plaza, the Pumapunku Complex forms a linear complex at least 500 meters long.

6. The Main Platform presents a deceptive facade. It appeared to be complete solely when viewed from the north or the west, the only sides where the revetments were finished. Later modifications in Phase 2 and 3 substantially increased the height of the west side of the Main Platform while the Revetments on the south side remained unfinished.

7. Monumental structures at Tiwanaku tend to be sited on the summits of natural elevations or on flat areas that may have been artificially leveled. The Pumapunku Complex is located on an incline that drops dramatically to a flat plain. The natural surface had been excavated and filled, but the angle of inclination of the natural surface was maintained. The Revetments follow this incline, whereas the surface of the Main Platform is more nearly horizontal, sloping slightly for water runoff. As a result, the west side is 7 meters tall from the base, but the estimated height of the east side is only 3.5 meters. Viewed from the west, then, the mass and height of the Main Platform appears to be much larger than it actually is. Viewed from the east, most of the central component of the Pumapunku Complex, the Main Platform, is hidden from view.

8. The Pumapunku Complex is located on the western edge of the urban center of Tiwanaku. To the east of the complex are the remains of residential buildings; there is no surface evidence for structures, residential or public, to the west.

### 9.3 Critique of the Reconstructions

None of the reconstructions cited in section 9.1 account for all of the points discussed in section 9.2. To be fair, I should state that many of these reconstructions were done prior to the first scientific excavations at the Pumapunku Complex. Access to the Inner Courtyard may have been from the east side of the Main Platform, but this was probably neither the principal nor the only entrance. While no excavations were conducted here to investigate the presence of a stairway, several factors support the assertion that the east side of the Main Platform was not the main entrance. First, the Western Stairway is large, monumental, and heavily worn, and shows signs of being repaired. Second, the Main Platform was built to be more imposing from certain sides. Viewed from the north or the west, it would have appeared to be large and complete; from the south and possibly east, the unfinished aspect of the Main Platform would have been evident. Moreover, the Main Platform is built into a slope, and the approach from the east actually de-emphasizes its size and volume. In effect, viewed from the west, the Main Platform appeared to be larger than it was. There are several examples throughout South America where the use of natural topography and false facades increases the monumental appearance of a structure; however, I can think of no examples where a large ceremonial structure was built with the intent of concealing its size. The Main Platform underwent modifications on two different occasions that dramatically increased its volume and visibility and added an additional stone Revetment on the west and north side. To place the entrance on the east would force us into the unlikely assumption that

labor and materials were spent elaborating the unseen backside while the front remained unfinished.

The second reconstruction described in the previous section successfully accounts for the first, second, and third points cited in section 9.2. My research revealed additional details about the Main Platform that confirm the general accuracy of the second reconstruction and allow me to elaborate on it. First of all, movement across the Main Platform during Phases 1 and 2 was restricted to a walled Passageway that would have prohibited people from walking on the summit of the Main Platform. Secondly, this reconstruction does not place an access on the eastern side of the Main Platform, which completely seals off the Eastern Plaza. This reconstruction, then, runs into difficulties when accounting for the large Eastern Plaza-some form of access to it would be necessary. Placing a principal entrance on the east side of this plaza, as in the fourth reconstruction of section 9.2, runs into the difficulties described in detail above; that is, the terrain and form of the Main Platform strongly suggest that the west side was the main approach.

The third reconstruction described above fails on every point. I have pointed out the unlikeness of a main entrance on the east side. The notion that participants would exit from the Inner Courtyard over the sides of the revetments lacks support. The small Stairway on the Revetment on the southern side of the Main Platform is, in all probability, a temporary accessway used while building the Main Platform. Poorly built by Tiwanaku standards, there is no wear on these stairs nor on the soft sandstone capstones of the First Revetment in front of the stairs, in sharp contrast to other examples

of stairways at Tiwanaku, such as at the Kalisasaya Complex and the Semi-subterranean Temple, where the stairs are heavily worn. Additionally, the Western Stairway continues beyond the top of the First Revetment, the proposed route of exit in this reconstruction.

The fourth reconstruction has difficulty reconciling points 1, 5, 6, 7, and 8. One version of this reconstruction would have an elite group entering the Main Platform from the west, while the non-elite were restricted to the Eastern Plaza. To use this entrance, this elite class residing at Tiwanaku would have to walk around the Main Platform and, in effect, leave the city boundaries, while the general population enjoyed an easy and close entrance through the Eastern Plaza. Furthermore, to envision this scenario, one would have to assume that the Pumapunku Complex and the series of modifications during its use were geared towards creating an impressive and massive entrance for a select few while the majority of the population saw only the lowest side. The other version of this reconstruction-entrance on the east side with increasing levels of restriction across the complex-also runs into the problems raised in points 5, 6 and 7. The impressive west side of the Main Platform would only be viewed by those leaving the Complex who happened to turn around. One would be hard-pressed to produce examples in the Andes or elsewhere across the world where the exit is architecturally more monumental or elaborate than the entrance.

#### 9.4 Alternative Route of Approach and Entry

In order to account for points 1 through 8 in section 9.2, the simplest solution lies in accepting that the Western Stairway served as the principal entrance to the Main

Platform (Figure 9.5). There is one basic and safe assumption underlying this inference: the primary purpose of a monument is to communicate a message, and it is evident that a completed monument would accomplish this purpose better than an unfinished one. The finished sides of the Main Platform faces west; the unfinished side faces south. The fact that this incomplete face remains unfinished for all three phases of Tiwanaku construction indicates a clear policy of finishing only the west and north sides. An approach from the west side, then, would highlight the building's monumentality while hiding its imperfection. The use of temporary materials such as thatch and textiles to mask this incomplete state is a real, though unconfirmed, possibility. Even if this were the case, approaching the Pumapunku Complex from the east does little to highlight the monumentality of the Main Platform. The tallest side, raised twice in the Main Platforms' history, is the west side, where the slope of the ground surface accentuates its height even more. The Earthen Esplanade, west of the Main Platform, adds significantly to the illusion of monumentality. Any suggestions that the Main Platform is unfinished due to lack of resources or labor is without merit, for there was sufficient labor and resources to modify the Main Platform on two occasions, and, each time, the south and possibly east sides were not finished while the north and west were polished to perfection. Judging by a dated carbon sample found below the Green Surface, the Main Platform I was completed sometime after AD 550. Judging from the dates of abandonment of the Akapana Pyramid, the Pumapunku Complex was in use for nearly a half millennium.

The Eastern Plaza, described in one of the most important ethnohistorical sources in the Andes (Cobo 1939), forms an essential part of the Pumapunku Complex. I find it

odd that such a prominent space has been almost completely ignored. In points 1 and 4 in section 9.2, I stated the improbability that the eastern side and plaza served as an area for gatherings separate from activities in the rest of the complex. The manner of passage from the Inner Courtyard to the Eastern Plaza is unknown at the present time. There is no wear on the Large Stone Slabs that can be attributed to the passage of people, unlike the heavily worn Western Stairway; nor are there indications of a gateway or stairway on the eastern side of the Large Stone Slabs. Access to the buildings that presumably stood on the slabs may have been restricted, and people may have traversed from the Inner Courtyard to the Eastern Plaza around the Large Stone Slabs. According to the description by Cobo, the area around the Large Stone Slabs was paved. Surface observations demonstrate that this area is large and relatively flat, leaving sufficient room to move from the Inner Courtyard to the Eastern Plaza without passing through the buildings on the Large Stone Slabs. Future excavations will show if there is in fact a stairway beneath the gentle incline that runs from the Inner Courtyard to the Eastern Plaza.

Placing the principal entrance on the west has serious implications for the structure of activities within the Pumapunku Complex. In short, the Pumapunku Complex is a linear complex built to channel people from west to east, from an area beyond the boundaries of Tiwanaku to the largest plaza space within Tiwanaku. Ritual action probably took the form of a procession that began in the Western Plaza, west of the Main Platform and Earthen Esplanade. The procession ascended to the Earthen Esplanade, entered the Main Platform via the Western Stairway, and terminated in the Eastern Plaza.

Passage from the Western Stairway to the Inner Courtyard was restricted and directed via the walled and roofed Passageway.

## 9.5 Form and Structure of Human Action at the Pumapunku Complex

In this following section, I will give an account of the reconstructed approach to and procession through the Pumapunku Complex as seen through the eyes of a pilgrim.

The reconstruction is supported by the archaeological data, and the methodology for describing the three-dimensional spaces of the complex was detailed in Chapter 1.

### Approaching Tiwanaku and the Western Plaza

Approaching Tiwanaku, the Pumapunku Complex first appears to our pilgrim as a visibly imposing landmark several kilometers away. Standing in the Western Plaza at the base of the Earthen Esplanade, most of the Main Platform is obscured from view by the Earthen Esplanade, as is all of Tiwanaku. Our pilgrim cannot see the towering mass of the Akapana Pyramid and the surrounding buildings, nor the snowcapped peak of the Illimani mountain farther west. At this point, the pilgrim stands 7 meters below than the surface of the Earthen Esplanade and 17 meters below the tallest point of the Main Platform. Unless one is familiar with the steeply inclined terrain, the act of climbing the Earthen Esplanade occupies all one's attention and forces one's vision down. However, once the top of the Earthen Esplanade is reached and the pilgrim's vision is suddenly raised to the normal horizontal level, the pilgrim has his or her first close encounter with the monumental Main Platform. The Main Platform is so close as to occupy nearly the

entire field of vision. Fine detail, decorations, colors, and brilliant metals are visible, and they become more apparent and dazzling as our pilgrim gets closer to the Western Stairway. This initial encounter with the Main Platform was evidently meant to be enthralling, and with a view to increasing the dramatic effect, several ingenious architectural techniques were put into play. Raising the western side on the Main Platform after the initial construction is the most obvious one. Closely stacked, the stone-faced revetments increase the illusion of height, while the gentle lateral incline of the revetments augment the illusion of width.

#### The Western Stairway and the Passageway to the Inner Courtyard

A procession to the Inner Courtyard begins at the Western Stairway. Passing underneath what must have been an opulently decorated gateway, the pilgrim walks across the Main Platform through a narrow Passageway that is bounded by high walls and a roof. The Passageway is dark, possibly illuminated only by incidental light from the Inner Courtyard entrance 50 meters away. To enter the Inner Courtyard, our pilgrim walks up a slight incline and passes through at least two monumental gateways. The critical detail of the Passageway is that the important iconography is located beneath the lintels of the gateways; thus only when passing underneath the gateways, moving from the Western Stairway to the Passageway or from the Passageway to the Inner Courtyard, can a pilgrim see and interpret the iconography. The pilgrim then crosses the Main Platform and Inner Courtyard under the gaze of a series of mythical figures. Hundreds of people could view the western monumental side of the Main Platform at the same time;



on the other hand, crossing the threshold of these gateways could only be done by a single person or by a few people standing side-by-side. One might conclude that this symbolically loaded act was meant to be a personal or introspective experience.

The Western Stairway allows fairly easy and direct access to the Inner Courtyard while preventing access to the proceedings in process. Waiting outside the Western Stairway 3-4 meters below the level of the walled Passageway, our pilgrim quickly loses sight of those entering the passageway. Once inside the passageway, the pilgrim would have at best the occasional brief glimpse of the Inner Courtyard at the end of the 50-meter Passageway. Although the Passageway cuts off any view of the Inner Courtyard, acoustically it could have served as a megaphone for the activities taking place inside. This is only a suggestion at this point and would need to be tested, but it is possible that the open mouth of the Passageway where it enters the Inner Courtyard would have collected the sounds that deflected off the Inner Courtyard wall or the towering facade of the stone buildings on the Large Stone Slabs. These sounds would then be directed down the narrow and roofed Passageway and projected to the area west of the Main Platform. The acoustic qualities of the Passageway may have increased the sense of apprehension and expectations surrounding the activities that took place in the Inner Courtyard prior to any direct physical or visual contact.

During Phase 3, the Pumapunku Complex, the Passageway is sealed and a new route is placed across the summit of the Main Platform. The alignment of the Western Stairway with the Stairway of the Inner Courtyard is the same as that of the earlier Passageway, but the present surface of the Main Platform is too eroded to determine

whether a formal accessway connected the two or our pilgrim could wander around the summit until deciding to descend into the Inner Courtyard. There is little evidence to argue conclusively for either position, but based on the previous two phases, I suggest that our pilgrim was similarly restricted to a direct route to the Inner Courtyard.

#### Inner Courtyard and Sunken Court

After a 50-meter journey through a narrow and dark passageway, our pilgrim crosses the final gateway and arrives inside the Inner Courtyard. The Inner Courtyard is sheltered from the high altiplano winds by walls on all sides that allow sounds like speech, chants, music, etc., to be heard across the defined space. These high walls obstruct the pilgrim's view of the colored surface of the Main Platform and all but the tops of the tallest structures at Tiwanaku, effectively restricting hearing and vision to the area defined by the Inner Courtyard walls. The ceremonies that were celebrated here took place in the most iconographically rich and complex area of Tiwanaku. Scattered around the Large Stone Slabs lie carvings of Andean crosses and iconic doorways, along with the remains of two if not three large gateways (Protzen and Nair 1997). The content and manner of presentation of ritual messages here differs radically from that of the walled Passageway.

The walled Passageway is narrow and dark, and only a small number of people could appreciate the important iconography at the same time. In contrast, the decorations and iconography on the buildings overlooking the Inner Courtyard are front-facing, allowing a large gathering of people to view and interpret them from all parts of the Inner

Courtyard. In a completed state, these buildings and monumental gateways would presumably have been covered with brilliant metals and painted with contrasting colors of red, yellow, and green. The liberal use of colors and ornaments may have been intended to overwhelm and produce a sense of awe in our pilgrim (Rapoport 1982).

The small Sunken Court is located in the approximate center of the Inner Courtyard. Not readily apparent from the Passageway, our pilgrim notes its presence once inside the Inner Courtyard. It is heavily damaged, and limited excavations produced no evidence of a stairway or ramp. If the Inner Courtyard was accessible, it could have accommodated only a limited number of people; yet it is deep enough that one would have to stand on its edge in order to view it in its entirety. It is possible that a monolith like those found in other inner courtyards (Ponce 1969; Goldstein 1993; Bennett 1934) existed here and would have been partially visible to those standing in the Inner Courtyard.

The Walls of the Inner Courtyard focus activities and the attention inward, to the Inner Courtyard, where our pilgrim encounters a spectacular array of ritual motifs. The ledge built into the Wall of the Inner Courtyard may have served as a bench, suggesting that those in attendance sat as part of the rituals. The refuse on the south side of the Main Platform indicates activities involving burning and the sacrifice and/or consumption of animals. The Vertical Conduit at the upper edge of the Inner Courtyard may have been the location of a basin for libations, similar to that of the Inka *ushnu* (Zuidema 1990). This conduit could have been a place to funnel liquids to the Inner Courtyard while

participants faced the large stone buildings further east. The symbolic aspects of this reconstruction are explored in Chapter 10.

Modern Andean festivals and those documented ethnohistorically are characterized by bouts of drinking. It is unlikely, though, that our pilgrim is consuming large quantities of liquids, like chicha, at this stage of the passage across the Temple Complex. Ceremonial artifactual remains at Tiwanaku suggest that similar feasting occurred as part of the rituals there (Alconini 1995; Janusek 1994), but to engage in ceremonial drinking in a confined area slanted towards the deep Sunken Court would have invited disaster. The Sunken Court would have become a repository of injured revelers, not to mention a collection pool for the urine from large numbers of people drinking all day. Some form of toasting could have taken place, but extended periods of drinking would not have been practical.

### Stone Buildings

There does not appear to be any direct access from the Inner Courtyard to the large stone buildings, not any significant wear on the Large Stone Slabs that would indicate the passage of a large number of people. Pilgrims apparently would not walk through the large stone buildings on the Large Stone Slabs; instead they would go around the sides of the buildings to the Eastern Plaza. The stone buildings represent a highly restricted space probably reserved for a class of people distinct from our hypothetical pilgrim. The location of the stone buildings is prime: high above the Inner Courtyard, they also tower over the Eastern Plaza. They could have formed an elaborate stage for

public rituals that a small and select group carried out. The small area inside the stone buildings possibly provided a discrete restricted place for private activity.

There is, at the moment, no direct evidence for an access from the Inner Courtyard, across the Large Stone Slabs, to the Eastern Plaza. Although unconfirmed by archaeological excavations, the gently inclined surface around the Large Stone Slabs suggests that an access route might have been on the north and south sides of the Large Stone Slabs.

#### Passage to the Eastern Plaza

Moving from the Inner Courtyard to the Eastern Plaza, one encounters a series of significant changes in architectural form and space. The colossal dimensions of the Eastern Plaza, the largest formally bounded space at Tiwanaku, stand in sharp contrast to the previous narrow Passageway and enclosed Inner Courtyard. The specific types of activities that may have occurred in this plaza are unknown, and artifactual data are lacking currently. Cobo describes a conduit or aqueduct running from the Main Platform to the Eastern Plaza, possibly to carved stones, one shaped like a bath, which may have formed the focus of activities. The specialized chicha-making structures found at Tiwanaku (Janusek 1994) and the ritual procession and dancing seen on textiles recovered in drier areas (Conklin 1991) suggest that people drank, ate, and danced in large plazas. The Eastern Plaza is clearly a site suitable for large scale ceremonial feasting.

There are several changes in visual emphasis worthy of note. The large stone buildings that occupy a central place along the western side of the Eastern Plaza and were essential to the ritual experience of the Inner Courtyard, may have continued to play a significant role in the activities in the Eastern Plaza. According to Cobo, one of the decorated gateways on the Large Stone Slabs faced east. From a good distance across the Eastern Plaza, our pilgrim could see the important iconography carved on the front and sides of this and the other gateways there, which may have formed an imposing background for ritual activities on the elevated Large Stone Slabs. This stands in sharp contrast to the iconography on the under-sides of the lintels of the Passageway, which could only be viewed by a few people at a time. Another important fact is the location of the Eastern Plaza. Our pilgrim started the procession 7 meters below the Eastern Plaza at the edge of the terrace upon which the city of Tiwanaku is located. Standing in the Eastern Plaza, our pilgrim is now at the same elevation as the city. Having entered the city, the pilgrim can admire the residences surrounding the plaza, the Akapana Pyramid, and the Kalisasaya Complex that rise to the northeast. More noticeable still is the towering snowcapped mountain of the Illimani farther to the west. Visible throughout the region, this mountain may have acted as a landmark for those approaching Tiwanaku. However, since the start of the procession in the Western Plaza, the Illimani has been obstructed by the mass of the Main Platform and by the buildings on the Large Stone Slabs. Walking from the Inner Courtyard to the Eastern Plaza, the pilgrim sees the mountain again, which forms in the pilgrim's mind a visual association between the final stages of the procession and the impressive peak.

## 9.6 Comparative Discussion

How does this interpretation of movement across the Pumapunku Complex compare to the three examples of monumental sites I described in Chapter 4? An answer to this question will provide insight into the meaning of the Pumapunku Complex.

### The Pumapunku Complex and the Inka Palace

The Pumapunku Complex compares poorly with the Inka Palace in several regards. The Inka Palace is primarily a residence, and much of the space inside is dedicated to storage, offices, and residences. Both are similar in that motion from one end of the complex to the other is linear in nature; however, unlike the case of the Pumapunku Complex where it is necessary to move across the entire length, access to and across the Inka Palace is heavily restricted. With the exception of the emperor and his immediate court, motion within the Palace is as limited as possible. The Inka Palace was a bounded, restricted static space; the Pumapunku Complex was built to funnel as many people through it as possible.

### The Pumapunku Complex and the Temple of Pachacamac

The Pumapunku Complex compares more favorably with the Temple of Pachacamac. Both are built to accommodate large numbers of visitors in large plazas, although the Pumapunku Complex lacks facilities like storage and housing to accommodate pilgrims staying on the grounds for several months at a time. The

Pumapunku Complex itself does not have the facilities to accommodate such a resident population, though there is a real possibility that such facilities existed elsewhere in the city of Tiwanaku. In both, gateways mark the passage from one area to the next.

One of the defining features of the Temple of Pachacamac is the hidden nature of the idol. A large portion of the complex is reserved for its care while the pilgrims wait in one of two adjoining plazas. While the Pumapunku Complex channels the pilgrims across its entire length, with the exception of the stone buildings, most of the pilgrims at the Temple of Pachacamac are barred from approaching the large pyramid complex housing the sacred idol. In this case, the spatial experience of the Temple of Pachacamac is less inclusive than that of the Pumapunku Complex: there are just two sets of expansive plazas.

#### The Pumapunku Complex and the Island of the Sun

The Pumapunku Complex compares quite well with the sanctuary of the Island of the Sun, although there are important differences. The sanctuary of the Island of the Sun is spread over several kilometers, while the Pumapunku is roughly half a kilometer long. The architecture of both is meant to funnel large numbers of people across a linear complex, at the end of which there is a large plaza, although there are places where gateways restrict access along the route to a single person. The foci of ritual activity in the large plaza at the Island of the Sun were the sacred rock and a basin for libations. At the Pumapunku Complex, a basin in the Eastern Plaza may have served a similar purpose.



## 9.7 Conclusion

The proposition that ritual motion at Pumapunku took the form of a linear procession results in a more complex view of ritual space and motion than previously imagined. Drawing on this proposed reconstruction and the phenomenological tour through it, we can draw a series of important conclusions.

The Pumapunku Complex is a linear complex nearly half a kilometer long. Following the route of the procession, the spaces change from the large Western Plaza to the narrow Earthen Esplanade that opens up before the Main Platform. The Passageway across the Main Platform is narrow and confined and leads to the walled and highly decorated Inner Courtyard and the small Sunken Court within. The spaces within the stone buildings are small, suggesting that they were restricted to use by a select few. However, the Eastern Plaza, the last element of this linear complex, is expansive.

I believe that the Pumapunku Complex accommodated large numbers of pilgrims. This may have been a relatively continuous, even flow of people, or a periodic flow marked by the influx of many people during special occasions. The architecture was designed to funnel a large number of people to the Inner Courtyard, which could have accommodated several hundred people, and then on to the Eastern Plaza, the largest public space at Tiwanaku, where thousands could have gathered. To pack the Eastern Plaza with thousands of participants, the flow through the rest of the complex must have been continuous. Perhaps the Inner Courtyard was filled, then people were shunted to the Eastern Plaza to make room for the next group.

A guiding architectural tenet in the structuring of the Pumapunku Complex is the need to impress through an illusion of monumentality. By putting its best face and principal entrance westward, the Pumapunku literally turns its back on the city's earlier monumental core. In effect, it creates a new architectural complex focused completely upon itself, especially in the last two phases, by utilizing natural and architectural optical illusions that augment its visually imposing nature. The revetments, especially those on the western side of the Main Platform, are tall and stacked closely together, giving the illusion of greater height. The use of natural topography to heighten the perception of monumentality is a novelty, in view of the fact that the other monuments of Tiwanaku are built on level ground. In the case of the Semi-subterranean Temple, the structure is below the ground and nearly out of sight. The construction methodology at Pumapunku Complex called for deliberate increases in vertical dimensions, even at the expense of losing its symmetrical form.

A defining characteristic of the Pumapunku Complex is the alternating use of large and small areas, all bounded by walls, connected to one to another by monumental gateways. The potential for types of human activity in each space is different, and, as we saw in the visual tour, the communicative potential of the monument changes as one moves across the linear complex. In this procession across the complex, the strategic placement of lines of sight and iconography are critical cues designed to freeze the perspective along different points of temple, turning the act of moving across the complex into a series of visual revelations framed by Tiwanaku religious motifs. The creation of distinct but related spaces divides the spatial experience into separate components, which,

in turn, highlights a separate aspect of the monumentality of the Pumapunku Complex. It is effectively a monumental tour de force of all the symbolism that is important to Tiwanaku, one that transformed physical movement into a process of indoctrination and reaffirmation of what it meant to be Tiwanaku. To enter the Pumapunku Complex and the city of Tiwanaku, one would travel from the everyday profane world through a series of ritually defined stages, before arriving inside the sacred ceremonial center.

Given these observations, I conclude that the architectural arrangement of the Pumapunku Complex created a spatial experience most like the third model I described in Chapter 4, the sanctuary of the Island of the Sun. Based on the analogy with the Island of the Sun, procession across the Pumapunku Complex was a pilgrimage involving moments of deep introspection at places like the gateways, combined with large-scale elaborate festivals in the large plazas. This procession exposed the pilgrim to a variety of important Tiwanaku symbols and created a personal association with the monumental ritual center of the Pumapunku Complex and, consequently, Tiwanaku.

These interpretations rest on an approach based on the perspective of a human being in the architectural spaces of the Pumapunku Complex. Though I am convinced of the validity of my interpretations, I recognize that this approach is only one manner of viewing a very complex and multifaceted structure. In the following chapter, I will examine a second approach, one that explores the idea that the Pumapunku Complex was designed to reflect a cosmological model of the universe. I will compare the results of both approaches and discuss my contention that the combination produces a more holistic view of meaning at the Pumapunku Complex.

## Chapter 10

### The Symbolic Meaning of the Pumapunku Complex

In the previous section, I proposed a potential interpretation of the Pumapunku Complex from the perspective of the human subject. Viewed from this perspective, the spatial experience at the Pumapunku Complex was similar to that at a pilgrimage site. An immediate criticism of this approach, from the structuralist perspective and from that of the architect, might be that ritual space is not built solely along functional lines but also follows strict religious guidelines. According to this critique, the primary purpose of ritual architecture at the Pumapunku Complex was to create a heaven on earth and an architectural representation of the cosmos, not to impress the common people. As Paul Wheatley (1971: 417) points out, “sacrality (which is synonymous with reality) is achieved through the imitation of a celestial archetype.” The creation of a ceremonial center and the ritual architecture within is a reproduction of the cosmos, and the ritual activities of the people imitate the cyclical movements of the universe and maintain order in the terrestrial world (Wheatley 1971). The guiding criterion for ritual architectural design is thus a culturally construed idea of the cosmological order of the universe. Wheatley’s examples of ritual architecture that represent the cosmos are taken primarily from the Old World and Asia, but they resonate with pre-Columbian America (Wheatley 1971; Eliade 1959; Tuan 1977).

We know from ethnohistorical sources that the Inka considered Cuzco to be the center of the universe and went to what seem like extremes from our Western perspective

to manifest this fact, such as by bringing sand from Pacific beaches to create the central plaza (Sherbondy 1992) and by dragging large stone huacas from the provinces to the capital. The layout of a new settlement with roads, a plaza, an *ushnu*, and temples, followed strict ritual lines in order to recreate Cuzco and hence a new center of the world (Hyslop 1985). I suggest that this perspective is also appropriate for a ceremonial center such as Tiwanaku, and I will explore this interpretation with the very same data I examined in the previous chapter. Finally, I will compare and contrast the meaning I deduced using a phenomenological approach with the meaning I infer using the structuralist perspective.

#### 10.1 Inka Interpretation of Tiwanaku Ritual Space

A methodology based on analogical reasoning could consist of first describing the formal characteristics of several structures of known function and then comparing them to my archaeological data. The principal assumption guiding this procedure would be that similarity in form and, if the evidence is available, use, is sufficient justification for proposing similarity in meaning. A series of recent articles (Stahl 1993; Wylie 1985, 1988, 1989; Isbell 1995) specifies the guidelines for the proper use of analogy. I have no criticisms of this method; on the contrary, I already applied such a method in the previous chapter in order to interpret the functional meaning of the Pumapunku Complex. In this chapter, I explore the symbolic meaning of the architectural form of the Pumapunku Complex, but I also have the opportunity, through historical accident, to pose an important question: What did the Inka think the Pumapunku Complex meant? Clearly, I

cannot ask the Inka to detail what they thought when they contemplated the monuments of Tiwanaku; there are, nonetheless, archaeological remains that reflect a series of decisions made by the Inka in their efforts to incorporate the Pumapunku Complex into the empire's ritual infrastructure. I endeavor to discover the analogical reasoning used by the Inka in their assigning of meaning to the Pumapunku Complex. In other words, I am engaging in the archaeology of the pre-Columbian interpretation of earlier ruins.

The ethnohistorical data clearly show that the Inka considered Tiwanaku to be a significant ritual place, the birthplace or creation place of the first Inka (Betanzos 1987; Garcilaso de la Vega 1987; Molina 1988; Sarmiento de Gamboa 1907). Tiwanaku became a *huaca* sited on one of the most important ceque lines radiating from Cuzco, and an Inka settlement was founded at Tiwanaku to maintain and venerate the Pumapunku Complex. Both Cieza de León (1939) and Cobo (1939) saw the remains of this settlement near the Pumapunku Complex. The excavations in 1977-78 and 1989 fully uncovered the remains of a large Inka structure. Clearly, this Inka site was a planned settlement of strong ritual importance. However, the question remains, why did the Inka choose to locate their settlement next to the Pumapunku Complex and not, for example, the Akapana Pyramid? The Akapana Pyramid was larger, and several other important ritual structures were clustered in the immediate environs. It would have been, in my opinion, the more attractive location because of the greater number of ritual structures and the commanding height of the Akapana Pyramid. Yet the Inka presence at and around the Akapana Pyramid is almost negligible; instead they invested their efforts at the Pumapunku Complex.

We find our first clue to the Inka perspective on the Pumapunku Complex in a passing reference penned by the scrupulous 17th century priest Cristóbal de Albornoz.

Compiling an extensive list of indigenous religious and ritual places, he describes an Inka structure of consequence:

hay otra guaca general en los caminos reales y en las plaças de los pueblos que llaman uznos. Eran de figura de un bolo hecho de muchas diferencias de piedras o de oro y de plata. A todos los tenían hechos edficios en donde tengo dicho en muchas partes como Bilcas y en Pucara y en Guanuco el Viejo y en Tiahuanaco a hechura de torres de muy hermosa cantería. Sentávanse los señores a beber a el Sol en dicho uzno y hazían muchos sacrificios al Sol. Hanse de mandar deshazer estos edificios que, como son públicos, ofenden por lo que significan, que en otras partes hay muchos más edificios y con facilidad se desharán. (1967: 24)

There is another ritual site along the main highways and in the town squares that is called *uznos*. They are shaped like newel posts made of many different types of stones or of gold and silver. They have made buildings for all of them, as I have said, in many places such as Bilcas and in Pucara y in Guanuco el Viejo y en Tihuanaco in shape of a tower of very beautiful stonework. The lords would sit to drink to the Sun in these uznos and they made many sacrifices to the Sun. These building are to be destroyed, for as they are public places, they offend because of what they represent. In other partes there are many more such structures and will be easily demolished, (translation mine)

There are two thought-provoking points in this passage. The first is that while ushnus are found throughout the Inka empire, Albornoz decides to mention only four: at Vilcas, Pucara, Huanaco Pampa, and Tiwanaku, all formed like towers and built with fine masonry. The extensive survey by John Hyslop (1990) of the provincial sites of the Inka Empire confirms the ubiquity of ushnus and documents a wide variation in form, ranging from the small ushnus in present-day Argentina to the imposing example at Huanaco Pampa. The largest and most monumental ushnus are found in important provincial sites such as Huanaco Viejo and Vilcas. It would appear, then, that Albornoz recognizes the

ubiquity of the ushnu but mentions by name only the most imposing or the most important. However, there is no large imposing Inka structure at Tiwanaku, especially not one the size of the ushnu at Huanaco Pampa. What is Albornoz referring to? Before I can continue this line of thought, I should enumerate the qualities of the Inka ushnu. We are fortunate the Cieza de León penned a description of the impressive ushnu at Vilcas when nearly all the major architectural elements were still in place.

On one part of this flat area [plaza], towards the rising sun, was a shrine of the rulers, made of stone, enclosed by a small wall, from which projected a not very large terrace six feet wide, with other stone walls set upon it to where the seat was on top where the lord went to pray, made of a single block so large that it is eleven feet long and seven wide, in which two seats are made for the purpose mentioned. They say that this stone used to be full of golden jewels and precious stones which adorned the place that they so much venerated and esteemed, and on another stone, not small, now in the middle of the square, like a baptismal font, was where they offered sacrificed animals and young children (so they say), whose blood was offered up to the god. . . . In the middle of the great square there was another bench, like that of a theater, where the Lord-Inka sat to watch the dances and lay feasts. . . . Behind this shrine were the palaces of Topainga Yupangue and other large buildings. (Cieza de León 1553: 126, from Hyslop 1990)

According to Cieza de León, the ushnu at Vilcas consisted of several elements, including a large, stepped, revetted platform surrounded by a wall (Figure 10.1). In the plaza there were two additional structures: a basin and a second stone structure where the Inka emperor would sit. Cieza also reports of a drain that ran across the center of the plaza that may be associated with the ushnu. Since the ushnu platforms were high-profile ritual structures, their very visibility doomed them. As Albornoz (1967: 24) said, “Hanse de mandar deshazer estos edificios que, como son públicos, ofenden por lo que significan” - these structures are to be destroyed for, as they are public, they offend



because of what they signify. The ushnu of Cuzco probably was one of the first to be destroyed, although many more remained in place. In an expansive survey of the site and architecture of the Inka empire, Hyslop (1990) notes, like Cieza de León, that the ushnu is not necessarily characterized by one particular feature, but rather by a complex of features. Notwithstanding the ushnu of Cuzco, which apparently was rather unique, I can make several generalizations about the Inka ushnu at provincial sites.

The ushnu is a combination of several distinct features: a flat stone, a basin, a drainage, and a platform (Figure 10.1). The platform is located either in or near the center or on one side of the plaza, which in turn is the center of the settlement. The platform is stepped and revetted by stone. Access to the summit is via a single central stairway. If the platform is located in the center of the plaza, the drainage and the basin may be on the summit or nearby. The platform is connected to the side of the plaza through various means such as a drain, a road, or an alignment of its central stairways with a series of gateways, as at Huanaco Pampa (Morris 1985). If the platform is located on the side of the plaza the stone, basin, and drain are located in the center of the plaza. The stairs of the platform face the center of the plaza and a drain may connect the two.

An important point that I should stress is that the platform cannot be considered an isolated architectural element, although it is the most visible part of the ushnu complex. It is directly related to the stone, basin, and drain, and all these elements form part of the larger centrally located plaza.

## 10.2 Meanings of the Ushnu

Graziano Gasparini and Luis Margolis (1980) note references to the ushnu complex as an altar, a place of prayer, a place of sacrifice, a seat, throne, and a place where justice was handed down. Still, there are a few consistencies. The basin was used to pour libations of chicha beer as offerings to the ancestors, and the flat stone was either an altar for the location of an important idol, like the gold idol of the sun at Cuzco, or for the placement of sacrifices, be they of materials, animals, or humans. Access to the platform was limited to those of highest rank. It seems that the Inka spoke to the population from this commanding point and reviewed military parades, festivals, and ceremonies. Other types of exclusive ritual may have been conducted here, including the observation of astronomical phenomena.

R. Tom Zuidema (1990) finds less ambiguity in the conceptual understanding of the ushnu complex as an opening into the ground through which offerings to the ancestors were made. The ushnu was, then, a means to communicate with the subterranean world. Water, borne on winds from all directions, was sucked through the ushnu and re-circulated through the universe. The ushnu also marked the location directly beneath the solstice sun. Combining both ideas-the ushnu as the point of communication to the underworld and as the place marking the exact location beneath the solstice sun-effectively makes the ushnu the center of the universe, that is, the axis mundi.

But what of the missing Inka ushnu at Tiwanaku? Cristóbal de Molina (1988) describes the large planned settlements of the Inka as having a great royal palace and a large plaza with a high square platform reached by a high stairway. Furthermore, since

Tiwanaku held such strong ritual importance for the Inka, an ushnu would seem to be required. The answer may be found in my proposal: I contend that the Pumapunku Complex was reused by the Inka as an ushnu. Reviewing the evidence, I would like to point out that the similarities are striking:

Ushnu	Pumapunku Complex
Revetted platform	Revetted platform
Single stairs	Possible two sets of stairs
Large plaza	Large Plaza
Drain from revetted platform to plaza	Drain from revetted platform to plaza
Altar and basin connected to a drain	Two stones, one shaped like a bath according to Cobo
Ritual focus of Inka settlement	Ritual focus of Inka occupation

Both structures have a large revetted platform with a high stairway, and drains that lead to a large plaza. The Pumapunku Complex is distinct in that the revetted platform has two sets of stairs, not one. Though unconfirmed by excavations, Cobo's description indicates that a drain led from the Main Platform to the Eastern Plaza where two stones, one shaped like a bath, were located. Quite possibly, he is describing the ushnu basin, a point that will have to await confirmation in further excavations. In certain examples of Inka ushnus, Hyslop notes that the revetted platform has the basin on the summit. At the Main Platform at the Pumapunku Complex, the drainage of water in

the Inner Courtyard leads to the center and leaves through the small Sunken Courtyard.

The entire Main Platform consequently acted as one large drainage basin.

I would conclude, then, that in light of formal architectural similarities, the Inka considered the Pumapunku Complex to be an ushnu. I must return, nonetheless, to the original piece of evidence, the passage from Albornoz, that gave impetus to this idea of the Pumapunku Complex as an ushnu, which leaves me with the nagging question: Why does Albornoz mention an ushnu at Tiwanaku while the observant Cobo and Cieza de León neglect to mention one? There is one salient difference between these sources: Cobo and Cieza de León personally visited Tiwanaku while Albornoz did not. In most cases, I place more emphasis on first-hand descriptions than on second- or third-hand knowledge of a distant place. Therefore, I would normally have more faith in Cobo and Cieza de León, whose previous descriptions have been shown to be accurate. The issue, though, is not only about reliability, but about perception. Cobo and Cieza actually traveled to Tiwanaku and saw the Pumapunku Complex for what it was—a magnificent building that predated the Inka Empire. This was their interpretation of the site. Albornoz did not set foot there and instead learned about native religious practices in large part through extirpation campaigns he carried out in the field, mostly in the old Soras and Lucanas provinces of modern Peru's department of Ayacucho. He reported this activity in various *informaciones de servicios* presented to the bishop of Cuzco in 1569, 1570, 1577, and 1584 (Barnes, personal communication). Albornoz's field informants appear to have been various local *curacas*, *segundas personas*, and other prominent Indians already officially converted to Christianity. Nevertheless, the fact that Albornoz never visited

Tiwanaku should not be taken as a point against him, but in fact can be seen as the principal strength of this passage. He was not describing the structures of Tiwanaku from his Western perspective, but instead recording an indigenous interpretation of the buildings of Tiwanaku. The Inka interpreted and used the Pumapunku Complex as an ushnu, an interpretation of the site that became common knowledge as the Inka propagated their exploits and mythic history across the provinces of the empire. When asked about the ushnus, Albornoz's informants replied truthfully: There is a large ushnu at Tiwanaku.

### 10.3 Interpretations

The initial observation that lead me to pursue this line of thought was slight: a single mention by an assiduous propagator of the Catholic faith who was preoccupied with the eradication of what were, in his eyes, dangerous symbols of a pagan culture. The supporting evidence, ethnohistorical and archaeological, is more convincing. The formal similarities between the two structures are striking, and their spatial relationships to other buildings in the Inka settlement are also similar. Functionally, both structures funneled water below the ground. The Inka conceived of the Pumapunku Complex as an opening into the ground from where, according to the ethnohistory, the first Inka sprang from the ground. It is, by all definitions, an ushnu.

At this point, I would like to follow a speculative line of thought related to the history of the Inka conception of the ushnu. It has been noted on several occasions that the ushnu at Cuzco is small, consisting solely of a basin and a flat stone, but the ushnus at

important provincial sites are large, the most evident feature of which is the large stone platform (Zuidema 1989; Gasparini and Margolis 1980; Hyslop 1990). Several researchers have puzzled over this important ritual transformation, observing that the Inka had little propensity for solid buildings (Conklin 1986). One suggestion is that the concept of the platform originated outside the Cuzco area, possibly from the solid platforms of the coastal tradition (Agurto 1987). Hyslop (1990) suggests that Vilcas Waman, because of its proximity to Cuzco and the fact that it was one of the first conquered areas, was the ushnu with a platform that served as a prototype for all others. Nevertheless, he urges caution because the archaeological data from the period prior to the Inka expansion are still too limited to pinpoint the sources of the concept of the ushnu platform.

Acknowledging this point, I would like offer some preliminary thoughts on the origin of the ushnu. I agree with Santiago Arguto that the source of the ushnu platform comes from outside Cuzco; but I disagree with the proposition that the source is the adobe pyramids along the coast of Peru. The dating is difficult, and the ethnohistorical sources are ambiguous, but one of the early Inka conquests was of the Lake Titicaca region (Betanzos 1987). In this early point in their imperial career, the Inka appear to have encountered the ruins of Tiwanaku and made the Pumapunku Complex the center of a ritually based settlement. As I argued above, the Pumapunku Complex became an ushnu or, more to the point, the prototype for all provincial ushnus. The similarities are more compelling than those between the adobe pyramids of the coast and the Inka ushnu; however, conceptually, the Pumapunku Complex also served the political and religious

needs of the Inka. To restate the evidence, the ushnu is directly associated with the plaza. And we know from the ethnohistorical records that the plaza at Cuzco was made from sand from the beaches of the Pacific, and any new plazas that the Inka built were “baptized” with some of this sacred sand. According to Jennette Sherbondy (1992), the sand of the plaza in Cuzco represented the sea, which was considered the source of all water and thus of life. Lakes, springs, and other bodies of water figure prominently in the mythic histories of creation for many ethnic groups; therefore, by placing the source of all water at the center of Cuzco, the Inka effectively “relocated” the symbolic origins of all people to their imperial capital. The other prominent element in the plaza was the ushnu, or as I propose it, the representation of the Pumapunku Complex and, by extension, Tiwanaku. Tiwanaku represented the origin place of the Inka and was also associated with Lake Titicaca. The Inka believed that the waters of Lake Titicaca and the Pacific Ocean were connected and circulated together (Zuidema 1989). Thus the Inka’s use of the symbolism of the center or axis mundi was clear and forceful and reproduced at every important settlement.

Nevertheless, the genius of the Inka lay in the utilization of this symbolism for their own purposes. The ushnu platform, found only in conquered provinces, was directly associated with Inka nobility (Zuidema 1989). Consequently, one of the first acts of the Inka in a conquered province was to order the building of the ushnu and, from that towering platform, to greet the newly conquered people, where “all the people and captains pay obedience to him, each with his own people” (Pachacuti Yamqi 1879: 299). Only the emperor and other important members of the empire could sit on the summit of

the ushnu, a fact first communicated to Pizarro by the imprisoned Atawalpa. In my opinion, the Inka were not associating themselves with the general concept of the center as axis mundi but with a specific center, that is, Tiwanaku. The Inka had co-opted Tiwanaku as their own through a few changes in their mythic history. Tiwanaku was proof of their supremacy in the world because of their first-born status, and to demonstrate this fact to all, they recreated the center of the world, the Pumapunku Complex, in every new province. Since only the Inka could occupy the platform, their personae were directly associated with the axis mundi and the power of Tiwanaku, the mythical place of genesis.

My data strongly support the proposition that the Inka considered the Pumapunku Complex to be an ushnu. Determining whether or not it was the prototype for all other ushnus, however, would require a great amount of additional archaeological and ethnohistorical data in order to untangle the history of ushnu construction. But from what we know of the Inka, such a scenario makes perfect sense. In the course of their conquests, they co-opted other religious ideas, incorporating and elaborating some ritual locations while destroying others. We know that Tiwanaku was transformed and incorporated into their mythic history. Whether or not the architectural form of Tiwanaku was transferred and recreated will require further research throughout the Andes.

#### 10.4 The Inka Ushnu at Tiwanaku

In its last pre-Columbian stage of use, the Pumapunku Complex was an ushnu. Does the last use and meaning attributed to the Pumapunku Complex by the Inka have



any connection to the meaning of the structure for its Tiwanaku builders and users?

Considering the architectural similarities, I would venture to make the argument that the Tiwanaku architect did indeed conceptualize the Pumapunku Complex as ushnu-like. To strengthen this position, I would need to show that the Tiwanaku architect conceptualized the Pumapunku Complex in the same manner as the Inkas. Without a pre-Columbian writing system, this is indeed a daunting task, but I do have one telling piece of evidence. Zuidema's interpretation stresses the most essential aspect of the ushnu, the opening into the ground (Figure 10.2). As described in Chapter 6, the Red, Green, and possibly Yellow colored surfaces on the summit of the stone-faced Main Platform have the form of a Tiwanaku gateway. Seen in plan view, the summit of the Main Platform appears to be a Tiwanaku gateway lying flat on the ground. This leads me to pose the logical question: Where does this stylized gateway lead? The obvious answer: down into the ground, through the Sunken Court, and into the conduit that takes in the water and other liquids that find their way to the Inner Courtyard and the Sunken Court. The Main Platform was, metaphorically speaking, an opening that lead below ground level, and conceptually, this is the definition of an Inka ushnu. I therefore suggest that one meaning of the Pumapunku Complex was, for the Tiwanaku, a gateway to the underworld, an axis mundi where the heavens, the earth, and the underworld converged.

## 10.5 Final Considerations

In this and the previous chapter, I have interpreted two sets of meanings for the Pumapunku Complex using two different approaches at different scales and levels of

resolution. Are these approaches at odds with each other? Do they conflict or do they complement one another and consequently create a more holistic view of a complex structure? In short, yes, they do all of the above; yet both approaches are, in my opinion, necessary if we are to grasp at least part of the meaning that the Pumapunku Complex held for the Tiwanaku builders and users and the later Inka occupants.

Addressing the first question, these two approaches provided two distinct meanings. The first examined the Pumapunku Complex from the point of view of a human subject. In a recent interpretation of ritual space at Tiwanaku, Jerry Moore (1996a) considered the small sunken courts to be the focus of ritual activity. But he sees ritual action as a static gathering around important iconography, whereas I found that the spatial experience at the Pumapunku Complex was that of a procession, nearly a half a kilometer long, that would take the subjects across a wide variety of spaces and expose them to various types of symbolism. Comparing this perspective of the Pumapunku Complex to other documented examples of Andean ritual action in monumental settings, I discovered considerable similarities to the pilgrimage route on the Island of the Sun. From this perspective, I interpreted a carefully constructed ritual environment built to elicit certain feelings, responses, and reactions from those processing through the complex. Lines of sight, facades, passageways, and accesses, were carefully planned to funnel a large number of people through the complex and expose them to all the symbolism that was important to Tiwanaku.

I arrived at a different meaning when I considered that the formal layout of the Pumapunku Complex might manifest a cosmological viewpoint of the world. Comparing

and contrasting the Pumapunku Complex to the Inka perception of architecture and cosmological space, I concluded that the complex was viewed as an ushnu by the Inka, and, by analogy, held a similar meaning for the Tiwanaku architect. The Tiwanaku architect made this concept manifest by designing the Main Platform of the Pumapunku Complex as an opening, a gateway between the terrestrial world and the subterranean world. A complex set of hydraulics drained water into the heart of the Main Platform and through the center of this gateway, a metaphor for passage underneath the ground. Several architectural elements like the copper clamps and the large stone slabs were not necessary from a strict Western engineering perspective, but to the Tiwanaku architect, they added to the symbolic strength of the structure. The precision of the layout and construction of the architecture is so impressive that I feel that precision and symmetry were in effect requirements for designing and defining ritual space. During the first construction phase, the colored surface of the Main Platform created a perfectly symmetrical iconic gateway. The surrounding revetments framed this gateway, thereby producing a symmetry and harmony of architecture that could not be fully appreciated from the ground. To me, the Tiwanaku architect recreated cosmological perfection through geometric perfection.

Seen from a diachronic perspective, these two approaches indicate two goals: to preserve a precise geometric and, thus, ritually correct form, and to create an impressive and awe-inspiring experience for the arriving pilgrim. The modifications to the Main Platform resulted in a dramatic increase in the mass and volume of the west side, but at a cost. The south side of the Main Platform was never completed and, as a result, it

forfeited its symmetry. The iconic gateway formed by the summit of the Main Platform consequently lost its precise form and became lopsided. Funneled through the impressive western side, the pilgrims arriving at the complex would not notice this discrepancy; they received the impression that the entire Pumapunku Complex was a finished and monumental structure. It seems, then, that the priority was to create an impressive ritual experience for the pilgrim, rather than to maintain the geometric precision of the symbolic form. Is it possible that this reflects a change in the authority of the ritual institutes at Tiwanaku? This evidence suggests to me that the ritual priorities shifted during the later phases of the Pumapunku Complex, from conforming to concepts of precise geometric ritual space to creating an awe-inspiring experience for the pilgrims. Perhaps Tiwanaku had become such a powerful draw for pilgrims that the need to maintain prestige and attract more pilgrims impelled the Tiwanaku architect to create ever more visually impressive ritual settings.

## TABLES

Trench:	Excavation Location Information:		
Trench P1	Excavated by Cordero in 1977-78 and Estévez in 1989		
Trench P2	Excavated by Cordero in 1977-78 and Faldín in 1989		
Trench P3	Excavated by Portugal in 1989		
Trench P4	Excavated by Cordero in 1977 and Rivera in 1989		
Trench P5	Excavated by Rivera in 1989		
	Easting	Southing	Elevation
Trench P6	44.764	35.591	-6.741
Trench P6	44.54	29.892	-6.882
Trench P6	43.567	29.976	-6.824
Trench P6	43.824	35.608	-6.877
Trench P7	51.98	15.531	-2.19
Trench P7	52.02	12.522	-1.662
Trench P7	46.98	12.522	-1.661
Trench P7	46.98	15.522	-2.26
Trench P8	48	12.522	-1.661
Trench P8	48.02	-35.775	-1.566
Trench P8	47.02	-35.775	-1.566
Trench P8	46.98	12.522	-1.661
Trench P9	48.03	-33.775	1.573

Trench P9	48.02	-35.775	-1.566
Trench P9	47.02	-35.775	-1.566
Trench P9	47.46	-33.775	-1.539
Trench P10	47.947	-52.562	-1.816
Trench P10	47.933	-53.984	-1.837
Trench P10	46.991	-53.972	-1.81
Trench P10	46.993	-52.559	-1.824
Trench P11	38.363	-17.388	-1.183
Trench P11	38.372	-19.377	-1.271
Trench P11	37.399	-19.436	-1.36
Trench P11	37.261	-17.414	-1.319
Trench P12	86.673	13.29	-3.635
Trench P12	86.495	11.474	-2.44
Trench P12	83.981	11.625	-2.508
Trench P12	84.003	8.624	-2.017
Trench P12	83.003	8.682	-2.006
Trench P12	82.979	12.693	-3.29
Trench P12	83.92	12.647	-3.332
Trench P12	83.937	13.416	-3.426
Trench P13	n/a	n/a	n/a
Trench P14	n/a	n/a	n/a

Trench P16	4.967	17.124	-1.233
Trench P16	4.821	15.674	-1.037
Trench P16	2.798	15.767	-1.02
Trench P16	2.94	17.247	-1.142
Trench P17	39.169	13.286	-1.487
Trench P17	39.111	12.635	-1.412
Trench P17	12.108	14.536	-1.176
Trench P17	12.165	15.119	-1.226
Trench P17	20.301	14.584	-1.368
Trench P17	20.341	15.515	-1.494
Trench P17	21.344	15.52	-1.446
Trench P17	21.332	14.544	-1.316
Trench P18	45.643	12.866	-1.492
Trench P18	45.638	12.251	-1.462
Trench P18	40.863	12.574	-1.363
Trench P18	40.887	13.189	-1.502
Trench P19	78.799	10.509	-2.082
Trench P19	77.642	9.96	-2.044
Trench P19	55.337	11.603	-1.594
Trench P19	55.418	12.081	-1.633
Trench P20	82.53	10.201	-2.19



Trench P20	82.506	9.608	-2.117
Trench P20	79.938	9.765	-2.021
Trench P20	80.047	10.393	-2.139
Trench P21	44.212	-44.084	-1.816
Trench P21	44.228	-44.979	-1.837
Trench P21	18.742	-44.95	-3.693
Trench P21	18.76	-43.924	-3.631
Trench P22	44.212	-44.084	-3.605
Trench P22	44.228	-44.979	-3.595
Trench P22	42.634	-44.969	-3.556
Trench P22	42.553	-44.066	-3.579
Trench P23	22.111	-43.973	-3.013
Trench P23	22.182	-44.994	-3.023
Trench P23	18.742	-44.95	-3.693
Trench P23	18.76	-43.924	-3.631
Trench P24	41.997	-45.08	-1.889
Trench P24	41.948	-50.078	-1.908
Trench P24	31.916	-50.049	-2.645
Trench P24	31.948	-45.057	-2.631
Trench P25	39.764	-42.589	-2.238
Trench P25	41.699	-45.925	-2.285

Trench P25	31.916	-50.049	-2.645
Trench P25	31.948	45.057	-2.631
Trench P26	36.863	-50.084	-2.313
Trench P26	36.924	-55.063	-2.219
Trench P26	31.827	-55.048	-2.521
Trench P26	31.912	-50.051	-2.643
Trench P27	38.018	-70.026	-1.587
Trench P27	38.056	-80.071	-0.9579999
Trench P27	37.052	-80.09499	-1.022
Trench P27	37.037	-70.078	-1.657
Trench P28	42.007	-72.095	-1.247
Trench P28	42.069	-77.095	-0.997
Trench P28	38.155	-77.111	-1.141
Trench P28	38.148	-72.096	-1.446
Trench P29	-3.087	-43.984	-2.965
Trench P29	-3.043	-45.054	-2.92
Trench P29	-8.013	-44.968	-2.73
Trench P29	-8.219	-43.853	-2.579

N.B. Corners of trenches are listed in the order southwest, northwest, northeast, southeast. All coordinates are in meters and on a grid that originates at the 1996 benchmark.

