

**BELIZE VALLEY
ARCHAEOLOGICAL RECONNAISSANCE
PROJECT**



**PROGRESS REPORT
OF THE 1994 FIELD SEASON
VOLUME 2**

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Jaime?
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you a little
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bother!!
Cheers
max
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On the Road Again: The Third Season of Excavations at the Zopilote Group, Cahal Pech, Belize

By

**David T. Cheetham, Gerald Trainor, James Mower, Esther Pozzani,
Suzanne Duggan, Anies Hassan and Prasun Amin**

Introduction

The third season of investigations at the Zopilote Group involved further refinement of site chronology. Specifically, five operations were conducted, varying both in location and objectives. The following report details these operations and provides some brief concluding remarks concerning chronological concerns. The reader is referred to the two previous reports (Cheetham et al. 1993, Cheetham et al 1994; see also Cheetham 1994) for discussion of the functional aspects of the Zopilote platform/*sacbe* complex and Maya *sacbeob* in general. As a complete, detailed site map has now been completed (Figure 1), the concluding remarks also incorporate a few comments concerning site orientation.

Excavations

Zopilote - Structure A-1 (Unit 7):

Unit 7 was begun during the 1993 field season. At the time the unit was not trenched to bedrock because of the large amount of time allocated to removal of Stela 9 which was located within Tomb #2 within the terminal staircase (see Cheetham et al. 1993; Cheetham 1994). Because the construction of Tomb 2 involved the destruction of previous architecture, it was decided that a large portion of our 1994 efforts at Zopilote would focus upon completing the Unit 7 excavation to the immediate east of the Tomb where preservation would likely be good. In addition, since it was known that Tomb 2 was constructed just west of the central axis of Structure A-1, it was thought that an additional chamber may be located in this vicinity. This potential second chamber, however, was not discovered. Instead, a sequence of seven temple structures were revealed (Figure 2), which span the Late Formative Xakal through Late Classic periods (350 B.C. - A.D. 900).

The preservation of terminal architecture turned out to be extremely poor, consisting, for the most part, of the first ascending step. Nevertheless, the ceramics obtained from humus down to floor 21 indicated a Late Classic Spanish Lookout phase (A.D. 680-880) construction date. This enabled this badly preserved terminal phase to be directly associated with Tomb 2 excavated the previous season. Prior to finishing the terminal staircase (perhaps at the time of Tomb 2 construction) a cache was placed below the stairway of the previous staircase which, again, had been largely removed to facilitate the construction of Tomb 2. In fact, cache #2 was placed into a hole which was cut into earlier platform surfaces, indicating that the middle section of the previous staircase had been completely removed. Cache #2 consisted of two large, unslipped vessels placed rim-to-rim: no other artifacts were located

ZOPILOTE GROUP, CAHAL PECH CAYO DIST., BELIZE

Plan and survey by Cameron Griffith
and David Cheetham 1994

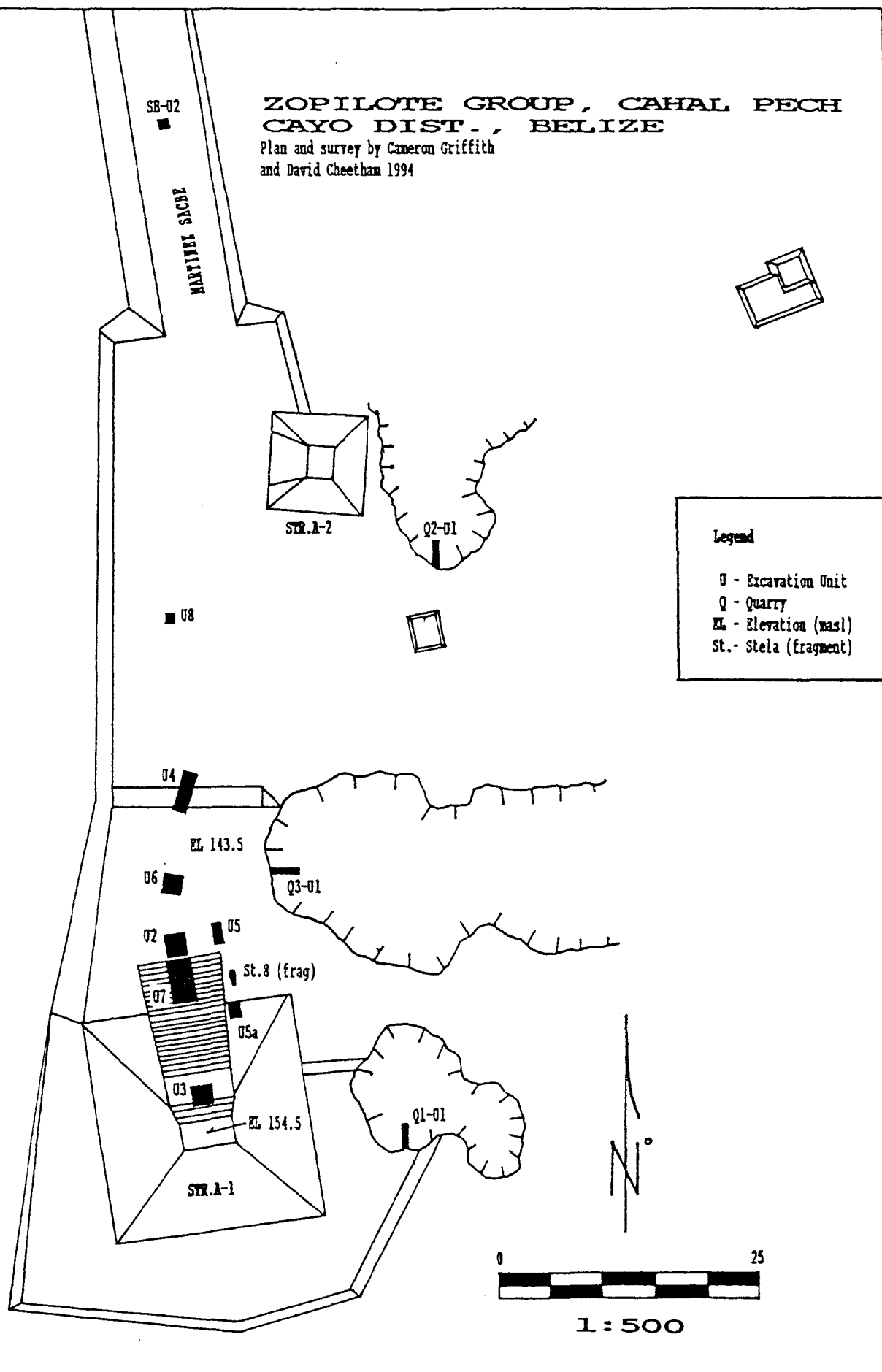


Figure 1. Map of Zopilote Group, Cahal Pech.

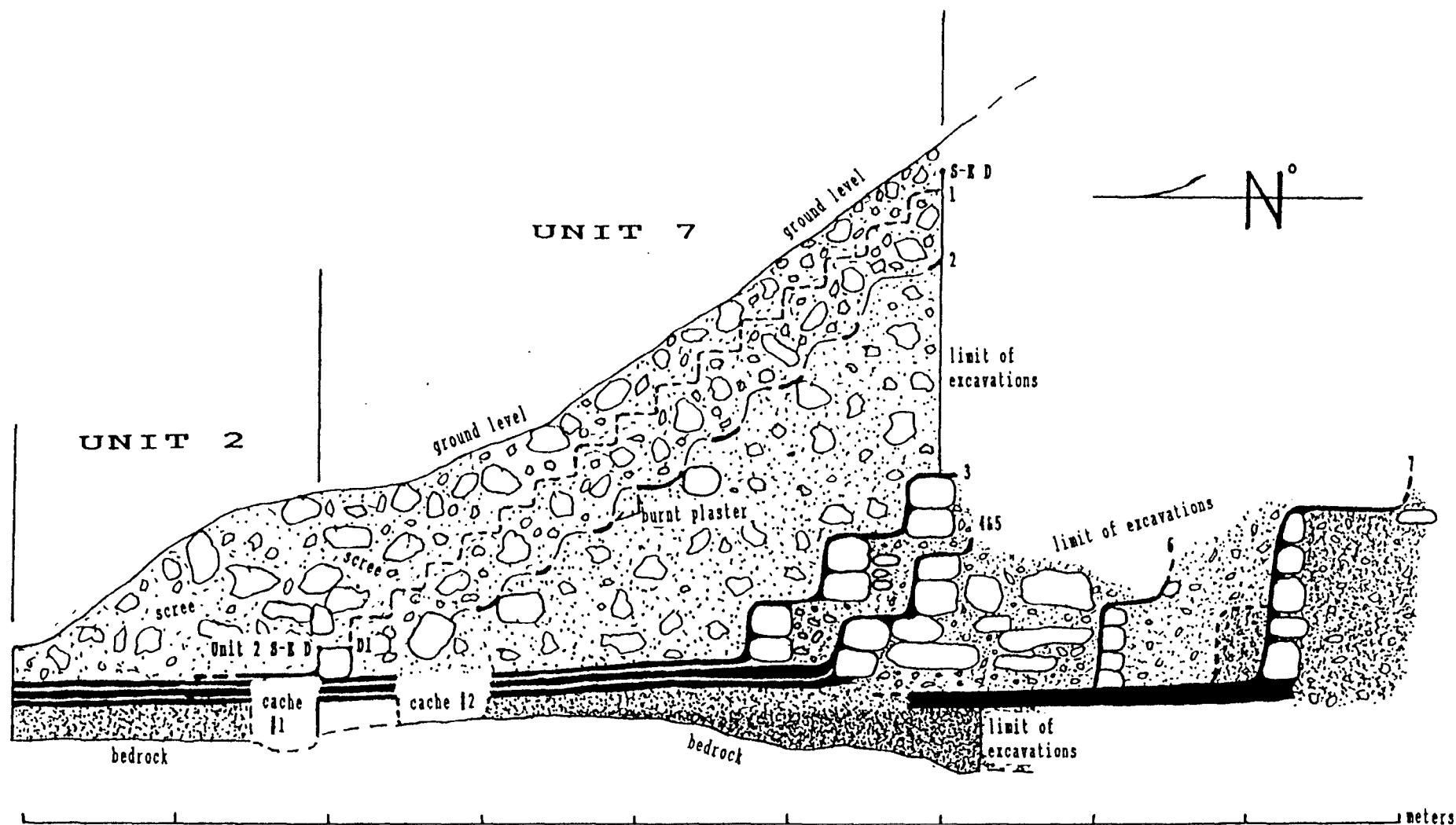


Figure 2. East-face profile, Structure A-1 (Unit 7) & Unit 2 (1992). Note that the center point(s) of cache #1 & #2 are offset from the east face 1.20 m and .43 m respectively.

within or near them. Furthermore, cache #2 is virtually identical to cache #1 excavated within Unit 2 (at the foot of A-1, see Figure 1) in 1992 (Cheetham et al. 1993).

