

CHAN PROJECT



THE CHAN PROJECT: 2004 SEASON

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TABLE OF CONTENTS

1.	The 2004 Season of the Chan Project Cynthia Robin	1-8
2.	Operation 3, Posthole testing around C-001 Cynthia Robin, Caleb Kestle, Michael Latsch, and Jim Meierhoff	9-14
3.	Operation 6, Str. 5-center at C-001 Jim Meierhoff, Caleb Kestle, and Ethan Kalosky	15-38
4.	Operation 6, Str. 5-north at C-001 Caleb Kestle	39-46
5.	Operations 5 and 7, Strs. 3 and 4 at C-001 Michael Latsch	47-60
6.	Preliminary Ceramic Analysis at C-001 Lisa LeCount	61-66
7.	Preliminary Testing and Excavation of the Northeast Group, 2004: Operations 8 and 9 Chelsea Blackmore	67-84
8.	Operation 4 Andrew Wyatt	85-96
9.	2004 Analysis of the Chan Burials Margaret Briggs	97-128

THE 2004 SEASON OF THE CHAN PROJECT

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THE CHAN SITE

The Chan site is an ancient Maya agrarian community in west-central Belize, which was occupied from the Early Middle Preclassic to the Early Postclassic periods (ca. 1000 B.C. - A.D. 1250). The site was named Chan after the landowners Don Ismael and Derric Chan. Located just east of the modern day community of San Jose Succotz, the Chan site is situated in an interfluvial area of undulating limestone uplands between the Mopan and Macal branches of the Belize river in a region of high, rounded hills (peaks >160m; Smith 1997). In the 3.29 sq km survey of the site, 583 mounds (177 per sq km) and 1258 terraces (382 per sq km) have been identified (Wyatt and Kalosky 2003). Across Chan's hilly terrain its ancient inhabitants constructed and utilized a productive agricultural landscape of hill-slope and cross-channel terraces.

The agrarian community of Chan is situated at the center-point between larger civic-centers located 4 to 6 km to the north, south, east, and west (Figure 1). To the west lies Xunantunich and Actuncan, to the north, Nohoch Ek, Buenavista, and Cahal Pech, to the east Dos Chombitos and Guacamayo, and to the south, Las Ruinas/ Arenal.

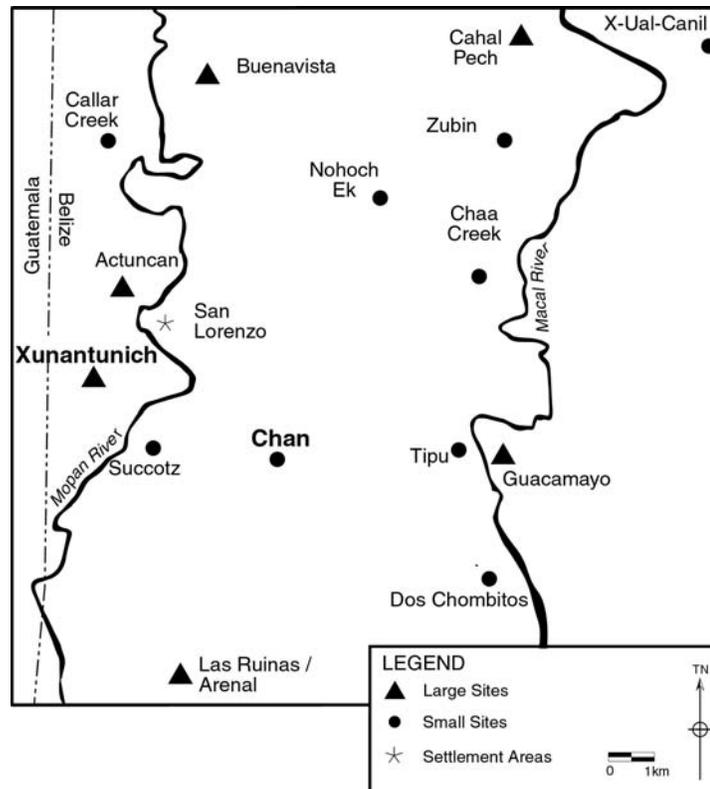


Figure 1: Location of the Chan site

The research goals of the Chan project can be summarized as three straight-forward objectives: (1) to document the over 2000 year history of ordinary life in an agrarian community; (2) to understand how agrarian life is transformed through interactions with larger centers, and (3) to understand how larger centers may have had to accommodate to life in agrarian communities.

Research at the Chan site was first permitted in 2002 by the Belize Institute of Archaeology. In 2002 and 2003 the survey of the Chan site was completed (Robin et al. 2002, 2003a; Wyatt and Kalosky 2003). Settlement survey research indicates that Chan's settlement occupation remains relatively low throughout the initial 1670 years of its history (Early Middle Preclassic to Early Classic periods). Chan's settlement occupation increases dramatically in the Late Classic period largely within the late Late Classic Hats' Chaak phase (A.D. 670-780) of Xunantunich's political florescence. Although Chan seems to survive Xunantunich's decline, its occupation declines dramatically in the Terminal Classic Tsak' period (A.D. 780-890), and it is abandoned in the Early Postclassic period (A.D. 890-1250).

2003 was also the first excavation season of the Chan project. Excavations in this year focused on C-001 the central plaza group at the Chan site. Two areas were excavated, (1) the northern structure of C-001, a building with a deep chronological history, that may have been the residence of one of Chan's founding families (Latsch 2003), and (2) the center of the C-001 plaza. In the center of the C-001 plaza a striking sequence of ritual deposits spanning the over 2000 year occupation of the site from the Middle Preclassic to Early Postclassic periods was identified (Blackmore 2003).

Publications and research reports on the Chan work include: Robin 2004; Robin et al. 2002, 2003a. Senior theses include: Juarez 2003, Kalosky 2004. Papers were presented by project members at the Belize Archaeology Symposium, the Midwest Mesoamericanist meetings, the American Anthropological Association meetings, and the Society for American Archaeology meetings (Robin 2003, 2004; Robin et al. 2003b, 2003c; Robin and Blackmore 2004; Wyatt 2004b).

2004 RESEARCH QUESTIONS AND GOALS

The 2004 season at the Chan site had three goals:

- 1) To continue excavations begun in 2003 at Chan's central group (C-001) by:
 - a) understanding the "vacant terrain" around C-001 by excavating post holes and test pits in a 100 m sq area around C-001 (Robin et al., this volume).
 - b) further exploring the ritual nature of C-001 by investigating Str. 5, the eastern tripartite building at C-001 (Kestle, this volume; Meierhoff, Kestle, and Kalosky, this volume).
 - c) further exploring domestic and/or public feasting activities at C-001 by investigating the two smallest structures at the group, Strs. 3 and 4, which are postulated to have been kitchens or other ancillary structures due to their small size and associated surface artifacts (Latsch, this volume).

2) To commence excavations on a sample of Chan's cross-channel and hill-slope terraces. These excavations were undertaken by Andrew Wyatt for his dissertation research (Wyatt, this volume).

3) To undertake preliminary post-hole and test excavation a NE neighborhood of the site. These excavations were undertaken by Chelsea Blackmore for her dissertation research (Blackmore, this volume).

Figure 2 shows the location of the three main areas of excavation in 2004. Figure 3 locates the structures excavated at C-001.

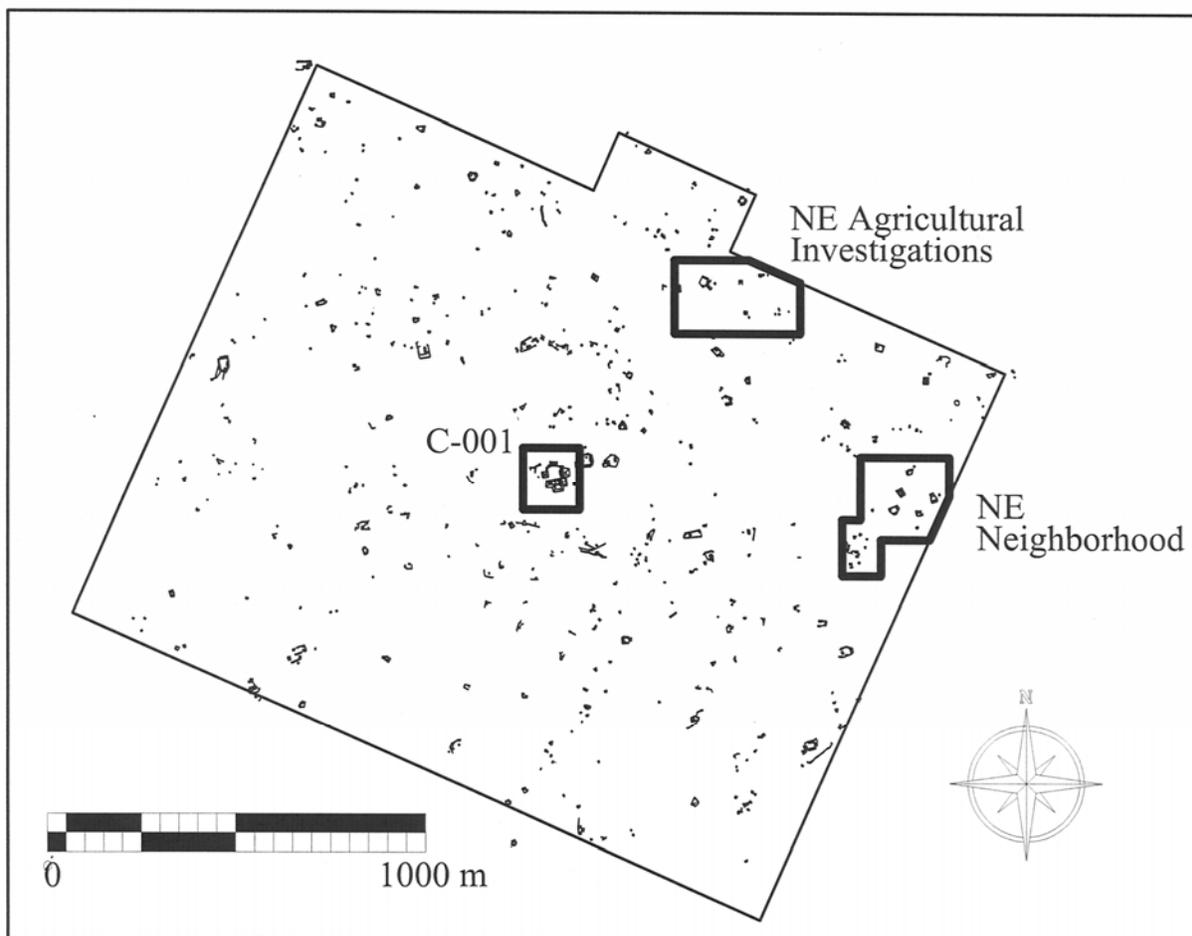


Figure 1: Location of three main areas of excavation at the Chan site in 2004

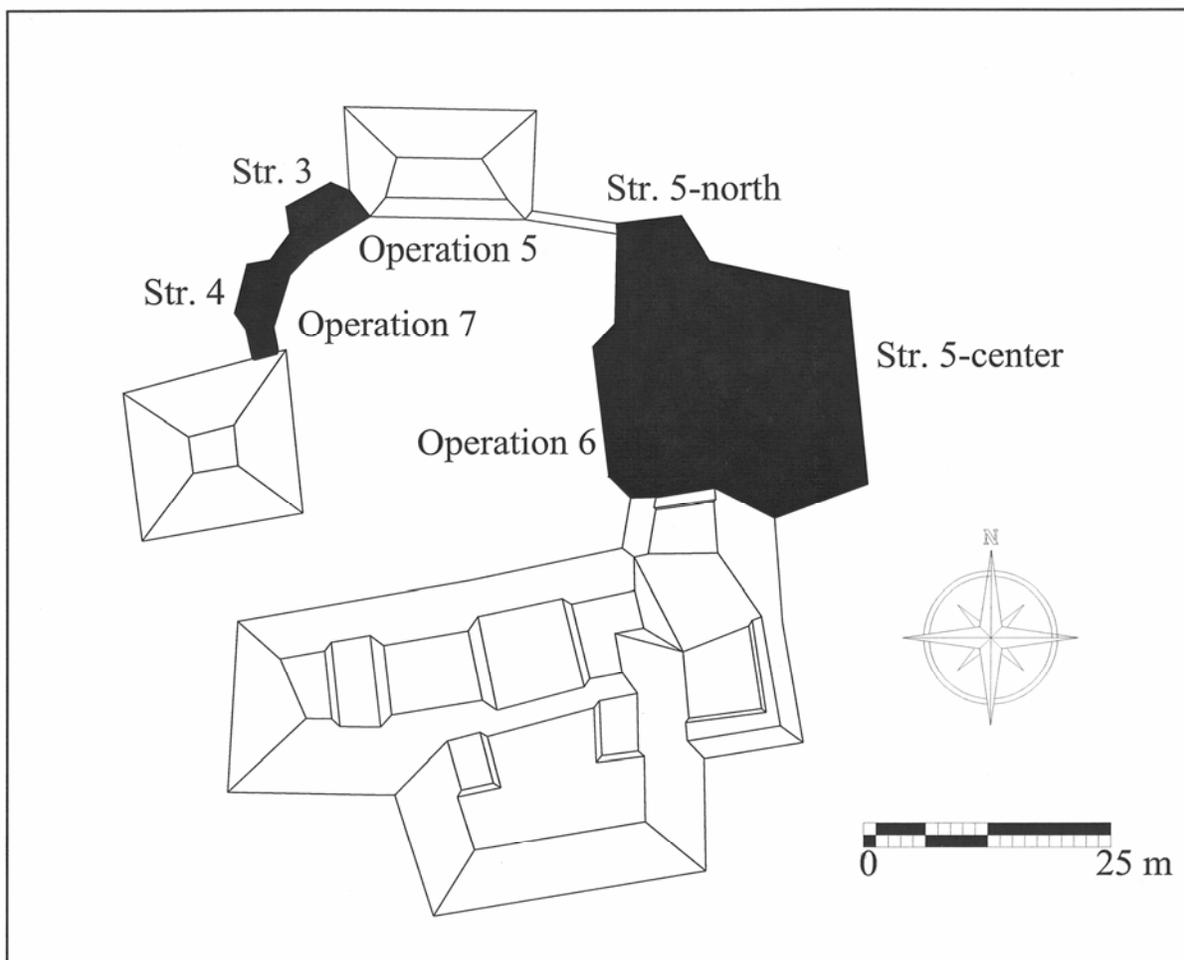


Figure 3: Structures excavated at C-001 in 2004

RESULTS OF THE 2004 EXCAVATIONS

2004 research at the Chan site has continued to illuminate a deep, over 2000 year, occupation history to the site and the complex and textured lives of ancient peoples living in an agrarian community. Chan's central group C-001 seems to have been one of the initially occupied areas of the site and remained the focus of the site throughout its history. Each structure and plaza area, as well as the surrounding "vacant" terrain, thus far investigated at C-001 has revealed a longevity of occupation (Blackmore 2003; Kestle, this volume; Latsch 2003, this volume; LeCount 2003, this volume; Meierhoff, Kestle, and Kalosky, this volume; Robin et al., this volume).

Beyond domestic and economic functions, C-001 was a center for ritual life at the site. This was first seen in the 2003 excavations which revealed a 2000 years sequence of ritual deposits placed in the center of the C-001 plaza (Blackmore 2003). Further evidence for the important ritual functions of C-001 were revealed in the 2004 excavations of Str. 5, a tripartite eastern structure (Kestle, this volume; Meierhoff, Kestle, and Kalosky, this volume).

Str. 5 is the largest structure at the Chan site, rising 5.6 m above the plaza floor in its final

phase construction. Its size, tripartite form, and eastern location, had suggested prior to excavations that this structure could be an eastern ancestral shrine or "E-group" for the Chan site (Aimers 1993; Aveni and Hartung 1989; Cohodas 1980; Laporte and Fialko 1990; Ricketson 1928). Excavations revealed that the structure was constructed and used between the Middle Preclassic and Terminal Classic periods. The structure did not take on a tripartite architectural form until the Late Preclassic. But there seems to have been some sort of tripartite ritual use of the area prior to the construction of the first tripartite structure, as an upright stone and cache was located below the northern wing of the tripartite construction initially constructed in the Late Preclassic.

Excavations of Str. 5 revealed the consistent and formal placement of burials and caches along the central-axes of both Strs. 5-center and north, the two of Str. 5's three buildings excavated this year. The Str. 5 burials were typically found lying prone, head to the south (Briggs, this volume). This consistency in burial position and placement is not only common between the Str. 5-center and Str. 5-north burials but is commonly found for eastern ancestral shrine burials throughout the Belize Valley (e.g., Awe 1992). These centrally placed burials and caches were deposited between the late Middle Preclassic and Terminal Classic periods, pointing to the structure's function as a central ancestral shrine for the Chan site across these periods.

Excavations of Chan's agricultural terraces, begun this year, are already documenting complex technologies of terrace construction and long terrace construction histories (Wyatt, this volume). Chan's agricultural terraces have multiple construction phases, which can be stratigraphically linked to the construction episodes of associated agrarian residences. While, perhaps unsurprisingly, Chan's latest terrace constructions seem to date to the Late to Terminal Classic periods, they have much longer construction histories. Evidence of terraces pre-dating the Late Classic period, seems to suggest that population pressure was not the motivating factor in the construction of terraces at Chan. Wyatt has further found evidence that has not previously been identified for Maya agricultural terraces, for a range of irrigation technologies that imply farmers' knowledgeable understanding of local topography and hydrology. As well, the technologies of terrace wall construction at Chan are quite variable and many differ from techniques used at larger Maya cities, perhaps again underscoring the local practices of farming families. Wyatt is approaching agricultural terrace research from a unique perspective involving large horizontal clearings of terraces and associated residences and incorporating archaeological, paleoethnobotanical, and soil studies. This work will continue in 2005 to reveal further information on agricultural practices and life ways at Chan.

Blackmore's preliminary research at the NE neighborhood at the Chan site, has identified this area as one of the late occupied areas of the site (Blackmore, this volume). The area is founded in the early Late Classic Samal phase (A.D. 600-670), just prior to Chan's peak in population. Unlike other areas of the site that are newly occupied in the Late Classic period which appear to be locales where expanding populations of relatively "poor" farming families moved (Robin 1999), the NE neighborhood has a range of architectural constructions and material assemblages that indicate the richly textured lives of Chan's farmers in the Late Classic and the variable identities and experiences of people living at Chan. Blackmore is approaching the new study of "neighborhoods" from an encompassing perspective that includes structural and vacant terrain studies as well as incorporating archaeological, paleoethnobotanical, and soil studies. This work will continue in 2005 to reveal further nuances of farmers' lives and identities at Chan.

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OPERATION 3, C-001

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PURPOSE

Across the Maya area, and indeed throughout most ancient settlements, ancient inhabitants swept away or cleaned away the residues of their activities from their living spaces across the course of their lives. As well, at a site's abandonment, people removed all or most portable materials. For these reasons it has often been difficult for archaeologists to identify activity areas in the archaeological record, and this can be particularly difficult for the expanses of "vacant" terrain that make up the majority of the archaeological record, and must have made up the majority of ancient people's living spaces, but were never "constructed" with permanent architecture. Previous research at Chan used a posthole testing strategy that involved the systematic placement of postholes across the so-called "vacant" spaces of farmsteads to collect archaeological and soil data (Robin 1999). This research enabled the delineation of ancient house lots, work areas, pathways, and refuse areas.

Operation 3 expanded this posthole testing strategy to collect archaeological and soil data at a community scale, by exploring the large "vacant" spaces that surround Chan's central group C-001. A grid of postholes spaced at 5 m intervals was extending 50 m in each direction from the edges of the C-001 plaza (Figure 1). This research involved the excavation of 1037 postholes.

EXCAVATION METHODS

Each posthole was excavated by a team of two Belizean archaeologists. One person dug the posthole and the other person screened and recorded data. A total of 25 to 35 postholes per day could be dug by the two-person team, depending on the nature of the soil matrix. Archaeological and soil data were collected from each posthole and recorded on the posthole form (Figure 2). The following information was collected from each posthole:

- (1) Depth of posthole
- (2) Number of stones removed from posthole
- (3) Whether bedrock or another sterile context was reached at the base of the posthole
- (4) Number of soil samples collected
- (5) Number of ceramic artifacts

- (6) Number of lithic artifacts
- (7) Number of other artifacts
- (8) Total number of artifacts

Four-ounce soil samples were placed in whirl pack bags and collected at depths of 10, 30, and 50 cm along the posthole. Soil samples are first being analyzed for available phosphorous in the Northwestern lab using the Mehlich II test recently refined by Terry et al. 2000. A sample of these will further be analyzed for amounts of 12 elements using Inductively Coupled Plasma/Atomic Emissions Spectroscopy.

Beyond the data recorded on the posthole form, soil profile drawings were complete for a sample of the postholes.

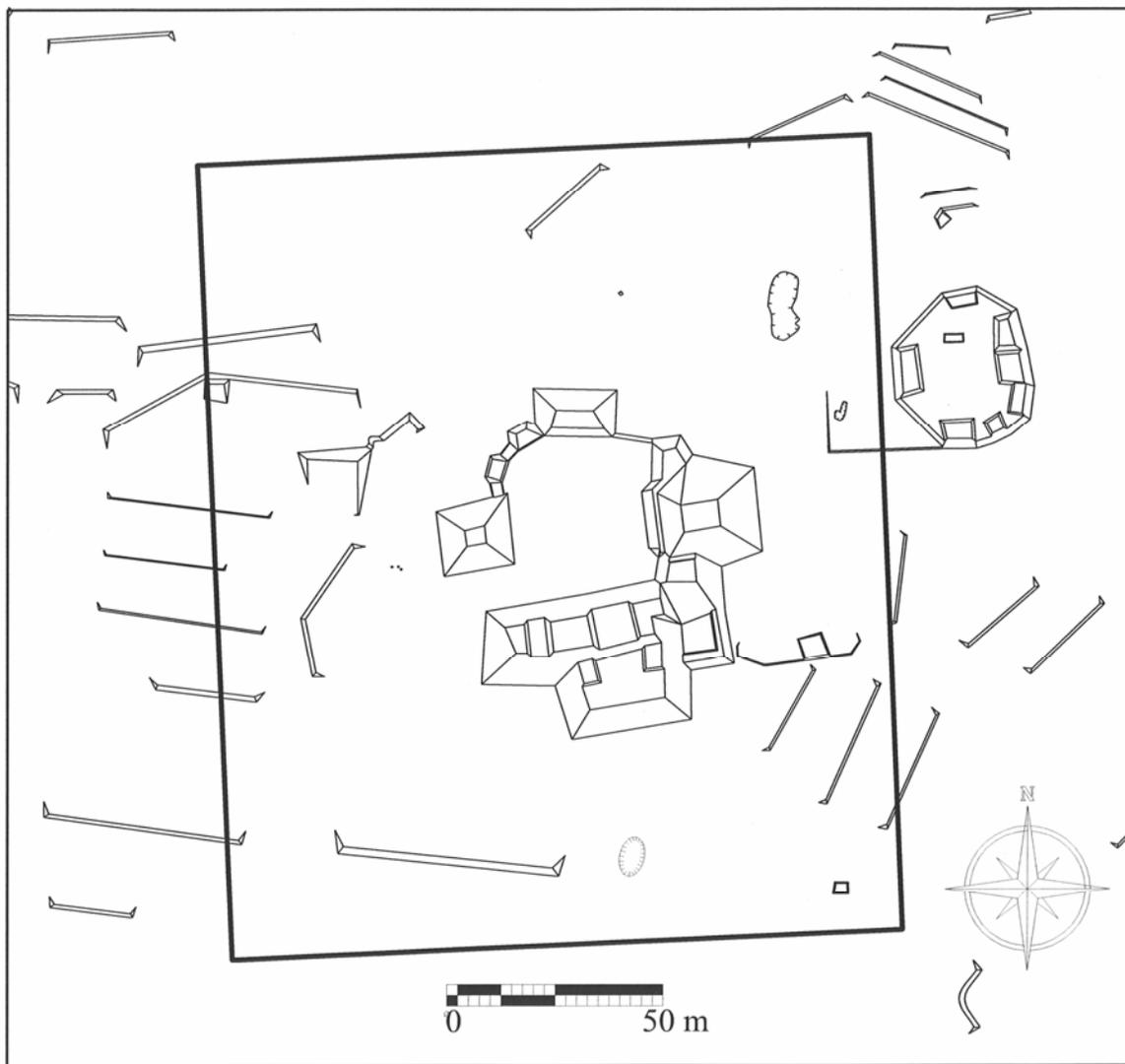


Figure 1: Location of posthole test grid around C-001

Op:	Subop:	Lot:
Date:	Excavators:	Depth:
# Stone removed:	Bedrock? Yes No	# Samples:
# Ceramics:	# Lithics:	# Other:
Op:	Subop:	Lot:
Date:	Excavators:	Depth:
# Stone removed:	Bedrock? Yes No	# Samples:
# Ceramics:	# Lithics:	# Other:

Figure 2: Chan project posthole form

EXCAVATION RESULTS

The Mehlich II phosphorous extraction of the posthole soils is still ongoing at the Northwestern lab, thus the results of the Operation 3 posthole work is still in preliminary stages.

This fall, Cynthia Robin set up an archaeological soil chemistry lab at Northwestern to undertake the Mehlich II phosphorus extraction. This lab meets Office of Research Safety specifications. Currently five students are involved in the Chan soils research. Graduate student, Doug Bolender, who's dissertation research focuses on archaeological soils analysis in Iceland, is supervising the work. Undergraduate students, Serena Jain, Shelley Khan, Alex Miller, and Jessie Pinchoff, are carrying out the studies. The accuracy of the Mehlich II procedure has been tested by undertaking multiple runs of the same samples. These tests have yielded correlations of 0.85, illustrating the high replicability of this approach.

Artifact and stone concentrations were used in the field to identify buried garbage remains and buried structures, but other significant findings of this research will only be available after the soils analysis is complete. In general, artifact concentrations were low throughout the central part of the site when compared to similar "vacant" terrain studies around domestic sites (Blackmore, this volume; Robin 1999). Possibly, the central area of the site was subject to more regular cleaning which could have been related to the public and ritual uses of the site center.

Only three refuse areas were identified in the expanse of terrain explored around C-001. 2 m by 2 m excavations (suboperations B, C, and D) were placed in each of these refuse areas to further explore their contents (Figure 3).

Suboperation B corresponded to a buried "jute" midden. The midden was located just NE of C-001, between C-001 and neighboring platform group C-002. The vast majority of this midden comprised a dense concentration of jutes. This is the only single-component midden identified at the Chan site. Dating of this midden must wait future ceramic analysis, but in-field assessment of the midden ceramics indicated a pre-Late Classic and possibly Preclassic date for the midden.

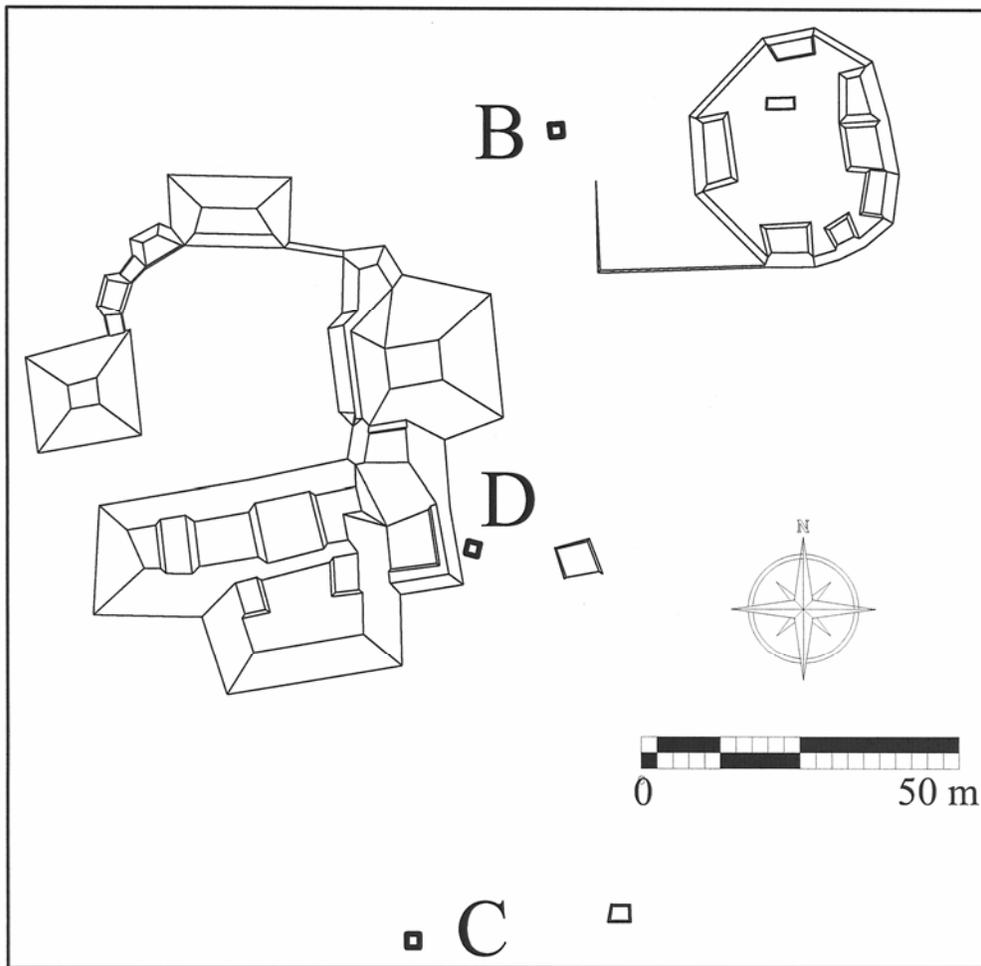


Figure 3: Location of suboperation B, C, and D

Suboperation D identified sparse refuse located just off the southeast edge of the C-001 plaza. This is the only area just off the C-001 plaza where any evidence of refuse was identified, warranting further exploration of this area in 2005.

Suboperation C identified a midden located near a small mound south of C-001. This midden seems more likely to be in association with the small mound, than with C-001. This mound represented the only other architectural complex than C-001 in the posthole sampling area.

Perhaps the most astounding result of the 2004 posthole research around C-001 was the location of a second western plaza area adjoining the C-001 plaza. Unlike the C-001 plaza, this low plaza area has only one small mound on its western edge, which had been identified in the Chan survey. The area encompassed by the new western plaza is roughly equivalent to that encompassed by C-001. The meaning and significance of this new plaza, lacking larger mounds, located at the center of the site, will be the focus of research in 2005. A possible butt of a stela, was identified to the south of the new plaza area, in front of a postulated stairway.

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OPERATION 6, STR. 5-CENTER

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PURPOSE

Operation 6 at C-001, the central platform group at the Chan site, focused on Structure 5, the eastern structure in the group (Figure 1). Str. 5 is a tripartite eastern structure morphologically similar to an "E-group" (Aveni and Hartung 1989; Ricketson 1928). This chapter discusses the Op. 6 excavations of Str. 5-center, the largest building at the Chan site. Prior to the excavation of Str. 5-center its mounded remains stood 6.8 m above the ground surface in the C-001 plaza area. Str. 5-center was constructed across 10 construction phases. In the final three phases of its construction history (Str. 5-center-1st - 3rd) its substructure was surmounted by an unvaulted masonry superstructure with walls that would have been constructed partly of masonry (lower sections) and partly of perishable materials (upper sections). During prior construction phases its superstructure would have been wholly perishable construction.

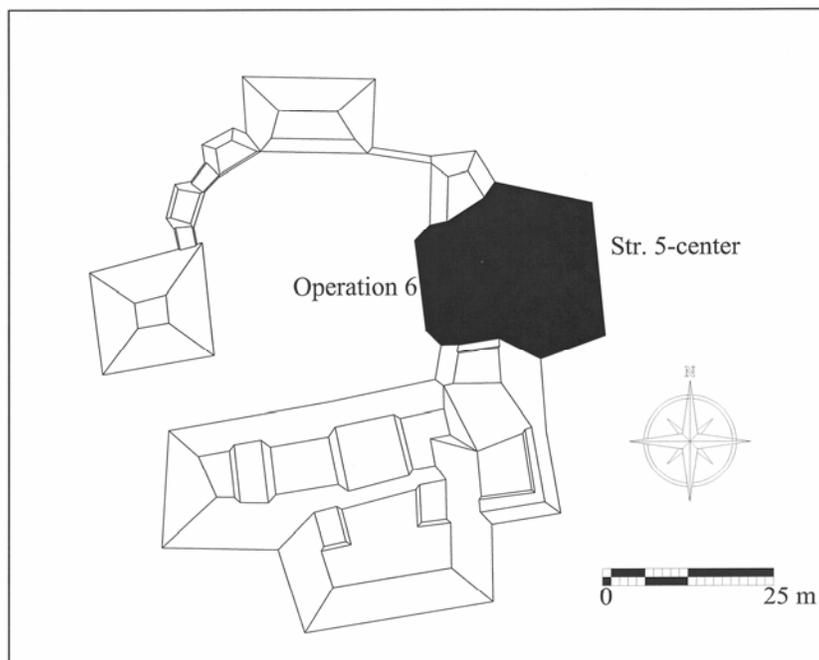


Figure 1: Location of Operation 6, Str. 5-center excavations
Str. 5's morphology - its size, eastern location, and tripartite construction - all suggested

that Str. 5 could be a ritual structure, and eastern ancestral shrine or "E-group" (Aimers 1993; Cohodas 1980; Laporte and Fialko 1990). Surface collection ceramics from Str. 5 yielded ceramics dating back to the Middle Preclassic period (ca. 900-600 B.C.). Based on this evidence, and evidence from previous excavations within the C-001 platform group, it was plausible that Str. 5 would have the great antiquity needed to be an ancestral shrine. The purpose of the Op. 6 excavations within Str. 5-center were to determine the form, function, and chronology of Str. 5-center, and understand if it had ritual or other uses.

EXCAVATION METHODS

Suboperation Locations

Three types of excavations were conducted on Str. 5-center within Op. 6: 1) areal excavations to reveal full horizontal exposures of the Str. 5-center-1st-a, b, and c superstructures; 2) strip excavations were placed along the front basal facade of Str. 5-center to establish the dimensions of the building and determine the stratigraphic relationship between Str. 5-center, adjacent substructures, and the plaza floor; 3) and penetrating excavations were placed along the central E-W axis of the building to expose the stratified architectural remains of Str. 5-center's substructures. Two old looter's trenches and one large tree fall existed in Str. 5-center. These were cleaned and drawn as suboperations A, C, and D before excavations began to provide a guide to subsequent excavations. The looter's trench designated A measured roughly 8 m (E-W) by 2 m (N-S) and was located along the upper central E-W axis of Str. 5-center. It was a narrow linear trench for the initial 4 m of its excavation, which penetrated Str. 5-center-1st - 4th and at its deepest extended 2 m into the structure. As the looters neared the center of the structure, within the final 2 m of the trench, the looters began to tunnel down extending their excavation an additional 2.8 m and penetrating Str. 5-center-5th - 7th. The looter's trench designated C measured 1.4 m (E-W) by 3 m (N-S) and was located along the NE corner of the summit of Str. 5-center. It had penetrated the rear room of the Str. 5-center-1st and 2nd superstructures. An 0.8 m (E-W) by 0.8 m (N-S) depression located along the SE corner of the summit of Str. 5-center was designated suboperation D. It had only penetrated into the collapse of the rear room of the Str. 5-center-1st superstructure and upon cleaning was determined to be a tree fall rather than a looter's trench. Before excavations began a surface collection was made around the looter's trenches and designated suboperation FF.

A total of 49 contiguous excavation suboperations were opened in Op. 6 on Str. 5-center (Figure 2). The horizontal exposure of the superstructure and the strip exposure of the front basal facade were conducted first to determine the dimensions of the building. The penetrating excavations were the final aspect of the excavations of Str. 5-center and these were placed along the central E-W axis of the structure based upon the structure dimensions determined in previous excavations.