**Table 5.1: Locations of Excavation Trenches on the Pumapunku Complex**

<b>Trench</b>	<b>Feature / Level</b>	<b>Locus</b>	<b>Structure</b>	<b>Phase</b>
P1	Feature 1	Locus 3	Main Platform I	Phase 1
P1	Feature 2	Locus 6	Main Platform I	Phase 1
P1	Feature 3	Locus 6	Main Platform I	Phase 1
P1	Feature 4	Locus 7	Main Platform I	Phase 1
P1	Feature 5	Locus 3	Main Platform I	Phase 1
P1	Feature 6	Locus 8	Main Platform I	Phase 1
P1	Feature 7	Locus 3	Main Platform I	Phase 1
P1	Feature 8	Locus 9	Main Platform I	Phase 1
P1	Feature 9	Locus 35	Main Platform III	Phase 3
P1	Feature 10	Locus 37	Eastern Plaza	Phase 1
P2	Feature 1	Locus 6	Main Platform I	Phase 1
P2	Feature 2	Locus 3	Main Platform I	Phase 1
P2	Feature 3	Locus 8	Main Platform I	Phase 1
P2	Feature 4	Locus 9	Main Platform I	Phase 1
P2	Feature 5	Locus 10	Main Platform II	Phase 2
P2	Feature 6	Locus 24	Main Platform II	Phase 2
P3	Feature 1	Locus 6	Main Platform I	Phase 1
P3	Feature 2	Locus 36	Main Platform III	Phase 3
P4	Feature 1	Locus 6	Main Platform I	Phase 1

P4	Feature 2	Locus 8	Main Platform I	Phase 1
P4	Feature 3	Locus 9	Main Platform I	Phase 1
P4	Feature 4	Locus 24	Main Platform I	Phase 1
P4	Feature 5	Locus 40	Inka Structures	Phase 4
P4	Feature 6	Locus 41	Inka Structures	Phase 4
P4	Feature 7	Locus 42	Inka Structures	Phase 4
P4	Feature 8	Locus 3	Main Platform I	Phase 1
P5	Feature 1	Locus 6	Main Platform I	Phase 1
P5	Feature 2	Locus 3	Main Platform I	Phase 1
P5	Feature 3	Locus 8	Main Platform I	Phase 1
P6	Level 1	Locus 3	Main Platform I	Phase 1
P6	Level 2	Locus 3	Main Platform I	Phase 1
P6	Level 3	Locus 3	Main Platform I	Phase 1
P6	Level 4	Locus 3	Main Platform I	Phase 1
P6	Level 5	Locus 3	Main Platform I	Phase 1
P6	Level 6	Locus 3	Main Platform I	Phase 1
P6	Level 7	Locus 1		
P6	Level 8	Locus 2	Main Platform I	Phase 1
P7	Feature 1	Locus 20	Main Platform I	Phase 1
P7	Level 2	Locus 3	Main Platform I	Phase 1
P7	Level 3	Locus 23	Main Platform II	Phase 2

P7	Level 4	Locus 23	Main Platform II	Phase 2
P7	Level 5	Locus 23	Main Platform II	Phase 2
P7	Level 6	Locus 3	Main Platform II	Phase 2
P7	Level 7	Locus 23	Main Platform II	Phase 2
P7	Level 8	Locus 23	Main Platform II	Phase 2
P7	Level 9	Locus 23	Main Platform II	Phase 2
P7	Level 10	Locus 23	Main Platform II	Phase 2
P7	Level 11	Locus 3	Main Platform II	Phase 2
P7	Level 12	Locus 3	Main Platform II	Phase 2
P7	Level 13	Locus 3	Main Platform II	Phase 2
P7	Level 14	Locus 23	Main Platform II	Phase 2
P7	Level 15	Locus 3	Main Platform II	Phase 2
P7	Level 16	Locus 23	Main Platform II	Phase 2
P7	Level 17	Locus 23	Main Platform II	Phase 2
P7	Level 18	Locus 27	Main Platform III	Phase 3
P8E	Feature 1	Locus 24	Main Platform II	Phase 2
P8E	Level 2	Locus 26	Main Platform III	Phase 3
P8E	Level 3	Locus 26	Main Platform III	Phase 3
P8E	Level 4	Locus 26	Main Platform III	Phase 3
P8E	Level 5	Locus 30	Main Platform III	Phase 3
P8E	Level 6	Locus 26	Main Platform III	Phase 3

P8E	Level 7	Locus 30	Main Platform III	Phase 3
P8E	Level 8	Locus 26	Main Platform III	Phase 3
P8E	Level 9	Locus 30	Main Platform III	Phase 3
P8E	Level 10	Locus 26	Main Platform III	Phase 3
P8E	Level 11	Locus 30	Main Platform III	Phase 3
P8E	Level 12	Locus 26	Main Platform III	Phase 3
P8E	Level 13	Locus 26	Main Platform III	Phase 3
P8E	Level 14	Locus 30	Main Platform III	Phase 3
P8E	Level 15	Locus 26	Main Platform III	Phase 3
P8E	Level 16	Locus 30	Main Platform III	Phase 3
P8E	Level 17	Locus 26	Main Platform III	Phase 3
P8W	Feature 1	Locus 24	Main Platform II	Phase 2
P8W	Feature 2	Locus 11	Main Platform II	Phase 2
P8W	Level 3	Locus 26	Main Platform III	Phase 3
P8W	Level 4	Locus 26	Main Platform III	Phase 3
P8W	Level 5	Locus 26	Main Platform III	Phase 3
P8W	Level 6	Locus 30	Main Platform III	Phase 3
P8W	Level 7	Locus 26	Main Platform III	Phase 3
P8W	Level 8	Locus 30	Main Platform III	Phase 3
P8W	Level 9	Locus 26	Main Platform III	Phase 3
P8W	Level 10	Locus 30	Main Platform III	Phase 3

P8W	Level 11	Locus 26	Main Platform III	Phase 3
P8W	Level 12	Locus 30	Main Platform III	Phase 3
P8W	Level 13	Locus 30	Main Platform III	Phase 3
P8W	Level 14	Locus 44		
P8W	Level 15	Locus 45		
P9	Feature 1	Locus 20	Main Platform I	Phase 1
P9	Level 2	Locus 23	Main Platform II	Phase 2
P9	Level 3	Locus 23	Main Platform II	Phase 2
P9	Level 4	Locus 23	Main Platform II	Phase 2
P9	Level 5	Locus 23	Main Platform II	Phase 2
P9	Level 6	Locus 23	Main Platform II	Phase 2
P9	Level 7	Locus 23	Main Platform II	Phase 2
P9	Level 8	Locus 23	Main Platform II	Phase 2
P9	Level 9	Locus 23	Main Platform II	Phase 2
P9	Level 10	Locus 23	Main Platform II	Phase 2
P9	Level 11	Locus 44		
P10	Feature 1	Locus 24	Main Platform II	Phase 2
P10	Level 2	Locus 44		
P11	Feature 1	Locus 20	Main Platform I	Phase 1
P11	Level 2	Locus 23	Main Platform II	Phase 2
P11	Level 3	Locus 23	Main Platform II	Phase 2



P11	Level 4	Locus 23	Main Platform II	Phase 2
P11	Level 5	Locus 23	Main Platform II	Phase 2
P11	Level 6	Locus 23	Main Platform II	Phase 2
P11	Level 7	Locus 23	Main Platform II	Phase 2
P11	Level 8	Locus 23	Main Platform II	Phase 2
P11	Level 9	Locus 23	Main Platform II	Phase 2
P11	Level 10	Locus 23	Main Platform II	Phase 2
P11	Level 11	Locus 23	Main Platform II	Phase 2
P11	Level 12	Locus 24	Main Platform II	Phase 2
P11	Level 13	Locus 44		
P12N	Feature 1	Locus 20	Main Platform I	Phase 1
P12N	Feature 2	Locus 20	Main Platform I	Phase 1
P12N	Level 3	Locus 23	Main Platform II	Phase 2
P12N	Level 4	Locus 23	Main Platform II	Phase 2
P12N	Level 5	Locus 23	Main Platform II	Phase 2
P12N	Level 6	Locus 23	Main Platform II	Phase 2
P12N	Level 7	Locus 23	Main Platform II	Phase 2
P12N	Level 8	Locus 35	Main Platform III	Phase 3
P12N	Feature 9	Locus 20	Main Platform I	Phase 1
P12N	Feature 10	Locus 35	Main Platform III	Phase 3
P12N	Feature 11	Locus 35	Main Platform III	Phase 3

P12N	Feature 12	Locus 35	Main Platform III	Phase 3
P12N	Feature 13	Locus 35	Main Platform III	Phase 3
P12N	Feature 14	Locus 46		
P12N	Feature 15	Locus 46		
P12N	Feature 16	Locus 45		
P12N	Feature 17	Locus 46		
P12N	Feature 18	Locus 44		
P12W	Feature 1	Locus 20	Main Platform I	Phase 1
P12W	Level 2	Locus 23	Main Platform II	Phase 2
P12W	Level 3	Locus 23	Main Platform II	Phase 2
P12W	Level 4	Locus 23	Main Platform II	Phase 2
P12W	Level 5	Locus 23	Main Platform II	Phase 2
P12W	Level 6	Locus 23	Main Platform II	Phase 2
P12W	Level 7	Locus 23	Main Platform II	Phase 2
P12W	Level 8	Locus 23	Main Platform II	Phase 2
P12W	Level 9	Locus 23	Main Platform II	Phase 2
P12W	Level 10	Locus 23	Main Platform II	Phase 2
P12W	Level 11	Locus 45		
P12W	Feature 12	Locus 45		
P12W	Level 13	Locus 45		
P12W	Level 14	Locus 45		

P12W	Level 15	Locus 11	Main Platform II	Phase 2
P12W	Level 16	Locus 44		
P13	Feature 1	Locus 19	Main Platform I	Phase 1
P13	Feature 2	Locus 19	Main Platform I	Phase 1
P13	Feature 3	Locus 19	Main Platform I	Phase 1
P13	Feature 4	Locus 19	Main Platform I	Phase 1
P13	Feature 5	Locus 19	Main Platform I	Phase 1
P13	Feature 6	Locus 19	Main Platform I	Phase 1
P13	Feature 7	Locus 19	Main Platform I	Phase 1
P13	Feature 8	Locus 19	Main Platform I	Phase 1
P13	Feature 9	Locus 19	Main Platform I	Phase 1
P14	Feature 1	Locus 28	Main Platform III	Phase 3
P14	Feature 2	Locus 29	Main Platform III	Phase 3
P14	Feature 3	Locus 30	Main Platform III	Phase 3
P14	Feature 4	Locus 31	Main Platform III	Phase 3
P14	Feature 5	Locus 32	Main Platform III	Phase 3
P15	Feature 1	Locus 24	Main Platform II	Phase 2
P15	Level 2	Locus 26	Main Platform III	Phase 3
P15	Level 3	Locus 26	Main Platform III	Phase 3
P15	Level 4	Locus 26	Main Platform III	Phase 3
P15	Level 5	Locus 26	Main Platform III	Phase 3

P15	Level 6	Locus 28	Main Platform III	Phase 3
P15	Level 7	Locus 26	Main Platform III	Phase 3
P15	Level 8	Locus 26	Main Platform III	Phase 3
P15	Level 9	Locus 26	Main Platform III	Phase 3
P16	Feature 1	Locus 11	Main Platform II	Phase 2
P16	Feature 2	Locus 24	Main Platform II	Phase 2
P16	Level 3	Locus 44		
P17	Feature 1	Locus 11	Main Platform II	Phase 2
P17	Feature 2	Locus 24	Main Platform II	Phase 2
P17	Level 3	Locus 44		
P17	Level 4	Locus 27	Main Platform III	Phase 3
P18	Feature 1	Locus 11	Main Platform II	Phase 2
P18	Level 2	Locus 44		
P18	Feature 3	Locus 24	Main Platform II	Phase 2
P19	Feature 1	Locus 24	Main Platform II	Phase 2
P19	Level 2	Locus 44		
P20	Level 1	Locus 44		
P21	Feature 1	Locus 20	Main Platform I	Phase 1
P21	Level 2	Locus 23	Main Platform II	Phase 2
P21	Level 3	Locus 23	Main Platform II	Phase 2
P21	Level 4	Locus 23	Main Platform II	Phase 2

P21	Level 5	Locus 23	Main Platform II	Phase 2
P21	Level 6	Locus 23	Main Platform II	Phase 2
P21	Level 7	Locus 23	Main Platform II	Phase 2
P21	Level 8	Locus 23	Main Platform II	Phase 2
P21	Level 9	Locus 23	Main Platform II	Phase 2
P21	Level 10	Locus 45		
P21	Feature 11	Locus 15	Main Platform I	Phase 1
P22	Level 1	Locus 1		
P22	Level 2	Locus 4	Main Platform I	Phase 1
P22	Level 3	Locus 5	Main Platform I	Phase 1
P22	Level 4	Locus 5	Main Platform I	Phase 1
P22	Level 5	Locus 5	Main Platform I	Phase 1
P22	Level 6	Locus 5	Main Platform I	Phase 1
P22	Level 7	Locus 5	Main Platform I	Phase 1
P22	Level 8	Locus 5	Main Platform I	Phase 1
P22	Level 9	Locus 45		
P22	Level 10	Locus 5	Main Platform I	Phase 1
P22	Feature 11	Locus 20	Main Platform I	Phase 1
P23	Level 1	Locus 4	Main Platform I	Phase 1
P23	Level 2	Locus 17	Main Platform I	Phase 1
P23	Level 3	Locus 45		

P23	Level 4	Locus 5	Main Platform I	Phase 1
P23	Level 5	Locus 5	Main Platform I	Phase 1
P23	Level 6	Locus 14	Main Platform I	Phase 1
P23	Level 7	Locus 44		
P24	Feature 1	Locus 20	Main Platform I	Phase 1
P24	Feature 2	Locus 13	Main Platform I	Phase 1
P24	Feature 3	Locus 18	Main Platform I	Phase 1
P24	Feature 4	Locus 14	Main Platform I	Phase 1
P24	Feature 5	Locus 16	Main Platform I	Phase 1
P24	Feature 6	Locus 14	Main Platform I	Phase 1
P24	Feature 7	Locus 22	Main Platform II	Phase 2
P24	Feature 8	Locus 47	Main Platform III	Phase 3
P24	Level 9	Locus 25	Main Platform III	Phase 3
P24	Feature 10	Locus 34	Main Platform III	Phase 3
P24	Level 11	Locus 23	Main Platform II	Phase 2
P24	Level 12	Locus 23	Main Platform II	Phase 2
P24	Level 13	Locus 23	Main Platform II	Phase 2
P24	Level 14	Locus 23	Main Platform II	Phase 2
P24	Level 15	Locus 23	Main Platform II	Phase 2
P24	Level 16	Locus 23	Main Platform II	Phase 2
P24	Level 17	Locus 45		

P25	Feature 1	Locus 14	Main Platform I	Phase 1
P25	Feature 2	Locus 14	Main Platform I	Phase 1
P25	Feature 3	Locus 18	Main Platform I	Phase 1
P25	Level 4	Locus 45		
P25	Feature 5	Locus 34	Main Platform III	Phase 3
P26	Feature 1	Locus 14	Main Platform I	Phase 1
P26	Feature 2	Locus 14	Main Platform I	Phase 1
P26	Feature 3	Locus 34	Main Platform III	Phase 3
P26	Level 4	Locus 45		
P27	Feature 1	Locus 13	Main Platform I	Phase 1
P27	Feature 2	Locus 20	Main Platform I	Phase 1
P27	Level 3	Locus 45		
P27	Level 4	Locus 44		
P27	Level 5	Locus 23	Main Platform II	Phase 2
P27	Level 6	Locus 23	Main Platform II	Phase 2
P27	Level 7	Locus 23	Main Platform II	Phase 2
P27	Level 8	Locus 23	Main Platform II	Phase 2
P27	Level 9	Locus 23	Main Platform II	Phase 2
P27	Level 10	Locus 23	Main Platform II	Phase 2
P27	Level 11	Locus 23	Main Platform II	Phase 2
P27	Level 12	Locus 23	Main Platform II	Phase 2

P27	Level 13	Locus 23	Main Platform II	Phase 2
P28	Level 1	Locus 45		
P28	Feature 2	Locus 13	Main Platform I	Phase 1
P28	Feature 3	Locus 22	Main Platform II	Phase 2
P28	Feature 4	Locus 22	Main Platform II	Phase 2
P28	Feature 5	Locus 12	Main Platform II	Phase 2
P28	Feature 6	Locus 24	Main Platform II	Phase 2
P28	Feature 7	Locus 12	Main Platform II	Phase 2
P28	Level 8	Locus 44		
P29	Feature 1	Locus 14	Main Platform I	Phase 1
P29	Level 2	Locus 45		

**Table 5.2: Features and Levels Excavated at the Pumapunku Complex**



<b>Locus</b>	<b>Locus Name</b>
Locus 1	Natural Soil
Locus 2	Foundation Pit
Locus 3	Compacted Earth and Cobble Fill
Locus 4	Clay Fill
Locus 5	Clay and Sand Fill
Locus 6	First Revetment
Locus 7	Stairway on the First Revetment
Locus 8	Second Revetment
Locus 9	Third Revetment
Locus 10	Fourth Revetment
Locus 11	Adobe Wall I
Locus 12	Adobe Wall II
Locus 13	Wall of the Inner Courtyard
Locus 14	Pavement of the Inner Courtyard
Locus 15	Vertical Conduit
Locus 16	Stone Slabs of the Inner Courtyard
Locus 17	Sunken Court
Locus 18	Passageway
Locus 19	Western Stairway
Locus 20	Green Surface

Locus 21	Large Stone Slabs
Locus 22	Reinforcing Wall
Locus 23	Sand Fill I
Locus 24	Red Surface
Locus 25	Brown Fill
Locus 26	Sand Fill II
Locus 27	Refuse I
Locus 28	Compacted Earth and Cobble Foundation I
Locus 29	Compacted Earth and Cobble Foundation II
Locus 30	Compacted Earth and Cobble Foundation III
Locus 31	Compacted Earth and Cobble Foundation IV
Locus 32	Compacted Earth and Cobble Foundation V
Locus 33	Yellow Surface
Locus 34	Stairway of the Inner Courtyard
Locus 35	Southern Stone Conduit
Locus 36	Northern Stone Conduit
Locus 37	Eastern Plaza
Locus 38	Earthen Esplanade
Locus 39	Western Plaza
Locus 40	Cobble Building I
Locus 41	Cobble Wall I

Locus 42	Cobble Wall II
Locus 43	Refuse II
Locus 44	Topsoil
Locus 45	Disturbance
Locus 46	Erosional Accumulation
Locus 47	Sides of the Stairway of the Inner Courtyard

**Table 6.1: Names of the Loci of the Pumapunku Complex**

<b>Locus</b>	<b>Trench</b>	<b>Feature / Level</b>
Locus 1	P6	Level 7
Locus 1	P22	Level 1
Locus 2	P6	Level 8
Locus 3	P1	Feature 1
Locus 3	P1	Feature 5
Locus 3	P1	Feature 7
Locus 3	P2	Feature 2
Locus 3	P4	Feature 8
Locus 3	P5	Feature 2
Locus 3	P6	Level 1
Locus 3	P6	Level 2
Locus 3	P6	Level 3
Locus 3	P6	Level 4
Locus 3	P6	Level 5
Locus 3	P6	Level 6
Locus 3	P7	Level 2
Locus 3	P7	Level 6
Locus 3	P7	Level 11
Locus 3	P7	Level 12
Locus 3	P7	Level 13

Locus 3	P7	Level 15
Locus 4	P22	Level 2
Locus 4	P23	Level 1
Locus 5	P22	Level 3
Locus 5	P22	Level 4
Locus 5	P22	Level 5
Locus 5	P22	Level 6
Locus 5	P22	Level 7
Locus 5	P22	Level 8
Locus 5	P22	Level 10
Locus 5	P23	Level 4
Locus 5	P23	Level 5
Locus 6	PI	Feature 2
Locus 6	PI	Feature 3
Locus 6	P2	Feature 1
Locus 6	P3	Feature 1
Locus 6	P4	Feature 1
Locus 6	P5	Feature 1
Locus 7	P1	Feature 4
Locus 8	P1	Feature 6
Locus 8	P2	Feature 3

Locus 8	P4	Feature 2
Locus 8	P5	Feature 3
Locus 9	P1	Feature 8
Locus 9	P2	Feature 4
Locus 9	P4	Feature 3
Locus 10	P2	Feature 5
Locus 11	P8W	Feature 2
Locus 11	P12W	Level 15
Locus 11	P16	Feature 1
Locus 11	P17	Feature 1
Locus 11	P18	Feature 1
Locus 12	P28	Feature 5
Locus 12	P28	Feature 7
Locus 13	P24	Feature 2
Locus 13	P27	Feature 1
Locus 13	P28	Feature 2
Locus 14	P23	Level 6
Locus 14	P24	Feature 4
Locus 14	P24	Feature 6
Locus 14	P25	Feature 1
Locus 14	P25	Feature 2

Locus 14	P26	Feature 1
Locus 14	P26	Feature 2
Locus 14	P29	Feature 1
Locus 15	P21	Feature 11
Locus 16	P24	Feature 5
Locus 17	P23	Level 2
Locus 18	P24	Feature 3
Locus 18	P25	Feature 3
Locus 19	P13	Feature 1
Locus 19	P13	Feature 2
Locus 19	P13	Feature 3
Locus 19	P13	Feature 4
Locus 19	P13	Feature 5
Locus 19	P13	Feature 6
Locus 19	P13	Feature 7
Locus 19	P13	Feature 8
Locus 19	P13	Feature 9
Locus 20	P7	Feature 1
Locus 20	P9	Feature 1
Locus 20	P11	Feature 1
Locus 20	P12N	Feature 1

Locus 20	P12N	Feature 2
Locus 20	P12N	Feature 9
Locus 20	P12W	Feature 1
Locus 20	P21	Feature 1
Locus 20	P22	Feature 11
Locus 20	P24	Feature 1
Locus 20	P27	Feature 2
Locus 21	n/a	n/a
Locus 22	P24	Feature 7
Locus 22	P28	Feature 3
Locus 22	P28	Feature 4
Locus 23	P7	Level 3
Locus 23	P7	Level 4
Locus 23	P7	Level 5
Locus 23	P7	Level 7
Locus 23	P7	Level 8
Locus 23	P7	Level 9
Locus 23	P7	Level 10
Locus 23	P7	Level 14
Locus 23	P7	Level 16
Locus 23	P7	Level 17



Locus 23	P9	Level 2
Locus 23	P9	Level 3
Locus 23	P9	Level 4
Locus 23	P9	Level 5
Locus 23	P9	Level 6
Locus 23	P9	Level 7
Locus 23	P9	Level 8
Locus 23	P9	Level 9
Locus 23	P9	Level 10
Locus 23	P11	Level 2
Locus 23	P11	Level 3
Locus 23	P11	Level 4
Locus 23	P11	Level 5
Locus 23	P11	Level 6
Locus 23	P11	Level 7
Locus 23	P11	Level 8
Locus 23	P11	Level 9
Locus 23	P11	Level 10
Locus 23	P11	Level 11
Locus 23	P12N	Level 3
Locus 23	P12N	Level 4

Locus 23	P12N	Level 5
Locus 23	P12N	Level 6
Locus 23	P12N	Level 7
Locus 23	P12W	Level 2
Locus 23	P12W	Level 3
Locus 23	P12W	Level 4
Locus 23	P12W	Level 5
Locus 23	P12W	Level 6
Locus 23	P12W	Level 7
Locus 23	P12W	Level 8
Locus 23	P12W	Level 9
Locus 23	P12W	Level 10
Locus 23	P21	Level 2
Locus 23	P21	Level 3
Locus 23	P21	Level 4
Locus 23	P21	Level 5
Locus 23	P21	Level 6
Locus 23	P21	Level 7
Locus 23	P21	Level 8
Locus 23	P21	Level 9
Locus 23	P24	Level 11

Locus 23	P24	Level 12
Locus 23	P24	Level 13
Locus 23	P24	Level 14
Locus 23	P24	Level 15
Locus 23	P24	Level 16
Locus 23	P27	Level 5
Locus 23	P27	Level 6
Locus 23	P27	Level 7
Locus 23	P27	Level 8
Locus 23	P27	Level 9
Locus 23	P27	Level 10
Locus 23	P27	Level 11
Locus 23	P27	Level 12
Locus 23	P27	Level 13
Locus 24	P2	Feature 6
Locus 24	P4	Feature 4
Locus 24	P8E	Feature 1
Locus 24	P8W	Feature 1
Locus 24	P10	Feature 1
Locus 24	P11	Level 12
Locus 24	P15	Feature 1

Locus 24	P16	Feature 2
Locus 24	P17	Feature 2
Locus 24	P18	Feature 3
Locus 24	P19	Feature 1
Locus 24	P28	Feature 6
Locus 25	P24	Level 9
Locus 26	P8E	Level 2
Locus 26	P8E	Level 3
Locus 26	P8E	Level 4
Locus 26	P8E	Level 6
Locus 26	P8E	Level 8
Locus 26	P8E	Level 10
Locus 26	P8E	Level 12
Locus 26	P8E	Level 13
Locus 26	P8E	Level 15
Locus 26	P8E	Level 17
Locus 26	P8W	Level 3
Locus 26	P8W	Level 4
Locus 26	P8W	Level 5
Locus 26	P8W	Level 7
Locus 26	P8W	Level 9

Locus 26	P8W	Level 11
Locus 26	P15	Level 2
Locus 26	P15	Level 3
Locus 26	P15	Level 4
Locus 26	P15	Level 5
Locus 26	P15	Level 7
Locus 26	P15	Level 8
Locus 26	P15	Level 9
Locus 27	P17	Level 4
Locus 28	P14	Feature 1
Locus 28	P15	Level 6
Locus 29	P14	Feature 2
Locus 30	P8E	Level 5
Locus 30	P8E	Level 7
Locus 30	P8E	Level 9
Locus 30	P8E	Level 11
Locus 30	P8E	Level 14
Locus 30	P8E	Level 16
Locus 30	P8W	Level 6
Locus 30	P8W	Level 8
Locus 30	P8W	Level 10

Locus 30	P8W	Level 12
Locus 30	P8W	Level 13
Locus 30	P14	Feature 3
Locus 31	P14	Feature 4
Locus 32	P14	Feature 5
Locus 33	n/a	n/a
Locus 34	P24	Feature 10
Locus 34	P25	Feature 5
Locus 34	P26	Feature 3
Locus 35	P1	Feature 9
Locus 35	P12N	Level 8
Locus 35	P12N	Feature 10
Locus 35	P12N	Feature 11
Locus 35	P12N	Feature 12
Locus 35	P12N	Feature 13
Locus 36	P3	Feature 2
Locus 37	P1	Feature 10
Locus 38	n/a	n/a
Locus 39	n/a	n/a
Locus 40	P4	Feature 5
Locus 41	P4	Feature 6

Locus 42	P4	Feature 7
Locus 43	P7	Level 18
Locus 44	P8W	Level 14
Locus 44	P9	Level 11
Locus 44	P10	Level 2
Locus 44	P11	Level 13
Locus 44	P12N	Feature 18
Locus 44	P12W	Level 16
Locus 44	P16	Level 3
Locus 44	P17	Level 3
Locus 44	P18	Level 2
Locus 44	P19	Level 2
Locus 44	P20	Level 1
Locus 44	P23	Level 7
Locus 44	P27	Level 4
Locus 44	P28	Level 8
Locus 45	P8W	Level 15
Locus 45	P12N	Feature 16
Locus 45	P12W	Level 11
Locus 45	P12W	Feature 12
Locus 45	P12W	Level 13

Locus 45	P12W	Level 14
Locus 45	P21	Level 10
Locus 45	P22	Level 9
Locus 45	P23	Level 3
Locus 45	P24	Level 17
Locus 45	P25	Level 4
Locus 45	P26	Level 4
Locus 45	P27	Level 3
Locus 45	P28	Level 1
Locus 45	P29	Level 2
Locus 46	P12N	Feature 14
Locus 46	P12N	Feature 15
Locus 46	P12N	Feature 17
Locus 47	P24	Feature 8

**Table 6.2: Locus Components of the Pumapunku Complex**



<b>Structure</b>	<b>Locus</b>	<b>Locus Name</b>	<b>Phase</b>
n/a	Locus 1	Natural Soil	n/a
n/a	Locus 44	Topsoil	n/a
n/a	Locus 45	Disturbance	n/a
n/a	Locus 46	Erosional Accumulation	n/a
Eastern Plaza	Locus 37	Eastern Plaza	Phase 1
Inka Structures	Locus 40	Cobble Building I	Phase 4
Inka Structures	Locus 41	Cobble Wall II	Phase 4
Inka Structures	Locus 42	Cobble Wall II	Phase 4
Main Platform I	Locus 2	Foundation Pit	Phase 1
Main Platform I	Locus 3	Compacted Earth and Cobble Fill	Phase 1
Main Platform I	Locus 4	Clay Fill	Phase 1
Main Platform I	Locus 5	Clay and Sand Fill	Phase 1
Main Platform I	Locus 6	First Revetment	Phase 1
Main Platform I	Locus 7	Stairway on the First Revetment	Phase 1
Main Platform I	Locus 8	Second Revetment	Phase 1
Main Platform I	Locus 9	Third Revetment	Phase 1
Main Platform I	Locus 13	Wall of the Inner Courtyard	Phase 1
Main Platform I	Locus 14	Pavement of the Inner Courtyard	Phase 1
Main Platform I	Locus 15	Vertical Conduit	Phase 1
Main Platform I	Locus 16	Stone Slabs of the Inner Courtyard	Phase 1

Main Platform I	Locus 17	Sunken Court	Phase 1
Main Platform I	Locus 18	Passageway	Phase 1
Main Platform I	Locus 19	Western Stairway	Phase 1
Main Platform I	Locus 20	Green Surface	Phase 1
Main Platform I	Locus 21	Large Stone Slabs	Phase 1
Main Platform I	Locus 24	Red Surface	Phase 1
Main Platform I	Locus 37	Eastern Plaza	Phase 1
Main Platform I	Locus 38	Earthen Esplanade	Phase 1
Main Platform I	Locus 39	Western Plaza	Phase 1
Main Platform II	Locus 3	Compacted Earth and Cobble Fill	Phase 2
Main Platform II	Locus 10	Fourth Revetment	Phase 2
Main Platform II	Locus 11	Adobe Wall I	Phase 2
Main Platform II	Locus 12	Adobe Wall II	Phase 2
Main Platform II	Locus 22	Reinforcing Wall	Phase 2
Main Platform II	Locus 23	Sand Fill I	Phase 2
Main Platform II	Locus 24	Red Surface	Phase 2
Main Platform III	Locus 25	Brown Fill	Phase 3
Main Platform III	Locus 26	Sand Fill II	Phase 3
Main Platform III	Locus 27	Refuse I	Phase 3
Main Platform III	Locus 28	Compacted Earth and Cobble Foundation I	Phase 3
Main Platform III	Locus 29	Compacted Earth and Cobble Foundation II	Phase 3

Main Platform III	Locus 30	Compacted Earth and Cobble Foundation III	Phase 3
Main Platform III	Locus 31	Compacted Earth and Cobble Foundation IV	Phase 3
Main Platform III	Locus 32	Compacted Earth and Cobble Foundation V	Phase 3
Main Platform III	Locus 33	Yellow Surface	Phase 3
Main Platform III	Locus 34	Stairway of the Inner Courtyard	Phase 3
Main Platform III	Locus 35	Southern Stone Conduit	Phase 3
Main Platform III	Locus 36	Northern Stone Conduit	Phase 3
Main Platform III	Locus 43	Refuse II	Phase 3
Main Platform III	Locus 47	Sides of the Stairway of the Inner Courtyard	Phase 3
Inka Structures	Locus 40	Cobble Building I	Phase 4
Inka Structures	Locus 41	Cobble Wall I	Phase 4
Inka Structures	Locus 42	Cobble Wall II	Phase 4

**Table 7.1: Structures of the Pumapunku Complex**

<b>Phase</b>	<b>Structure</b>
Phase 1	Earthen Esplanade
Phase 1	Eastern Plaza
Phase 1	Main Platform I
Phase 1	Western Plaza
Phase 2	Main Platform II
Phase 3	Main Platform III
Phase 4	Inka Construction

**Table 8.1: Phases of Construction of the Pumapunku Complex**

# FIGURES

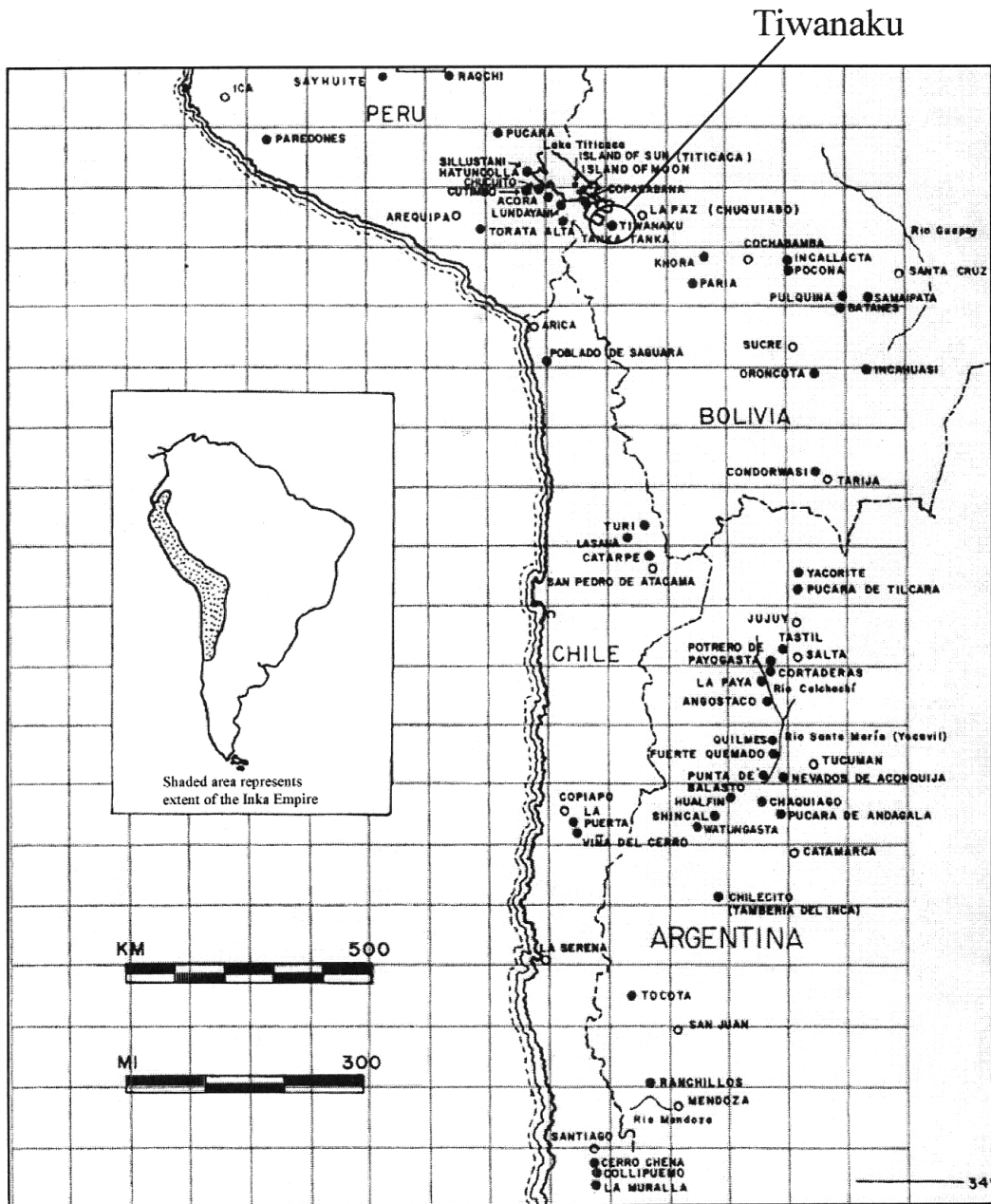


Figure 2.1: Map of the Central Andes Showing the Location of Tiwanaku (from Hyslop 1990)

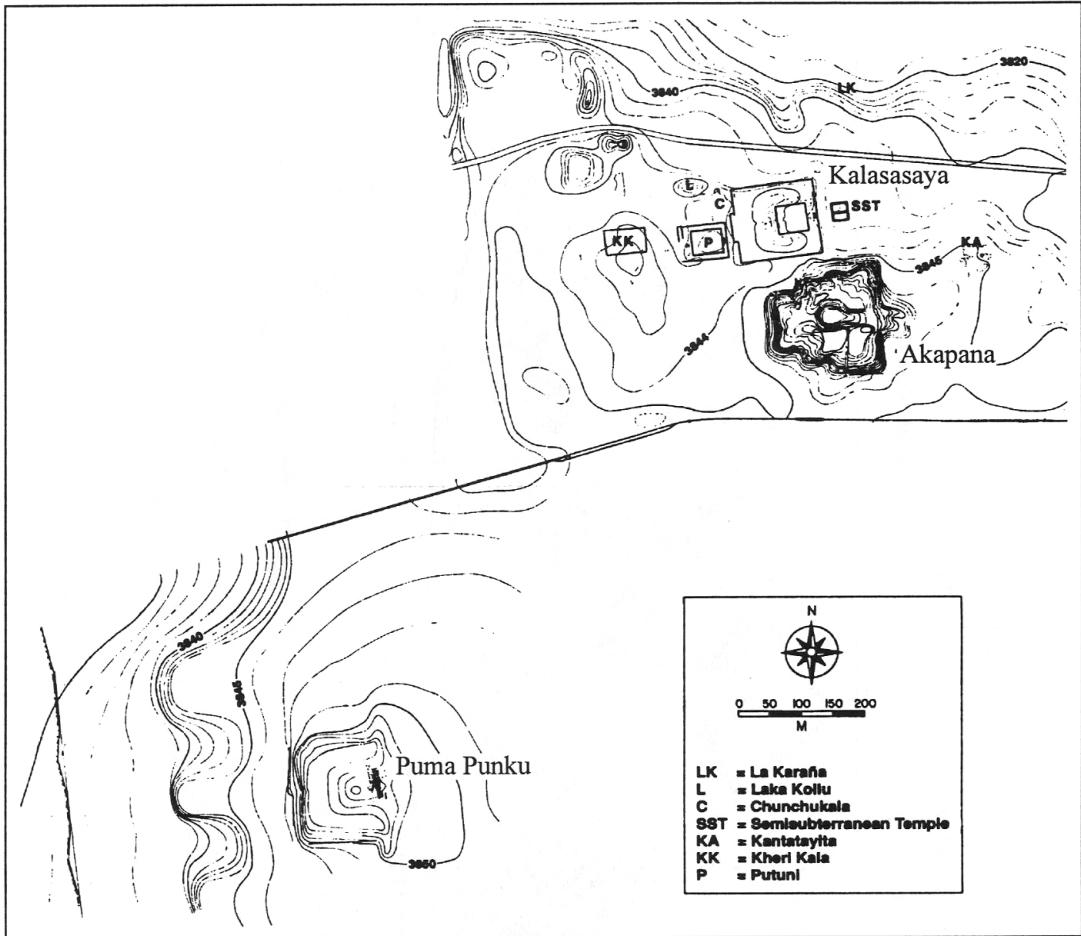


Figure 2.2: Map of the Monuments of Tiwanaku (from Kolata 1993, based on Posnansky 1945)

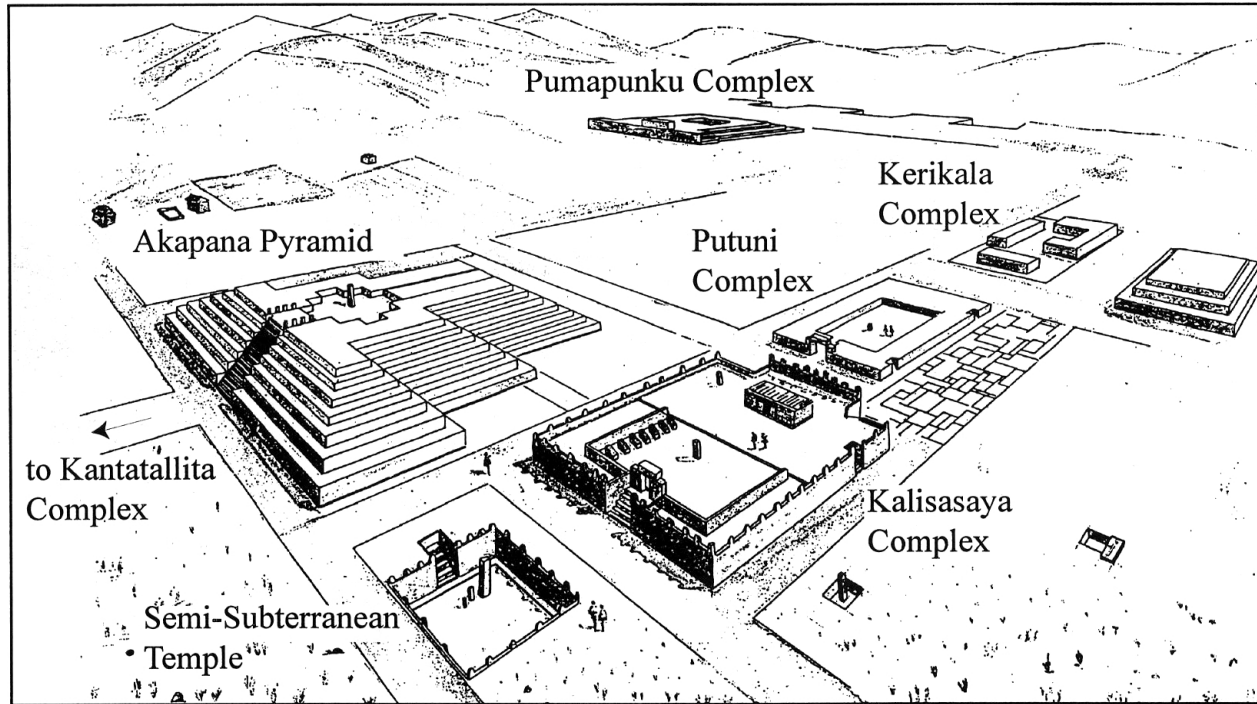


Figure 2.3: Hypothetical Reconstruction of the Monumental Core of Tiwanaku from the Southwest, by Escalante (1994)



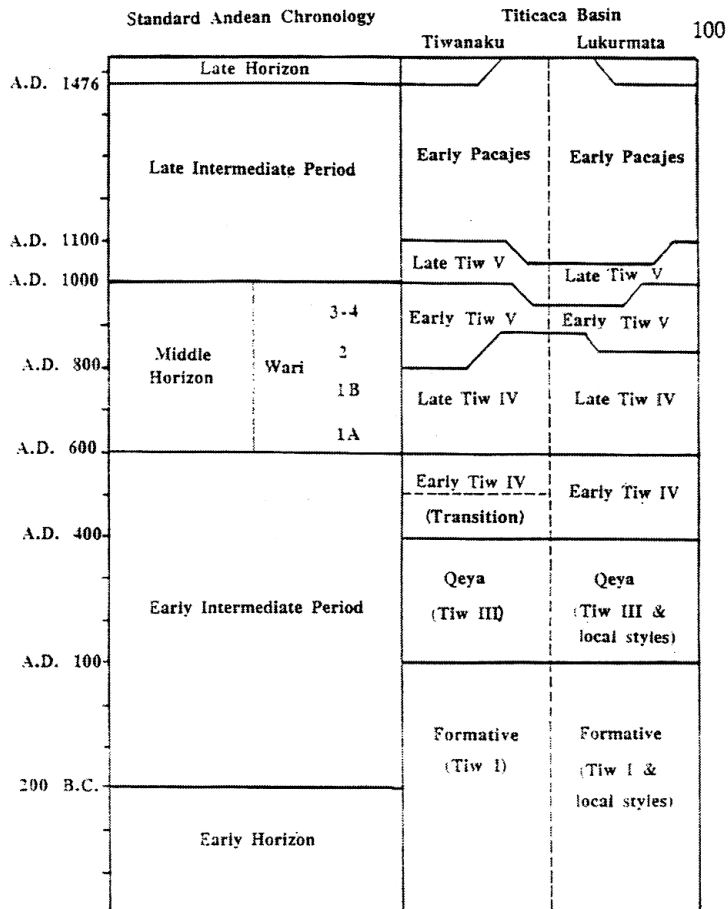


Figure 2.4: Chronology for the Andes and the Titicaca Basin (from Janusek 1994)

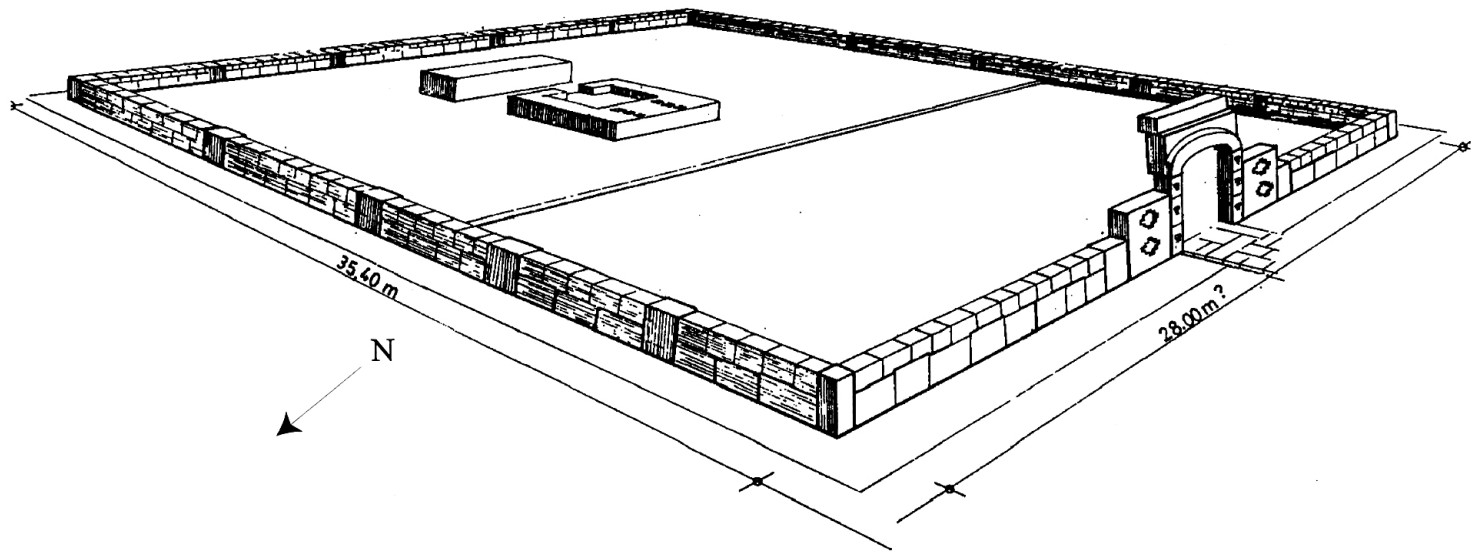


Figure 2.5: Reconstruction of the Kantatallita Complex by Javier Escalante (1994)

## Major Features:

- A Wings
- B Inner Courtyard
- C Stone Buildings on Large Stone Slabs
- D Western Stairway
- E Red Surface
- F First Revetment
- G Second Revetment
- H Third Revetment
- I Fourth Revetment
- J Northern Stone Conduit

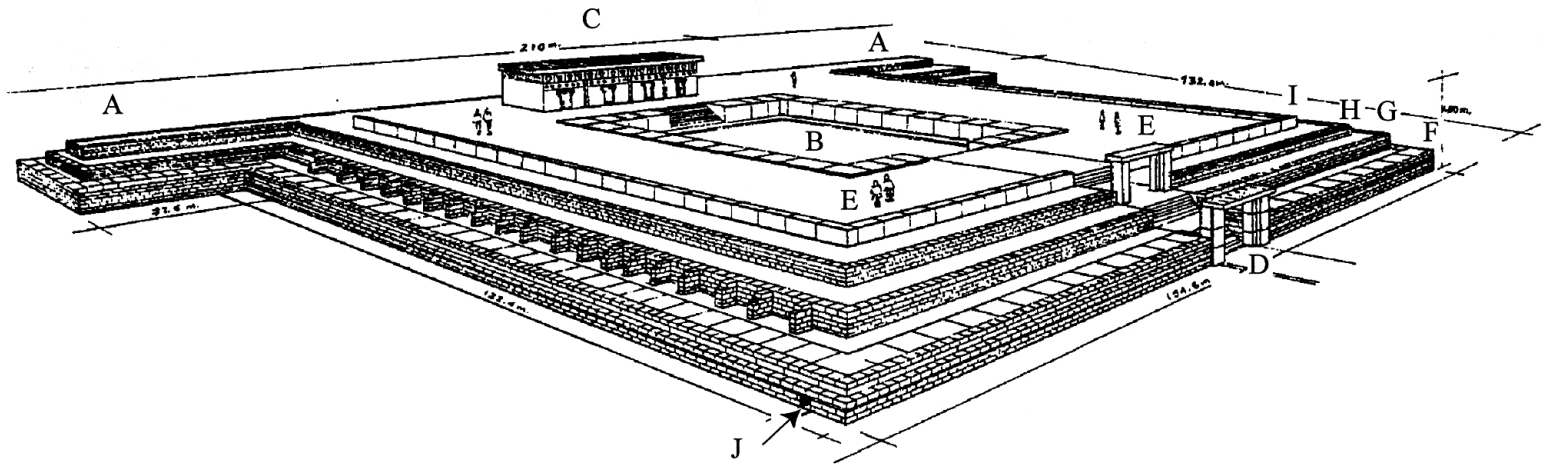
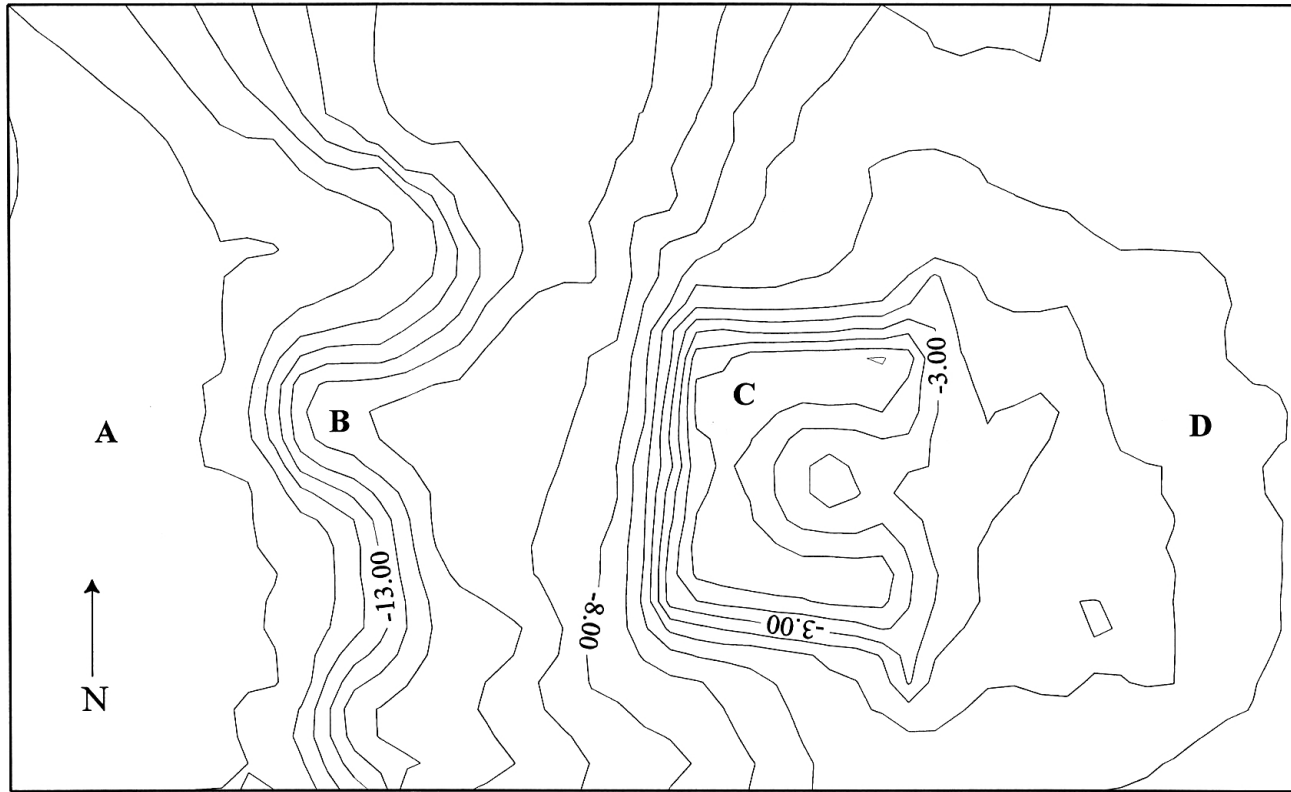


Figure 3.1: Main Features of the Pumapunku Main Platform, drawing by Escalante (1994)



- A Western Plaza
- B Earthen Esplanade
- C Main Platform
- D Eastern Plaza

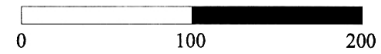


Figure 3.2: Contour Map of the Pumapunku Complex with Places Mentioned in the Text

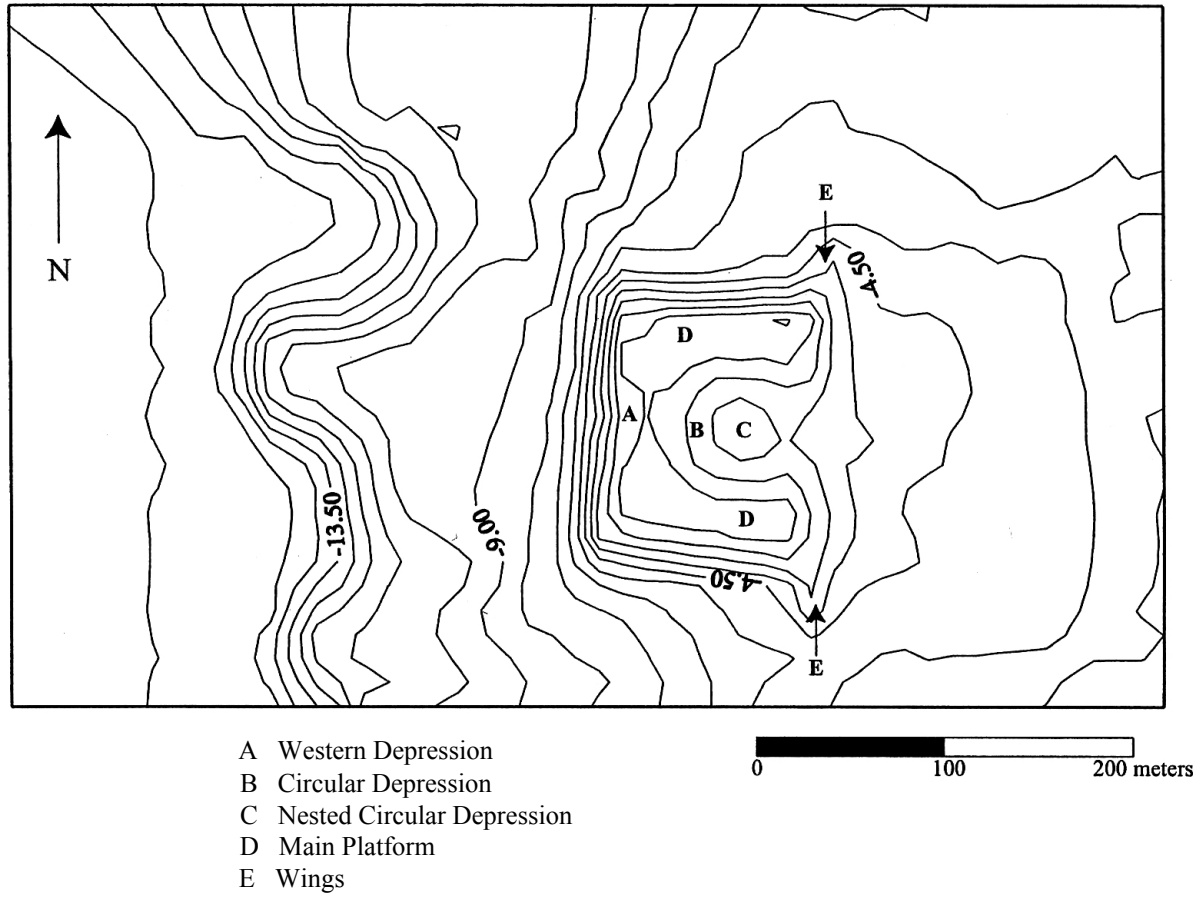


Figure 5.1 : Surface Features of the Pumapunku Complex

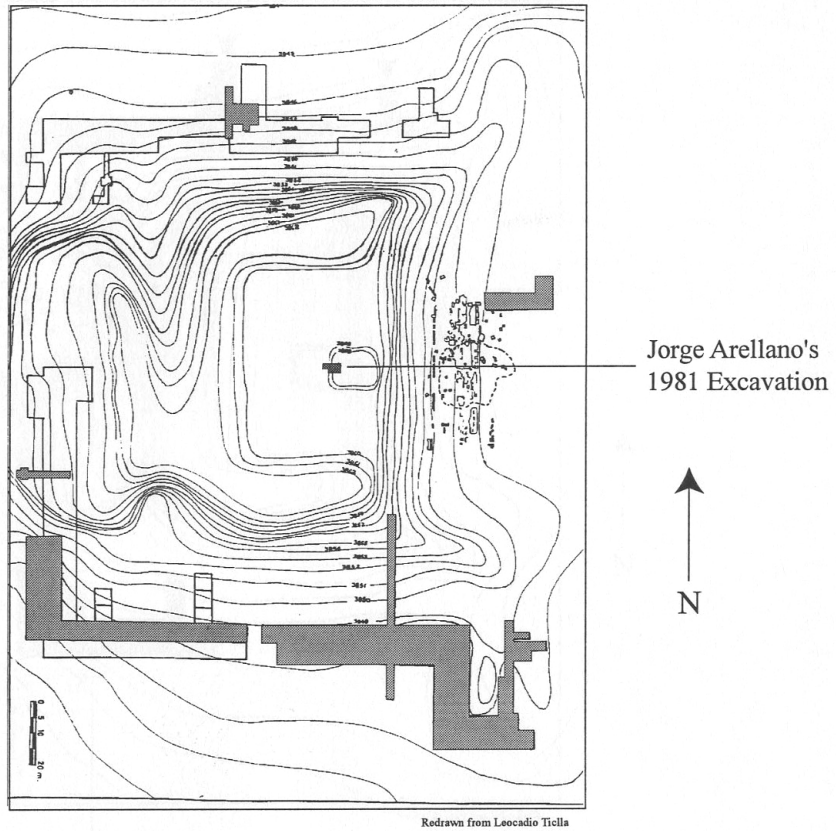


Figure 5.2: Location of National Institute of Archaeology of Bolivia Excavations by G. Cordero in 1977 and 1978 and by J. Arellano in 1981