The previous phase of architecture (A-1/sub 2) was, for reasons noted above, only visible along the extreme east-face of Unit 7. Remarkably, our excavation unit just caught the edge of what remained, therefore, we likely removed the same portion of this staircase as had been done some 1,200 years previously. Ceramics obtained from an undisturbed area dated A-1/sub 2 to the Tzakol 3 sub-phase of the Early Classic period (A.D. 450-600, see Smith 1955 for phase/type descriptions). In addition, this date corresponds with the A-1/sub 2 architecture (and Tomb #1) noted within the summit excavations (Unit 3, see Cheetham et al 1983). To the west, portions of the staircase still remained, including a large section, or overhang, above Tomb 2 - likely left intact to provide solid, upper support for the tomb. Perhaps the most remarkable aspect of the remnants of Structure A-1/sub 2 was that the staircase was burnt black virtually everywhere it was recovered. The amount of ritual incense burning at, or on, this structure is truly remarkable as, we shall see, it is for earlier architecture as well.

Structure A-1/sub 3 is also dated to the Early Classic period based on ceramic association. The plaster plaza/platform constructed at this point serviced both this architectural phase and, at a later date, A-1/sub 2 -this entire surface was extremely blackened, presumably through the ritual burning of incense. The construction techniques employed for the staircase are of a high quality, including large blocks of limestone encompassing the entire height of the risers (.40 m in height) and a dense mortar and ballast forming the backing fill. In addition, a thick, smooth coat of plaster covers the outer surface of the staircase.

Two platform surfaces were constructed in conjunction with Structure A-1/sub 4-5. Again, both of these surfaces displayed extensive blackening - in fact, covering the majority of their surfaces. The construction of the staircase itself is similar to A-1/sub 3 in overall quality, however, the dense backing/fill includes larger core fill within the mortar/earth matrix. Ceramics located below both the platform surfaces and the staircase include types from the Middle and Late Formative period. However, the presence of the Floral Park phase (100 B.C. - A.D. 300, see Gifford 1976, 1965) Aguacate Orange sherds indicate a chronological placement in the latter half of the Late Formative period.

Structure A-1/sub 6 is characterized by a low (.55 m high) terrace flanking a central staircase (offset from the east-face profile by .27 m). The poorly preserved staircase extends to the plaza/platform surface from the aforementioned terrace. Construction techniques are, once again, exemplary, with the terrace exhibiting a thick coat of plaster, sturdy masonry backing and a dense mortar/earth structural fill. Ceramics located within the staircase and behind the terrace/apron include a mixture of Middle and Late Formative types. Notably absent are types of the Floral Park phase - especially prominent being Sierra Red, indicating a Late Formative date likely within the first half or facet (350 B.C. A.D. 1).

The final architectural phase recorded within Unit 7 was the remarkably well preserved A-1/sub 7. This structure is characterized by a 1.10 m high terrace/apron with a .48 m high step (offset from the east-face by .83 cm). This architecture was built upon the initial plaster plaza/platform surface, which would have extended approximately 4 m north of the step prior to later modification. Ceramics recovered within the terrace/apron dated

to the Middle and Late Formative periods, however, the large number of Middle Formative sherds combined with the presence of transitional Savana Orange-Sierra Red types indicate an approximate date of 400-300 B.C. for this structure.

Zopilote Platform (Unit 8):

This 1X1 m unit was placed within the lower (north) platform 27.5 m south of the junction with the Martinez *sacbe* (see Figure 1 for location). A previous excavation unit (4), straddling the upper and lower platforms, revealed a single lower platform floor .18 m below humus (Cheetham et al. 1993:Figure 2). Since this was the only discernable stratigraphic division within the north section of Unit 4 (and bedrock was located .32 m below this point), it was decided this season to place an additional unit to the north to further test the stratigraphy of this portion of the platform.

Two plaster surfaces were revealed within Unit 8 (Figure 3a). Humus level was dated to the Late Classic period based upon the frequency of ash-tempered sherds of the Belize Ceramic Group (Gifford 1976). Two Late Formative plaster surfaces were located below humus - again, dating was achieved through ceramic association. As noted above, bedrock was a mere .50 m below humus within the north section of Unit 4, however, within Unit 8 bedrock begins at a depth of 1 m. The additional surface, therefore, may be attributed to the bedrock slope; quite possibly a step was located between Unit 4 and Unit 8 as was the case within Unit 4.

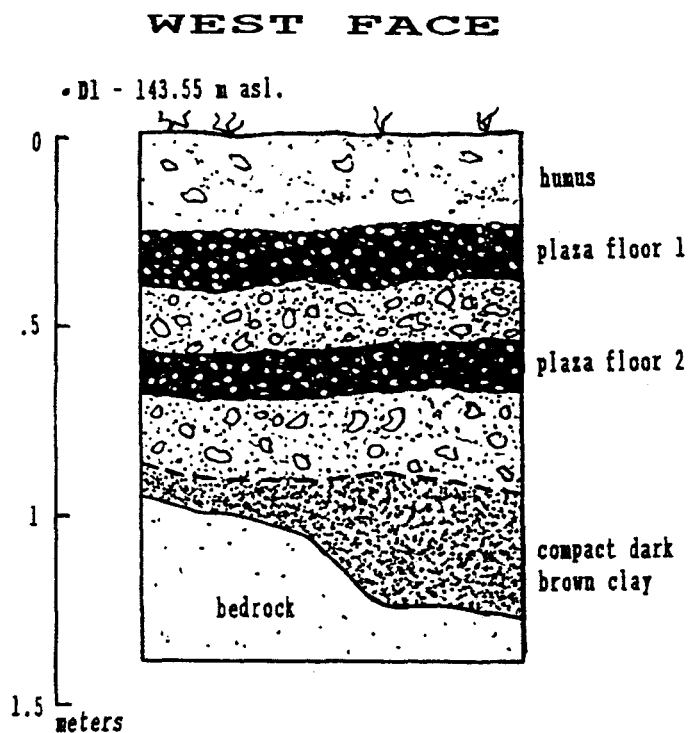
Martinez Sacbe (Unit 2):

Previous excavations on the *sacbe* (Cheetham et al. 1993:155,158 & Figure 3) indicated two poorly preserved plaster floors and a plastered surface atop bedrock. At the time it was suggested that the uppermost two floors dated to the Classic period, however, no ceramic data was recovered to corroborate this chronological assignment. In an effort to rectify this deficiency a second test excavation (Unit 2) was initiated.

This small 1X1 m unit (Figure 3b) was placed 20 m north of the junction between the Martinez *sacbe* and the Zopilote platform (see Figure 1 for location). Similar to previous excavations, two poorly preserved plaster floors were noted. Ceramics recovered within the humus level (1) date exclusively to the Late Classic Spanish Lookout phase (A.D. 680-880). The depth of this stratum (.33 m), as well as the abundance of Late Classic sherds, suggests that a third plaster surface may have been present but is now completely deteriorated. Below the first definite surface (1), ceramics of the Late Formative Xakal phase (350 B.C. - A.D. 350) were recovered. Similarly, below surface 2 Late Formative sherds constituted the latest ceramics identified. It should also be noted that in both strata Middle Formative ceramics were present, suggesting a chronological placement within the early facet of the Late Formative period, although this is not altogether certain. Finally, at a depth of .92 m very dense, dark and compact clay was encountered. This stratum was sterile, likely representing the original ground surface or paleosol.

Structure 3 "Luth Be":

Structure 3 (or "Luth Be") is a small temple mound (2.6 m in height) located approximately 280 m north of the Zopilote terminus, adjacent to the east side of the



1 : 20

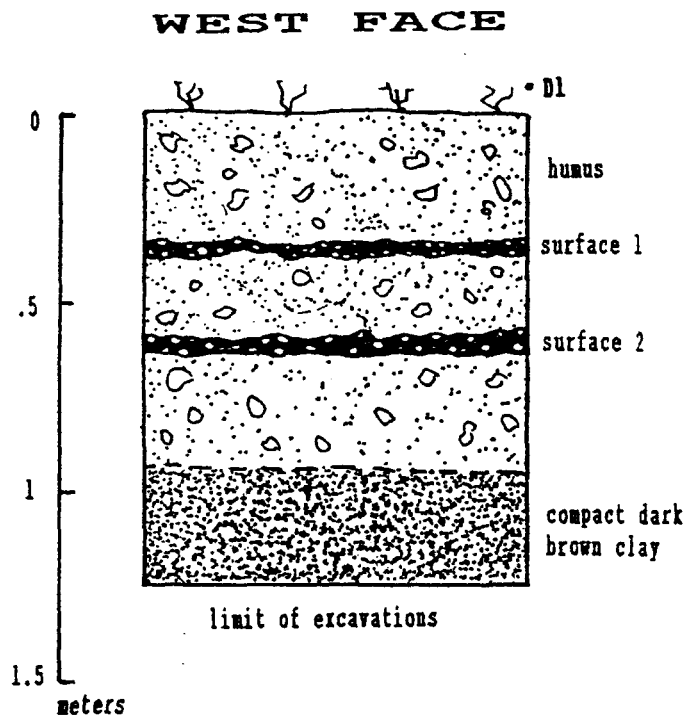


Figure 3. a, West-face profile, Unit 8; b, west-face profile, Martinez Sacbe, Unit 2 (see Figure 1 for location).

Martinez *sacbe*. Reported in 1993 (Cheetham et al. 1993), Structure 3 was severely looted at some point in the recent past - a large "crater-like" pit gutted the summit and a remarkably well positioned axial trench penetrated the west face. As a result, the remnants of a Tomb was noted at the east end of the west trench.

In order to correlate the date of this structure with the Zopilote terminus it was decided to clean-up the western trench and record what stratigraphic and artifactual data remained. Remarkably, only one phase of architecture was evident in the profile (Figure 4a), although a floor was noted to run under the tomb raising the possibility that this surface represents an earlier structure. In any event, the most notable aspect of the trench was undoubtedly Tomb #1 (Figure 4a, b). The tomb is oriented east-west, being constructed of carefully hewn limestone blocks left unplastered and capped with large limestone slabs (only one of which remained in situ). The tomb measured 1.10 m (east-west) by .68 m (north-south). Contrary to the conventional alignment of north-south for burials (and tombs) this odd orientation demonstrates the relationship of Structure 3 to the Martinez *Sacbe*. Unfortunately, no tomb contents remained to be discovered despite our intensive screening efforts.