Fifteen contiguous suboperations were opened across the Str. 5-center-1st superstructure to achieve full horizontal exposure of this building (H, I, J, K, L, M, N, P, Q, R, S, V, AA, BB, CC; see Figure 2). All of these were 2 m x 2 m suboperations

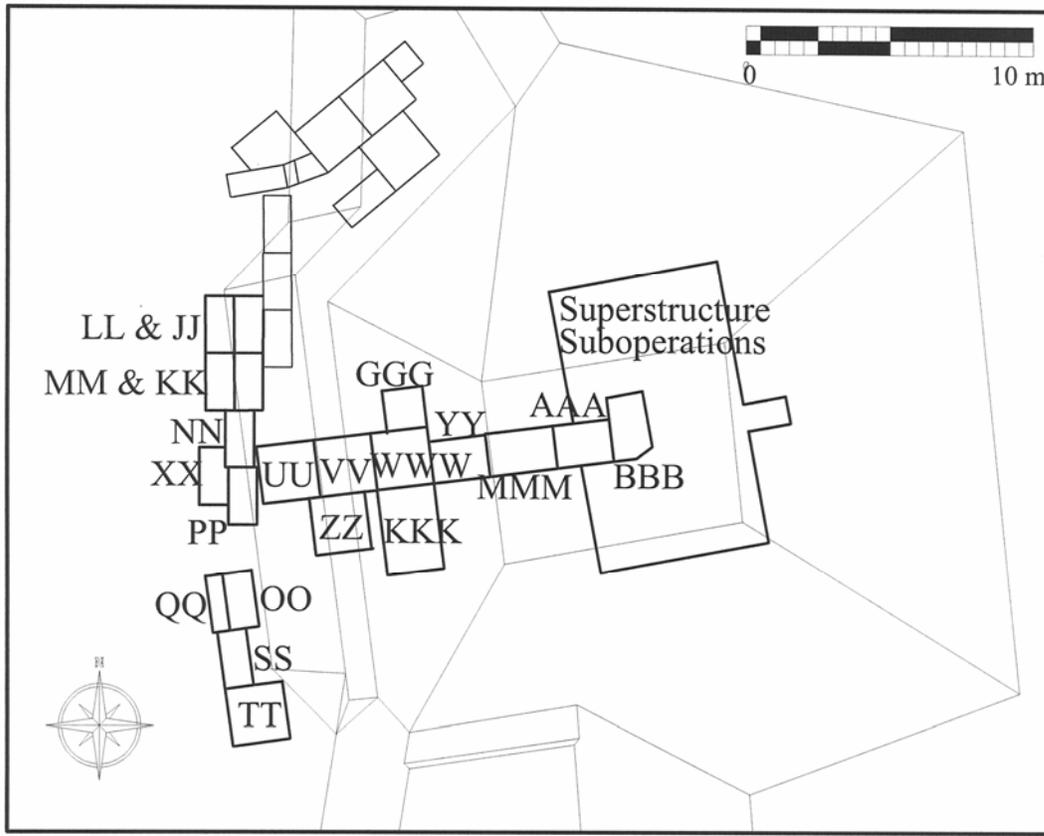


Figure 2: Location of Str. Operation 6 suboperations at Str. 5-center. Unmarked suboperations are those of Operation 6 at Str. 5-north.

except for suboperation V which measured 1 m x 2 m.

Ten contiguous suboperations were opened along the front basal facade of Str. 5-center with the intent of exposing the outer dimensions of the structure and its relationship to the adjacent Str. 5-north and the C-001 plaza floors (JJ, KK, LL, MM, NN, OO, PP, QQ, SS, and TT; see Figure 2). All of these were 2 m by 1 m suboperations except for QQ, which measured 0.5 m by 2 m and TT which measured 2 m by 2 m.

Once the dimensions of Str. 5-center were established the central E-W axis of the structure was determined and a total of 11 penetrating suboperations were placed along this axis (UU, VV, WW, YY, ZZ, AAA, BBB, CCC, GGG, KKK, MMM; see Figure 2). Suboperations UU, VV, WW, and ZZ measured 2 m by 2 m. CCC measured 2m x 0.5 m. GGG measured 1.5 m x 1.5 m. KKK measured 2 m by 3 m. YY, AAA, BBB, and MMM were located at the base of the looter's trench designated suboperation A. YY and AAA measured 1.5 m by 2 m. MMM measured 1.5 by 2.4 m. BBB extending the looter's hole as it descended into the center of the structure. BBB followed the contours of the original looter's hole measuring roughly 1.55 m by 1.35 m.

As these initial penetrating suboperations exposed architectural plans, new interior suboperations were placed below them to more precisely follow the architecture. There were 8 interior suboperations (RR, XX, DDD, EEE, III, JJJ, PPP, QQQ). Suboperation RR, measuring

2.5 m by 2.5 m, was placed south of the looter's trench designated suboperation A, below the southern suboperations of the Str. 5-center-1st excavations. XX is a 2 m by 2 m suboperation placed partly below suboperation PP and partly to the west of PP (the half of suboperation XX located west of PP was a surface suboperation). DDD comprised a 2 m by 2 m suboperation placed below the eastern half of UU and the western half of VV. JJJ comprised a 2 m by 3 m suboperation was placed below WW and the eastern half of VV. PPP a 1 m by 1 m suboperation was placed in the east profile of BBB to enable to full excavation of Burial 10. QQQ, a 1.2 m by 3.5 m suboperation, was located below YY. EEE measured 2 x 1.3 m.

Eight burials were located in Str. 5-center (Burials, 3, 4, 5, 6, 7, 8, 9, and 10). Eight caches were located in Str. 5-center (Special Deposits D4, 6, 8, 9, 10, 101, 102, and cache Special Artifact 108). One altar, Altar 3, was located in Str. 5-center. Burials, caches, and altars that were assigned separate excavation suboperations include: Burial 3 (FFF), Burial 4 (HHH), Burial 9 (OOO), cache Special Deposit 10 (LLL), and Altar 3 (NNN).

EXCAVATION RESULTS

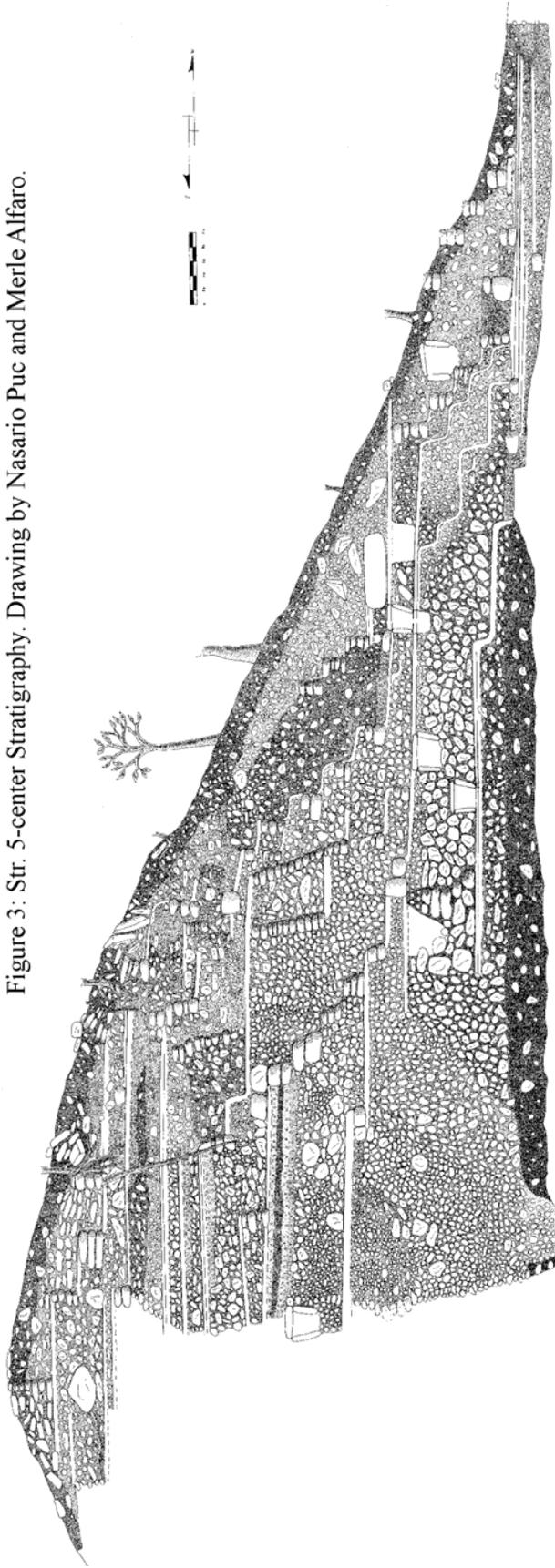
Building Dimensions and Stratigraphic Sequence

The stratigraphy of Str. 5-center is characterized by the deposition of 48 fill and floor layers which formed 10 construction phases - Str. 5-center-1st to 10th and at least 18 sub-phases (Figure 3). Each construction phase will be described following the excavation sequence from latest to earliest phase. All exterior masonry of Str. 5-center architecture was constructed of cut limestone blocks. The section drawings of Str. 5-center illustrated in Figure 3 can be used as the reference drawing to locate all construction phases.

The basal (N-S) dimension of the front facade of the Str. 5-center final phase substructure was 11.15 m. The dimensions of the Str. 5-center-1st final phase superstructure was 8.6 m (N-S) x 7 m (E-W). Assuming that the Str. 5-center superstructure was centrally placed on its substructure the overall dimensions of the final phase substructure are 11.15 m (N-S) x 28.20 m (E-W), by 5.6 m in height. The height of the bench and walls of the superstructure raised the construction an additional 1.3 m.

Excavations also determined the relationship between Str. 5-center, Str. 5-north, and the C-001 plaza floor sequence. The final phase architecture of Str. 5-center was constructed overlying plaza Floor 1, the penultimate phase plaza floor in this area. Floor 1 was physically followed through the strip excavations along the front facade of Str. 5-center to the front facade of Str. 5-north (see Kestle this volume). The penultimate construction of Str. 5-north was built on plaza Floor 1. Plaza Floor 0 overlay plaza Floor 1 and the final phase construction of Str. 5-north was built on this plaza floor abutting the final phase construction of Str. 5-center. Although plaza Floor 0 was never found intact in front of Str. 5-center, it must have originally extended into this area and would have been constructed around Str. 5-center's final phase architecture, thus there do not appear to have been any modifications to Str. 5-center's substructure in plaza Floor 0 times. Later phase reconstructions of the Str. 5-center superstructure potentially could have been

Figure 3: Str. 5-center Stratigraphy. Drawing by Nasario Puc and Merle Alfaro.



constructed during plaza Floor 0 times and future ceramic analyses will allow us to situate these chronologies.

Str. 5-center-1st-a,b,c

Str. 5-center-1st is the final phase construction of Str. 5-center. It is a bi-level subrectangular substructure with a frontal (western) axial stair and a partial masonry superstructure. The stair leading up the lower substructure probably had 6 steps (only 4 remain in-situ). The stair leading up the upper substructure may have had 9 steps (only 4 remain in-situ). The superstructure was constructed partly of masonry and partly of perishable materials. The Str. 5-center-1st substructure was 5.6 m tall. The superstructure bench and masonry walls extended the height of Str. 5-center by an additional 1.3 m. Str. 5-center-1st had at least three sub-phases in which its superstructure and substructure were re-constructed.

The Str. 5-center-1st-a superstructure consisted of a two-room building, with an elevated and enclosed rear (east) room and a lower and an enclosed front (west) room (Figure 4). One entered the lower front room via one of two or three doorways located along the eastern freestanding wall of the superstructure (Wall 103). The northern and southern doorways were identified during excavations, the central doorway, had it existed, was obliterated by the looter's trench designated suboperation A. Once within the front room, one entered the rear room via one inset step within the central doorway to the rear room (Wall 101). Similarly, a central access way was present in the rear of the rear room, which lead out to a small terrace that looked out to the east. The walls of the superstructure were constructed partly of masonry and partly of perishable materials. At their greatest preserved height the masonry walls rose 7-8 courses high or 0.5 to 0.6 m above the room floors and wall widths varied between 0.8 and 1 m. Given excavated wall collapse material these walls originally would have been higher. The overall dimensions of the superstructure (exterior measurements) were 8.6 m (N-S) x 7 m (E-W), the front room measured 8.6 m (N-S) x 2 m (E-W) and the rear room measured 6.6 m (N-S) x 2 m (E-W).

Floor 101 the floor of the rear room is a 10 YR 8/1 white plaster room floor approximately 2-3 cm in thickness. Floor 103 the floor of the front room is a 10 YR 8/2 white plaster room floor approximately 2 cm in thickness. The well preserved Floor 103 of the front room was substantially burned, while there was no evidence of burning on the poorly preserved Floor 101 of the rear room. The burning of Floor 103 does not seem to represent a single and complete burning episode. Instead the pattern of burning on the floor appears to have been caused by small, localize fires. Areas along the walls were not burnt. Several small patches of burned plaster were found that appeared to be semi-circular in shape. The burning of Floor 103 was focused more on the north than south end of the room. The dedicatory and terminal caching of incense burners in this room seems to suggest that types of instruments and activities that lead to the patchy burning of Floor 103.

During the terminal use or abandonment of the front room, a cache of six ceramic vessels excavated as five discrete clusters of sherds (A102-106, Special Deposit 102) were placed along the west face of Wall 101 at the north end of the room. Given the patterning of the sherds that formed the five clusters, the vessels were originally placed

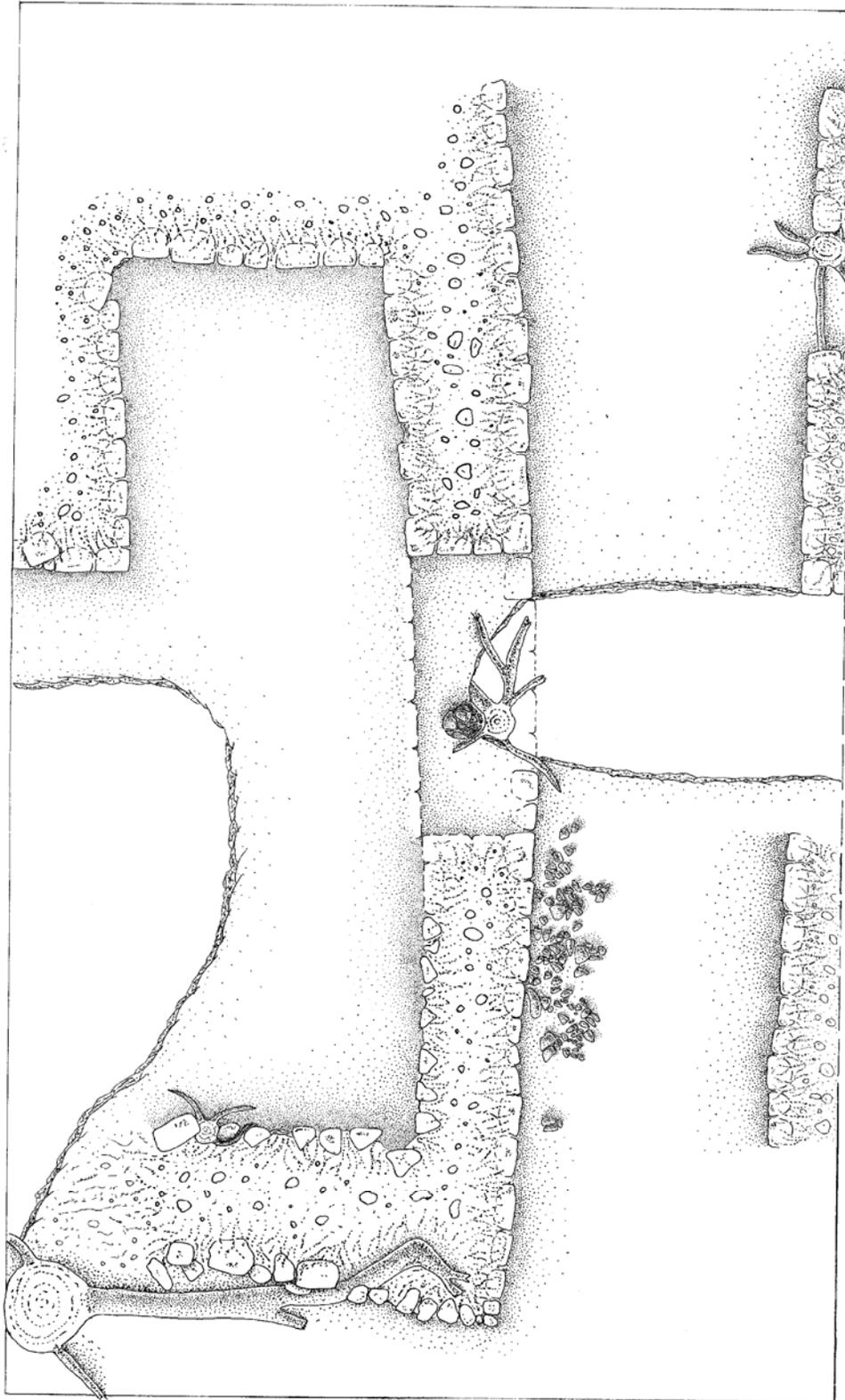


Figure 4: Str. 5-center-1st-a Superstructure.
 Dedicatory cache D102 is inside step.
 Termination cache D101 is in front of Wall 101.

Drawing by Nasario Puc and Merle Alfaro.

along the wall whole and then broke as the wall collapsed.

During the construction of the Str. 5-center-1st-a superstructure a cache of an incensario (A107, Special Deposit 101) was placed inside the central step leading from the front to rear rooms. The incensario was found within the step sitting in an upright, vertical position, with parts of the vessel appearing to be in place and other parts appearing to be broken and out of place. In the field lab, the incensario was re-constructed to a height of approximately 0.8 m, and it would have originally been taller, as no upper lip for the vessel has been found. This item therefore must have been partly broken in order to fit within the step. Large pieces of charcoal were found within the incense burner. Andrew Wyatt examined these in the field and preliminarily identified them as pine charcoal.

The Str. 5-center-1st-a superstructure was largely a reconstruction of the Str. 5-center-1st-b and c superstructures. The Str. 5-center-1st-b superstructure consisted solely of a resurfacing of the Str. 5-center-1st-c rear bench step.

The Str. 5-center-1st-c superstructure consisted of one enclosed room with a rear U-shaped bench (Bench 101) and partly masonry, partly perishable walls (Figure 5). Wall 103, the exterior masonry wall of the 8.6 m (N-S) x 7 m (E-W) Str. 5-center 1st-a, b, and c superstructures was initially constructed in Str. 5-center 1st-c times. It abutted Floor 104 a 3 cm thick plaster floor, that directly underlay Floor 103. Like Floor 103, Floor 104 was burned. The burning on Floor 104 was more intense than the burning on Floor 103, but like the burning on Floor 103, the pattern of floor burning was patchy suggesting multiple burning episodes from incensario use or other ritual activity rather than one single burn episode. To the rear of this large 8.6 m (N-S) x 6 m (E-W) room was a U-shaped bench that measured 8.6 m (N-S) x 3.2 m (E-W). The U-shaped bench had one central inset step, which could be used to access its summit.

Just as a cache was placed within the step leading to the rear room of the Str. 5-center-1st-a superstructure, a cache (Special Artifact A108) was placed within the step leading to the rear bench of Str. 5-center-1st-c. This cache contained one unslipped vessel.

The Str. 5-center-1st bi-level substructure rose 5.6 m in height and served as the base for the Str. 5-center-1st-a, b, and c superstructures. The upper substructure retained Fill 106, a limestone rubble fill containing medium size rubble in a 10 YR 6/2 sascab matrix. The lower substructure retained Fill 24, a 10 YR 4/2 sandy loam limestone rubble fill predominated by medium sized rubble inclusions. Two floors capped the lower substructure, Floors 14 and 9. Floor 14 the original floor of the lower substructure is a 10 YR 8/2 plaster floor approximately 2-3 cm thick. Floor 14 was constructed during Str. 5-center-1st-c times contemporary with the Str. 5-center-1st-c superstructure. Floor 9 is 10 YR 8/2 plaster floor ranging between 1 and 6 cm in thickness. Floor 9 represents a later resurfacing of Floor 14, which likely occurred in Str. 5-center 1st-b or c times. Lower Stair 1, the final phase lower substructure steps of Str. 5-center-1st were either built in Str. 5-center-1st times or had initially been built in Str. 5-center-2nd times and were reused in this later phase. Lower Stair 1 probably consisted of 6 steps (4 of which remain in-situ).

Floor 14 and the later Floor 9 elevated the lower substructure 0.2 m above the previous lower substructure capped by Floors 10 and 12. A round altar (Altar 3), 1 m in diameter and 30 cm in height had been placed on Floor 10. Floors 14 and 9 were

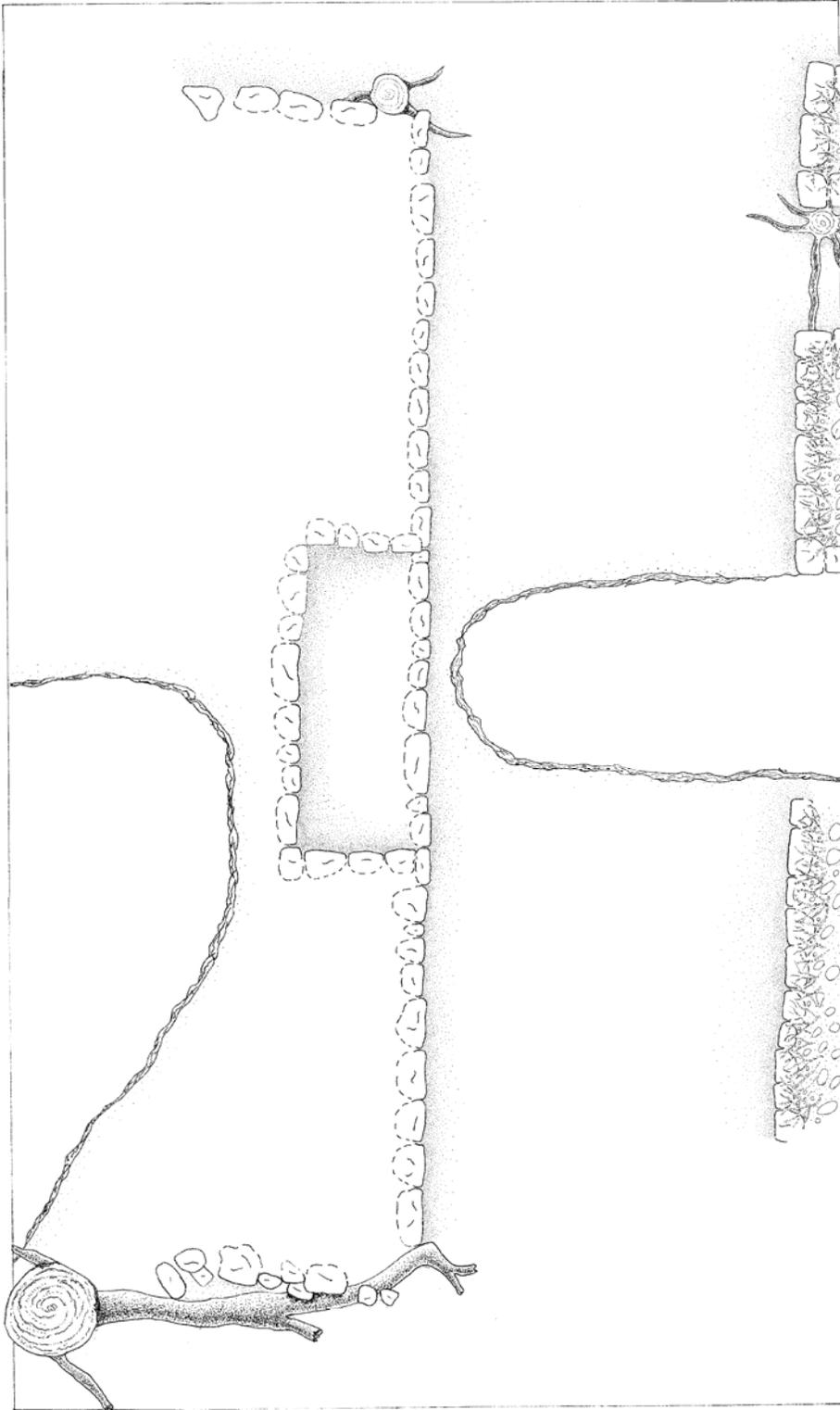


Figure 5: Str. 5-center-1st-c Superstructure. Drawing by Nasario Puc and Merte Alfaro.

constructed around the altar so that the altar would remain visible and usable during the use of these floors. After the construction of Floor 9, only about 3 cm of the altar was visible above the floor surface, but it still could be seen and used.

Three burials, Burials 4, 5, and 7 were cut through Floors 10 and 12. As Floors 10 and 12 were not patched over these burials, it is likely that the burials were interred during the construction of Str. 5-center-1st, rather than during the use of Str. 5-center-2nd. Burial 4 was located north of Altar 3 and Burials 5 and 7 were located south of Altar 3.

Burial 4, Special Deposit 7, contained one individual (4-1) interred within a crypt grave (Figure 6). The crypt grave was built directly over Floor 11, the lower substructure floor below Floor 12. Floor 11 served as the base of the crypt and Individual 4-1 was interred lying on Floor 11. Individual 4-1 lay in an extended prone position with the head to the south facing west (right).

Two jade beads (A55 and 56) were found within the grave associated with Individual 4-1. Directly over the crypt capstones was A34, a chert projectile point, which may or may not have been associated with the burial.

Burial 5, contained one individual (5-1) interred within a crypt grave. The crypt grave was built directly over Floor 11, which served as the floor of the crypt. Individual 5-1 lay with its head to the south. One obsidian blade (A153) was associated with this burial.

Burial 7, contained one individual (7-1) interred within a cist grave. The cist grave was built directly over Floor 11, which served as the floor of the cist. Individual 7-1 was lying head to the south. There were no grave goods in this burial.

Two caches, Special Deposits 4 and 6 were interred in Fill 24 below Floor 14 during the initial construction on Str. 5-center-1st-b architecture.

Special Deposit 4, a cache of six eccentric flints (A25-30), was deposited in Fill 24 below Floor 14 (Figure 7). The six eccentrics were placed in the cache in association with the cardinal directions. Eccentric flints A25, 26, and 27 were crescent moon shaped oriented with all of the crescent openings pointed in a general direction of east. A28 was a closed ring with a large round off-centered hole. The narrowest point of this ring was also along its easterly side. A29 and 30 were side-notched blades. They were oriented lengthwise in a N-S direction. A29 had 4 side notches on each side and A30 had 1 notch on each side. This cache of eccentrics was located 0.2 m west of Altar 3.

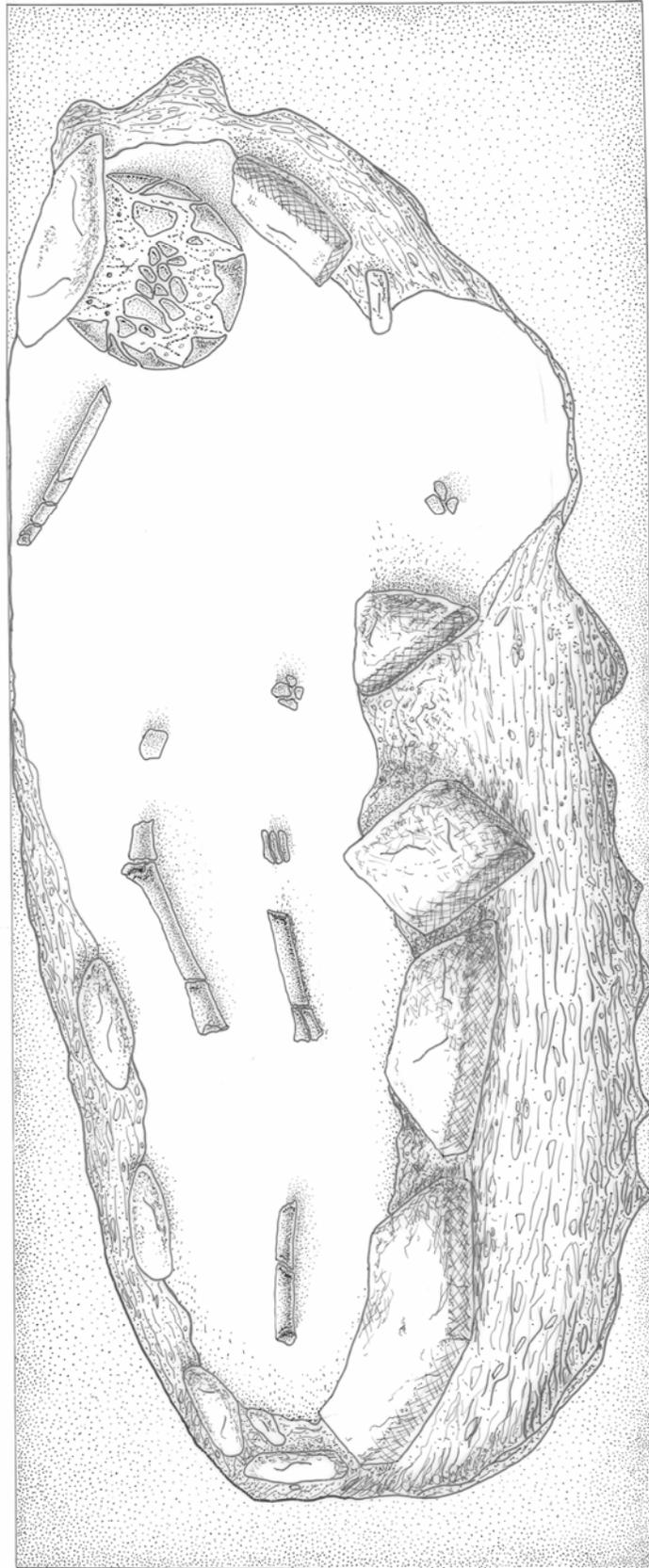
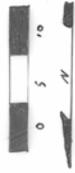
Special Deposit 6 is a cache of a single unslipped vessel (A34). It was placed in Fill 24 exactly below the first step of the Str. 5-center-1st-c upper substructure stair and directly above the first step of the previous Str. 5-center-2nd upper substructure stair.

Str. 5-center-2nd-a,b,c,

Str. 5-center-2nd is a bi-level subrectangular substructure with a frontal (western) axial stair that supported a masonry bench surrounded by a part masonry, part perishable superstructure. One of two stairs, Lower Stair 1 or Lower Stair 2 (see below) may have served as its lower substructure stair. The stair leading up its upper substructure was completely destroyed during the construction of Str. 5-center-1st, thus nothing is known of this stair. The Str. 5-center-2nd substructure was 5.3 m tall. It had at least three sub-phases in which the superstructure bench was re-constructed.

In all sub-phases the Str. 5-center-2nd superstructure was a one room building with

Figure 6: Burial 4. Drawing by Nasario Puc and Merle Alfaro.



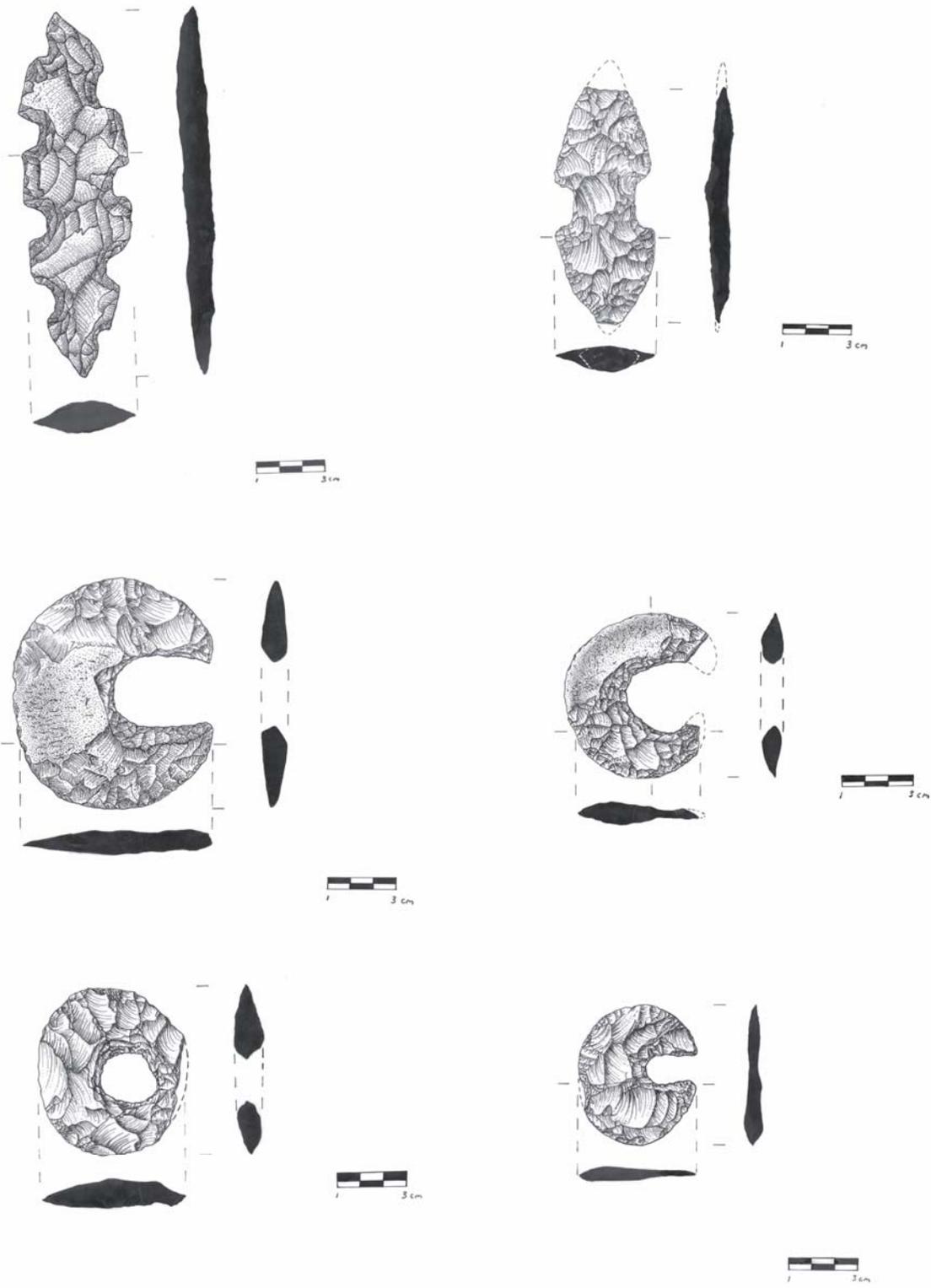


Figure 7: Cache Eccentrics (A25-30). Drawings by Elmer Valdez and Nasario Puc.

a rear masonry bench. This bench began as a low 25 cm high bench (Str. 5-center-2nd-c). The initial bench surface and the floor of the room were one continuous surface, Floor 109. Floor 109 is a 10 YR 8/1 plaster floor, 1-2 cm in thickness. Later the bench was elevated by 10 cm and resurfaced with Floor 108, a 10 YR 8/2 plaster floor, 2-3 cm in thickness (Str. 5-center-2nd-b). The final elevation of the bench added 50 cm to its height and was surfaced by Floor 107, a 2-3 cm thick plaster floor (Str. 5-center-2nd-a).

The Str. 5-center-2nd bi-level substructure constructed during Str. 5-center-2nd-c times served as the substructure for all Str. 5-center-2nd constructions. The Str. 5-center-2nd substructure was elevated 0.50 m above the height of the preceding Str. 5-center-3rd substructure. Its upper substructure retained Fill 108, a limestone fill containing medium sized rubble inclusions in a silty loam matrix. The upper substructure stair was completely destroyed during the construction of Str. 5-center-1st. The lower substructure was capped by Floor 10, a 10 YR 8/1 plaster floor, 3-5 cm in thickness. Altar 3, was originally placed on top of and used in association with Floor 10. Floor 10 did not serve to substantially elevate the lower substructure of Str. 5-center as it directly resurfaced Floor 12 below it.

Either Lower Stair 1, previously discussed, was constructed in Str. 5-center-2nd times and is originally associated with this construction phase, or the lower stair of the Str. 5-center-2nd substructure was Lower Stair 2. Lower Stair 2 consists only of 2 steps and it may be a 2 step refurbishing of the previous Lower Stair 3. If Lower Stair 2 was initially a full stair whose upper portions were subsequently destroyed in later constructions, than Lower Stair 2 could have originally extended to Floor 10, placing its construction in Str. 5-center-2nd rather than earlier times. Fill 26, a 10 YR 4/3 silty loam fill with small limestone inclusions was retained by Lower Stair 2. Future analysis of Fill 26 will help determine the chronology of its construction.

Burial 3, Special Deposit 5, was placed below Floor 10 during the construction of the Str. 5-center-2nd lower substructure. Burial 3 contained 4 individuals, all buried one on top of the other and interred in an informal cyst grave (Figures 8, 9, and 10). Individual 3-1 was represented solely by a disarticulated bundle of tibia. Individuals 3-2, 3, and 4 were primary interments, all buried on a N-S axis with their heads to the south and feet to the north. Intriguingly the proximal ends of the disarticulated tibia that represent Individual 3-1 were facing south implying the same feet-to-north positioning of the primary interments. No artifacts were clearly associated with Individual 3-1.

Individual 3-2 was lying prone in a extended position with flexed arms to the side and the face down. Assessment of prone position is based on femoral and pelvic positioning, but disturbance of these bones have made positive identification questionable. Special artifact A37 was found in direct associated with this individual. A37 consisted of many small sea shells found near the lower mandible of Individual 3-2. All shells had clear holes punctured into them, presumably so they could be strung as a necklace. This would also explain the proximity to the mandible.