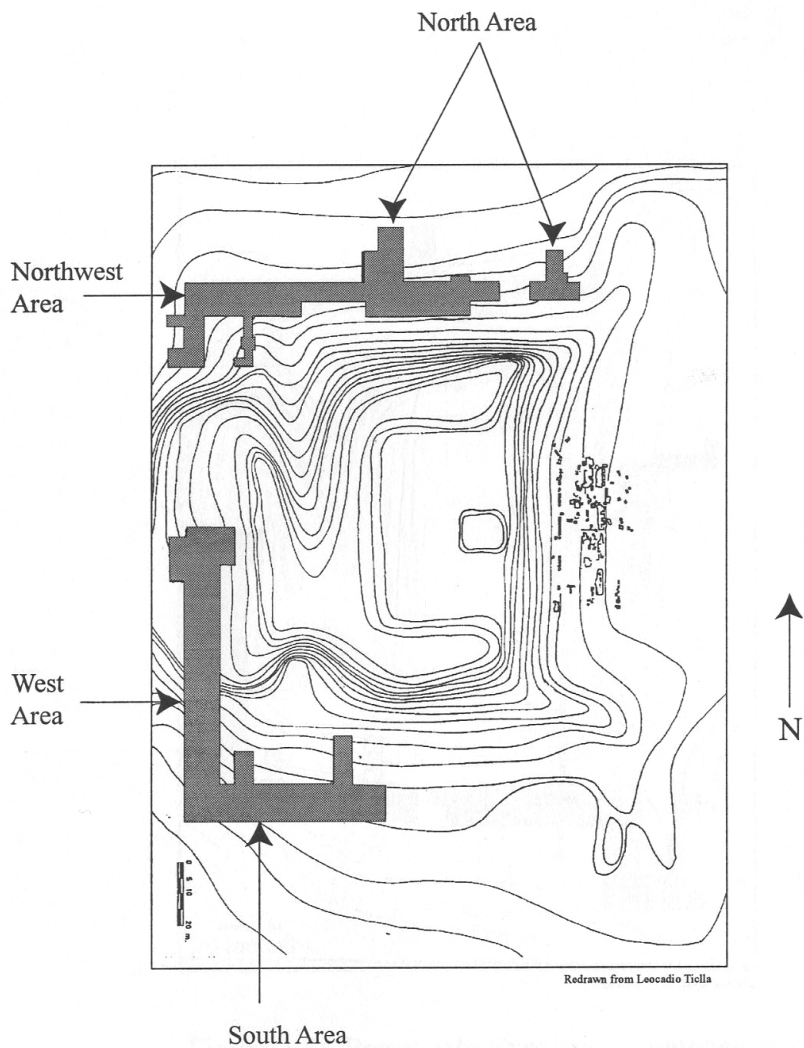
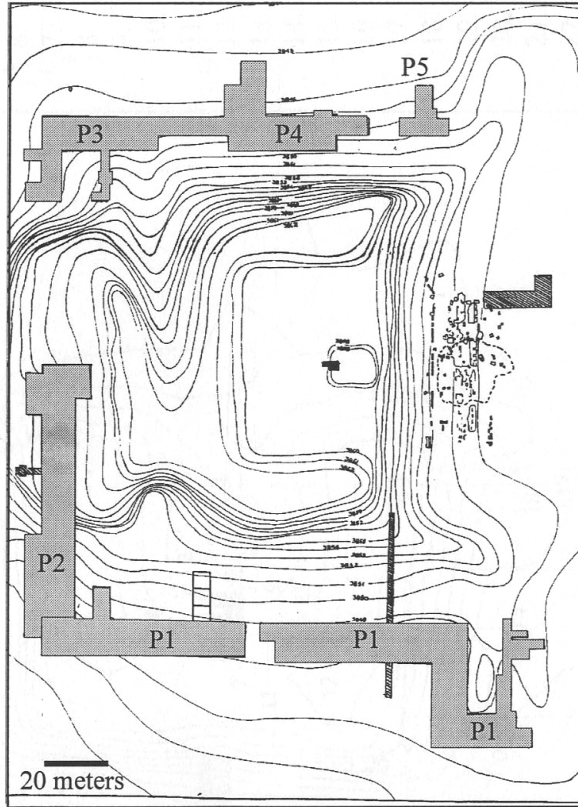


Figure 5.3: Location of National Institute of Archaeology of Bolivia Excavations in 1989 by J. Estévez and O. Claire (South Area), J. Faldín (West Area), M. Portugal (Northwest Area), O. Rivera (North Area)



Redrawn from Leocadio Ticlia

Figure 5.4: Previously Excavated Trenches and Their Trench Designations in This Study



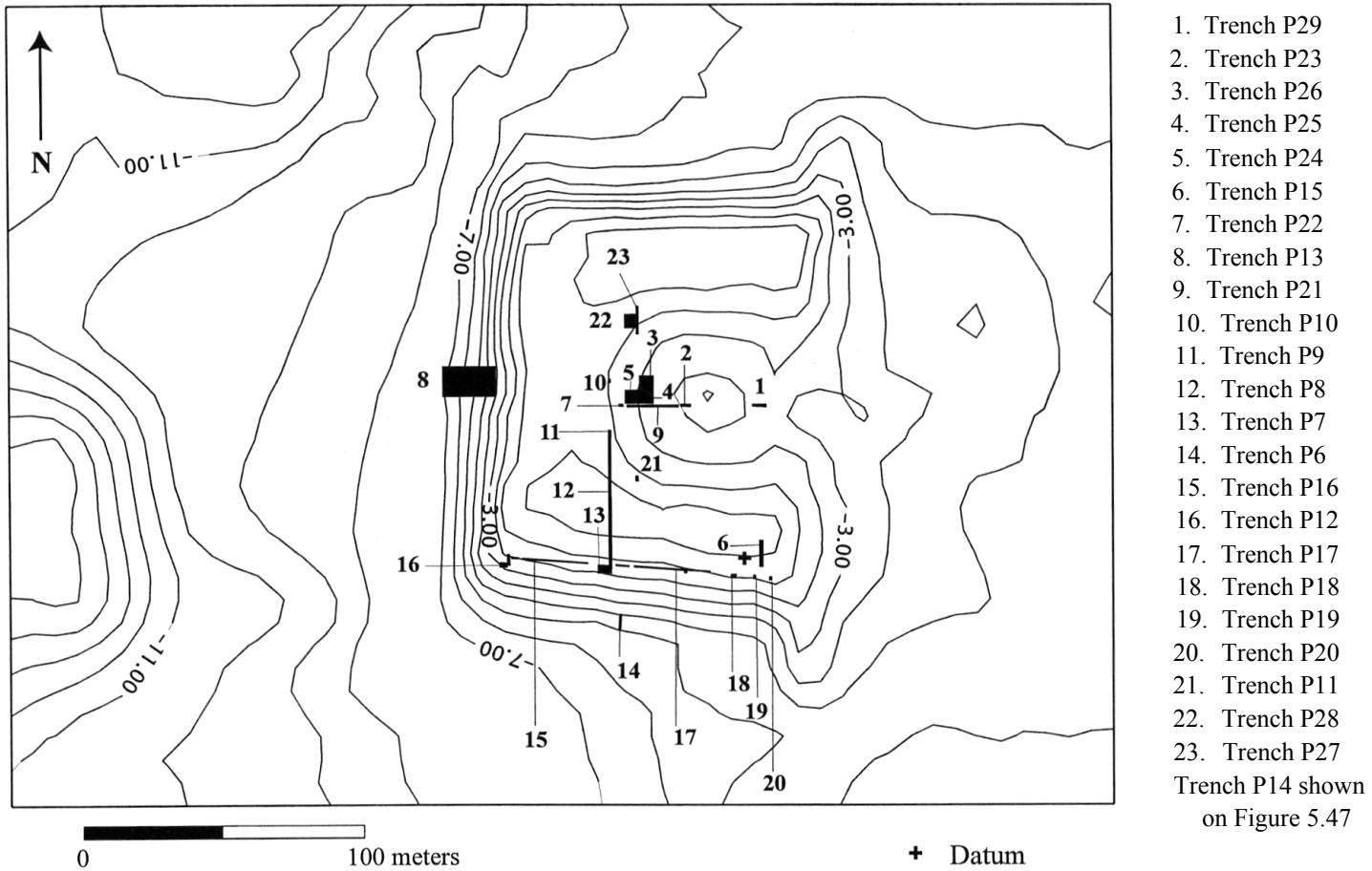


Figure 5.5: Trenches Excavated during the 1995-1996 Field Season

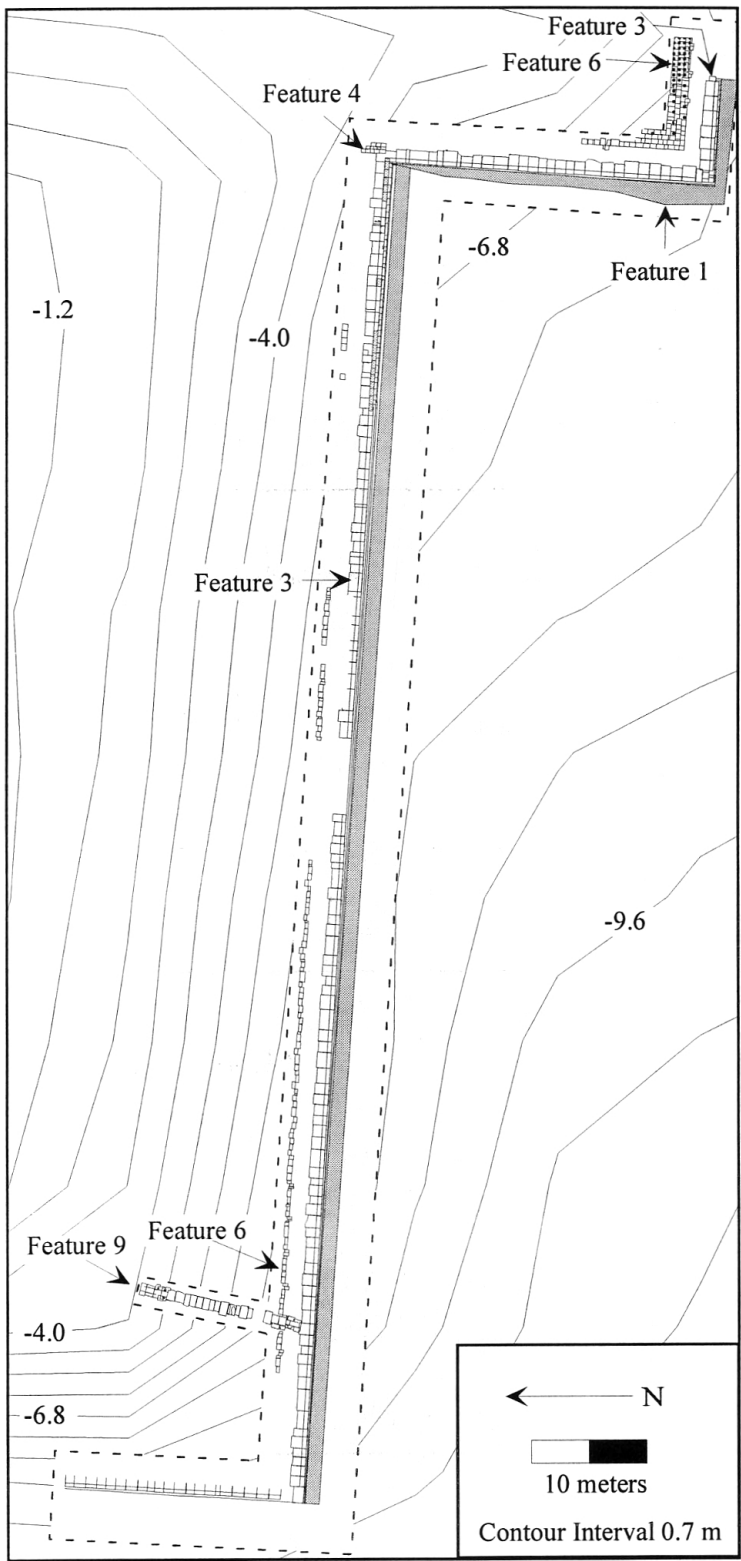


Figure 5.6: Trench P1, Plan View

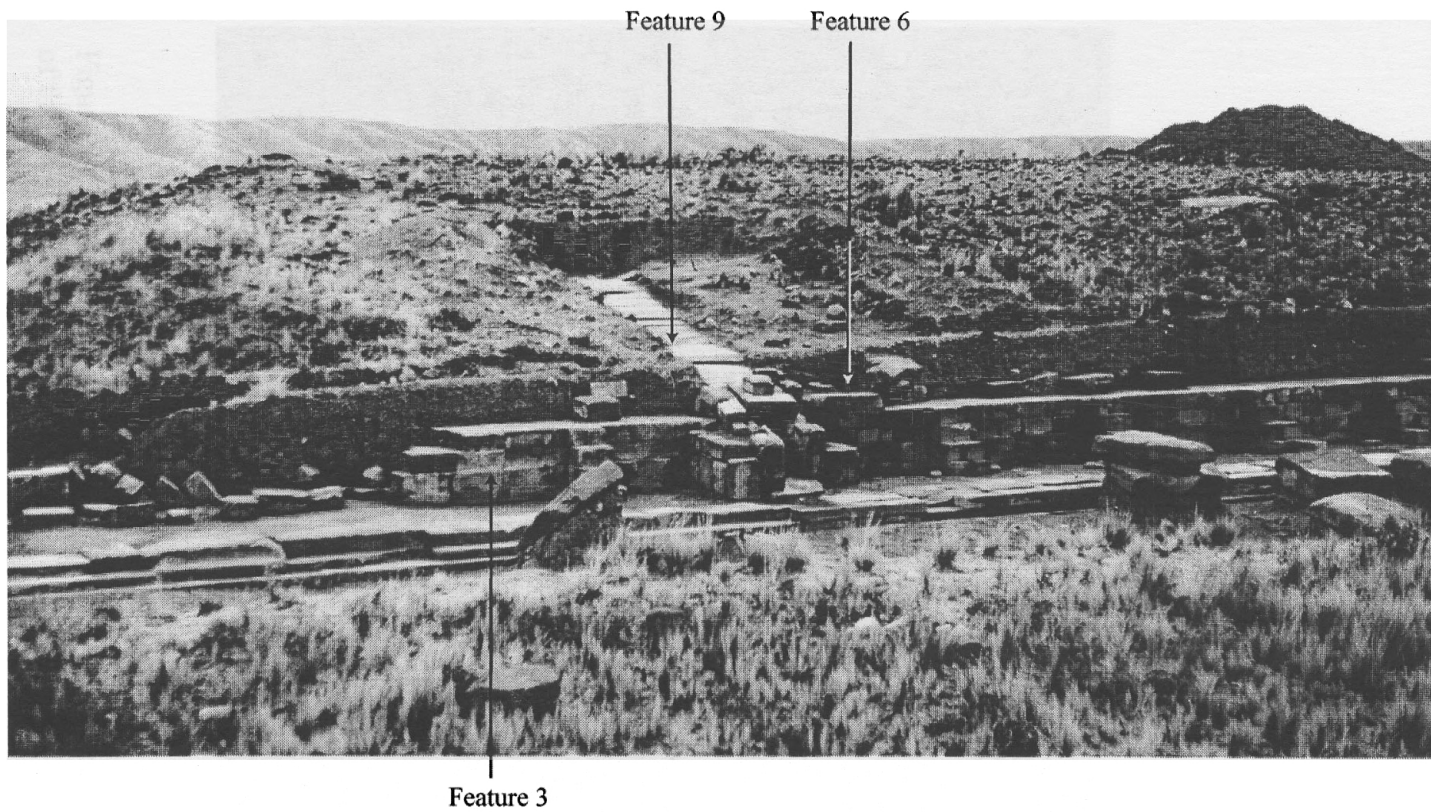


Figure 5.7: Trench P1, View Looking North at the Southwest Corner of the Main Platform.

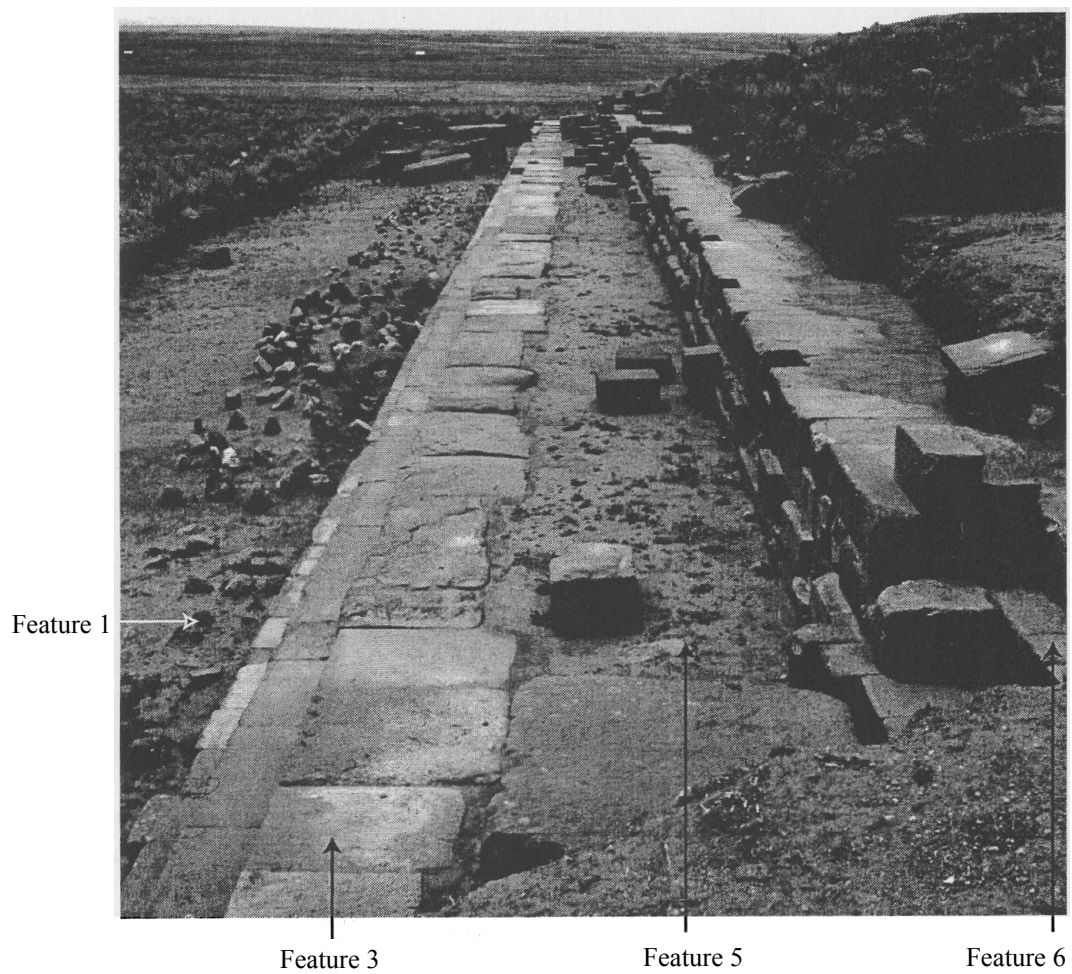


Figure 5.8: Trench P1, View Looking West along the South Side of the Main Platform.

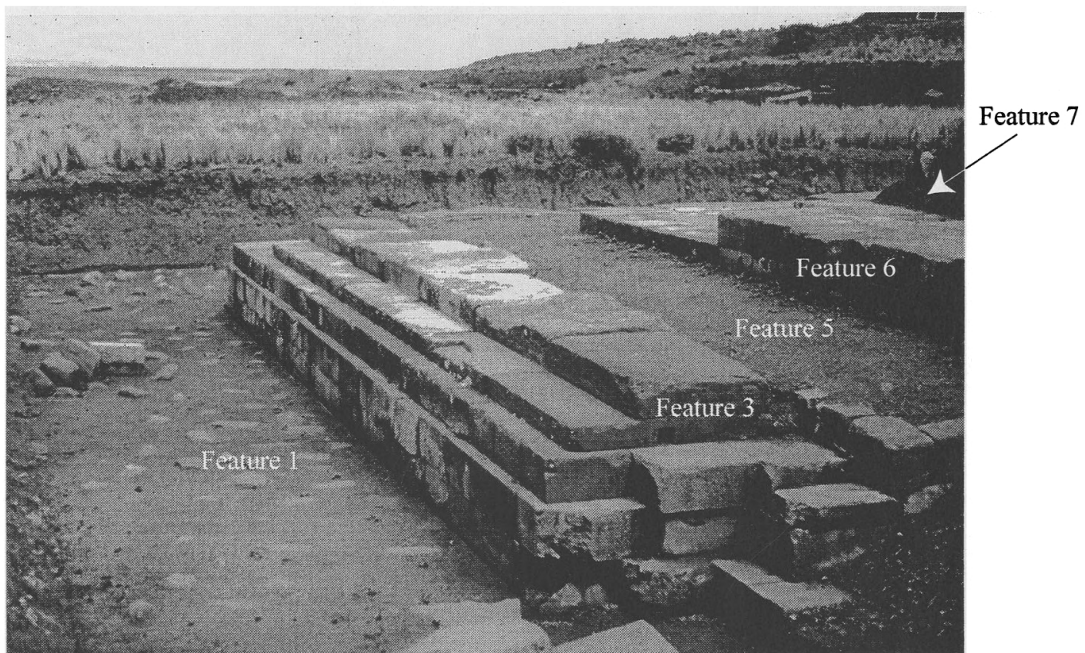


Figure 5.9: Trench P1, View Looking West along the South Face of the Southern Wing of the Main Platform



Figure 5.10: Trench P1, Feature 3. Notice the Uneven Face of the Feature.

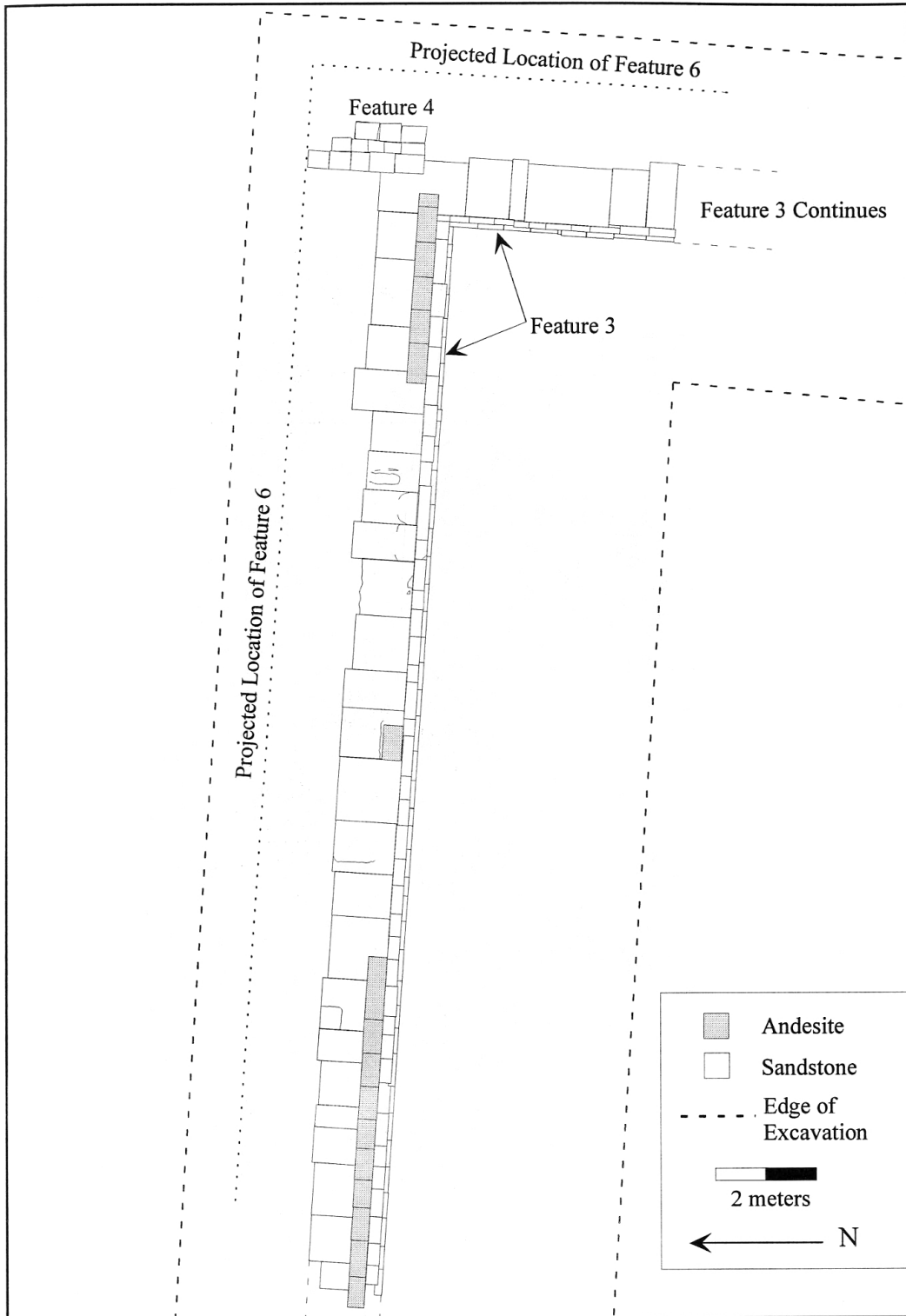


Figure 5.11: Trench P11, Feature 3. Detail Showing the Types of Stone in the Feature and its Relation to Feature 4

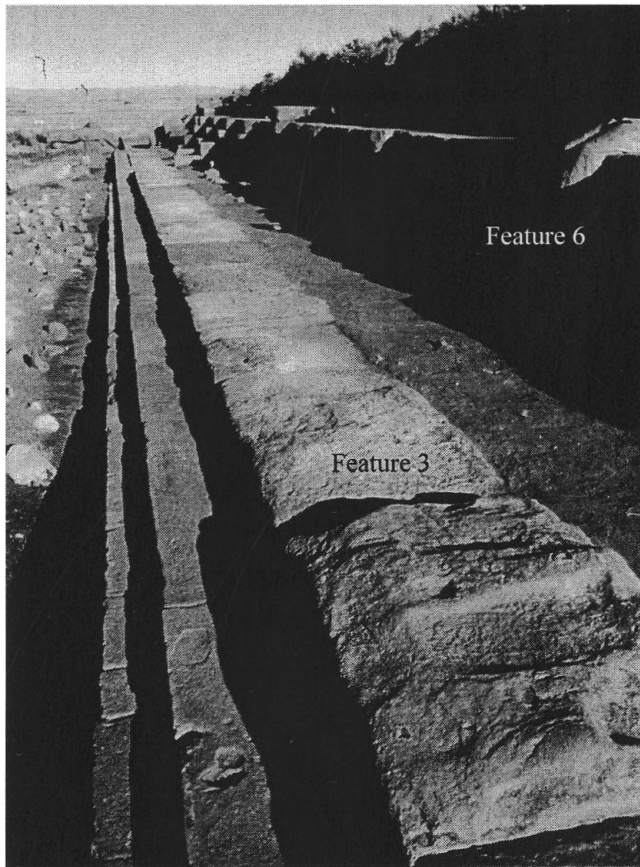


Figure 5.12: Trench P1, View Looking West along the South Side of the Main Platform. Notice the Uneven Top of Feature 3.



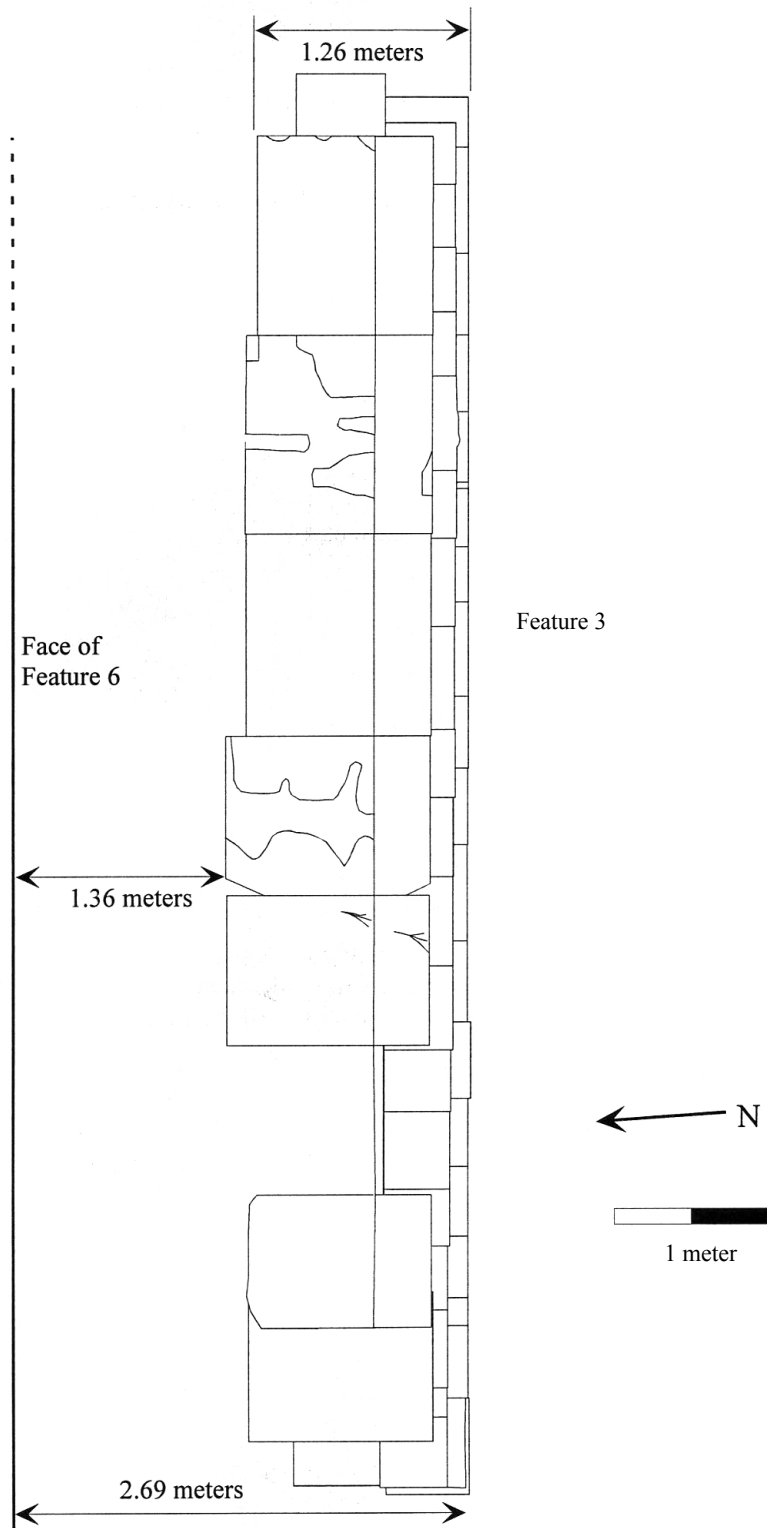


Figure 5.13: Trench P1, Feature 3. Detail Showing the Rough Surfaces of the Upper Course on the South Face of the South Wing of the Main Platform

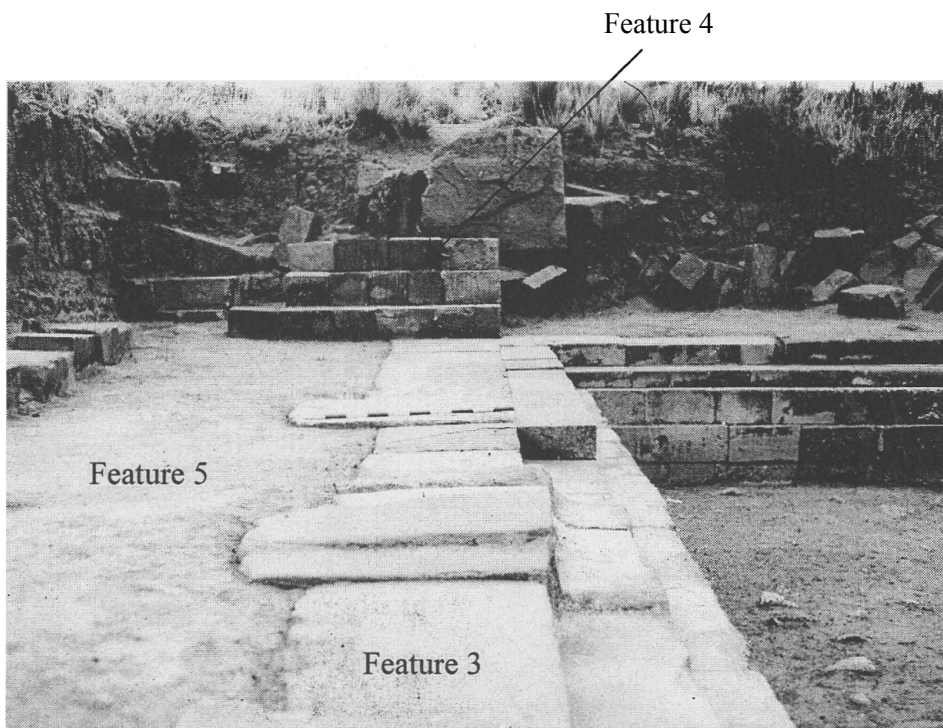


Figure 5.14: Trench P1, Feature 4, View Looking East

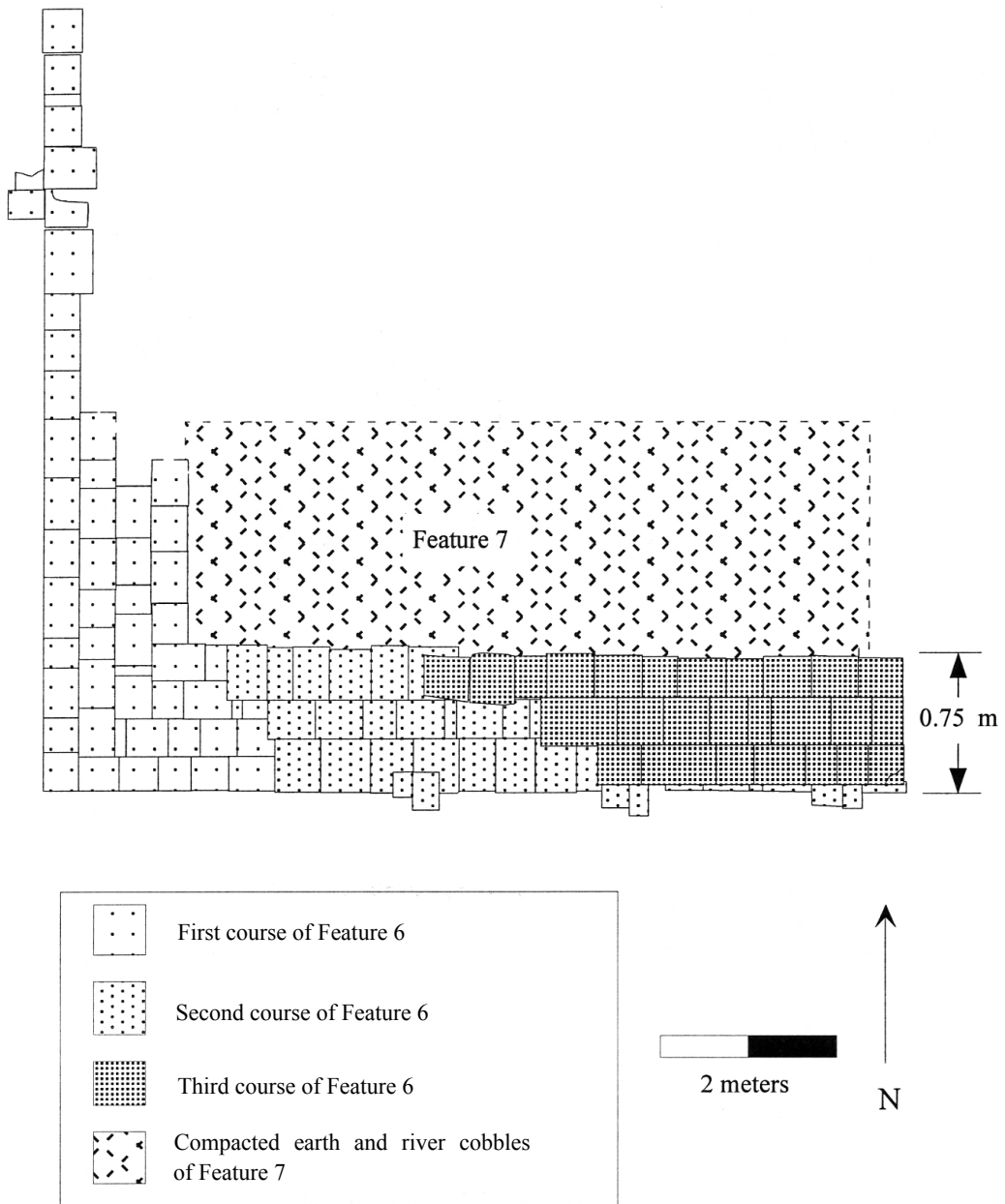


Figure 5.15: Trench P1, Features 6 and 7 at the Southwest Corner of the South Wing of the Main Platform

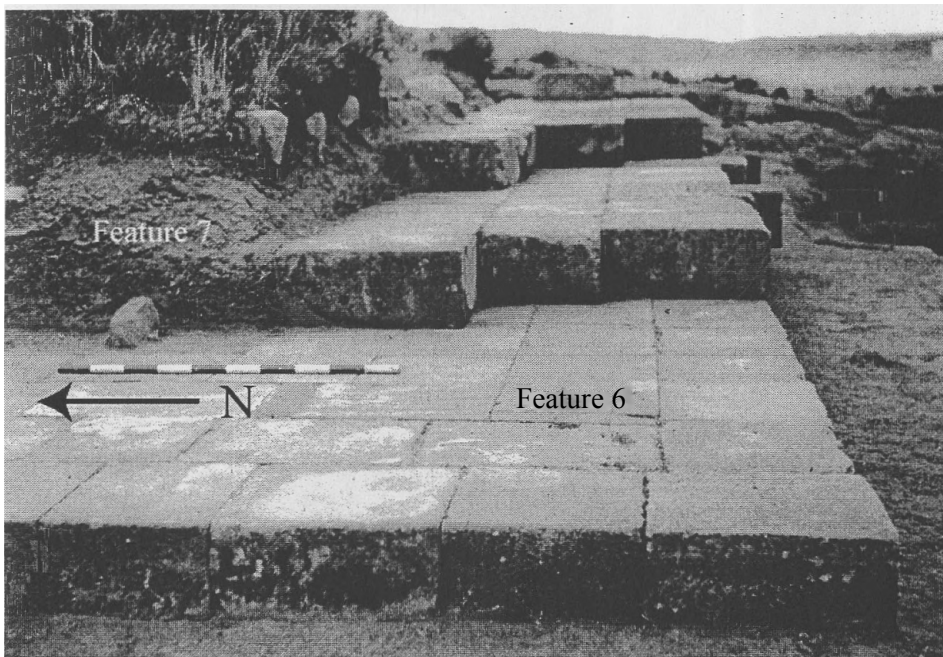
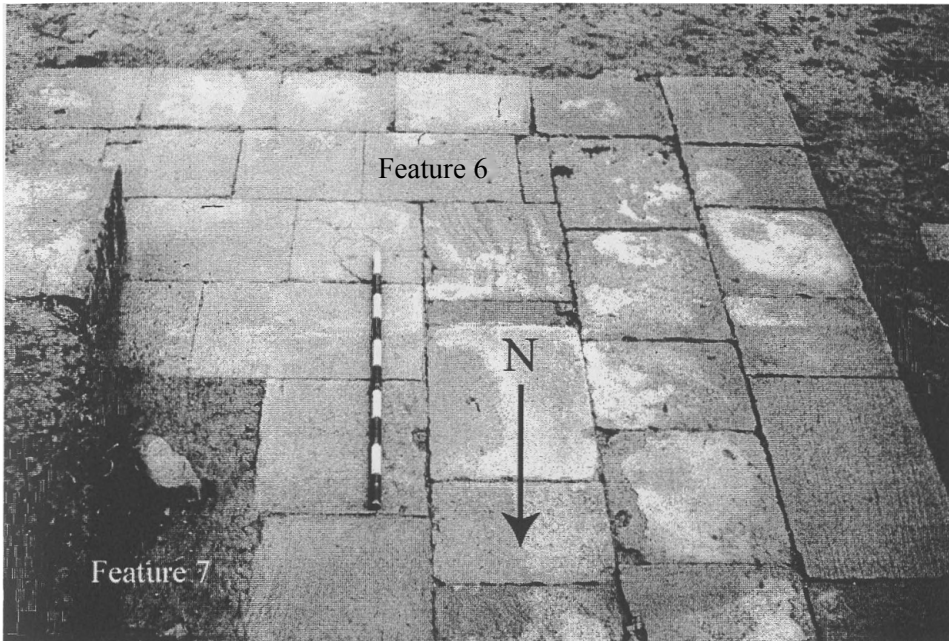


Figure 5.16: Trench P1, Features 6 and 7 at the Southeast Corner of the Southern Wing of the Main Platform

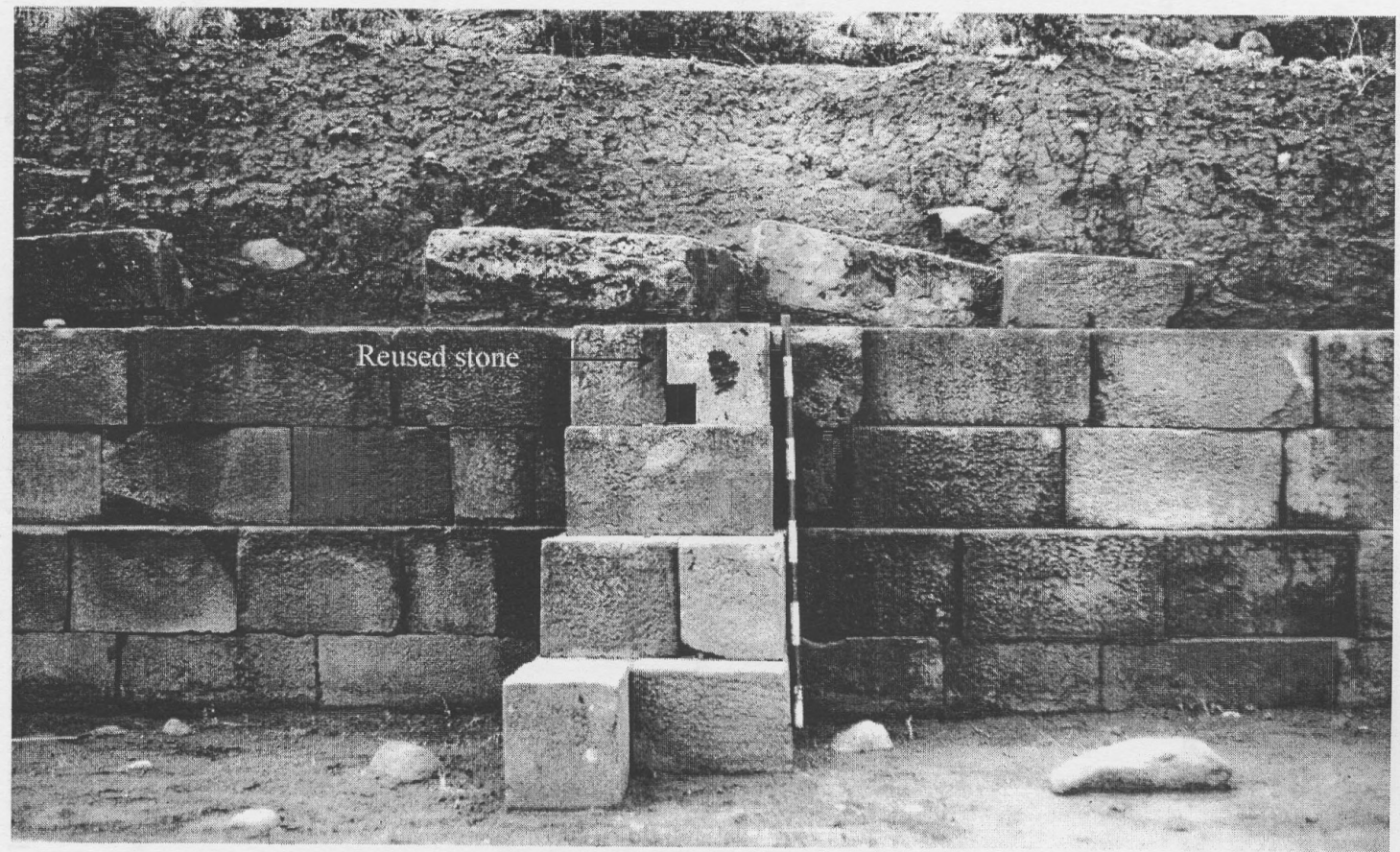


Figure 5.17: Trench P1, Detail of Feature 6

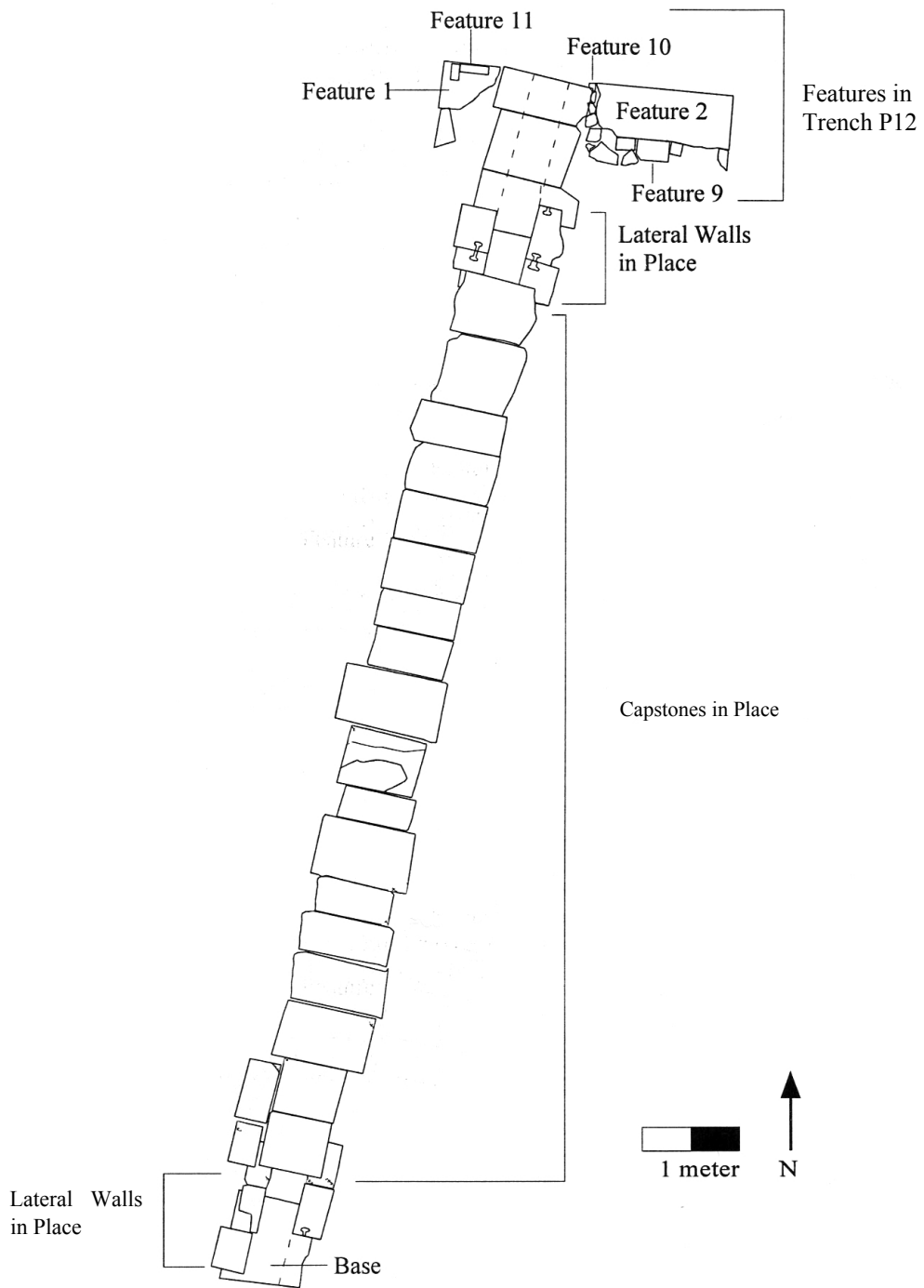


Figure 5.18: Trench P1, Feature 9, with Features in Trench P12

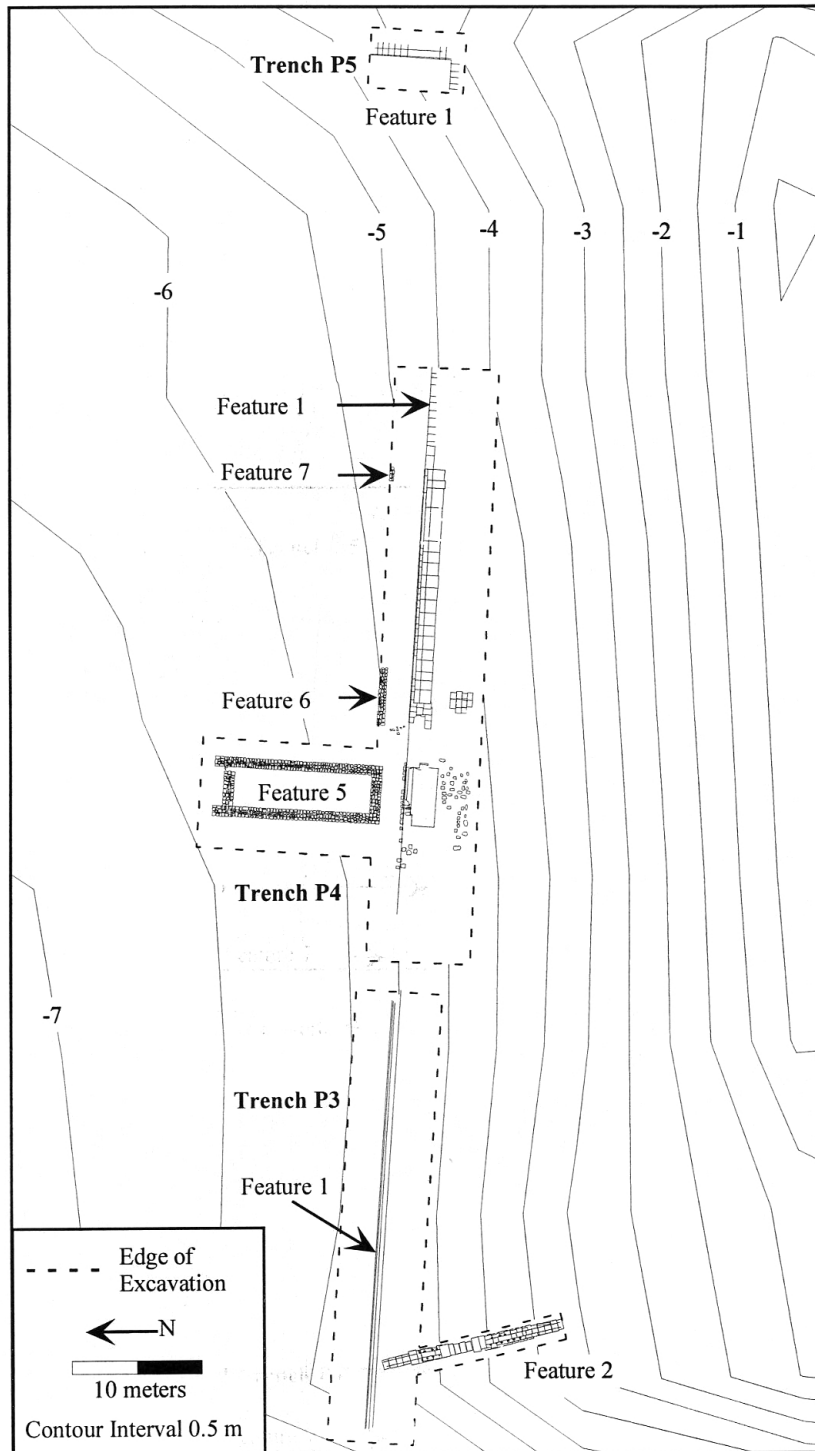


Figure 5.19: Trenches P3, P4, and P5, Plan View

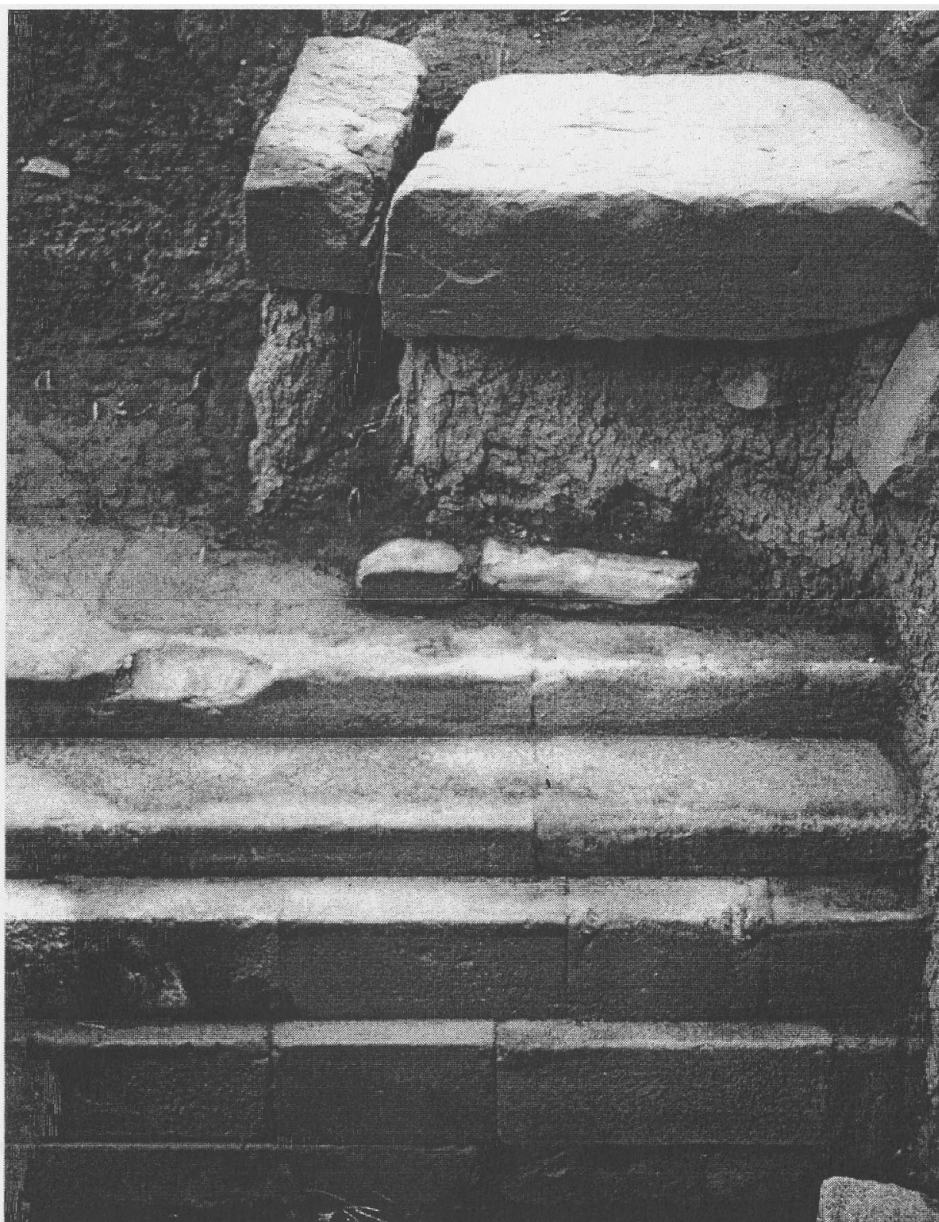


Figure 5.20: Trench P3, Feature 1. Notice the Precision Fit of the the Stone Blocks.