Two other significant architectural features recorded include the north stair-side and northwest outer wall or terrace. The north stair-side (Figure 4c) was offset .36 m south of the central axis, indicating that a stairway existed south of the central axis and not to the north (see Figure 4d). This is corroborated with the evidence of the north-west outer wall which, aside from the portion which was removed by the looter's within the confines of the western trench, abuts the north stair-side.

The chronological assessment of Structure 3 was achieved primarily through ceramic association. Collections were obtained from three sources: looter's backdirt within and in front of the western trench, from below the floor of Tomb #1 and, although to a lesser extent, within the summit looter's pit. In all cases ceramics were easily assigned to the Late Classic period (A.D. 650-900). Thus, given the height of the only visible floor at .40 m above the surrounding terrain, it is likely that Structure 3 was constructed entirely during the Late Classic period - possibly in two phases.

Concluding Remarks

As indicated in the introduction, this brief report has outlined additional architectural and chronological data obtained during the 1994 field season at the Zopilote Group. These objectives have enabled a definitive association between the "stela chamber" (or Tomb #2) and the now largely obliterated Late Classic/terminal staircase. Furthermore, a large collection of ceramics were obtained from within A-1/sub 7 providing a reliable Middle to Late Formative date (approx. 400-300 B.C.) for the construction of this temple structure which stands approximately 5.5 m in height.

Unit 8 demonstrates that the Late Formative plaster plaza/platform construction extended across the currently existing platform. In fact, other units previously excavated (eg. Units 4 & 6) indicate that several tiers gave the platform a multi-level appearance throughout the Late Formative period. Perhaps most significantly, though, is that the extension of the Formative platform surfaces towards the *sacbe* junction hints that the Martinez *sacbe* existed at this early time period. This latter point was confirmed within *sacbe* Unit 2 through

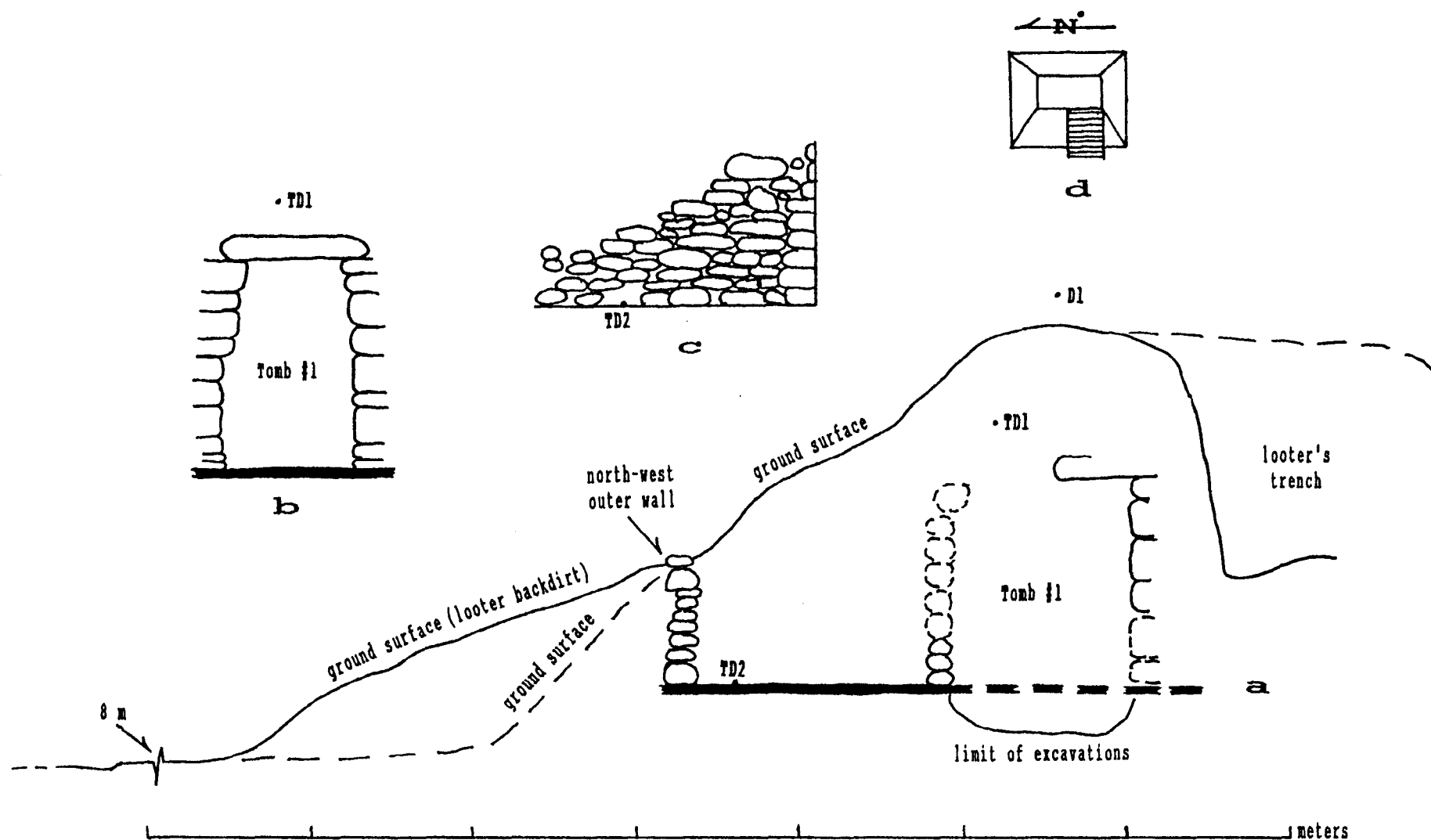


Figure 4. a, East-west X-section of Structure 3 "Luth Be"; b, north-south X-section of Tomb 1; c, north stair-side profile; d, rectified top-map of structure, noting probable location of offset stairway (not to scale).

the isolation of two causeway surfaces dated through ceramic association to the Late Formative period. Investigations of Structure 3 ("*Luth Be*") indicate that it was built adjacent to the Martinez *sacbe* sometime during the Classic Period, likely during the latter half. Although severe looting precludes definitive data as to the nature of the principal interment (Tomb 1), its presence attests to the intentional association of elite burials in relation to the *sacbe*.

Finally, the newly drafted site map indicates an orientation of 8 degrees west of magnetic north for the Martinez *sacbe*. This accords with the architectural (terminal and sub-level) orientation of Structure A-1, strongly suggesting a cosmological and/or astronomical configuration of the entire architectural complex.

Note: Because the final phase of architecture was not noted in previous excavations I will not endeavour to re-number the entire architectural sequence in diminishing numerical fashion (eg. Str. A-/10th as the final architectural phase). I will, instead, use a numerical system which adds a number for each additional architectural phase encountered (eg. A-1/sub 1, A-1/sub 2, etc.). At a later date all excavated units (previous and present) will be coordinated and brought under the same format.

Acknowledgements

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**Living on the Edge:
Late Classic Peripheral Activities at the Figueroa Group**

By

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Introduction

Recent archaeological investigations at Cahal Pech, Belize, have focused on the distribution and chronology of several different peripheral settlement clusters surrounding the central precinct. In particular, investigations have focused on defining the dynamic inter-site relationships between these groups and the site core (Awe 1992:173-203). The results of these excavations have illustrated both variation in settlement type and spatial proximity to the site core.

Due to the ever-present threat of urban development from the growing town of San Ignacio, many of these excavations have been of a salvage nature (i.e. Tzinic and Cas Pek). Investigations at such peripheral groups as Tolok (Powis 1993, 1994; Powis and Hohmann 1995), Zotz (Aimers n.d.; Awe et al. 1992), Zopilote (Cheetham et al. 1993, 1994), K'ik (Goldsmith 1992), Tzinic (Conlon 1992; Conlon and Awe 1991), and Cas Pek (Awe et al. 1992; Sunahara and Awe 1994) have provided data indicating that the periphery of Cahal Pech was occupied from the Middle Formative (900-300 B.C.) through to the Late Classic period (A.D. 700-900). This paper will report specifically on the preliminary excavations undertaken at the Figueroa Group, a Late Classic plaza group in the southwestern periphery of Cahal Pech.

Site Description

The Figueroa Group is located approximately 400 meters southwest of the central precinct of Cahal Pech on private land owned by Mr. Ramon Figueroa of San Ignacio Town (Figure 1). Although the location of the group had been known for several years archaeological excavations were not undertaken until July 1994, when the authors began preliminary work at the site.

The Figueroa Group is situated on a prominent natural bedrock terrace overlooking agricultural lands, and a small, circular reservoir approximately 125 meters to the northeast (home to one extremely shy crocodile). The group's spatial configuration resembles the patio group, or patio residence, defined by Ashmore (1981:49). It consists of several structures surrounding an open, "ambient" space. There are two low-lying range structures (Structures 1 and 3) to the north and south, and one relatively square structure (Structure 2) to the east, which are all situated around an open plaza area (Figure 2). It is interesting to note that within the plaza area there is an