Individual 3-3 was also found face down, extended and prone. However, Individual 3-3 did not have its arms flexed. Individual 3-3 also had the most associated artifacts. Artifacts were located around or under the cranium. Marine conch and spondylus shell objects made up a significant amount of the special artifacts associated with Individual 3-3. Special Artifact A36 was a large piece of a sea bivalve. Also found were several shell disks (A38, 40, 41, and 43). These disks were circular, flat on one side

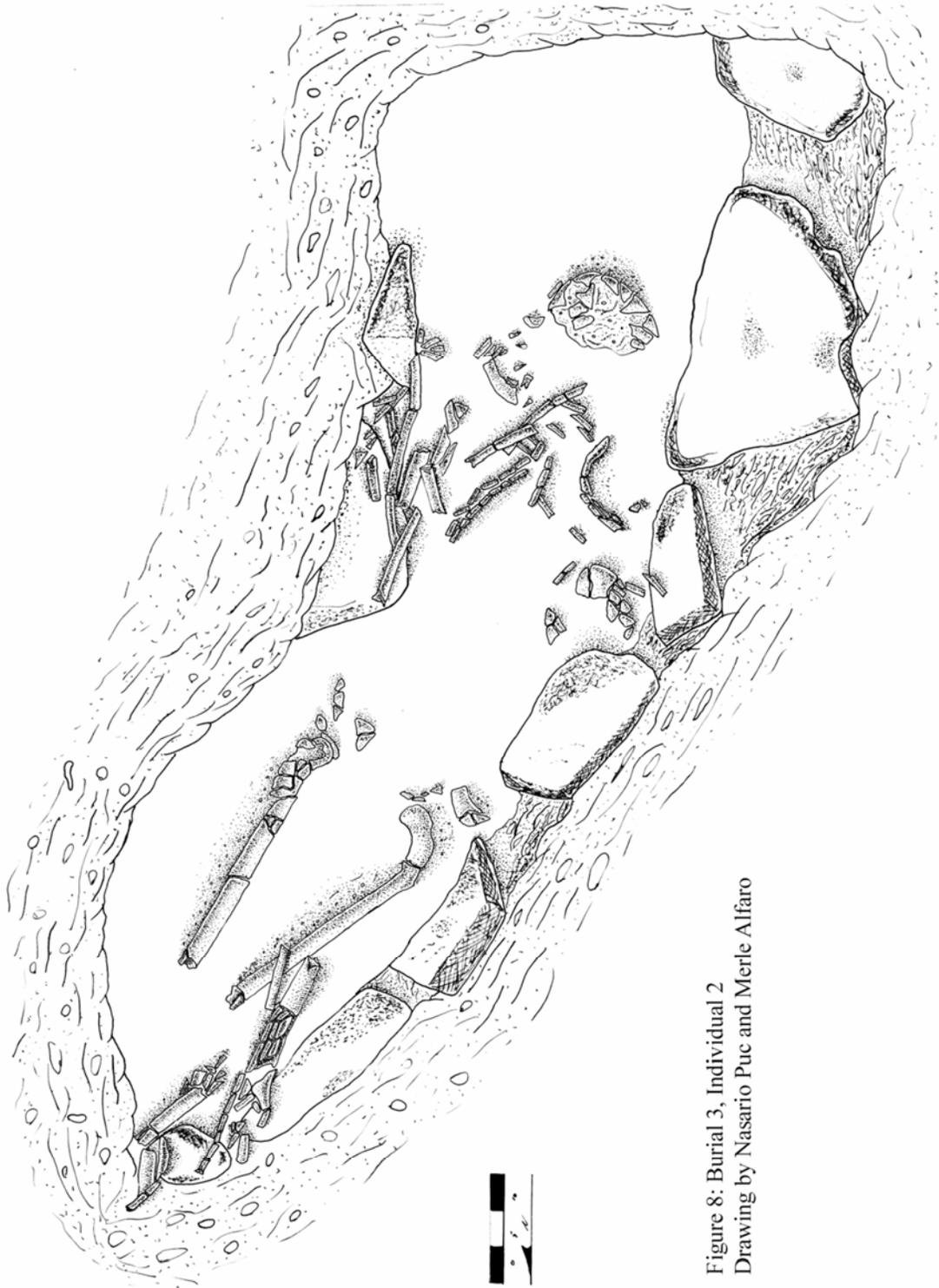


Figure 8: Burial 3, Individual 2
Drawing by Nasario Puc and Merle Alfaro

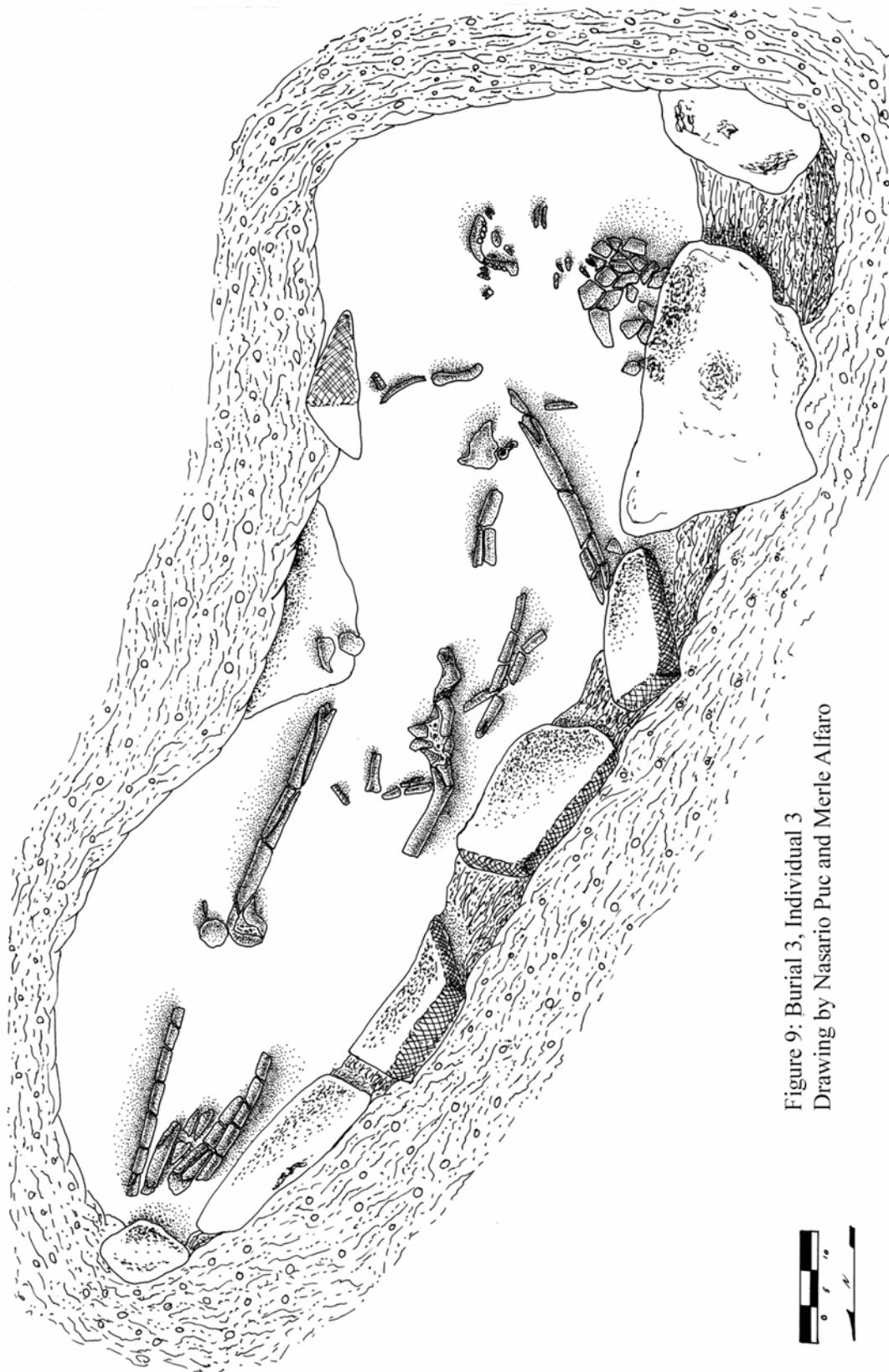


Figure 9: Burial 3, Individual 3
Drawing by Nasario Puc and Merle Alfaro

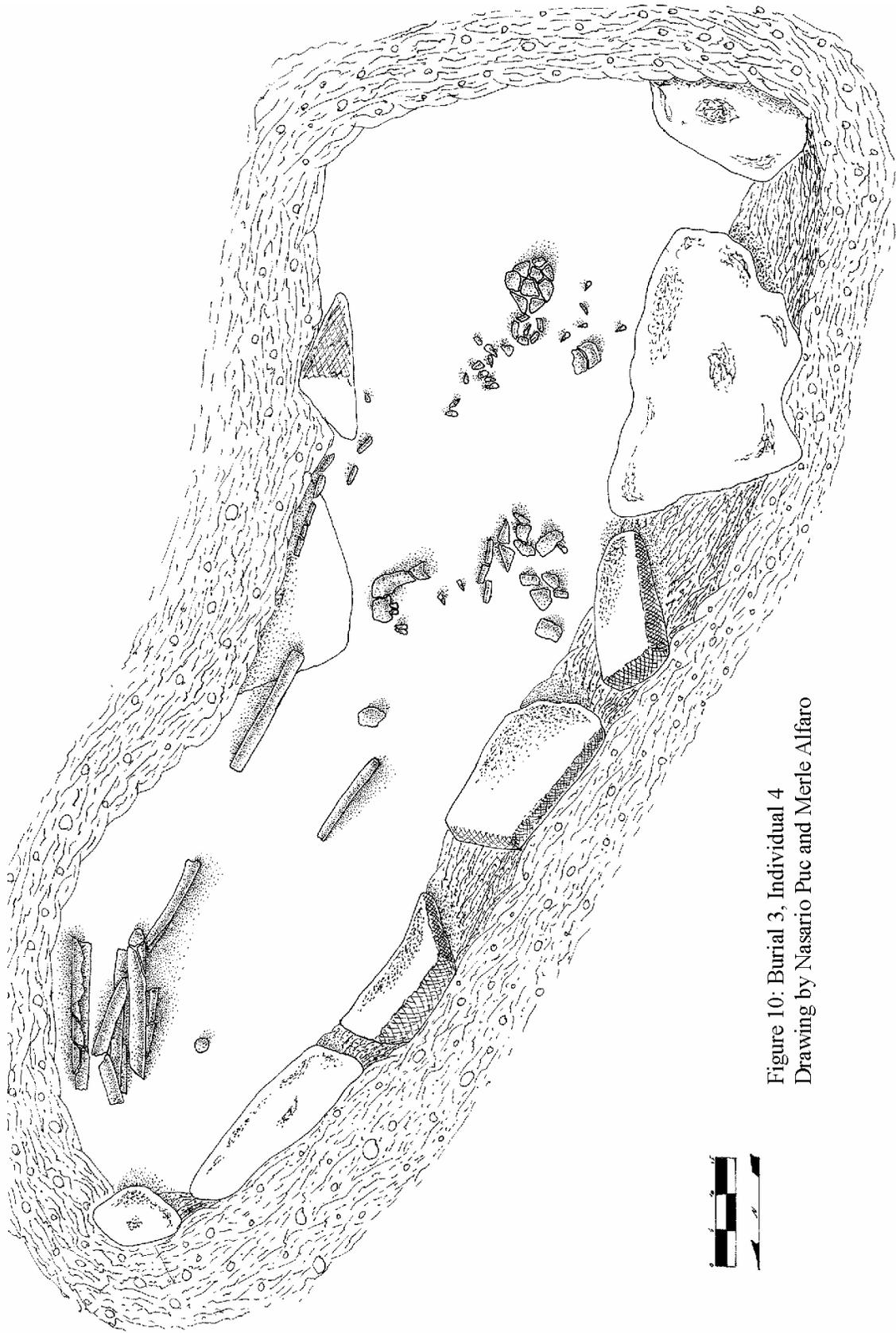


Figure 10: Burial 3, Individual 4
Drawing by Nasario Puc and Merle Alfaro

with an engraved rim just near the edge of the other side of the disk. Special artifact A42 was also similar to these shell disks, but was a simple concave disk. Also similar was special artifact A44, which had a five pointed flower shape with a incised hole in its center. Special artifact A39 was a spondylus shell carved with wing-like shapes. In association with these shell pieces two feline teeth were also found (A45). Also found beneath the cranium in association with Individual 3-3 were 7 pieces or irregular obsidian flakes (A48-54). This individual was also associated with a chunk of red plaster (A58)

Individual 3-4 was the lowest interment within this grave. Individual 3-4 was also found in the extended prone position with its head down and to the south. This individual was interred with 2 pieces of obsidian (A60 and 61) and several large pieces of red plaster (A62). A large ceramic sherd found in association with this individual was also given a special artifact number (A59) but probably isn't a grave good.

Special artifact A35 a large chunk of red plaster found in the screen (as well as special artifacts A58 and A62 just discussed) may be remains of an original plaster lining to the cyst grave or may be remains of plaster from the step in which Burial 3 is interred.

Four additional special artifacts were found in the screen and can not be definitively associated with any one of the four individuals in Burial 3. These are: a shell bead (A31), an obsidian blade (A32), and A46 and 47, pieces of worked chert which are likely part of grave fill rather than being grave offerings.

Str. 5-center-3rd-a,b

Str. 5-center-3rd is a bi-level subrectangular substructure with a frontal (western) axial stair that supported a part masonry, part perishable superstructure. One of two stairs, Lower Stair 2 or Lower Stair 3 (see below) may have served as its lower substructure stair. The stair leading up to the upper substructure had 7 steps. The Str. 5-center-3rd substructure was 5 m tall. It had at least two sub-phases in which the upper substructure stair and possibly lower substructure stair was remodeled.

The Str. 5-center-3rd superstructure was a one-room construction with part masonry, part perishable walls. No evidence for an interior masonry bench was found.

The Str. 5-center-3rd bi-level substructure constructed during Str. 5-center-3rd-b times served as the substructure for all Str. 5-center-3rd constructions. The upper substructure was capped by Floor 112, a 10 YR 8/2 plaster floor 5 cm thick. Floor 112 and the upper substructure stair retained Fills 109 and 38. These contiguous fills are contextually the same fill episode, and the different fill numbers represent excavation designations, Fill 109 is the fill directly below Floor 112 and Fill 38 is the fill retained by the upper substructure stair. Fills 109/38 comprise a limestone rubble fill containing evenly dispersed medium sized rubble in a 10 YR 5/2 silty loam matrix. In its latest sub-phase, Str. 5-center-3rd-a, the 6th step of the upper substructure stair was enlarged. No excavations of the upper substructure stair enlargement was undertaken.

The lower substructure was capped by Floor 12, a 10 YR 7/2 plaster floor, 4-5 cm in thickness. Floor 12 elevated the lower substructure some 35 cm above the previous lower substructure capped by Floor 11. Floor 12 adjoined Lower Stair 3 forming the lower substructure, which retained Fill 30, a 10YR 5/2 limestone rubble fill with a sandy loam matrix.

Floor 12 and Lower Stair 3 form the lower substructure that was in use during Str. 5-center-3rd times, but it can not be determined from stratigraphy alone if this lower substructure was initially built in Str. 5-center-3rd, 4th, or 5th times. If the Lower Stair 2 previously discussed

was not constructed in Str. 5-center-2nd times then it was a 2 step refurbishing of Lower Stair 3, and likewise this refurbishing may have happened in Str. 5-center-3rd, 4th, or 5th times.

Three caches, Special Deposits 8, 9, and 10 were associated with the construction of Floor 12 and thus may date to Str. 5-center-3rd, 4th, or 5th times. Initially Special Deposit 10 was cut through Floor 11, and because Floor 11 was never patched in this location it is probable that the cache was placed in this location just prior to the laying of Fill 30 below Floor 12. Special Deposit 10 contained two smashed ceramic vessels (A68 and 69). Later in the construction process during the laying of Fill 30, Special Deposits 8 and 9 were placed within this fill. Special Deposit 8 consisted of a pair of small bowls (A65) placed with open sides facing each other. To the south of these were several large pieces of conch shell (A66). Special Deposit 9 contained one considerably smashed vessel (A67).

One burial, Burial 6 (Special Deposit 103) was also cut through Floors 11 and 13. Again as the floors were not capped over the location of the burial its deposition was likely associated with the construction of Floor 12 and may date to Str. 5-center-3rd, 4th, or 5th times. Burial 6 probably only contained one individual, although relatively scant traces of human bone were found. This individual was buried in a crypt grave. Judging from the tear shaped form of the crypt, the location of the surviving teeth, and the placement of special artifact A110 (see below), the individual interred in this crypt grave may have been lying with their head to the south. The preservation of the surviving long bone fragments, was good, possibly suggesting that this crypt was revisited and human remains were removed in antiquity.

Four special artifacts were associated with Burial 6. Possibly lying in "chest position" was a tubular jade bead (A110), 7 cm long by 2 cm wide. It could have been a pectoral or necklace piece. A111, found in the screen, was a small opaque crystal piece, 1 cm long. Two ceramic vessels were found in the southern section of the crypt, A112 and A113. A112 is an Early Classic red slipped basal flange dish. A113 is an unslipped olla.

Str. 5-center-4th

Str. 5-center-4th is a tri-level subrectangular substructure with a frontal (western) axial stair that supported a perishable superstructure. No evidence for a superstructural bench was found. The stairs leading to its upper and medial substructures were largely destroyed during the construction of Str. 5-center-3rd and only one step of the medial substructure stair remain. As well the stratigraphic connection between the Str. 5-center-4th upper and medial substructures and its lower substructure was completely destroyed during the construction of Str. 5-center-3rd. Either Lower Stair 3 or the previous Lower Stair 4 served as the lower stair for Str. 5-center-4th. The Str. 5-center-4th substructure was 4.7 m tall.

Str. 5-center-4th enlarged the form of Str. 5-center-5th which was also a tri-level substructure. The Str. 5-center-4th upper substructure was elevated 25 cm above the existing Str. 5-center-5th upper substructure. It was capped by Floor 113, an extremely thick (10 cm) 10 YR 8/2 plaster floor and filled by Fill 110, a compact limestone rubble fill containing medium size rubble inclusions in a 10 YR 5/2 silty loam matrix. During Str. 5-center-4th times an enlargement of the existing Str. 5-center-5th medial substructure extended it 80 cm to the west and added an axial stair. The Str. 5-center-4th addition to the medial substructure was filled by Fill 43, a limestone rubble fill containing medium size rubble inclusions in a 10 YR 3/2 silty loam matrix. Both of the Str. 5-center-4th re-constructions may have occurred at the same time or in sequential sub-phases.

Str. 5-center-5th-a,b

Str. 5-center-5th is a tri-level subrectangular with a frontal (western) axial stair that supported a perishable superstructure. No evidence for a superstructural bench was found. As seen for Str. 5-center-4th, the stratigraphic connection between the Str. 5-center-5th upper and medial substructures and its lower substructure was completely destroyed during the construction of Str. 5-center-3rd. Either Lower Stair 3 or the previous Lower Stair 4 served as the lower stair for Str. 5-center-4th. The Str. 5-center-4th substructure was 4.45 m tall. It had at least two construction sub-phases.

During Str. 5-center-5th times the construction of Str. 5-center changed from the more common bi-level substructure to that of a tri-level substructure. Str. 5-center-5th-a is represented by a resurfacing of the Str. 5-center-5th-b upper substructure with Floor 114, a 2-3 cm thick 10 YR 8/1 plaster floor. The initial Str. 5-center-5th-b upper substructure was capped by Floor 116, a 3-4 cm thick 10 YR 8/2 plaster floor and filled by Fill 112, a limestone rubble fill containing medium sized rubble inclusions in a 10 YR 6/1 sascab matrix. The Str. 5-center-5th-b medial substructure was capped by Floor 150, a 5 cm thick 10 YR 8/1 plaster floor and filled by Fill 150, a limestone rubble fill containing medium to large size rubble inclusions in a 10 YR 3/1 silty loam matrix. Intriguingly two steps led up to the well-plastered west facing retaining wall (Wall 150) of the Str. 5-center-5th-b medial substructure, but would not have allowed access to the top of the medial substructure. Thus during this construction sub-phase, and only during this construction sub-phase, one must have surmounted the medial substructure using side stairs.

Str. 5-center-6th-a,b

Like the later Str. 5-center-1st, 2nd, and 3rd substructures, Str. 5-center-6th is a bi-level subrectangular substructure with a frontal (western) axial stair that supported a perishable superstructure. A U-shaped masonry bench sat within the perishable superstructure. It was 30 cm in height and was capped by Floor 117, a 2-3 cm thick plaster floor and filled by Fill 113, a limestone rubble fill containing medium size rubble inclusions in a 10 YR 6/1 silty loam matrix.

During Str. 5-center-6th-a times new upper and lower substructures were constructed upon the existing Str. 5-center-7th construction. The Str. 5-center-6th substructure was 3.6 m tall.

During Str. 5-center-6th-a times a new stair was added to the front (west) of the existing upper substructure stair. This new stair retained Fill 52, a limestone rubble fill containing medium sized limestone inclusions in a 10 YR 5/2 silty loam matrix. Only two steps of the stair remained in-situ, but like its predecessor this stair likely originally had 6 steps. Likely constructed simultaneously and abutting the new upper substructure stair was a new lower substructure. This lower substructure was capped by Floor 11, a 10 YR 8/1 plaster floor 2.5-4 cm in depth. The lower substructure was filled by Fill 36, a 10 YR 5/3 sandy loam limestone rubble fill containing small rubble inclusions and some dressed stone. Lower Stair 4 which had four steps led up to the top of the lower substructure. Floor 11 did not add elevation to the lower substructure it simply resurfaced the existing Floor 13.

The initial Str. 5-center-6th-b substructure had an upper substructure with frontal axial stair containing 6 steps and a lower substructure with a frontal axial stair containing 4 steps. Its upper substructure was capped by Floor 151, a 5 cm thick 10 YR 6/2 plaster floor and filled by Fills 152 and 153. Fill 152 is a series of 10 YR 8/1 sascab lenses. Fill 153 underlies Fill 152 and

is limestone rubble fill containing medium and large limestone inclusions in a 10 YR 6/1 silty loam matrix. It made use of the lower substructure constructed in Str. 5-center-8th times as its lower substructure.

Burial 9 was interred in the construction fill, Fill 153, of Str. 5-center-6th-b. Burial 9 contained one individual, lying head to the south, in a crypt grave. This individual was associated with 2 Sierra Red buckets (A154, 159), providing a Late Preclassic date for this grave.

Str. 5-center-7th

Str. 5-center-7th is a bi-level subrectangular substructure with a frontal (western) axial stair that supported a perishable superstructure. A masonry bench sat within the perishable superstructure. It was 30 cm in height and was capped by Floor 153, a 10 cm thick 10 YR 8/1 plaster floor. A stair containing 2 steps led to the upper substructure and a stair containing 4 steps led to the lower substructure. The Str. 5-center-7th substructure was 2.2 m tall.

The Str. 5-center 7th upper substructure was capped by Floor 154, a 7-8 cm thick 10 YR 8/1 plaster floor and filled by Fill 154, a limestone rubble fill containing medium sized rubble inclusions in a 10 YR 3/2 silty loam matrix. Its lower substructure, made use of the substructure initially built in Str. 5-center-8th times.

Burial 10 was cut through Floor 201 of Str. 5-center-9th, but because this floor was not patched over Burial 10, the burial was probably placed in this location during the construction of Str. 5-center-7th upper substructure which overlies Str. 5-center-9th (Figure 11). Burial 10 contained one individual (10-1) interred in a crypt grave. Individual 10-1 lay head to the south and was associated with 9 special artifacts (A155-158, 160-164). A155 was a carved face, A156 an obsidian blade, A157 a hematite fragment, A158 an incensario plug, A160 a jade bead, A161 a Sierra Red bucket, A162 a marine shell, A162 a stingray spine, and A164 a bone fragment with a drilled hole. A161, the Sierra Red bucket provides a Late Preclassic date for the Burial 10 assemblage.

Str. 5-center-8th

Str. 5-center-8th is a single-level subrectangular substructure with a frontal (western) axial stair that supported a perishable superstructure. It extended the Str. 5-center-9th substructure to the west. It was capped by Floor 13, a 10 YR 7/2 plaster floor, 3-4 cm thick and filled by Fill 35, a 10 YR 5/2 silty loam limestone rubble fill with medium limestone inclusions. This substructure was surmounted by Lower Stair 5, a stair that comprised 4 steps.

Figure 11: Burial 10
Drawing by Nasario Puc and Merle Alfaro



During the construction of Str. 5-center-8th, Burial 8 (Special Deposit 104) was placed in a crypt grave within Fill 35. The underlying Floor 22 of Str. 5-center-10th served as the floor of the crypt. Burial 8 contained one individual associated with 8 special artifacts (A117-124). The individual was lying prone, head to the south. Intriguingly the cranium of this individual had been severed prior to its placement in the grave, as the complete cranium was found in the appropriate anatomical position but placed inside ceramic vessel A117. Special artifact A124, a square jade bead 1.5 cm long, was also placed in ceramic vessel A117. A120, a 40 cm long brown chert blade with a triangular cross-section, lay along the individual's left tibia. Six of Burial 8's 8 grave goods were ceramic vessels (A117, A118, A119, A121, A122, A123). A117 and A118 were matching Joventud vessels. A118 was placed vertically in the crypt wedged between the crypt sidewall and A117. A122 was the only other diagnostic vessel. Its form and dimensions match the Black Rock Red vessels illustrated in Gifford (1976). It and was located along with A121 and A123 in the abdomen area. A119 was vertically placed in the crypt near the individual's left femur and chert blade A120. Both of Burial 8's Joventud vessels had typical Joventud red slipped interiors, but one had an unusually streaky Sierra-like slip on its exterior, this suggests that the Burial 8 assemblage has a Late Middle Preclassic date.

Str. 5-center-9th

Str. 5-center-9th was largely destroyed by subsequent constructions. Based on its height, 1.6 m, it could have been a bi-level substructure. Only an eastern portion of its substructure, east of its substructural retaining wall and its lowest two steps remain in-situ. The substructure was capped by Floor 201, a 10 cm thick sascab surface and filled by fill 201 a compact limestone rubble fill containing large rubble inclusions.

The lowest of its two steps was filled by Fill 45, a 10 YR 4/2 clay loam limestone rubble fill with small inclusions. The uppermost of its two steps was filled by Fill 44, a 10 YR 4/2 clay loam limestone rubble fill with small rubble inclusions.

Str. 5-center-10th-a,b

Str. 5-center-10th is a single-level substructure with two steps leading to its summit. It stands 0.8 m high and would have supported a perishable superstructure. No evidence for a masonry bench was found. Str. 5-center-10th represents the initial construction of the Str. 5-center substructures. It was constructed directly over bedrock and in fact its lowest of two steps was carved directly from the bedrock. Given its size, simple form, and lack of associated ritual deposits, it is likely that unlike later constructions Str. 5-center-10th could have simply been a domestic structure. Its substructure was initially surfaced by Floor 202, a 7-8 cm thick 10 YR 8/1 plaster floor in Str. 5-center-10th-b times and resurfaced by Floor 22, a 7-8 cm thick 10 YR 8/1 plaster floor in Str. 5-center-10th-a times. The substructure was filled by Fill 54 and Fill 155. Fill 54 is a limestone rubble fill containing medium sized rubble inclusions in a 10 YR 4/1 clay loam matrix. Fill 155 is a clayey matrix with few rubble inclusions that overlies bedrock. Its upper step was capped by Floor 17, a 7-8 cm thick 10 YR 8/1 plaster floor. Its lower step was carved directly from bedrock.

CONCLUSION

With 48 fill and floor layers, Str. 5-center is the most complex architectural construction thus far excavated at the Chan site. Initially constructed on bedrock, this structure rose to a height of 5.6 m and ultimately supported a partly masonry, partly perishable superstructure.

There is substantial evidence for the ritual use of Str. 5-center both in terms of deposits entombed within its construction phases and in terms of contemporary and termination ritual uses of its floors. Nearly every construction phase yielded some evidence of ritual. The preoccupation with the ritual activity represented in the structure weighs heavily on the proposal that this structure was had a religious nature.

Eight burials and eight caches, illustrate two types of ritual entombment within the buildings construction phases. The patchy burned floors of the Str. 5-center-1st superstructure that were likely the result of localized burning in incense burners evidence some of the kinds of ritual activity that would have taken place on the summit of Str. 5-center. The Str. 5-center-2nd and 3rd Altar 3 on the front terrace of the lower substructure, and the two later floors that were constructed around it so that it could still be used in subsequent construction phases, further illustrate continuities and importance of ritual practice on Str. 5-center. The termination of Str. 5-center-1st achieved by the placement of incense burners and other ceramic vessels in its front room along Wall 101, again indicate the types of ritual practices that would have been associated with the use of the structure.

As is common with eastern ancestral shrines and E-Group tripartite structures in the Maya building tradition, the burials, caches, and altars of Str. 5-center were all placed on the axial center-line of the structure. Following the Belize Valley eastern ancestral shrine tradition, burials were largely place in a prone, head to the south position (Awe 1992).

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OPERATION 6, STR. 5-NORTH

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PURPOSE

Operation 6 at C-001, the central platform group at the Chan site, focused on Structure 5, the eastern structure in the group (Figure 1). Str. 5 is a tripartite eastern structure morphologically similar to an "E-group" (Aveni and Hartung 1989; Ricketson 1928) or a tripartite eastern ancestral shrine. This chapter discusses the Op. 6 excavations of Str. 5-north, the northern and smaller wing of the tripartite Str. 5. Prior to the excavation of Str. 5-north its mounded remains stood 2.4 m above the ground surface in the C-001 plaza area. From the excavation data, we determined that Str. 5-north was constructed across 4 construction phases and at least 5 sub-phases. The purpose of the Op. 6 excavations within Str. 5-north were identical to those of the excavations of Str. 5-center (see Meierhoff, Kestle, and Kalosky, this volume). These were to determine the form, function, and chronology of Str. 5-north, and understand if it had ritual or other uses.

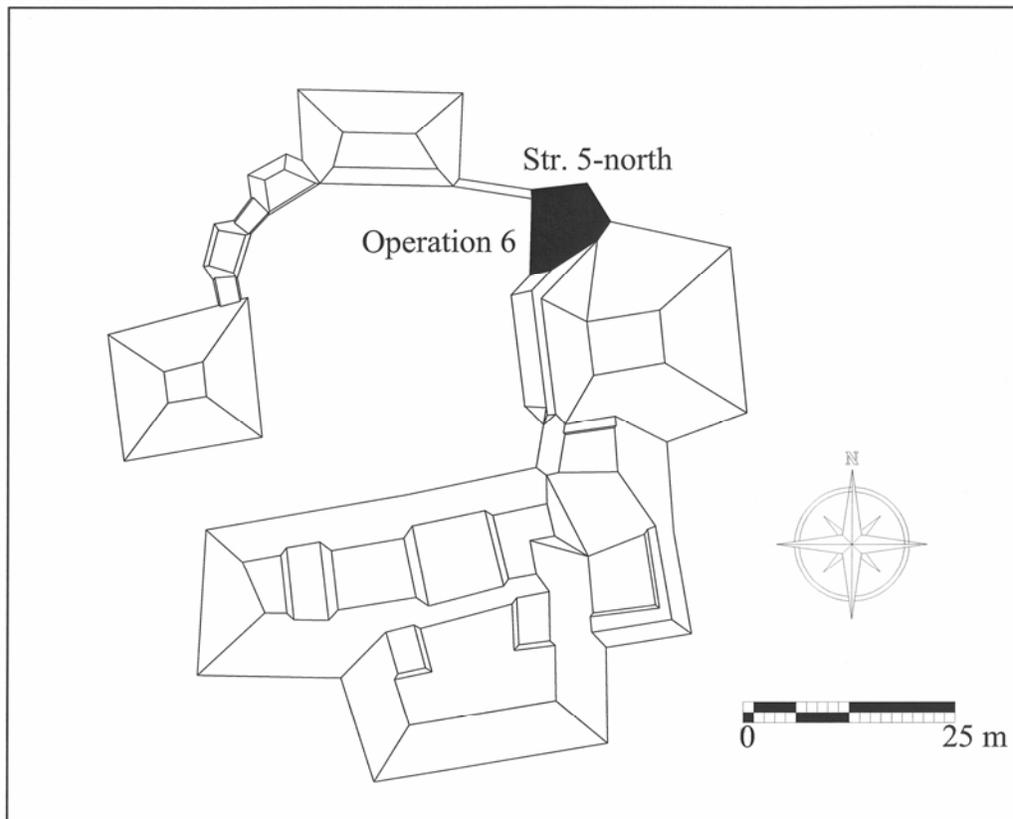


Figure 1: Location of Operation 6, Str. 5-north excavations

EXCAVATION METHODS

Suboperation Locations

Due to the substantial looting in Str. 5-north excavations were limited in their capabilities. Before excavation the looters' trench was cleaned to expose the general fill sequence of the structure and provide a guide for further excavation. Cleaning of the looters' trench and removal of looters' back dirt was designated suboperation B. Units were placed along the bottom of the looters' trench to continue excavations to bedrock. Units were opened adjacent and to the south and east of the looters' trench to sample the stratigraphic sequence observed in the looters' trench. A total of 15 suboperations were opened across Str. 5-north (suboperations E, F, G, O, T, U, W, X, Y, Z, DD, and II; Figure 2).

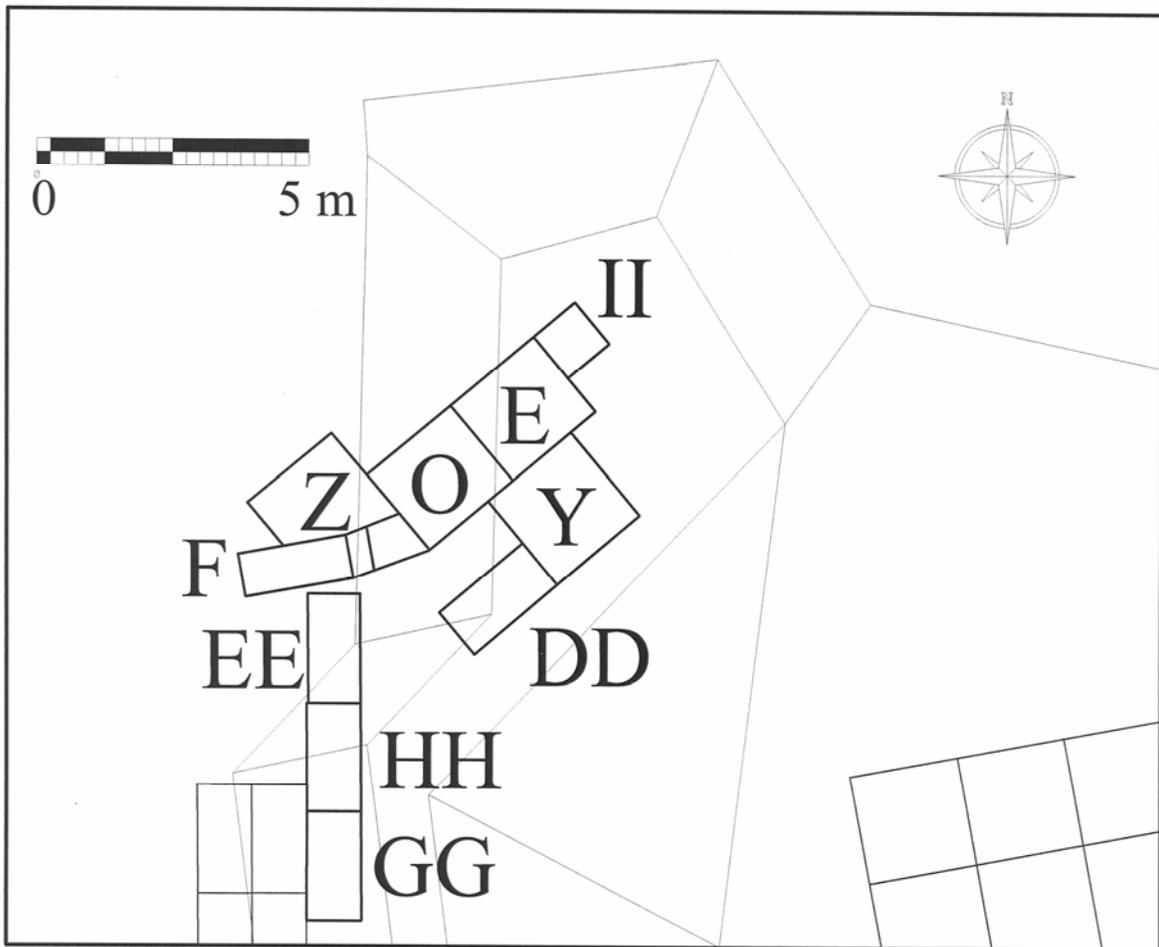


Figure 2: Location of Operation 6 suboperations at Str. 5-north. Unmarked suboperations are those of Operation 6 at Str. 5-center.

Six suboperations were opened at the base of the looters' trench, E and O (2 m by 1.8 m), Z (2 m by 2 m), F (1 m by 2 m), G (1.2 m by 0.4 m), and T (1.1 m by 0.8 m).

Three 1 m by 2 m suboperations (EE, HH and GG) were opened to the south and in front of Str. 5-north. These suboperations connected the Str. 5-north and Str. 5-center excavations and exposed the stratigraphic articulation of the two structures (see Meierhoff, Kestle, and Kalosky, this volume).

Two suboperations, Y (2 m by 2 m) and DD (1m by 2m) were opened at the summit of the structure to the south of the looters' trench to sample the stratigraphy exposed in the looters' trench.

Special Deposits and burials were given their own suboperation designations. Burial 2 (Special Deposit 1) found within suboperation O was designated suboperations U and X. A cache (Special Deposit 2) seen in the east section of the looters' trench was designated suboperation W. Suboperation II (1m by 1m) was opened along the east section of the looters' trench to excavate to this special deposit. Two special deposits, Special Deposits 3 and 201, were not assigned separate suboperation designations.

EXCAVATION RESULTS

General Stratigraphic Sequence

The stratigraphy of Str. 5-north is characterized by the deposition of 14 fill and floor layers which formed 4 construction phases – Str. 5-north-1st to Str. 5-north-4th. Each construction phase will be described following the excavation sequence from latest to earliest phase. Figure 3 illustrates Str. 5-north stratigraphy.

Str 5-north-1st-a,b

Str 5-north-1st is the latest construction phase of Str. 5-north and it had 2 sub-phases. Str. 5-north-1st is a bi-level subrectangular substructure with a frontal (western) axial stair that would have supported a perishable superstructure. Str. 5-north-1st was constructed on plaza Floor 0, the penultimate plaza floor in the sequence of plaza floors in front of Str. 5. The Str. 5-north substructure was 2.2 m tall.