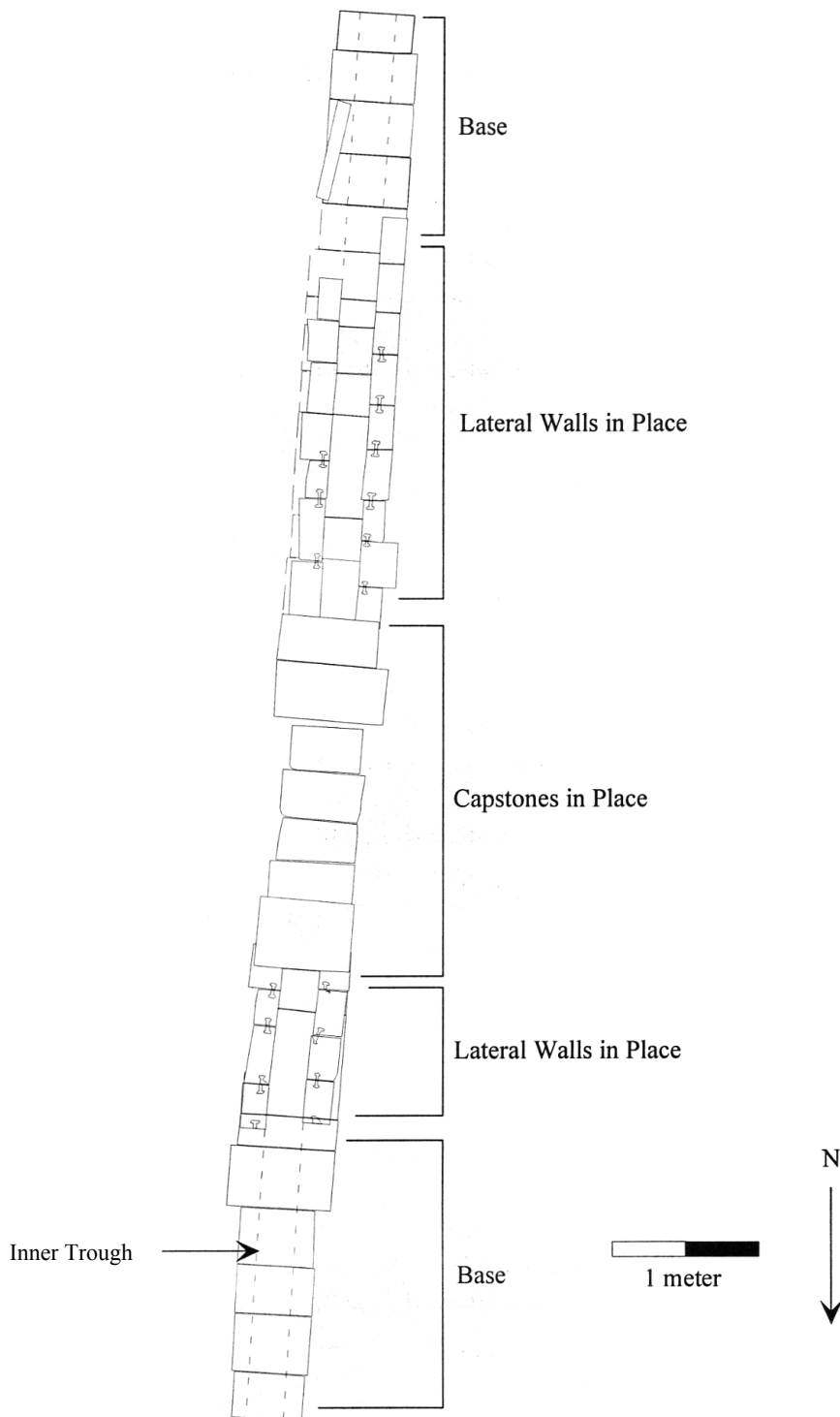


Figure 5.21: Trench P3, Feature 2

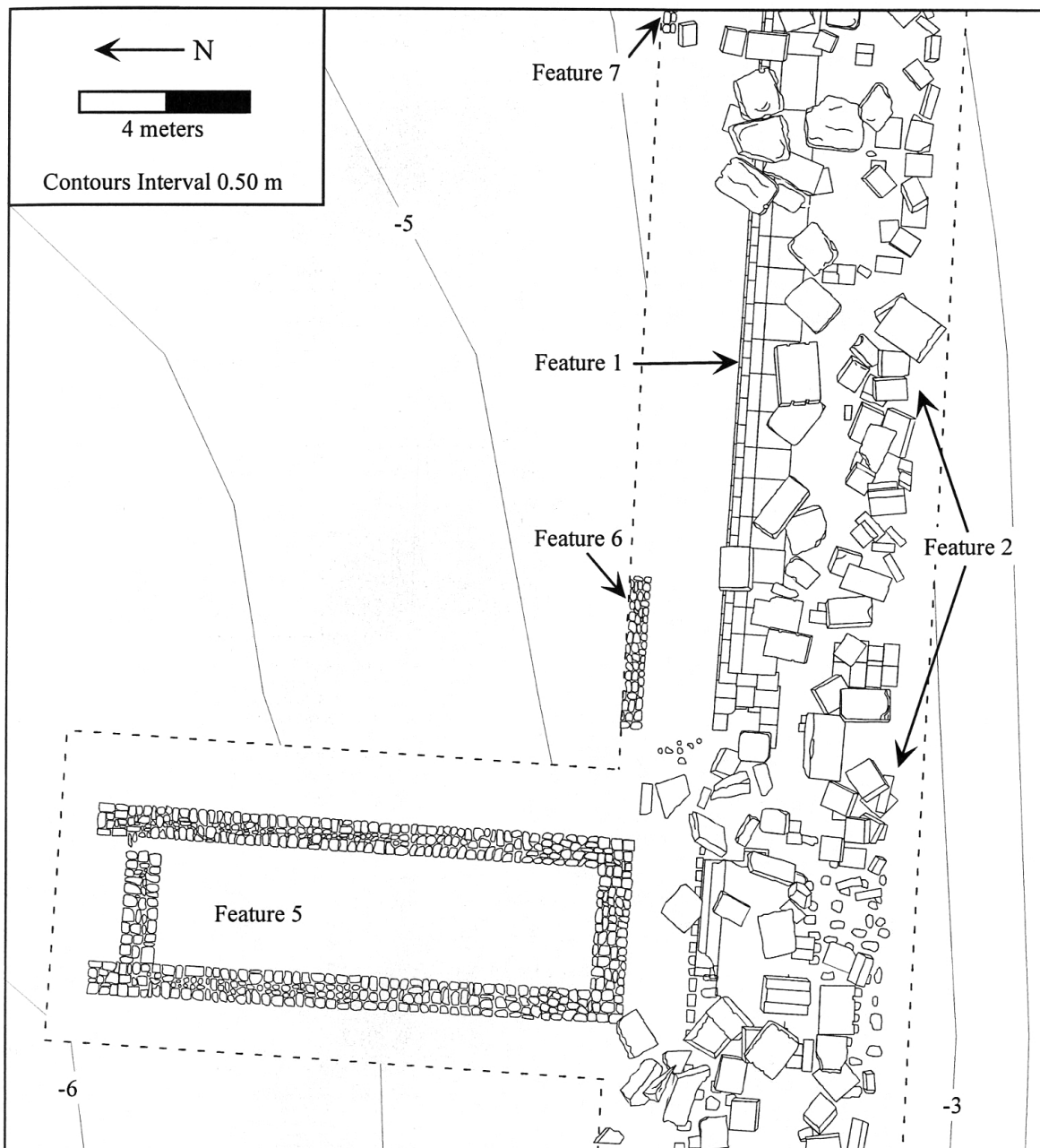


Figure 5.22: Trench P4, Plan View



Figure 5.23: Trench P4, Feature 2. Large Stones Blocks of Feature 2 on the Even Courses of Feature 1.



Figure 5.24: Trench P4, Feature 5, View Looking North

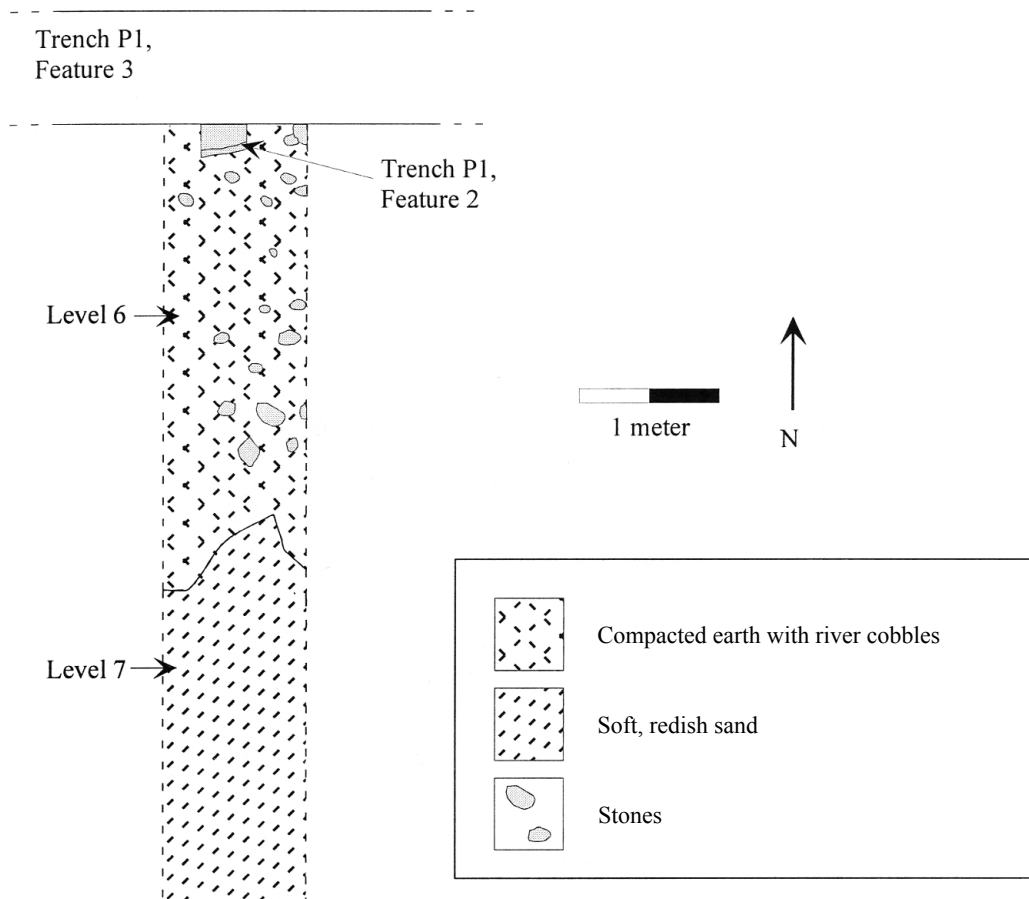
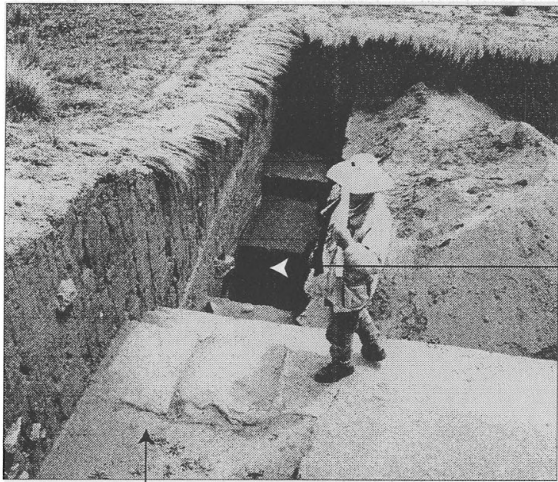
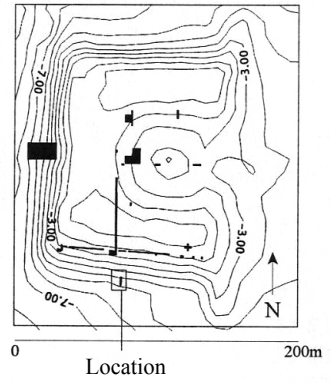


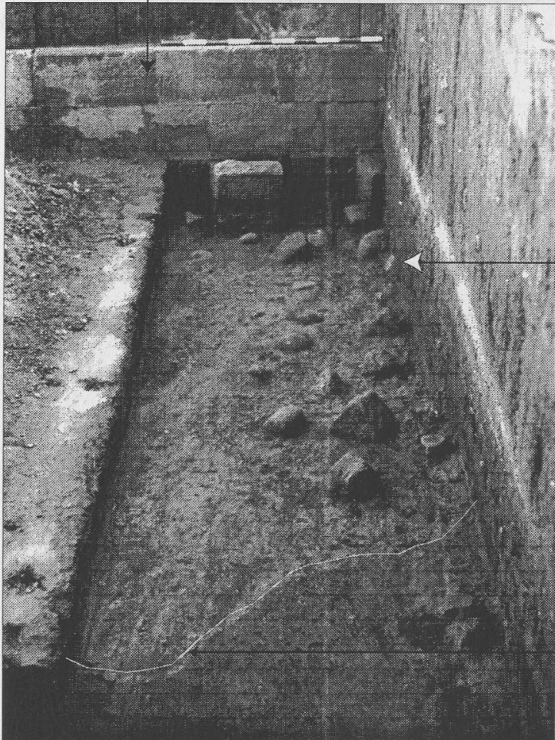
Figure 5.25: Trench P6, Plan View, Showing Relation to Trench P1



Trench P1, Feature 3



Trench P6



Southern Edge of Level 6

View Looking North

Figure 5.26: Trench P6 and Its Relation to Trench P1

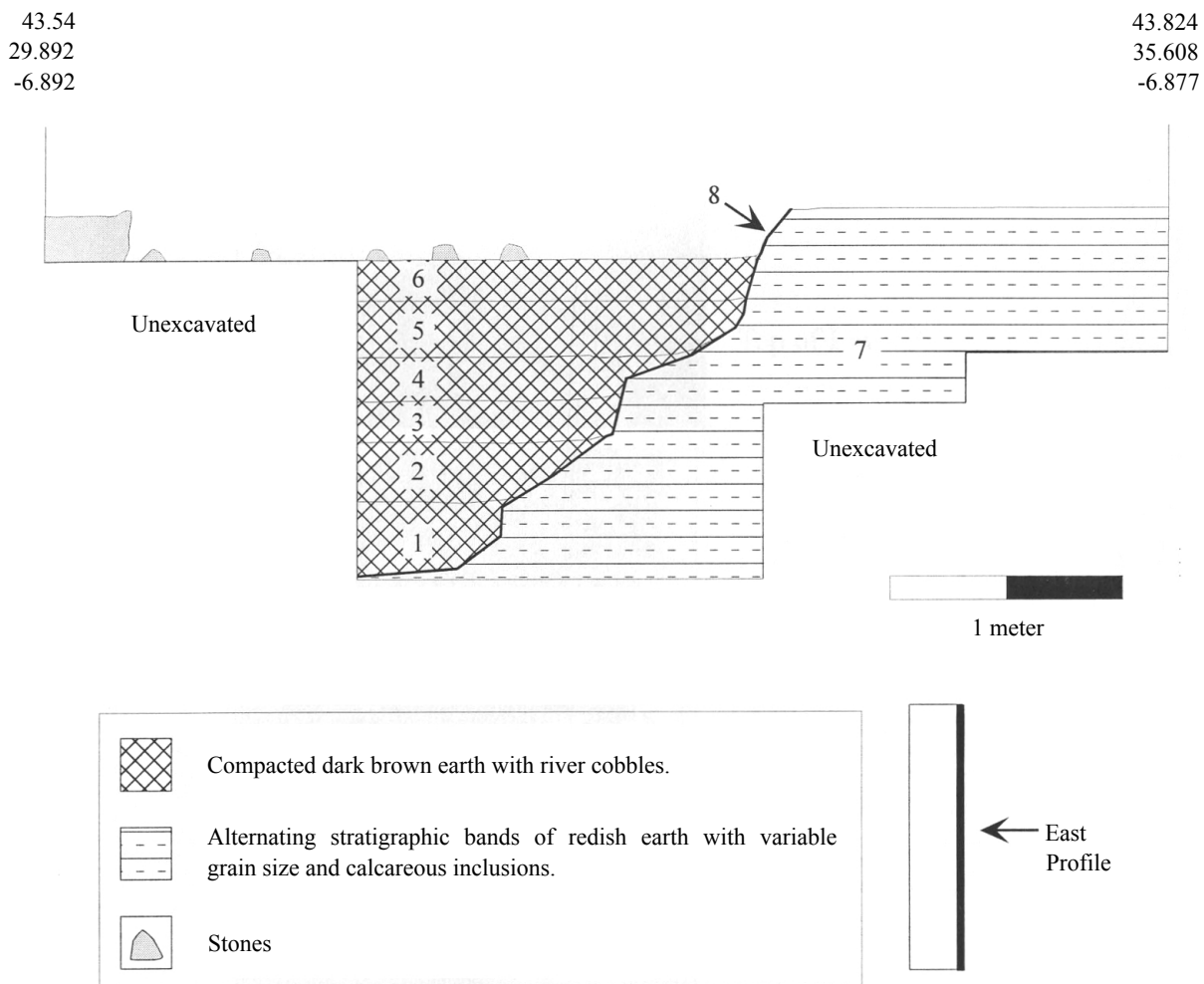
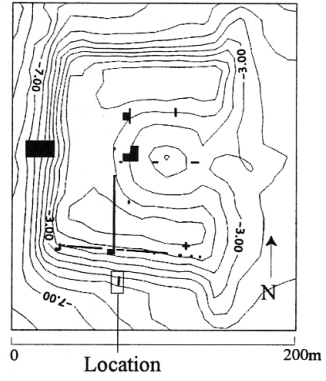
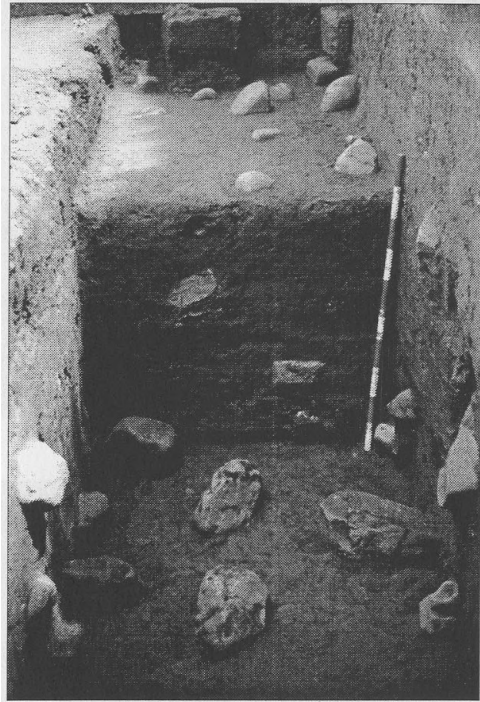
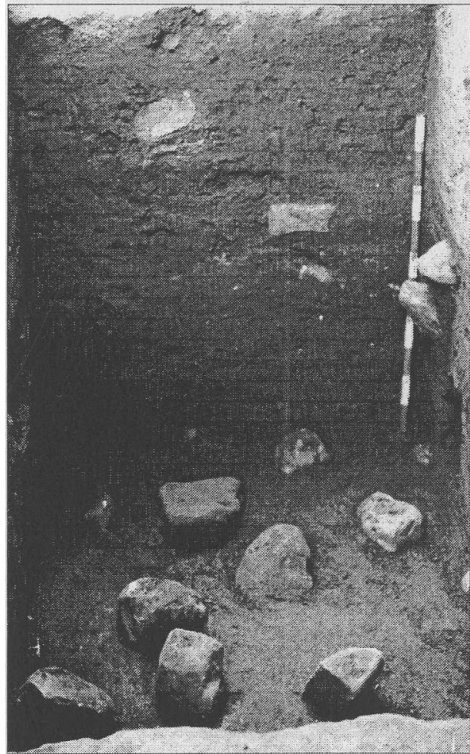


Figure 5.27: Trench P6, East Profile



Top of Level 3



Top of Level 1

Figure 5.28: Trench P6, Levels 1 and 3



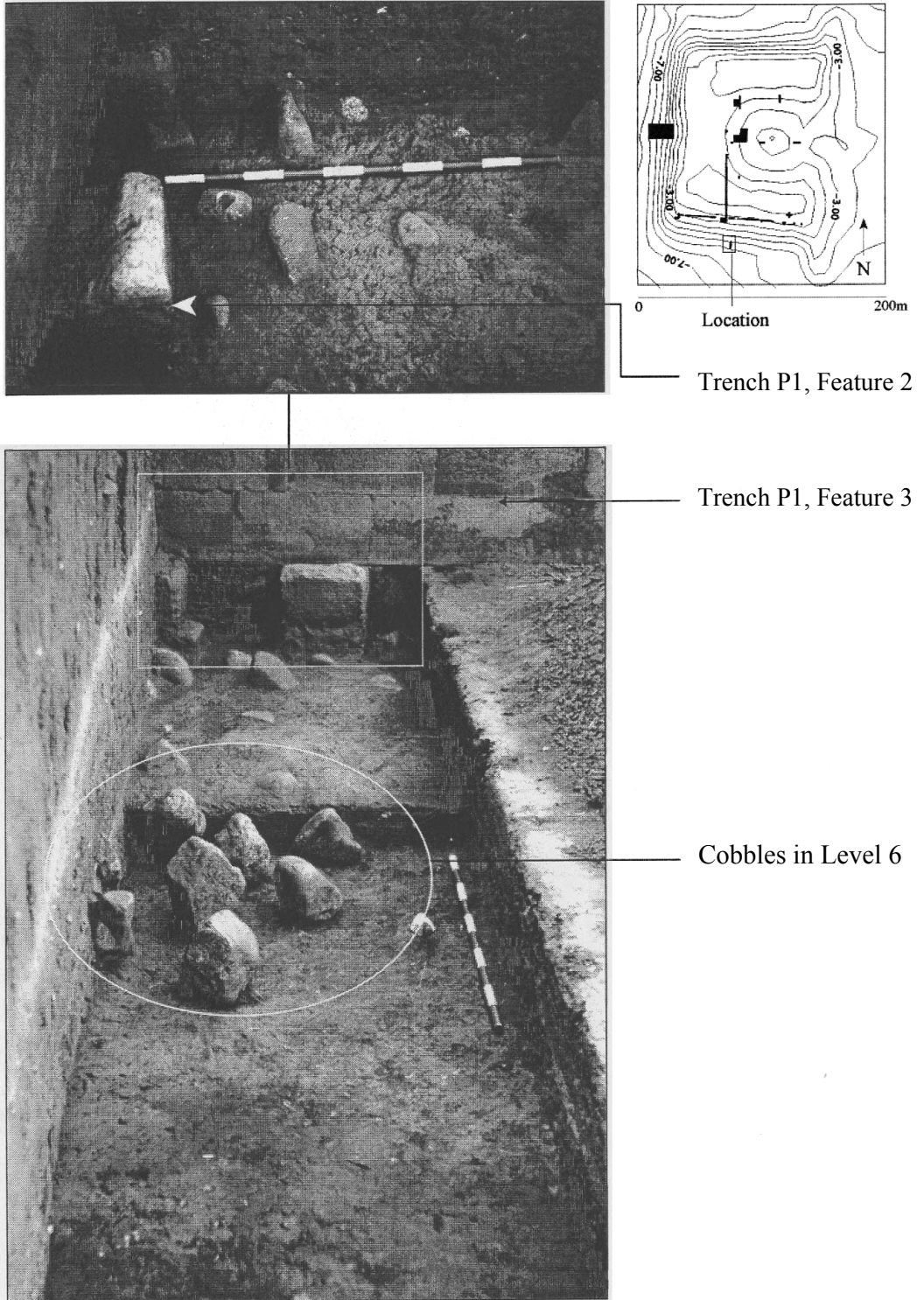


Figure 5.29: Trench P6, Level 6

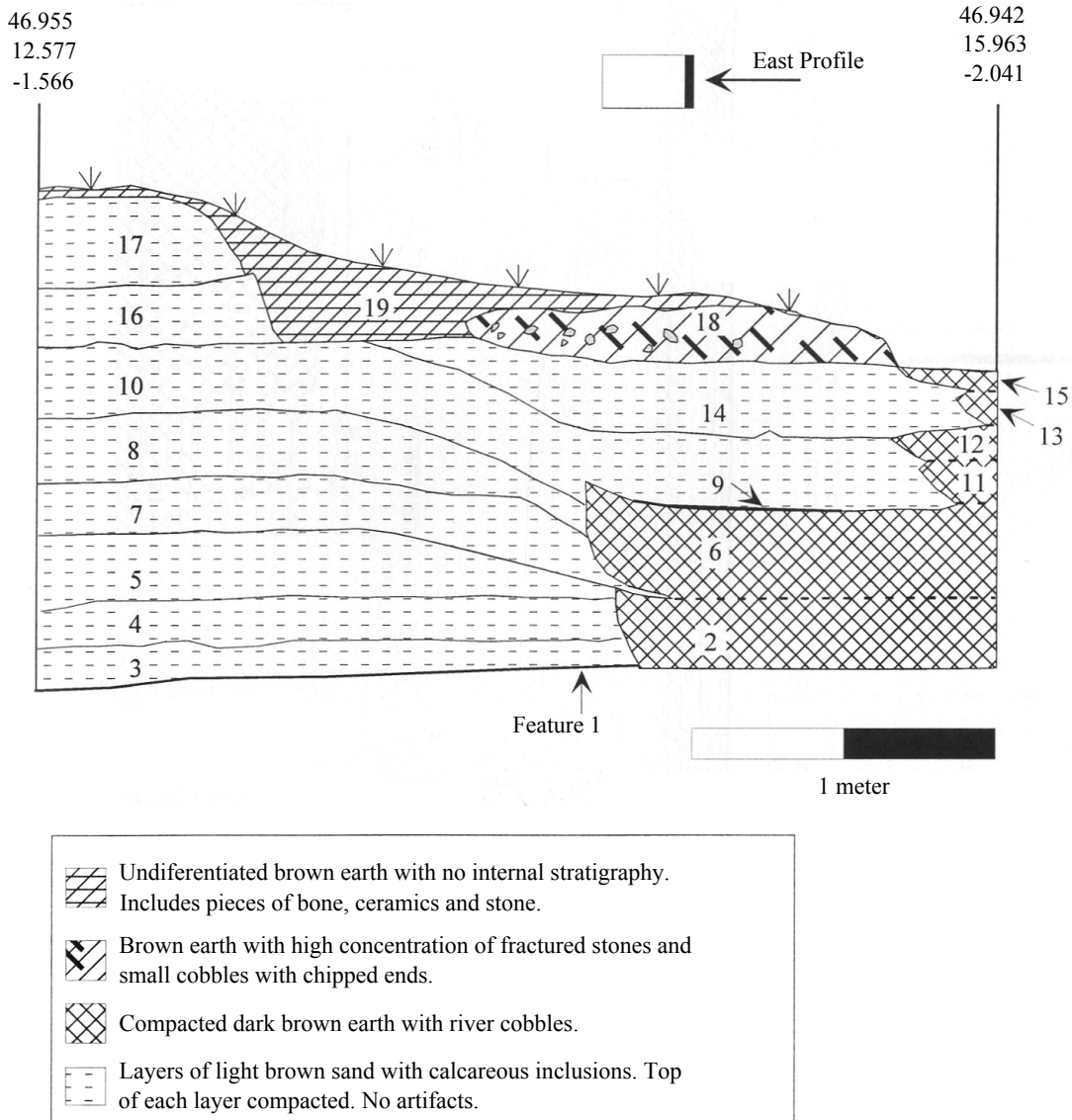


Figure 5.30: Trench P7, East Profile

358

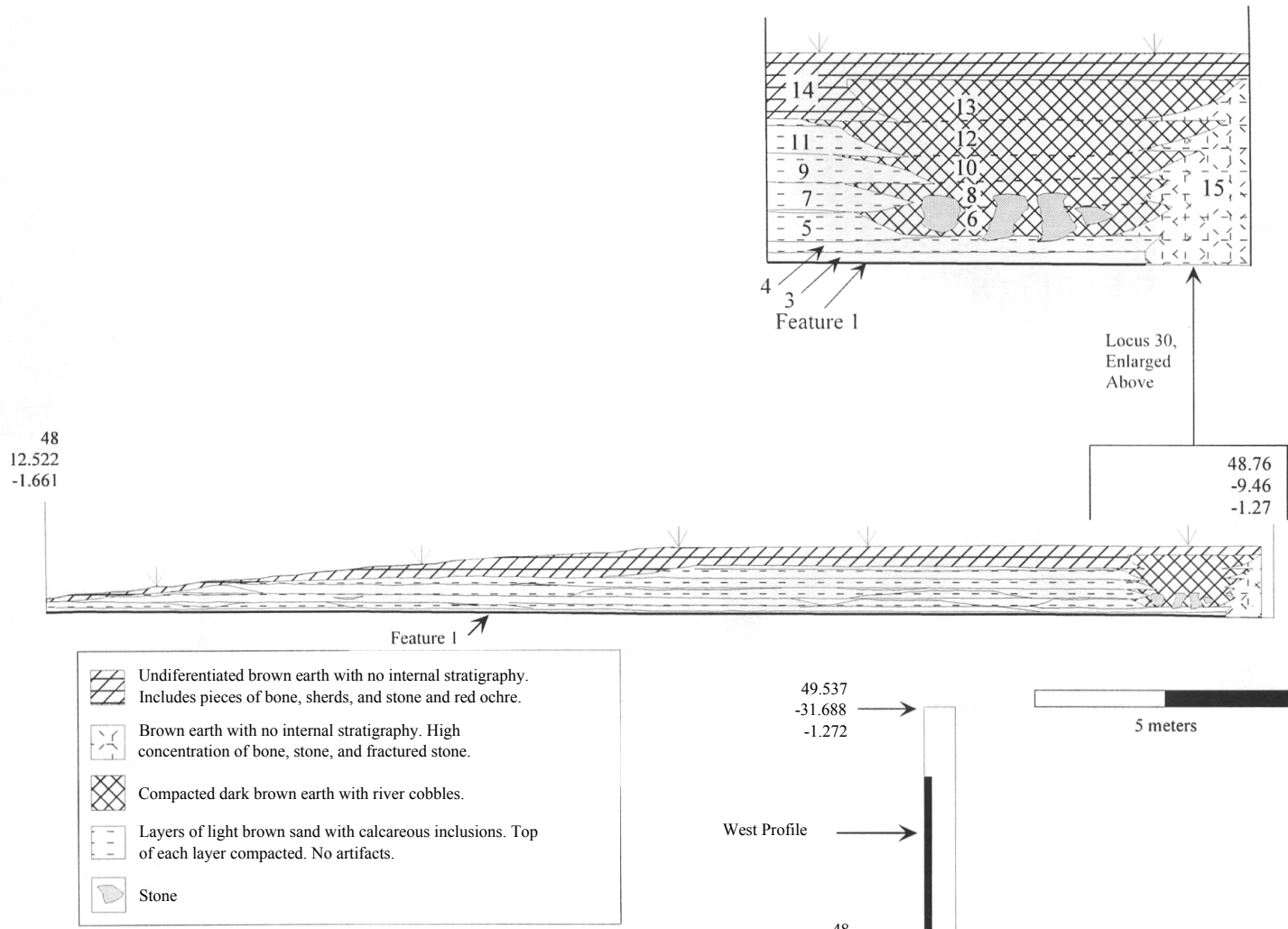


Figure 5.31 : Trench P8, West Profile

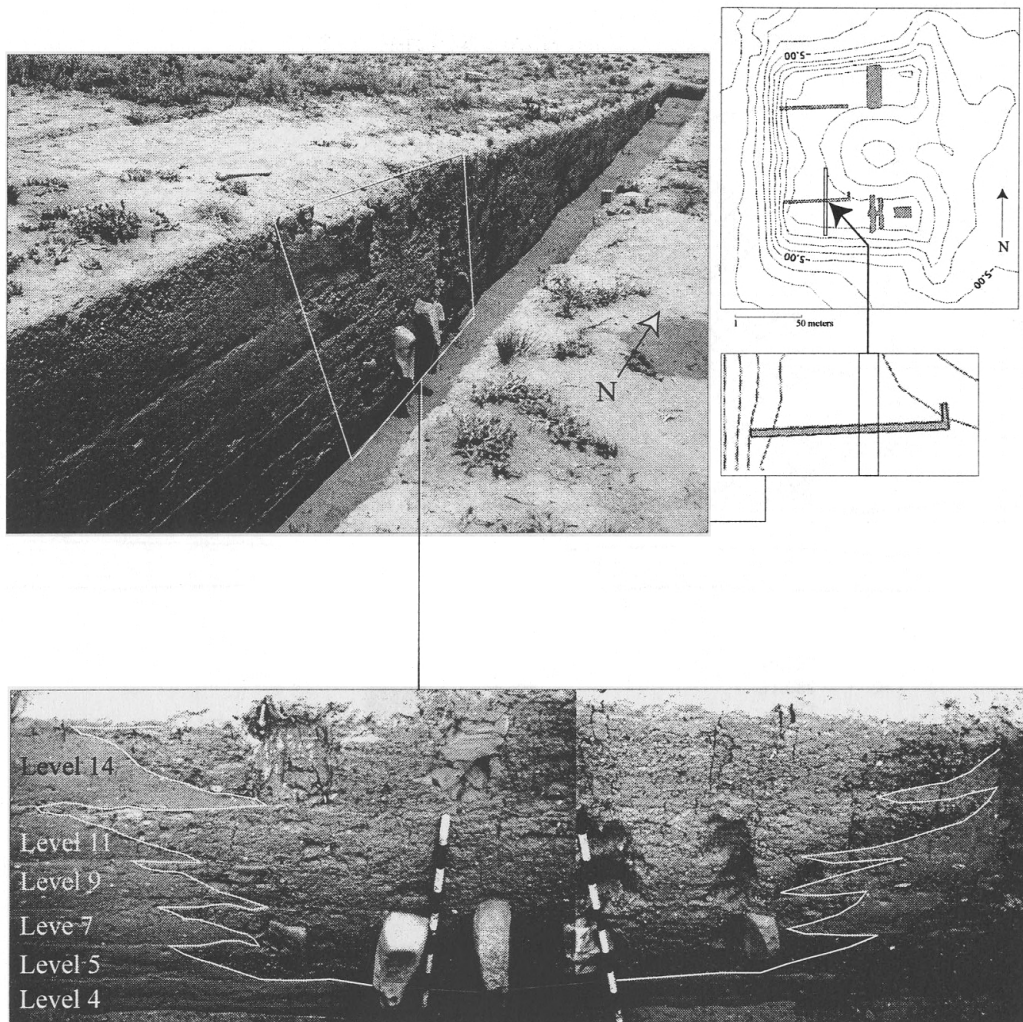


Figure 5.32: Trench P8, West Profile. Detail of the Section through the Compacted Earth and Cobble Strata of Locus 30.

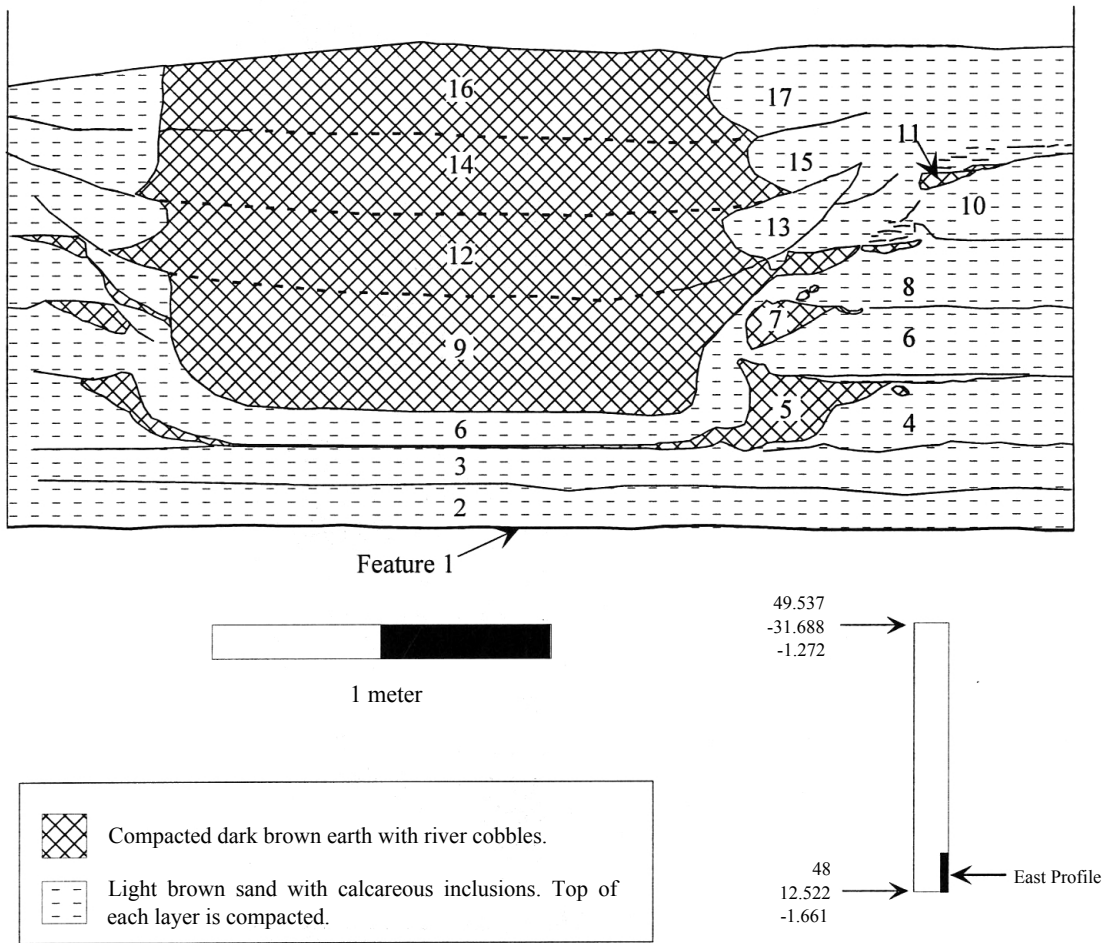


Figure 5.33: Trench P8, East Profile

48.569  
-31.738  
-1.314

48.578  
-29.498  
-1.315

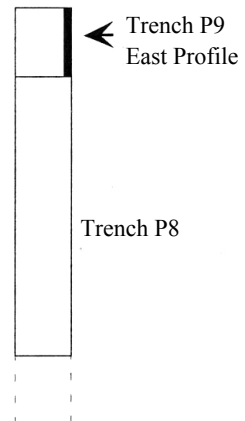
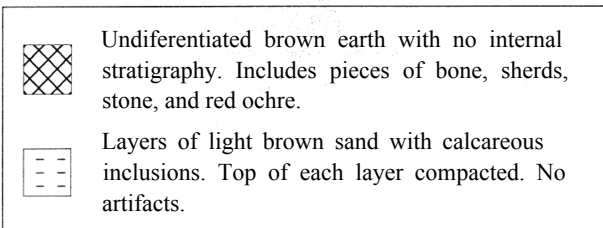
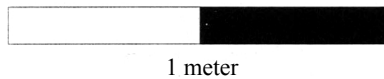
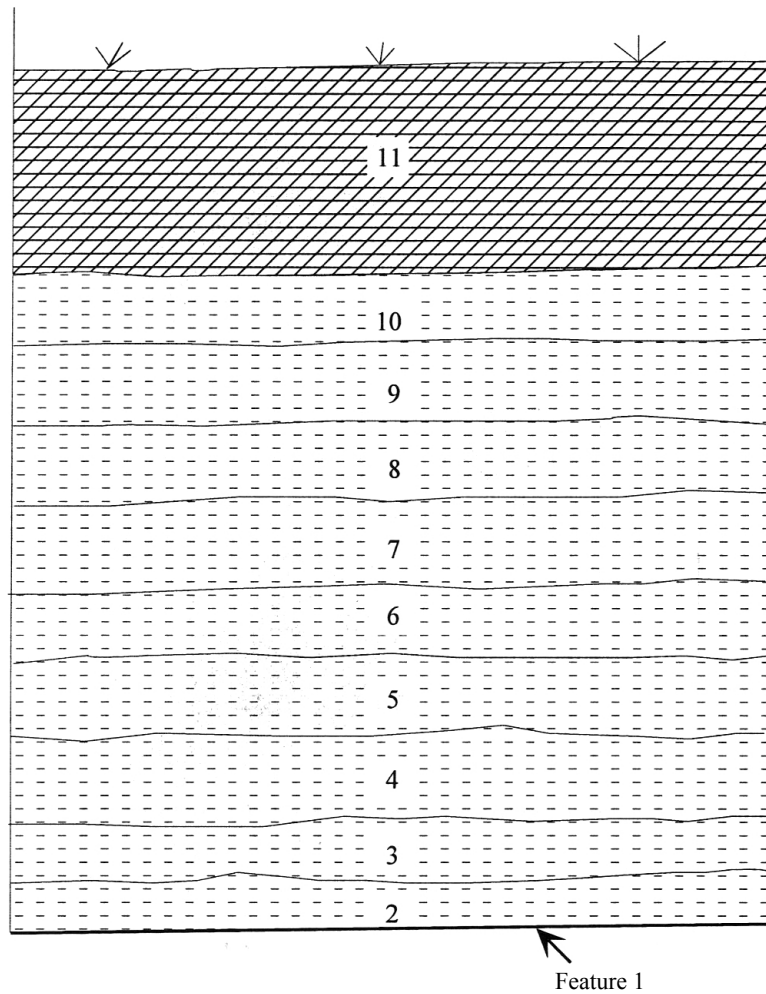
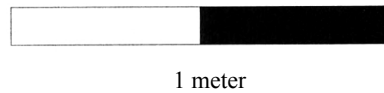
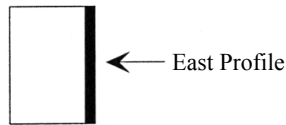
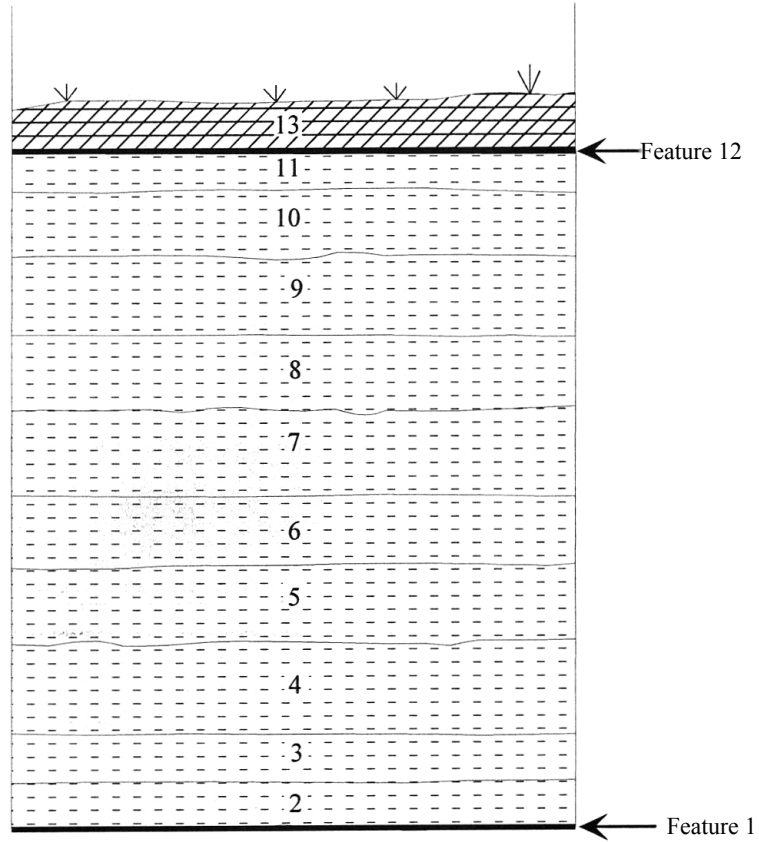


Figure 5.34: Trench P9, East Profile

37.399  
-19.436  
-1.36

37.261  
-17.414  
-1.319





- |   |  |
|---|--|
|  | Undifferentiated brown earth with no internal stratigraphy. Includes pieces of bone, sherds, and stone, and red ochre. |
|  | Layers of light brown sand with calcareous inclusions. Top of each layer compacted. No artifacts.                      |

Figure 5.35: Trench P11, East Profile

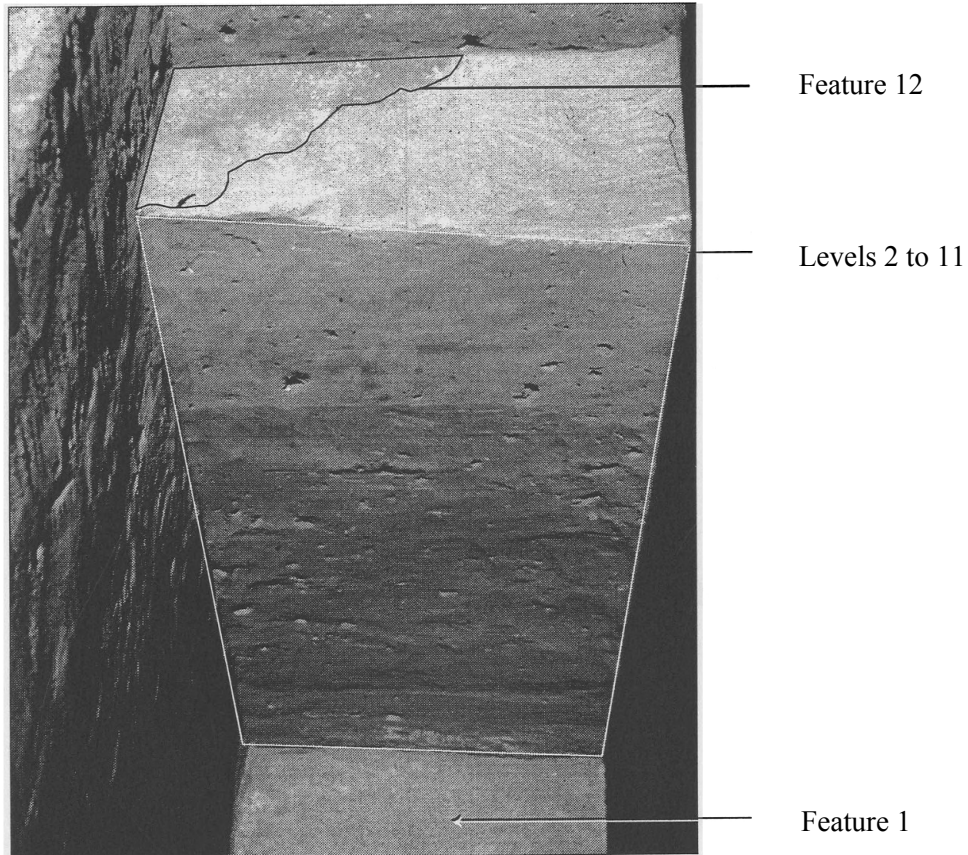
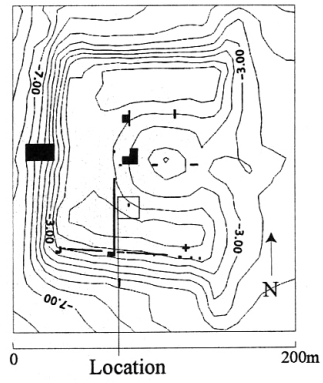


Figure 5.36: Trench P 1 1 , South Profile



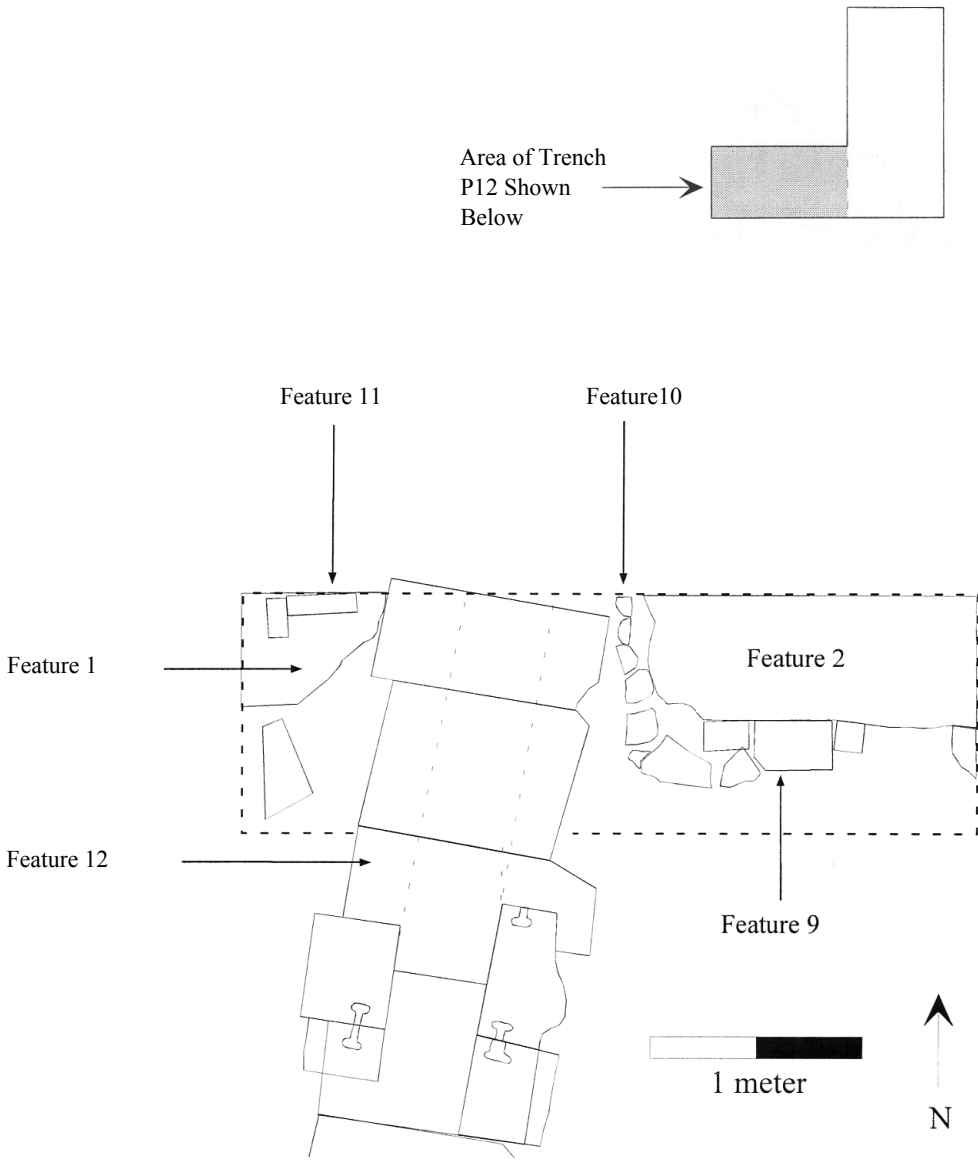


Figure 5.37: Trench P12, Plan View

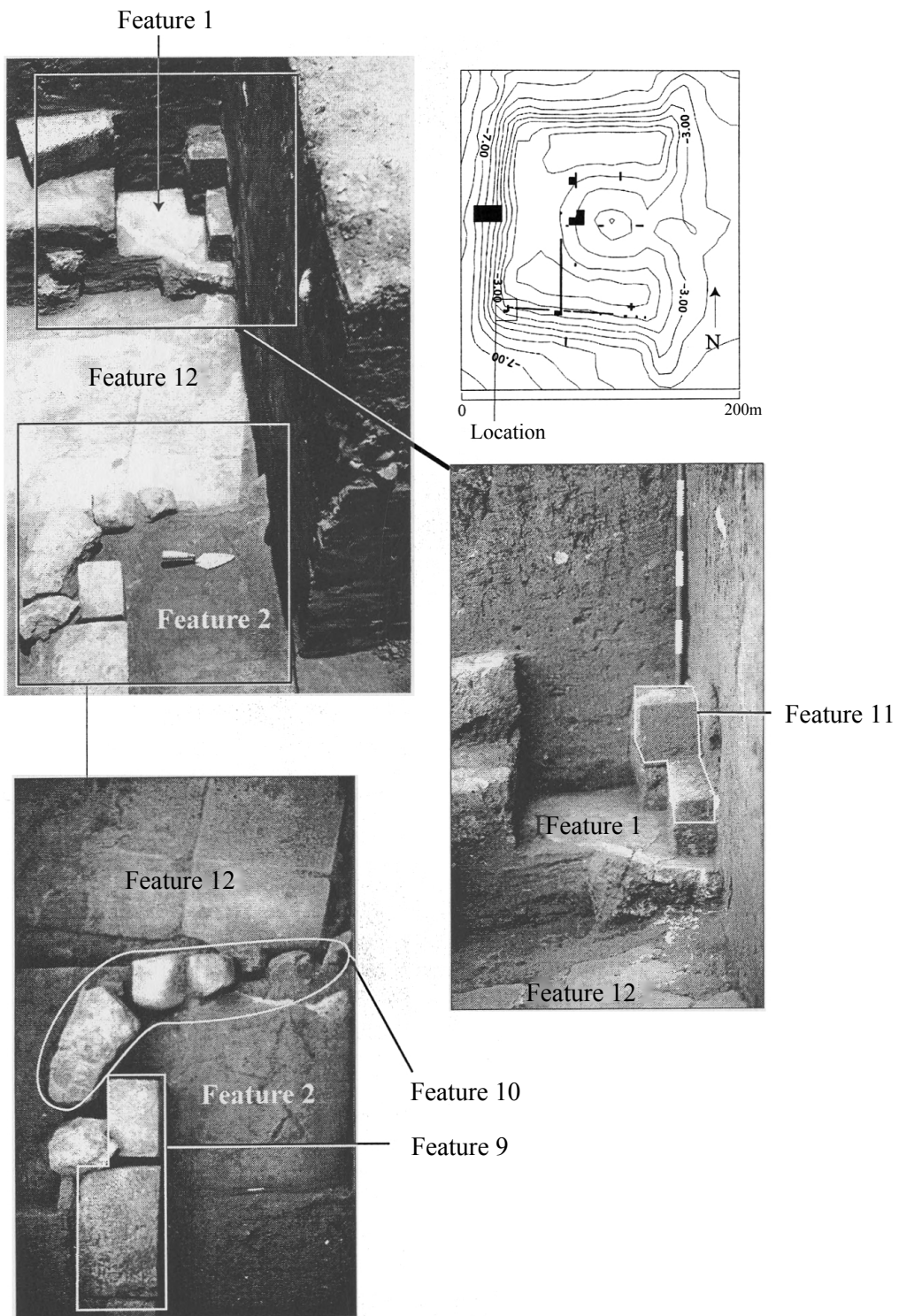


Figure 5.38: Trench P12, View of the Features adjacent to the North Profile

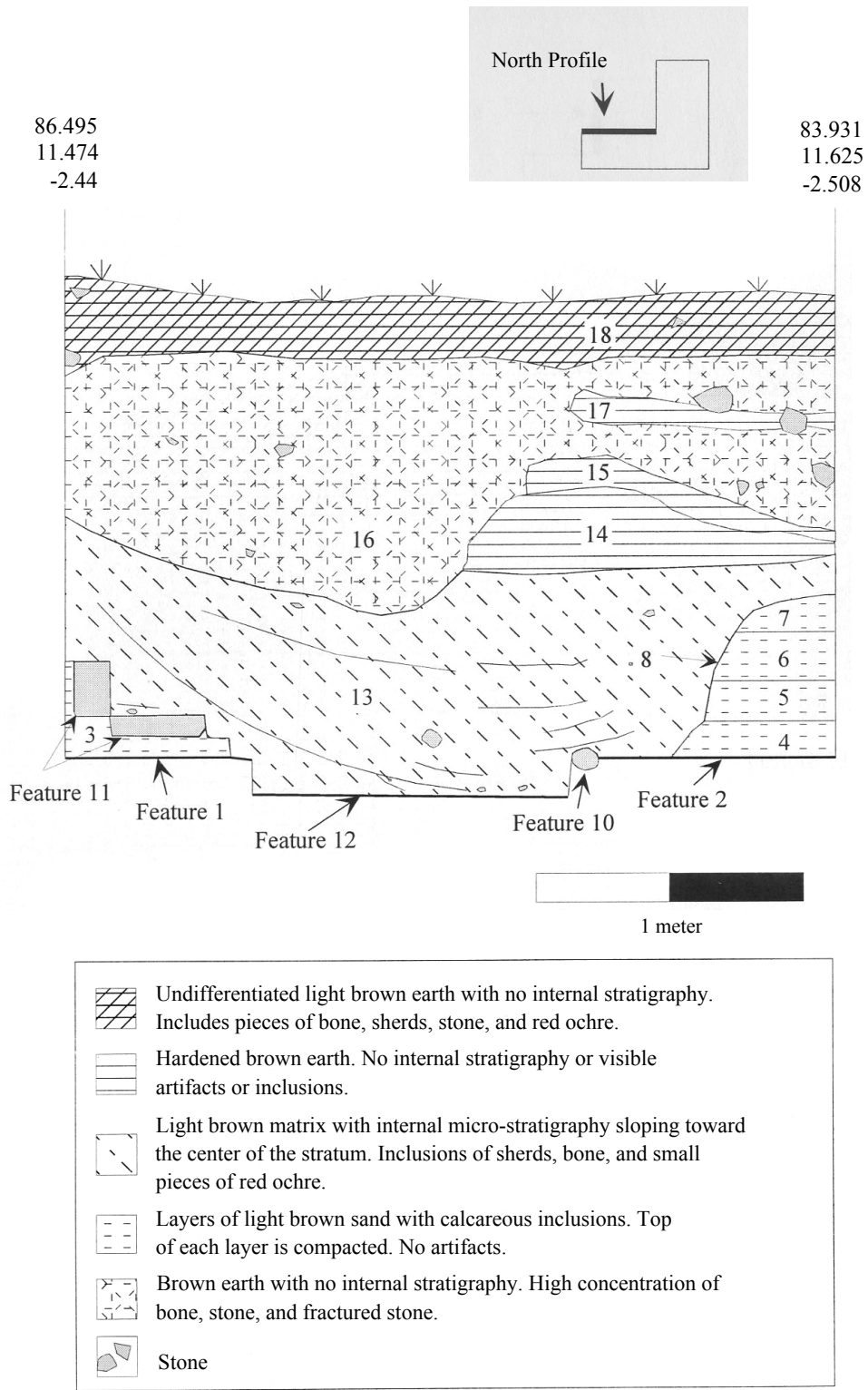
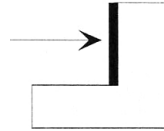