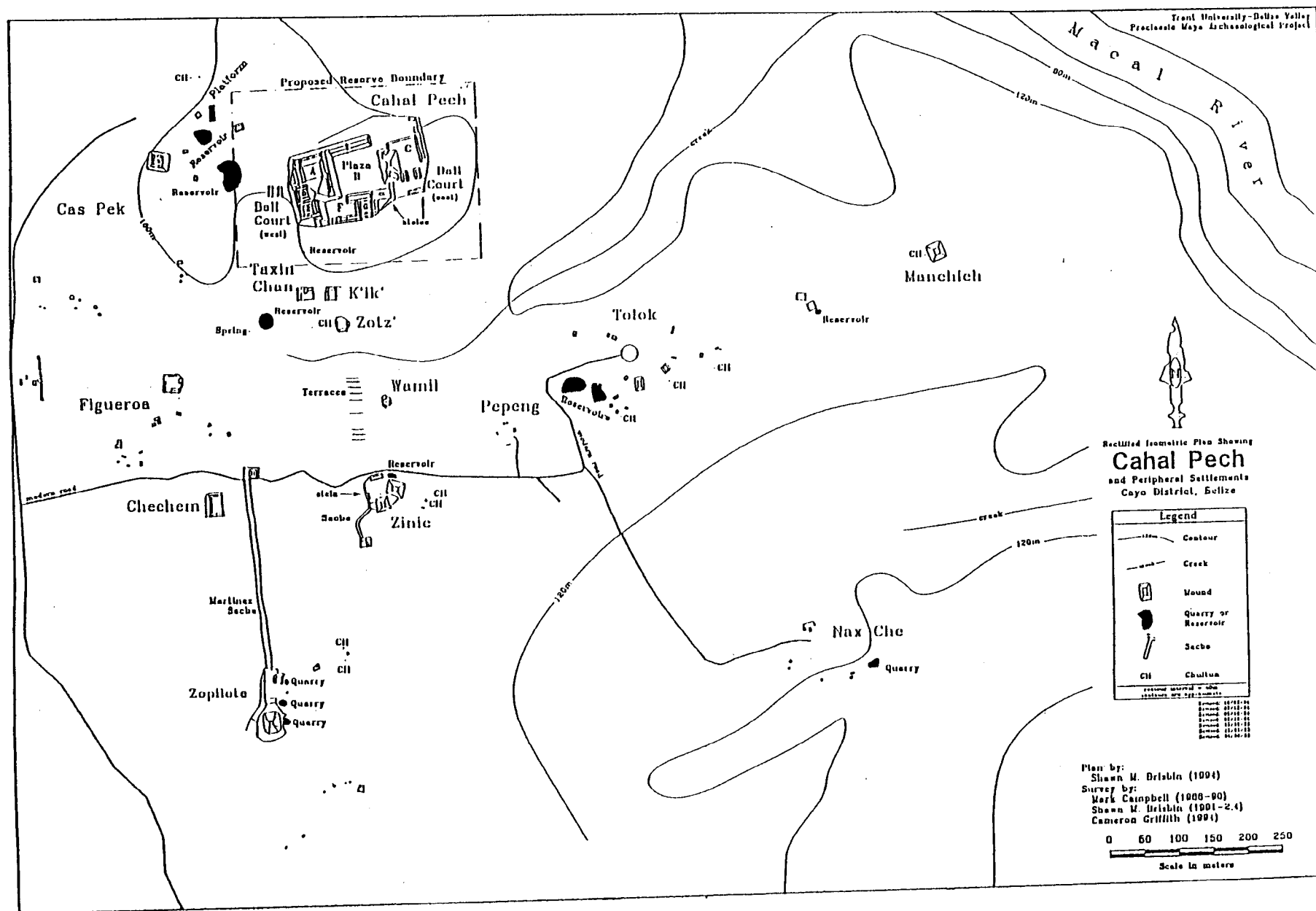


Figure 1: Site plan of settlement at Cahal Pech, Belize

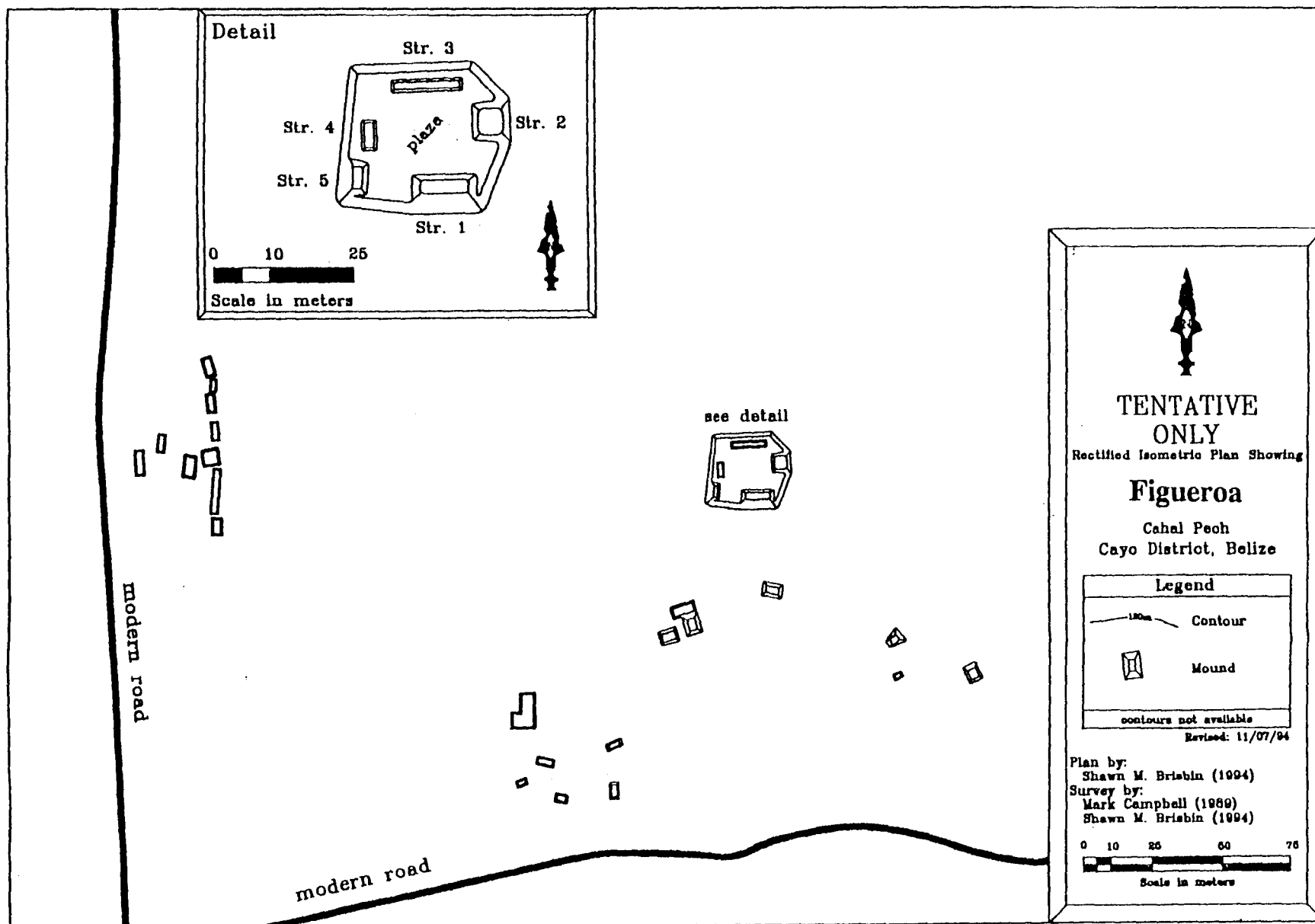


Figure 2: Figueroa Site Plan

elevated, rectangular-shaped platform extending from the western side of the plaza and reaching beyond the central axis (north-south) of the group. There is no visible structure on the western edge of the group, however, it is possible that this mound may have been bulldozed during previous land clearing. It is also possible that the structure's height is masked by the elevated, rectangular-shaped platform. The architectural configuration of the group resembles the Plaza Plan II settlement type defined by Becker (1971) for Tikal. This will be discussed in more detail below.

Excavations

Although investigations at the Figueroa Group were only of a preliminary nature, we hoped that through our limited excavation we would be able to recover enough chronological information to determine the diachronic development of the group. Additionally, our investigations were conducted to clarify the position of the Figueroa Group within the Cahal Pech settlement hierarchy. In addition to the goals stated above, we also hoped to test the applicability of Becker's Plaza Plan II settlement type to the Cahal Pech peripheral groups. Although this settlement type was created specifically for the peripheral settlements surrounding Tikal, this pattern is known to have a more widespread distribution throughout the lowlands, including several sites in the Belize Valley: Warrie Head, Cahal Cunil, Tzimin Kax (Thompson 1931); Bedran (Conlon 1993; Powis 1993); and Blackman Eddy (Garber et al. 1992).

Due to time constraints and the onset of the rainy season, we were forced to restrict our excavation to only that area comprising the plaza group. Because of these constraints we were also limited to vertical excavations, or test-pitting, rather than large-scale horizontal exposure of individual structures. Due to the limited nature or scale of these excavations, little can be said at this time about individual structure form and group dynamics.

Structure 1

Structure 1, a range-type structure located on the southern edge of the plaza, measures approximately 10 meters in length and 1.12 m in height. No architectural features were preserved on the surface of the mound to guide placement of the excavation unit. A 1 m x 2 m unit was placed along the primary axis of the mound to define stratified construction sequences. Based on excavation data, it appears that Structure 1 was built in two construction episodes during the Spanish Lookout phase (A.D. 700-900) of the Late Classic period.

The earliest construction phase in Structure 1 is discernible only in terms of changes in structural fill in the unit profiles. The earliest architectural phase seems to have been placed directly on top of what seems to be the old ground surface, or paleosol - a dark, thick soil directly above bedrock. It is possible, however, that this layer is merely wet-laid fill gathered from the surrounding area. There was no evidence of a tamped floor in the plan view or cross-section, thus this level is not being identified as a separate architectural phase. There is an obvious change in the profile approximately 40 cm above bedrock, where the structural fill changes to dry-laid core rubble. Near the surface, the fill changes again, and there is evidence of remaining architecture in the form of two cut stones in the northern and eastern profiles. Beneath these stones, the fill

is primarily ballast with some larger nodules interspersed throughout the unit, which is consistent with Classic period construction techniques.

The quantity of ceramics and lithics from the construction fill of Structure 1 is noticeably low in comparison to other groups around Cahal Pech. Faunal remains were noticeably absent from the unit. The only formal tools recovered were one mano fragment, one chert projectile point fragment, and one drill fragment. As mentioned above, all ceramics recovered from the units dated to the Spanish Lookout phase of the Late Classic period (A.D. 700-900).

Structure 2

Structure 2 is located on the eastern boundary of the Figueroa plaza group. Unlike the rectangular, range-type structures to the north and south, the eastern structure appears more square in shape or plan. The structure has the appearance of being higher in elevation than the other mounds, particularly when approached from the east, or rear, where a natural uplift in the bedrock emphasizes the height of the eastern structure.