The lower substructure retained Fill 19 and was capped by Floor 7. This lower substructure was constructed in Str. 5-north-1st-b times and maintained in Str. 5-north-1st-a times. Fill 19 is a limestone rubble fill containing mostly medium and some large sized limestone inclusions in a 10 YR 5/2 sandy loam matrix. Floor 7 is a 5 cm thick layer of 10 YR 6/2 sascab. Only one step of the axial stair leading from plaza Floor 0 to the summit of the lower substructure remained in-situ. This step retained Fill 1, a 10 YR 6/2 clay loam fill with some medium sized rubble inclusions.

The Str. 5-north-1st-b upper substructure was modified in Str. 5-north-1st-a times. In Str. 5-north-1st-a times, the Str. 5-north-1st-b rectangular upper substructure was expanded into a T-shaped substructure. This expansion was achieved by the addition of a small centrally placed substructure to the west of the original Str. 5-north-1st-b. The Str. 5-north-1st-a upper substructure addition retained Fills 17 and 18. Fill 17 is a limestone rubble fill containing medium sized rubble inclusions in a 10 YR 4/2 sandy loam matrix. Fill 18 is a limestone rubble fill containing medium sized rubble inclusions in a 10 YR 5/2 silty loam matrix. Along with this

addition to the upper substructure, Floor 7 (the floor of the lower substructure) was resurfaced with Floor 6, a 10 YR 8/2 plaster floor 3-5 cm in thickness.

The initial Str. 5-north-1st-b upper substructure was a rectangular construction that retained Fill 12, a limestone rubble fill containing medium sized rubble inclusions in a 10 YR 5/1 sandy loam matrix. Special Deposit 2, a largely intact Mt. Maloney cache vessel (A13) was located in Fill 12 on the axial center-line of the structure.

Str 5-north-2nd

Str. 5-north-2nd had one construction phase and consisted of a single-level substructure with a frontal (western) axial stair, that would have supported a perishable superstructure. It was constructed on plaza Floor 1, which underlies plaza Floor 0 in the sequence of plaza floors west of Str. 5-north. Str. 5-north-2nd was 0.9 m tall.

The Str. 5-north-2nd substructure retained Fills 15 and 16 and was capped by Floor 5. Fill 15 is a limestone rubble fill containing medium sized rubble inclusions in a 10 YR 5/2 silty loam matrix. Fill 16 is a limestone rubble fill containing small and medium sized rubble inclusions in a 10 YR 4/2 silty loam matrix. Floor 5 is a 10 YR 8/1 plaster floor 5-7 cm in thickness.

Only the basal step of the axial stair of this substructure remains in-situ. Intriguingly, the lowest course of this step consisted of the capstones of Burial 2. Thus the interment of Burial 2 and the construction of Str. 5-north-2nd were simultaneous acts. Burial 2 (Special Deposit 1) contained a single individual (Individual 1) lying prone, head to the south in a crypt grave. One shell bead (A7) was located below the individual's skull. Fragments of green plaster (A5) found in the grave fill may be remnants of a plaster lining on the crypt. An unusual quantity of red chert flakes (A9) were also located throughout the grave fill. Burial 2 (Special Deposit 1), as well as cache Special Deposits 2 and 3 were all located along the axial center-line of Str. 5-north.

Plaza Floor 1 was constructed abutting the crypt grave of Burial 2. The crypt cut through plaza Floor 3 (situated below plaza Floor 1) and cut into bedrock. A second special deposit, an empty cache (Special Deposit 3) was also cut into plaza Floor 3 just west of Burial 2. This empty cache measured 50 cm in diameter. As it was not capped at the level of plaza Floor 3, it is likely that this empty cache was also cut during the construction of Str. 5-north-2nd.

Str 5-north-3rd

Str. 5-north-3rd is the earliest substructure built in this location. It is a single-level substructure with a frontal (western) axial stair, which would have supported a perishable superstructure. Str. 5-north-3rd was constructed on plaza Floor 3, which underlies plaza Floor 1 in the sequence of plaza floors west of Str. 5-north. The Str. 5-north-3rd substructure was 0.5 m tall.

The substructure retained Fills 13 and 14. Fill 13 is a limestone rubble fill containing small to medium sized rubble inclusions in a 10 YR 5/2 sandy loam matrix. Fill 14 is a limestone rubble fill containing medium to large sized rubble inclusions in a 10 YR 6/3 silty loam matrix. The two basal most steps of the substructure's axial stair remain in-situ. These retained Fill 10, a limestone rubble fill containing small and medium sized rubble inclusions in a 10 YR 4/2 silty loam matrix.

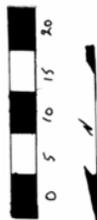
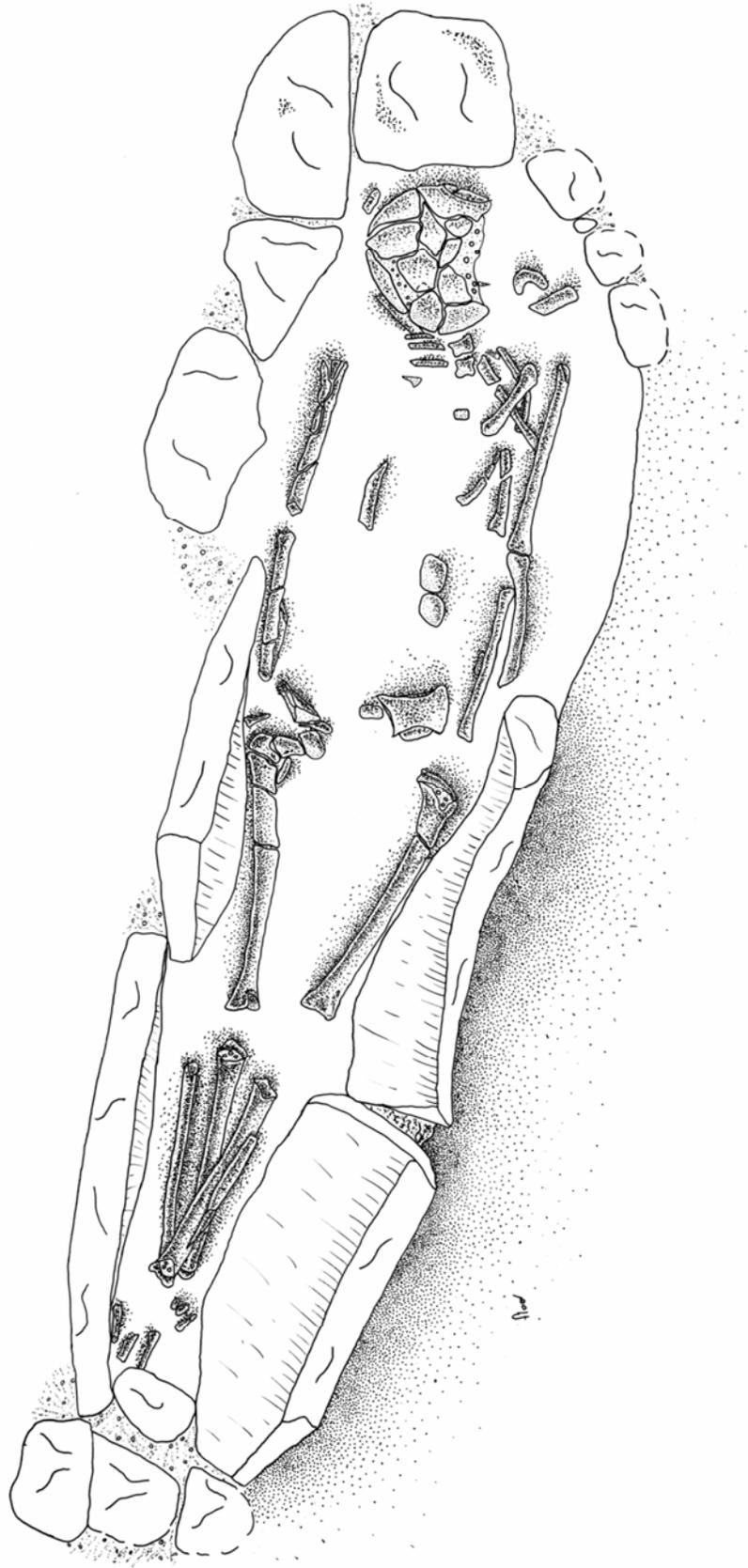


Figure 4: Burial 2. Drawing by Nasario Puc and Merle Alfaro.



Str 5-north-4th

Prior to any masonry construction in the location of Str. 5-north there appears to have been ritual use of this area. Below Str. 5-north-3rd, a large upright stone was set into plaza Floor 3. The stone was oriented on an east-west axis.

One large fragment of a Preclassic spiked incensario (A18) was found in association with a large piece of charcoal, a sea bi-valve (A19), and a probable cache vessel (A21). These items (Special Deposit 201) were placed less than 6 cm to the northwest of the upright stone. The placement of these artifacts in association with the upright stone suggest some sort of ritual use of this area prior to the construction of the subsequent masonry structures.

CONCLUSION

The excavations of Str. 5-north reveal a shorter and less complex depositional history of architectural remains than seen in Str. 5-center (see Meierhoff, Kestle, and Kalosky, this volume). These two buildings were part of the same tripartite construction but had unique construction histories. Stratigraphically, the construction of masonry architecture in the area of Str. 5-center predates the earliest masonry architecture of Str. 5-north (Str. 5-north-3rd) for which a Late Preclassic construction date has been assigned based on preliminary ceramic analysis (see LeCount, this volume). Only from the Late Preclassic onwards would Str. 5 have been a tripartite construction. But intriguingly there seems to have been some sort of ritual use of the Str. 5-north area prior to the first masonry construction which took the form of ritual deposits placed around an upright stone. Thus a tripartite focus of ritual activities along the eastern edge of the C-001 plaza seems to have pre-dated the formal construction of tripartite architecture.

Despite substantial looting to Str. 5-north, which removed the majority of the central portion of the structure, four special deposits, 3 caches and 1 burial, were found associated with 3 of its 4 construction phases (Str. 5-north-1st, 2nd, and 4th). The three special deposits associated with the masonry architecture of Str. 5-north, Burial 2 (Special Deposit 1), and caches (Special Deposits 2 and 3), were located on the axial center-line of the structure, the same location where burials and caches were located in Str. 5-center (Meierhoff, Kestle, and Kalosky, this volume). Similar to other interments from Str. 5-center, Burial 2 was located in a step, and Individual 1 of Burial 2 was found lying prone, head to the south. This consistency in burial position and placement is not only common between the Str. 5-center and Str. 5-north burials but is commonly found for eastern ancestral shrine burials throughout the Belize Valley (e.g., Awe 1992).

The marking of ritual use of the Str. 5-north area in Str. 5-north-4th times prior to any masonry construction, an upright stone and associated Special Deposit 201, were located just south of what would later become the central axis of the Str. 5-north masonry constructions.

The consistent and formal placement of burials and caches in Str. 5-north, like Str. 5-center, supports the identification of Str. 5 as a tripartite eastern ancestral shrine.

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OPERATIONS 5 AND 7, C-001

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PURPOSE

Operations 5 and 7 at C-001, the central platform group at the Chan site, focused on Structures 3 and 4, located at the northwest corner of the group (Figure 1). Strs. 3 and 4 are the two smallest buildings at C-001 both in terms of height and area. The mounded remains of Str. 3 stood 60 cm above the plaza area and the mounded remains of Str. 4 stood 70 cm above the plaza area. The Str. 3 mound measured 5 m (N-S) by 7.5 m (E-W) and the Str. 4 mound measured 4.5 m (E-W) by 7.5 m (N-S). Based on surface morphology these two small structures are very similar.

Small structures that form a part of larger platform groups are often ancillary structures or kitchen areas (e.g., Gonlin 1993; Robin 1999; Sheets 1992). Intriguingly and despite their small size, greater densities of surface artifacts were found associated with Strs. 3 and 4 prior to excavations, than at any other structure at C-001. These data lend support to a hypothesis that Strs. 3 and 4 could have had ancillary or kitchen functions. Strs. 3 and 4 are also located just west of C-001's northern residence (Latsch 2003). The purpose of the Op. 7 excavations within Strs. 3 and 4 were to determine their form, function, and chronology, and understand if they had ancillary or other uses.

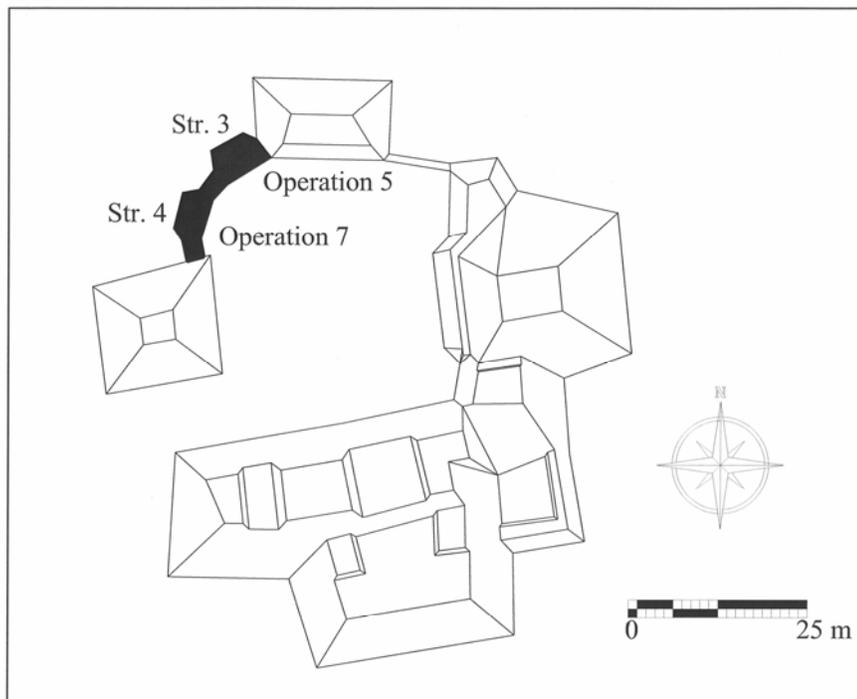


Figure 1: Location of Operation 5 (Str. 3) and Operation 7 (Str. 4) excavations

Operation 7 excavations identified a third deeply buried structure, Str. 6 located two plaza floor levels below and to the east of Str. 4. As discussed below, the architectural forms of Strs. 3 and 4 were quite distinct, despite the similarities in their surface form. This highlights the need to conduct broad horizontal excavations to understand the small structures of the archaeological record, which may appear similar in their surface morphology simply due to their small size.

OPERATION 5

OPERATION 5 EXCAVATION METHODS

Operation 5 Suboperation Locations

Operation 5 areal excavations exposed just less than 40% of Str. 3. Excavations also exposed the connecting platform between Str. 2 and Str. 3. This connecting platform had previously been identified in the 2003 excavations of Operation 2, suboperations G and X (Latsch 2003). A 1 m wide trench located along the western edge of the areal excavations penetrated the stratigraphy of Str. 3. Penetrating excavations were also located within and south of the connecting platform. Prior to the excavations, two looters' trenches in Str. 3 were cleaned as suboperation A. Suboperation F encompassed the clearing of our own backdirt from suboperations G and X of 2003 Operation 2.

A total of 14 excavation suboperations were opened in Operation 5 (B-E, G-P; Figure 2).

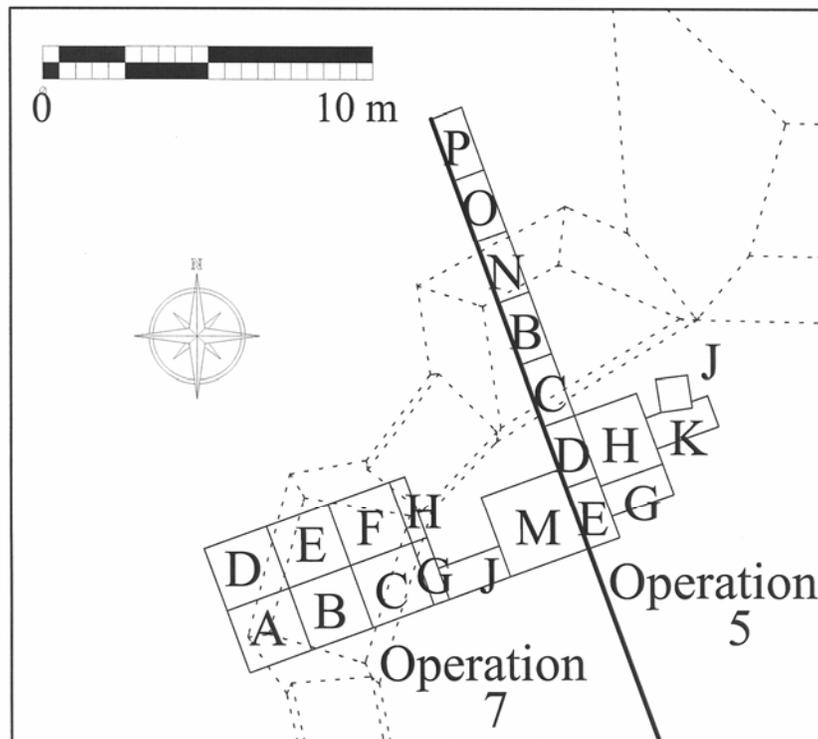


Figure 2: Location of Operation 5 and Operation 7 suboperations

Given our goal to gain a basic understanding of form and construction history of Str. 3, our initial plan was simply to section the structure using a series of 2 m by 1 m suboperations. These initial 2 m by 1 m excavations were suboperations B-E, laid out to the north and south of the eastern looters' trench in Str. 3. As we came to see the complexity of form apparent at many of Str. 3's construction phases we decided to expand excavations east. Suboperations G (1x2 m) and H (2.3x2 m) were this western expansion. Suboperations J (1x1 m) and K (1x1.25 m) investigated the Str. 2-Str. 3 connecting platform. Suboperations I (1.1x2.3 m), L (2x1), and M (1.2x1 m) were interior suboperations placed below existing suboperations to further explore the structure's deep stratigraphy. Finally, suboperations N, O, and P (2x1 m) extended the section line begun with suboperations B-E north an additional 6 m, an extension necessary to find the north retaining wall of Str. 3-5th.

OPERATION 5 EXCAVATION RESULTS

Operation 5 General Stratigraphic Sequence

Str. 3 was constructed using 17 fill and floor layers in 5 construction phases - Str. 3-1st to Str. 3-5th. Each construction phase will be described following the excavation sequence from latest to earliest phase. Figure 3 illustrates the Str. 3 stratigraphy.

Str. 3-1st-a,b,c

Str. 3-1st is the latest construction phase of Str. 3. It was constructed on top of plaza Floor 3, the latest plaza floor in the sequence of plaza floors in front of Strs. 3 and 4. Str. 3-1st is a single-level subrectangular substructure that would have supported a perishable superstructure. During Str. 3-1st-a times, the substructure initially constructed in Str. 3-1st-b times was modified. The original interior depression within the Str. 3-1st-b substructure was leveled off and capped with Fills 5 and 27 and Floor 0 to form a small flat-topped substructure. This substructure is retained by four walls, although only one of them, Wall 5, was found preserved. Wall 5 is a single course, crudely faced retaining wall, resting on Fill 4 of the Str. 3-1st-b substructure. Str. 3-1st-a only elevated the height of the upper substructure by 0.2 m over that of Str. 3-1st-b. Two fills, Fill 5 and Fill 27 made up the core upper substructure modifications in Str. 3-1st-a times. Fill 5, a rubble fill with medium limestone inclusions and secondary deposit artifacts in a 10YR 5/2 silty loam matrix, filled the interior depression in the Str. 3-1st-b substructure. Fill 27, a gravel fill with small limestone inclusions and secondary deposit artifacts in a 10YR 2/1 silty loam matrix, fills the area above the top course of the inner retaining walls that define the Str. 3-1st-b substructure depression. Floor 0, found only as a gravel ballast layer nearly at the ground surface, capped this substructure.

Str. 3-1st-b essentially comprised elevating the original Str. 3-1st-c substructure to create a single-level substructure with a central depression. The Str. 3-1st-b substructure was constructed on top of substructure Floor 1, which capped the Str. 3-1st-c substructure. The Str. 3-1st-b substructure was constructed with an interior central depression that measured 0.9 m N-S. 1.5 m of the depression's E-W extent was excavated and assuming proportionality and symmetry, we can estimate the total E-W extent of the depression as 4 m. The elevated area of the substructure surrounding this depression rises roughly 20 cm in height, and has the same outer dimension as the Str. 3-1st-c substructure, 4.4 m (N-S) by 8.5 m (E-W).

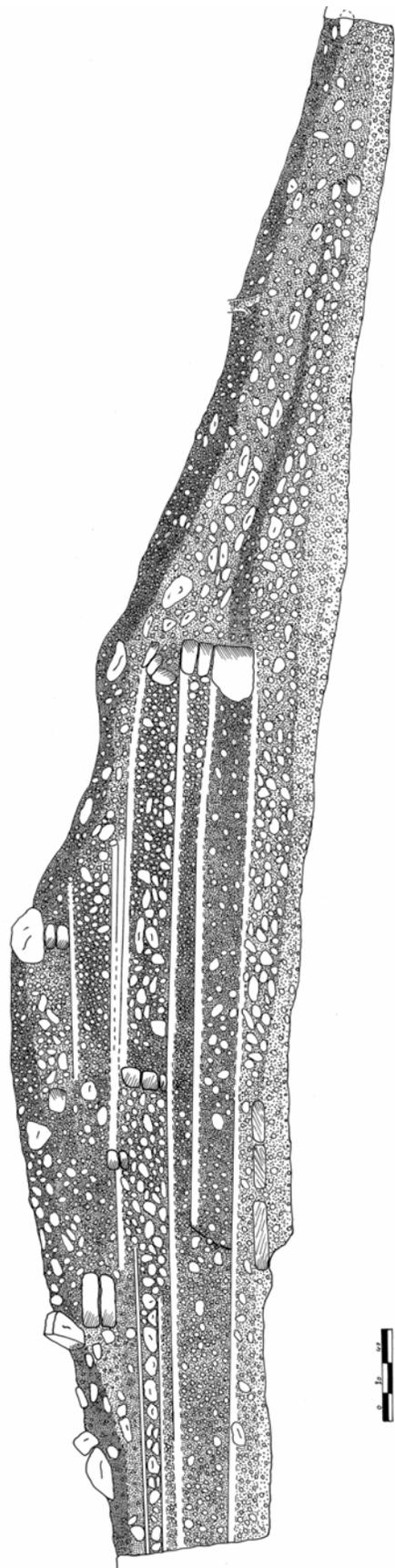


Figure 3: Str. 3 Stratigraphy. Drawing by Nasario Puc and Merle Alfaro.



The outer retaining walls of the Str. 3-1st-b substructure are upward extensions of substructure walls originally constructed during Str. 3-1st-c times, Wall 9 in the south, Wall 6 in the east, and Wall 1 in the north. The inner retaining walls of the Str. 3-1st-b substructure's central depression, were all new constructions in this sub-phase. These were Wall 3 in the north, Wall 4 in the east, and Wall 7 in the south. All three of these walls were faced limestone retaining walls, although Wall 7 was constructed with larger more crudely faced blocks than the other two. The raised area of the substructure that these walls retain is filled with Fill 4, a rubble fill with medium limestone inclusions and secondary deposit artifacts in a 10YR 2/1 silty loam matrix. Inside the central depression, two large flat stones were found immediately west of Wall 4, resting on Floor 1. These may serve as a step down to the depression from the top of the substructure. Floor 7, a 4 cm plaster floor with integrated gravel ballast, lined the newly created depression and lipped up to Wall 3. It was not preserved as far south as Wall 7 or as far east as Wall 4, however it may have lipped up to the two flat stones west of Wall 4.

Str. 3-1st-c is a single-level subrectangular substructure. Although the Str. 3-1st-c single-level substructure serves as the base for Str. 3-1st-b and c constructions, the fact that it has its own floor surface argues for its existence as a temporally distinct construction. Str. 3-1st-c is retained in the south by Wall 9, which was constructed on Floor 3, which is the latest plaza floor in the sequence of plaza floors in front of Strs. 3 and 4. In contrast with Str. 2, which saw only minor modifications to its front step after the construction of the latest plaza floor, significant portions of Strs. 3 and all of Str. 4 were constructed above Floor 3. With its north side retained by an upward extension of Wall 1, and its east by Wall 6, the Str. 3-1st-c substructure measures 4.4 m (N-S) and 8.5 m (E-W). At its greatest height over Floor 3 the substructure is 25 cm high. The substructure is filled by Fill 2, a rubble fill with medium limestone inclusions and secondary deposit artifacts in a 10YR 5/2 silty loam matrix, which covers over the Str. 3-2nd-a substructure. Floor 1, a 2 cm plaster floor with gravel ballast, caps Str. 3-1st-c.

Str. 2-Str. 3 Connecting Platform

The Str. 2-Str. 3 connecting platform was constructed at the time of the construction of plaza Floor 3. It is retained in the south by a faced limestone retaining wall. On the east and west this retaining wall abuts (was placed between) the retaining walls of Strs. 2 and 3. The bottom course of the south retaining wall is a crude cobble construction that do not match the finely faced cut stones that rest above it. This cobble course was set on top of plaza Floor 4 (the plaza floor below plaza Floor 3) during the construction of plaza Floor 3, so that after the construction of plaza Floor 3, only the finely faced stones of the wall would be visible. The fill of the connecting platform is Fill 15, a rubble fill with medium limestone inclusions and secondary deposit artifacts in a 10YR 4/2 silty loam matrix.

Str. 3-2th-a,b

Str. 3-2nd-a,b is a single-level subrectangular substructure that would have supported a perishable superstructure. It was constructed on plaza Floor 4, the penultimate plaza floor in the sequence of plaza floors in front of Strs. 3 and 4. It had two sub-phases, which like the later Str. 3-1st-b and c sub-phases involved elevating an initial flat-topped substructure and modifying it into a construction with a central depression.

The outer retaining walls of Str. 3-2nd-a are the same as those of the earlier Str. 3-2nd-b substructure, Wall 1 in the north, Wall 6 in the east, and Wall 8 in the south. This gives the substructure a N-S dimension of 3.2 m and an E-W dimension of 8.5 m. Str. 3-2nd-a has a height of only about 10 cm above Str. 3-2nd-b. It is filled by Fill 16, a rubble fill with medium limestone inclusions and secondary deposit artifacts in a 10YR 6/1 silty loam matrix. Floor 5, which caps this substructure was found only in a patch in the east of the substructure. It is a thin, hard plaster floor.

The central depression of the substructure is formed by four inner retaining walls, although only one, Wall 10 was found in-situ, resting on Floor 8 the substructure floor of Str. 3-2nd-b, and retaining Fill 16 and Floor 5. This is a faced limestone retaining wall. The inner depression measured 1.4 m N-S with 1.6 m exposed of its E-W extent. By proportion, the depression would have a total E-W dimension of 4.3 m. Floor 2, a 2 cm hard plaster floor lined the depression, and lipped up to Wall 10.

Structure 3-2nd-b was a simple single-level substructure whose south retaining wall, Wall 8 sits on top of plaza Floor 4. It shares a north retaining wall, Wall 1, with the preceding and following substructures. The east retaining wall is Wall 6. This gives a total area of 3.2 m (N-S) by 8.5 m (E-W) for Str. 3-2nd-b. The substructure rises 10 cm above plaza Floor 4 level, but is barely 2-3 cm higher than Str. 3-3rd. This means that, Fill 21, a rubble fill with medium limestone inclusions and secondary deposit artifacts in a 10YR 6/1 silty loam matrix, was only emplaced south of Wall 11, the south retaining wall for Str. 3-3rd. Floor 8, the floor that caps the Str. 3-2nd-b is 2-3 cm thick. Where structure 3-2nd-b overlies Str. 3-3rd, Floor 8 runs directly over Floor 10, the substructural floor of Str. 3-3rd.

Str. 3-3rd

Str. 3-3rd is a single-level substructure that would have supported a perishable superstructure. It was constructed on plaza Floor 11 (the plaza floor below plaza Floor 4). The substructure measures 2.80 m N-S, with only 3.6 m exposed of its E-W extent, its total E-W dimension is unknown.

The south retaining wall is Wall 11, the north is Wall 1. Str. 3-3rd was the first substructure to be retained by Wall 1. Two fills, Fill 24 and Fill 25 make up the body of the substructure. Fill 24 is a rough rubble fill, with medium limestone inclusions and secondary deposit artifacts in a 10YR 7/1 silty loam matrix. It makes up the bulk of the substructure. Immediately north of Wall 11, and probably emplaced to provide a finer cushion into which to set the wall is Fill 25, a rubble fill with medium limestone inclusions and secondary deposit artifacts in a 10YR 5/2 silty loam matrix. Both these fills are capped over by Floor 10, a soft, thick (4 cm), plaster floor underlain by gravel ballast.

Str. 3-4th

Str. 3-4th is a single-level substructure, without preserved retaining walls, that would have supported a perishable superstructure. It rests on plaza Floor 14, the plaza floor below plaza Floor 11 and the earliest plaza floor.

Str. 3-4th was filled by Fill 11 and capped by Floor 12. Its retaining walls were destroyed or robbed before later plaza construction covered Str. 3-4th. As no areal exposures were made this deep, we cannot determine the E-W dimensions of this substructure. From the discrete south

edge of Fill 11 to its tapering north edge is 6 meters. To estimate from the shape of Fill 11, the structure was probably a bit smaller than this, perhaps 5 m - the further north extension due to erosion of Fill 11 after the north retaining wall was robbed. Fill 11 is a gravel fill with small limestone inclusions and secondary deposit artifacts in a 10YR 5/1 silty loam matrix. Floor 12 is a thin hard plaster floor.

Str. 3-5th

Str. 3-5th is the earliest construction phase of Str. 3, constructed partly on Fill 13 and partly on bedrock, well below plaza Floor 14. It is a single-level substructure that would have supported a perishable superstructure. In our 1 meter wide trench through Str. 3-5th we encountered this structure's east retaining wall, Wall 13, which was a double-thickness (two lines of stones) faced wall, rising just one course. Finding this prompted us to open suboperations N, O and P to search for the north edge of this substructure. We found it in suboperation N, Wall 14, a single-thickness faced wall. Thus the substructure measured 7 m N-S. These two walls retain Fill 12, a rubble fill with medium limestone inclusions and secondary deposit artifacts in a 10YR 5/2 silty loam matrix.

OPERATION 7

OPERATION 7 EXCAVATION METHODS

Operation 7 Suboperation Locations

Excavations in Op 7 areally exposed about half of the final phase architecture of Str. 4. Later, penetrating excavations removed this same northern half of the structure to the base of its earliest construction sub-phase, Str. 4-1st-e. More limited penetrating excavations in the southernmost 1 m of the excavated area (which was also the approximate north-south midpoint of Str. 4) examined the underlying plaza stratigraphy, and discovered Str. 6, which rested two plaza levels below Str. 4.

These excavations were conducted in 16 contiguous excavation suboperations (A-P). Suboperations A-H, J, and M were located in relation to the surface-visible form of Str. 4 and exposed its final two sub-phases (see Figure 2). Of these, A-F were 2x2 m, G and H were 2x0.5 m, J was 1x2 m and M was 2.6x2.4 m. A-F were arranged in a 4x6 m grid, with A-C in the southern row, and D-F in the northern row. Suboperation G was added onto the east side of the southern row, while H was added onto the east side of the northern row. Suboperation J was extended east from the southern 1 m of G, while M extended east from J, reaching to the western edge of suboperation E of Operation 5. Suboperations I, K, L, and N-P were interior suboperations placed below suboperations A-F. These were defined on the basis of exposed architecture of Str. 4-1st-b and were used to explore the earlier construction sub-phases of Str. 4 and the partially underlying Str. 6.

OPERATION 7 EXCAVATION RESULTS

Operation 7, Str. 4 General Stratigraphic Sequence

Str. 4 was constructed using 11 fill and floor layers in 5 construction sub-phases Str. 4-1st-a through e. Each construction phase will be described from latest to earliest. Figure 4 illustrates the Str. 4 stratigraphy.

Str. 4-1st-a,b,c,d,e

Str. 4-1st-a is the latest construction sub-phase of Str. 4. In its latest and earliest sub-phases, Str. 4-1st-a and e, it is a single-level substructure. In its middle three sub-phases, Str. 4-1st-b, c, and d, it is a bi-level substructure. In all sub-phases the substructure was constructed on plaza Floor 2 and would have supported a perishable superstructure. Operation 7, plaza Floor 2, is contextually the same plaza floor designated plaza Floor 0 in Operation 5, both are the latest plaza floor in the sequence of plaza floors in front of Strs. 3 and 4.

Str. 4-1st-a

Str. 4-1st-a consisted of capping over the architectural complexity of the cumulative constructions of Str. 4-1st-b through e with a simple single-level substructure. The Str. 4-1st-a substructure was capped by Floor 0 and filled by Fill 1. It was constructed by extending retaining Walls 4 and 5 (originally used as retaining features for Str 4-1st-b) and Wall 2 (originally used as a retaining feature for Str 4-1st-e).

The Str. 4-1st-a substructure measured 4.60 m E-W, and 3.40 m of its N-S extent was exposed. On the basis of surface morphology, the structure is probably about twice this length in total - 6.80 m N-S. The substructure itself is roughly 70 cm in height. Str. 4-1st-a presented a façade of 15-30 cm cut limestone blocks rising up from plaza Floor 2, with a cobble retaining wall backing this cut stone façade in the west and north. Fill 1, a gravel fill containing small limestone inclusions and secondary deposit artifacts in a 10YR 4/2 silty loam matrix is retained by these walls. Capping this fill is Floor 0, a floor which although presumably was originally plaster, was only found preserved as an approximately 5 cm thick gravel ballast layer.

Str. 4-1st-b

Unlike Str. 4-1st-a, Str. 4-1st-b extended horizontally, rather than added vertically to the form of Str. 4-1st. Str. 4-1st-b is a bi-level substructure that would have supported a perishable superstructure. Its construction involved modifying the Str. 4-1st-c bi-level substructure by extending its lower substructure. In addition, the eastern portion of the Str. 4-1st-b caps over part of Str 4-1st-e. Str 4-1st-b is subrectangular in its overall form, but with a rectangular depression in its NW corner. The Str. 4-1st-b lower substructure measures 3.60 m E-W, and 2.80 m of its N-S extent was exposed. Assuming the south limit of excavation area is the middle point of the lower substructure, and that the lower substructure is symmetrical, the total N-S dimension would be 5.60 m. The height of Str 4-1st-b is roughly 25 cm above plaza Floor 2. The lower substructure is retained by Walls 4 and 5 on the west and north, and Wall 11 on the east. Wall 4 is a rough cobble retaining wall, which is fronted by Wall 5, a faced retaining wall that served as

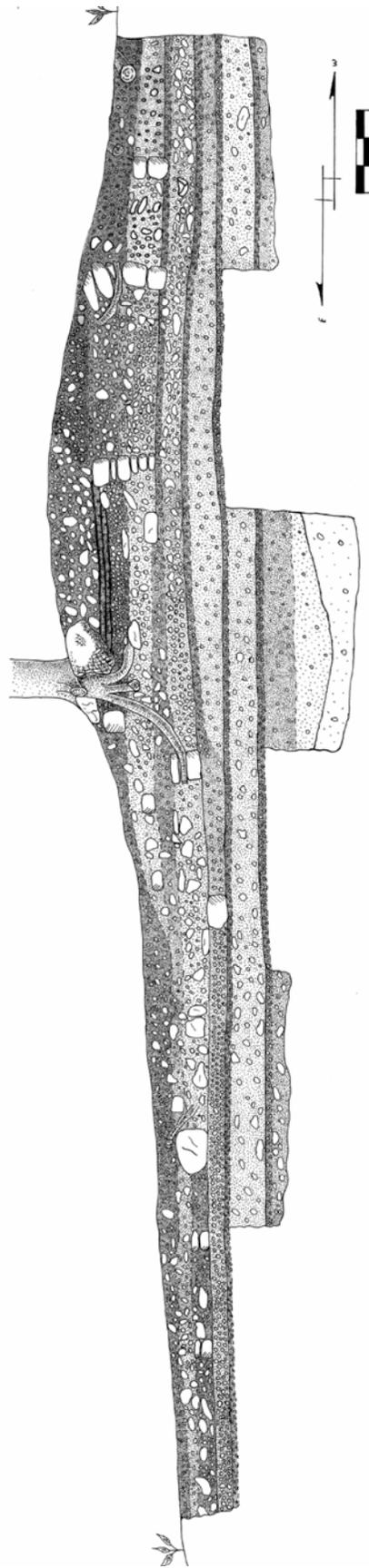


Figure 4: Str. 4 and 6 Stratigraphy. Drawing by Nasario Puc and Merle Alfaro.

a façade. Wall 5 was found only as two in-situ courses lying 60 cm west of the west side of Wall 4. Both of these walls rest of Floor 2. Wall 11 is a faced retaining wall. All preserved elements of Wall 11 were found resting on Floor 13, the substructure floor of Str 4-1st-e, however our reconstruction of the original form of the structure implies that the northern part of Wall 11, in an unexcavated area north of the edge of Str 4-1st-e, rested directly on Floor 2 as well. Fill 5 is the fill in between Walls 4 and 5 and is a gravel fill with small limestone inclusions and secondary deposit artifacts in a 10YR 3/1 silty loam matrix. Fill 4, a gravel fill with small limestone inclusions and secondary deposit artifacts in a 10YR 4/1 silty loam matrix, comprises the majority of the fill of the lower substructure extension, deposited inside of Walls 4 and 11. Fill 19, a darker gravel fill, with small limestone inclusions and secondary deposit artifacts in a 10YR 3/2 silty loam fill, fills the northern portion of the lower substructure extension. Floor 1 caps these fills, and though it was never found preserved as plaster, we encountered it as a layer of more dense gravel inclusions coinciding with the matrix lightening that marked the top of Fill 4.