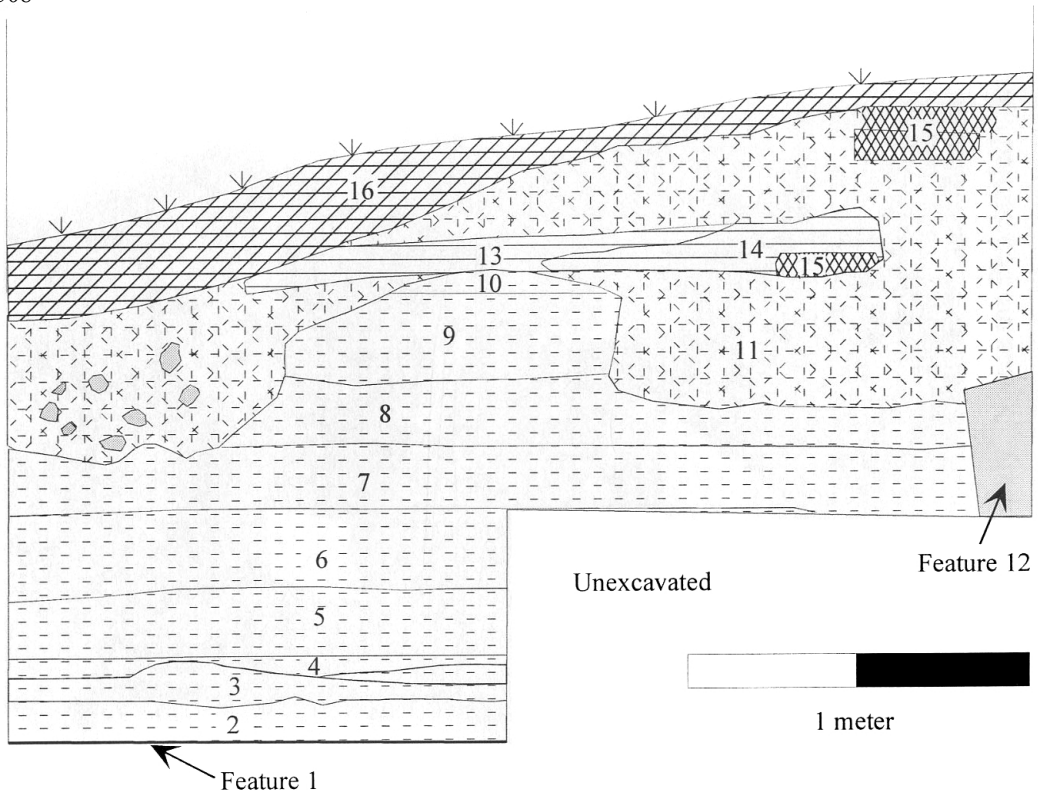
Figure 5.39: Trench P12, North Profile

83.981  
11.625  
-2.508

West Profile →



84.003  
8.624  
-2.017









-  Undifferentiated brown earth with no internal stratigraphy. Includes pieces of bone, sherds, stone, and red ochre.
-  Adobe
-  Brown earth with no internal stratigraphy. High concentration of bone, stone and fractured stone.
-  Hardened brown earth. No internal stratigraphy or visible artifacts or inclusions.
-  Layers of light brown sand with calcareous inclusions. Top of each layer is compacted. No artifacts.
-  Stone

Figure 5.40: Trench P12, West Profile

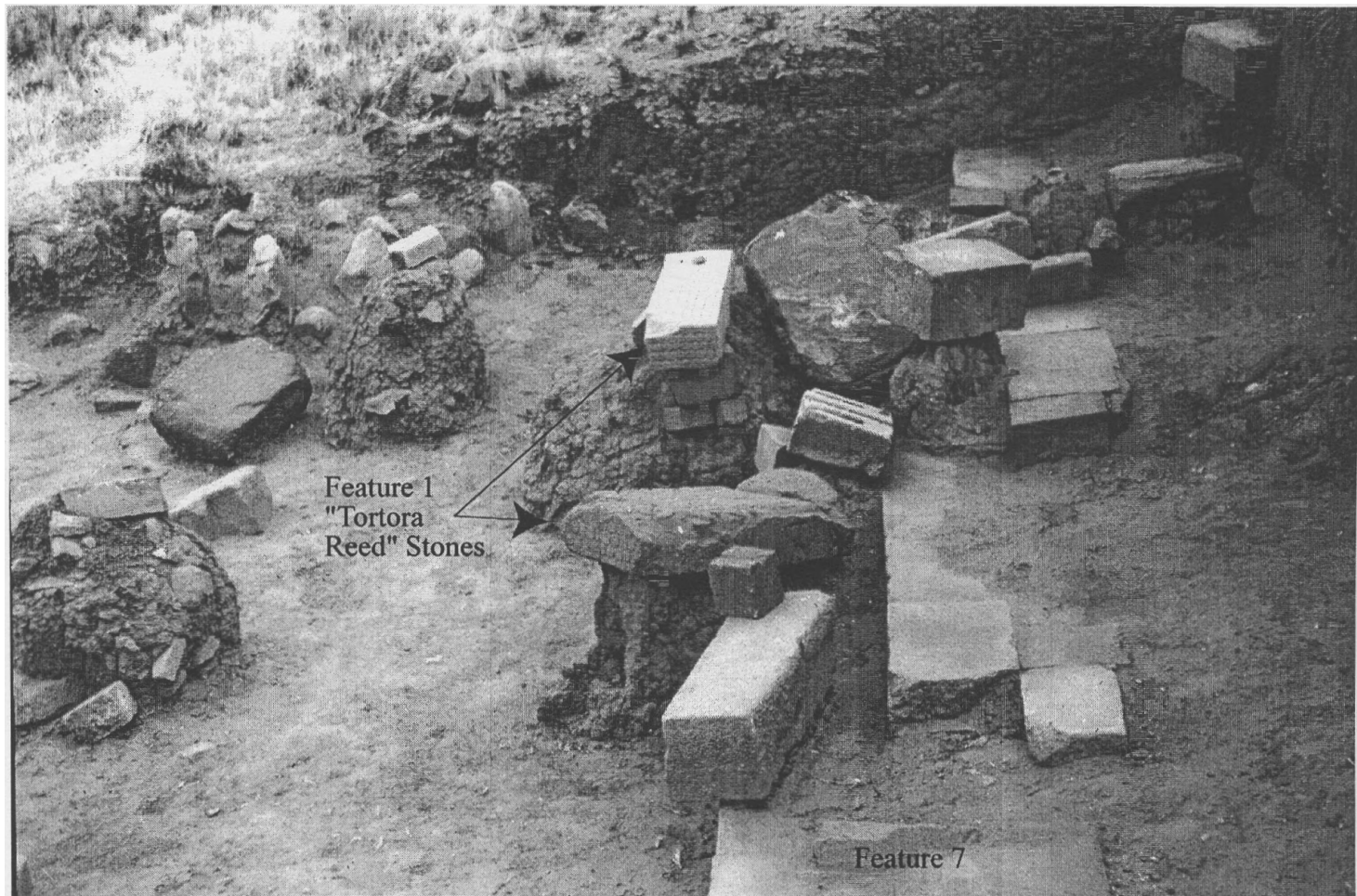


Figure 5.41: Trench P13 prior to Cleaning for This Study. Notice the Pedestalled Carved Stones.

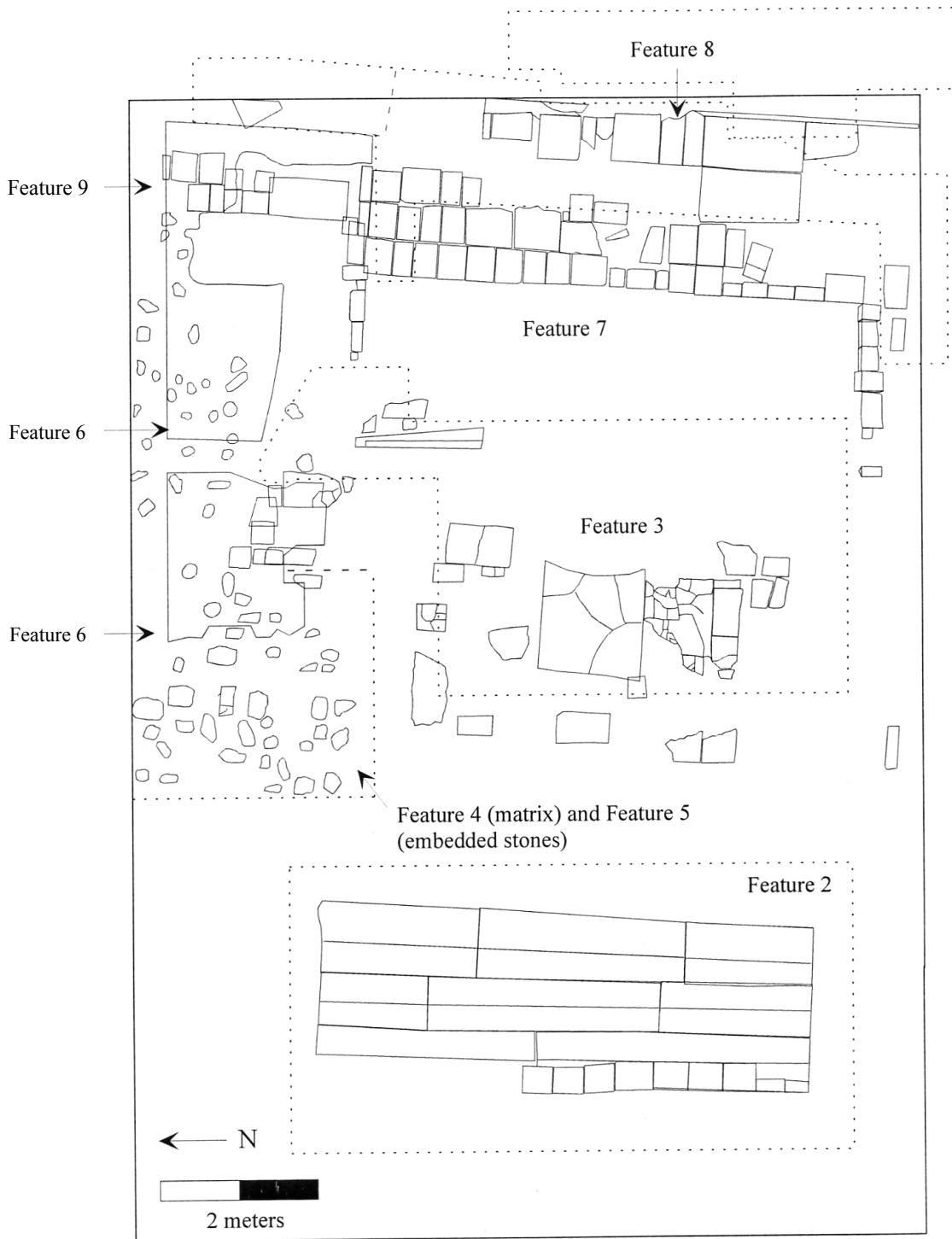
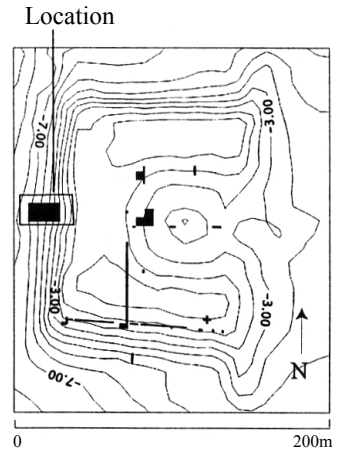
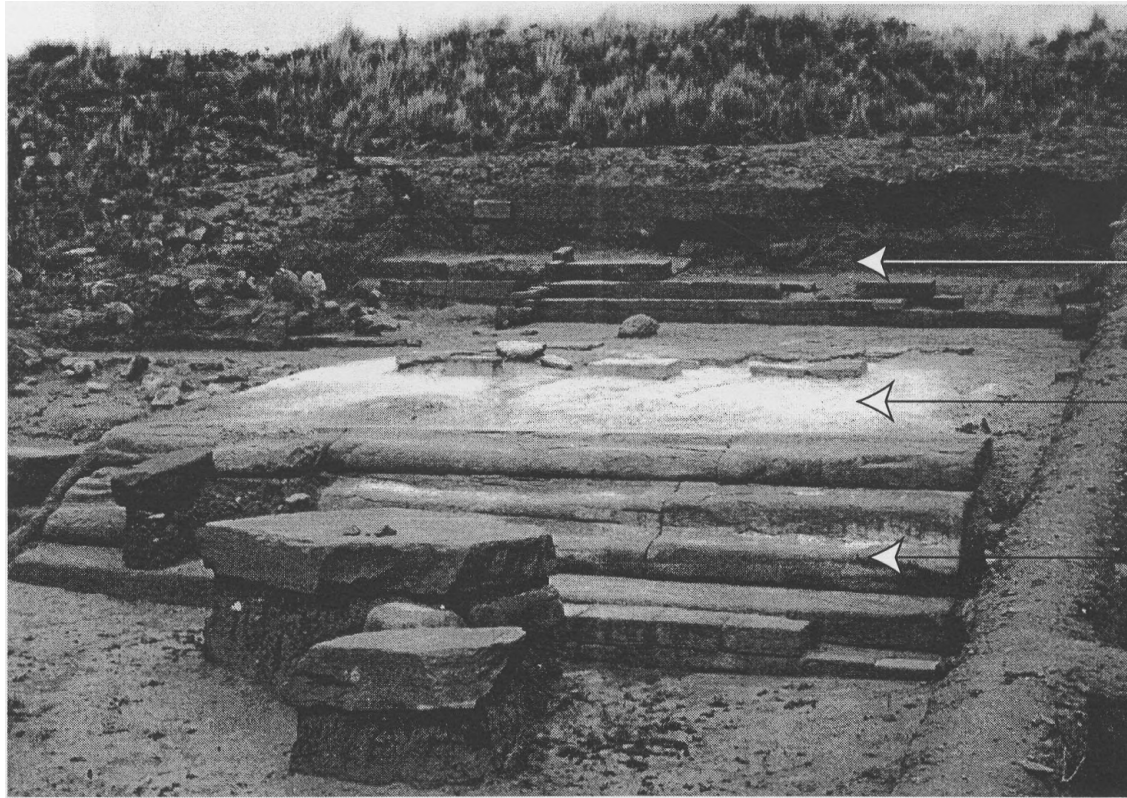


Figure 5.42: Trench P13, Plan View



Feature 7

Feature 3

Feature 2

Figure 5.43: Trench P13, Features 2, 3, and 7



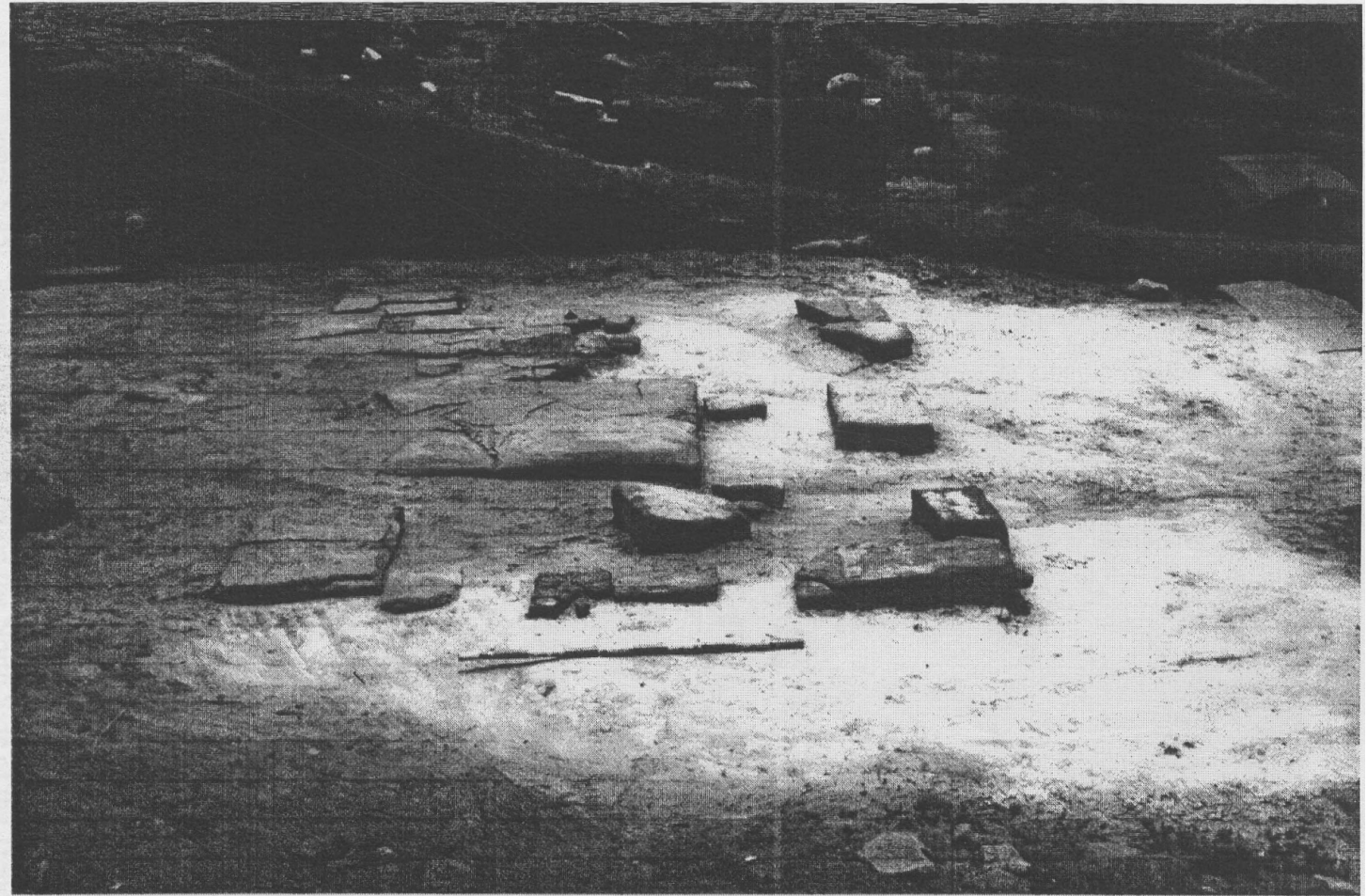


Figure 5.44: Trench P13, Feature 3, View Looking South. Feature 2 is to the West and Feature 7 is to the East.



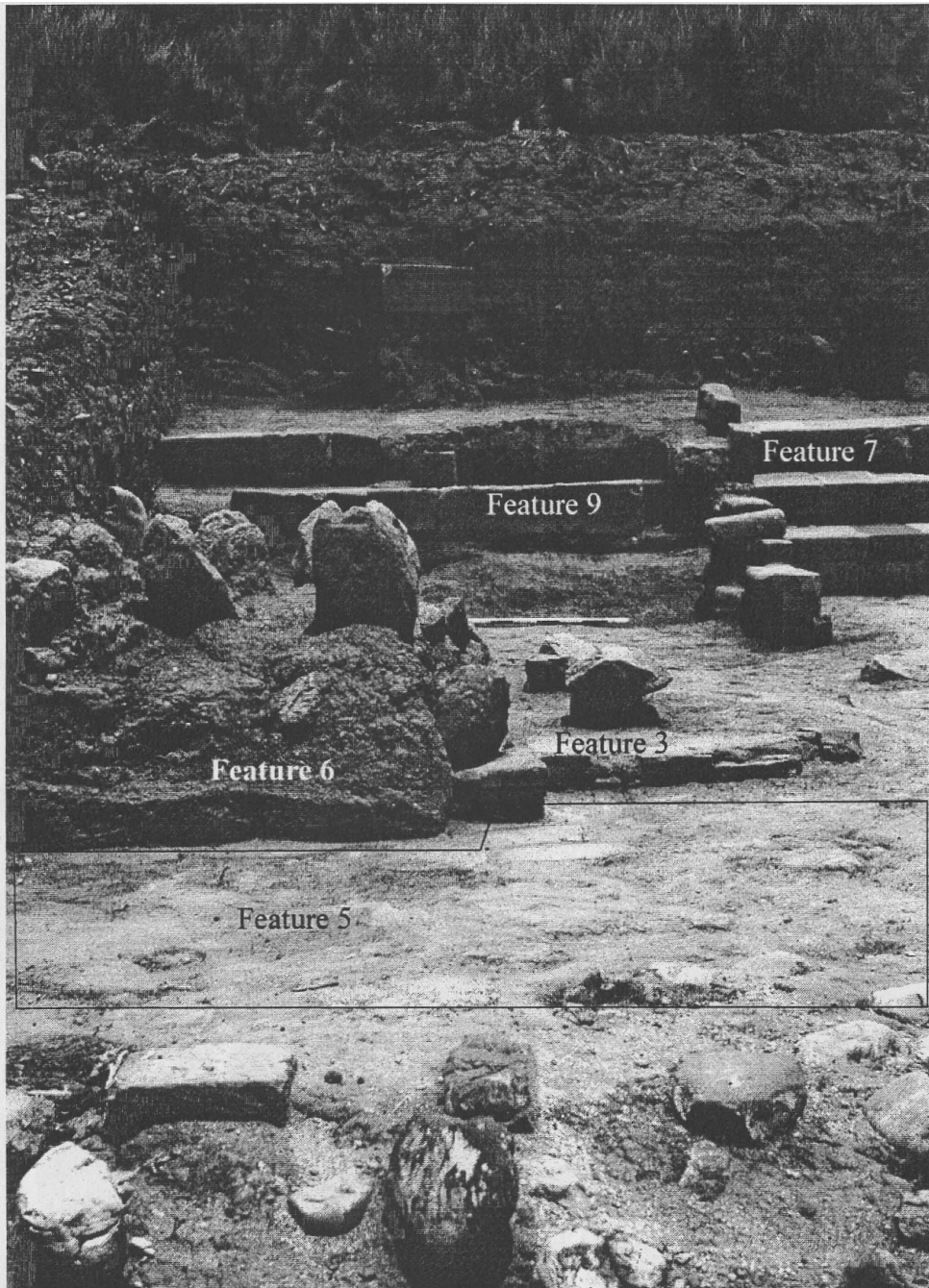
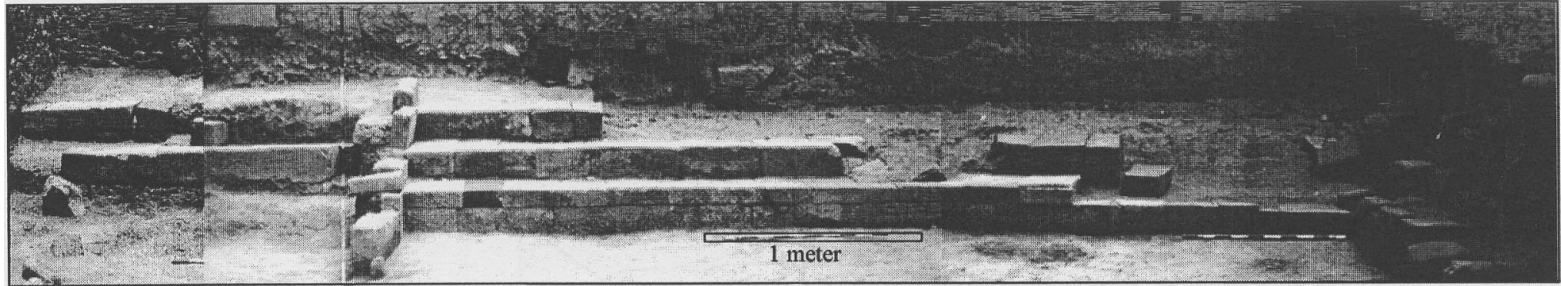
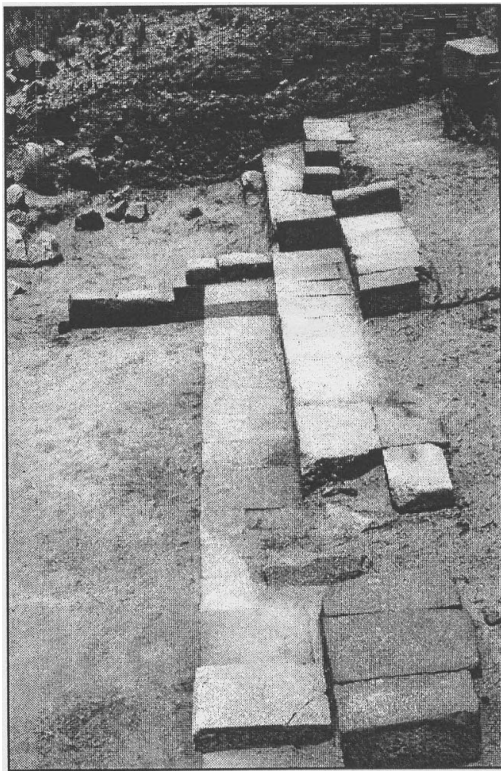


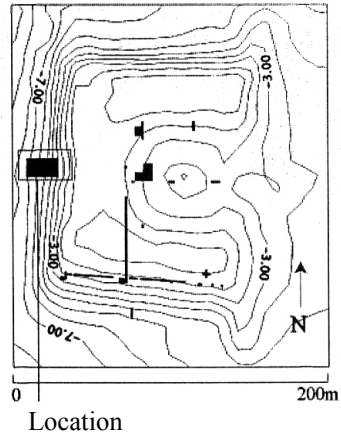
Figure 5.45: Trench P13, Features on the North Side of the Trench



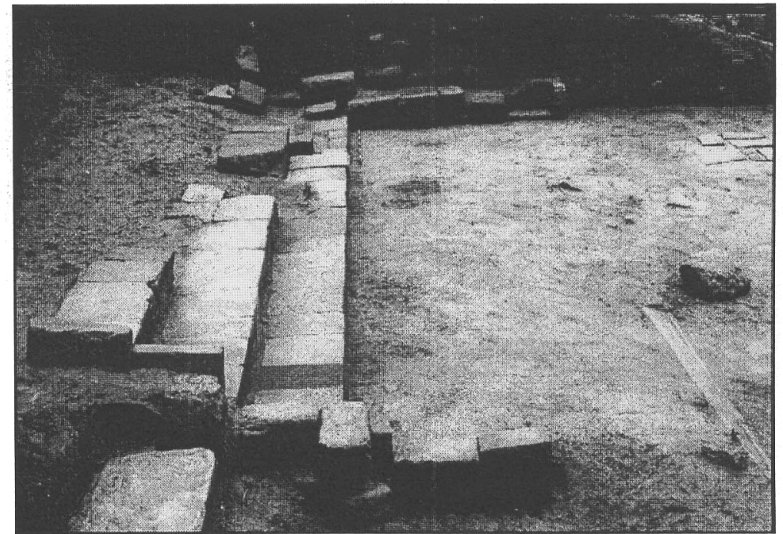
View Looking East



View Looking North



Location



Feature 7, View Looking South

Figure 5.46: Trench P13, Feature 7

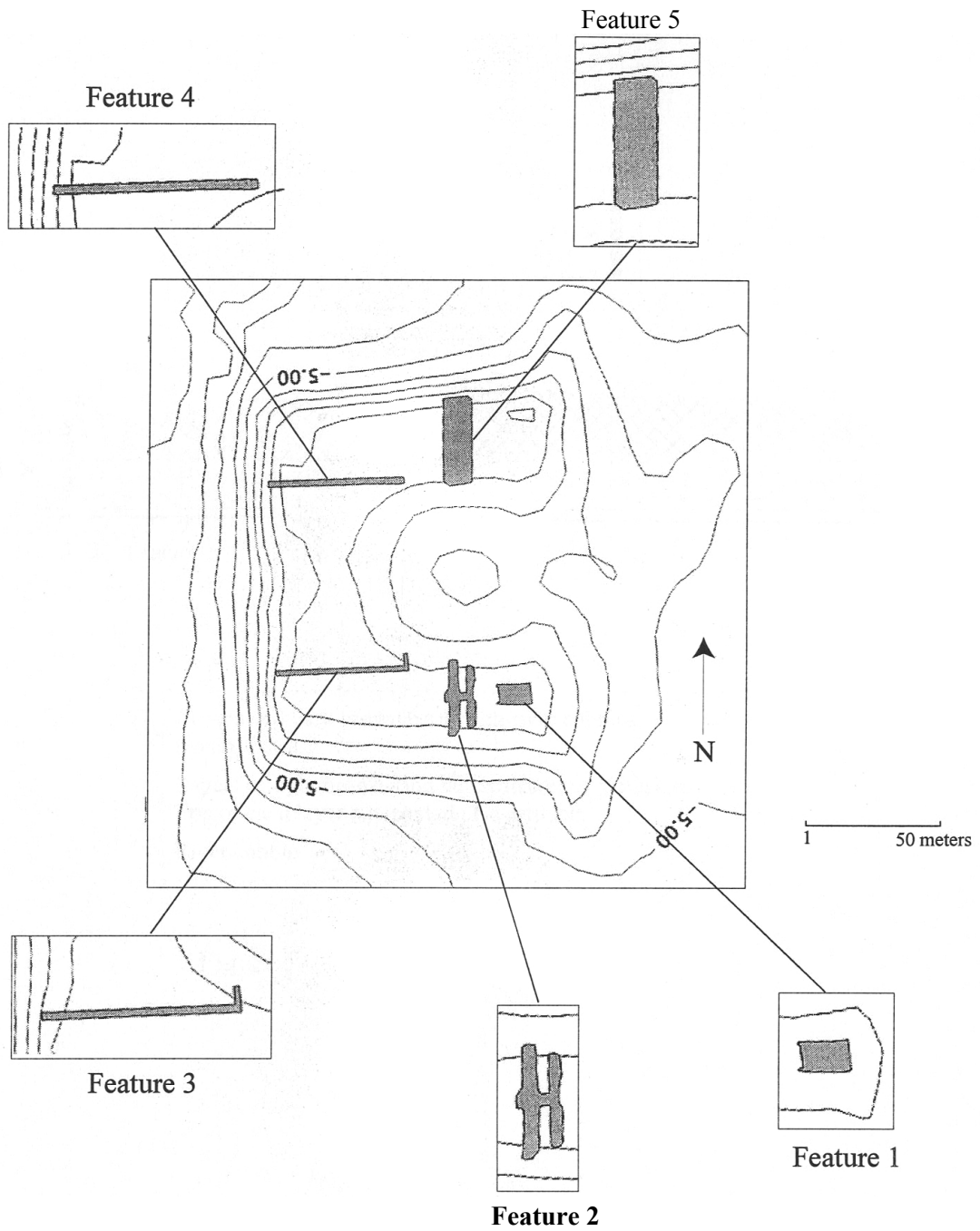


Figure 5.47: Trench P14, Features on the Summit of the Main Platform

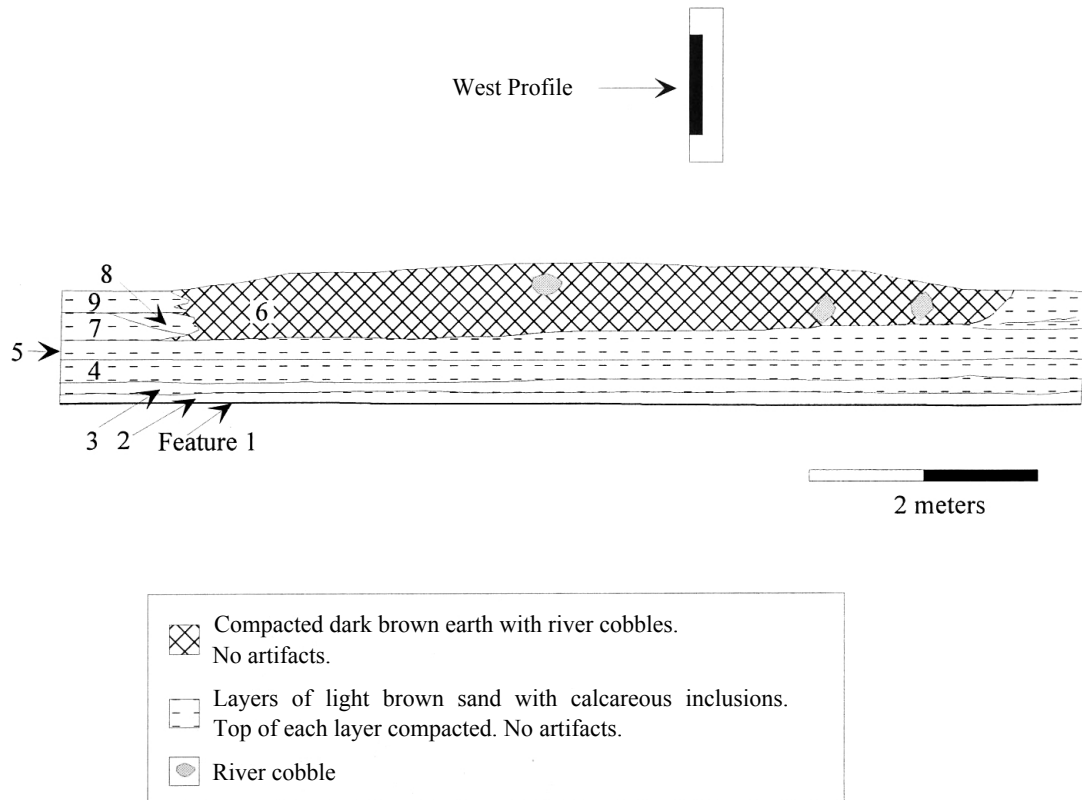
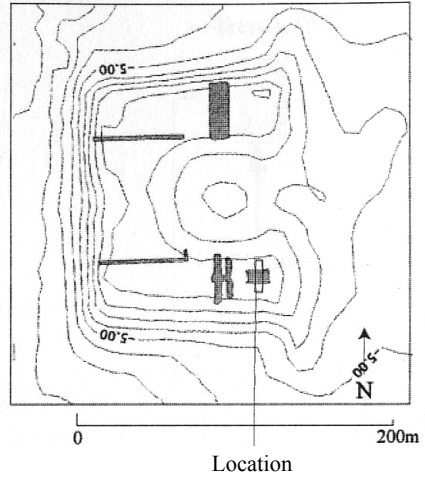
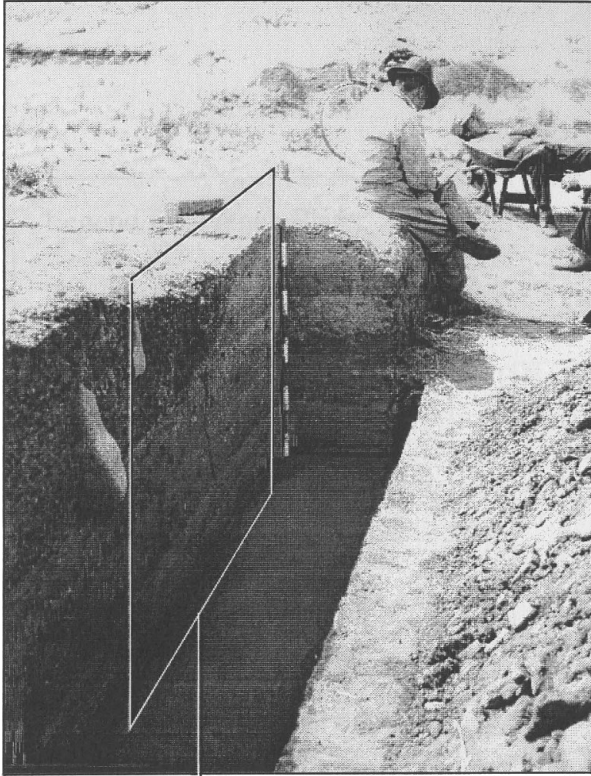


Figure 5.48: Trench P15, West Profile



View Looking North

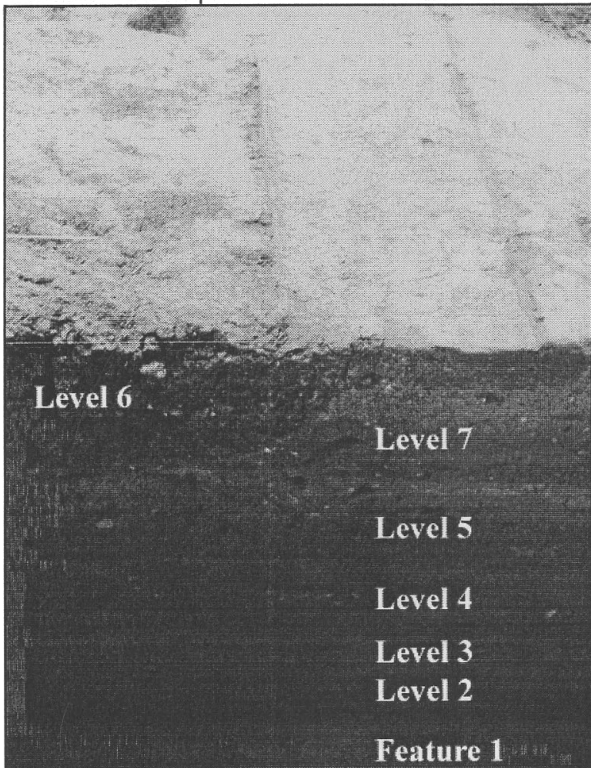


Figure 5.49: Trench P15, West Profile

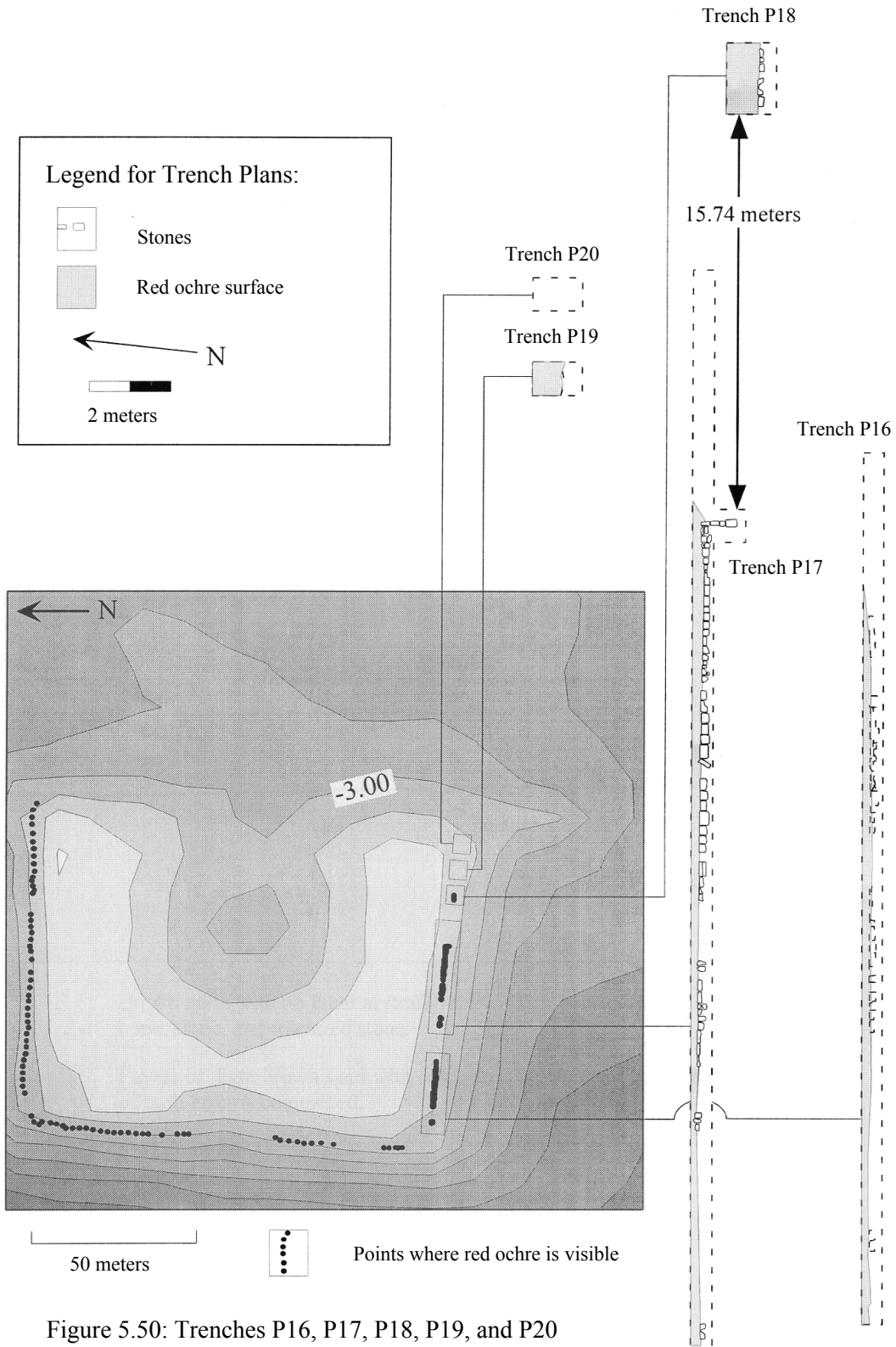
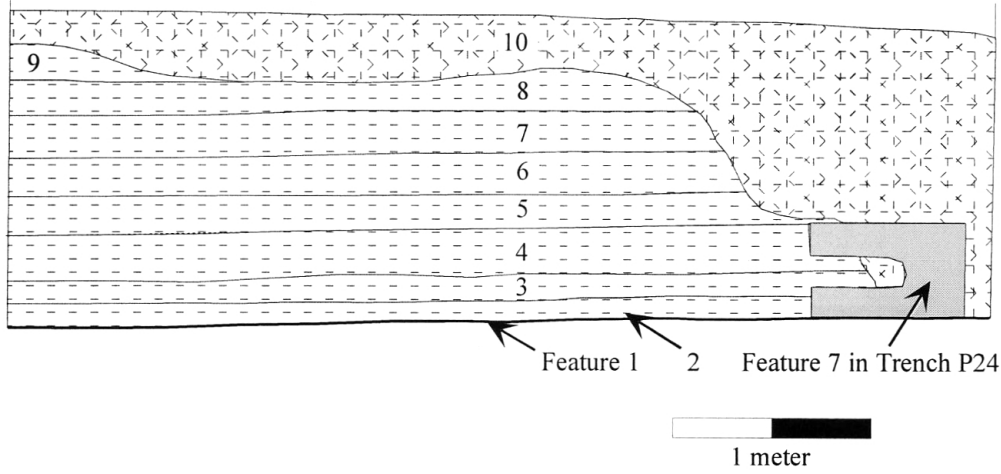
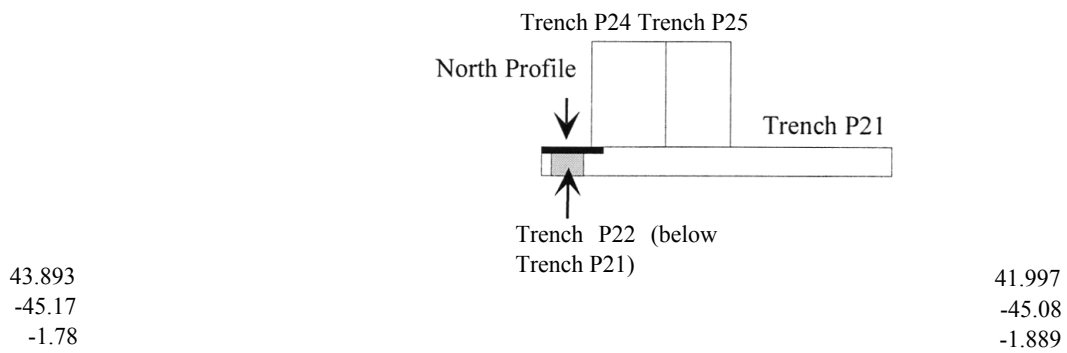


Figure 5.50: Trenches P16, P17, P18, P19, and P20






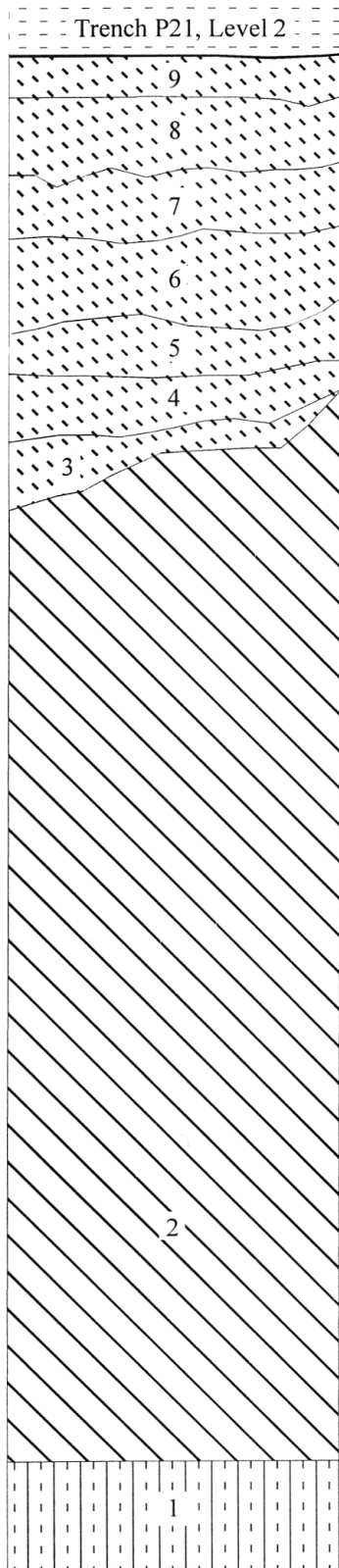
-  Brown earth with no internal stratigraphy. High concentration of bone, stone, and fractured stone.
-  Layers of light brown sand with calcareous inclusions. Top of each layer is compacted.
-  Carved andesite

Figure 5.51: Trench P21, North Profile





← Feature 11

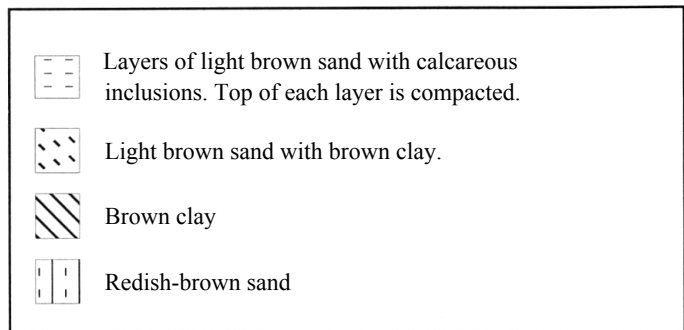
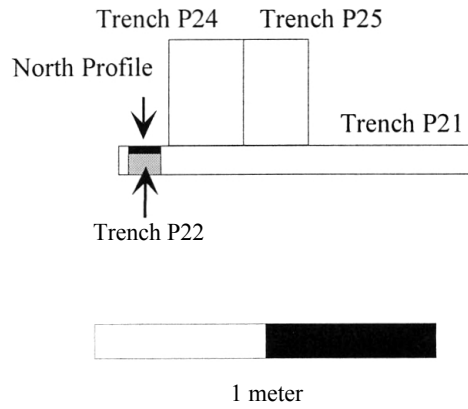


Figure 5.52: Trench P22, North Profile



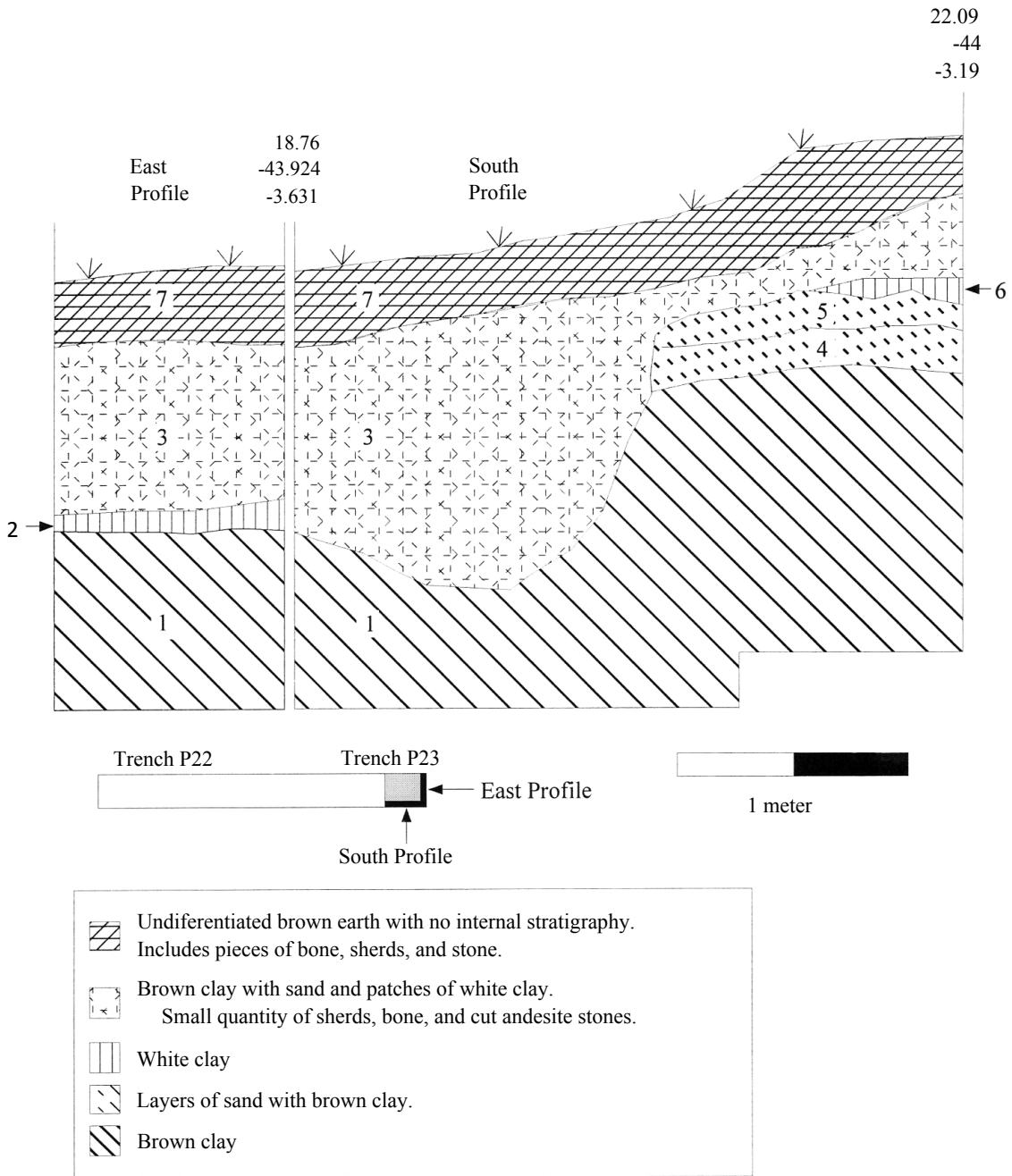


Figure 5.53: Trench P23, South and East Profiles

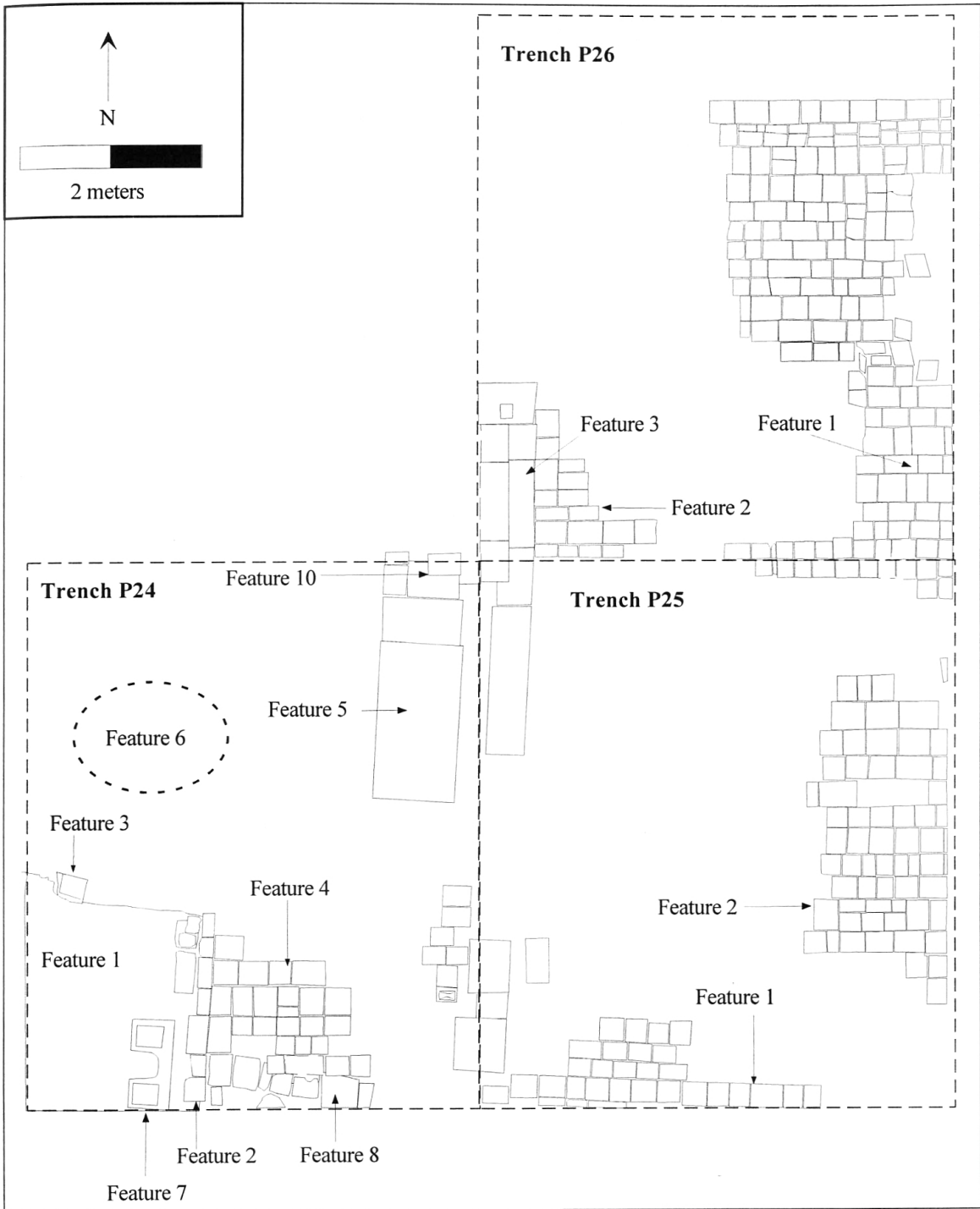


Figure 5.54: Trenches P24, P25, and P26, Plan View

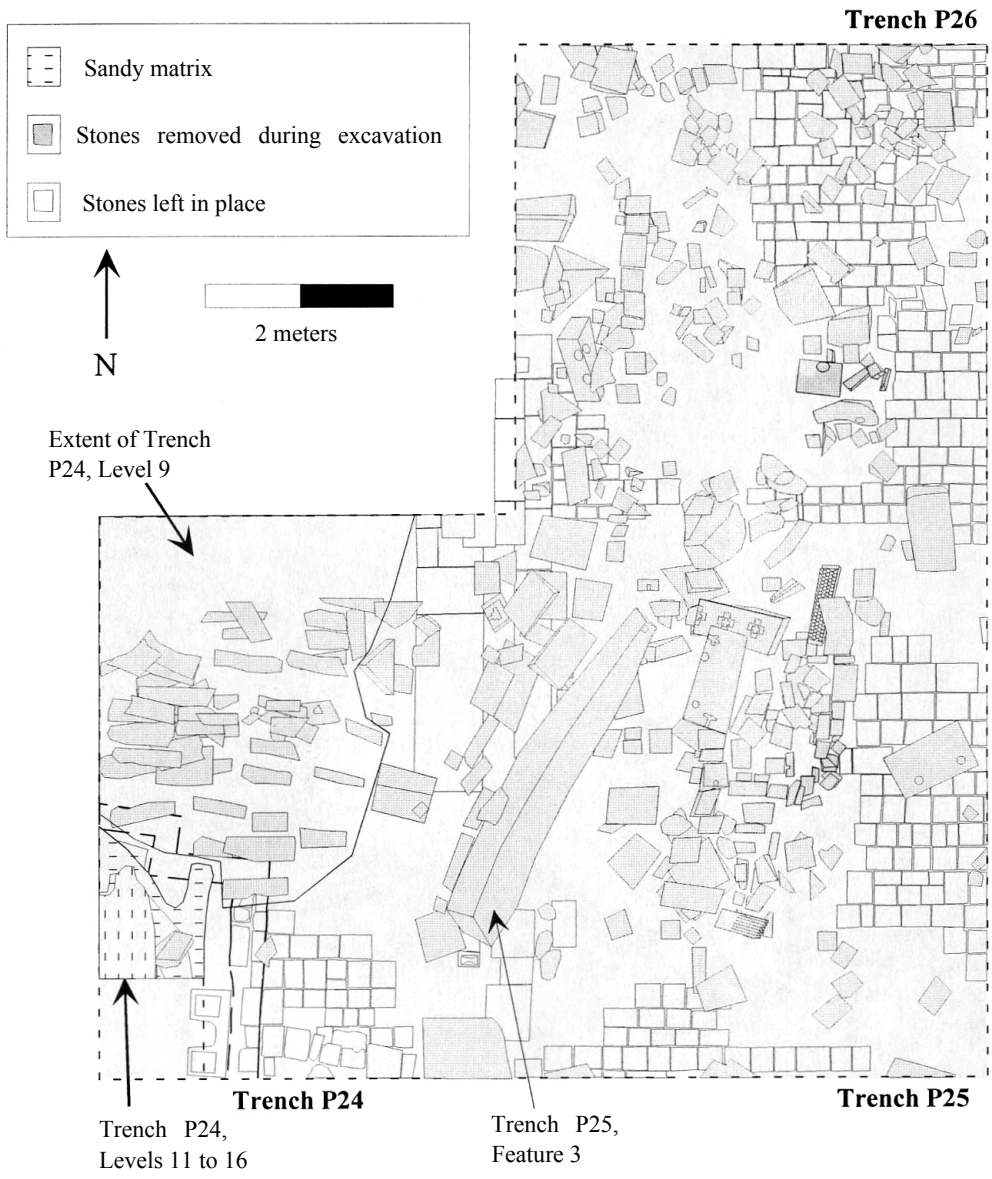


Figure 5.55: Trenches P24, P25, and P26, Plan View before Removal of Fallen Blocks and Debris (Level 9 of Trench P24, Level 4 of Trench P25, and Level 4 of Trench P26)