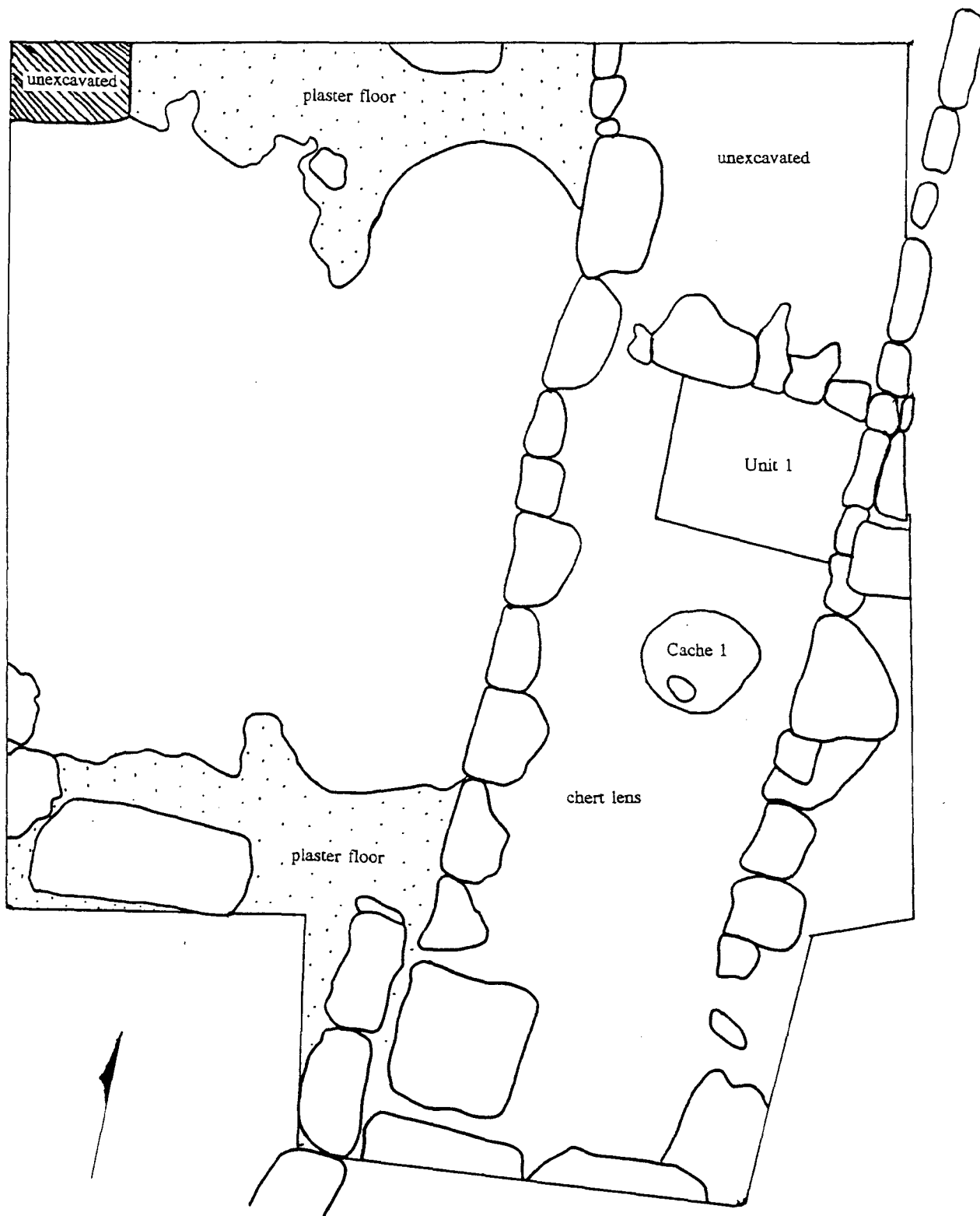
Due to the presence of the attributes mentioned above, we believed that the excavation of this mound would allow us to test Becker's (1971) Plaza Plan II model, in which "a diagnostic structure (is) situated on the eastern edge of each group", and functions in a non-domestic capacity as the household shrine (Welsh 1988:188). In this hypothesis, Becker (1971:149-150) suggests that this particular settlement plan can be recognized by structures that are:

"...characteristically small, square in plan, and high in proportion to area of base when compared with the other structures in the group. Indeed, this structure is often spatially dominant and distinctly separated from the other construction in these generally quadrangular architectural groups."

Structure 2 had been severely looted on the eastern side as well as the summit of the structure. In order to avoid stratigraphic difficulties associated with this intrusion, we decided to place our excavation unit below the looter's trench on the western incline toward the plaza. We began excavation along the primary axis, however, upon further investigation, it became obvious that the looter's backdirt had obscured the original dimensions of this mound. Consequently, our excavation unit had to be extended further to the north.

Based on excavation data, it appears that Structure 2 was constructed in two, possibly three, architectural phases. The earliest construction phase consists of a plaster floor extending from the plaza and abutting a vertical wall seven courses high (Figure 3). Extending from this wall was a one course extension to the south continuing along the same line (Figure 4). This architectural phase bares a strong resemblance to the inset shrine found in Structure 2 at the Bedran Group, a plazuela group located in the southwest periphery of Baking Pot (Conlon 1993:192; Powis 1993).

Figure 3: Structure 2 Plan



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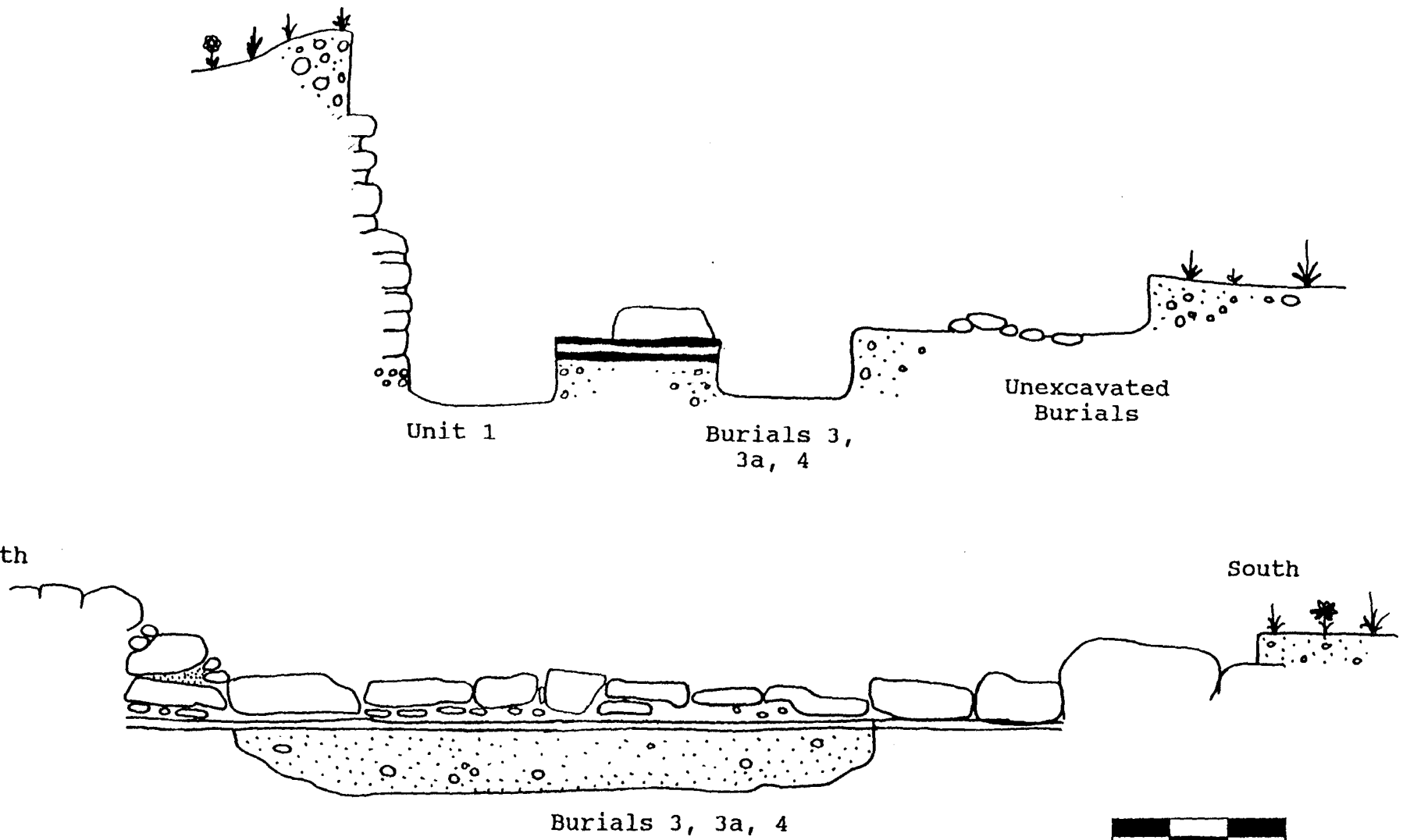
Figure 4: Structure 2 Profiles

East

West

North

South



scale 1:20cm

The second (or penultimate) construction phase consisted of a single course retaining wall added to the front of the structure (plaza side), approximately one meter to the west of the earliest construction phase (Figure 4). This wall was aligned in a north-south direction and was placed directly on top of the two earlier plaster floors, which extended eastward towards the structure. These two plaster floors were quite thick and well preserved. This preservation may be due to the presence of a 10 cm thick chert lens that covered this entire portion of the structure. This lens consisting primarily of chert flakes and debitage was placed directly on top of the terminal plaster floor and was roughly the same height as the single course wall which confined it. Although a strip of this lens was left intact, we estimate that an excess of twelve thousand lithic flakes were removed from this area.

Directly beneath the chert lens we encountered a roughly circular, dark patch in the plaster floor. This area measured approximately 34 cm x 36 cm (see Figure 3). It appears that the residents of Figueroa dug through both plaster floors, the underlying structural fill, and 15-20 cm of bedrock before depositing a cache (Cache 1) consisting of three marine bivalves (Family *Cardiidae*). This non-dedicatory cache containing three marine bivalves was deposited within the structure and, subsequently, sealed with the thick layer of chert flakes. Both the cache and chert lens are believed to be part of a single votive offering.

The floors mentioned above extended toward the existing architecture located on both the east and the north of the unit. The eastern limit of the unit was bordered by a low wall that was both parallel, and of an equal height to the wall to the west. However, a three-course abutment rested upon this wall at 2.4 m south, and extended north into the northern baulk. Resting upon this abutment lay another wall consisting of four courses of cut-stone.

Excavations also revealed that the plaza floor extended to the base of Structure 2 where it abutted a single course of cut stones. These cut stones bisected the unit in a north-south direction. The plaza floor west of this wall was deliberately broken in two areas, probably indicating two separate events. These two areas joined to form an hour-glass shape into which several burials were interred (Burials 1-4). Due to time constraints, we were unable to complete the excavation of this unit leaving additional burial(s) behind. Further west, the plaster floor was intentionally broken in a less uniform fashion, forming the bottom half of the hour-glass figure. It is possible that additional interments were placed closer to the plaza when the adjoining area reached its capacity. Because the depth of bedrock is so shallow, this is a distinct possibility. It is from this area that Burials 1 and 2 were removed. There is evidence of a cist burial below these remains but, again, because of the limited time available for excavation, we were unable to expose it.

Burials 1 and 2

Burial 1 was found in the southwestern corner of the unit, just north of an extremely large cut stone. It was located directly above the plaza floor and a few centimeters beneath the present ground surface. Although the preservation of the bone was very poor, we were able to determine that Burial 1 consisted of a human skull

placed face down with a Platan-Punctated Incised vessel placed above the head. The head of the individual from Burial 1 was oriented to the south and was lying in an extended position with the arms placed at the sides. Similar head in vessel offerings have been found at other peripheral settlements at Cahal Pech, including Burial 2-B/7 from the Zotz Group (Aimers n.d.). According to Welsh (1988:69), the skull under dish burial denotes symbolic importance of the structure in which it is found, and further implies the possibility of human sacrifice and intentionally severed skulls. Furthermore, Welsh (1988:69) has stated that:

"...several skulls in, between or under bowls is very clearly associated with human sacrifice, either as dedication to structures or, in the case of multiple interments, to the primary interred".