Str. 4-1st-c,d

Structure 4-1st-c,d is bi-level subrectangular substructure that would have supported a perishable superstructure. It was constructed by adding a subrectangular upper substructure on top of the central-west portion of Str 4-1st-e lower substructure. Str. 4-1st-c solely involves resurfacing the floor of the Str. 4-1st-d upper substructure with Floor 3, a hard plaster floor with about 2 cm of plaster and no underlying gravel ballast.

The Str. 4-1st-d upper substructure measures 1.60 m E-W, and 1.20 m of its N-S extent was exposed. Its full N-S dimension is estimated to be 2.40 m. This upper substructure was about 30 cm in height and rested on Floor 13, the floor of Str 4-1st-e lower substructure. The western faced stone retaining wall of the Str. 4-1st-d upper substructure, Wall 12, was constructed directly on top of Wall 10. The distinctively larger block size of this wall distinguishes it from the earlier Wall 10. Its northern (Wall 13) and eastern (Wall 1) faced retaining walls rest directly on top of Floor 13, and where Floor 13 is not preserved, the underlying Fill 14. Fill 3, a rubble fill with medium limestone inclusions and secondary deposit artifacts in a silty loam 10YR 5/2 matrix, provided the body of the substructure. Floor 6, a hard plaster floor, which was found burnt in places and composed of about 3 cm thick plaster, with an underlying gravel ballast, capped the substructure.

Str. 4-1st-e

Str. 4-1st-e is the earliest construction sub-phase of Str. 4. It is a single-level substructure that would have supported a perishable superstructure.

Although the NE corner of Str. 4-1st-e and the SW corner of Str. 3-1st-c meet, poor preservation of this area prevents assessment of which structure was constructed on top of the poorly preserved plaza Floor 2 first or whether their construction was simultaneous. The Str. 4-1st-e substructure measures 2.60 m E-W, with 2.80 m of its N-S extent exposed, yielding an estimated 5.60 m total N-S extent. The substructure is about 20 cm in height. The west faced retaining wall of Str. 4-1st-e is Wall 10 and the eastern faced retaining wall is Wall 2. Wall 3 served as a step, providing easy access to the east (front) side of the substructure from the plaza floor. The northern retaining wall for the substructure was never located with certainty,

but on the basis of a north facing stone found resting on Floor 2, we estimate that this wall ran from the furthest north preserved stone of Wall 10 east to the SW corner of Str. 3, where it would have intersected with Wall 2. The substructure is filled with Fill 14, a gravelly fill with small limestone inclusions and secondary deposit artifacts in a 10YR 4/1 silty loam matrix. Floor 13, an approximately 4 cm hard plaster floor with gravel ballast, capped this first substructure, and was found preserved in the SW part of the substructure.

Operation 7, Str. 6 General Stratigraphic Sequence

Str. 6 was constructed using 2 floors and 3 fills in 3 construction sub-phases. These substructures are designated a separate structure from Str. 4 because while all phases of Str. 4 are in contiguous contact with one another, the three construction sub-phases of Str. 6 are separated from Str. 4 by two plaza floors (Floors 2 and 15) and are contiguous with one another. In addition, Str. 4 is transposed east from underlying Str. 6. Str. 6 was constructed on plaza Floor 7, which is the same plaza floor as Operation 5 plaza Floor 11, the third plaza floor in the sequence of plaza floors in front of Strs. 3, 4, and 6. Figure 4 illustrates Str. 6 stratigraphy.

Str. 6-1st-a

Str 6-1st is a bi-level subrectangular substructure that would have supported a perishable superstructure. Str. 6-1st-c served as its lower substructure. Str. 6-1st-a consisted of a horizontal expansion of the E-W area of the Str. 6-1st-b upper substructure, which had been built upon Str. 6-1st-c.

In Str. 6-1st-a times, Wall 9 extended the earlier Str. 6-1st-b upper substructure 0.80 m east. Wall 9 rests on Floor 9, the lower substructural floor of Str. 6-1st-c and is fronted by a faced façade of cut stones. Wall 9 has a distinct cobble backing. The Str. 6-1st-a upper substructural extension is filled by the distinct rubble Fill 17, which had medium limestone inclusions and secondary deposit artifacts in a 10YR 3/1 silty loam matrix.

Str 6-1st-b

Str. 6-1st-b is a bi-level subrectangular substructure that would have supported a perishable superstructure. Str. 6-1st-c served as its lower substructure. Str. 6-1st-b consisted of the addition of an upper substructure to the Str. 6-1st-c lower substructure. Str. 6-1st-b was constructed partly on Floor 9, the lower substructural floor capping Str. 6-1st-c, and partly on Fill 13, a fill laid down to level the plaza west of Str. 6-1st-c before the construction of Str. 6-1st-b. The Str. 6-1st-b upper substructure measures 3.60 m E-W, and 2.40 m of its N-S was exposed in excavation. It measures about 20 cm in height. We estimate that this upper substructure did not extend more than 0.2 m further north than the extent exposed in excavation, on the basis of the northward extent of Str 6-1st-c as seen in the west section of excavations in Operation 5. Its southward extent remains unknown. Wall 8, a faced retaining wall, retains the Str. 6-1st-b upper substructure on the west, while Wall 6, another faced retaining wall serves the same purpose in the east. The fill of the upper substructure is Fill 11, with small limestone inclusions and secondary deposit artifacts in a 10YR 4/2 silty loam matrix.

Str. 6-1st-c

Str. 6-1st-c is the earliest substructure in the Str. 6 sequence. It is a single-level subrectangular substructure that would have supported a perishable superstructure. Only Wall 7, a rough cobble retaining wall that serves as the western retaining wall for the substructure was encountered in excavation. The northward extent of the structure was determined from the edge of Fill 9 and Floor 9, the substructural fill and floor seen in the western section of Operation 5 excavations. Its north facing retaining wall was dismantled in later construction efforts. Its eastward extent was determined by the end of the same substructural elements in the south section of Operation 5. Str. 6-1st-c is about 5.40 m E-W, and 2.60 m of its N-S extent was exposed. Fill 9, the fill of the substructure was a gravel fill, with small limestone inclusions and secondary deposit artifacts in a 10YR 4/2 silty loam matrix. Floor 9, the substructural floor was preserved as 3-6 cm of plaster, with an underlying gravel carpet.

CONCLUSION

The small size of Strs. 3 and 4 did not correspond to a lack of chronological depth or construction complexity for these two structures. Like other structures around C-001 they have a deep history and multiple construction phases and sub-phases. They were originally built to be small structures, and they were maintained as small structures throughout their construction history.

Str. 3 located on the northern edge of the NW corner of the C-001 plaza area adjacent to the northern residence Str. 2 has as lengthy a construction history as Str. 2. Although the ceramics have yet to be analyzed from Str. 3, Str. 2's construction phases date from the Middle Preclassic to Terminal Classic periods (LeCount 2003, this volume). Str. 4 and the partly underlying Str. 6 are located on the western edge of the NW corner of the C-001 plaza area. Str. 4 only existed in Str. 3-1st times and Str. 6 only existed in Str. 3-3rd times. The large concentrations of artifacts initially observed on the surfaces of Strs. 3 and 4 continued to be found as excavations penetrated these structures. These abundant artifacts comprised a full range of domestic items including, manos and metates, spindle whorls, obsidian blades, chert tools, serving, storage, and cooking vessels, etc. These comprise a rich data set for future analyses of the precise functions(s) of Strs. 3, 4, and 6.

As noted at the onset of this chapter, despite similarities in terms of their surface morphology the small Strs. 3 and 4 were architecturally quite different. Str. 3 was a single-level substructure in all of its construction phases. In two of its sub-phases it had a lower lined and walled depressed interior area within its summit. The precise function of this interior depression is yet unknown. Future chemical analyses of the lining's depression may provide additional clues to its function. Strs. 4 and 6 were bi-level substructures in some of their construction sub-phases and neither had an interior depression. Architectural and chronological differences between these two small buildings, suggests differing functions which need to be explored further based on artifactual and comparative architectural analysis.

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PRELIMINARY CERMIC ANALYSIS AT C-001

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INTRODUCTION

Between May 24 and June 25, 2004, Cynthia Robin and I analyzed a sample of ceramic lots from the 2003 and 2004 excavations at Chan's central plaza group C-001. Our goal was to gain a coarse grained, yet accurate understanding of the temporal depth and stylistic breadth of ceramics recovered from Str. 2 and the central plaza area of C-001 (excavated in 2003) and Str. 5 (excavated in 2004).

Ceramic lots were analyzed using a quick sort method (LeCount 1996: 133). This technique consists of visually inspecting the lot for known ceramic diagnostics and recording each temporal phase represented by the materials (Table 1). Ceramic types, styles, or forms are not quantified by frequency or weight at this point in the analysis since more detailed research is expected in the near future. Ceramic phase names in Table 1 below follow LeCount et al. 2002 for the Late and Terminal Classic and Gifford 1976 for earlier periods.

CERAMIC SUMMARIES

2004 ceramic analysis from Operation 1 (excavated in 2003) examined the ritual deposits cut into bedrock in the center of the C-001 plaza. These deposits dated largely to the Middle Preclassic with some evidence for Late Preclassic and Terminal Late Preclassic materials. As also identified in the 2003 ceramic analyses, some Early Middle Preclassic Cunil materials were found mixed into the deepest Middle Preclassic deposits, suggesting that there was Early Middle Preclassic activity in the area of C-001, but to date no single phase Early Middle Preclassic Cunil deposits have been identified.

2004 ceramic analysis from Operation 2, Str. 2 (excavated in 2003) continued analyses of the Str. 2 fill sequence. 2003 ceramic analyses of the upper portion of the Str. 2 fill sequence had identified a stratigraphic sequence of building construction dating from the Terminal Preclassic to the Late Classic periods. The 2004 analysis continued this stratigraphic analysis to bedrock, further identifying Late and Middle Preclassic stratigraphy. As seen in Operation 1, some Early Middle Preclassic Cunil material was found mixed into the deepest Middle Preclassic deposits in Operation 2.

2004 ceramic analysis from Operation 6, Str. 5 (excavated in 2004) had two goals: 1) to date the vessel deposit associated with the termination of Str. 5-center 1st-c, and 2) to date the initial construction phase of Str. 5-north which stratigraphically post-dated the initial construction phase of Str. 5-center (see Kestle, this volume, and Meierhoff, Kestle, and Kalosky, this volume). The vessel deposit associated with the termination of Str. 5-center 1st-c were labeled Special Artifacts A102, 103, 104, 105, and 106 corresponding to five concentrations of sherds. Six vessels were identified in the lab from this deposit providing it with a date of Hats' Chaak or Tsak': 2 Cambio unslipped incensarios, 1 slab footed Belize Red vessel, 1 out-curving Belize Red dish, 1 Belize Red or Chunhuitz incurving vase, and 1 unslipped calcite vessel. Preliminary ceramic analysis from the initial construction phase of Str. 5-north provides a Late Preclassic construction date.

Lot	Phases	Materials
1.AA.3	Middle Preclassic	50% Mars Orange, 50% Jocote
1.AA.4.D1	Middle Preclassic	60% Jocote, 40% Mars Orange
1.AA.5.D1	Middle Preclassic	60% Jocote, 20% Mars Orange
1.AA.6.D1	Middle Preclassic	60% Mars Orange, 40% Jocote
1.BB.2.D1	Middle Preclassic, Late Preclassic	50% Jocote, 40% Mars Orange, 10% unknown, 1 waxy cream
1.BB.3	Middle Preclassic	50% Mars Orange, 50% Jocote
1.BB.4.D1	Middle Preclassic	50% Mars Orange, 50% Jocote
1.BB.5	Middle Preclassic	50% Mars Orange, 50% Jocote
1.BB.6	Middle Preclassic	90% Mars Orange, 10% Jocote
1.DD.1	Middle Preclassic	95% Jocote, 3 Mars Orange
1.DD.2	Middle Preclassic	2 Jocote, 3 Mars Orange
1.DD.3.D5	Middle Preclassic	6 Jocote
1.DD.4.D5	Middle Preclassic, Terminal Late Preclassic?	8 Jocote, 5 Mars Orange, Paso Caballo ware, 1 Quacco Creek?
1.EE.1	Middle Preclassic	60% Jocote, 40% Mars Orange, 1 Chunhinta, 2 Joventud?/Flores waxy
1.EE.2	Middle Preclassic	60% Jocote, 40% Mars Orange
1.EE.3	Middle Preclassic, Classic?	12 Mars Orange, 11 Jocote, 1 ash ware
1.EE.4	Middle Preclassic, Classic?	60% Jocote, 40% Mars Orange, 1 ash ware
1.EE.5.D1	Middle Preclassic	11 Mars Orange, 5 Jocote
1.EE.6	Middle Preclassic, Early Middle Preclassic	50% Jocote, 50% Mars Orange, 4 Cunil ash wares
1.EE.6.D1.A75	Middle Preclassic	Mars Orange
1.EE.7.D1	Middle Preclassic	80% Jocote, 20% Mars Orange
1.GG.2.D4	Middle Preclassic	4 Jocote, 2 Mars Orange, 7 rims of special vessels
1.HH.1	Middle Preclassic, Late Preclassic	30% Mars Orange, 30% Jocote, 30% unknown, 1 unknown rim, 1 waxy ware
1.HH.2	Middle Preclassic	8 Mars Orange, 8 Jocote, 2 unknown
1.HH.3.D5	Middle Preclassic	2 Mars Orange, 1 Jocote
1.HH.4.D5	Middle Preclassic	6 Mars Orange, 5 Jocote
1.JJ.4.D1	Middle Preclassic	50% Mars Orange, 50% Jocote
1.KK.4	Middle Preclassic	60% Jocote, 40% Mars Orange
1.NN.4	Middle Preclassic, Late Preclassic, other Classic?	60% Jocote, 30% Mars Orange, 10% unknown, 1 Sierra, 1 waxy orange, 1 Mt. Maloney?
1.NN.9.D5	Middle Preclassic	2 Mars Orange
1.OO.15	Middle Preclassic	7 Jocote
1.OO.16	Middle Preclassic	5 Jocote, 5 Mars Orange
1.OO.17	Middle Preclassic	4 Jocote
1.OO.20.D5	Middle Preclassic	3 Mars Orange, 1 Jocote

1.PP.1	Middle Preclassic, Late Preclassic, Terminal Late Preclassic, Early Middle Preclassic	60% Jocote, 40% Mars Orange, 1 Sierra? waxy, 3 red waxy (Terminal Late Preclassic not Sierra), 1 Cunil ash ware
1.PP.5	Middle Preclassic	60% Jocote, 40% Mars Orange, 1 Cunil ash ware
1.PP.7	Middle Preclassic	50% Mars Orange, 50% Jocote, 1 Cunil ash ware, 3 Chaccinic
1.PP.8	Middle Preclassic	60% Jocote, 40% Mars Orange, 2 Chaccinic
1.QQ.4	Middle Preclassic	60% Mars Orange, 40% Jocote
1.RR.2	Middle Preclassic	90% Jocote, 10% Mars Orange
1.RR.4	Middle Preclassic	80% Jocote, 20% Mars Orange
1.RR.6.D1	Middle Preclassic, Early Middle Preclassic	60% Mars Orange, 40% Jocote, 1 Cunil ash ware
1.RR.8	Middle Preclassic	60% Jocote, 40% Mars Orange, 2 unknown rims
1.SS.3.D6	Middle Preclassic	70% Jocote, 30% Mars Orange
1.SS.4.D7	Middle Preclassic	60% Jocote, 40% Mars Orange
1.SS.5	Middle Preclassic	95% Jocote, 5% Mars Orange
1.SS.5.D7	Middle Preclassic	80% Jocote, 20% Mars Orange, 3 unknown pieces
2.AA.9	Middle Preclassic and Protoclassic	60% Jocote, 10% Mars Orange, 1 Sarteneja, 3 eroded rims, 1 bolstered base, 2 glossy black sherds
2.AA.10	Middle Preclassic	50% Mars Orange, 50% Jocote
2.AA.11	Middle Preclassic and Late Preclassic	Polvero, Jocote, Mars Orange, other
2.AA.12	Middle Preclassic and Late Preclassic	Sierra and Jocote
2.AA.13	Middle Preclassic and unknown	60% Jocote, 40% Mars Orange, 1 ash ware (Late Classic or Cunil)
2.AA.14	Middle Preclassic and unknown	70% Jocote, 5% Mars Orange, 15% ash wares that may burnt Late Classic ash wares but there is a strong possibility that they are Cunil, 1 waxy ware, 1 Belize Red?
2.W.1	Classic and Middle Preclassic	Ring base, Mars Orange
2.W.3	Middle Preclassic and Classic (Early Classic?)	60% unknown, 20% Mars Orange, 10% Jocote, 1 Classic rim, 1 Balanza
2.W.4	Middle Preclassic and Classic?	40% Mars Orange and Jocote, others look Classic
2.W.5	Middle Preclassic and Classic?	2 Jocote, 2 Mars Orange, 1 brown bowl that looks Classic, unknown
2.W.7	Middle Preclassic	70% Jocote, 30% Mars Orange
2.W.8	Middle Preclassic and Late Preclassic	60% Jocote, 30% Mars Orange, 10% Sierra, Polvero, and other

2.W.9	Late Preclassic and Middle Preclassic	60% Sierra, 15% Mars Orange, 15% Jocote, 10% Other
2.W.10	Middle Preclassic and Late Preclassic	50% Jocote, 30% Mars Orange, 15% Sierra, 5%: Hillbank and other
2.W.11	Middle Preclassic and Late Preclassic	40% Mars Orange, 40% Jocote, 10% unknown, 10%: Sierra and Paila unslipped
2.W.12	Middle Preclassic and Late Preclassic	50% Jocote, 20% Mars, 20% Sierra, 10%: 1 Hillbank, other rims
2.W.13	Middle Preclassic, Late Preclassic, Early Classic, Late Classic	30% Jocote, 30% Mars Orange, 10% Sierra, 20% other bodies, 10%: 3 ash ware, 1 Flor Cream, 1 spiked vessel (see Paila unslipped, Gifford page 109), 2 Balanza
2.W.14	Middle Preclassic	70% Jocote, 30% Mars Orange
2.W.16	Middle Preclassic, Late Preclassic, and Late Classic?	70% Jocote, 30% Mars Orange, 3 Sierra, 1 Flor Cream, 3 ash ware
2.W.17	Middle Preclassic and Late Preclassic	60% Jocote, 40% Mars Orange, 3 Sierra, 2 ash ware with red slip (Mars Orange w/ ash?)
2.W.18	Middle Preclassic and Late Preclassic	70% Jocote, 20% Mars Orange, Pital Cream or Flor Cream
2.W.19	Middle Preclassic and unknown	50% Jocote, 50% unknown
2.W.20	Middle Preclassic and Late Preclassic	70% bodies, 10% Mars Orange, 5% Jocote, 15% Sierra
2.W.21	Middle Preclassic and Late Classic	70% Jocote, 20% Mars Orange, 10% Classic, including 7 ash wares, 1 black ware (Mt. Maloney bowl?)
2.W.22	Middle Preclassic	Jocote?
2.Z.2	unknown	Unknown eroded
2.Z.3	Middle Preclassic and Late Preclassic	95% Jocote, 5% Mars Orange (Rejolla bowl), 1 Sierra-Polvero
2.Z.4	Middle Preclassic	60% Jocote, 40% Mars Orange
2.Z.5	Middle Preclassic	60% Jocote, 40% Mars Orange
2.Z.6	Middle Preclassic	60% Jocote, 40% Mars Orange
2.Z.7	Middle Preclassic	90% Jocote, 10% Mars Orange
2.Z.8	Middle Preclassic, Early Middle Preclassic	60% Jocote, 40% Mars Orange, 2 Cunil ash ware
2.Z.9	Transitional Middle Preclassic, Early Middle Preclassic	70% Jocote and Chaccinic, 20% Mars Orange, Chunhinta (2), Cunil ash ware (1)
2.Z.10	unknown	Unknown
2.Z.11	Middle Preclassic, Late Preclassic	20% Jocote, 10% Mars Orange, Sayab group, Sierra and other non-Middle Preclassic sherds
2.Z.12	Middle Preclassic	70% Jocote, 30% Mars Orange, 3 unknown
2.Z.13	Middle Preclassic and Late Preclassic	70% Jocote, 25% Mars Orange, Polvero, Sierra, 1 ash ware, pre-fired, incised waxy ware

2.Z.14	Middle Preclassic and unknown	70% Jocote, 25% Mars Orange, possibly Sierra or another brown like Protoclassic San Antonio
2.Z.15	Transitional Middle Preclassic to Late Preclassic	70% Jocote, 25% Mars Orange, 2 Joventud, 1 Pital, 1 Sierra, large Jocote, other large jars
2.Z.16	Middle Preclassic	largely Jocote
6.E.5	Terminal Late Preclassic, Middle Preclassic	Mars Orange, Polvero, Flor Cream, double slip Sierra, lip flange (red on cream), ash foot, Hillbank, Society Hall (Sierra Red Variety), Gale Creek Redwares
6.E.6	Early Middle Preclassic, Middle Preclassic, Late Preclassic	Jocote, Mars Orange (spout), Sierra red, Polvero, Flor, lip flange, Cunil ash ware, Society Hall (1)
6.E.7	Late Classic	Ash ware, black slip sherd
6.F.4	Middle Preclassic, Late Preclassic, and Samal	Sierra, ash ware, early Mt. Maloney bowl, Mars Orange
6.F.5	Samal, Middle Preclassic, and Late Preclassic	Mars Orange, Sierra, Lateral ridge
6.G.2	Classic and Preclassic	Jocote, Mars Orange, Late Classic ash ware, Classic black slip
6.H.5.A103	Hats' Chaak or Tsak'	80% Cambio unslipped incensario pieces, probably parts of two different incensarios that have been identified in 6.H.5.A103, A104, and A105, 5 pieces possibly from incensario lid, 11 pieces from slab foot Belize Red vessel 6.H.5.A106, 44 pieces from out-curving Belize Red dish 6.H.5.A106
6.H.4.A104	Hats' Chaak or Tsak'	90% Cambio unslipped incensario pieces, probably parts of two different incensarios that have been identified in 6.H.5.A103, A104, and A105, Belize Red/Chunhuitz incurving vase (9), Belize Red vessel same as 6.H.5.A106 (11)
6.H.5.A105	Tsak', Hats' Chaak or Tsak'	80% Cambio unslipped incensario pieces, probably parts of two different incensarios that have been identified in 6.H.5.A103, A104, 105, two different incensario bases identified, pedestal base (3), ring base (2), lid (2), Alexander unslipped rim (1), 5 pieces of a Belize Red vessel probably from 2 Belize Red vessels identified in 6.H.5.A106, thin unslipped calcite vessel (26)
6.O.10	Middle Preclassic, Late Preclassic	Sierra, Polvero, sandy ware strap handle, Mars Orange, Gale Creek red

Table 1: 2004 Ceramic Analysis

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PRELIMINARY TESTING AND EXCAVATIONS OF THE NORTHEAST GROUP, 2004: OPERATIONS 8 AND 9

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PURPOSE

Operations 8 and 9, carried out at the Northeast Group focused on the systematic coverage, sampling, and excavations of both on and off-mound areas. Located approximately 1km from the Chan Central Group (C-001), the Northeast group is composed of six distinctive mound clusters (#1-6) of variable size and spatial organization (Figure 1). Based on surface characteristics and overall spatial cohesion, the Northeast Group approximates a “neighborhood”—a focus of intracommunity interaction maintained through social, economic and ritual activities. Although interpretations of rural and commoner populations often focus on the integrative aspects of these communities, few studies explore the process of social differentiation and identity formation. Unfortunately, rural populations continue to be equated with folk societies—geographic and economic isolates, constrained by tradition, custom, and kinship (Redfield 1950; Mintz 1953). In recent years, archaeologists have criticized these assumptions as oversimplifications of people, their lives, and activities (Iannone and Connell 2003; King and Potter 1994; McAnany 1998; Pyburn 1997).

Investigations in communities in the Upper Belize River Valley suggest that rural communities were, in fact, loci of intense social and economic heterogeneity (Ashmore et al 2004; Robin 2003; Yaeger 2000, 2003). At the site of San Lorenzo, Belize, for instance, households associated with feasting exhibited more elaborate architectural and masonry construction, as well as increased access to incense burners and decorated serving vessels. At the site of Cerén, power was defined by the control and centralization of ritual in Structure 12 (Brown and Gerstle 2002: 102; Simmons and Sheets 2002: 11). Similarly, at Colha, occupation specialization and ritual participation opened the door for the formation and elaboration of community social identities (King and Potter 1994: 82-83). Since people vary in their economic strategies, status positions, occupations, and access to resources, this leaves little room for social homogeneity. As a microcosm for the interactions of the Chan community, investigations at the Northeast Group provide a discrete testing ground for understanding social relations, both within and outside the settlement unit of the neighborhood. Specifically, how were differences in social identity and status expressed by community members? And how do these differences manifest themselves within the settlement unit of a neighborhood? In order to examine these questions, research strategies were based on an intensive post-hole and test-pitting program, part of Phase 1 investigations to understand broader chronological sequences and distribution of activities and behaviors across the neighborhood.

EXCAVATION METHODS

Posthole testing (Operation 8) was conducted in accordance with the strategies previously outlined by Robin for Chan Noohol (1999) as well as those conducted at the site core during the 2004 season. Given the nature of site abandonment, material remains and evidence associated with structures are often carried away or altered, obscuring the actual practices and activities

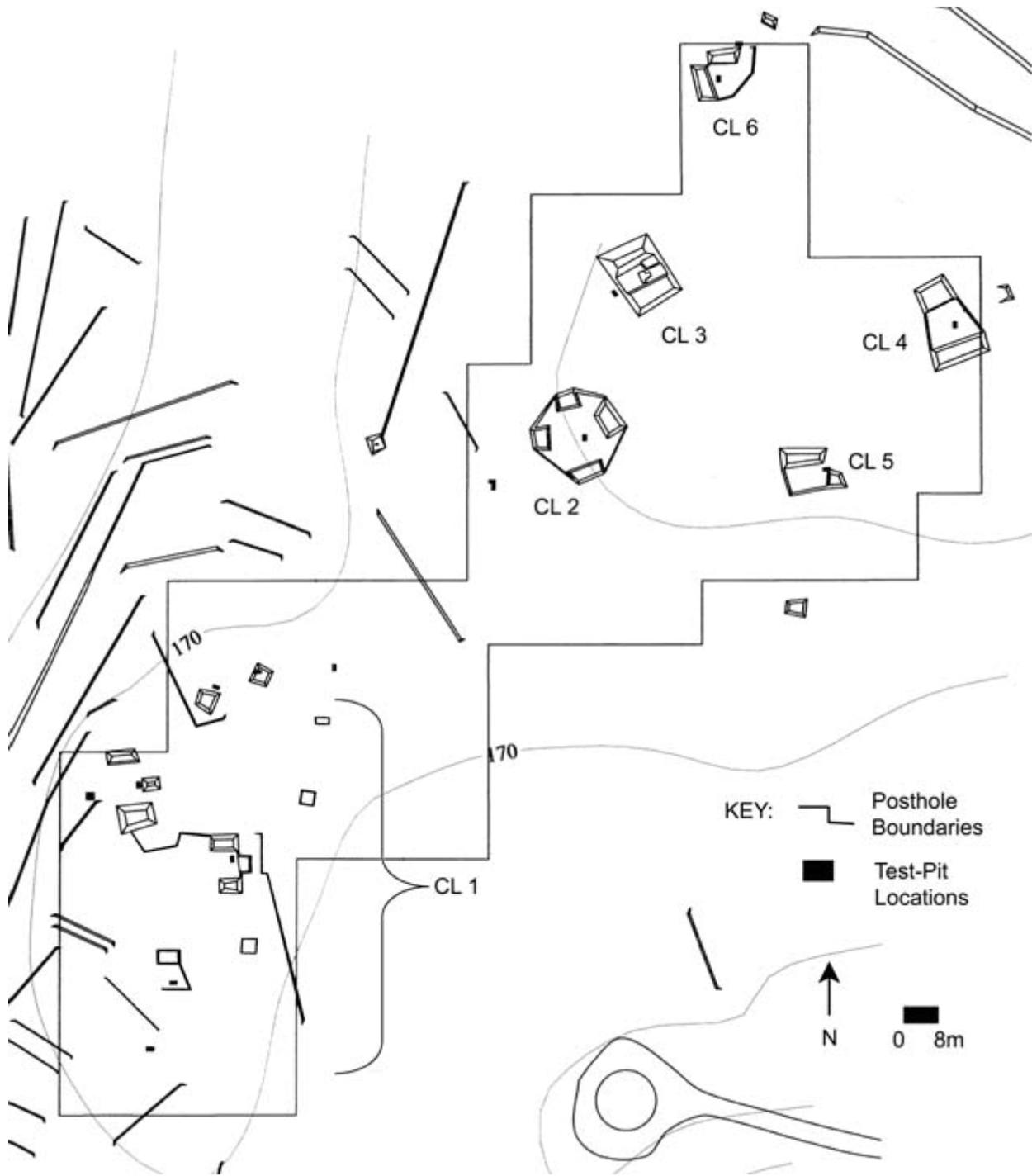


Figure 1: Overview of Northeast Group

conducted in interior spaces. Post-hole testing, as such, was invaluable for accessing the distribution, variation, and density of artifact scatters, house-lot boundaries, as well as the identification of features not immediately visible (see Robin 1999, Robin et al. 2002). As a byproduct of transect survey, we identified six structures and two chultuns previously undocumented. Posthole tests were placed at 6-m intervals along north-south transects laid in with tape, compass, and total station. While transects incorporated known architecture, the majority of these postholes were skipped, except those within potential patio areas (see Figure 1). The following information was collected from each posthole: distance or location in reference to visible geographic features or known structures, depth to bedrock (70cm if bedrock was not located), number of stone inclusions, and quantity and type of artifacts. Four ounce soil samples were also collected at 10, 30, and 50cm depths to provide information on the distribution and concentration of phosphorus levels (Middleton et al. 1998; Terry et al. 2000). Every fifth posthole and those containing 30 or more artifacts were more closely examined in respect to stratigraphy, munsell colors, and artifact location (when present). Of the 812 postholes completed, 46% contained evidence of cultural remains and 13 of these were considered productive; Op 8.A.47, 105, 252, 354, 358, 359, 367, 479, 520, 557, 559, 660, and 785 (Table 1). Posthole testing was particularly productive around Cluster 3, where midden materials were recovered in relatively high concentrations along the northern, western and eastern sides of Cluster 3.

Op	Subop	Lot	Depth	# Stone	Bedrock?	# Samples	# Ceramics	# Lithics	# Other	Total Artifacts
8	A	47	39	0	Yes	2	36	4	0	40
8	A	105	70	1	Yes	3	56	0	0	56
8	A	252	20	0	Yes	1	29	3	0	32
8	A	354	33	3	Yes	2	90	3	0	93
8	A	358	70	16	Yes	3	41	2	0	43
8	A	359	53	10	Yes	3	104	3	1 slate	107
8	A	367	28	1	Yes	1	30	1	0	31
8	A	479	92	0	Yes	3	161	6	1 slate	167
8	A	520	40	2	Yes	2	31	2	0	33
8	A	557	45	0	Yes	2	45	1	0	46
8	A	559	62	4	Yes	3	34	2	0	36
8	A	660	26	0	Yes	1	40	2	0	42
8	A	785	43	0	Yes	2	29	9	0	38

Table 1: Summary of Productive Postholes

Test-pitting (Operation 9) was conducted in two parts: 1. to expand investigations near productive post-holes and 2. to identify the construction history and chronology of known architectural groups (Figures 2 & 3). Of the 13 productive post-holes identified, six, (8.A.105, 252, 354, 367, 479, 785), were expanded into 2x1m test-pits to try and identify the function and extent of the feature. These included Op 9.A (8.A.105) located 16m to the south of M7, Cluster 1; Op 9.G (Op 8.A.252) located 16 meters to the east of Group 3, Cluster 1; Op 9.B and C (Op 8.A.354) located two meters to the west of Group 1, Cluster 1; OP 9.I (Op 8.A.367) located 24

meters southwest of Cluster 2; Op 9.N (Op 8.A.479) located on the western side of Cluster 3; and Op 9.T (8.A.785) located next to the northeast corner of Structure 2, Cluster 6 (see Figure 2). With regard to Clusters 1 through 6, test-pits were placed into the patio areas where possible. Three 2x1m test-pits were opened in Cluster 1: Op 9.D in the patio of M7, Op 9.E directly west of M4; and Op 9.F to the south of M1. Clusters 2, 4, and 5 were more tightly arranged than Cluster 1, allowing a single 2x1m test-pit to be set-up in each corresponding patio area: Cluster 2-Op. 9.L, Cluster 4-Op 9.Y, and Cluster 5-Op 9.U (SE corner of M1). Clusters 3 and 6, however, identified features during excavation and as a result subsequent test-pits were opened. For Cluster 3, Op 9.M. was expanded primarily to the west and to the south with suboperations O (1x 2m),P (2x1m), Q (0.50 x 1.0m), and R (0.30 X 1.0m). Suboperation S was opened to identify the extent of Burial 1 (2.3m NS x 1,0 m EW), located at the base of excavations in Cluster 3. Op 9.V (2x1m) was initially placed in Cluster 6, then expanded to the north (suboperation W-1.5 x1m) when Burial 2 was identified. Burial 2 was excavated as a separate suboperation, suboperation X.

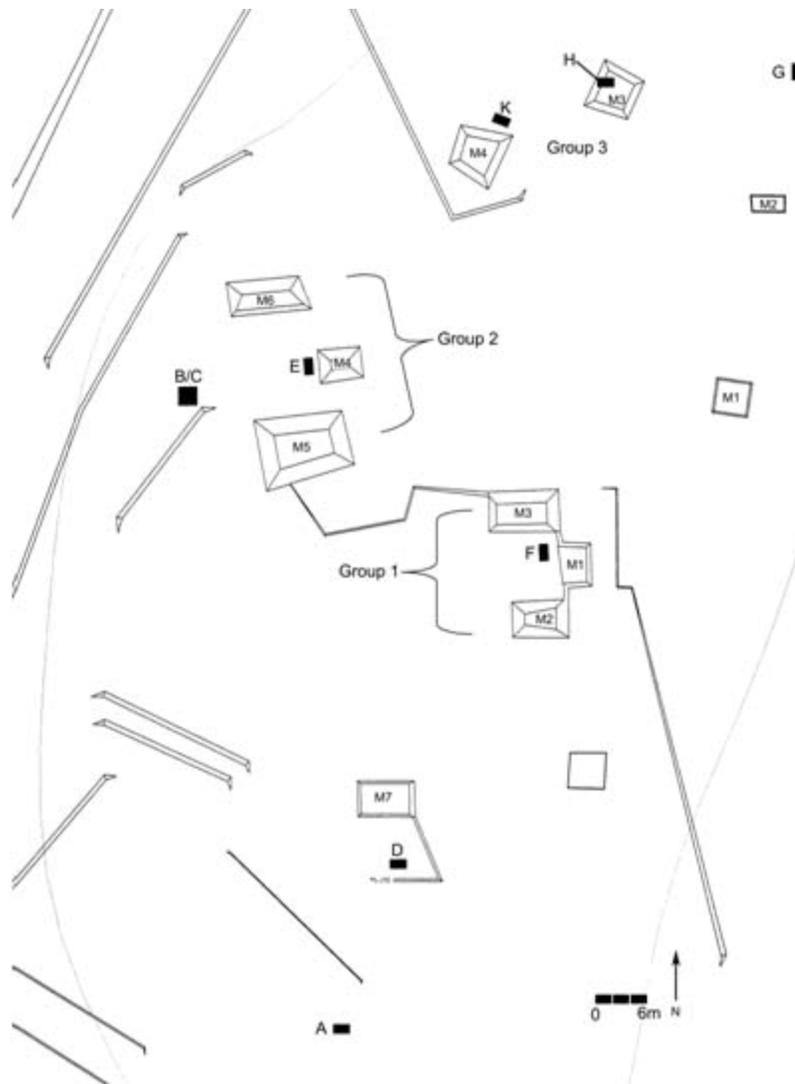


Figure 2: Suboperation Locations for Cluster 1

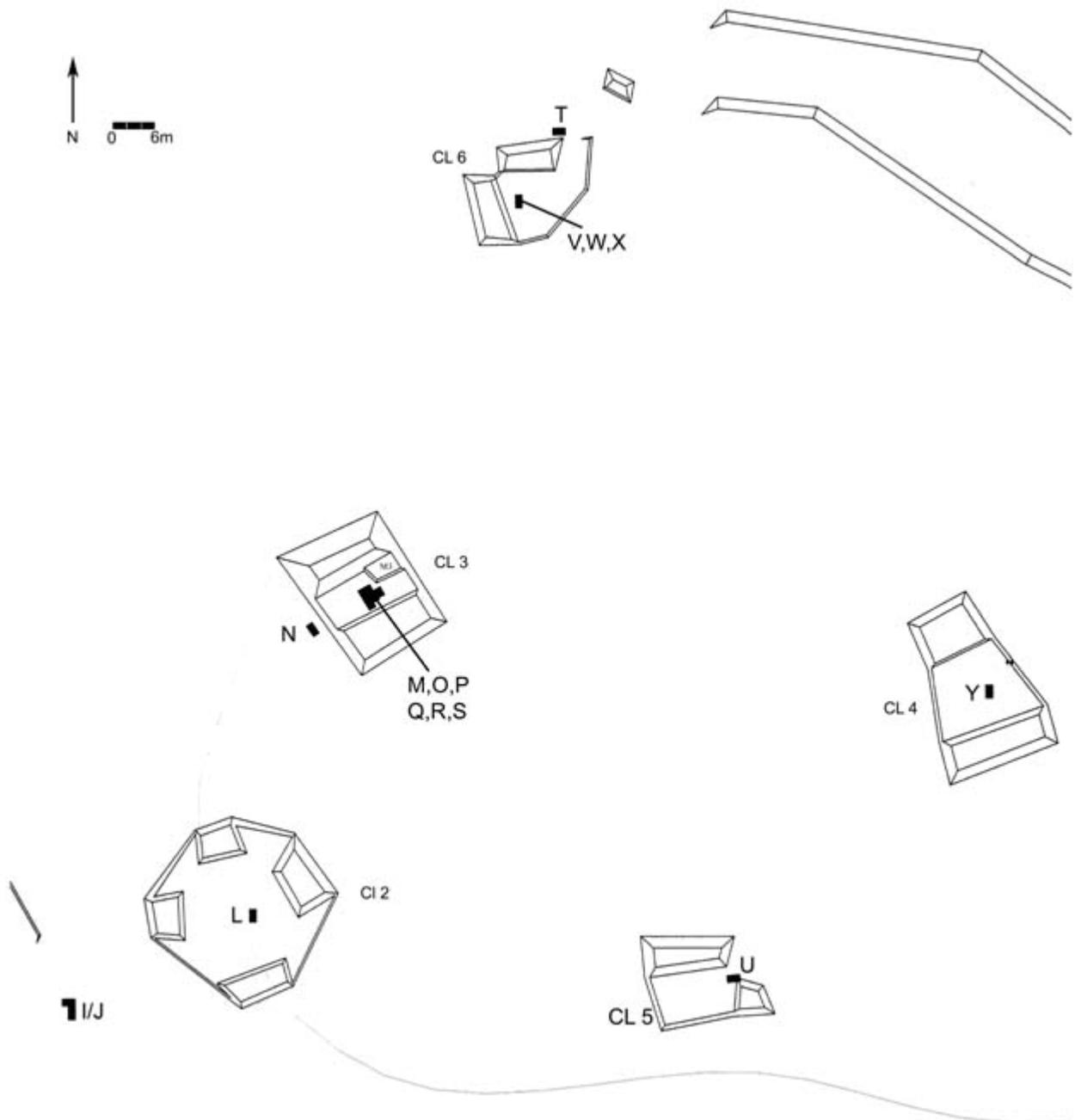


Figure 3: Suboperation Locations for Clusters 2 through 6

EXCAVATION RESULTS

General Stratigraphic Sequence

Stratigraphy in Operation 9 is characterized by a relatively short and simplistic depositional history, confined primarily to the Late Classic Period. Although there was little stratigraphic depth, three areas, Op 9.B/C, and excavations in Clusters 3, 5, and 6 exhibited more complex construction histories and the identification of Special Deposits 1 and 2. For the purpose of this report, I will briefly summarize the stratigraphic sequences of each excavation area and address additional features when appropriate.