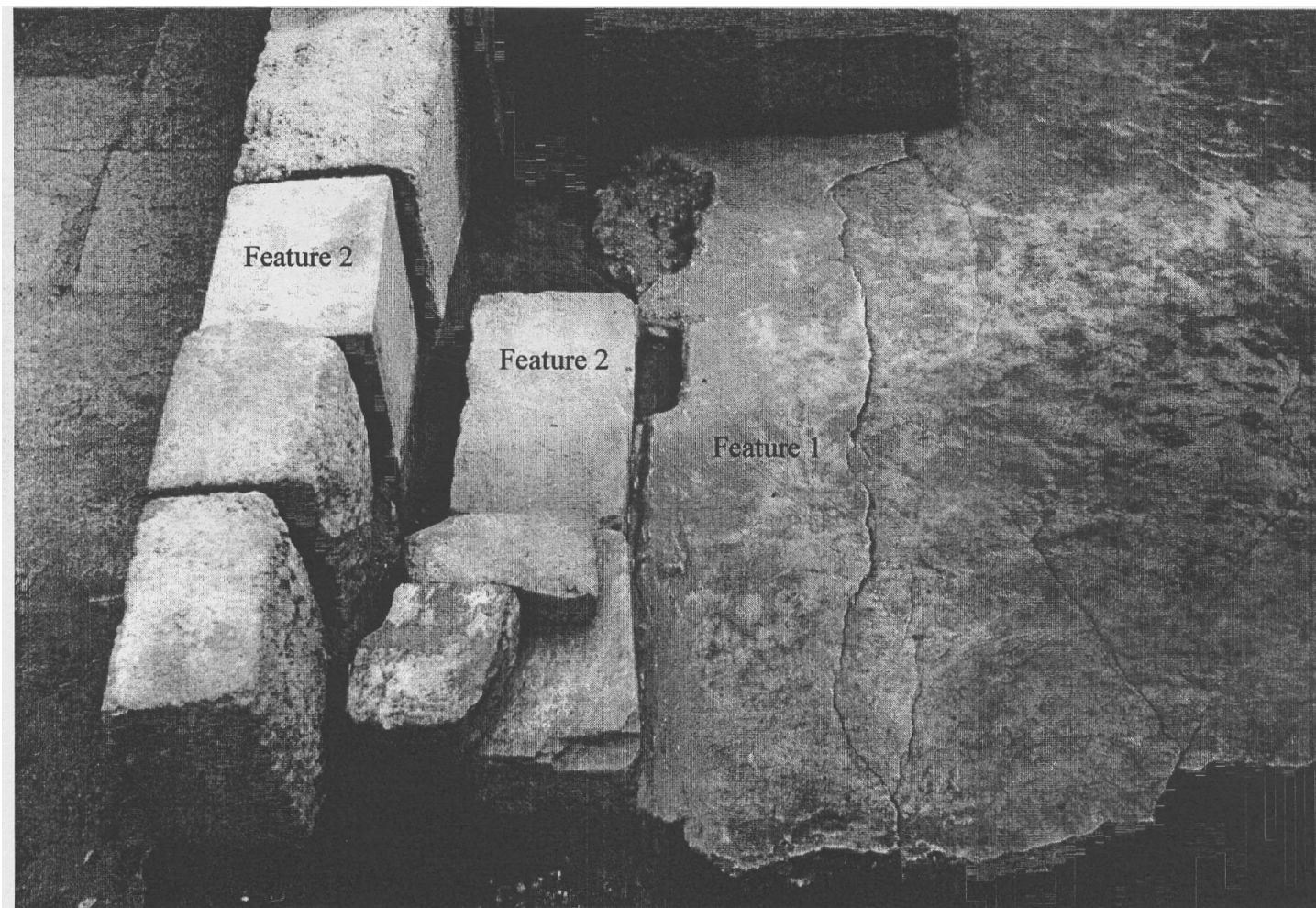


Figure 5.56: Trench P24, Features 1 and 2

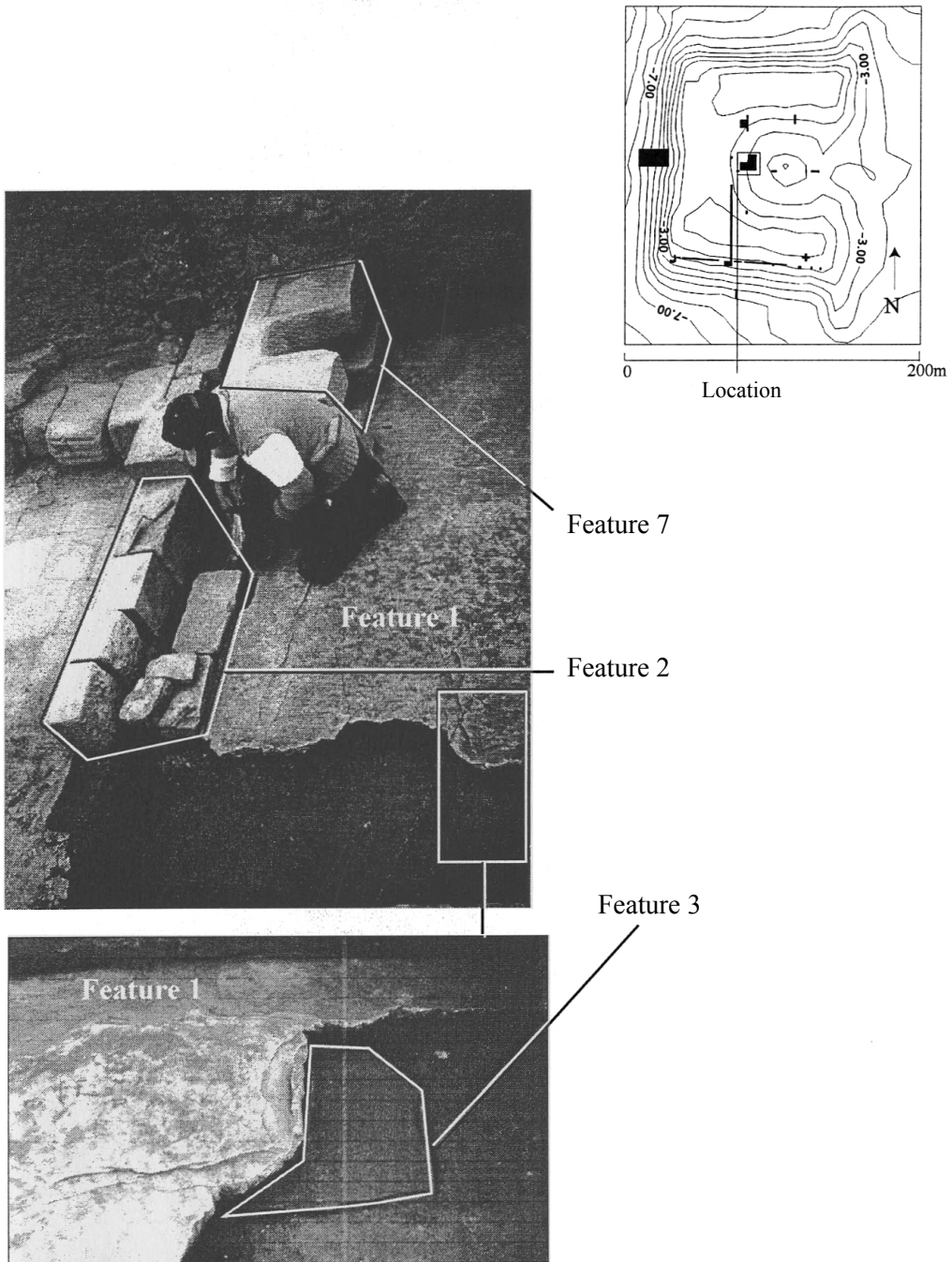
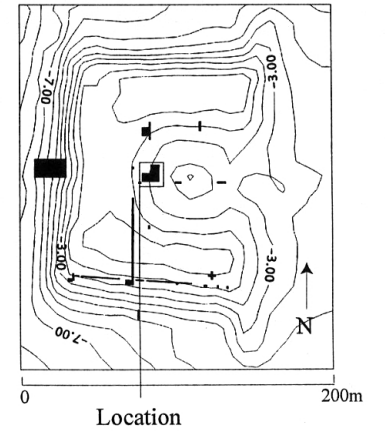


Figure 5.57: Trench P24

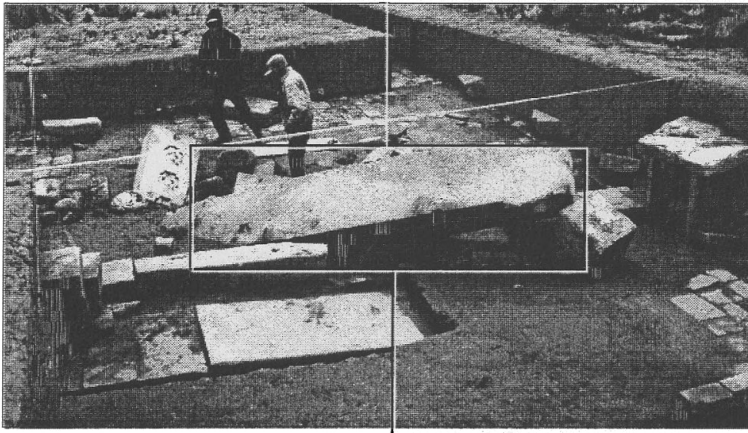
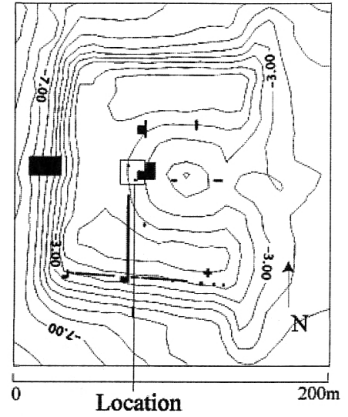
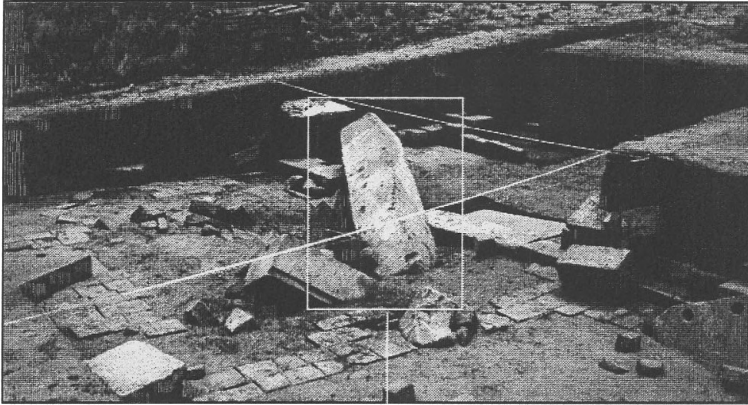
Trench P25, Feature 3



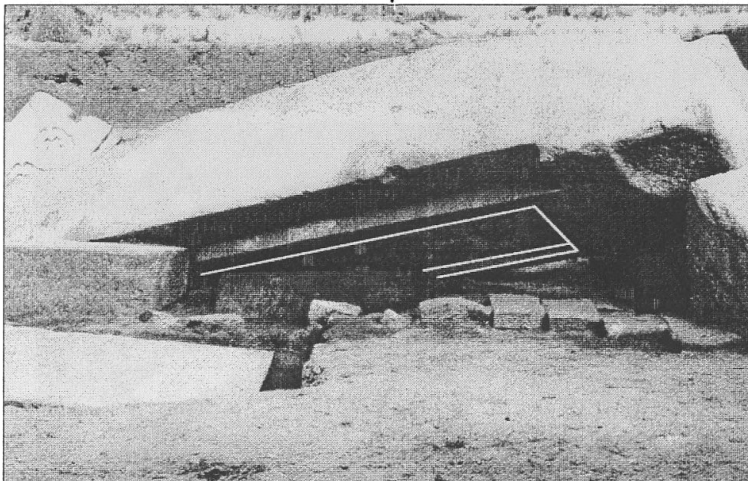
Figure 5.58: Trench P25 with P24 in the Background, View Looking West. Pedestaled Stones from Level 4.



View Looking Southwest



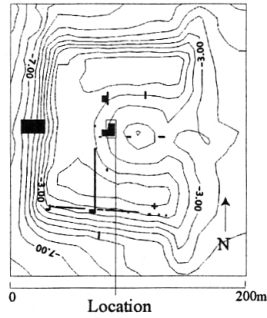
View Looking East



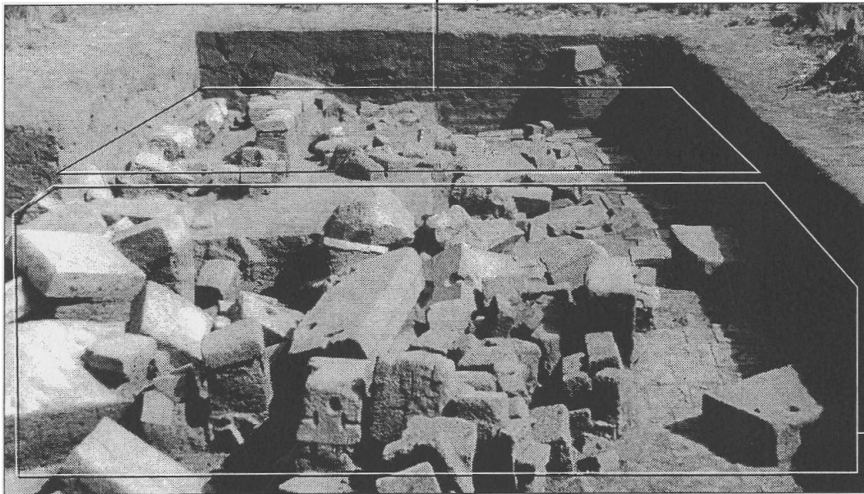
View Looking East

Figure 5.59: Trench P25, Feature 3. Note the Carved Panel in the Bottom Picture.





Trench P26



Trench P25

Trenches P25 and P26, View Looking North



Feature 2

Trench P26, View Looking West

Figure 5.60: Trenches P25 and P26



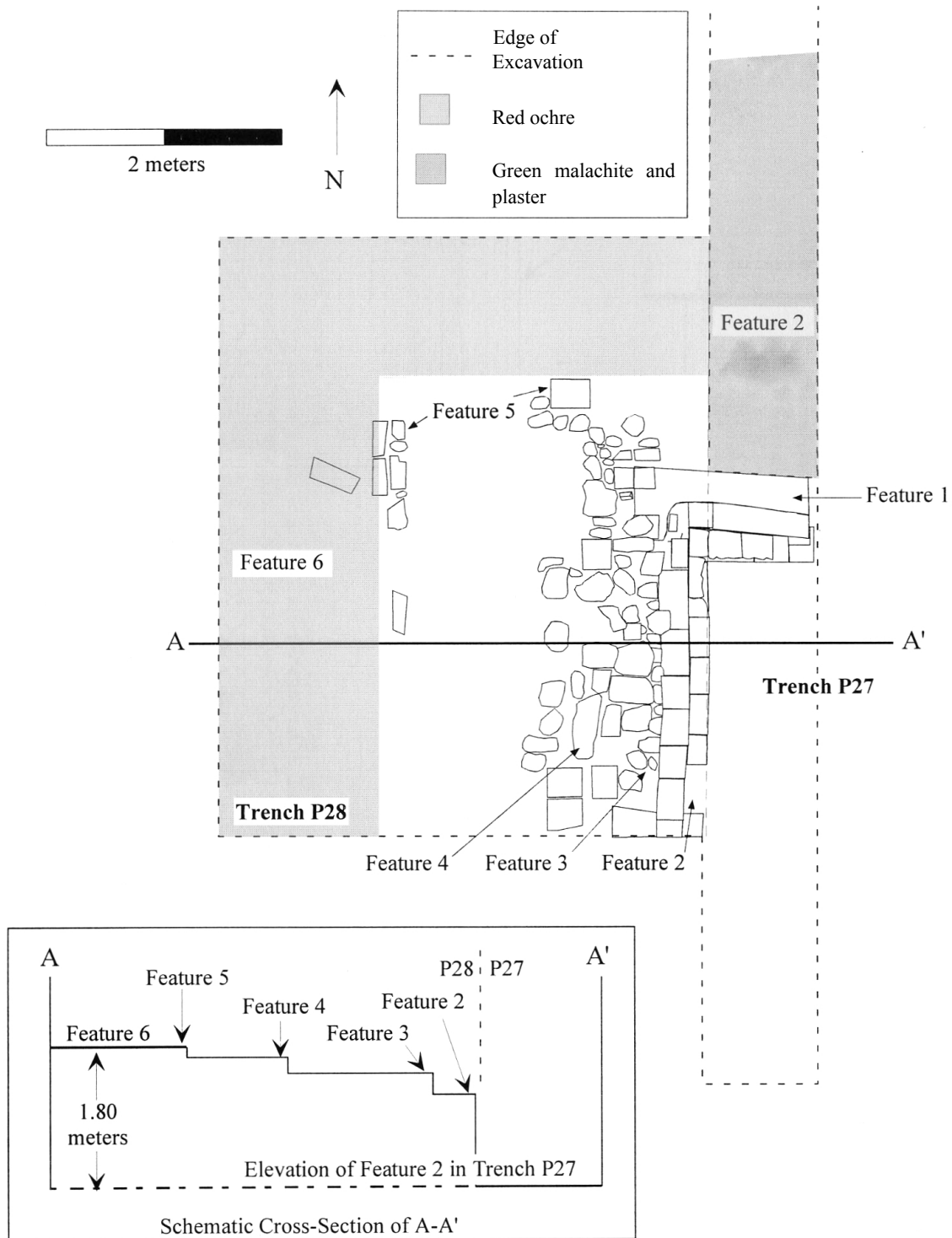


Figure 5.61 : Trenches P27 and P28, Plan View

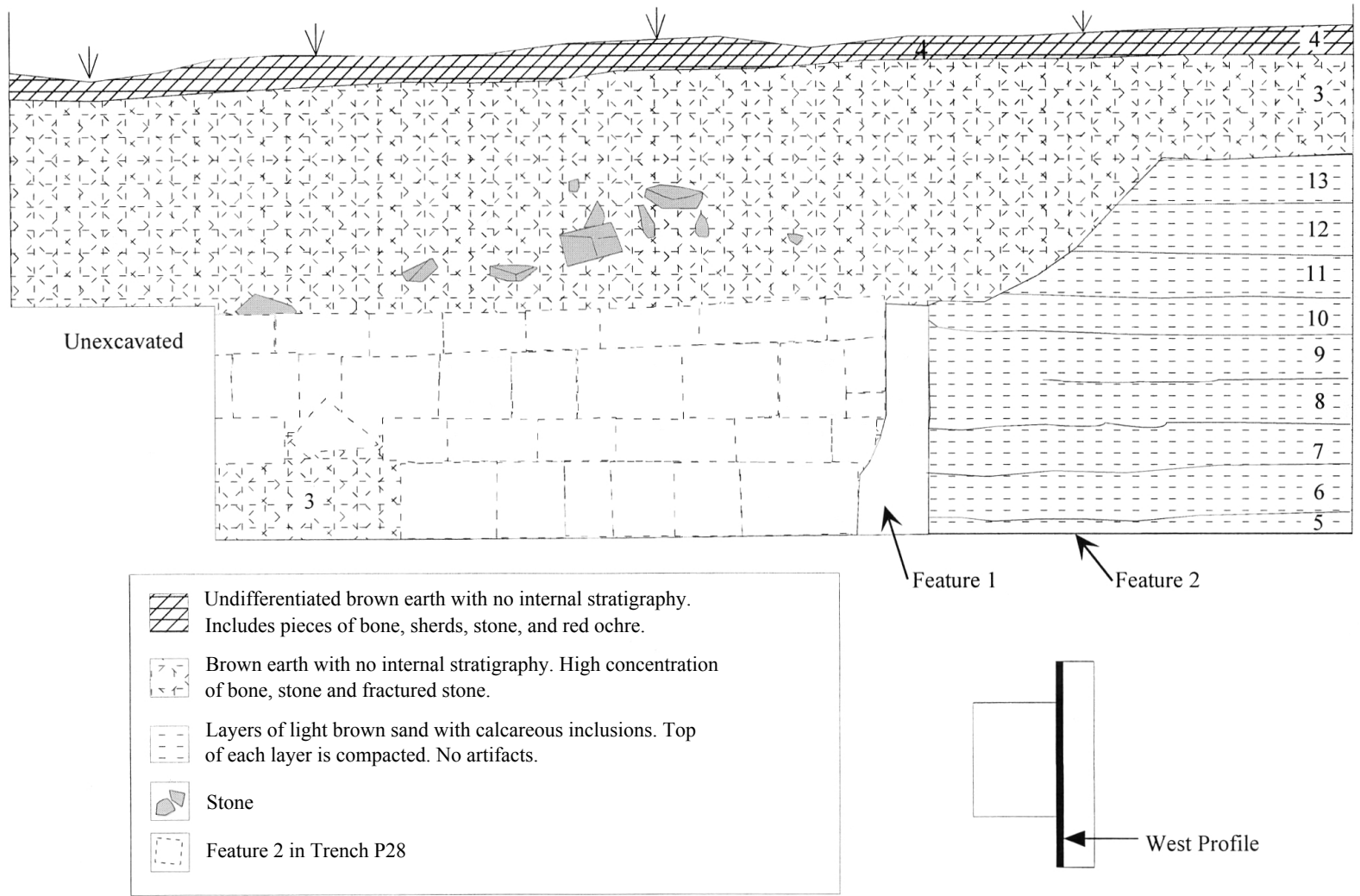


Figure 5.62: Trench P27, West Profile

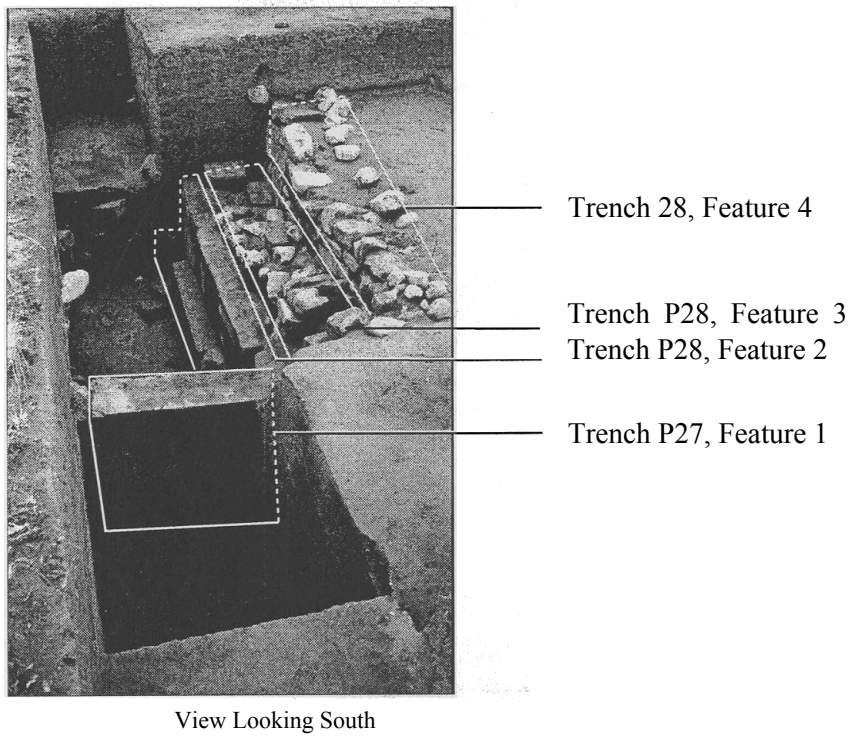
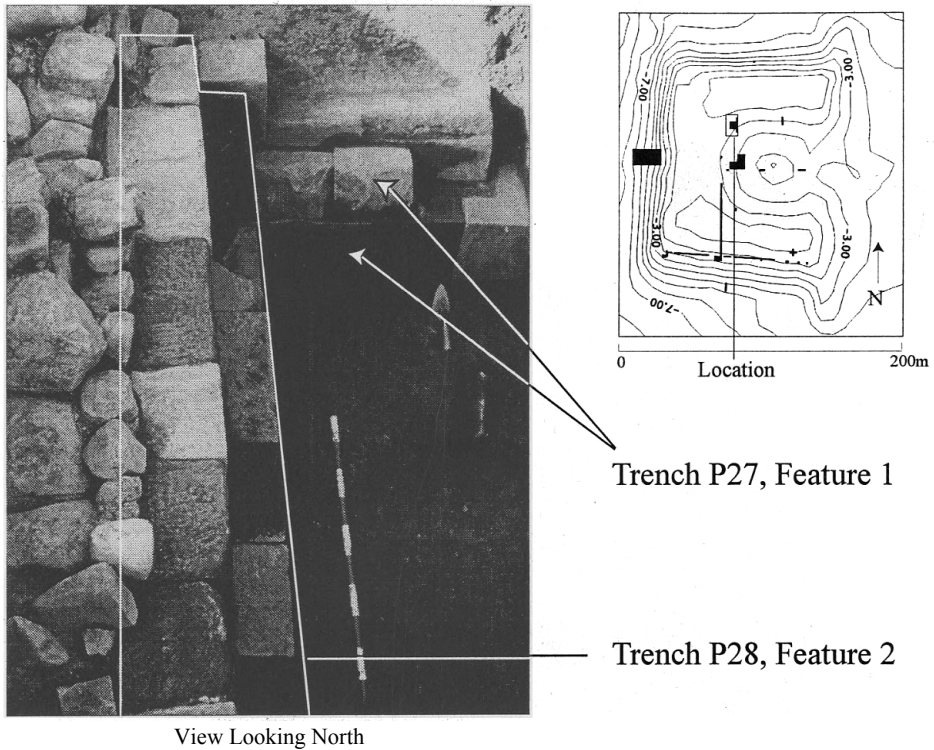


Figure 5.63: Trenches P27 and P28

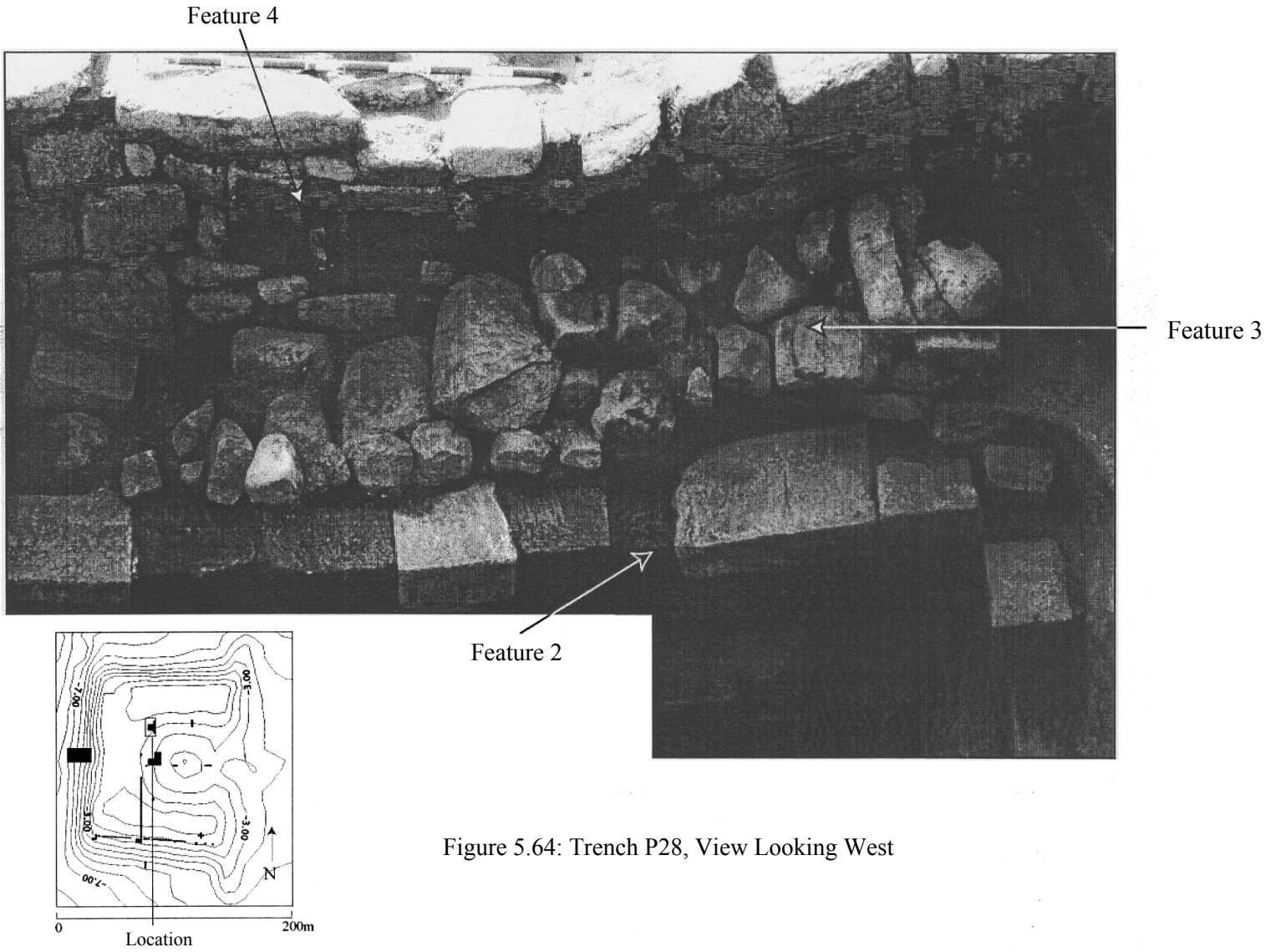
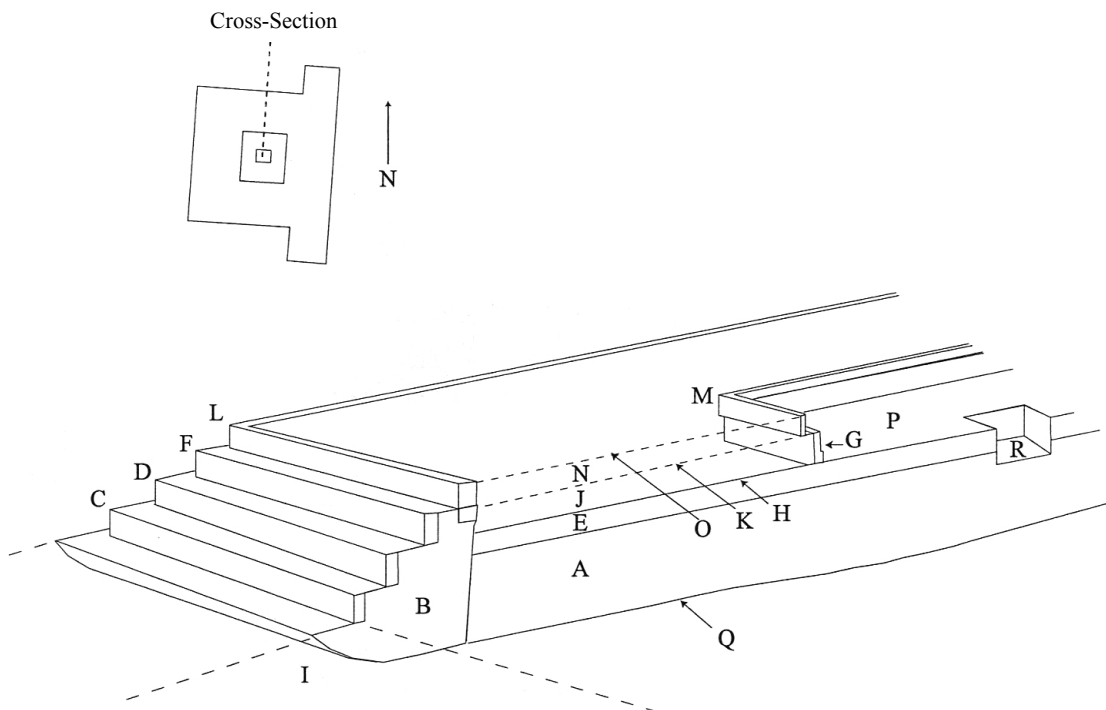


Figure 5.64: Trench P28, View Looking West



- |   |   |   |                             |
|---|---|---|-----------------------------|
| A | Clay Fill (Locus 4)                       | J | Sand Fill I (Locus 23)      |
| B | Compacted Earth and Cobble Fill (Locus 3) | K | Red Surface (Locus 24)      |
| C | First Revetment (Locus 6)                 | L | Fourth Revetment (Locus 10) |
| D | Second Revetment (Locus 8)                | M | Adobe Wall II (Locus 12)    |
| E | Clay and Sand Fill (Locus 5)              | N | Sand Fill II (Locus 26)     |
| F | Third Revetment (Locus 9)                 | O | Yellow Surface (Locus 33)   |
| G | Wall of the Inner Courtyard (Locus 13)    | P | Pavement (Locus 14)         |
| H | Green Surface (Locus 20)                  | Q | Foundation Pit (Locus 2)    |
| I | Natural Soil (Locus 1)                    | R | Sunken Court (Locus 17)     |

Figure 6.1 : Schematic Cross-Section of the North Side of the Main Platform. Not to scale.

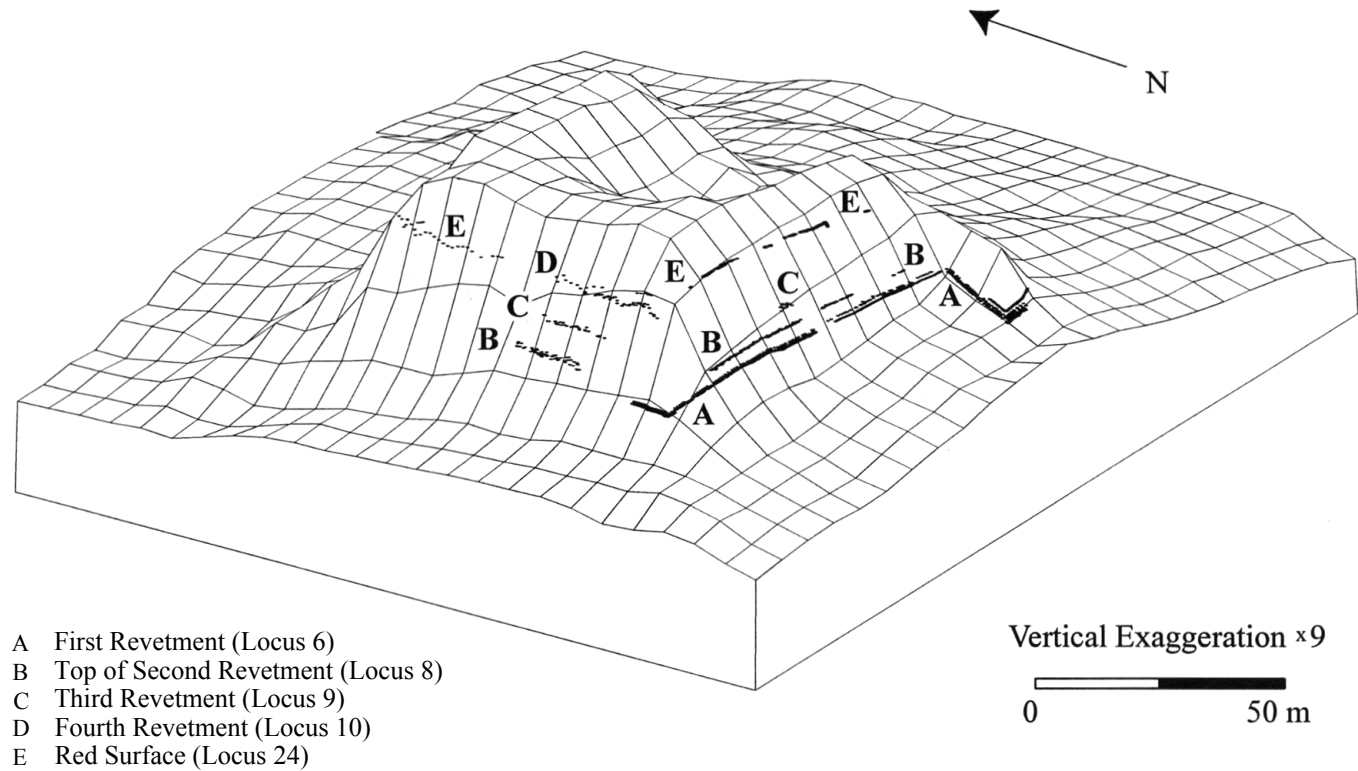


Figure 6.2: Southwest Side of the Main Platform, Showing the Revetments and the Red Surface. Revetments on the West Side of the Main Platform are Indicated by Cimentation Stones.

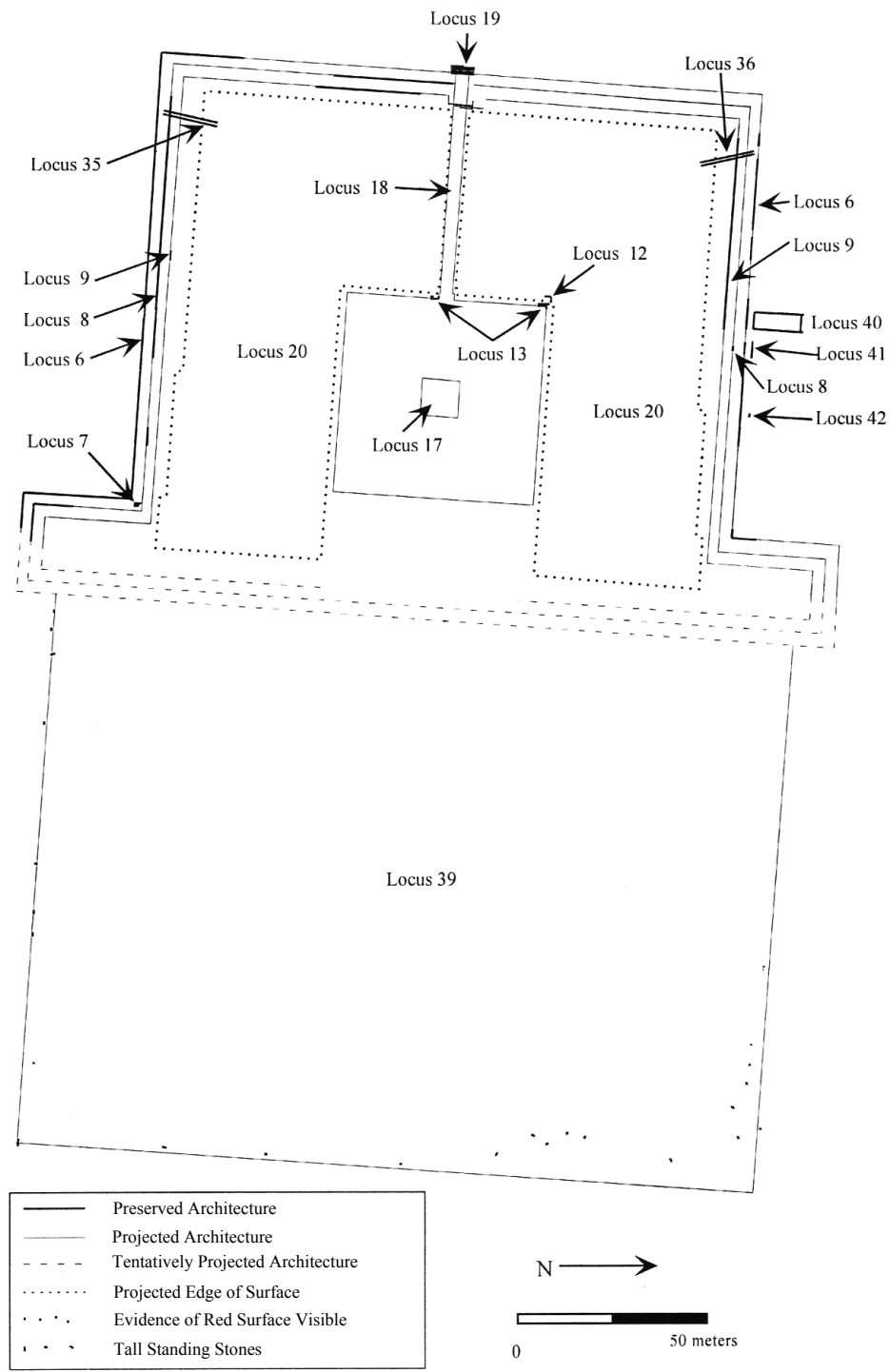
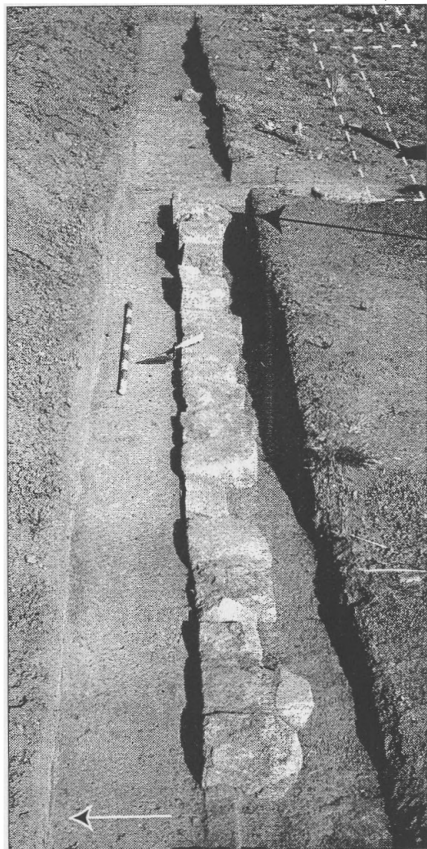


Figure 6.3: Reconstruction of the Pumapunku Complex Showing Major Loci, Including the Green Surface (Locus 20)

Reconstruction of the Edge of the Red Surface



Detail of Corner

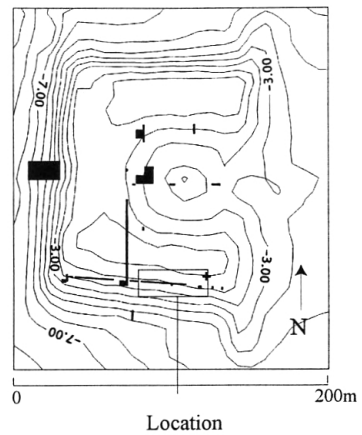


Figure 6.4: Trench P17, Edge of the Red Surface on the South Side of the Main Platform



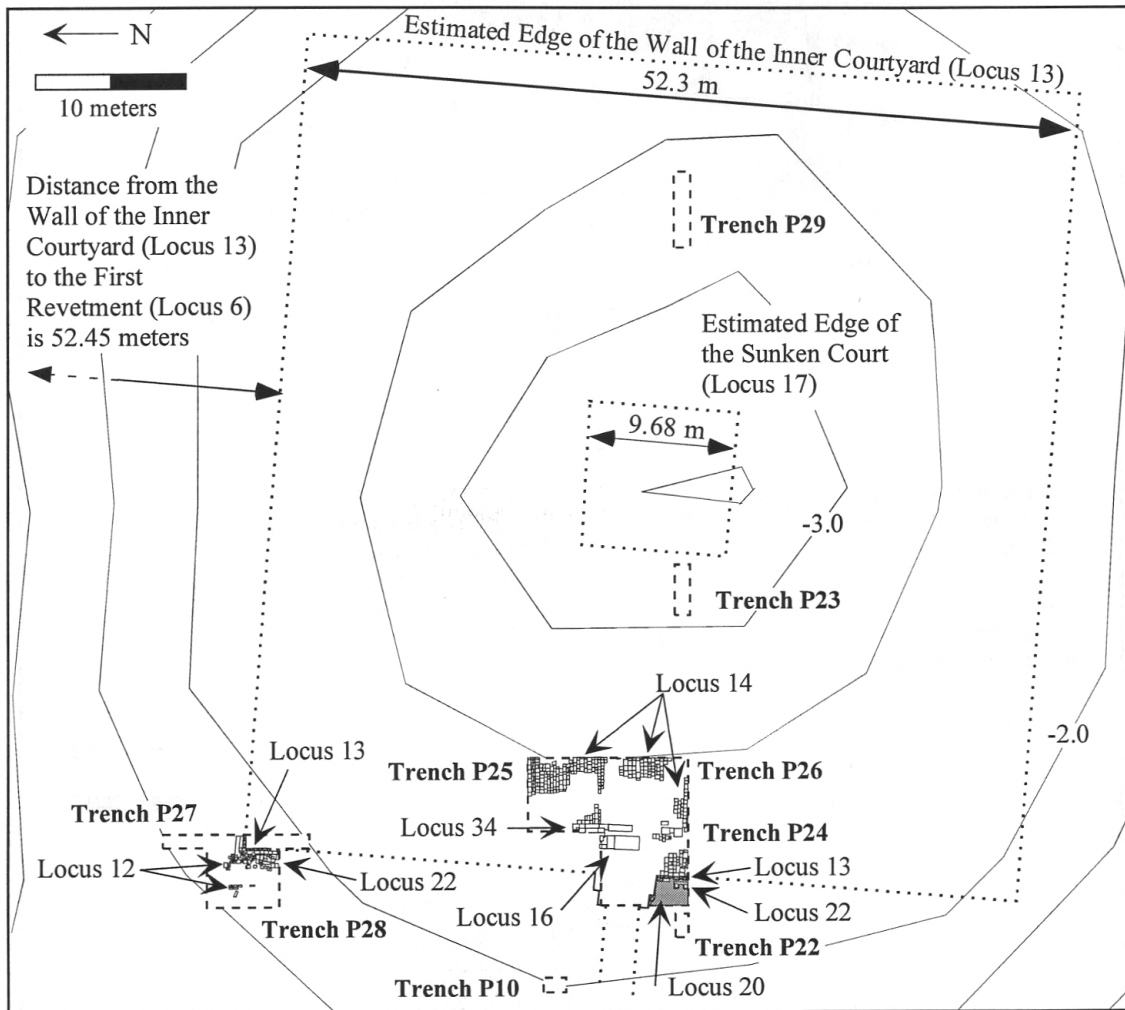


Figure 6.5: Loci Associated with the Inner Courtyard

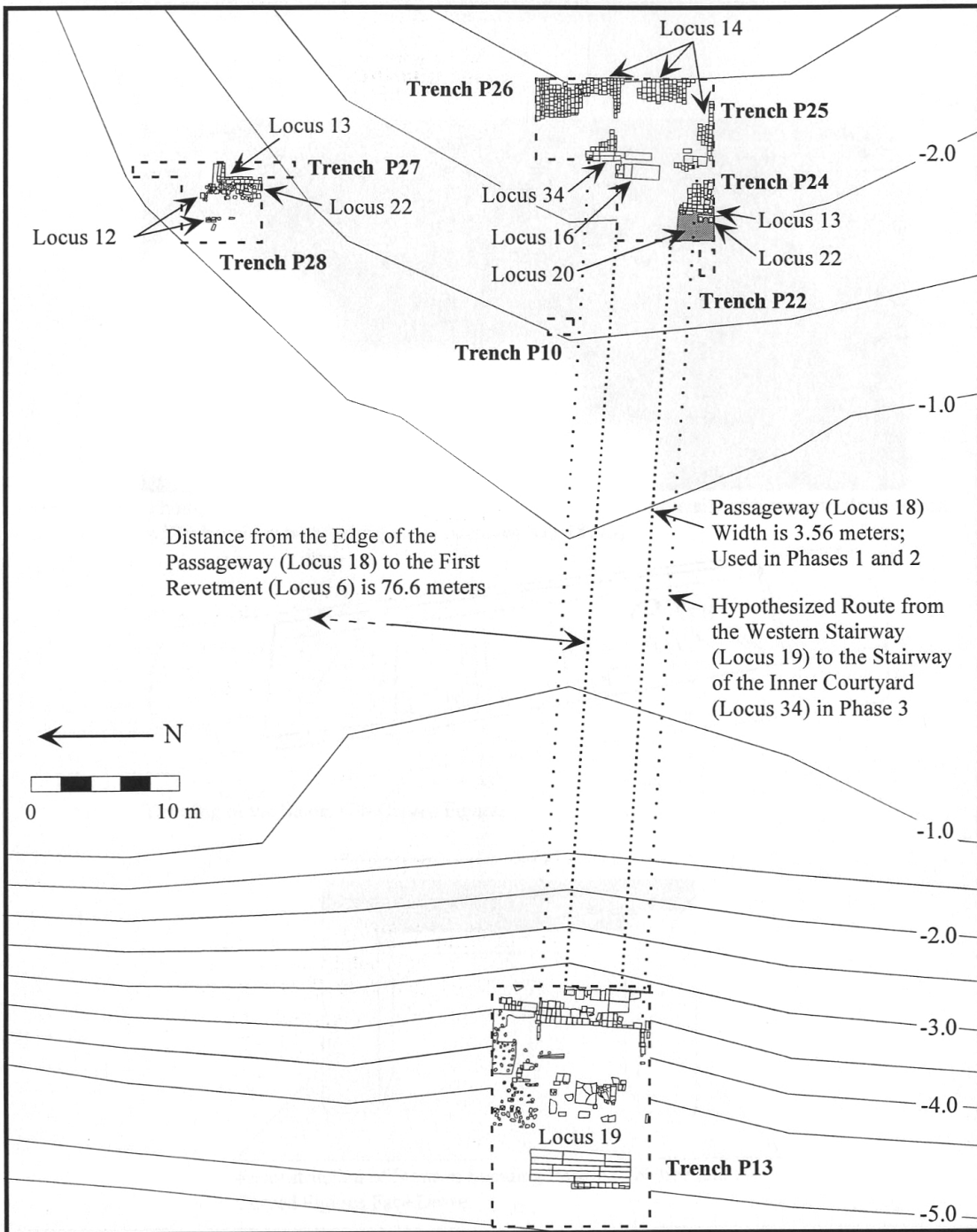
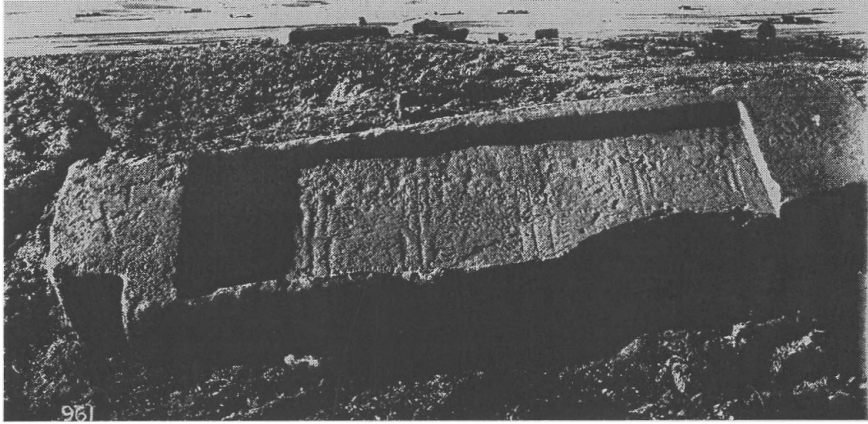
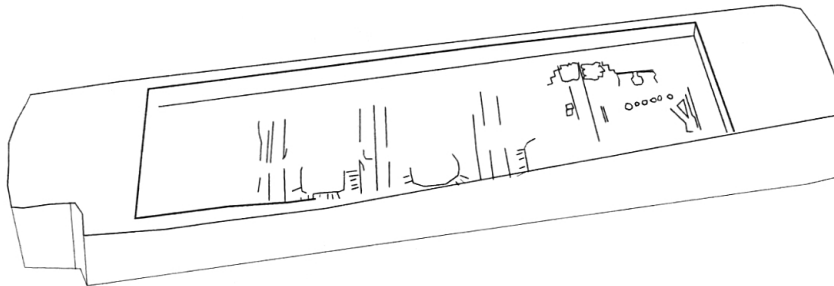


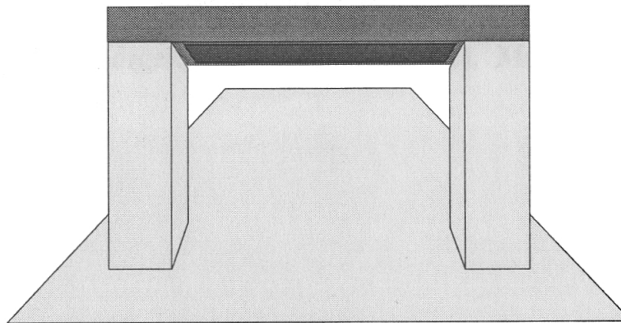
Figure 6.6: Loci Associated with the Western Stairways (Locus 19), the Passageway (Locus 18), and the Inner Courtyard



Photograph by Max Uhle from the Kalisasaya Complex (University of Pennsylvania Museum of Archaeology and Anthropology Archives (G5-18775).