This particular interment seems to support the hypothesis that the eastern structure at Figueroa served as a religious shrine to the family or group living there. It is possible that there were additional postcranial bones associated with the head in the vessel, however, at this time, conclusions are indefinite. This will be discussed further below.

Several poorly preserved bones were found scattered to the north and east of Burial 1, including one mandible, a maxilla, and several teeth. Due to their close spatial proximity to Burial 1, it is possible that these bones (Burial 2) could be related to the skull in the vessel. Without further osteological analyses however, it is impossible to determine if such a relationship existed. Based on the breakage of the plaster floor, it appears that both Burial 1 and 2 were secondary burials deposited during, or after, Burials 3 and 4 were deposited (see below).

Burial 3a

Burials 3 and 4 were both interred in a simple cist burial (cf. Welsh 1988:17), composed of many large cut stones placed directly to the west of the one course wall of Structure 2 (Figure 5). The cist lay between the single course wall and Burials 1 and 2, aligned in a north-south direction. The bones of Burial 3a suffered from poor preservation and there were no ribs or phalanges present. Several subsequent interments encroached upon this burial, which will be discussed below (Figures 6 and 7).

Several interesting grave goods were found accompanying Burial 3a. Five worked shell "adornos" of various shapes and sizes were found to the north of, and scattered throughout, the cut stones of the cist. An additional six "adornos" were located inside the cist (Figure 8). While some of these worked shell artifacts seem to be of an ornamental nature, others may have possibly been used as ear ornaments (see Garber 1989:61-70; Kidder 1947:65-65).

In addition to the shell artifacts, an unusual human effigy vessel accompanied this burial (Figure 9). This pitcher-like vessel of the Belize Red variety (Gifford 1976:255-256) was situated to the west of the individual's right femur. The vessel depicted a small anthropomorphic male figure with animal-like haunches and a tail in the rear. This individual had a full face, belly, and penis, as