Cluster 1

Group 1 (M1, M2, M3)

Humus 1, located in the surface root zone, covered the entirety of all Operation 9 excavations (heretofore skipped in subsequent summaries). Humus 1 is a 10YR 2/1 silty loam matrix with small limestone and gravel inclusions and numerous roots and rootlets. Humus 1 overlies Fill 6, a 10YR 3/1 dark brown silty loam construction fill with small to medium limestone inclusions. Underlying Fill 6 was Fill 7, the penultimate construction fill, a 10YR 4/1 medium to light brown silty loam soil with dense concentrations of medium limestone inclusions. Because Fill 6 peeled away from Fill 7, this suggests that the top of Fill 7 may have been a previous living surface although no plaster was recovered. As excavations neared bedrock, limestone inclusions increased in density and size although there was no noticeable break in stratigraphy.

Group 2 (M4, M5, M6)

Underlying Humus 1 is Fill 4, a 10YR 3/1 dark brown silty loam with small to medium limestone inclusions. Although no plaster was identified, this has been identified as the ultimate construction phase of the Group 2 patio area. A small piece of jade, the only one identified from the Northeast Group, was recovered in the humic layer. Fill 4 overlies Fill 5, the penultimate fill layer, a 10YR 4/1 brown loam soil with relatively dense medium limestone inclusions. Like Group 1, inclusion size and density increases as excavations neared bedrock. No obvious floors or architectural features were identified.

Group 3 (M3, M4)

Because no discernable patio area connected M3 and M4, subop H (2x1m) was placed at the top of M4. At the base of Humus 1, we identified what appeared to be the southwest corner of a small structure, dividing the subop into two distinct fill contexts, Fill 8 and Fill 9. Fill 8 was the interior construction fill of ultimate platform surface. Characterized by a 10YR 3/2 loam matrix with large and medium-sized limestone inclusions, Fill 8 was separated from the exterior platform fill, Fill 9, by a line of large flat, cut stones that bisected the subop. Fill 9 is a 10YR 4/2 light brown loam with small and medium limestone inclusions. Both Fills 8 and 9 overlie bedrock. Once Fill 8 was removed, we realized that the line of cut stones was composed in part

by large chunks of shaped bedrock, still attached to the bedrock surface. Further excavations are needed to clarify the construction history of M4 and determine if these fill contexts actually constitute two distinct fill episodes or simply one.

Because few diagnostic sherds were recovered from these excavations, an additional test-pit, suboperation K, was opened against the northern edge of M3. Stratigraphy in this subop is considerably more complex than elsewhere in Cluster 1, comprising nine stratigraphic sequences. Underlying Humus 1 was Fill 10, a 10YR 3/1 medium brown loam matrix with small limestone inclusions. At the base of lot 2 in Fill 10, we identified 4 cut pieces of limestone lying horizontally within the southern half of the subop. Collapse 2 matrix was composed primarily by a mixture of medium faced and unfaced stones. What little soil existed in the collapse was a light brown (10YR 6/3) sandy loam matrix. Underlying Collapse 2 was Fill 40, a layer of soil and small limestone inclusions, confined to the southeast corner of the subop. Directly beneath this was Fill 41, a loam (10YR 7/3) construction fill also isolated to the southeast corner. Underlying Fill 41 was Fill 13, a 10YR 7/3 loam soil with sascab inclusions and low frequency of limestone inclusions and directly overlies bedrock. Fill 12, adjacent to Fill 40, was a 10YR 7/3 loam construction fill with few small limestone inclusions. Fill 14 which underlies Fill 12 was a subsequent pocket of limestone fill containing medium and large limestone inclusions and soil darker than the adjacent sascab. Because these pockets of fill were interspersed among sterile sascab, these appear to be part of a series of discrete fill episodes used to raise the level of bedrock surface in relation to Structures M3 and M4.

M7

Excavations identified M7 as a single phase construction, characterized by two distinct fill episodes, Fill 2 and 3. Fill 2 which underlies Humus 1 was characterized by a 10YR 2/2 silty loam soil with medium limestone inclusions. Fill 3 underlies Fill 2, a 10YR 4/2 loam and clay loam matrix with medium-sized limestone inclusions. Although Fill 2 and 3 were identified as distinct construction episodes, there was no obvious break between the two layers. As noted in excavations for Group 1 and Group 2, slight changes in soil color and texture as you near bedrock may have been a natural transformation rather than a distinctive cultural break.

Cluster 2

Excavations in Cluster 2 identified three distinct contexts: Collapse 5, Fill 15, and Fill 16. Collapse 5 was characterized by a layer of medium-sized pieces of limestone lying horizontally at the base of Humus 1. Comprised of both faced and roughly cut stones, soil excavated as part of Collapse 5 is a 10YR 3/2 dark brown silt loam. Stones in this context do not appear to be part of a structure, although their central location would suggest otherwise. Underlying Collapse 5 is the ultimate construction fill of the patio area, Fill 15, a 10YR 3/2 silty loam soil. Penultimate construction fill, Fill 16 was characterized by a 10YR 3/3 medium brown loam soil and medium limestone inclusions. As we began to move through this fill context, we hit bedrock in the northern half of the subop while the southern half continued down. Since this fill continued down for an additional 40cm in the southern half, we believe that Fill 16 was used to level out areas of undulating bedrock.

Cluster 3/Special Deposit 1

Cluster 3 has the most complex depositional history this far identified at the Northeast Group. As one of the more visually noticeable groups at the site, this is not surprising. While removing Humus 1 (Lot 1), a line of cut stones (Wall 3) was identified in the eastern 1/3rd of subop M. At the base of the lot, it was clear that this was a single course making up the eastern edge of the interior patio space, connecting structures M1, M2, and M3. Adjacent to this retaining wall was Fill 18, a 10YR 3/2 silty loam with small limestone inclusions. As the ultimate construction fill (Phase 1) of Cluster 3, Fill 18 would have been the final living surface, most likely underlying the construction of M1, 2, and 3. Underlying Fill 18 are two major sequences of construction; one related to the earliest construction (Phase 4) of Cluster 3 and the other to the later addition of Special Deposit 1 (Phase 3) and the extension of the platform to the south (Phase 2). In its initial stages, Cluster 3 appears to have been considerably smaller than in its ultimate construction, possibly only half of the area and height that is currently visible. Phase 4 includes Fill 23, Fill 24, and Wall 2. Fill 24, which underlies Fill 18, is a 10YR 6/3 loam matrix with small and medium limestone inclusions. Fill 23, a 10YR 5/3 loam fill, was identified as part of the fill sequence associated with Wall 2, which overlies bedrock. Although Fill 23 and Wall 2 have been identified as underlying Fill 24, it appears that they may be part of the same construction episode—the construction fill for Wall 2, identified as the southern façade of the earliest platform construction. Excavations in Fill 23 to the northwest of Special Deposit 1, recovered a number of well-preserved human cranial fragments indicative of a second crypt. Because only a small fraction of this burial was identified, it was determined that further excavations would wait until the following year.

The second major phase of construction (Phase 2) underlying Fill 18, was Fill 19. Fill 19 was a 10YR 4/2 construction fill, characterized by medium to light brown silty loam and medium limestone inclusions. This fill context was particularly noticeable given the dramatic increase in inclusion density and size in comparison to Fill 18. Fill 20 which underlies Fill 19, is similar in composition, although soil texture and color changed slightly (10YR 5/2 loam). Although inclusion sizes are generally larger in this last context, Fill 19 and 20 are nearly impossible to distinguish in section drawings. Underlying Fill 20 was Fill 21, a 10YR 4/2 construction fill that was used to fill in the area around Special Deposit 1. Characterized by fine loam and compact, small limestone inclusions, Fill 21 was distinct from overlying Fill 20. During the course of excavations an additional fill context, Fill 22, which directly overlies bedrock, was separated out from Fill 21. Although described as underlying Fill 21, the only difference between the two contexts is the slightly lighter color of the later. In retrospect, these may have been part of the same fill context deposited in the interment of Special Deposit 1. Of prime importance in both contexts was the dramatic increase in artifact density and quality. While density was at least two or three times higher than that of overlying Fill 18, the preservations of artifacts were considerably better than anywhere else in the neighborhood. These included considerably larger pieces and higher counts of pieces with rims, slip, and designs (Figure 4). Four special artifacts were identified: Special Artifacts A4 (stone pendant), A8 (Mt. Maloney Bowl Fragments), A9 (Jar Fragments), A10 (Mt. Maloney Bowl). Although these artifacts in themselves are not spectacular, their large size, relative completeness, overall preservation, and placement near Special Deposit 1, suggest otherwise. Two pieces not immediately identified during excavations are worth noting: three well-preserved fragments of Benque Viejo Polychrome and one Martin's Incised Cylinder Vase Fragment (Figure 5). Although no floor was identified, the abrupt change



Figure 4: Fill 20 and Fill 21 Assemblage

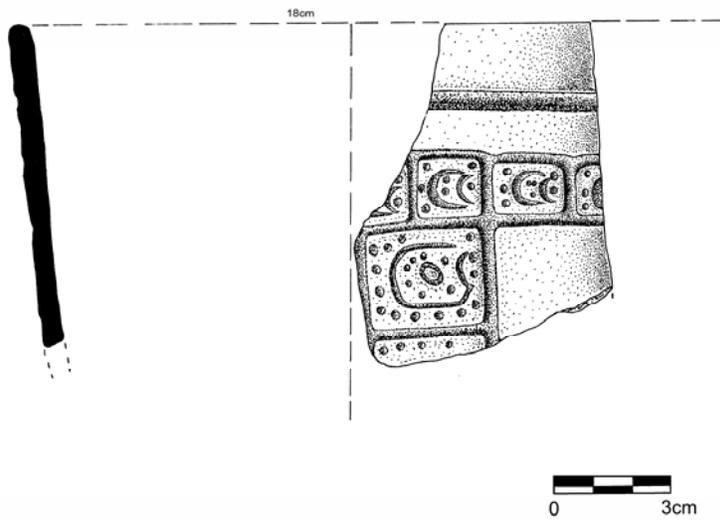


Figure 5: Martin's Incised Cylinder Vase Fragment

from Fill 18 to underlying fills does intimate that this may have been the penultimate living surface (created after the capping of Special Deposit 1 and the southward extension of the platform). As well, a number of fragments were placed on top and against the capstones and sidewalls of Special Deposit 1. Although these were all fragmentary remains, they may have been part of ritual fill or caching conducted during the interment of the burial.

Although only three courses of cut stones were identified as Wall 2, it appears that this wall may have been collapsed or purposely dismantled during the construction of Special Deposit 1 (Figure 6). As a result, the height of the wall may have been considerably higher coinciding with the top of Fill 24. At a later point, Wall 2 was partially dismantled to place Special Deposit 1, Burial 1 (Phase 3). Lying directly on bedrock, Burial 1 was a stone lined crypt approximately 2.3m (NS) by 1m (EW) in size. Special Deposit 1 is comprised of four contexts: Surface 1, Wall 1, and Fill 30 and Fill 31. Surface 1, comprised of large dressed capstones, was placed horizontally on top of Wall 1, the deposit's primary retaining wall. Once Surface 1 was removed, it was immediately clear that the head of the burial was oriented North-South, a common burial pattern in the Upper Belize River Valley. The deposit itself was divided into two fill contexts associated with two relatively distinct interments. Fill 30 was a 10YR 5/2 loam fill with few small limestone inclusions. Similarly, Fill 31, which underlies Fill 30, was a 10YR 5/3 light brown loam with small limestone inclusions. Although these two contexts were relatively homogenous, they were split based on their association with individual remains. Fill 30, the ultimate fill of Special Deposit 1, contained Individual 1, a secondary interment placed on top of the primary burial. This assessment was based on the general disintegration of bone and scattering of long bones throughout the deposit, suggesting this was an offering rather than the primary context. Fill 31 was associated with Individual 2. This individual was considerably more intact than Individual 1; including fragments of skull and long bones that appeared to be in a relatively articulated, extended position (Figure 7). The large majority of special artifacts identified this field season were recovered from Special Deposit 1 (Special Artifacts A11-25), including fragments of ceramics, lithics, and one obsidian prismatic blade.

Cluster 4

Although current maps indicate that a patio area exists between M1 and M2 of Cluster 4, there are no discernable architectural features supporting this. Because the cluster is located at the top of a hilltop, it's difficult to distinguish between terrace edges and natural limestone outcrops. Posthole testing revealed this potential discrepancy as there was no evidence indicating construction fill or the presence of plaster, further corroborated by excavations. Soil underlying Humus 1 was identified as Fill 38, a 10YR 5/3 silt loam with few small limestone inclusions. Although this may have been a soil construction fill, few artifacts were recovered and its stratigraphy is completely different from any other patio area excavated.

Cluster 5

Unlike the majority of Cluster's in the Northeast Group (except Cluster 3), Cluster 5 appears to have at least two distinct construction phases. At the base of Humus 1, excavations identified a well-cut square stone in the southeast corner of the subop. Given the subops close proximity to M2, it was clear that this was the northwest corner of M2. Directly underlying this stone, we identified Fill 32, the ultimate patio construction, characterized by a 10YR 3/2 dark

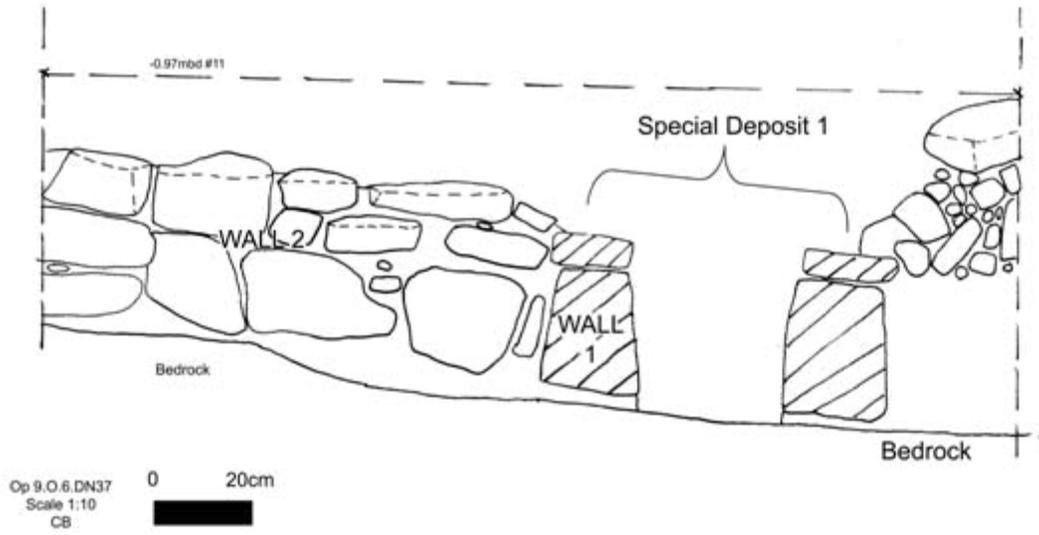


Figure 6: Northern Section of Wall 2 and Special Deposit 1



Figure 7: Special Deposit 1, Individual 2

brown silty loam soil and low density of small limestone inclusions. Underlying this fill context, there was an abrupt change in soil color, texture, and inclusions size. As well, it was clear in section, that Fill 32 and Fill 33 were separated by a number of flat stones. Given the abrupt break between these two contexts, I believe this may have been the earliest living surface of the patio area. Although plaster was not recovered, numerous flecks of white sascab characterized the topmost surface of Fill 33, suggesting that this may be the construction fill underlying a plaster floor. Fill 33 is a loam matrix, notable for a dramatic increase in inclusion size and artifact density. Munsell color ranges from 10YR 5/2 to 4/2 to 3/1, darker in higher lots and lighter in those closer to bedrock. More excavations are needed in both structures to determine the overall history of the group. Fill 34, which overlies bedrock, was defined as a separate construction episode from Fill 33. Like Cluster 1 and 2, it's difficult to explicitly distinguish between contexts. Although inclusion density decreases in Fill 34 context, color and soil texture are similar. Because Fill 34 is limited to a deeper area of bedrock, it may have been used to fill in this uneven surface.

Cluster 6/Special Deposit 2

Initial excavations in Cluster 6 began with an investigations of a productive posthole (Op 8.A.785) near the northeast corner of M2. Although the artifact composition mimicked those identified in other productive midden features, excavations indicated that material remains were more likely the result of collapse than refuse collection or other cultural activities. Underlying Humus 1 was Fill 27, a 10YR 2/1 dark brown silty loam with small limestone inclusions between 4-10cm in size. Underlying this was Fill 28, a 10YR 3/1 dark brown loam characterized by an increase in the density and size of limestone inclusions. The final fill sequence was Fill 29, which directly overlaid bedrock. Fill 29 was most likely a construction fill used to level out the sloping bedrock surface. It was characterized by a 10YR 3/2 medium and dark brown silty loam with smaller limestone inclusions. Although this material was later defined as collapse from M2, the characteristics of these contexts were not typical of collapse observed elsewhere at the site or construction fill contexts consistent with other patio excavations.

Additional excavations in Cluster 6 can be divided into two parts: single phase patio construction and the interment of Special Deposit 2, Burial 2. The patio area itself was relatively shallow, no more than 30cm in depth. Underlying Humus 1 was a single fill context overlying bedrock, Fill 35, a 10YR dark brown silty loam with small limestone inclusions. However, as we came down to the base of Lot 1 (Humus 1), there was evidence of capstones lying horizontally on the bedrock surface. Once Humus 1 and Fill 35 were removed, it was clear that these capstones had collapse inward, displacing them from their original placement on top of a low retaining wall (Wall 4). In comparison to Special Deposit 1, the burial structure was poorly preserved and poorly constructed.

Excavations of Special Deposit 2 were treated as distinct from those in subop U and W. The deposit itself was excavated as a separate subop, Suboperation X in order to maintain tighter stratigraphic control of materials and samples removed from the burial. Special Deposit 2 was comprised of Surface 2, Wall 4, Fill 36 and Fill 37. The position of capstones (Surface 1), although disturbed, suggested another North-South orientation for the burial. Although Surface 2 appeared to be sitting on top of a series of rocks identified as Wall 4, it was difficult to discern whether Wall 4 was truly a retaining wall of the special deposit or simply more collapsed capstones. Fill 35, the ultimate fill, was a 10YR 3/2 medium-brown silty loam with few, small

limestone inclusions. From this context, we recovered poorly-preserved fragments of at least one individual. Very little bone was left intact; among them two molars, a canine, and fragments of long bones. One special artifact (A31) was identified from the burial, a piece of round worked shell (Figure 8). Once these fragments were mapped and removed, it was clear that only the southern most portion of the bedrock had been modified. The remainder of the cist took advantage of the natural sloping bedrock, creating a cavity in the bedrock approximately 1.4m (NS) x .5m (EW). Once the remaining fill was removed, we identified a second, large cut in the bedrock (Figure 9). This fill was defined as Fill 37, a 10YR 5/2 compact loam with very few inclusions. No artifacts were recovered from this fill. Because of its round shape and overall depth (approximately 37cm), this may have been a posthole, filled in at a later date to create an appropriate space for Special Deposit 2.

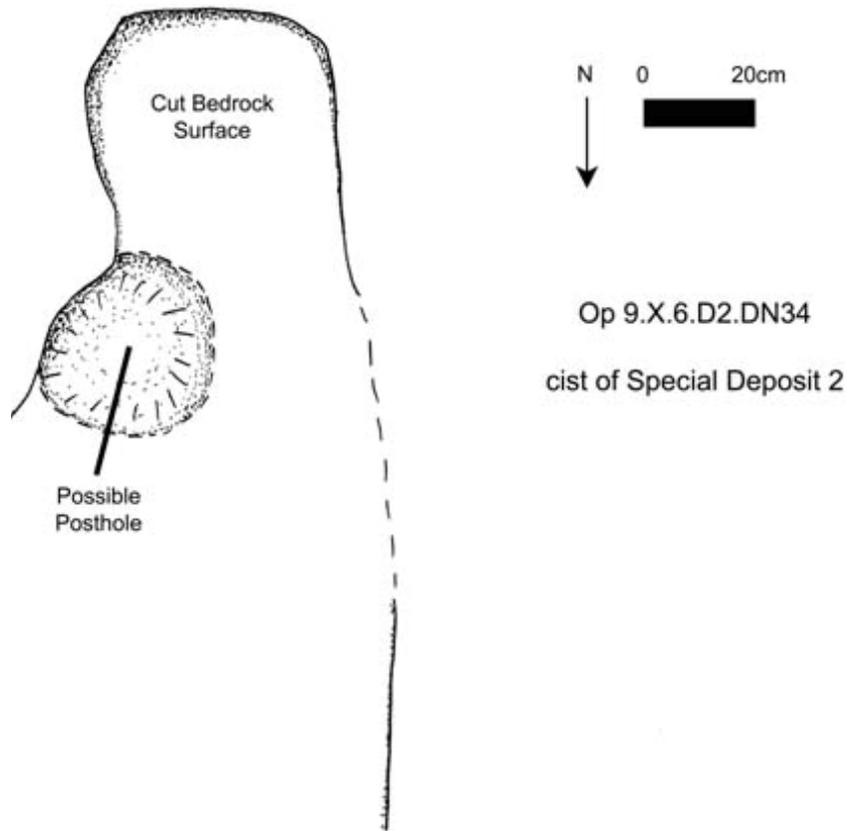


Figure 8: Base of Special Deposit 2, Burial 2

Midden 1

Midden 1 (Suboperation A) was identified by a productive posthole test, Op 8.A.105, approximately 16 m to the south of M7 in Cluster 1. Underlying Humus 1 was Refuse 2, the primary lense of Midden 1. This was identified at approximately 23 cm below the ground surface. Excavations in the lot overlying Refuse 2 were identified as Mixed 5, mixed lots of Humus 1 and Refuse 2, since there was no clear break between the two. Refuse 2 is a 10YR 3/2 clay loam soil with small limestone inclusions. Although not as productive as other middens excavated at the Northeast Group, Refuse 2 produced a relative dense lens of ceramic and lithic debris. Underlying Refuse 2, we identified a second context, Refuse 4, a 10YR 4/2 clay loam characterized by limestone and sascab inclusions. Artifact density began to taper off in this context, suggesting that this was the earliest lens of midden debris overlying bedrock. Although this midden is closest to M7 of Cluster 1, there is a small mound of dirt approximately 50cm north of the test-pit. If this is a small structure, than these remains may be collapse or general debris rater than an intentional midden.

Midden 2

Midden 2 was identified from posthole Op 8.A.354, identified directly behind the patio area of Group 2, Cluster 1. Initially, a single 1x2m test-pit (suboperation B) was placed to identify the extent of the feature. However, the complexity of this feature required a second 2x1 be opened to the north (suboperation C). In comparison to other midden excavations, this was by far the most productive feature excavated, given the diversity and amount of artifacts recovered; ceramics, lithics, groundstone, incensario fragments, and obsidian prismatic blades. Although identified and interpreted as a midden, final conclusions are still unclear given the complex stratigraphy of the area and its close proximity to a terrace wall.

Refuse 1 was a 10YR 2/2 silt loam with small limestone inclusions, underlying Humus 1. It appears that part of this refuse is contained within the humic zone as well, probably a result of root activity and bioturbation. Underlying Refuse 1 is Collapse 1, a layer of stone and soil that presumably collapsed from a nearby terrace wall. The soil recovered from this context was a 10YR 2/1 loam containing both rubble and faced stones, between 6 and 25cm in size. Like the overlying refuse context, this collapse contains a relatively dense assortment of artifacts. While this context has been designated collapse, it may also reflect a distinct refuse episode in which lager rocks were disposed of alongside trash. Collapse 1 peeled away from underlying Refuse 3, a 10YR 3/2 silt loam with small and medium limestone inclusions. It was easily differentiated from the overlying collapse by a relative decrease in larger limestone inclusions as well as a general decrease in artifact density. At the base of Refuse 3 context, we identified special artifact, A.1, a partially mineralized piece of wood lying a the base of the lot directly on bedrock. While Refuse 3 overlies bedrock, it also overlies Fill 1, isolated to the western 1/3rd of the subop. Fill 1, typical of construction fills identified in previous excavations, was presumably used to fill in the large area of cut-bedrock. Fill 1 is a 10YR 4/2 gray-brown clay loam matrix with small to medium stone inclusions.

Midden 3

This midden located in close association with Group 3 of Cluster 1 is a shallow midden approximately 30cm in depth. This midden was contained within two contexts-Humus 1 and Refuse 5. Refuse 5 was a 10YR 2/1 dark brown silty loam with small and medium limestone inclusions that overlaid bedrock. Like Midden 2, there were high densities of artifacts in both Humus 1 and Refuse 5. Although artifact density dropped off closer to bedrock, a moderate amount of material continued to be recovered. Primarily, these included jar and bowl forms, although a few fragments of incensarios were also identified (Special Artifact A3-molded nose).

Midden 4

Midden 4 was identified from posthole Op 8.A.367, in relative proximity to Cluster 2. While artifact density was not nearly as high as in Middens 1, 2 and 3, its isolation from any other visible features suggests that it was most likely an area of refuse debris. Midden 4 is comprised primarily of Refuse 6, a dark brown 10YR 2/1 silty loam soil with concentrations of small and occasionally medium limestone inclusions. Refuse 6 was a shallow lense of midden, at most 32cm in depth even in areas where bedrock was sloping. Artifacts recovered included ceramics and lithics only.

Midden 5

Midden 5 was found in association with posthole Op 8.A.479, along the western edge of Cluster 3. This appears to be only a small part of a large and potentially continuous midden located along the perimeter of this architectural group. Not only was this midden incredibly productive but it also appears to be a thick lense of material, suggesting that it may have been in use longer than the other middens. This is unsurprising given that Cluster 3 also appears to have the longest chronology and most complex construction history in the neighborhood. Refuse 7 was identified as the ultimate refuse lens underlying Humus 1. Refuse 7 was a 10YR 3/1 dark brown, silty loam with small limestone inclusions. Underlying this, we identified Refuse 8, the primary and densest concentration of materials in the midden. Characterized by dark brown (10YR 3/2) silty loam and small limestone inclusions, Refuse 8 was only distinguishable from the overlying fill context by a concentration of small white sascab flecks. Refuse 9 was identified as a separate midden fill, although it may have been a mixed lot between Refuse 8 and Refuse 10. The reason for this is that there is no clear break between Refuse 8 and 9 or 9 and 10. Refuse 9 was slightly lighter in color (10YR 4/3) with comparable soil texture and inclusion size to that of Refuse 8. Refuse 10 can be characterized by an increasing thickness of soil texture and lighting of soil (10YR 5/3 clay loam). As well, there was a dramatic decrease in artifact density although we continued to find material for another 50cm continuing to bedrock. Special artifacts, A26 (incensario nose), A28 (burnt ceramics), and A29 (incised polished stone) were identified in Midden 5. The high density of artifacts, depth of midden, and diversity of artifacts present (obsidian prismatic blades and incensario fragments) suggest that these middens may have been the result of long-term repetitive behaviors carried out in Cluster 3. Considered in relation to Special Deposit 1 and the Cluster's complex construction history, this area may have been the focus of community ritual and feasting.

CONCLUSION

Preliminary evidence from the 2004 field season indicates that two patio groups, Clusters 1 and 3, may have been the focus of social and ritual activities in the neighborhood (Figure 2). Excavations identified high concentrations of midden, obsidian prismatic blades, and effigy censer fragments at both clusters. The diversity and quality of artifacts found in and around Clusters 1 and 3 were unique when compared to excavations elsewhere in the neighborhood. Cluster 3, as well, appears to be the earliest known residence at the group, dating back to the Samal phase of the Late Classic (ca. AD 600-670; LeCount et al. 2002). The location and recovery of one, if not two, relatively well-constructed and well-preserved burials in relation to the surrounding midden are suggestive that Cluster 3 was home to the neighborhood's founding members. The identification of Clusters 1 and 3 provide a unique opportunity to explore how the control of ritual and neighborhood activity may have been a principal component in the expression and definition of social identity. Similarly, the comparison of Special Deposits 1 and 2 may allow us to examine differences in status in relation to burial remains. While the construction and preservation of materials in Special Deposit 1 were relatively good, those of Special Deposit 2 were not. The poor preservation of Special Deposit 2 clearly indicates that the occupants of Cluster 6 may have had less access to resources than individuals living in Cluster 3. Future investigations will expand excavations in Clusters 1, 3, and 6 to examine the process of ritual control in the negotiation of identity and status within the Northeast Group.

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OPERATION 4

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PURPOSE

Operation 4 was completed in an area of dense terracing and structures located approximately 1km to the northwest of the site core. The primary goal of this operation was to conduct extensive excavations of terrace walls, terrace planting surfaces, and structures located adjacent to terraces constructions and apply the data recovered to an analysis of ancient Maya political economy.

Chan is an ideal location for the study of Maya farmers and political economy. It contains the highest density of terraces in the entire Belize River Valley (304 terraces/km²), a wide variety of different terrace types (often found in conjunction with one another), close proximity of terraces and house mounds, and extraordinarily well-preserved terrace walls and planting surfaces (Wyatt and Kalosky 2003). The data recovered will provide detail for our interpretations of Classic Maya farmers, their relationship to nearby elites, and their position in the regional political economy.

Previous excavations on terraces have often consisted simply of trenches through terrace walls to determine construction techniques and chronologies, and those on structures located on terraces are often only sampled to obtain a chronological sequence. While it is necessary to obtain this information, more in-depth excavations are necessary to undertake any kind of analysis of the role of agriculture in the political and social life of the ancient Maya. Unfortunately, most studies of ancient Maya agriculture have been hindered by the need to simply prove the existence of intensive strategies such as terracing (Beach and Dunning 1995; Fedick 1994; Healy et al. 1983; Turner 1983).

The location of Operation 4 is in an area approximately 1km N/NE of the site core in an area of dense contour and cross-channel terracing with a number of associated structures. This area was chosen because of the large number of terraces, the multiple terrace types, and the well-preserved terrace walls (Wyatt 2003).

Excavations in Operation 4 were undertaken at four different locations. These will be referred to at Sites A, B, C, and D (Figure 1). Site A consisted of excavations in and around site C-304; a single mound projecting from the hillslope and connected to several terrace walls. This is a somewhat unique structure in that it exists alone, yet is fairly large; rising nearly 3 meters on the north side and projecting directly from the hill at the south side. The structure also cuts through three different terrace walls lining the hillside.

This site was chosen to investigate the function of a structure located amidst the terraces (as opposed to the majority of the structures which are located either atop the hills or at the base), as well as develop a chronology of terrace construction by studying the intersection of terrace and structure walls. Suboperations were conducted on the terraces adjacent to the structure, where the structure and the terraces connected, and within the structure itself.

Site B excavations were located approximately 50 meters to the southwest of this structure, in an area of terraces distant from any structures. These excavations consisted of a long trench (14m) through two terrace walls and encompassing three terrace beds. While obtaining profiles of the two terrace walls was important, we were also concerned with

excavations on the terrace beds in order to look for buried planting surfaces and any invisible structures that might have been located on the terrace surface, such as storage bins or tool sheds.

Site C excavations began on the terrace bed at the corner of two terrace walls approximately 20 meters from Site B. While we initially intended to simply investigate the construction sequence and techniques of joining terrace walls, we immediately encountered a drainage/irrigation channel running across the terrace bed which we proceeded to follow from this corner to the next terrace wall.

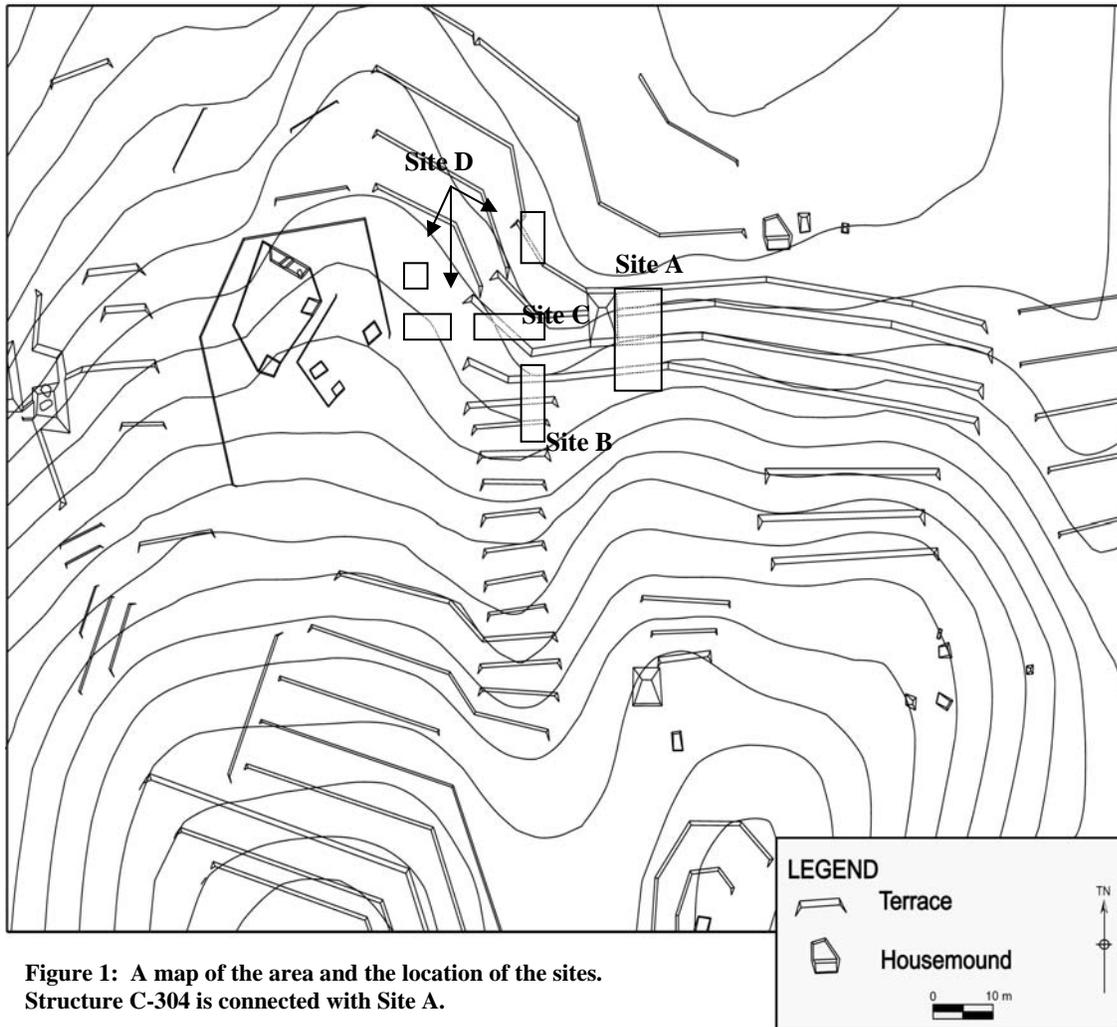


Figure 1: A map of the area and the location of the sites. Structure C-304 is connected with Site A.