Drawing of the Stone with Carved Figures



Reconstruction of Stone in Standing Position. Notice that the Carved Figures Face Down.

Figure 6.7: Lintel from the Kalisasaya Complex Similar to That Found at the Pumapunku Complex

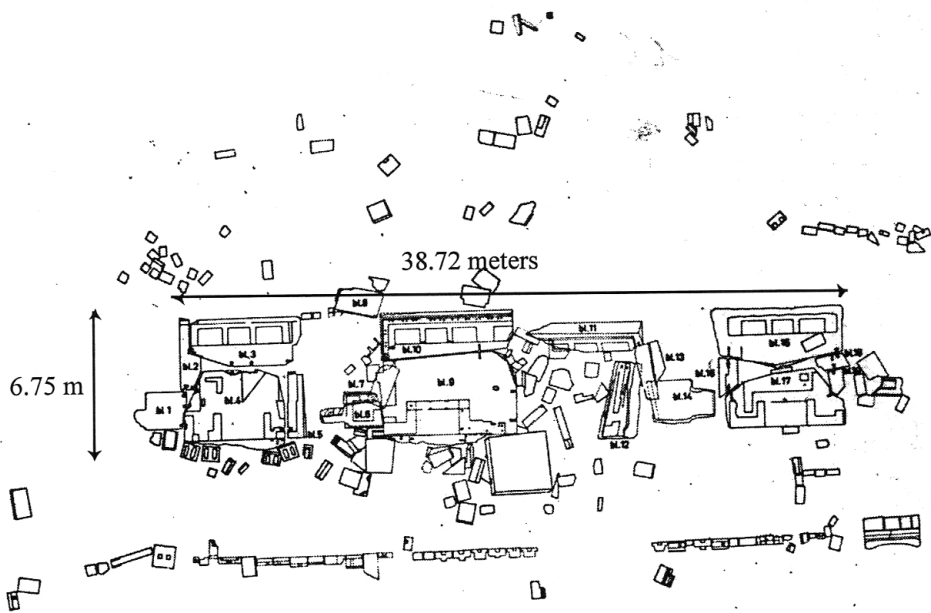


Figure 6.8: Large Stone Slabs (Locus 21). Modified from Ponce 1971

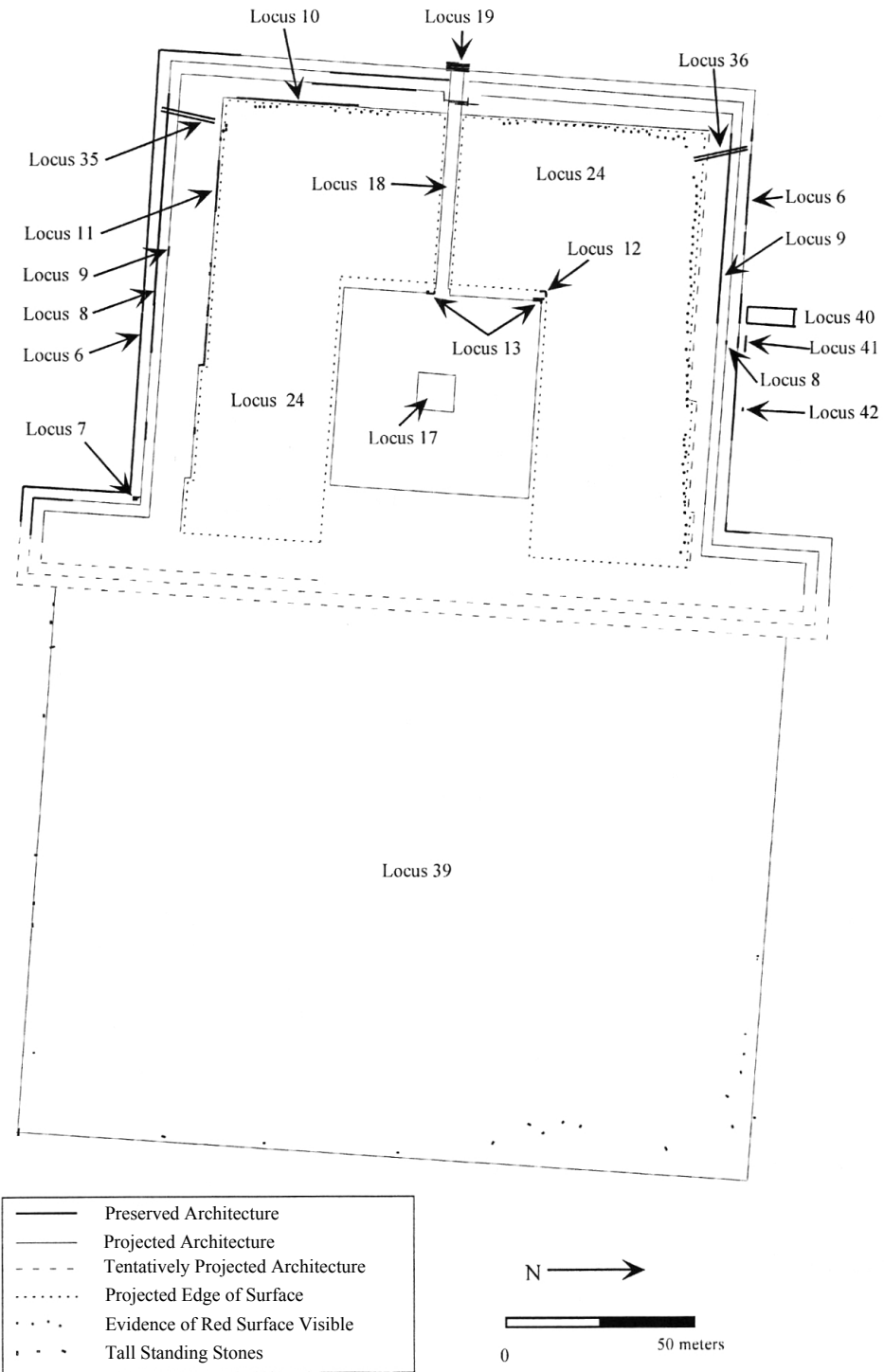


Figure 6.9: Reconstruction of the Pumapunku Complex Showing Major Loci, Including the Red Surface (Locus 24) and the Fourth Revetment (Locus 10)

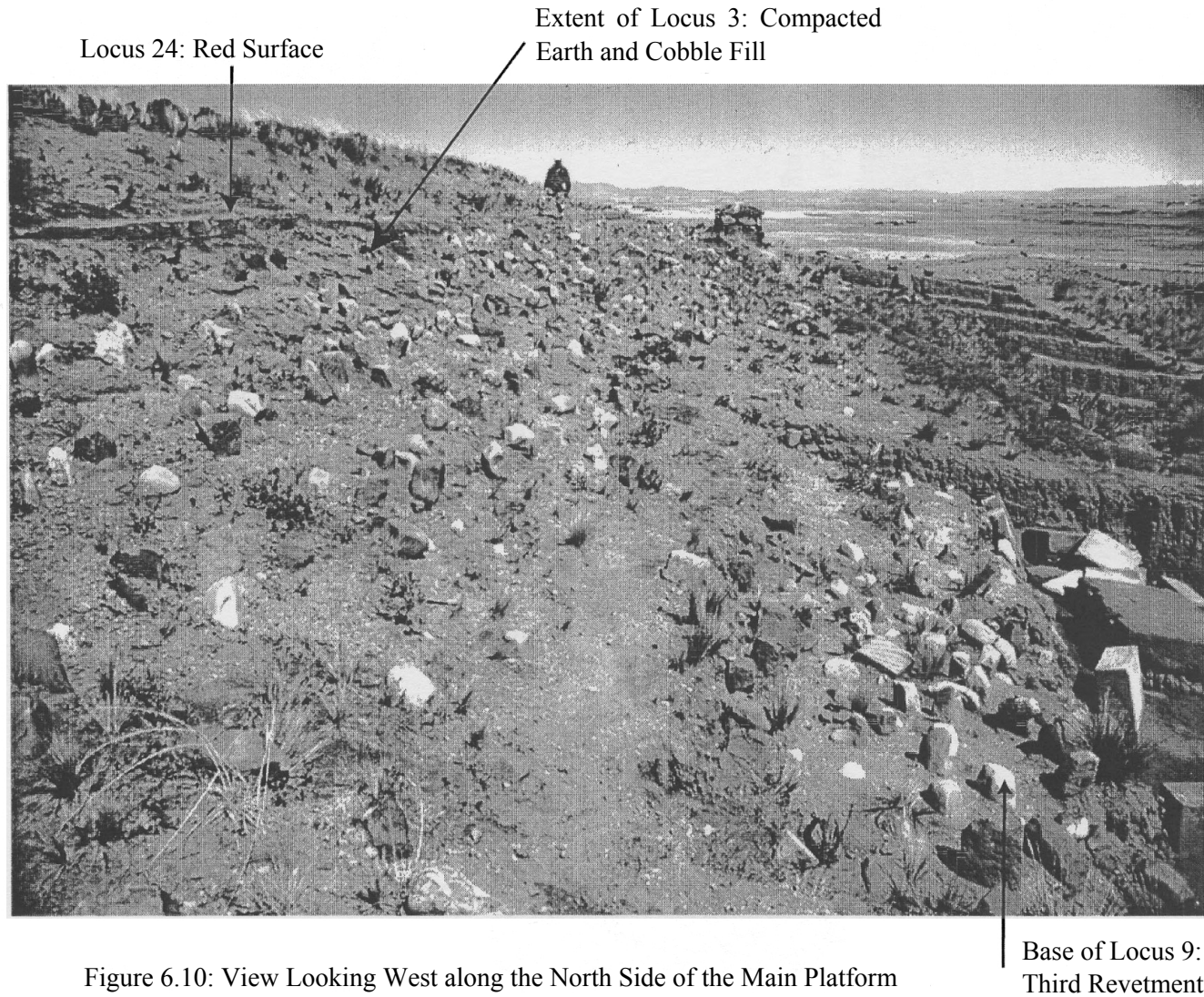
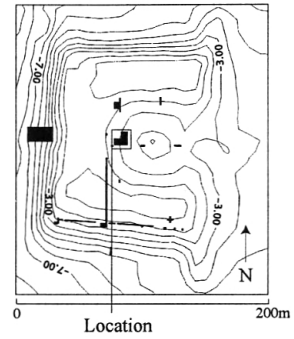
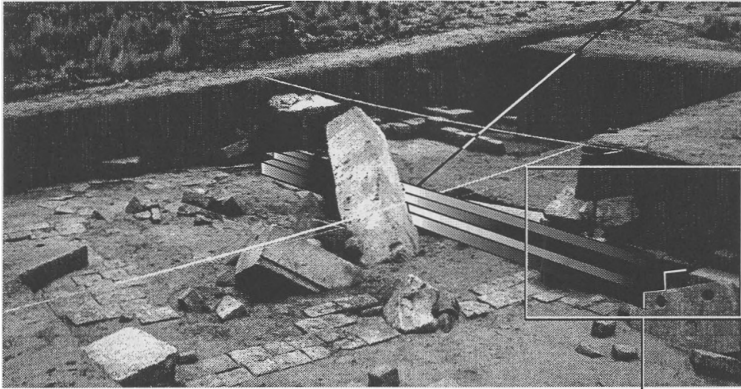
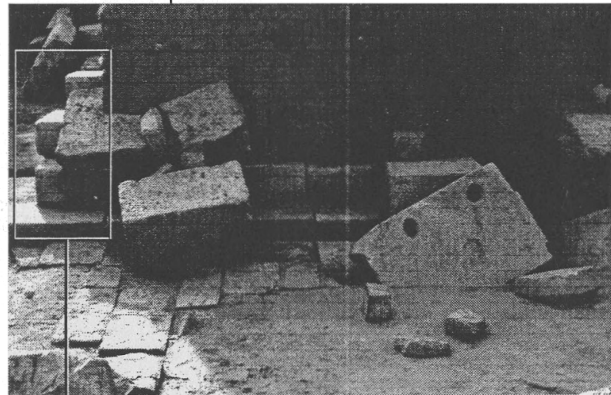


Figure 6.10: View Looking West along the North Side of the Main Platform

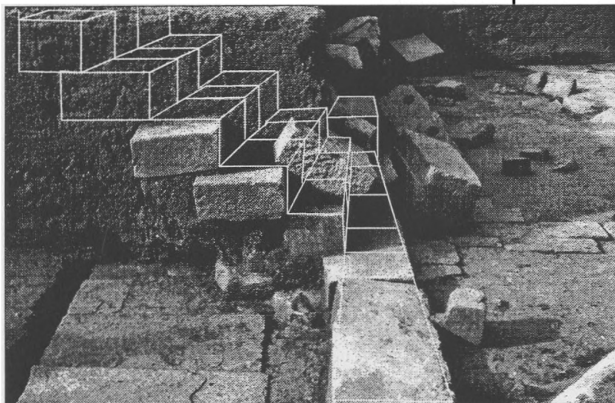
Reconstruction of the first two steps  
of the Stairway to the Inner Courtyard



Trenches P24 and P25,  
View Looking Southwest

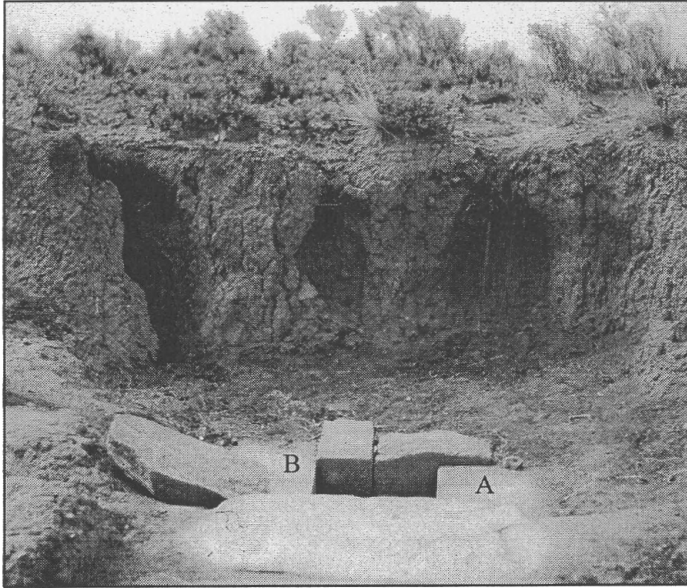


Trench P26, View Looking East

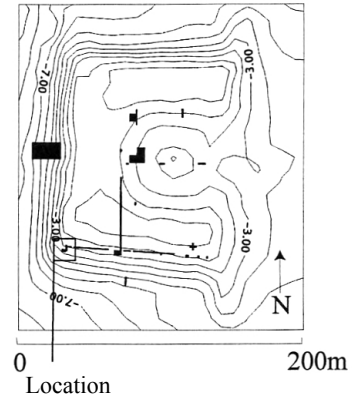


Trench P24, View Looking North at the  
Stairway to the Inner Courtyard

Figure 6.11: Trenches P24, P25 and P26. Stairway to the Inner  
Courtyard (Locus 34).

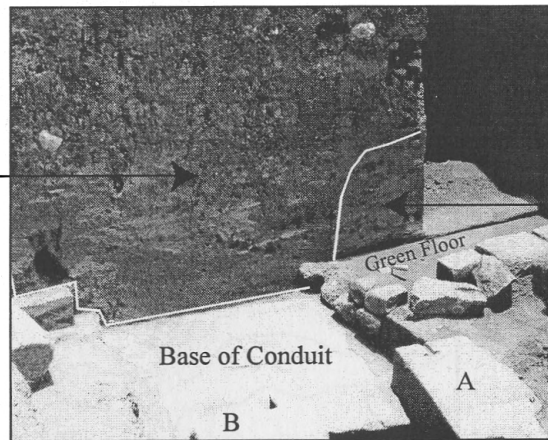


Trench P12 prior to this Study



A and B are the same stones in each photograph.

Trench dug for the placement of the Southern Stone Conduit. Notice how the Green Surface was cut by this Trench.



Sand Fill I

Figure 6.12: Trench P12, Southern Stone Conduit



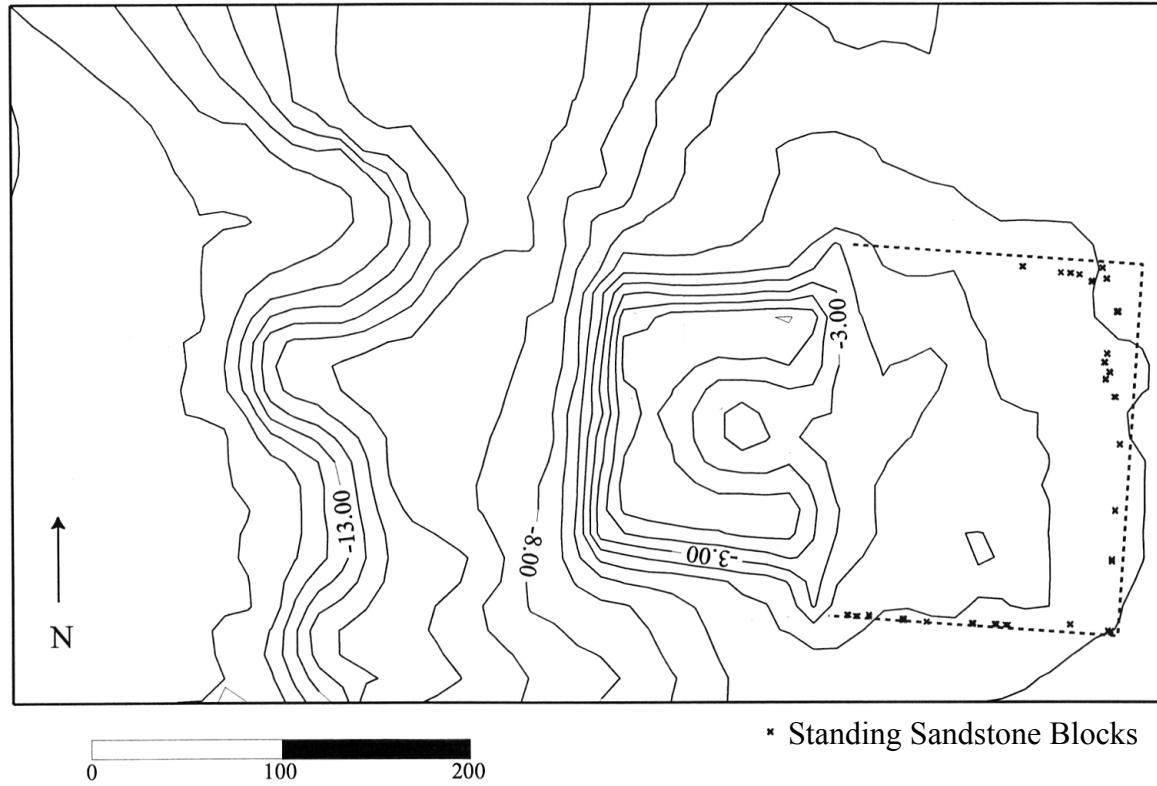


Figure 6.13: Contour Map of the Pumapunku Complex showing the Distribution of Extant Sandstone Blocks East of the Main Platform. Dashed Line Indicates Reconstructed Dimensions of the Eastern Plaza.

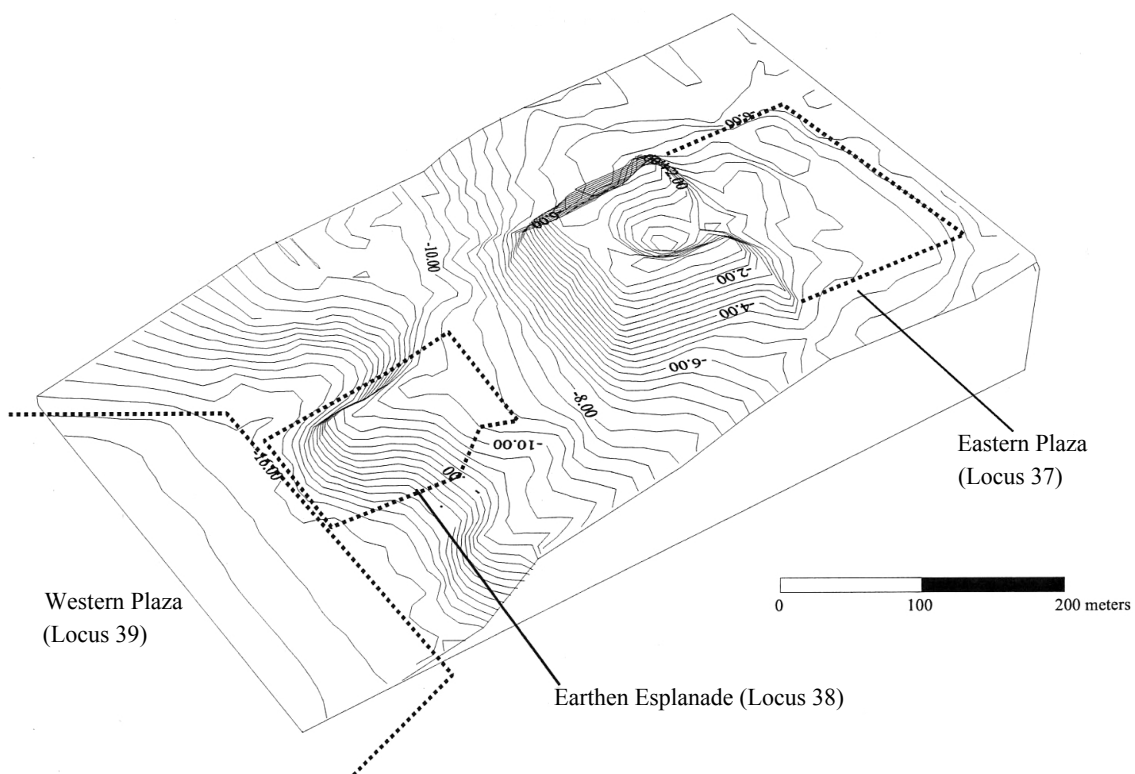


Figure 6.14: View Looking Northeast of the Pumapunku Complex Showing the Location of Locus 37, 38, and 39

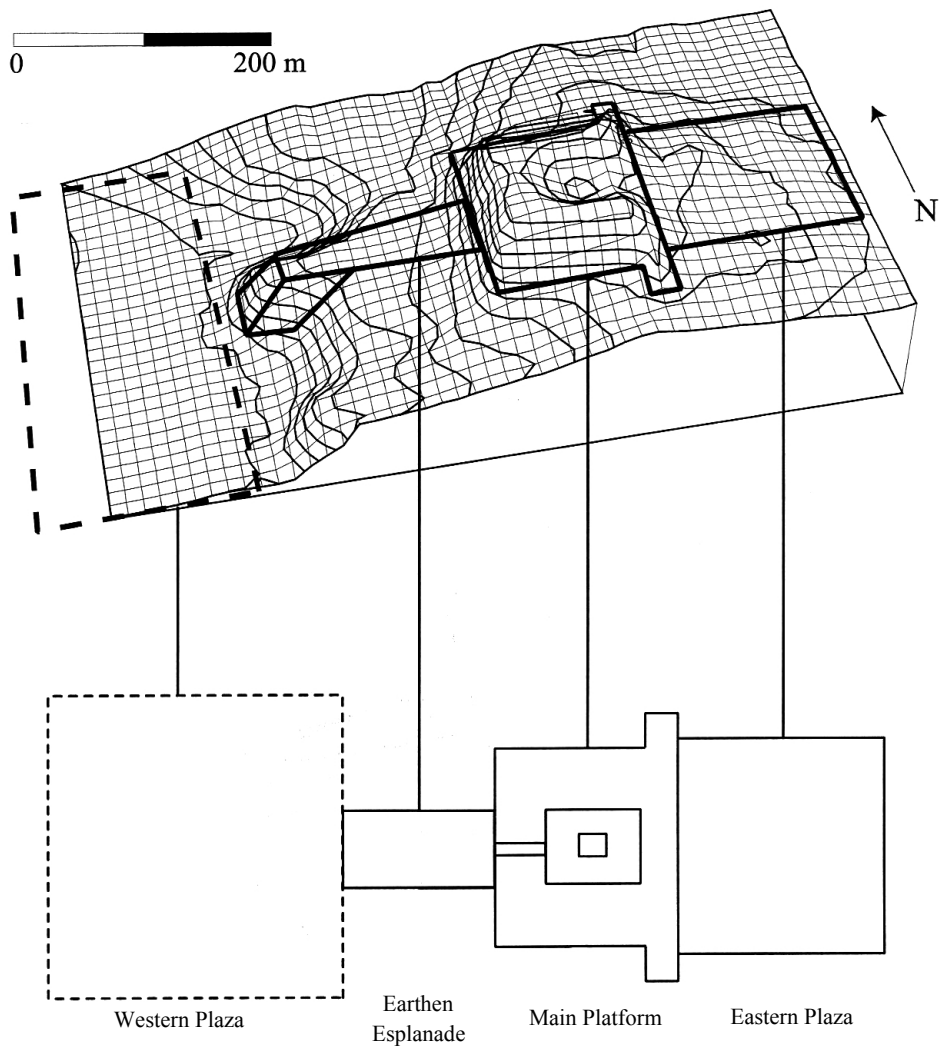


Figure 7.1 : Topographic Map of the Pumapunku Complex with Structures Overlaid

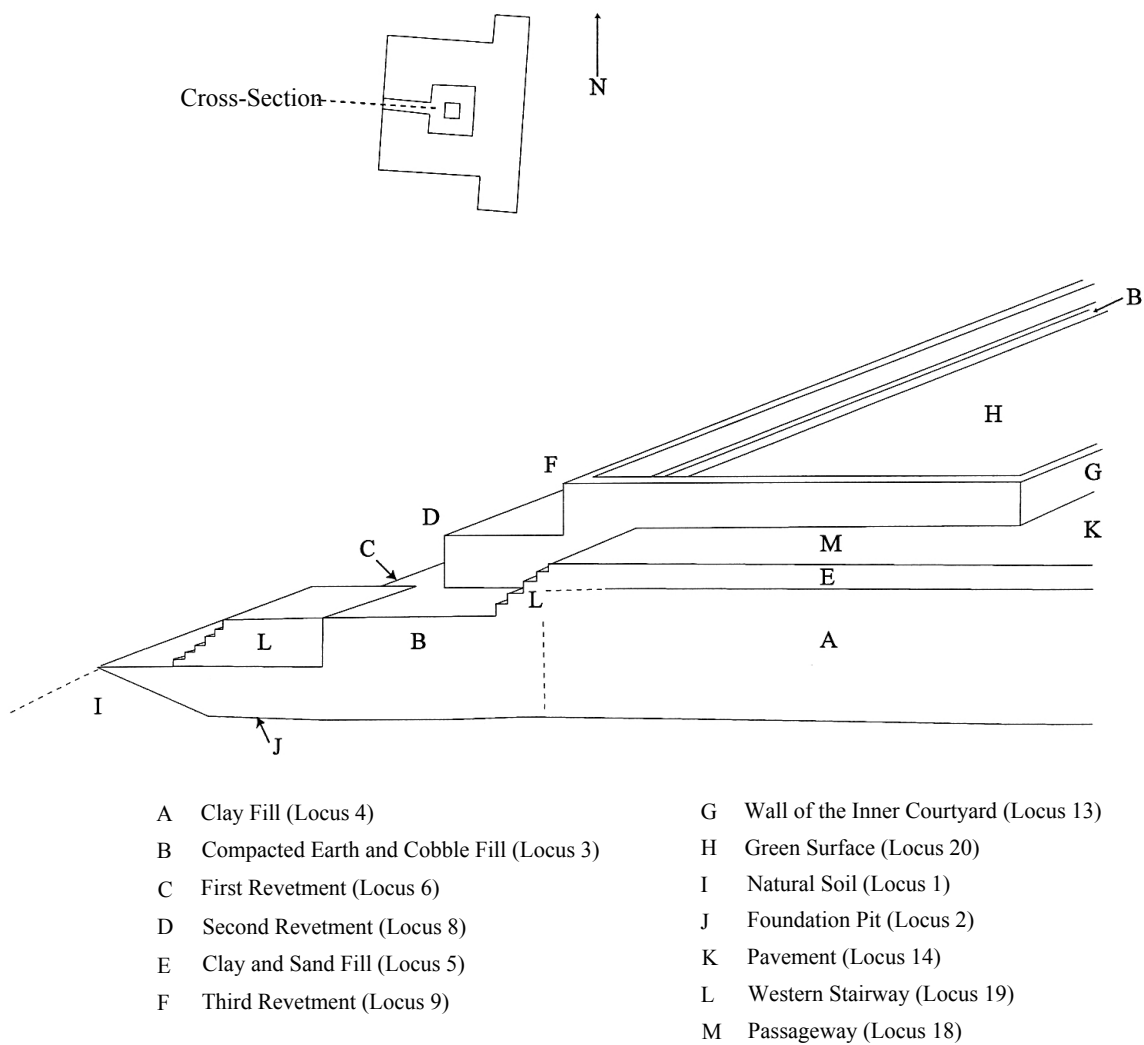
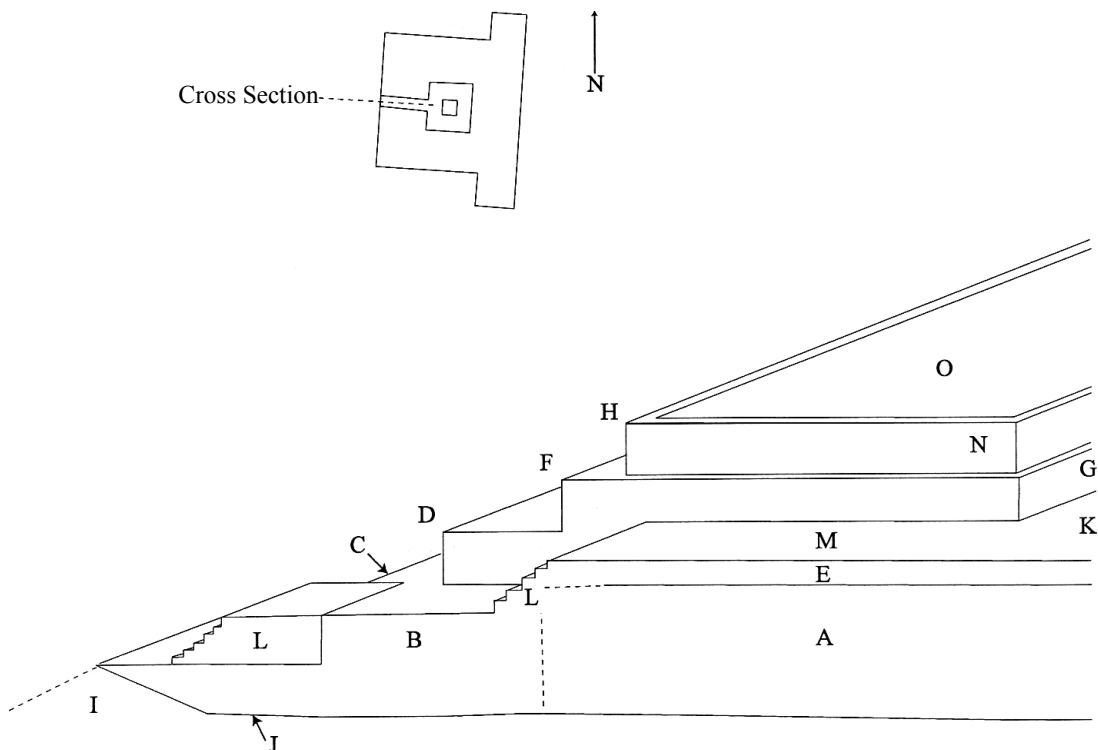
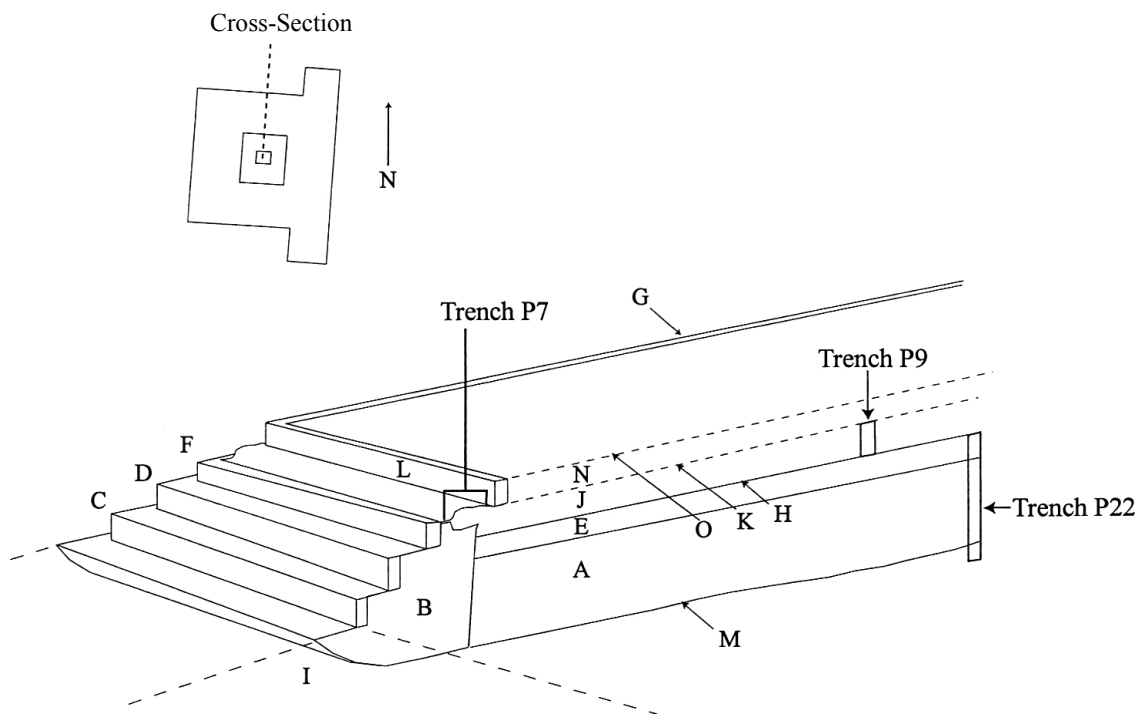


Figure 7.2: Schematic Cross-Section of the West Side of the Main Platform through the Passageway during Phase 1. Not to scale.



- |   |   |   |                             |
|---|---|---|-----------------------------|
| A | Clay Fill (Locus 4)                       | I | Natural Soil (Locus 1)      |
| B | Compacted Earth and Cobble Fill (Locus 3) | J | Foundation Pit (Locus 2)    |
| C | First Revetment (Locus 6)                 | K | Pavement (Locus 14)         |
| D | Second Revetment (Locus 8)                | L | Western Stairway (Locus 19) |
| E | Clay and Sand Fill (Locus 5)              | M | Passageway (Locus 18)       |
| F | Third Revetment (Locus 9)                 | N | Adobe Wall II (Locus 12)    |
| G | Wall of the Inner Courtyard (Locus 13)    | O | Red Surface (Locus 24)      |
| H | Fourth Revetment (Locus 10)               |   |                             |

Figure 7.3: Schematic Cross-Section of the West Side of the Main Platform through the Passageway in Phase 2. Not to scale.



- |   |   |   |                           |
|---|---|---|---------------------------|
| A | Clay Fill (Locus 4)                       | I | Natural Soil (Locus 1)    |
| B | Compacted Earth and Cobble Fill (Locus 3) | J | Sand Fill I (Locus 23)    |
| C | First Revetment (Locus 6)                 | K | Red Surface (Locus 24)    |
| D | Second Revetment (Locus 8)                | L | Adobe Wall I              |
| E | Clay and Sand Fill (Locus 5)              | M | Foundation Pit (Locus 2)  |
| F | Third Revetment (Locus 9)                 | N | Sand Fill II (Locus 26)   |
| G | Fourth Revetment (Locus 10)               | O | Yellow Surface (Locus 33) |
| H | Green Surface (Locus 20)                  |   |                           |

Figure 7.4: Schematic Cross-Section of the South Side of the Main Platform Showing Unfinished Revetments. Not to scale.

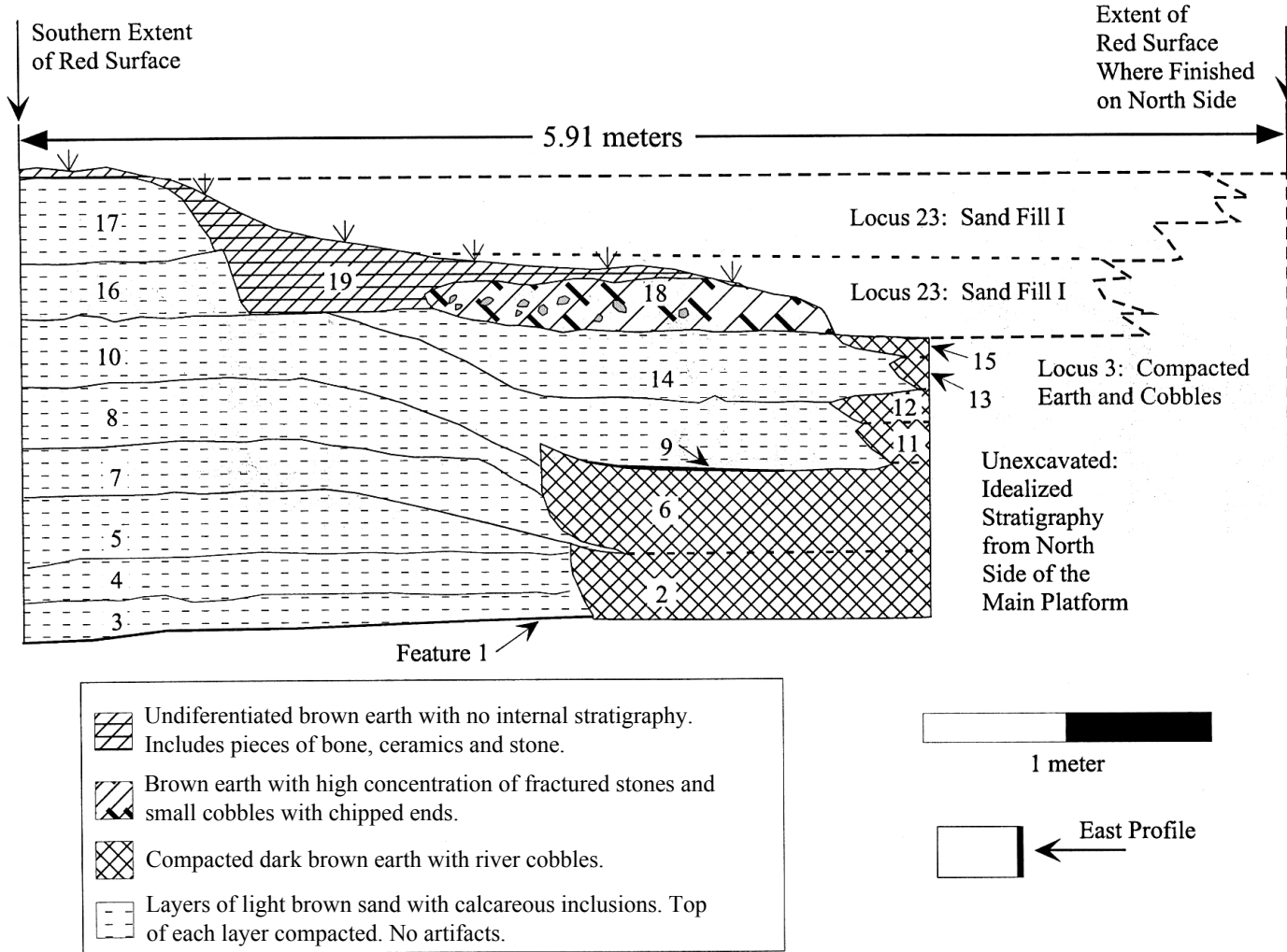
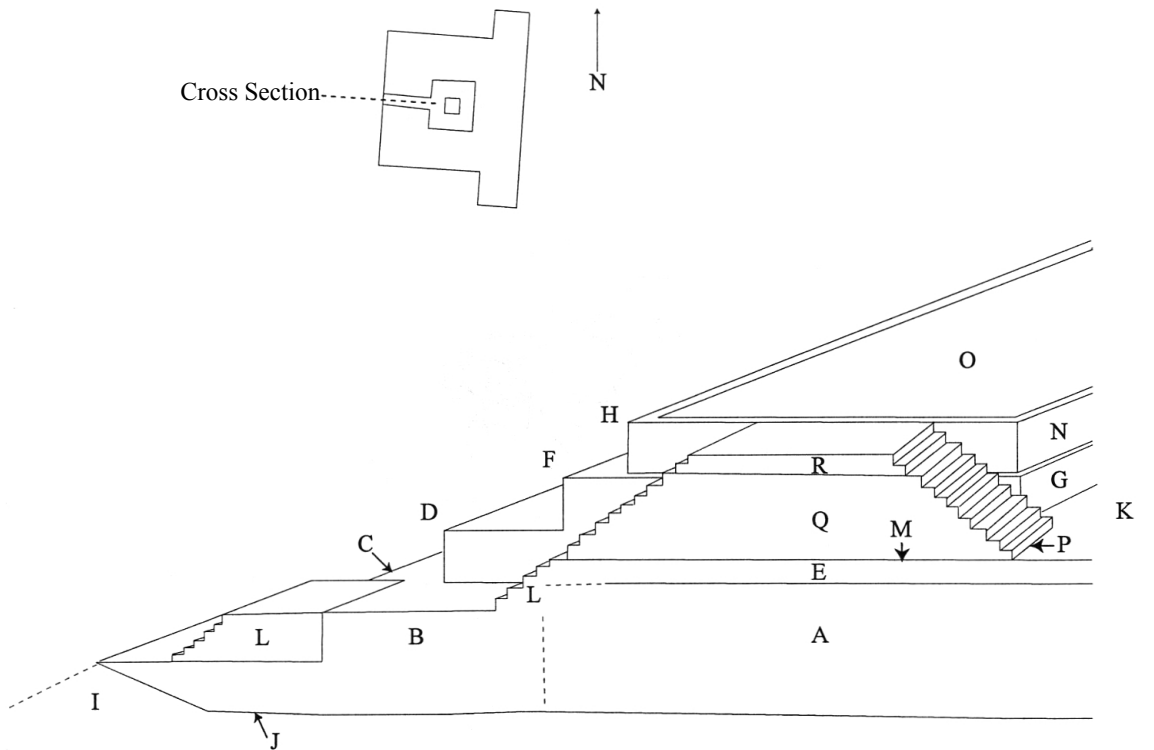


Figure 7.5: Trench P7, East Profile, with Imposed Idealized Stratigraphy from North Side of the Main Platform to Demonstrate the Unfinished Nature of the South Side



- |   |   |   |  |
|---|---|---|--|
| A | Clay Fill (Locus 4)                       | J | Foundation Pit (Locus 2)                   |
| B | Compacted Earth and Cobble Fill (Locus 3) | K | Pavement (Locus 14)                        |
| C | First Revetment (Locus 6)                 | L | Western Stairway (Locus 19)                |
| D | Second Revetment (Locus 8)                | M | Passageway (Locus 18)                      |
| E | Clay and Sand Fill (Locus 5)              | N | Adobe Wall II (Locus 12)                   |
| F | Third Revetment (Locus 9)                 | O | Yellow Surface (Locus 33)                  |
| G | Wall of the Inner Courtyard (Locus 13)    | P | Stairway of the Inner Courtyard (Locus 34) |
| H | Fourth Revetment (Locus 10)               | Q | Brown Fill (Locus 25)                      |
| I | Natural Soil (Locus 1)                    | R | Sand Fill II(Locus 26)                     |

Figure 7.6: Schematic Cross-Section of the West Side of the Main Platform through the Passageway in Phase 3. Not to scale.



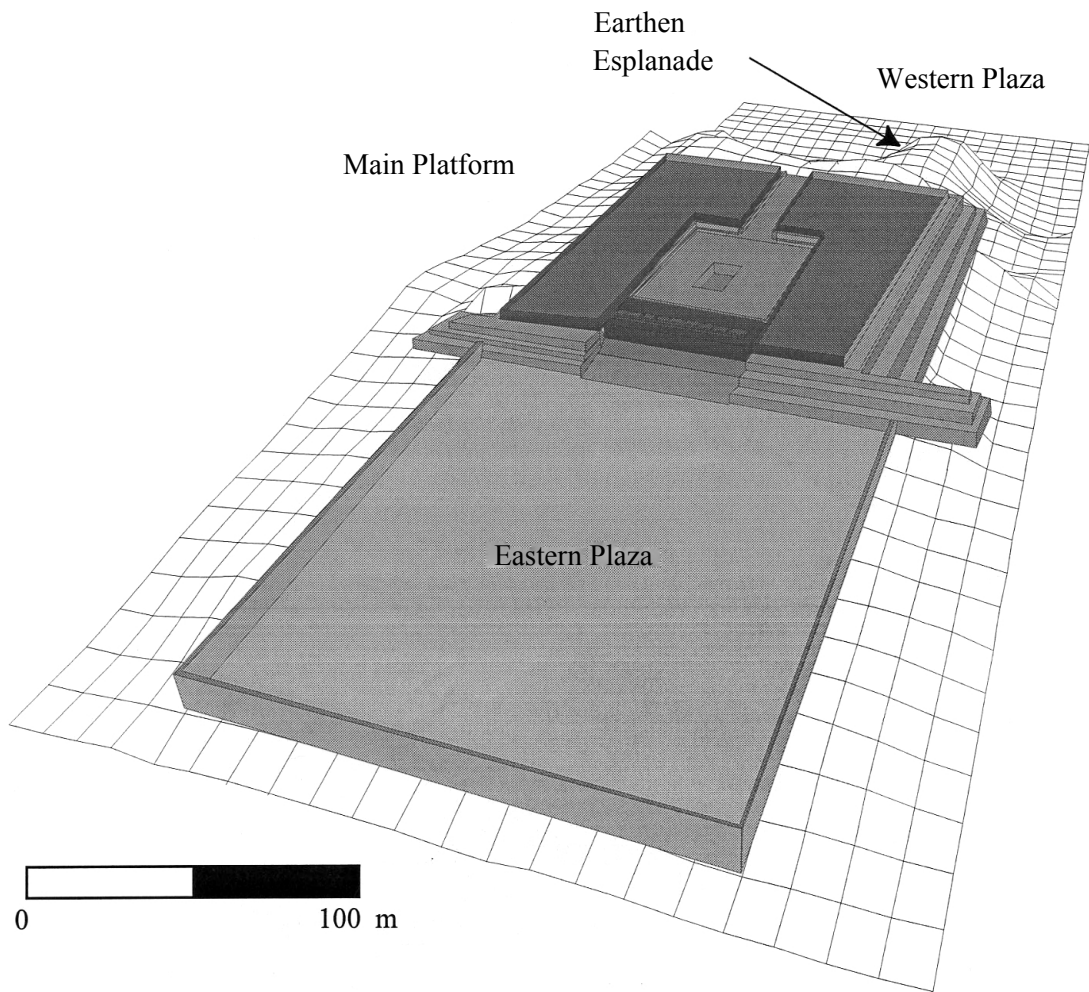
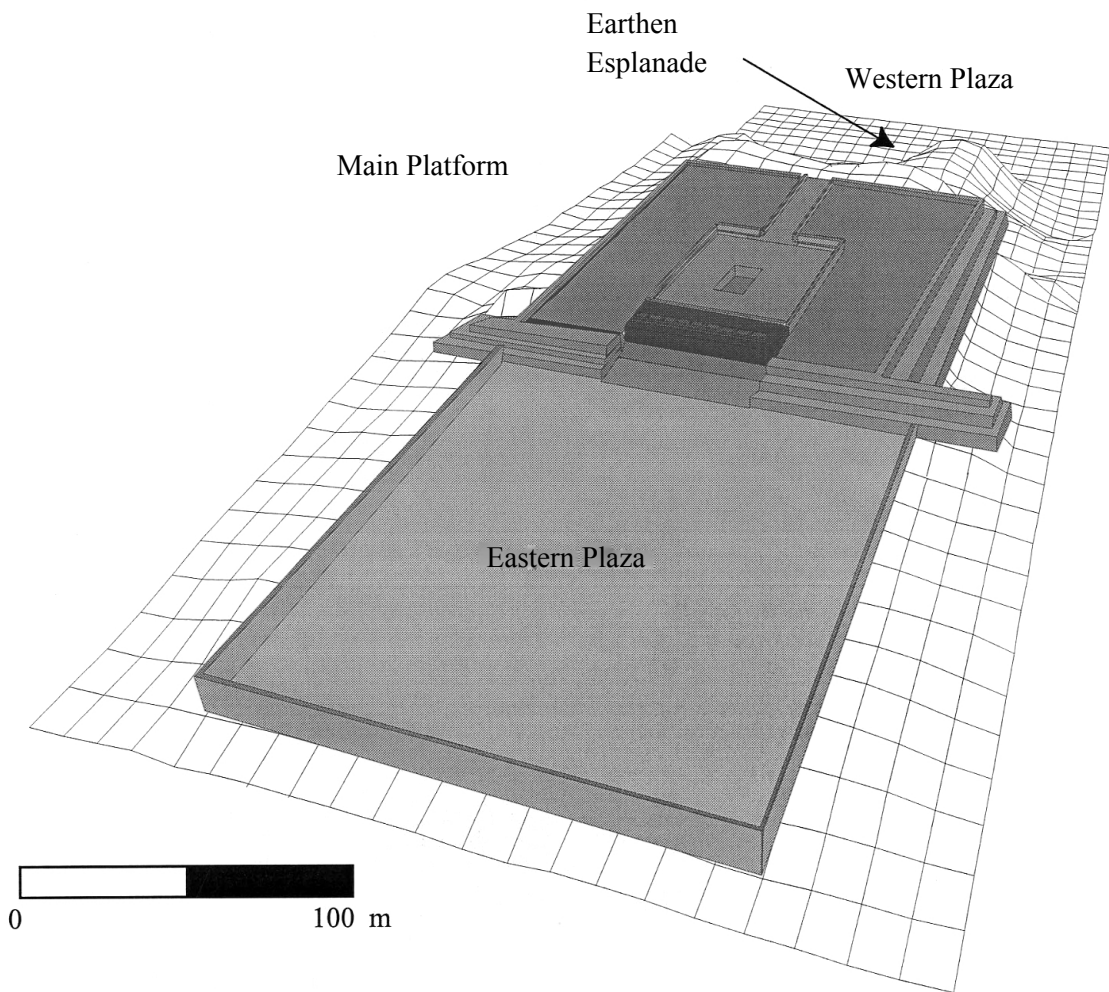
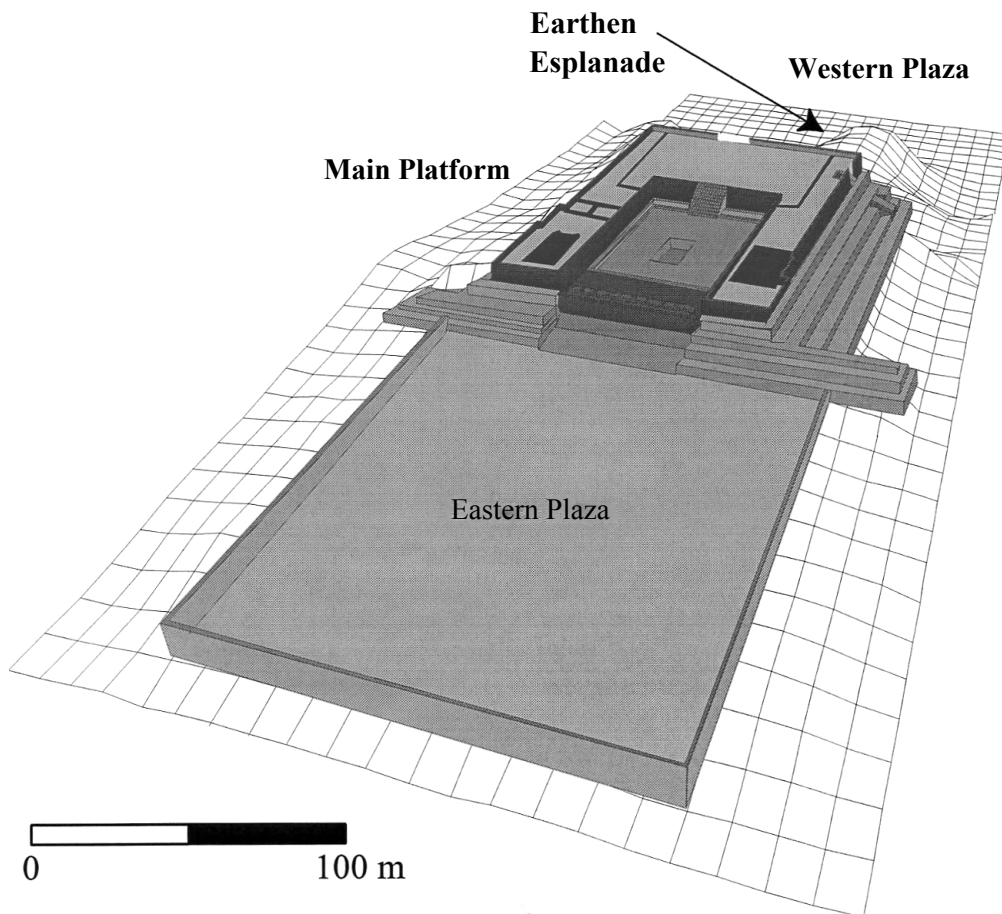


Figure 8.1 : Schematic Reconstruction of the Pumapunku Complex  
Seen from the East in Phase 1