Figure 5: Structure 2, Burial 3 - Cist

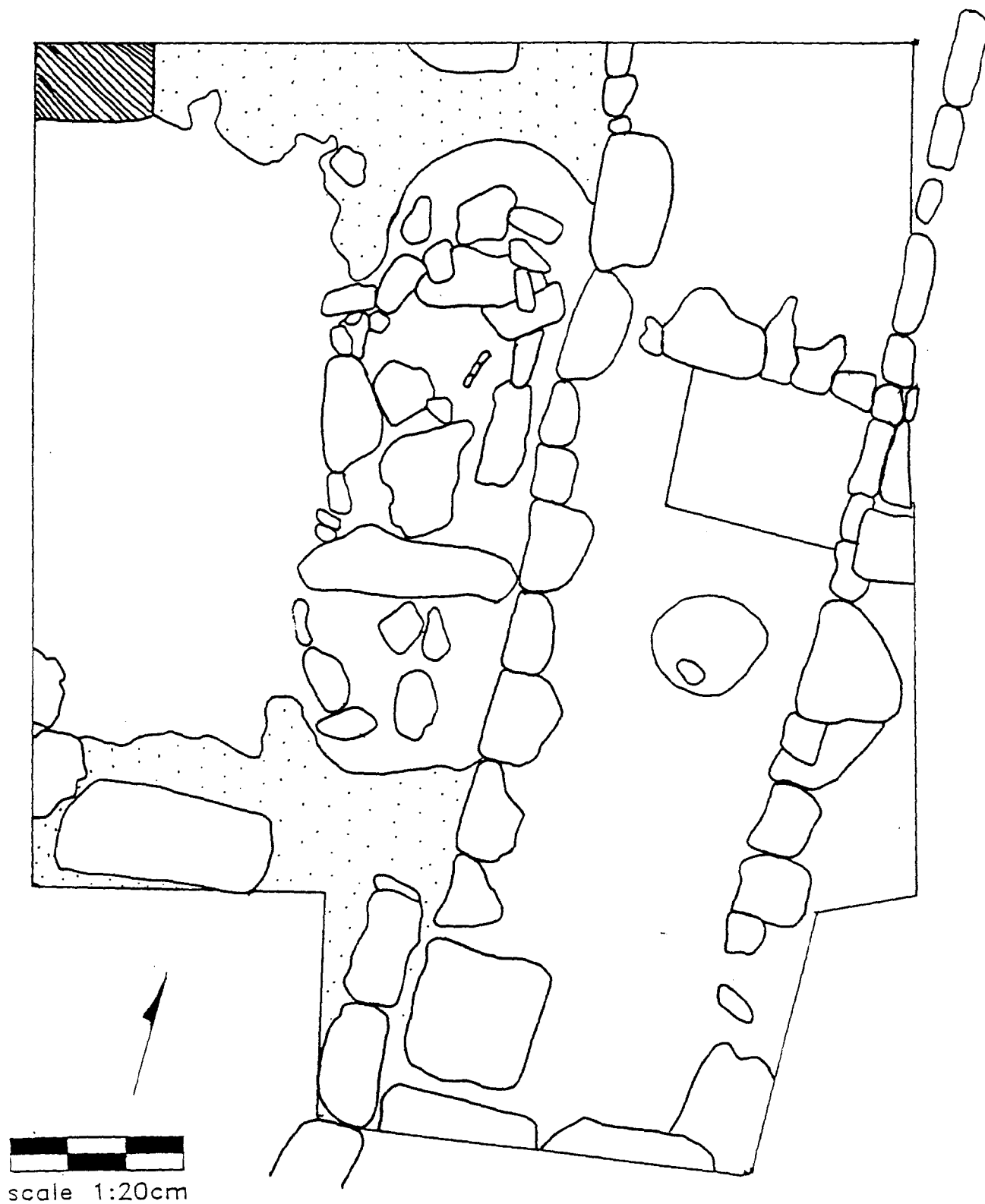


Figure 6: Structure 2, Burial 3a

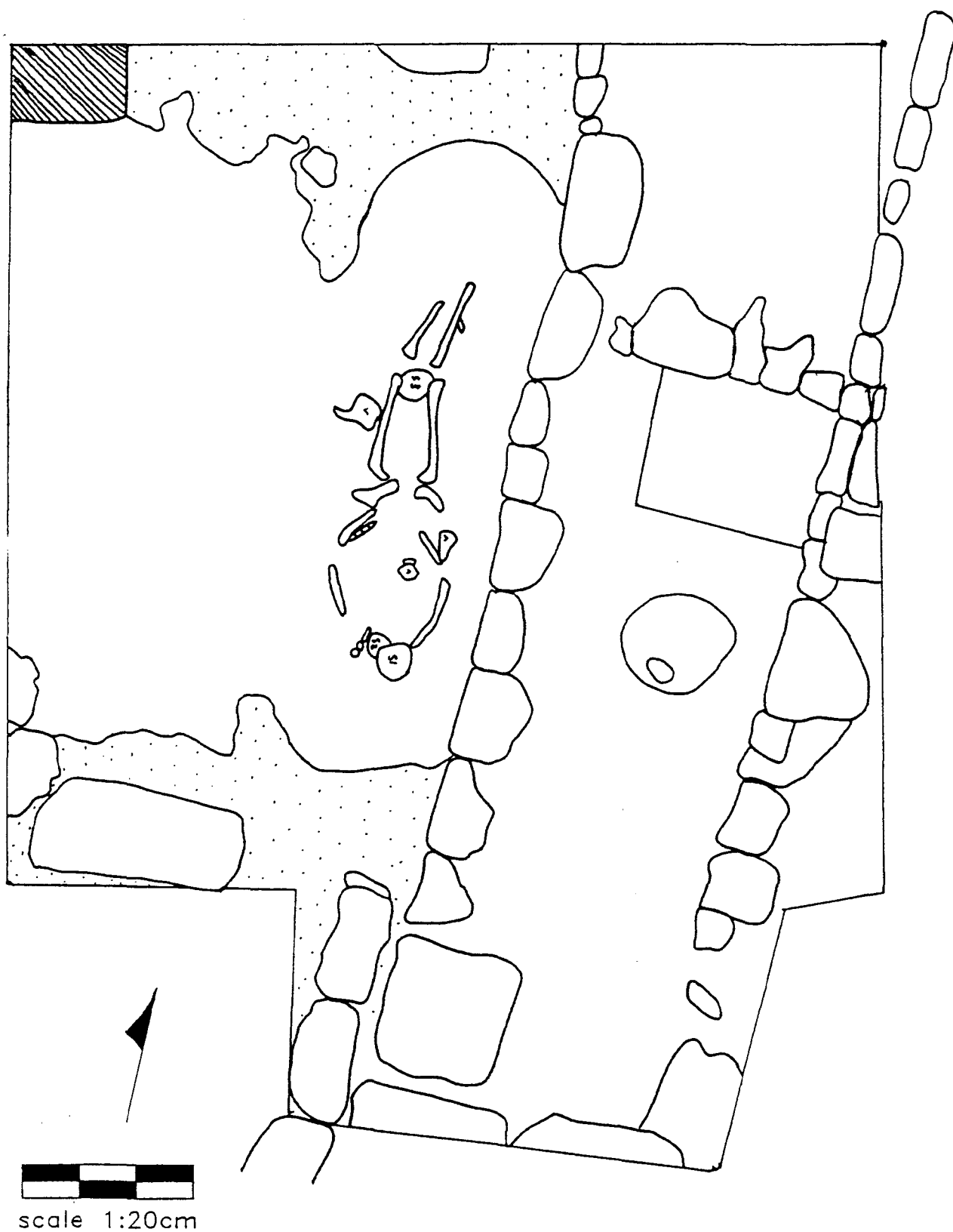


Figure 7: Structure 2, Burials 3b and 4

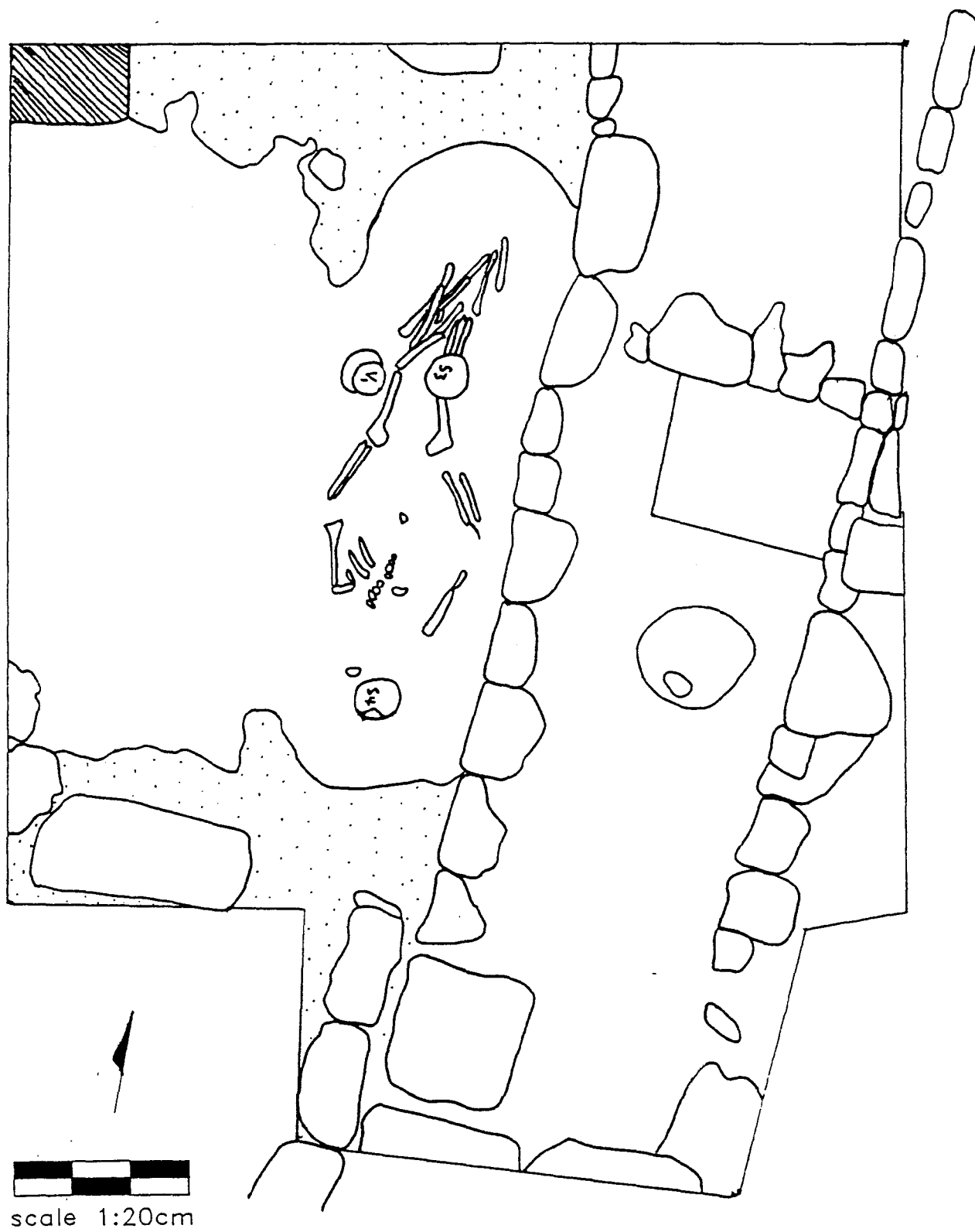


Figure 8: Adorno Shell Ornaments from Burial 3

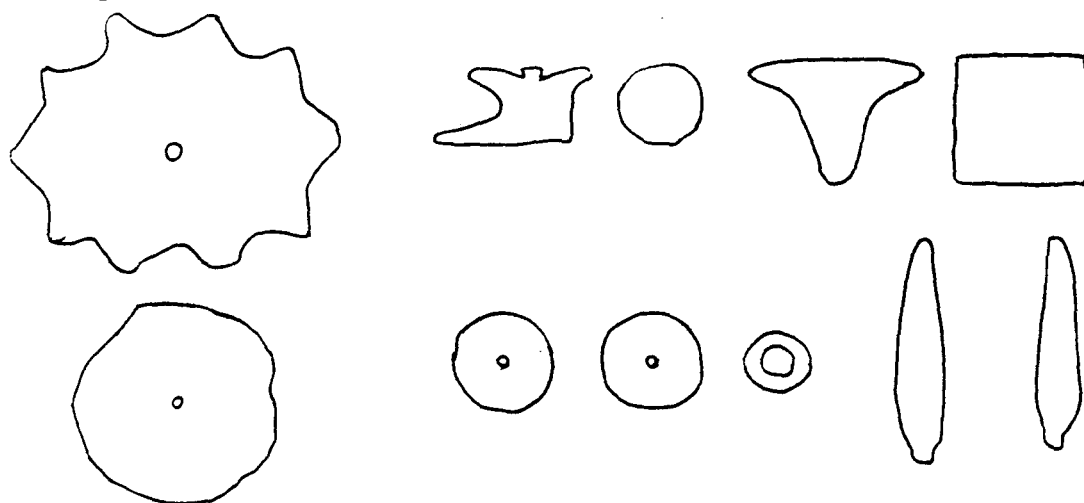
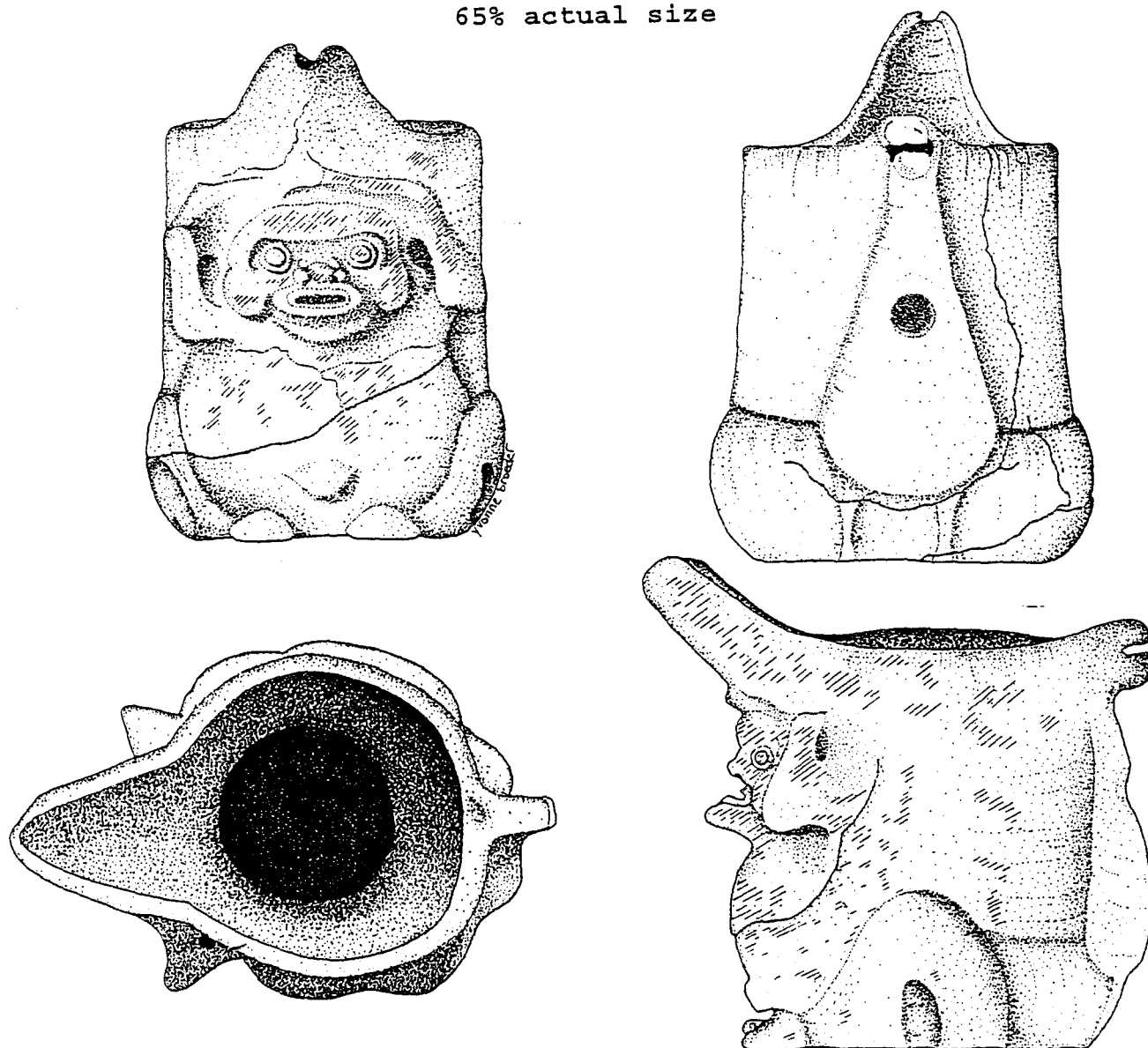


Figure 9: Ceramic Effigy Vessel from Burial 3

65% actual size



well as his arms held up over his head as if holding an object. It is possible that the figure is holding a snake with its head to the back, and tail above the man's head in the front. However, further study is needed to determine this preliminary interpretation. Some portions of the vessel exhibited traces of red slip, although the preservation conditions have left the vessel in a relatively delicate state of disrepair.

Burial 3b

Included under Burial 3 were the remains of a disarticulated, presumably secondary, interment consisting of a skull and numerous long bones (see Figure 7). The skull was placed face down, similar to the other burials found in Structure 2, and was situated between the distal ends of the femurs of the individual from Burial 3a. In addition to the skull, a cluster of long bones was piled to the north of the skull, alongside the tibia and fibula of the overlapping burial. The bones of Burial 3b continued into the northern baulk of the unit and could not be removed during this field season. It appears that Burial 3b is a secondary interment associated with Burial 3a, however, it is distinctly possible that the remaining portions of this individual will be uncovered during future excavations.

Burial 4

Burial 4 was found directly beneath Burial 3 and was separated from these individuals by several cut stones lying horizontally across the body. Like the other individuals interred in Structure 2, the preservation of the individual was relatively poor. All of the long bones were present, as were several ribs and vertebrae, but the epiphyses of the long bones were highly fragmented. The position of the skull was located at an elevation slightly higher than the accompanying remains, possibly due to slumping, or other natural processes (see Figure 7).

In addition to the skeletal remains, a number of burial goods were found associated with this individual. One freshwater bivalve shell (*Nephronaias ortmanni*) was found west of the skull, between the skulls of Burials 3 and 4, making it difficult to establish the exact context in which it had been originally placed. Because this was one of the few faunal remains recovered from Figueroa, it is likely that it was interred with one of the burials for dedicatory purposes. A complete obsidian blade was also recovered and was located east of the individual's left femur. Similar to Burial 3a, one intact vessel was located to the west of the individual's right femur, directly beneath the effigy vessel from Burial 3. At the present time, the vessel type has not been identified, thus a relative date cannot be assigned to this burial. It is assumed that this vessel is associated with Burial 4, although the layered nature of the burials makes it difficult to determine which individual this vessel was intended to accompany. One additional individual was detected immediately beneath Burial 4, but due to time constraints, it could not be removed.