Site D is not one individual location, but an umbrella encompassing three separate excavations which investigated several features we began calling “aguaditas”. These aguaditas are very small depressions visible on the surface, often only 2-3 meters in diameter and less than a meter in depth. Initially thought to be natural depressions left from tree fall or simply part of the natural topography, we suspected that these may have been water catchments for pot irrigation. While not indisputably water catchments, these aguaditas were certainly not natural features.

SITE A

The excavations at Site A consisted of two primary goals; to assess the function of the solitary structure at site C-304 and to investigate the articulation of the structure and the

agricultural terraces. The structure is located on the hillside and connects to three terrace beds and two terrace walls. It is 7.5m x 11m in area, 3m in height on the north and 0m in height on the south. Excavations encompassed an area of 6m x 14m for a total of 84 m² of exposure. Suboperations include A, C, E, H, I, M, O, Q, R, T, V, X, W, Z, BB, CC, EE, FF, OO, SS, TT, UU, XX, AAA, CCC, EEE, GGG, III, JJJ, LLL, PPP, QQQ, SSS, VVV, YYY, ZZZ, AAAA, DDDD, EEEE, FFFF, GGGG. Size of the suboperations varied in size from 3m x 2m to 1m x 1m.

The results of excavations at Site A can be broken down into three important areas. First are the excavations in and around the structure itself. This took the form of areal excavations on the front and side of the structure as well as a trench to bedrock through the midline. Second are the excavations on the terraces to the east of the structure which included exposing terrace walls and excavating terrace beds to bedrock. Third are the excavations on the terrace bed that relate to a natural spring coming from the hillside and fed both the structure and the terrace beds below.

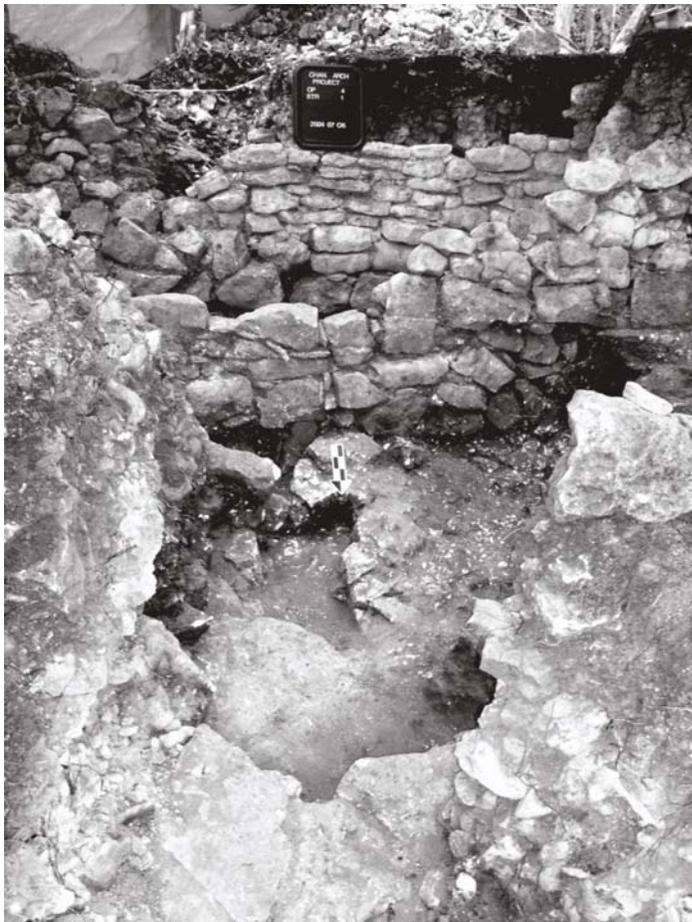


Figure 2: The water basin in Str. 1-4th. A large rock as part of the floor was removed.

Str. 1

The stratigraphy of Str. 1 is characterized by the deposition of 4 floors forming five construction phases Str. 1-1st to Str. 1-5th. These will be described below beginning with the earliest phase.

Str. 1-5th

This phase represents the earliest incarnation of the structure and is represented by a series of large stones (some measuring 0.5m x 0.5m) set on bedrock with a series of large stone blocks set on these to form a basin for collecting water (Figure 2). A small spillway on the south side of the basin would guide water out of the structure to the terraces below. The water for the basin came from a natural spring emanating from the hillside 15m upslope. The only unequivocal wall from this construction phase is Wall 22 in the far SE corner of the structure. Here we find a small opening in the wall (15cm x 20cm) where the spring entered the structure. From this point the water was guided down to the stone basin

where it would be collected. Although the spring is now dried up, a heavy rainfall at the end of the excavation season showed that water still flows through the structure and collects in the basin. Although it appeared that only 25L of water collected in the basin, a steady flow from the spring would have guaranteed a constant supply.

Two interior walls (Walls 23 and 24) span the interior of the structure between the entrance of the spring and the basin. It is unclear whether any courses of either or both of these walls were in place while the spring was in use. While they may have been in place and allowed the spring to pass under, they also may have been put in place later. No unequivocal evidence suggests either.

Overlying the entire Str. 1-5th is an A horizon of 7.5YR 2.5/1. This soil has the same appearance and texture of the A horizon throughout Op. 4. It is as yet unclear if this soil was deposited through alluvial processes after the abandonment of the first structure, or if the level of the structure was covered over with soil to create a planting surface. If the latter is true, the terrace walls were disassembled and utilized for the construction of subsequent phases.

In sum, Str. 1-5th consists of a basin of water constructed by large stone blocks, and a cut stone wall with an entrance for water. Initial conclusions on this structure indicate that we have a “springhouse”. This is a structure that captures natural springwater which would then be used as a location for food storage, or for the collection of drinking water (or, most likely, both). Since there is no documented evidence of such structures in the Maya Lowlands, it is difficult to assess its exact use.



Str. 1-4th

This phase is marked by the sealing of Str. 1-5th with an A horizon soil layer and a fill layer of stones and the construction of Floor 4. This is a very ephemeral floor constructed of loose gravel and crushed limestone. It extends to the lower course of Wall 13 and to the edge of the stone basin. Below this floor sealed near the water basin is an offering of three lids; two set lip to lip with a third atop those. On either side of this ceramic offering were two eccentric cherts (Figures 3, 4, 5). Also, in the SE corner of the structure, an similar offering but without the eccentric chert objects was placed with the sealing of Wall 22 in the fill. Although no other ritual objects were found in this or later constructions, it indicates that the collection and maintenance of water were ritually



Figures 3, 4, 5: Above is the offering at the center of the photo and the two eccentrics found with it.

important to the ancient Maya.

Str. 1-3rd

The next construction phase is associated with the construction of Floor 3. This is a poorly preserved floor of gravel and limestone over a gravel fill. It terminates to the north at the lower course of Wall 13.

Str. 1-2nd

The penultimate construction phase is associated with the construction of Floor 2, and the addition of Wall 2 atop Wall 23. Floor 2 is also very fragmented, and in some locations appears to simply be of packed gravel and limestone, although toward the northern part of the structure there are parts that are more complete. Floor 2 was also laid down immediately over Floor 3 without a fill layer in between. Floor 2 again terminates at the lower course of Wall 13. Also possibly associated with Floor 2 is Floor 1, a hard plaster floor to the north of Wall 13.

It appears then that this phase is formed of a two level floor separated by a stone step. The north edge of this phase, however, was destroyed with the construction of the ultimate phase.

Str. 1-1st

The ultimate construction phase is represented by the sealing of the two floors with large stone fill and overlaid with three horizontal walls and the top likely exhibiting a perishable superstructure. What was then formerly the primary part of the structure now became built over with three lines of large stones passing across the surface (Walls 11, 12, and 13). It seems unlikely that the three walls were used as terraces, as there wasn't an appreciable level planting surface, but they seem to mimic the construction of the later terrace walls by using large stone walls and fill in between. Walls 2 and 24 were also built up to the surface, therefore building upon the earliest construction to create a base for the later superstructure.



Figure 6: Some of the 22 agricultural implements found in middens and fill.

Associated with this construction are two middens; one at the SE corner at the junction of the terrace wall, and another down the NE corner. Only the midden in the NE corner was analyzed to provide chronological data. Based on work with project ceramicist Dr. Lisa LeCount, this midden is dated to the Late Classic Hats' Chaak phase (A.D. 670-780) and represents a typical household assemblage.

The likely agricultural function of the ultimate construction phase is indicated by the presence of 22 General Utility Bifaces (Figure 6). These tool are made of poor quality chert and limestone and were mostly likely utilized as a garden hoe (McAnany 1992)

Agricultural Terraces Associated with Str. 1

Three terrace walls were uncovered in these excavations, with one dismantled to bedrock to determine construction techniques. The walls are named Agriculture 9, 18, and 20. The terrace bed associated with these walls are Agriculture 8 and 17.

Agriculture 9

This terrace wall is located at the SE corner of the Str. 1 and its ultimate construction is connected to the structure walls. The ultimate construction phase of this wall was hastily built of different sized, uncut stones with a great deal of soil mixed in. As with the terrace walls at Site B (see below), this indicates an accretional construction of the wall



Figure 7: Agriculture 9. Note the different construction between the three angled walls

with more stones added as soil collected through alluvial processes. The wall also was constructed at a 45° angle to the planting surface, also similar to the terrace walls at Site B, and was made with no large, cut stones.

Below this wall were three walls running at an angle of 50° NE (Figure 7). The more careful construction of these walls and the lack of soil intermixed indicated that they were built at an earlier time period. Fill in between these walls was a sandy 10YR 4/3 and extended completely to the bedrock.

The angle of these stones corresponds to the natural uplift of the bedrock. What this suggests is that these stones were set in place to facilitate drainage, as this is the direction of the natural water flow. In fact, immediately above this terrace wall is the spring coming from the hillside and a sluice gate cut into bedrock below the later terrace construction. It appears that these walls were utilized to channel the water coming from the spring and guide it to the terraces below.

Agriculture 18

This terrace wall is immediately upslope and to the south of Agriculture 9. It was uncovered by not excavated to bedrock. The steeper slope of this terrace wall necessitated larger stones, although they appear to follow the pattern of utilizing three walls with fill stones in between.

Agriculture 20

This, the lower of the three terrace wall adjacent to Str. 1 is the most substantial and constructed of the largest stones, some measuring 0.5m x 0.5m. It sits atop a fairly steep slope, the likely reason for the larger stones. The terrace wall again is composed of three walls, with the uppermost (southernmost) wall the largest, and the lowest composed of a single course and used as a retaining wall.

Similar to Agriculture 9, this wall has a hastily built final construction of smaller stones with soil mixed within over several courses of larger, more carefully constructed stones. This wall also joins with Wall 23, one of the walls of the early construction phase in Str. 1, indicating that the terrace wall's earliest construction corresponds to the early structure.



Figure 9: Spring emerging from hillside

Spring

The natural spring coming from the hillside has been given the designation of Water Management Feature 1 (Figure 9). This feature was found during the excavation of Agriculture 17, the terrace bed. The spring originates at the base of the uppermost terrace wall and was found buried beneath a level of fill, suggesting that it had dried up at some point. Two holes in the hillside were actually found, although one was purposefully blocked off with stones. At the end of the initial channel as the spring emerged from the hillside was a single course of small stones.

The spring was guided down the hillslope by cut bedrock and was channeled to both Str. 1 and to the terrace bed below. As the Figure 10 indicates, it could have been diverted to either by blocking the channel with stones. In the case of the terraces, the water passed below a sluice gate carved into the bedrock, forming a small bridge (Figure 10). This way, a wall could be built over the gate without impeding the flow of water.

The entire complex of the spring, channels, and sluice gate were eventually filled in, most likely when the spring dried up.



Figure 10: Sluice gate

SITE B

Excavations at Site B consisted of a trench through two terrace walls and three terrace beds as well as areal exposure on the terrace bed to the west of the trench. The trench itself was 1m wide and 14m long, and was excavated to determine construction techniques on the terrace walls and obtain ceramics for chronology. The areal exposure was 5m long by 4m wide and was conducted to search for any hidden structures on the terrace bed. Suboperations at this location were B, D, F, G, J, K, L, N, and P for the trench, and S, U, Y, and AA for the areal exposure.

Excavation Results

Site B is composed of an early terrace wall (Agriculture 10) located on the terrace bed, its partial dismantling, and the later construction of two larger terrace walls (Agriculture 2 and 5). This site also encompasses three terrace beds, Agriculture 1, 4, and 7.

Agriculture 2 is the northernmost wall of the trench, separating two terrace beds (Agriculture 1 to the north and 4 to the south). It was constructed in two phases, although exact construction episodes are difficult to ascertain as there was a great deal of soil mixed in the wall indicating that it may have been built accretionally, rather than all at once. The ultimate



Figure 11: Initial exposure of terrace wall (Agriculture 2). Retaining wall in front already removed

construction phase was composed of two large walls approximately 1m in height with smaller fill stones in between. To the north of the large wall was a smaller (approx. 0.5m in height) retaining wall with fill stones in between (Figure 11). Underneath this wall were the remains of an earlier construction in the form of an angled (50° NE) wall (Figure



Figure 12: After removal of ultimate terrace wall. Note angled wall underneath.

12). The later construction of the terrace wall demonstrates a common construction method here in which the face of the wall is not constructed of vertical stone blocks, as is common throughout the Maya Lowlands, but rather is made at a 45° angle to the planting surface. While a small amount of planting surface is lost, the angle of the wall offers greater resistance to hydrostatic pressure that builds up behind most terrace walls, often causing portions to collapse. The walls here would have required less maintenance, and may have even been used as a planting surface themselves.

Agriculture 5 is the southern terrace wall in the trench, located in between two terrace beds (Agriculture 4 and 7). This wall was left unexcavated in order to preserve the surface appearance of the unique terrace wall construction. As Agriculture 2, the face of this wall is at a 45° angle to the planting surface and composed primarily of small stones, although the rear/top of the terrace wall has larger stones (Figure 13).



Figure 13: Terrace Wall (Agriculture

Although both terrace walls initially appeared to be collapsed, possibly explaining the 45° angle of the wall, both excavations revealed wall stones sitting directly over bedrock, indicating that they were placed there purposefully. The quantity of small stones, as compared to large facing stones, also indicates that these walls were composed mostly of these rocks. It appears that several vertical walls were built of larger stones and small stones used as fill in between. The base of the wall was then built up with small stones to provide a retaining wall and added strength.

On the terrace bed (Agriculture 4) between the two terrace walls were two interesting features. First we uncovered the remains of an earlier terrace wall underneath the surface (Figure 14). This ephemeral wall was composed of a single course of stones at the edge of a downturn in the bedrock. The trench also revealed several flat stones on the bedrock in line with these other stones, although they were unfortunately removed before we realized this was an old terrace wall.

We believe this is an early terrace wall, instead of a structure, based on the linear alignment of the stones, their location immediately over bedrock, and the absence of any significant artifacts.

A second feature found on the terrace bed was a buried terrace planting surface (Figure 15). The stratigraphy shows a relatively sharp distinction between the surface soil (7.5YR 2.5/1) and the soil of the terrace bed (10YR 3/1).



Figure 15: Terrace planting surface in



Figure 14: Remains of early terrace wall.

Immediately atop this surface is a thin layer of daub. The pieces of daub were very small, and may have been the buried remains of a burned tree stump. A 2x2m unit was opened to the west of the trench to expose the planting

surface and take soil samples. A piece of a mano was found in these excavations, and initial ceramic analysis suggests that this is of a pre-Late Classic date.

SITE C

The excavations at this site began as an exploration of the intersection of two terrace walls. We were interested in seeing how the walls joined, and whether we could determine a construction chronology. We began on the terrace bed (Agriculture 1) right at the corner of the two walls (Agriculture 2 and 26). The suboperations completed at this site are DD, GG, HH, II, KK, LL, MM, NN, PP, QQ, RR, VV, WW, YY, ZZ, BBB, DDD, FFF, HHH, KKK, MMM, NNN, OOO, and RRR, and consisted of many different sizes.

In the first suboperation we uncovered the remains of an irrigation and drainage ditch running at an angle across a terrace bed (Agriculture 27). Beginning on the terrace wall, the channel ran at a 50° angle across the terrace bed from the corner of the two terrace walls to the next terrace wall below (Figure 16). In all, the terrace wall is approximately 15m long (approximately because there were sections of the channel that were unclear). The accompanying photograph shows the beginning of the channel at the corner of the two terrace walls.



Figure 16: Irrigation/drainage channel lined with stones. Note dam at top of picture.

Units were placed following the course of the channel, and therefore varied in size from 2x2m to 0.5x0.5m. The soil profile consisted of a level of 7.5YR 2.5/1 at the surface, with 10YR 3/1 toward bedrock.

The channel was constructed from large rocks set alongside the channel on bedrock, some smaller stones, and also utilized the natural uplifted bedrock in some sections of the channel. In some locations the bedrock was overlaid with stones, whereas in others it was bare. As the channel headed toward the lower terrace wall, it descended until it was over a meter below surface. At this point the channel was filled with many small stones. We suspect that due to the depth of the

channel, and the subsequent loss of planting surface if walls were constructed along either side to keep it exposed, that it was probably filled with small stones and then covered with soil. The stones would have allowed the water to filter through without loss of planting surface. This, however, is simply a hypothesis at this point.

Originally we suspected that this was simply a channel to drain excess water, a necessity during the rainy season. However, a small pile of stones was placed directly in the channel at two points, resembling a water distribution system utilized by terrace farmers in Switzerland (Netting 1993). In this system, water is released from a reservoir located farther up the hill and allowed to drain down a channel. At various points, a barrier is placed in the channel, causing the water to pool and spread across the terrace bed, providing water for crops. A large series of

reservoirs are located above the terraces on a plateau, possibly providing a water source for this particular irrigation channel.

This provides the first evidence of small-scale irrigation of agricultural terraces in the Maya Lowlands. Much of the irrigation projects throughout Mesoamerica consist of large scale public works projects such as the chinampas outside Tenochtitlan (Matheny and Gurr 1983) and the raised fields in Pulltrouser Swamp (Turner and Harrison 2000). What this demonstrates is that small scale farmers could and did create and maintain intensive agricultural systems away from centralized control. Scarborough (2004) shows how the Tikal elite controlled access to water for a large area surrounding the site core. In the hinterlands, however, similar systems were constructed and maintained by a non-elite farming populace.

SITE D

Site D is not one specific location, but refers to three excavations undertaken in what we have come to term “aguaditas”. Aguadita refers to a very small depression visible on the surface, often no more than 2 meters in diameter, and less than a meter deep. Originally we thought these were simply depressions created by tree fall, but closer inspection revealed they lacked the normal mound of dirt created by the uplifted roots on one side. Excavations revealed that of the



Figure 17: Aguadita lined with stones at top of picture. Opening in bedrock leading to underground stream immediately in front of direction arrow.

three aguaditas excavated, two are unequivocally human made structures whereas the third is less certain. We have called them aguaditas because we believe they were small water reservoirs for practicing “pot irrigation”; filling small containers with water and watering plants by hand.

Aguadita 1 (Agriculture 28) is located immediately upslope from the excavations in the irrigation/drainage channel. At this location we observed a small depression in the surface of the terrace bed and attempted to determine if the channel continued farther up the slope and was fed from this aguadita. We discovered that the surface depression was in fact a human-constructed feature, evidenced by the stone lining of the depression (Figure 17).

Immediately upslope from the aguadita is a small (10x10cm) opening in the bedrock, exposing an underground stream (now dry). Although these are common features in the porous limestone bedrock, a stone was found directly over the hole, as if to plug it. Approximately 15m downslope of the observed direction

of the stream was another opening in the bedrock. A possible hypothesis is that the lower

opening would be stopped up, the underground stream allowed to back up into the aguadita, and the hole subsequently plugged to prevent water draining away. The location of the aguadita immediately below the opening and the stone plug both suggest this possibility.



Figure 18: Aguadita at base of “ramp”. Rocks are lining the basin as it continues to channel water down terrace.

A second aguadita (Agriculture 29) was explored approximately 30 meters to the north of the first. We chose this location based on the visible surface depression immediately at the base of what appeared to be a “ramp” on the hillside extending from one of the terraces above. It appeared that the ramp may have been another channel to guide water from above in order to be stored in this aguadita. Again, we found stones lining the bedrock, although parts of the bedrock were left exposed (Figure 18), and stones lined on either side of the ramp and aguadita feature.

A third aguadita (Agriculture 30) was explored to the west of the second at the top of the hill. This feature is much more equivocal and it is difficult to say whether it is an aguadita. Rather than a stone lining, this surface depression was a result of a depression in the bedrock. While this may have been constructed artificially, it also may have been the result of root action from a very large tree.

The excavations at Site D indicate that not all water management features need to be of a large scale. In the two instances shown here, shallow basins of 1-3m in diameter were utilized to store water for immediate use. In one instance, the basin was filled with water from an underground stream, whereas in the second, it was potentially filled with water coming from reservoirs above.

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2004 ANALYSIS OF THE CHAN BURIALS

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INTRODUCTION

Analysis of the Chan burials began in 2004. By the end of the 2004 season, a total of 12 burials had been excavated at the Chan site. Burial 1, from Operation 1 in 2003, was located in the center of the main C-001 plaza. Burial 2, from Operation 6 in 2004, was located in the north wing (Str. 5-north) of the eastern shrine at C-001. Burials 3-10, from Operation 6 in 2004, were located in the central building (Str. 5-center) of the eastern shrine at C-001. Burials C1 and C2 were located in residences of Chan's NE neighborhood.

Osteological research took place in the Corozal Archaeology Lab developed by Margaret Briggs for the study of human remains. Human remains from Chan were brought to the Corozal lab where they were first cleaned and then analyzed. Margaret Briggs also came to the Chan site to supervise the excavation of human remains. Alma Patt assisted in the osteological analysis in the Corozal lab.

As on December 13, 2004 four of the Chan burials had been analyzed: Burial 1, 2, C1, and C2. The table below lists the summary data on these burials. Burial reports for each individual follow the summary table.

SUMMARY BURIAL TABLE

Burial Number	Summary of Analysis
Burial 1, Op. 1 (2003) Young Adult Undetermined Sex	<p>These are the remains of a robust adult, possibly a young adult, of undetermined sex; a primary interment in the extended, supine position. The complete absence of cranial material strongly supports the notion that the grave pit was re-entered at least once, and that cranial and possibly postcranial material from the originally interred individual was removed. It is also probable that during one or more of these re-entry episodes, skeletal and dental material from at least one additional individual was added to the pit.</p> <p>Without cranial material, it was not possible to determine the presence or absence of cranial modification. None of the teeth associated with the burial, re-entry episodes, or Special Deposit 6 were modified.</p> <p>There was no evidence of skeletal trauma or disease in general.</p>

<p>Burial 2, Op. 6 (2004) Young Adult Male</p>	<p>The primary interment of an adult male, possibly a young adult aged 20 to 35 years at death. This individual suffered from an osteitic inflammation of the right humerus, probably osteomyelitis, which may have led to his death.</p> <p>No evidence of cultural modification of the remains was found: the incisors associated with this burial were not modified; and without sufficient cranial material for reconstruction and analysis, the presence or absence of cranial modification cannot be assessed.</p>
<p>Burial C1, Individual 1 Op. 9 (2004) Young Adult Female</p>	<p>These are the remains of a gracile young adult, aged 20 to 35 at death, probably female. This may have been a secondary interment, whose burial position could not be determined.</p> <p>The paucity of skeletal and dental remains is consistent with a secondary interment of a less than complete skeleton; however, this is also consistent with severe deterioration of the remains, and it is also possible that due to the commingling of the remains of two individuals, some bones belonging to Individual 1 were identified in the field as belonging to Individual 2.</p> <p>No other evidence of cultural modification of the remains was found, either pre- or post-mortem: the upper left canine associated with this burial was not modified; and without sufficient cranial material for reconstruction and analysis, the presence or absence of cranial modification cannot be assessed.</p>
<p>Burial C1, Individual 2 Op. 9 (2004) Middle Adult Male</p>	<p>The remains of Individual 2 are those of an adult, possibly aged 35 to 50 years at death, possibly male, whose burial position could not be conclusively determined in the field or in the lab due to commingling of the remains with those of Individual 1.</p> <p>The right ulna of this individual exhibits a healed, probably simple, fracture, the only sign of trauma or disease observed in this burial. The two tibial fragments associated with Individual 1 may in fact belong to Individual 2; these displayed numerous shallow cut marks consistent with those made by stone tools, which can be interpreted as evidence of ritual handling or manipulation of the unfleshed remains. This suggests either a secondary interment, or at least one subsequent reentry of the interment.</p> <p>No other evidence of cultural modification of the remains was found, either pre- or post-mortem: the incisors associated with this burial were not modified; and without sufficient cranial material for reconstruction and analysis, the presence or absence of cranial modification cannot be assessed.</p>

<p>Burial C2, Op. 9 (2004) Adult, possibly Female</p>	<p>The remains consist of a handful of deeply eroded, very small fragments of human bone, with a possible admixture of faunal bone, and four human adult teeth. Reconstruction was not possible on any of the bone fragments; no measurements could be taken.</p> <p>We were able to identify one fragment as part of a human mandible, a portion of the lowest bony area below the mental eminence. The delicate, narrow fragment would delineate a curved chin, consistent with a gracile, possibly female, individual.</p> <p>Four human teeth were recovered, one of which was burned.</p> <p>We believe this may have been a cache, or special deposit, rather than a burial, based on the presence of the burned canine, the paucity of remains which cannot be attributed solely to erosion, and the absence of the cranial materials which caused excavators to believe that this was an interment.</p>
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BURIAL REPORT: Burial 1, Op.1 (2003)

Burial / Skeleton Number: Burial 1, Op 1, 2003
Est. Sex / Age at Death: Adult of unknown sex

Description of Remains

This burial was described in field notes as a simple cist interment of one individual, in the extended supine position. The excavators believe that the burial was moderately disturbed by at least one, and possibly more, re-entries after the original interment.

The poorly preserved and incomplete remains are those of a reasonably robust adult, comprised of partial diaphyses of the right humerus, left ulna, left and right femurs, left and right tibiae, and left and right fibulae. The skull and pelvis are missing in their entirety. Only a few, very small fragments of vertebrae and ribs were recovered. The identification and siding of long bones in the field was accurate with the sole exception of the recovered humerus, which is right, not left.

The distal end of the left femur does display three small, shallow cut marks as noted in the field. These cuts appear U-shaped in cross-section, consistent with cuts made by stone, rather than metal, tools.

After cleaning and reconstruction, some measurements could be taken from the right humerus, the right femur and the right fibula.

Only three teeth were recovered from this interment:

- RI²: Upper right 2nd incisor, light wear, shoveled, unmodified, root missing; burned; recovered from re-entry lot 1.NN.7.
- LC¹: Upper left canine; light wear, unmodified.
- LC₁: Lower left canine; light to moderate wear, unmodified.

An additional tooth was recovered from Special Deposit 6, a rock-lined pit near the interment:

- LM₂: Lower left 2nd molar, moderate wear; lot 1.SS.2.D6.

Without DNA testing, it is impossible to determine if the incisor from the re-entry lot and the molar from Special Deposit 6 belong to the same primary individual in the cist. It is possible that the two canines were originally associated with this individual; if so, we could tentatively assess the age at death of this individual as young adult, based solely on the tooth wear.

We carefully examined the bone fragments recovered from the re-entry fill lots, but were unable to match them to the long bones of the primary interment. We could, however, match some of the fragments to each other, supporting the notion that these were once entire bones intentionally placed, not random fragments accidentally included in the fill. Those from lot 1.NN.4 are femoral; those from lot 1.Z.3 appear to be humerus and radius fragments. We cannot determine if these account for the left humerus missing from the original interment.

Summary

These are the remains of a robust adult, possibly a young adult, of undetermined sex; a primary interment in the extended, supine position.

The number of phalangeal fragments recovered, and their positioning in the pit, as well as the positioning of the lower limbs reported in the field notes, is consistent with a primary interment. The complete absence of cranial material strongly supports the notion that the grave pit was re-entered at least once, and that cranial and possibly postcranial material from the originally interred individual was removed. It is also probable that during one or more of these re-entry episodes, skeletal and dental material from at least one additional individual was added to the pit. DNA testing of the recovered material would be required to determine this.

Without cranial material, it was not possible to determine the presence or absence of cranial modification. None of the teeth associated with the burial, re-entry episodes, or Special Deposit 6 were modified; however, only the incisor, and, more rarely, the canines, would have been candidates for dental modification.

There was no evidence of skeletal trauma or disease in general; in particular, we found no evidence of treponemal infection such as yaws in the reconstructed tibial remains.

SKELETAL INVENTORY FORM

Burial / Skeleton Number: Burial 1, Op 1, 2003

Est. Sex / Age at Death: Adult of unknown sex

Cranial Bones & Joint Surfaces						
	Left	Right			Left	Right
Frontal	N/A	N/A		Sphenoid	N/A	N/A
Parietal	N/A	N/A		Zygomatic	N/A	N/A
Occipital	N/A	N/A		Maxilla	N/A	N/A
Temporal	N/A	N/A		Palatine	N/A	N/A
TMJ	N/A	N/A		Mandible	N/A	N/A

Postcranial Bones & Joint Surfaces						
	Left	Right			Left	Right
Clavicle	N/A	N/A		Os Coxae		
Scapula				Ilium	N/A	N/A
Body	N/A	N/A		Ischium	N/A	N/A
Glenoid F.	N/A	N/A		Pubis	N/A	N/A
Patella	N/A	N/A		Acetabulum	N/A	N/A
Sacrum	N/A	N/A		Auric. Surf.	N/A	N/A

Vertebrae (Individual)		
	Centrum	Neural Arch
C1	N/A	N/A
C2	N/A	N/A
C7	N/A	N/A
T10	N/A	N/A
T11	N/A	N/A
T12	N/A	N/A
L1	N/A	N/A
L2	N/A	N/A
L3	N/A	N/A
L4	N/A	N/A
L5	N/A	N/A

Vertebrae (Grouped) #Present / #Complete		
	Centra	Neural Arches
C3-6	N/A	N/A
T1-T9	N/A	N/A

Sternum	
Manubrium	N/A
Body	N/A

Ribs (Individual)		
	Left	Right
1 st	N/A	N/A
2 nd	N/A	N/A
11 th	N/A	N/A
12 th	N/A	N/A

Ribs (3-10, Grouped) #Present / #Complete		
Left	Right	Unsided
N/A	N/A	N/A

LONG BONES					
		Diaphysis			
	Proximal Epiphysis	Proximal Third	Middle Third	Distal Third	Distal Epiphysis
L Humerus	N/A	N/A	N/A	N/A	N/A
R Humerus	N/A	99%	99%	99%	N/A
L Radius	N/A	N/A	N/A	N/A	N/A
R Radius	N/A	N/A	N/A	N/A	N/A
L Ulna	N/A	75%	N/A	N/A	N/A
R Ulna	N/A	N/A	N/A	N/A	N/A
L Femur	N/A	75%	N/A	75%	N/A
R Femur	N/A	99%	99%	99%	N/A
L Tibia	N/A	10%	50%	99%	N/A
R Tibia	N/A	N/A	100%	N/A	N/A
L Fibula	N/A	50%	N/A	50%	N/A
R Fibula	N/A	99%	99%	99%	N/A
L Talus	N/A	N/A	N/A	N/A	N/A
R Talus	N/A	N/A	N/A	N/A	N/A
L Calcaneus	N/A	N/A	N/A	N/A	N/A
R Calcaneus	N/A	N/A	N/A	N/A	N/A

	HAND (# Present / # Complete)			FOOT (# Present / # Complete)			
	Left	Right	Unsided	Left	Right	Unsided	
Carpals	/	/	/	Tarsals	/	/	/
Metacarpals	/	/	/	Metatarsals	/	/	/
Phalanges	/	/	/	Phalanges	/	/	/

CRANIAL & POSTCRANIAL MEASUREMENTS (ADULT REMAINS)

Burial / Skeleton Number: Burial 1, Op 1, 2003

Est. Sex / Age at Death: Adult of unknown sex

- All measurements were recorded to the nearest **millimeter**.
- In the case of bilateral measurements, measurements were taken from LEFT side whenever possible. If measurement was taken on RIGHT side, it is marked with (R).
- Measurements taken from reconstructed bones are marked with an asterisk (*).

Cranial Measurements			
1.	Maximum Cranial Length		18. Interorbital Breadth
2.	Maximum Cranial Breadth		19. Frontal Chord
3.	Bizygomatic Diameter		20. Parietal Chord
4.	Basion-Bregma Height		21. Occipital Chord
5.	Cranial Base Length		22. Foramen Magnum Length
6.	Basion-Prosthion Length		23. Foramen Magnum Breadth
7.	Maxillo-Alveolar Breadth		24. Mastoid Length
8.	Maxillo-Alveolar Length		25. Chin Height
9.	Biauricular Breadth		26. Height of Mandibular Body
10.	Upper Facial Height		27. Breadth of Mandibular Body
11.	Minimum Frontal Breadth		28. Bigonial Width
12.	Upper Facial Breadth		29. Bicondylar Breadth
13.	Nasal Height		30. Minimum Ramus Breadth
14.	Nasal Breadth		31. Maximum Ramus Breadth
15.	Orbital Breadth		32. Maximum Ramus Height
16.	Orbital Height		33. Mandibular Length
17.	Biorbital Breadth		34. Mandibular Angle

Postcranial Measurements			
35.	Clavicle Maximum Length		
36.	Clavicle Ant-Post Diameter at Midshaft		
37.	Clavicle Sup-Inf Diameter at Midshaft		
38.	Scapula Height		
39.	Scapula Breadth		
40.	Humerus Maximum Length		
41.	Humerus Epicondylar Breadth		
42.	Humerus Vertical Diameter of Head		
43.	Humerus Maximum Diameter at Midshaft	23.58 R	
44.	Humerus Minimum Diameter at Midshaft	16.54 R	
45.	Radius Maximum Length		
46.	Radius Ant-Post Diameter at Midshaft		
47.	Radius Med-Lat Diameter at Midshaft		
48.	Ulna Maximum Length		
49.	Ulna Ant-Post Diameter		
50.	Ulna Med-Lat Diameter		
51.	Ulna Physiological Length		
52.	Ulna Minimum Circumference		
53.	Sacrum Anterior Length		
54.	Sacrum Ant-Sup Breadth		
55.	Sacrum Max Transverse Diameter of Base		
56.	Os Coxae Height		
57.	Os Coxae Iliac Breadth		
58.	Os Coxae Pubis Length		
59.	Os Coxae Ischium Length		
60.	Femur Maximum Length		
61.	Femur Bicondylar Length		
62.	Femur Epicondylar Breadth		
63.	Femur Maximum Diameter of Femoral Head		
64.	Femur Ant-Post Subtrochanteric Diameter		23.19 R
65.	Femur Med-Lat Subtrochanteric Diameter		33.10 R
66.	Femur Ant-Post Midshaft Diameter		26.02 R
67.	Femur Med-Lat Midshaft Diameter		28.19 R
68.	Femur Midshaft Circumference		86.0 R
69.	Tibia Length		
70.	Tibia Maximum Proximal Epiphyseal Breadth		
71.	Tibia Maximum Distal Epiphyseal Breadth		
72.	Tibia Maximum Diameter at Nutrient Foramen		
73.	Tibia Med-Lat Diameter at Nutrient Foramen		
74.	Tibia Circumference at Nutrient Foramen		
75.	Fibula Maximum Length		
76.	Fibula Maximum Diameter at Midshaft		14.95 R
77.	Calcaneus Maximum Length		
78.	Calcaneus Middle Breadth		

BURIAL REPORT: Burial 2, Op.1 (2003)

Burial / Skeleton Number: Burial 2, Op. 6, 2004

Est. Sex / Age at Death: Adult Male, poss. Young Adult

Description of Remains

This burial is described in field notes as a simple crypt interment of one individual in the extended prone position, interpreted as a primary interment. The excavators believe that the burial was moderately disturbed by the collapse of the crypt capstones, and by the intrusion of a large root system.

The heavily eroded remains are those of a moderately robust adult, probably male, possibly a young adult 20 to 35 years of age at death. The assessment of sex is based on a fragment of an unisided sciatic notch, which is narrow, and on the male-associated features of the recovered mandibular fragment, notably the broad mental eminence and square chin shape. Age assessment is based solely on the light wear of the premolars, the apparent absence of calculus, and the presence of only a single carie in the recovered dentition, although the recovery of only six very eroded teeth makes this a more tentative conclusion; it is also possible that this individual was a middle adult, aged 35 to 50 years at death.

Field identification and siding of the long bones proved accurate, so in the absence of a burial map it is assumed that the field assessment of the burial position is also correct. Although no epiphyses were recovered, several of the long bone diaphyses could be reconstructed enough to confirm siding and allow measurement of the bones, including both femurs, tibiae, fibulae, radius and ulnae. Skull fragments included identifiable bits of frontal, parietal and occipital bone; of these, only 50% of the occipital could be reconstructed, which was not adequate to determine the presence or absence of cranial modification.