**Figure 8.2: Schematic Reconstruction of the Pumapunku Complex Seen from the East in Phase 2**



**Figure 8.3: Schematic Reconstruction of the Pumapunku Complex  
Seen from the East in Phase 3**

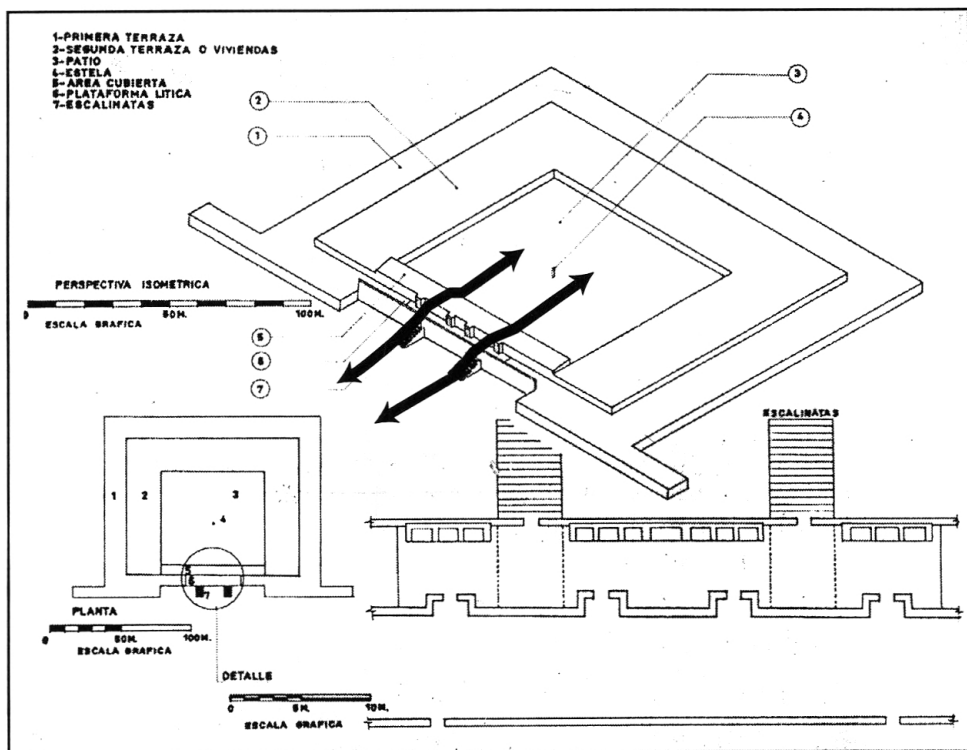


Figure 9.1: Reconstruction of Movement across the Main Platform: Entrance and Exit on the East (drawing from Ponce 1971)

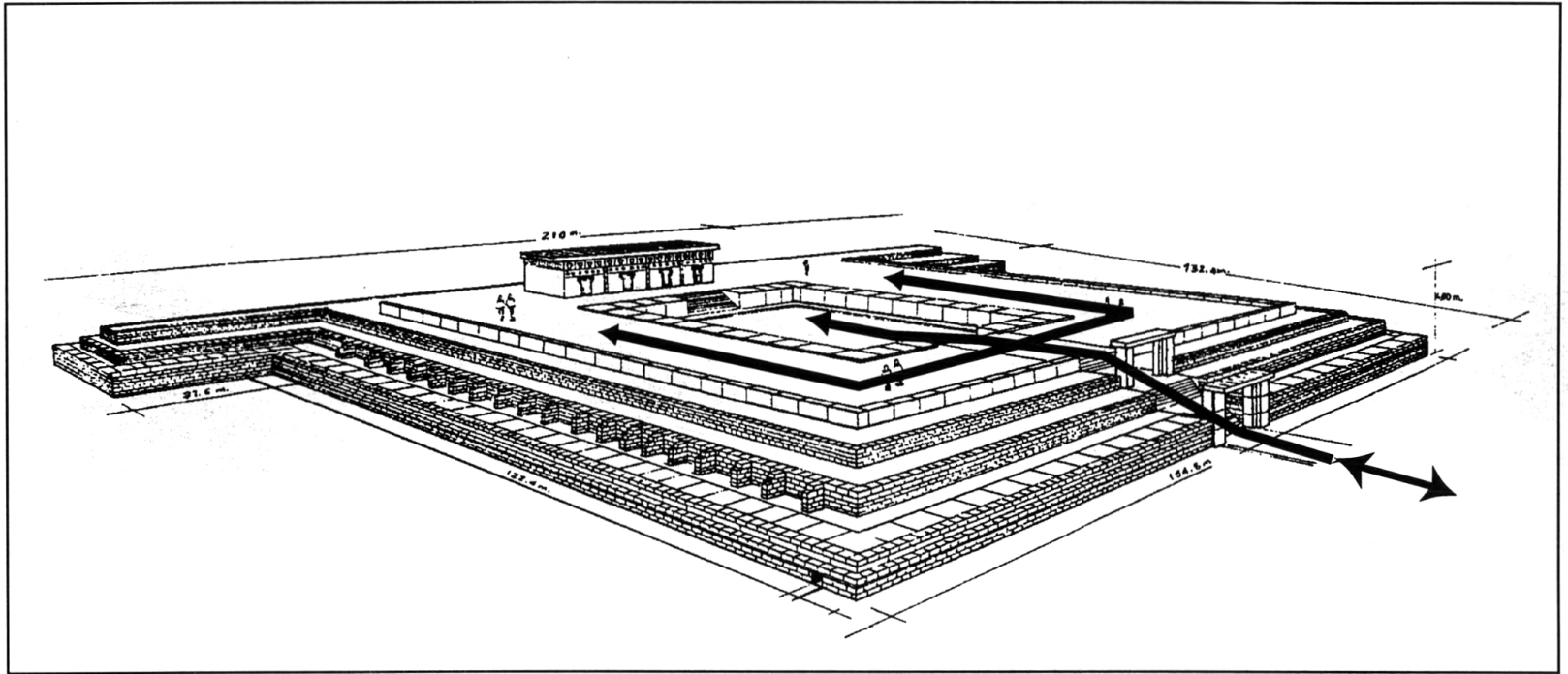


Figure 9.2: Reconstruction of Movement across the Main Platform: Entrance and Exit on the West (drawing from Escalante 1994)

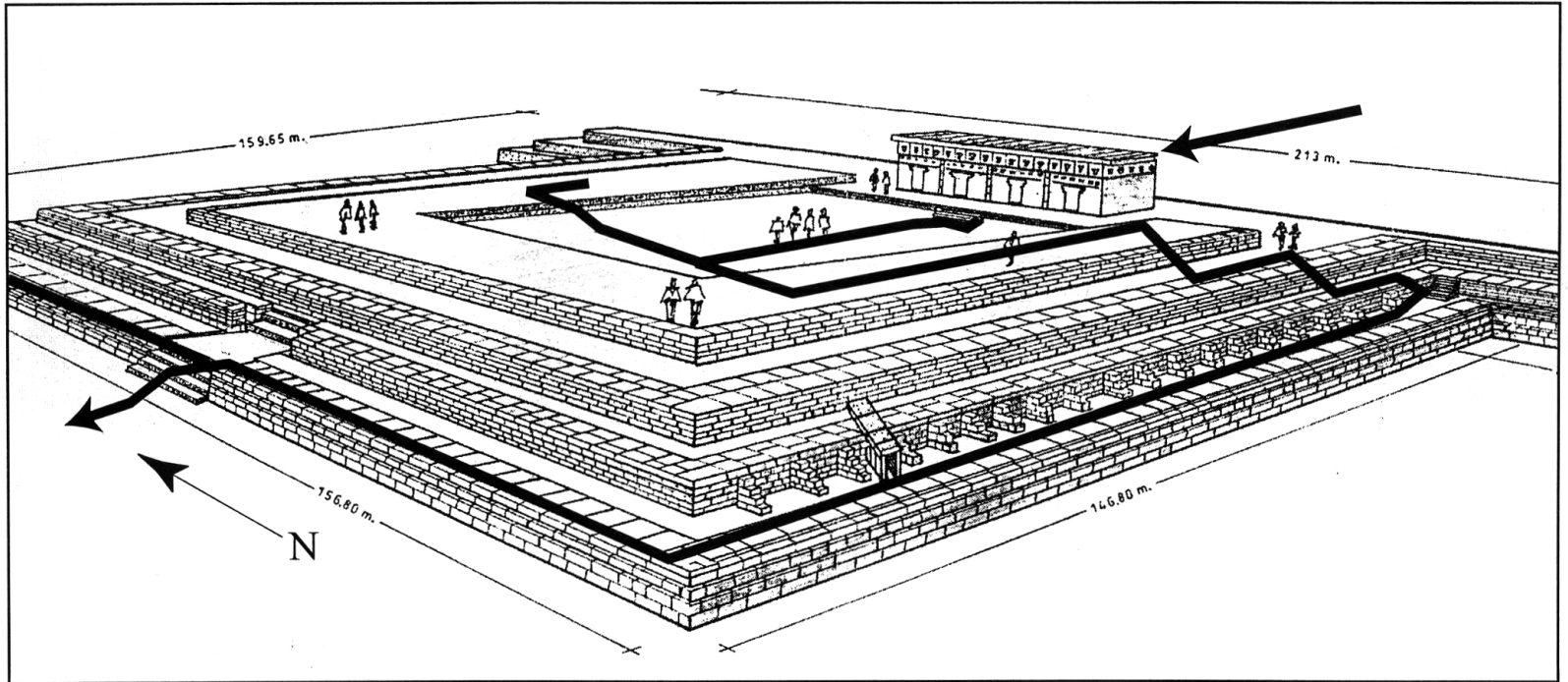


Figure 9.3: Reconstruction of Movement across the Main Platform: Entrance on the East and Exit on the West (drawing from Estévez 1989)

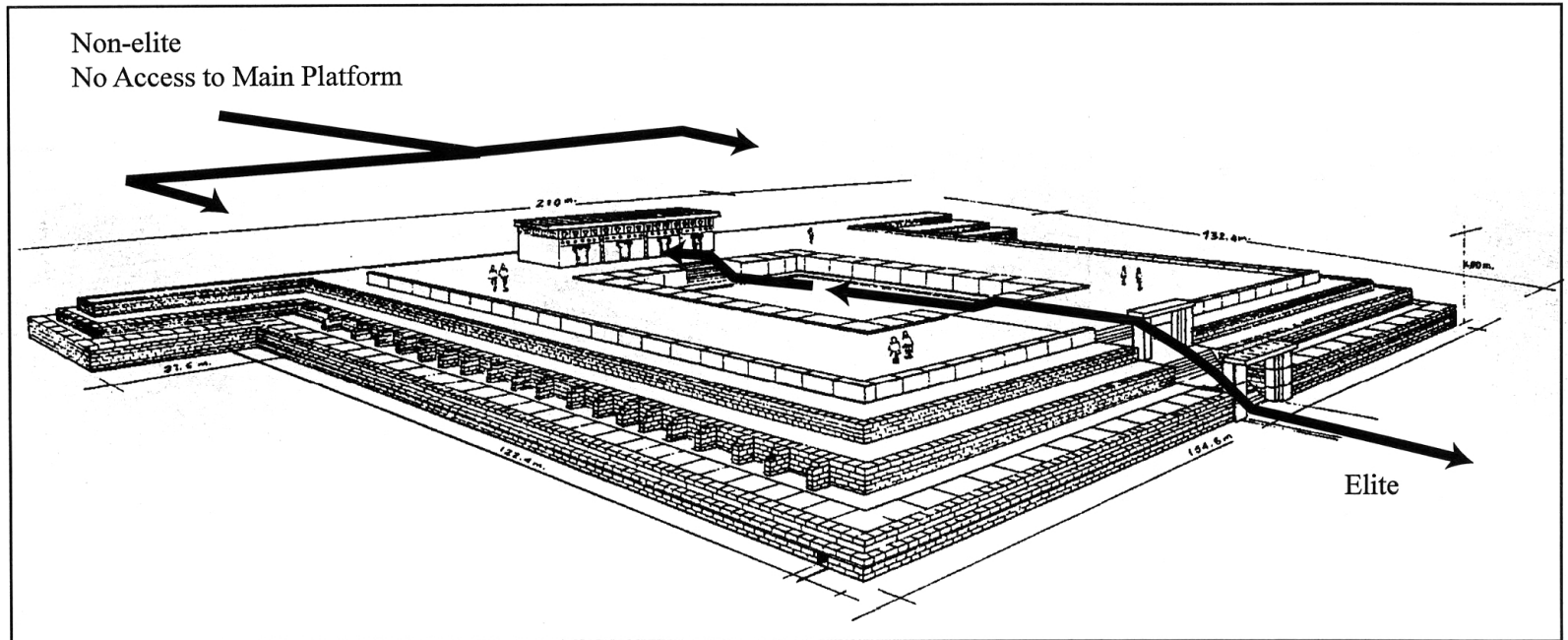


Figure 9.4: Reconstruction of Movement across the Main Platform: Elite Enter and Exit on West; Non-Elite Only Enter the Eastern Plaza (drawing from Escalante 1994)

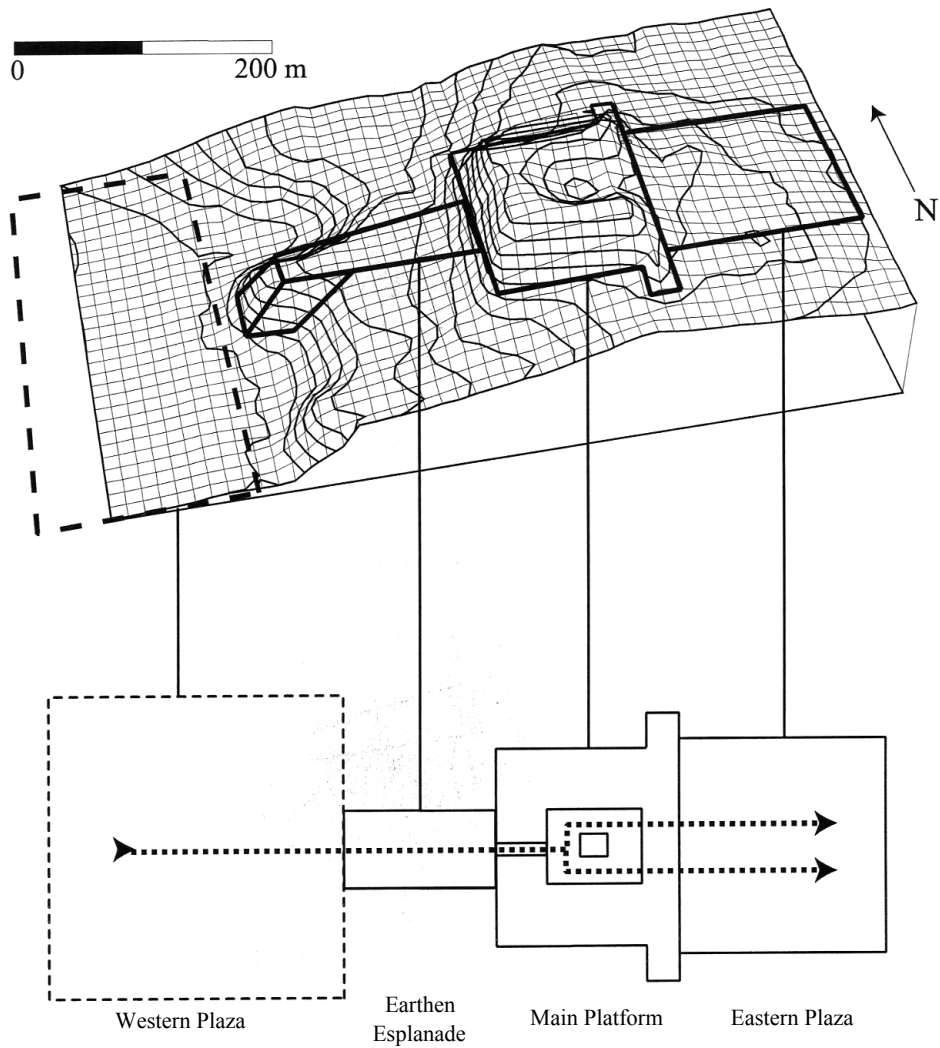


Figure 9.5: Reconstruction of Movement through the Pumapunku Complex: Entrance on the West and Exit on the East



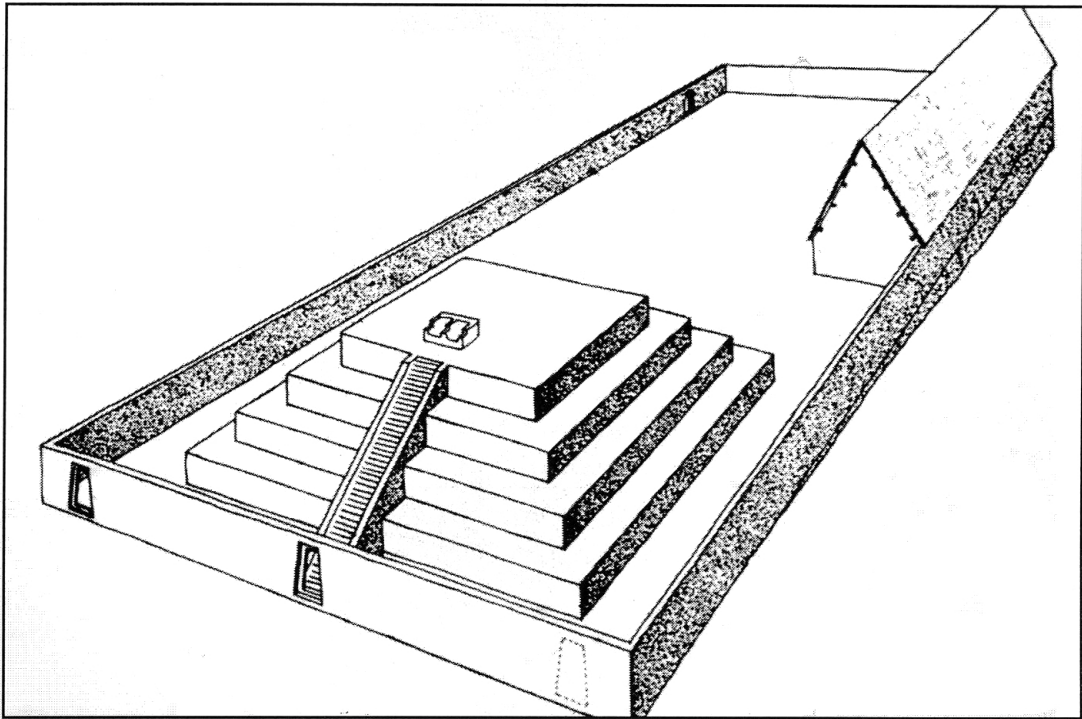


Figure 10.1 : Reconstruction of the Ushnu at Vilcas Described by Cieza de León (from Gasparini and Margolis 1980)

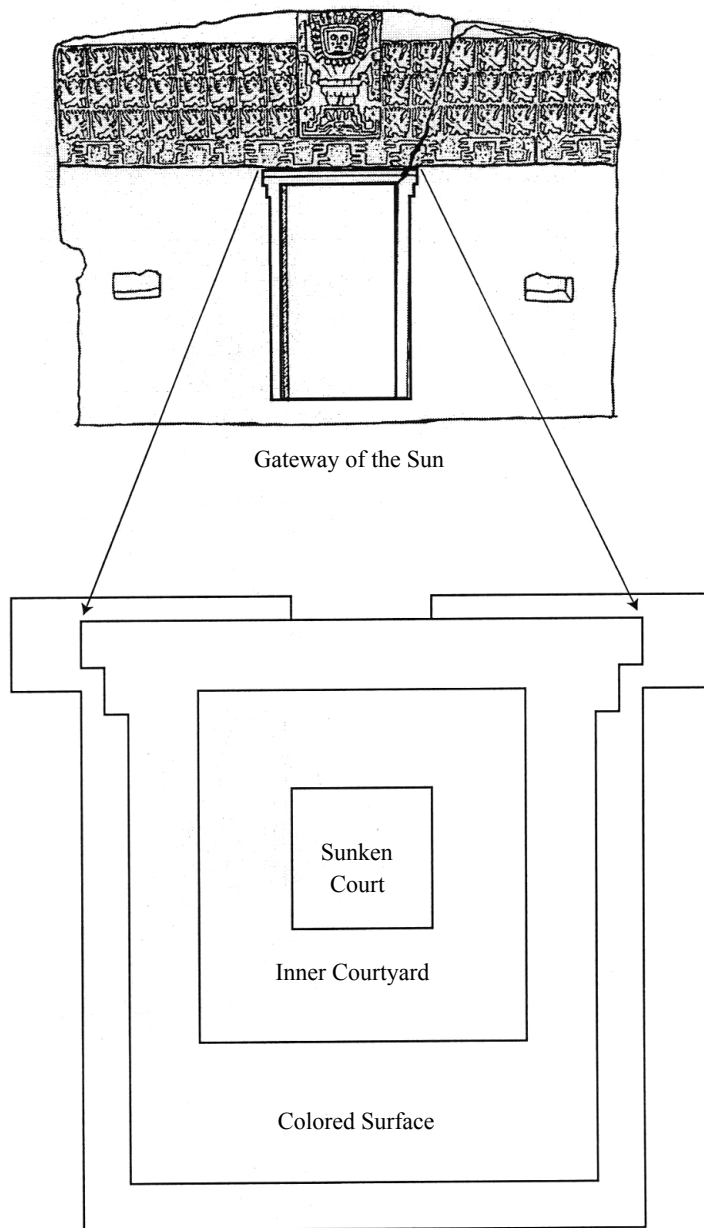


Figure 10.2: Comparison of the Major Features of the Main Platform of the Pumapunku with the Tiwanaku Doorway Motif. Schematic Drawing.

## BIBLIOGRAPHY

Agurto, S.

1987 *Estudios acerca de la construcción, arquitectura, y planeamiento incas.*

Cámara Peruana de la Construcción, Lima.

Albarracín-Jordán, J.

1996a *Tiwanaku: Arqueología regional y dinámica segmentaria.* Plural Editores, La

Paz.

1996b *Tiwanaku Settlement System: The Integration of Nested Hierarchies in the Lower Tiwanaku Valley.* *Latin American Antiquity* 7(3):183-210.

Albornoz, C. de

1967 *La instrucción para descubrir todas las guacas del Pirú y sus camayos y haciendas.* *Journal de la Société des Americanistes* 55(1):7-39.

Alconini, S.

1995 *Rito, símbolo e historia en la pirámide de Akapana, Tiwanaku: Un análisis de cerámica ceremonial prehispánica.* Editorial Acción, La Paz.

Aldenderfer, M.

1993 *Ritual, Hierarchy, and Change in Foraging Societies.* *Journal of*

*Anthropological Archaeology* 12:1-40.

Anders, M.

1986 *Dual Organization and Calendars Inferred from the Planned Site of Azangaro-Wari Administrative Strategies*. Unpublished Ph.D. dissertation. Department of Anthropology, Cornell University, Ithaca.

Arellano López, J.

1991 The New Cultural Context of Tiahuanaco. In *Huari Administrative Structure: Prehistoric Monumental Architecture and State Government*, edited by W. H. Isbell and G. F. McEwan, pp. 259-280. Dumbarton Oaks, Washington, D.C.

Ascher, R.

1961 Analogy in Archaeological Interpretation. *Southwestern Journal of Anthropology* 17(4):317-325.

Bandelier, A.

1911 The Ruins at Tiahuanaco. *Proceedings of The American Antiquarian Society* 21:218-265.

Barrencea, R. P.

1986 *Los cronistas del Perú. Biblioteca Clásica de Perú*, vol. II. Banco de Crédito

de Perú, Lima.

Bastien, J.

1978 *Mountain of the Condor: Metaphor and Ritual in an Andean Ayllu*. West Publishing, St. Paul.

Bauer, B.

1991 Pacariqtambo and the Mythical Origins of the Inca. *Latin American Antiquity* 2(1):7-26.

1992 Ritual Pathways of the Inca: An Analysis of the Collasuyu Ceques in Cuzco. *Latin American Antiquity* 3(3): 183-205.

Bauer, B., and C. Stanish

1998 Pilgrimage and the Geography of Power of the Inka state. Paper presented in the Pre-Columbian Symposium at Dumbarton Oaks, Washington, D. C.

Bauer, B., and D. S. P. Dearborn

1995 *Astronomy and Empire in the Ancient Andes: The Cultural Origins of Inca Sky Watching*. University of Texas Press, Austin.

Bawden, G.

1982 Community Organization Reflected by the Household: A Study of Pre-

Columbian Social Dynamics. *Journal of Field Archaeology* 9(2): 163-181.

1995 The Structural Paradox: Moche Culture as Political Ideology. *Latin American Antiquity* 6(3):255-273.

Bell, J. A.

1994 The Ancient Mind. In *Elements of Cognitive Archaeology*, edited by C. Renfrew and E. B.W. Zubrow, pp. 15-21. Cambridge University Press, Cambridge.

Bennett, W. C.

1934 *Excavations at Tihuanacu*. American Museum of Natural History, New York.

Berman, M.

1994 *Lukurmata: Household Archaeology in Prehispanic Bolivia*. Princeton University Press, Princeton.

1997 Domestic Life and Vertical Integration in the Tiwanaku Heartland. *Latin American Antiquity* 8(2):93-112.

Betanzos, J. de

1987 [1551] *Suma y narración de los incas*. Ediciones Atlas, Madrid.

Bloomer, K. C., and C. W. Moore

1977 *Body, Memory and Architecture*. Yale University Press, New Haven.

Bourdieu, P.

1973 The Berber House. In *Rules and Meaning*, edited by M. Douglas, pp. 98-110.

Penguin, Harmondsworth.

1977 *Outline of a Theory of Practice*. Cambridge University Press, Cambridge.

Browman, D.L.

1978a The Temple of Chiripa, Lake Titicaca, Bolivia. In *El hombre y la cultura. III Congreso peruano. Actas y trabajos*, vol. 2, edited by R. Matos, pp. 807-813. Lima.

1978b Toward the Development of the Tiwanaku (Tiahuanaco) State. In *Advances in Andean Archaeology*, edited by D. Browman, pp. 327-49. Mouton, The Hague.

1980 Tiwanaku Expansion and Altiplano Economic Patterns. *Estudios arqueológicos de la Universidad de Chile, Antogasta* 5:107-120.

1981 New Light on Andean Tiwanaku. *American Scientist* 69(4):408-419.

1984 Tiwanaku: Development of Interzonal Trade and Economic Expansion in the Altiplano. In *Social and Economic Organization in the Prehispanic Andes*, edited by British Archaeological Reports, International Series 194, Oxford.

1989 Cultural Primacy of Tiwanaku in the Development of the Latter Peruvian States. In *Diálogo andino*, pp. 59-71.

Burger, R.

1992 *Chavin and the Origins of Andean Civilization*. Thames and Hudson, New

York.

Burger, R., and L. Salazar-Burger

1993 The Place of Dual Organization in Early Andean Ceremonialism: A Comparative Review. In *El mundo ceremonial andino*, edited by L. Millones and Y. Onuku, pp. 97-116. Museo Nacional de Etnología, Osaka.

Calancha, A.

1972 *Corónica moralizada del Orden de San Augustin en el Perú*, vol. 17. Consejo Superior de Investigaciones Científicas, Madrid.

Castelnau, F. de.

1854 *Antiquites des Incas et autres peuples anciens, recueillies pendant l'expedition dans les parties centrales de l'Amerique du Sud*. P. Bertrand, Libraire-editeur, Paris.

Chalon, P.

1882 Monumentos religiosos y militares de Tihuanacu. In *Tihuanacu: Antología de los principales escritos de los cronistas, americanistas e historiadores bolivianos*, pp. 78-87. La Paz.

Chávez, K. L. M.

1988 The Significance of Chiripa in Lake Titicaca Basin Development. *Expedition*



30(3): 17-26.

Chávez, K. L. M., and S. J. Chávez

1997 In *Willay: Newsletter of the Andean Anthropological Research Group*, edited by I. Shimada and M. Shimada, pp. 5-7. Carbondale.

Chávez, S. J.

1992 *The Conventionalized Rules in Pucara Pottery Technology and Iconography: Implications for Socio-Political Developments in the Northern Lake Titicaca Basin*. Unpublished Ph.D. dissertation. Department of Anthropology, Michigan State University, East Lansing.

Chávez, S. J., and K. L. Mohr-Chávez

1976 A Carved Stela from Taraco, Puno Peru, and the Definition of an Early Style of Stone Sculpture from the Altiplano of Peru and Bolivia. *Nawpa Pacha* 45-83.

Chávez, S. J.

1976 The Arapa Thunderbolt Stela: A Case of Stylistic Identity with Implications for Pucara Influences in the Tiahuanaco Area. *Nawpa Pacha* 13:3-24.

Cieza de León, P.

1939 Del pueblo de Tihuahuacu y de los edificios tan grandes y antiguos que en él se

ven. In *Tihuanacu: Antología de los principales escritos de los cronistas coloniales, americanistas e historiadores bolivianos*, edited by G. A. Otero, pp. 89-100. Ministerio de Educación, Bellas Artes y Asuntos Indígenas, La Paz, Bolivia.

Cobo, B.

1939 Del templo y edificios de Tihuanacu. In *Tihuanacu: Antología de los principales escritos de los cronistas coloniales, americanistas e historiadores bolivianos*, edited by G. A. Otero, pp. 28-44. Ministerio de Educación, Bellas Artes y Asuntos Indígenas, La Paz, Bolivia.

1990 *Inca Religion and Customs*. Translated by Roland Hamilton. University of Texas Press, Austin.

Conklin, W. J.

1986 Inca Architecture. *Archaeoastronomy* 9(I-V): 128-133.

1991 Tiahuanaco and Huari: Architectural Comparisons and Interpretations. In *Huari Administrative Structure: Prehistoric Monumental Architecture and State Government*, edited by W. Isbell and G. F. McEwan., pp. 281-291. Dumbarton Oaks, Washington, D.C.

Conklin, W. J., and M. E. Moseley

1988 The Patterns of Art and Power in the Early Immediate Period. In *Peruvian Prehistory*, edited by R. Keatinge, pp. 145-163. University Press, Cambridge.

Cook, A.

1983 Aspects of State Ideology in Huari and Tiwanaku Iconography: The Central Deity and the Sacrificer. In *Investigations of the Andean Past*, edited by D. H. Sandweiss, pp. 161-85. Latin American Studies Program, Cornell University, Ithaca, New York.

Cook, A., and W. Isbell

1987 Ideological Origins of an Andean Conquest State. *Archaeology* 40(4):27-33.

Cordero Miranda, G.

1978 *Informe preliminar acerca de las excavaciones en Pumapunku*. Report to Instituto Nacional de Arqueología de Bolivia, La Paz, number 33/78.

Courty, G., and G. Crequi-Monfort

1906 *Fouilles de la mission scientifique française a Tiahuanaco*. Internationaler Americanisten Kongress, Stuttgart.

Culbert, T. P.

1991 *Classic Maya Political History: Hieroglyphic and Archaeological Evidence*. Cambridge University Press, Cambridge.

D'Altroy, T. N.

1992 *Provincial Power in the Inka Empire*. Smithsonian Institution Press,  
Washington, D.C.

d'Orbigny, A.

1945 *Viaje a la América Meridional*. Editorial Futuro, Buenos Aires.

DeBoer, W. R.

1997 Ceremonial Centers from the Cayapas (Esmeraldas, Ecuador) to Chillicothe  
(Ohio, USA). *Cambridge Archaeological Journal* 7(2):225-253

Dillehay, T. D.

1992 Widening the Socio-Economic Foundations of Andean Civilization: Prototypes  
of Early Monumental Architecture. In *Andean Past*, vol. 3, pp. 55-65. Cornell University.

Donnan, C. B.

1986 The Huaca 1 Complex. In *The Pacatnamu Papers*, edited by G. A. Cock and C.  
B. Donna, pp. 63-84. 1 ed. Museum of Cultural History, University of California, Los  
Angeles.

Doxtater, D.

1984 Social Opposition in Non-Discursive Expression: Architecture as Ritual  
Process. *Canadian Journal of Anthropology* 4[1] : 1-19.

Earle, T. K. and D'Altroy, T. N.

1989 Political Economy of the Inka Empire: The Archaeology of Power and Finance. In *Archaeological Thought in America*, edited by C. C. Lamberg-Karlovsky, pp. 183-204. Cambridge University Press, Cambridge.

Eliade, M.

1959 *The Sacred and the Profane: The Nature of Religion*. Harcourt, Brace, and Jovanovich, New York.

Erickson, C.

1993 Social Organization of Prehispanic Raised Field Agriculture in the Lake Titicaca Basin. In *Economic Aspects of Water Management in the Prehispanic New World*, edited by V. Scarborough, pp. 369-426. JAI Press, Greenwich.

Escalante, J. F.

1994 *Arquitectura prehispánica en los Andes bolivianos*. CIMA, La Paz.

Espada, J. de la

1939 Del templo y edificios de Tihuanacu. In *Tihuanacu: Antología de los principales escritos de los cronistas coloniales, americanistas e historiadores bolivianos*, edited by G. A. Otero, pp. 3-5. Ministerio de Educación, Bellas Artes y Asuntos

Indígenas, La Paz.

Estévez Castillo, J.

1990 Excavaciones arqueológicas en el sector sur del templo de Pumapunku, Tiwanaku (Informe de los trabajos de campo de la gestión de 1989). Instituto Nacional de Arqueología de Bolivia, La Paz.

Farrington, I. S.

1992 Ritual Geography, Settlement Patterns and the Characterization of the Provinces of the Inka Heartland. *World Archaeology* 23(3):368-385.

Flannery, K. V., and J. Marcus

1994 Ancient Zapotec Ritual and Religion: An Application of the Direct Historical Approach. In *The Ancient Mind: Elements of Cognitive Archaeology*, edited by C. Renfrew and E. B. W. Zubrow, pp. 55-74. Cambridge University Press, Cambridge.

1996 Cognitive Archaeology. In *Contemporary Archaeology in Theory*, edited by I. Hodder and R. Preucel, pp. 350-361. Blackwell, Oxford.

Fritz, J. M.

1987 Chaco Canyon and Vijayanagara: Proposing Spatial Meaning in Two Societies . In *Mirror and Metaphor: Material and Social Constructions of Reality*, edited by D. W. Ingerrisoll and G. Bronitsky, pp. 313-349. University Press of Amsterdam, Lanham.

Fritz, J. M. and G. Michell

1984 Interpreting the Plan of a Medieval Hindu Capital, Vijayanagara. *World Archaeology* 19(1):105-129.

Garcilaso de la Vega, I.

1987 [1604] *Royal Commentaries of the Incas and General History of Peru*.  
University of Texas Press, Austin.

Gasparini, G., and L. Margolies

1980 *Inca Architecture*. Indiana University Press, Bloomington.

Gibson, J. J.

1966 *The Senses Considered as Perceptual Systems*. Houghton Mifflin Company,  
Boston.

Giddens, A.

1984 *The Constitution of Society*. Oxford Polity Press, Oxford.

Goldstein, P.

1993 Tiwanaku Temples and State Expansion: A Tiwanaku Sunken-Court Temple  
in Moquegua, Peru. *Latin American Antiquity* 4(1):22-47.

Haas, J.

1982 *The Evolution of the Prehistoric State*. Columbia University Press, New York.

1985 Excavations of Huaca Grande: An Initial View of the Elite of Pampa Grande, Peru. *Journal of Field Archaeology* 12(4):390-409.

Haas, J., S. Pozorski, and T. Pozorski

1987 *The Origins and Development of the Andean State*. Cambridge University Press, New York.

Hall, E. T.

1966 *The Hidden Dimension*. Doubleday Anchor, Garden City.

Hammond, N.

1991 Matrices and Maya Archaeology. *Journal of Field Archaeology* 18(1):29-41.

Harris, E.

1979 *Principles of Archaeological Stratigraphy*. Academic Press, London.

1993 *Practices of Archaeological Stratigraphy*. Academic Press, London.

Hastings, C. M., and M. E. Moseley

1975 The Adobes of Wuaca del Sol and Wuaca de la Luna. *American Antiquity*



40:196-203.

Hastorf, C.

1997 In *Willay: Newsletter of the Andean Anthropological Research Group*, edited by

I. Shimada and M. Shimada, pp. 10-12. Carbondale.

Hillier, B., and J. Hanson

1984 *The Social Logic of Space*. Cambridge University Press, New York.

Hillier, B., A. Leaman, P. Stansall, and M. Bedford

1978 Space Syntax. In *Social Organization and Settlement Pattern*, edited by D.

Green, C. Haselgrove, and M. Spriggs, pp. 343-381. B.A.R. International Series, vol. 47,

Oxford.

Hodder, I., and R. Preucel

1996 Material Symbols. In *Contemporary Archaeology in Theory*, edited by I.

Hodder and R. Preucel, pp. 299-314. Blackwell, Oxford.

Home, L.

1991 Reading Village Plans: Architecture and Social Change in Northeastern Iran.

*Expedition* 33(1 ):44-52.

Hyslop, J.

1985 *Inka Wasi, the New Cusco: Cañete Cana Lunahuana, Peru*. Institute of Andean Research, New York.

1990 *Inka Settlement Planning*. University of Texas Press, Austin.

Ibarra Grasso, D. E., J. de Mesa, and T. Gisbert

1955 Reconstrucción de Taypicala (Tiahuanaco). *Cuadernos americanos* 79:149-175.

Isbell, B. J.

1978 *To Defend Ourselves: Ecology and Ritual in an Andean Village*. University of Texas Press, Austin.

Isbell, W. H.

1978 Cosmological Order Expressed in Prehistoric Ceremonial Centers. *42nd International Congress of Americanists, Paris* 4:269-297.

1983 Shared Ideology and Parallel Political Development: Huari and Tiwanaku. In *Investigations in the Andean Past*, edited by D. H. Sandweiss, pp. 186-208. Latin American Studies Program, Cornell University, Ithaca, New York.

1985 Conchopata, Ideological Innovator in Middle Horizon 1 A. *Nawpa Pacha* 22-23:91-126.

1988 City and State in Middle Horizon Huari. In *Peruvian Prehistory*, edited by R. Keatinge, pp. 164-189. Cambridge University Press, Cambridge.

1991 Huari Administrative Structure. In *Huari Administrative Structure: Prehistoric Monumental Architecture and State Government*, edited by W. H. Isbell and G. F.

McEwan, Dumbarton Oaks, Washington, D. C. pp. 293-315. Dumbarton Oaks,

Washington D. C.

1995 Constructing the Andean Past or "As You Like It." *Journal of the Steward Anthropological Society* 23(1-2): 1-12.

1997 *Mummies and Mortuary Monuments: A Postprocessual Prehistory of Central Andean Social Organization*. University of Texas Press, Austin.

1998 Palaces in the Andean Past: Unexpected Surprises. Paper presented at 17th Northeast Meeting for Amazonian and Andean Archaeology and Ethnohistory.

Binghamton, N. Y.

Isbell, W. H., and A. Cook

1987 Ideological Origins of an Andean Conquest State. *Archaeology* 40 (4):26-33.

Isbell, W. H., and G. F. McEwan

1991a A History of Huari Studies and Introduction to Current Interpretations. In *Huari Administrative Structure: Prehistoric Monumental Architecture and State*

*Government*, edited by W. H. Isbell and G. F. McEwan, pp. 1-17. Dumbarton Oaks,

Washington,

D. C.

1991b Conclusions: Huari Administration and the Orthogonal Cellular Architectural

Horizon. In *Huari Administrative Structure: Prehistoric Monumental Architecture and State Government*, edited by W. H. Isbell and G. F. McEwan, pp. 293-315. Dumbarton Oaks, Washington D. C.

1991c Tiahuanaco and Huari: Architectural Comparisons on Interpretations. In *Huari Administrative Structure: Prehistoric Monumental Architecture and State Government*, edited by W. H. Isbell and G. F. McEwan, pp. 281-291. Dumbarton Oaks, Washington D. C.

Janusek, J. W.

1994 *State and Local Power in a Prehispanic Andean Polity: Changing Patterns of Urban Residence in Tiwanaku and Lurkurmata, Bolivia*. Unpublished Ph.D. dissertation, Department of Anthropology, University of Chicago.

Kidder, A.

1948 The Position of Pucara in Titicaca Basin Archaeology. *Memoirs of the Society for American Archaeology* 4:84-89.

1956 Digging in the Titicaca Basin. *University Museum Bulletin* 20(3): 16-29.

Kiss, E.

1937 *Das Sonnentor von Tihuanaku und Hörbigers Welteislehre*. Koehler & Umelang, Leipzig.

Kolata, A.

1986 The Agricultural Foundations of the Tiwanaku State: A View from the Heartland. *American Antiquity* 51:748-62.

1992 Economy, Ideology, and Imperialism in the South-Central Andes. In *Ideology and Pre-Columbian Civilizations*, edited by A. A. Demarest and G. W. Conrad, pp. 65-86. School of American Research Press, Santa Fe, New Mexico.

1996 Mimesis and Monumentalism in Native Andean Cities. *RES* 29-30:223-236.

1993 *The Tiwanaku*. Blackwell, Cambridge.

Kolata, A., and D. Kuljis

1978 *Prospección Geofísica en Tiwanaku*. Instituto Nacional de Arqueología de Bolivia, La Paz.

Kolata, A., and C. Ponce Sangines

1992 Tiwanaku: The City at the Center. In *The Ancient Americas. Art from Sacred Landscapes*, edited by R. F. Townsend, pp. 317-333. Prestel Verlag, Munich.

Kuper, H.

1972 The Language of Sites and the Politics of Space. *American Anthropologist* 74(3): 411-425.

Lanning, E. P.

1967 *Peru Before the Incas*. Prentice-Hall, Englewood Cliffs, N. J.

Lathrap, D. W.

1985 Jaws: The Control of Power in the Early Nuclear American Ceremonial Center.

In *Early Ceremonial Architecture in the Andes*, edited by C. Donnan, pp. 241-267.

Dumbarton Oaks, Washington, D.C.

Lawrence, D., and S. Low

1990 The Built Environment and Spatial Form. *Annual Review of Anthropology*

19:453-505.

Leach, E.

1978 Does Space Syntax Really Constitute the Social? In *Social Organization and*

*Settlement Pattern*, edited by D. Green, C. Haselgrove, and M. Spriggs, pp. 385-401.

B.A.R. International Series, vol. 47, Oxford.

1983 The Gatekeepers of Heaven: Anthropological Aspects of Grandiose

Architecture. *Journal of Anthropological Research* 39(3):243-264.

Lightfoot, K.

1995 Culture Contact Studies: Redefining the Relationship Between Prehistory and

Historical Archaeology. *American Antiquity* 60 (2): 199-214.

Low, S.

1995 Indigenous Architecture and the Spanish American Plaza in Mesoamerica and the Caribbean. *American Anthropologist* 97(4):748-762.

Lumbreras, L.

1974 *The Peoples and Cultures of Ancient Peru*. Smithsonian Press, Washington D.C.

Lynch, T. F.

1983 Camelid Pastoralism and the Emergence of Tiwanaku Civilization in the South-Central Andes. *World Archaeology* 15:1-14.

Macaulay, R.

1953 *Pleasure of Ruins*. Weidenfeld and Nicolson, London.

Manzanilla, L.

1992 *Akapana: Una pirámide en el centro del mundo*. Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México, Mexico City.

Manzanilla, L., and E. Woodard

1992 Restos humanos asociados a la pirámide de Akapana (Tiwanaku, Bolivia). *Latin American Antiquity* 1 (2): 133-49.

Marcus, J.

1976 *Emblem and State in the Classic Maya Lowlands: An Epigraphic Approach to Territorial Organization*. Dumbarton Oaks, Washington, D.C.

McGuire, R. H., and M. B. Schiffer

1983 A Theory of Architectural Design. *Journal of Anthropological Archaeology* 2:227-303.

Menzel, D.

1964 Style and Time in the Middle Horizon. *Nawpa Pacha* 2:1-105.

1968 New Data on the Huari Empire in Middle Horizon Epoch 2A. *Nawpa Pacha* 6:47-114.

Molina, C. de

1988 Relación de las fábulas i ritos de los ingas [1553]. In *Fábulas y mitos de los incas*, edited by H. Urbano, pp. 49-134. Historia, vol. 16.

Moore, H. L.

1986 *Space, Text and Gender: An Anthropological Study of the Marakwet of Kenya*. Cambridge University Press, Cambridge.

Moore, J. D.



1992 Pattern and Meaning in Prehistoric Architecture: The Architecture of Social Control in the Chimu State. *Latin American Antiquity* 3(2): 95-113.

1995 The Archaeology of Dual Organization in Andean South America: A Theoretical Review and Case Study. *Latin American Antiquity* 6(2): 165-181.

1996a The Archaeology of Plazas and the Proxemics of Ritual Three Andean Traditions. *American Anthropologist* 98(4) 7:89-802.

1996b *Architecture and Power in the Ancient Andes: The Archaeology of Public Buildings*. Cambridge University Press.

Morris, C.

1997 Contrasts to Exercise in Royal Inka Power and Strategies. Paper presented in the Pre-Columbian Symposium at Dumbarton Oaks, Washington, D. C.

Morris, C., and D. E. Thompson

1985 *Huanuco Pampa: An Inca City and its Hinterland*. Thames and Hudson, London.

Moseley, M. E.

1975 Prehistoric Principles of Labor Organization in the Moche Valley, Peru. *American Antiquity* 40:191-96.

1985 The Exploration and Explanation of Early Monumental Architecture in the Andes. In *Early Ceremonial architecture in the Andes*, edited by C. Donnan, pp. 29-57.

Dumbarton Oaks. Washington, D.C.

Moseley, M. E., and C. M. Hastings

1975 The Adobes of Huaca del Sol and Huaca de la luna. *American Antiquity* 40(2): 196-203.

Murúa, M. de

1987 *Historia del origen y geneología de los reyes incas del Perú*. Instituto Gonzalo Fernández de Oviedo, Madrid.

Niles, S.

1987 *Callacacha: Style and Status in an Inca Community*. University of Iowa Press, Iowa City.

1992 Inca Architecture and the Sacred Landscape. In *Ancient Americas: Art from Sacred Landscapes*, edited by R. Townsend, pp. 346-357. Art Institute of Chicago, Chicago and Munich.

Pachacuti Yamqui Salcamayhua, J.

1879 Antigüedades deste reyno del Pirú [1613]. In *Tres relaciones de antigüedades peruanas*, pp. 230-328. Imprenta y Fundación de M. Tello, Madrid.

Pachacuti Yamqui Salcamayhua, J.

1950 Relación de antigüedades deste reyno del Perú [1613]. In *Tres relaciones de antigüedades peruanas*, edited by M. J. de la Espada. Editorial Guaranía, Asunción del Paraguay.

Parsons, J. R.

1968 An Estimate of Size and Population for the Middle Horizon Tiwanaku. *American Antiquity* 33:243-245.

Patterson, T. C.

1985 Pachacamac-An Andean Oracle under Inca rule: Recent Studies in Andean Prehistory and Protohistory. In *Papers From the Second Annual Northeast Conference on Andean Archaeology and Ethnohistory*, edited by D. P. Kviatok and D. H. Sandweiss, pp. 159-175.

Ponce Sangines, C.

1961 *Informe de labores*. Centro de Investigaciones Arquelógicas en Tiwanaku, Tihuanaco.

1969 *Descripción sumaria del temple semisubterráneo de Tiwanaku*. Academia Nacional de Ciencias de Bolivia, La Paz.

1972a Réplica a Gasparini. *Pumapunku* (5):69-83.

1972b *Tiwanaku: Espacio, tiempo y cultura: Ensayo de síntesis arqueológica*. Academia Nacional de Ciencias de Bolivia, La Paz.

1974 *Documentos etnohistóricos*. Centro de Investigaciones Arqueológicas, La Paz.

1981 *Tiwanaku, Espacio, tiempo y cultura: Ensayo de síntesis arqueológica*. Los Amigos del Libro, La Paz.

Ponce Sangines, C., W. A. Echazu, A. C., Salinas, and F. U. Barrau

1971 *Procedencia de las areniscas utilizadas en el templo de Pumapunku*. Academia Nacional de Ciencias de Bolivia, La Paz.

Posnansky, A.

1945 *Tiwanacu, la cuna del hombre americano*, vols. I y II. New York.

1957 *Tiwanacu, la cuna del hombre americano*, vols. III and IV. Ministerio de Educación, La Paz.

Pozorski, T.

1980 The Early Horizon Site of Huaca de los Reyes: Societal Implications. *American Antiquity* 45(1): 100-109.

Preucel, R., and I. Hodder

1996 *Contemporary Archaeology in Theory*. Blackwell, Cambridge.

Protzen, J.-P., and S. Nair

1997 Who Taught the Inca Stonemasons their Skills: A Comparison of Tiahuanaco

and Inca Cut-Stone Masonry. *Journal of the Society of Architectural Historians*  
56(2): 146-167.

Ramos Gavilán, A.

1988 *Historia del Santuario de Nuestra Señora de Copacabana*, edited by Ignacio

Prado Pastor. Gráfico P.L. Villanueva S. A., Lima.

Rapoport, A.

1982 *The Meaning of the Built Environment: A Nonverbal Communication Approach*.

Sage Publications, Beverly Hills.

1990 *The Meaning of the Built Environment: A Nonverbal Communication Approach*.

University of Arizona, Tuscon.

1994 *Thirty-Three Papers in Environment-Behavior Research*. Urban International

Press, New Castle Upon Tyne.

Redman, C. L.

1991 Distinguished Lecture in Archeology: In Defense of the Seventies-The

Adolescence of New Archeology. *American Anthropologist* 93:295-307.

Reinhard, J.

1985 Chavin and Tiahuanaco: A New Look at Two Andean Ceremonial Centers.

*National Geographic Research* 1(3):395-422.

1991 Tiwanaku: Ensayo sobre su cosmovisión. *Pumapunku: Nueva Epoca* 2:8-66.

Rivera, M. A.

1985 Alto Ramírez y Tiwanaku: Un caso de interpretación simbólica a través de datos. *Diálogo andino* 39-57.

Rowe, J. H.

1963 Urban Settlements in Ancient Peru. *Nawpa Pacha* 1-27.

Ryden, S.

1947 *Archaeological Researches in the Highlands of Bolivia*. Elanders BoktryckeriAktiebolag, Goteborg.

Sallanow, D.

1987 *Pilgrims in the Andes: Regional Cults in Cusco*. Smithsonian Institution, Washington, D.C.

Sarmiento de Gamboa, P.

1907 *History of the Incas* [1572]. Hakluyt Society, Cambridge.

Schaedel, R. P.

1988 Andean World View: Hierarchy or Reciprocity, Regulation or Control? *Current*

*Anthropology* 29(5):768-775.

Scheie, L., and P. Mathews

1998 *The Code of Kings: The Language of Seven Sacred Maya Temples and Tombs.*

Scribner, New York.

Seddon, M.

1998 *Ritual, Power, and the Development of a Complex Society: The Island of the*

*Sun and the Tiwanaku State.* Unpublished Ph.D. dissertation, Department of Anthropology, University of Chicago, Chicago.

Selles-Reese, V.

1997 *From Virachocha to the Virgin of Copacabana: Representation of the Sacred at*

*Lake Titicaca.* University of Texas Press, Austin.

Sharer, R., and W. Ashmore

1987 *Archaeology: Discovering our Past.* Mayfield, Palo Alto.

Sherbondy, J.

1992 Water Ideology in Inca Ethnogenesis. In *Andean Cosmologies through Time:*

*Persistence and Emergence,* edited by R. V. H. Dover, K. Seibold, and J. H. McDowell, pp. 46-66. Indiana University Press, Bloomington.

Shimada, I.

1978 Economy of a Prehistoric Urban Context: Commodity and Labor Flow at Moche V Pampa Grande, Peru. *American Antiquity* 43(4):569-592.

1981 The Batan Grande-La Leche Archaeological Project: The First Two Seasons. *Journal of Field Archaeology* 8:405-446.

1986 Batan Grande and Cosmological Unity in the Prehistoric Central Andes. In *Andean Archaeology: Papers in Memory of Clifford Evans*, edited by H. H. Eling, M. Matos, and S. A. Turpin, pp. 163-188. Institute of Archaeology, University of California, Los Angeles.

1991 *Pachacamac Archaeology: Retrospect and Prospect*. University of Pennsylvania, Philadelphia.

Silverman, H.

1993 *Cahuachi in the Ancient Nasca World*. University of Iowa Press, Iowa City.

1994 The Archaeological Identification of an Ancient Peruvian Pilgrimage Center. *World Archaeology* 26[1]:1-18.

Squier, E. G.

1877 *Peru: Incidents of Travel and Exploration in the Land of the Incas*. Harper & Brothers, New York.



Stahl, A. B.

1993 Concepts of Time and Approaches to Analogical Reasoning in Historical Perspective. *American Antiquity* 58(2):235-260.

Stanish, C.

1992 *Ancient Andean Political Economy*. University of Austin Press, Austin.

1999 A New View of Tiwanaku. Paper presented at the meeting of the Society for American Archaeology.

Stubel, A., and M. Uhle

1892 *Die Ruinenstaette Von Tiahuanoco Im Hochlande Des Alten Peru: Eine Kulturgeschichtliche Studie Auf Grund Selbstaendiger*. Verlag, Leipzig.

Trigger, B.

1990 Monumental Architecture: a Thermodynamic Explanation of Symbolic Behavior. *World Archaeology* 22( 2): 119-132.

Tuan, Y.

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

Urton, G.

1981 *At the Crossroads of the Earth and Sky: an Andean Cosmology*. University of Texas Press, Austin.

1988 La arquitectura pública como texto social: La historia de un muro de adobe en Pacariqtambo, Perú (1915-1985). *Revista andina, Centro de estudios rurales andinos "Bartolomé de las Casas"* 1:255-256.

1990 *The History of a Myth: Pacariqtambo and the Origin of the Incas*. University of Texas Press, Austin.

1993 Moieties and Ceremonialism in the Andes: The Ritual Battles of the Carnival Season in Southern Peru. In *El mundo ceremonial andino*, edited by L. Millones and Y. Onuku, pp. 117-142. Museo Nacional de Etnología, Osaka.

Urton, G., and A. F. Aveni

1983 Archaeoastronomy Fieldwork on the Coast of Peru. In *Calendars in Mesoamerica and Peru: Native American Computation of Time*, edited by A. F. Aveni and G. Brotherson, pp. 221-234. BAR International Series, vol. 174, Oxford.

Valcárcel, L. E.

1934 Recientes descubrimientos arqueológicos en el Cuzco: La ciudadela de Sajsawaman. *Revista geográfica americana* 2:340-345.

Van de Guchte, M. J. D.

1990 *Carving the World: Inca Monumental Sculpture and Landscape*. Unpublished

Ph.D. dissertation. Department of Anthropology, University of Illinois.

von Gernet, A.

1993 The Construction of Prehistoric Ideation. Exploring the Universality-Idiosyncrasy Continuum. *Cambridge Archaeological Journal* 3(1 ):67-81.

Vranich, A.

1998 The Pumapunku and the Cosmological Unity of the Middle Horizon. Paper presented at 17th Northeast Meeting for Amazonian and Andean Archaeology and Ethnohistory. Binghamton, N. Y.

Vranich, A., and L. Ticlla

1997 Investigaciones en la pirámide de Pumapunku. Institute of Archaeology of Bolivia, La Paz.

Wallace, D. T.

1957 *The Tiahuanaco Horizon Styles in the Peruvian and Bolivian Highlands*. University of California at Berkeley, Department of Anthropology.

1980 Tiwanaku as Symbolic Empire. *Estudios andinos* 5:133-144.

Wheatley, P.

1971 *The Pivot of the Four Quarters*. Aldine Publishing Company, Chicago.

Willey, G.

1977 A Consideration of Archaeology. *Daedalus* 81-95.

Williams, C.

1982 A Scheme for the Early Monumental Architecture of the Central Coast of Peru.

In *Early Ceremonial Architecture in the Andes*, edited by C. Donnan, pp. 227-240.

Dumbarton Oaks, Washington D.C.

Wilson, D. J.

1988 *Prehispanic Settlement Patterns in the Lower Santa Valley, Peru: A Regional*

*Perspective on the Origins and Development of Complex North Coast Society.*

Smithsonian Institution Press, Washington, D.C.

Wylie, A.

1985 Reaction Against Analogy. In *Advances in Archaeological Method and Theory*,

vol. 8, pp. 63-111. New York

1989 The Interpretive Dilemma . In *Critical Traditions in Contemporary*

*Archaeology: Essays in the Philosophy, History and Socio-politics of Archaeology*,

edited by V. Pinsky and A. Wylie, pp. 18-27. Cambridge University Press, Cambridge.

Yates, T.

1989 Habitus and Social Space: Some Suggestions About Meaning in the Saami (Lapp) Tent ca. 1700-1900. In *The Meaning of Things: Material Culture and Symbolic Expression*, pp. 249-62. Unwin Hyman, London.

Zucker, P.

1968 *Fascination of Decay: Ruins, Relic, Symbol, Ornament*. Gregg Press, Ridgewood, N.J.

Zuidema, R. T.

1964 *The Ceque System of Cuzco: The Social Organization of the Capitol of the Inca*. E. J. Brill, Leiden.

1974 La imagen del sol y la huaca de Susurpuquio en el sistema astronómico de los incas en el Cuzco. *Journal de la Société des Americanistes*, vol. 63, pp. 199-230.

1989 *Reyes y guerreros: Ensayos de cultura andina*. Grandes Estudios Andinos. Lima, Peru .

1990 *Inca Civilization in Cuzco*. University of Texas Press, Austin.

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