Dental Inventory

Six teeth and two root fragments were recovered from this interment:

LI ¹	Upper left incisor 1	Shoveled; moderate to heavy wear of occlusal surface; no evidence of caries or calculus; no evidence of modification.
LC ¹	Upper left canine	Heavy wear occlusally and lingually; no evidence of caries or calculus.
RPM ¹	Upper right premolar 1	Light wear; no evidence of caries or calculus.
RPM ²	Upper right premolar 2	Light wear; no evidence of caries or calculus.
LI ₁	Lower left incisor 1	Shoveled; moderate to heavy wear of occlusal surface; no evidence of caries or calculus; no evidence of modification.
RC ₁	Lower right canine	Moderate to heavy wear of occlusal surface, large carie pit at gumline.

Additionally, it should be noted that a grave inclusion not noted in the field report was recovered with the mandibular fragments. This was a flat, round shell disk, incised and center bored, measuring approximately 2.5 cm in diameter [see Photo 1, below].



Photo 1: Incised & bored shell disk, Burial 2

Evidence of Trauma / Disease

Evidence of osteological pathology was noted in the proximal half of the right humerus diaphysis: a bulge of vertically striated reactive bone pierced with a cloacal hole [see Photo 2, below]. Although fragments of this bulge of bone are missing, the appearance of the reconstructed shaft is consistent with osteomyelitis, a bacterially-caused infection which follows a wound or injury to the bone (White 2000:390-392). It was not possible to determine whether there was involvement of the medullary cavity of the humerus, but the presence of a pus drainage hole (cloaca) in the area of reactive bone does support the diagnosis of osteomyelitis. It should be noted that the process of remodeling was incomplete, indicating that the bone had not completely healed at the time of death; this infection may even have been the cause of death.



Photo 2: Osteomyelitic infection in R Humerus, Burial 2

Additionally, there is some evidence of pathological bone remodeling in the proximal shaft of the left tibia. This bone could not be reconstructed to the point of confirming a separate pathology, such as a treponemal infection, so it is also possible that this striation was caused by a systemic infection that originated in the infected humerus.

Summary

Burial 2 was the primary interment of an adult male, possibly a young adult aged 20 to 35 years at death. This individual suffered from an osteitic inflammation of the right humerus, probably osteomyelitis, which may have led to his death.

No evidence of cultural modification of the remains was found: the incisors associated with this burial were not modified; and without sufficient cranial material for reconstruction and analysis, the presence or absence of cranial modification cannot be assessed.

Bibliography

White, Tim D.
2000 Human Osteology. Academic Press, San Diego, California.

SKELETAL INVENTORY FORM

Burial / Skeleton Number: Burial 2, Op 6, 2004

Est. Sex / Age at Death: Adult Male, poss. Young Adult

Cranial Bones & Joint Surfaces						
	Left	Right			Left	Right
Frontal	Fragments			Sphenoid	N/A	N/A
Parietal				Zygomatic	N/A	N/A
Occipital				50%	Maxilla	N/A
Temporal	N/A	N/A		Palatine	N/A	N/A
TMJ	N/A	N/A		Mandible	25%	

Postcranial Bones & Joint Surfaces						
	Left	Right			Left	Right
Clavicle	N/A	N/A		Os Coxae		
Scapula				Ilium	Unsided sciatic notch	
Body	N/A	N/A		Ischium	N/A	N/A
Glenoid F.	N/A	N/A		Pubis	N/A	N/A
Patella	N/A	N/A		Acetabulum	N/A	N/A
Sacrum	N/A	N/A		Auric. Surf.	N/A	N/A

Vertebrae (Individual)		
	Centrum	Neural Arch
C1	N/A	N/A
C2	N/A	N/A
C7	N/A	N/A
T10	N/A	N/A
T11	N/A	N/A
T12	N/A	N/A
L1	N/A	N/A
L2	N/A	N/A
L3	N/A	N/A
L4	N/A	N/A
L5	N/A	N/A

Vertebrae (Grouped)		
	#Present / #Complete	
	Centra	Neural Arches
C3-6	N/A	N/A
T1-T9	N/A	N/A

Sternum		
Manubrium	N/A	
Body	N/A	

Ribs (Individual)		
	Left	Right
1 st	N/A	N/A
2 nd	N/A	N/A
11 th	N/A	N/A
12 th		

Ribs (3-10, Grouped)		
	#Present / #Complete	
Left	Right	Unsided
N/A	N/A	N/A

LONG BONES					
		Diaphysis			
	Proximal Epiphysis	Proximal Third	Middle Third	Distal Third	Distal Epiphysis
L Humerus	N/A	10%	15%	10%	N/A
R Humerus	N/A	25%	100%	35%	N/A
L Radius	N/A	Fragments			N/A
R Radius	N/A	10%	100%	10%	N/A
L Ulna	N/A	10%	25%	Fragments	N/A
R Ulna	N/A	Fragments			N/A
L Femur	N/A	75%	99%	50%	N/A
R Femur	N/A	75%	99%	50%	N/A
L Tibia	N/A	25%	99%	25%	N/A
R Tibia	N/A	10%	75%	10%	N/A
L Fibula	N/A	Fragments			N/A
R Fibula	N/A	Fragments			N/A
L Talus	N/A	N/A	N/A	N/A	N/A
R Talus	N/A	N/A	N/A	N/A	N/A
L Calcaneus	N/A	N/A	N/A	N/A	N/A
R Calcaneus	N/A	N/A	N/A	N/A	N/A

HAND (# Present / # Complete)				FOOT (# Present / # Complete)			
	Left	Right	Unsided		Left	Right	Unsided
Carpals	N/A	N/A	N/A	Tarsals	N/A	N/A	N/A
Metacarpals	N/A	N/A	N/A	Metatarsals	N/A	N/A	1/0
Phalanges	N/A	N/A	N/A	Phalanges	N/A	N/A	N/A

CRANIAL & POSTCRANIAL MEASUREMENTS (ADULT REMAINS)

Burial / Skeleton Number: Burial 2, Op 6, 2004

Est. Sex / Age at Death: Adult Male, poss. Young Adult

- All measurements were recorded to the nearest **millimeter**.
- In the case of bilateral measurements, measurements were taken from LEFT side whenever possible. If measurement was taken on RIGHT side, it is marked with (R).
- Measurements taken from reconstructed bones are marked with an asterisk (*).

Cranial Measurements			
1.	Maximum Cranial Length		18. Interorbital Breadth
2.	Maximum Cranial Breadth		19. Frontal Chord
3.	Bizygomatic Diameter		20. Parietal Chord
4.	Basion-Bregma Height		21. Occipital Chord
5.	Cranial Base Length		22. Foramen Magnum Length
6.	Basion-Prosthion Length		23. Foramen Magnum Breadth
7.	Maxillo-Alveolar Breadth		24. Mastoid Length
8.	Maxillo-Alveolar Length		25. Chin Height
9.	Biauricular Breadth		26. Height of Mandibular Body
10.	Upper Facial Height		27. Breadth of Mandibular Body
11.	Minimum Frontal Breadth		28. Bigonial Width
12.	Upper Facial Breadth		29. Bicondylar Breadth
13.	Nasal Height		30. Minimum Ramus Breadth
14.	Nasal Breadth		31. Maximum Ramus Breadth
15.	Orbital Breadth		32. Maximum Ramus Height
16.	Orbital Height		33. Mandibular Length
17.	Biorbital Breadth		34. Mandibular Angle

Cranial fragments from this burial not measurable.

Postcranial Measurements			
35.	Clavicle Maximum Length		
36.	Clavicle Ant-Post Diameter at Midshaft		
37.	Clavicle Sup-Inf Diameter at Midshaft		
38.	Scapula Height		
39.	Scapula Breadth		
40.	Humerus Maximum Length		
41.	Humerus Epicondylar Breadth		
42.	Humerus Vertical Diameter of Head		
43.	Humerus Maximum Diameter at Midshaft	21.16 (R)	
44.	Humerus Minimum Diameter at Midshaft	16.10 (R)	
45.	Radius Maximum Length		
46.	Radius Ant-Post Diameter at Midshaft		
47.	Radius Med-Lat Diameter at Midshaft		
48.	Ulna Maximum Length		
49.	Ulna Ant-Post Diameter		
50.	Ulna Med-Lat Diameter		
51.	Ulna Physiological Length		
52.	Ulna Minimum Circumference		
53.	Sacrum Anterior Length		
54.	Sacrum Ant-Sup Breadth		
55.	Sacrum Max Transverse Diameter of Base		
56.	Os Coxae Height		
57.	Os Coxae Iliac Breadth		
58.	Os Coxae Pubis Length		
59.	Os Coxae Ischium Length		
60.	Femur Maximum Length		
61.	Femur Bicondylar Length		
62.	Femur Epicondylar Breadth		
63.	Femur Maximum Diameter of Femoral Head		
64.	Femur Ant-Post Subtrochanteric Diameter		22.87
65.	Femur Med-Lat Subtrochanteric Diameter		27.44
66.	Femur Ant-Post Midshaft Diameter		26.80
67.	Femur Med-Lat Midshaft Diameter		24.76
68.	Femur Midshaft Circumference		82.0
69.	Tibia Length		
70.	Tibia Maximum Proximal Epiphyseal Breadth		
71.	Tibia Maximum Distal Epiphyseal Breadth		
72.	Tibia Maximum Diameter at Nutrient Foramen		31.89
73.	Tibia Med-Lat Diameter at Nutrient Foramen		18.95
74.	Tibia Circumference at Nutrient Foramen		81.0
75.	Fibula Maximum Length		
76.	Fibula Maximum Diameter at Midshaft		
77.	Calcaneus Maximum Length		
78.	Calcaneus Middle Breadth		

BURIAL REPORT: Burial C1, Individual 1, Op 9 (2004)

Burial / Skeleton Number: Burial C1, Individ 1, Op 9, 2004
Est. Sex / Age at Death: Probable Female, Young Adult

Description of Remains

Burial Information

Burial C-1 was described in field notes as a crypt interment, with capstones and wallstones, of two individuals, placed one above the other. The excavators encountered the remains identified as Individual #1 first, and interpreted this upper deposit as a secondary interment due to the disarticulated, scattered arrangement of the long bones identified as femur and tibiae. (After cleaning and reconstruction in the lab, however, these bones proved to be identified in reverse; that is, those bones identified as tibiae were femurs, and vice versa. This is discussed in more detail within this report.)

The remains discovered underneath those of Individual #1 were identified as Individual #2, and interpreted as a primary interment. The remains of Individual 2 are discussed in the following, separate report.

Individual 1 Information

The remains of Individual 1 are poorly preserved, fragmented and heavily eroded. Reconstruction was difficult: no epiphyses were recovered, and of the long bone diaphyses found, only the femurs could be sided; and only 3 measurements could be taken, from the left femur. The fragments of humerus, radius, ulna, tibia and pelvis that were recovered could not be sided; very few phalangeal fragments were recovered, and there were no fragments identifiable as vertebrae, clavicle, scapula or ribs. A handful of skull and pelvic fragments were recovered, and were not reconstructable. This selection of remains is consistent with the interpretation of a secondary interment, but also with a relatively shallow interment subject to the destructive effect of alternating periods of drenching and drying.

We tentatively identify these remains as those of a gracile young adult (20 to 35 years of age at death), probably female.

This age estimate is based solely on the condition of the three partial teeth recovered and identified in the field as belonging to Individual 1:

- LC¹: Upper left canine, no root, light to moderate wear, no calculus, no caries; not modified.
- RM²: Upper right 2nd molar, partial root, moderate wear, no calculus, one incipient carie.
- M₂: Lower unsided 2nd molar, partial, no root, light to moderate wear, no calculus, no caries.

The identification of the remains as probable female is based on the recovered fragment of one sciatic notch, which is broad; on the gracile appearance of the long bones, which, for a young adult, is more consistent with a female; and on the reconstructed portions of the femoral

diaphyses, which, while too incomplete for accurate estimation of stature, suggest that this individual was short.

The linea aspera of both reconstructed femurs are unusually pronounced. As noted in the Measurements section of this report, this affects the measurements taken, exaggerating the robusticity of the left femur.

The tibial fragments, which could not be reconstructed or sided, are unexpectedly more robust than the individual's femurs. While it is possible that this thickening is due to bone remodeling by an infectious disease such as yaws, the bone fragments are too incomplete and eroded to make an accurate determination. Two of the tibial fragments display numerous short, shallow cut marks, similar to those observed in Burial 1 recovered by Op. 1 in 2003: these cuts appear U-shaped in cross-section, consistent with cuts made by stone, rather than metal, tools.

There are no other signs of disease, trauma or cultural modification in the skeletal remains.

After cleaning and reconstruction, we were able to identify a number of the long bone fragments recovered and associated with Individual 1, although we were not able to side the majority. However, we had great difficulty matching the bone numbers assigned in the field to the photocopied burial map provided us. Following is a list of the bone numbers from the field with their corresponding identification in the lab, so that the original map may be consulted in hopes of determining the burial position:

Bone Number Assigned in Field	Bone Identification by Lab
3	Tibia fragments, unsided (identified in field as <i>Femur</i>)
6	Tibia fragments, unsided
7	Radius fragments, unsided
8	Left Femur fragments (identified in field as <i>Tibia</i>)
9	Tibia fragments, unsided
10	Radius fragments, unsided
12	Tibia fragments, unsided
13	Humerus fragments, unsided
15	Humerus fragments, unsided
17	Fragments from Tibia, Fibula and Pelvis, all unsided
19	Right Femur fragments (identified in field as <i>Tibia</i>)
20	Ulna fragments, unsided

Summary

These are the remains of a gracile young adult, aged 20 to 35 at death, probably female. This may have been a secondary interment, whose burial position could not be determined.

The paucity of skeletal and dental remains is consistent with a secondary interment of a less than complete skeleton; however, this is also consistent with severe deterioration of the remains, and it is also possible that due to the commingling of the remains of two individuals, some bones belonging to Individual 1 were identified in the field as belonging to Individual 2. (This possibility is discussed in more detail in the report on Individual 2.) Two tibial fragments displayed numerous shallow cut marks consistent with those made by stone tools, which can be

interpreted as evidence of ritual handling or manipulation of the unfleshed remains; but these may belong to Individual 2.

No other evidence of cultural modification of the remains was found, either pre- or post-mortem: the upper left canine associated with this burial was not modified; and without sufficient cranial material for reconstruction and analysis, the presence or absence of cranial modification cannot be assessed.

The fragments of tibial bone recovered were thick in comparison with this individual's femoral bones, which suggests the possibility of a treponemal infection such as yaws; however, these fragments were too incomplete and eroded to assess this with any certainty. No other evidence of disease or trauma was found.

SKELETAL INVENTORY FORM

Burial / Skeleton Number: Burial C1, Indiv 1, Op 9, 2004

Est. Sex / Age at Death: Probable Female, Young Adult

Cranial Bones & Joint Surfaces						
	Left	Right			Left	Right
Frontal	N/A	N/A		Sphenoid	N/A	N/A
Parietal	N/A	N/A		Zygomatic	N/A	N/A
Occipital	10%, unside			Maxilla	N/A	N/A
Temporal	N/A	N/A		Palatine	N/A	N/A
TMJ	N/A	N/A		Mandible	N/A	N/A

Postcranial Bones & Joint Surfaces						
	Left	Right			Left	Right
Clavicle	N/A	N/A		Os Coxae		
Scapula				Ilium	Portion sciatic notch, uns.	
Body	N/A	N/A		Ischium	N/A	N/A
Glenoid F.	N/A	N/A		Pubis	N/A	N/A
Patella	N/A	N/A		Acetabulum	N/A	N/A
Sacrum	N/A	N/A		Auric. Surf.	N/A	N/A

Vertebrae (Individual)		
	Centrum	Neural Arch
C1	N/A	N/A
C2	N/A	N/A
C7	N/A	N/A
T10	N/A	N/A
T11	N/A	N/A
T12	N/A	N/A
L1	N/A	N/A
L2	N/A	N/A
L3	N/A	N/A
L4	N/A	N/A
L5	N/A	N/A

Vertebrae (Grouped)		
	#Present / #Complete	
	Centra	Neural Arches
C3-6	N/A	N/A
T1-T9	N/A	N/A

Sternum	
Manubrium	N/A
Body	N/A

Ribs (Individual)		
	Left	Right
1 st	N/A	N/A
2 nd	N/A	N/A
11 th	N/A	N/A
12 th	N/A	N/A

Ribs (3-10, Grouped)		
#Present / #Complete		
Left	Right	Unside
N/A	N/A	N/A

LONG BONES					
		Diaphysis			
	Proximal Epiphysis	Proximal Third	Middle Third	Distal Third	Distal Epiphysis
L Humerus	N/A	Approx 25%, unsided			N/A
R Humerus	N/A				N/A
L Radius	N/A	Approx 10%, unsided			N/A
R Radius	N/A				N/A
L Ulna	N/A	Approx 10%, unsided			N/A
R Ulna	N/A				N/A
L Femur	N/A	25%	100%	25%	N/A
R Femur	N/A	25%	75%	25%	N/A
L Tibia	N/A	Approx 25%, unsided			N/A
R Tibia	N/A				N/A
L Fibula	N/A	Approx 5%, unsided			N/A
R Fibula	N/A				N/A
L Talus	N/A	N/A	N/A	N/A	N/A
R Talus	N/A	N/A	N/A	N/A	N/A
L Calcaneus	N/A	N/A	N/A	N/A	N/A
R Calcaneus	N/A	N/A	N/A	N/A	N/A

	HAND (# Present / # Complete)			FOOT (# Present / # Complete)		
	Left	Right	Unsided	Left	Right	Unsided
Carpals	/	/	/	Tarsals	/	/
Metacarpals	/	/	/	Metatarsals	/	/
Phalanges	/	/	/	Phalanges	/	/

* Approximately 3 fragments identified as phalangeal recovered.

CRANIAL & POSTCRANIAL MEASUREMENTS (ADULT REMAINS)

Burial / Skeleton Number: Burial C1, Indiv 1, Op 9, 2004

Est. Sex / Age at Death: Probable Female, Young Adult

- All measurements were recorded to the nearest **millimeter**.
- In the case of bilateral measurements, measurements were taken from LEFT side whenever possible. If measurement was taken on RIGHT side, it is marked with (R).
- Measurements taken from reconstructed bones are marked with an asterisk (*).

Cranial Measurements			
1.	Maximum Cranial Length		18. Interorbital Breadth
2.	Maximum Cranial Breadth		19. Frontal Chord
3.	Bizygomatic Diameter		20. Parietal Chord
4.	Basion-Bregma Height		21. Occipital Chord
5.	Cranial Base Length		22. Foramen Magnum Length
6.	Basion-Prosthion Length		23. Foramen Magnum Breadth
7.	Maxillo-Alveolar Breadth		24. Mastoid Length
8.	Maxillo-Alveolar Length		25. Chin Height
9.	Biauricular Breadth		26. Height of Mandibular Body
10.	Upper Facial Height		27. Breadth of Mandibular Body
11.	Minimum Frontal Breadth		28. Bigonial Width
12.	Upper Facial Breadth		29. Bicondylar Breadth
13.	Nasal Height		30. Minimum Ramus Breadth
14.	Nasal Breadth		31. Maximum Ramus Breadth
15.	Orbital Breadth		32. Maximum Ramus Height
16.	Orbital Height		33. Mandibular Length
17.	Biorbital Breadth		34. Mandibular Angle

NOTE: Only measurements possible were taken from the incomplete reconstruction of the Left Femur. Unusually pronounced linea aspera (in both femurs) affects these measurements.

Postcranial Measurements			
35.	Clavicle Maximum Length		
36.	Clavicle Ant-Post Diameter at Midshaft		
37.	Clavicle Sup-Inf Diameter at Midshaft		
38.	Scapula Height		
39.	Scapula Breadth		
40.	Humerus Maximum Length		
41.	Humerus Epicondylar Breadth		
42.	Humerus Vertical Diameter of Head		
43.	Humerus Maximum Diameter at Midshaft	23.58 R	
44.	Humerus Minimum Diameter at Midshaft	16.54 R	
45.	Radius Maximum Length		
46.	Radius Ant-Post Diameter at Midshaft		
47.	Radius Med-Lat Diameter at Midshaft		
48.	Ulna Maximum Length		
49.	Ulna Ant-Post Diameter		
50.	Ulna Med-Lat Diameter		
51.	Ulna Physiological Length		
52.	Ulna Minimum Circumference		
53.	Sacrum Anterior Length		
54.	Sacrum Ant-Sup Breadth		
55.	Sacrum Max Transverse Diameter of Base		
56.	Os Coxae Height		
57.	Os Coxae Iliac Breadth		
58.	Os Coxae Pubis Length		
59.	Os Coxae Ischium Length		
60.	Femur Maximum Length		
61.	Femur Bicondylar Length		
62.	Femur Epicondylar Breadth		
63.	Femur Maximum Diameter of Femoral Head		
64.	Femur Ant-Post Subtrochanteric Diameter		
65.	Femur Med-Lat Subtrochanteric Diameter		
66.	Femur Ant-Post Midshaft Diameter		29.42
67.	Femur Med-Lat Midshaft Diameter		26.85
68.	Femur Midshaft Circumference		88.0
69.	Tibia Length		
70.	Tibia Maximum Proximal Epiphyseal Breadth		
71.	Tibia Maximum Distal Epiphyseal Breadth		
72.	Tibia Maximum Diameter at Nutrient Foramen		
73.	Tibia Med-Lat Diameter at Nutrient Foramen		
74.	Tibia Circumference at Nutrient Foramen		
75.	Fibula Maximum Length		
76.	Fibula Maximum Diameter at Midshaft		14.95 R
77.	Calcaneus Maximum Length		
78.	Calcaneus Middle Breadth		

BURIAL REPORT: Burial C1, Individual 2, Op 9 (2004)

Burial / Skeleton Number: Burial C1, Indiv 2, Op 9, 2004
Est. Sex / Age at Death: Possible Male, Possible Middle Adult

Description of Remains

Burial Information

See description for Burial C1, Individual 1.

Individual 2 Information

The remains of Individual 2 are poorly preserved and fragmented, though not as heavily eroded as those of Individual 1. Although no epiphyses were recovered, several of the long bone diaphyses could be reconstructed enough to allow siding and measurement of the bones, including femoral, radial and ulnar shafts. However, from the remains assigned by the field to Individual 2, we identified two right radii, two left radii, and two left ulnae. This means we could only guess which individual donated which material, basing our assessment on the observation that the remains of Individual 2 are more robust than those of Individual 1. While it is possible that some of the duplicated material was donated by additional individuals, there is nothing in the material recovered to suggest a minimum number of individuals (MNI) higher than two.

One of the right ulnae exhibits a healed, probably simple, fracture. We believe this bone (field # 35, see Photo 3) belongs to Individual 2, and is the only sign of trauma – or disease – observed in this burial.



Photo 3: Healed fracture R Ulna, Burial C1-2

Very little cranial material was recovered, totaling approximately 25% of the combined frontal, occipital and unsided parietal bones. We were not able to identify any material from the clavicle, scapula, os coxae, vertebrae or ribs; and, strangely, we could not identify any tibial material in this interment. (However, it should be noted that the tibiae recovered with Individual 1 were robust in comparison to that individual's otherwise gracile remains, so it is possible that those tibiae belong to Individual 2.)

We did identify a comparatively large amount of material from the hands and feet, as noted in the field, including the left and right lunates, numerous phalangeal fragments, the left and right calcaneus, and an unsideable portion of a fifth metatarsal (which is quite long, consistent

with a larger, taller individual). Normally the recovery of these types of remains suggests a primary interment, but in this case the field notes indicate that this material was not identified in situ, but was recovered in the screens; the field excavator believed they may have belonged to Individual 1. It is not possible to determine which individual owned the fragments by gross observation.

We identified these remains as those of an adult, possibly 35 to 50 years of age at death, possibly male. The sex and age identification of Individual 2 is more tentative than that of Individual 1, as we did not recover as much diagnostic material. Individual 2 was a taller and more robust person than Individual 1, which suggests a male; heavier tooth wear, presence of two fully formed and erupted M3s, and an increased incidence of caries and calculus suggest an older adult. (As the dental remains may also have been commingled, this assessment is also somewhat speculative.)

A total of 15 teeth were recovered and associated with Individual 2, including two upper left second incisors (LI²) and two upper right second incisors (RI²). These “duplicate” teeth are very similar in size, shape, color and wear to the other 13 teeth, suggesting that the dentition is that of a single individual; but it not possible to say with any certainty whether they were the supernumerary teeth of Individual 2, or belonged to Individual 1 (with whom only 3 teeth are associated), or came from additional unknown donors.

Dental Inventory Associated with Individual 2

* indicates supernumerary teeth

RC ₁	Lower right canine	Fragment only; large carie pit with side grooves possibly worn by pre-mortem probing with a stick or other implement.
LC ₁	Lower left canine	Moderate wear both lingually and occlusally, large carie.
* LI ²	Upper left incisor 2	Large carie, moderate wear.
* LI ²	Upper left incisor 2	Heavy wear both lingually and occlusally, very large carie.
LI ₂	Lower left incisor 2	Heavy wear, no caries or calculus.
M3 x 2	Two unisided M3s	Fragmented; moderate wear, light calculus.
RC ₁	Lower right canine	Moderate wear occlusally, no caries or calculus.
RC ¹	Upper right canine	Heavy wear both lingually and occlusally, small carie.
RI ₁	Lower right incisor 1	Moderate wear, no caries or calculus.
RI ¹	Upper right incisor 1	Shoveled; moderate wear both lingually and occlusally.
* RI ²	Upper right incisor 2	Heavy wear, broken, large carie.
* RI ²	Upper right incisor 2	Shoveled; moderate wear lingually.
RPM ₁	Lower right premolar 1	Light to moderate wear, no caries or calculus.
RPM ¹	Upper right premolar 1	Moderate wear, no caries or calculus.

It is interesting to note that there is no evidence of cosmetic dental modification in this collection of teeth, which includes seven incisors, five upper and two lower. Dental modification, when practiced, almost always included modification of the incisors.

Skeletal Inventory Associated with Individual 2

As noted in the report on Individual 1, we had great difficulty matching the bone numbers assigned in the field to the photocopied burial map provided us. The following table lists the bone numbers from the field with their corresponding identification in the lab for comparison with the original burial map, along with lab annotations indicating whether we believe the bones belong to Individual 1 or Individual 2.

It should be noted that this estimation is based on gross observation only; without DNA testing, it is impossible to determine conclusively if these bones belong to Individual 1, Individual 2, or (unlikely) additional unknown donors.

Field Assigned Bone #	Bone Description by Lab	Assignment to Individual
32	L Ulna, gracile. <i>Matching R Ulna not found.</i>	Belongs to Individual 1.
26	L Radius, gracile. <i>Appears to pair with R Radius bone # 36.</i>	Belongs to Individual 1.
36	R Radius, gracile. <i>Appears to pair with L Radius bone # 26.</i>	Belongs to Individual 1.
27	R Femur, robust. <i>Appears to pair with L Femur bone # 28.</i>	Belongs to Individual 2.
28	L Femur, robust. <i>Appears to pair with R Femur bone # 27.</i>	Belongs to Individual 2.
29	5 th Metatarsal, unsided, large.	Belongs to Individual 2.
30	L Radius, robust. <i>Appears to pair with L Radius bone # 33.</i>	Belongs to Individual 2.
33	R Radius, robust. No sign of fracture or other trauma. <i>Appears to pair with L Radius bone # 30.</i>	Belongs to Individual 2.
31	L Ulna, robust. <i>Appears to pair with R Ulna bone # 35.</i>	Belongs to Individual 2.
35	R Ulna, robust. Healed fracture. <i>Appears to pair with L Ulna bone # 31.</i>	Belongs to Individual 2.
22	Humerus, unsided. This is consistent in size, robusticity and weathering with the humeral fragment associated with Individual 1 (Individual 1 bone # 15).	Both belong to Individual 2.
20	L & R Calcaneus.	Could not determine.
23, 25, 29	Skull fragments.	Could not determine.

Summary

The remains of Individual 2 are those of an adult, possibly aged 35 to 50 years at death, possibly male, whose burial position could not be conclusively determined in the field or in the lab due to commingling of the remains with those of Individual 1, possibly a young adult female.

The right ulna of this individual exhibits a healed, probably simple, fracture, the only sign of trauma or disease observed in this burial.

The dentition associated with Individual 2 is consistent with that of a single individual, despite the recovery of two supernumerary teeth. This dentition displays greater wear, and evidence of poorer dental health exhibited by numerous caries and light to moderate calculus, than that associated with Individual 1.

The recovery of the numerous small bones of the hands and feet associated with Individual 2 suggest that this was a primary interment, but it is not possible to conclusively assign them to Individual 2.

The two tibial fragments associated with Individual 1 may in fact belong to Individual 2; these displayed numerous shallow cut marks consistent with those made by stone tools, which can be interpreted as evidence of ritual handling or manipulation of the unfleshed remains. This suggests either a secondary interment, or at least one subsequent reentry of the interment.

No other evidence of cultural modification of the remains was found, either pre- or post-mortem: the incisors associated with this burial were not modified; and without sufficient cranial material for reconstruction and analysis, the presence or absence of cranial modification cannot be assessed.

SKELETAL INVENTORY FORM

Burial / Skeleton Number: Burial C1, Indiv 2, Op 9, 2004

Est. Sex / Age at Death: Possible Male, Possible Middle Adult

Cranial Bones & Joint Surfaces						
	Left	Right			Left	Right
Frontal	Unsided fragments amounting to 25% of total			Sphenoid	N/A	N/A
Parietal				Zygomatic	N/A	N/A
Occipital				Maxilla	N/A	N/A
Temporal	Palatine	N/A		N/A		
TMJ				Mandible	N/A	N/A

Postcranial Bones & Joint Surfaces						
	Left	Right			Left	Right
Clavicle	N/A	N/A		Os Coxae		
Scapula				Ilium	N/A	N/A
Body	N/A	N/A		Ischium	N/A	N/A
Glenoid F.	N/A	N/A		Pubis	N/A	N/A
Patella	N/A	N/A		Acetabulum	N/A	N/A
Sacrum	N/A	N/A		Auric. Surf.	N/A	N/A

Vertebrae (Individual)		
	Centrum	Neural Arch
C1	N/A	N/A
C2	N/A	N/A
C7	N/A	N/A
T10	N/A	N/A
T11	N/A	N/A
T12	N/A	N/A
L1	N/A	N/A
L2	N/A	N/A
L3	N/A	N/A
L4	N/A	N/A
L5	N/A	N/A

Vertebrae (Grouped) #Present / #Complete		
	Centra	Neural Arches
C3-6	/	/
T1-T9	/	/

Sternum	
Manubrium	N/A
Body	N/A

Ribs (Individual)		
	Left	Right
1 st	N/A	N/A
2 nd	N/A	N/A
11 th	N/A	N/A
12 th	N/A	N/A

Ribs (3-10, Grouped) #Present / #Complete		
Left	Right	Unsided
/	/	/

LONG BONES					
		Diaphysis			
	Proximal Epiphysis	Proximal Third	Middle Third	Distal Third	Distal Epiphysis
L Humerus	N/A		Unsided 25%		N/A
R Humerus	N/A				N/A
L Radius	N/A	50%	25%	10%	N/A
R Radius	N/A		50%		N/A
L Ulna	N/A			75%	N/A
R Ulna	N/A	25%	100%	50%	N/A
L Femur	N/A	50%	100%	50%	N/A
R Femur	N/A	50%	100%	50%	N/A
L Tibia	N/A	Missing – may be incl with Indiv 1			N/A
R Tibia	N/A				N/A
L Fibula	N/A	Missing – may be incl with Indiv 1			N/A
R Fibula	N/A				N/A
L Talus					
R Talus					
L Calcaneus	25%				
R Calcaneus	25%				

HAND (# Present / # Complete)				FOOT (# Present / # Complete)			
	Left	Right	Unsided		Left	Right	Unsided
Carpals	1 / 1	1 / 1	/	Tarsals	1 / 0	1 / 0	/
Metacarpals	/	/	/	Metatarsals	/	/	1 / 0
Phalanges	/	/	/	Phalanges	/	/	/

CRANIAL & POSTCRANIAL MEASUREMENTS (ADULT REMAINS)

Burial / Skeleton Number: Burial C1, Indiv 2, Op 9, 2004

Est. Sex / Age at Death: Possible Male, Possible Middle Adult

- All measurements were recorded to the nearest **millimeter**.
- In the case of bilateral measurements, measurements were taken from LEFT side whenever possible. If measurement was taken on RIGHT side, it is marked with (R).
- Measurements taken from reconstructed bones are marked with an asterisk (*).

Cranial Measurements			
1.	Maximum Cranial Length		18. Interorbital Breadth
2.	Maximum Cranial Breadth		19. Frontal Chord
3.	Bizygomatic Diameter		20. Parietal Chord
4.	Basion-Bregma Height		21. Occipital Chord
5.	Cranial Base Length		22. Foramen Magnum Length
6.	Basion-Prosthion Length		23. Foramen Magnum Breadth
7.	Maxillo-Alveolar Breadth		24. Mastoid Length
8.	Maxillo-Alveolar Length		25. Chin Height
9.	Biauricular Breadth		26. Height of Mandibular Body
10.	Upper Facial Height		27. Breadth of Mandibular Body
11.	Minimum Frontal Breadth		28. Bigonial Width
12.	Upper Facial Breadth		29. Bicondylar Breadth
13.	Nasal Height		30. Minimum Ramus Breadth
14.	Nasal Breadth		31. Maximum Ramus Breadth
15.	Orbital Breadth		32. Maximum Ramus Height
16.	Orbital Height		33. Mandibular Length
17.	Biorbital Breadth		34. Mandibular Angle

Cranial fragments from this burial not measureable.

Note: Remains of Individual 1 and 2 commingled. Here it is *estimated* which bone belongs to which individual.

Postcranial Measurements					
35.	Clavicle Maximum Length		57.	Os Coxae Iliac Breadth	
36.	Clavicle Ant-Post Diameter at Midshaft		58.	Os Coxae Pubis Length	
37.	Clavicle Sup-Inf Diameter at Midshaft		59.	Os Coxae Ischium Length	
38.	Scapula Height		60.	Femur Maximum Length	
39.	Scapula Breadth		61.	Femur Bicondylar Length	
40.	Humerus Maximum Length		62.	Femur Epicondylar Breadth	
41.	Humerus Epicondylar Breadth		63.	Femur Maximum Diameter of Femoral Head	
42.	Humerus Vertical Diameter of Head		64.	Femur Ant-Post Subtrochanteric Diameter	
43.	Humerus Maximum Diameter at Midshaft		65.	Femur Med-Lat Subtrochanteric Diameter	
44.	Humerus Minimum Diameter at Midshaft		66.	Femur Ant-Post Midshaft Diameter	C1-2 Left 28.79
45.	Radius Maximum Length		67.	Femur Med-Lat Midshaft Diameter	C1-2 Left 29.7
46.	Radius Ant-Post Diameter at Midshaft	C1-1 Right 12.48	68.	Femur Midshaft Circumference	C1-2 Left 95.0
47.	Radius Med-Lat Diameter at Midshaft	C1-1 Right 16.53	69.	Tibia Length	
48.	Ulna Maximum Length		70.	Tibia Maximum Proximal Epiphyseal Breadth	
49.	Ulna Ant-Post Diameter	C1-2 Right 14.15	71.	Tibia Maximum Distal Epiphyseal Breadth	
50.	Ulna Med-Lat Diameter	C1-2 Right 18.59	72.	Tibia Maximum Diameter at Nutrient Foramen	
51.	Ulna Physiological Length		73.	Tibia Med-Lat Diameter at Nutrient Foramen	
52.	Ulna Minimum Circumference		74.	Tibia Circumference at Nutrient Foramen	
53.	Sacrum Anterior Length		75.	Fibula Maximum Length	
54.	Sacrum Ant-Sup Breadth		76.	Fibula Maximum Diameter at Midshaft	
55.	Sacrum Max Transverse Diameter of Base		77.	Calcaneus Maximum Length	
56.	Os Coxae Height		78.	Calcaneus Middle Breadth	

BURIAL REPORT: Burial C2, Op. 9 (2004)

Burial / Skeleton Number: Burial C2, Op. 9, 2004
Est. Sex / Age at Death: Adult, poss. Female

Description of Remains

This burial is described in field notes as the interment of one individual in a roughly cut, shallow cist lined with faced limestone. The arrangement of the stones lining the cist suggested a “grave shape” to the excavators, who identified skull fragments and teeth in the southern end of the pit. The cist was extremely close to the present day surface, within 20 to 30 cm.

The remains consist of a handful of deeply eroded, very small fragments of human bone, with a possible admixture of faunal bone, and four human adult teeth. Reconstruction was not possible on any of the bone fragments; no measurements could be taken.

We were able to identify one fragment as part of a human mandible, a portion of the lowest bony area below the mental eminence. The delicate, narrow fragment would delineate a curved chin, consistent with a gracile, possibly female, individual.

Four teeth were recovered from the cist, one of which was burned:

RPM ¹	Upper right premolar 1	Light wear; no evidence of caries or calculus.
RC ¹	Upper right canine	Light wear; no evidence of caries or calculus.
LC ¹	Upper left canine	Light wear; no evidence of caries or calculus.
LC ₁	Lower left canine	Light wear; one occlusal carie, no calculus; burned.

While the field notes describe skull fragments, despite careful examination we were not able to identify any cranial material in the remains, other than the above-described mandibular fragment.

Summary

We believe this may have been a cache, or special deposit, rather than a burial, based on the presence of the burned canine, the paucity of remains which cannot be attributed solely to erosion, and the absence of the cranial materials which caused excavators to believe that this was an interment.