Structure 3

Located on the north side of the plaza, Structure 3 is a range-type structure measuring approximately 14 meters in length and 80 cm in height. As mentioned above, the residents of Figueroa took advantage of the natural terracing of bedrock when

choosing their settlement location. The bedrock terrace slopes dramatically along the northern edge of the mound. The structure's height is, therefore, exaggerated when viewed from the north, as it would have been by the residents of Cas Pek, some 300+ meters to the north.

Like its counterpart on the south side of the plaza (Structure 1), initial investigations indicated that Structure 3 was also built in two construction episodes during the Spanish Lookout phase (A.D. 700-900) of the Late Classic. The initial occupation of the structure is represented by a 4-5 cm thick plaster floor and a retaining wall aligned in an east-west direction (Figures 10 and 11). This plaza floor appears to have lipped up to the bottom row of cut stones in the retaining wall. The portion of the floor that was preserved within the unit was approximately 5 cm thick and the surface had been burned. Due to the preliminary nature of the excavation, the nature and extent of the burning cannot be determined. It must be noted that these earliest architectural features lay directly on top of a layer of soil that is thought to be the old ground surface or paleosol. This layer is approximately 24 cm thick and consists of dense, dark mucky soil sitting directly on top of bedrock, similar to Structure 1. It is possible that there may have been an earlier tamped floor at this level, however, no archaeological evidence was encountered to indicate this floor existed. A few ceramic sherds found within this layer (Dolphin Head Red, Mount Maloney Black, and Belize Red), indicate that the earliest or penultimate construction phase can be dated to the Late Classic.

The terminal architecture within the excavation unit was poorly preserved for the most part. There was no evidence of a plaster floor above the penultimate phase of architecture, but the small, compact ballast fill below the humus layer seems consistent with the presence of a plastered surface. During this phase of construction, the east-west retaining wall and associated plaster floor to the north were modified. The plaster floor was intentionally broken approximately 15 cm to the north of the wall, apparently for the removal of cut stones, as the elevation of the plaster floor to the north is 4-5 cm higher than the present height of the one-course retaining wall. After the floor had been broken, several larger cut stones were then placed on top of the earlier retaining wall, significantly increasing the height of the structure above the plaza surface. Construction fill beneath the terminal architecture consisted primarily of compact ballast and a significant proportion of Spanish Lookout phase ceramic sherds (Belize Red, Dolphin Head Red, Mount Maloney Black, Cayo Unslipped, and Silver Creek Impressed), indicating a Late Classic date for this construction phase. Additional artifacts included one obsidian blade fragment, slate debitage, three metate fragments, one medial biface fragment, a celt fragment, and one bark beater, representing the contents of a household or community midden.

Plaza Unit 1 and 2

As mentioned above, the plaza area of the group was not flat, but rather, included a raised, rectangular-shaped platform extending from the western edge of the group. It was originally believed that the raised area within the plaza may have been the result of bulldozer activity, however, the symmetrical nature of the platform and the occurrence of cut stones along the margins suggested that this area was a cultural feature. Additional excavations are needed to

Figure 10: Structure 3 - Profile

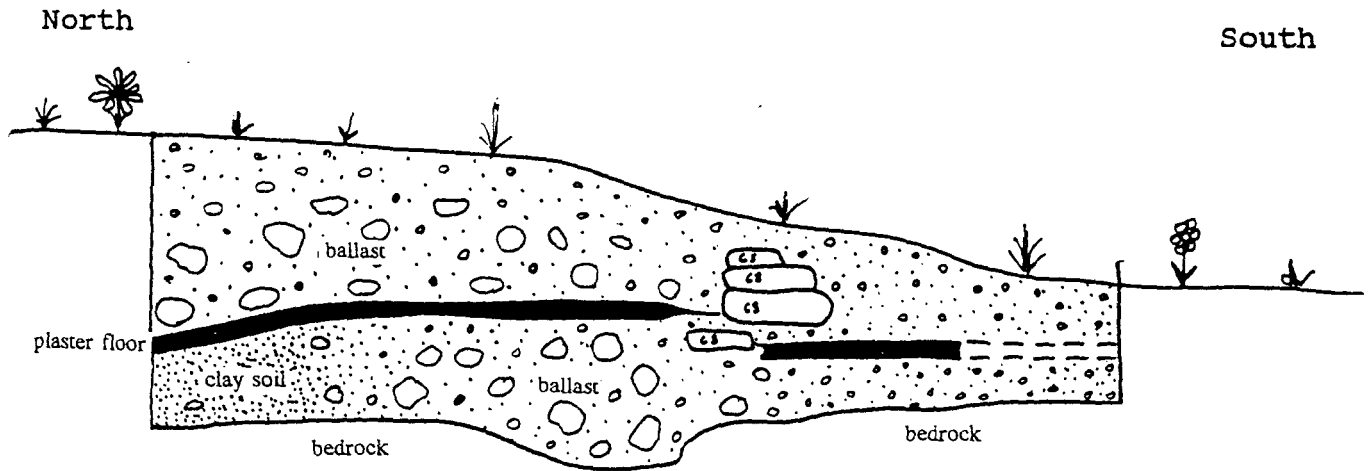
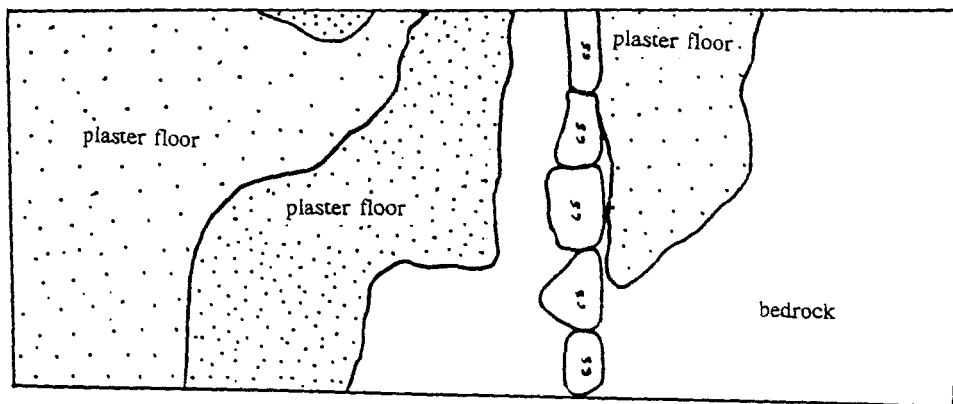


Figure 11: Structure 3 - Plan



scale 1:20cm

define the construction history and form of this plaza platform, but based on current excavation data, it appears that the raised platform is contemporaneous with the plaza floor. This archaeological information indicates that the elevated portion (raised platform) of the plaza was built to its present height during the initial construction of the group.

In an attempt to resolve this issue, two 1 m x 1 m excavation units were placed within the plaza to determine both the construction history and the diachronic development of the plaza. Plaza Unit 1 was placed along the sloping eastern margin of the raised platform. Within 2-3 cm below the surface, a poorly preserved plaster floor was found bisecting the unit in a north-south strip approximately 26 cm in width and less than 2 cm in thickness (Figures 12 and 13). Although the floor was poorly preserved, it was determined that the plaster floor gradually sloped upward from the eastern side of the plaza to the west, indicating that this platform was accessed by a ramp, not a stair or step. Based on ceramics recovered from the unit, a Late Classic (Spanish Lookout phase) date can be assigned to the construction of this platform.

Plaza Unit 2 was placed along the northwest margin of the raised platform where one large cut stone was visible on the surface. Approximately 2-3 cm beneath the present ground surface a poorly preserved plaza floor was exposed (Figures 14 and 15). The plaster floor was visible in the southern quadrants of the unit abutting two large cut stones and in the northwest corner of the unit. Although the western "mound" was not tested, it is possible that the preserved plaster in the northwest corner of the unit is associated with this structure. This unit was taken to bedrock, 60 cm below the top of the raised plaza platform, but no additional construction phases were revealed.

Discussion

The architectural formality of the Figueroa Group, coupled with its close spatial proximity to a series of reservoirs to the northeast, may indicate an involvement of the residents of Figueroa in water management at Cahal Pech during the Late Classic. According to Scarborough (1991), water management among the Maya of the southern lowlands served two major functions: collection and storage of water for daily use, and control of water for purposes of facilitating food production.

At Cahal Pech, the collection and storage of water is apparent throughout the site. Two different mechanisms for water catchment have been identified: chultuns and reservoirs. It is important to note here that the central acropolis of Cahal Pech is situated on top of a natural limestone ridge approximately one kilometre from the Macal River to the north. Residents at the settlements around Cahal Pech would have had to transport water from the river, or collect it at the site, as there is no permanent water source nearby.

Although we were unable to test the reservoir at Figueroa, it appears that this feature was the collection point for a series of reservoirs running along the western edge of the site core (Awe et al. 1992; Conlon 1992). It seems that runoff from the central acropolis would have drained the western plazas into the western reservoir, so that once this reservoir was at capacity, gravity would have pulled water downhill to the Figueroa Reservoir. Once at the Figueroa Reservoir, it is

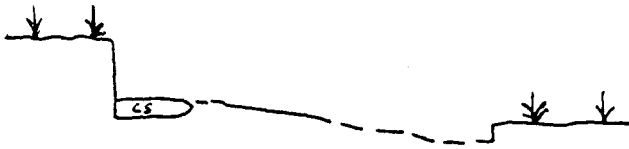


Figure 12: Plaza Unit 1
Profile

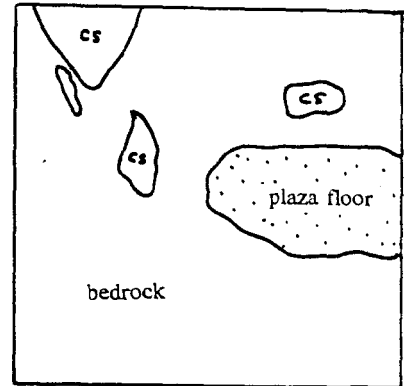


Figure 13: Plaza Unit 1
Plan

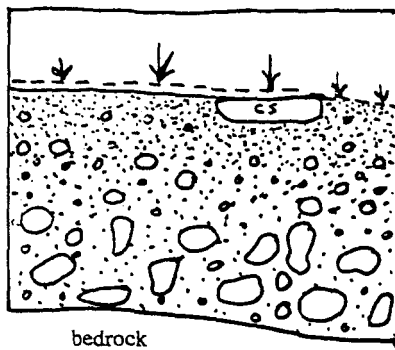


Figure 14: Plaza Unit 2
Profile

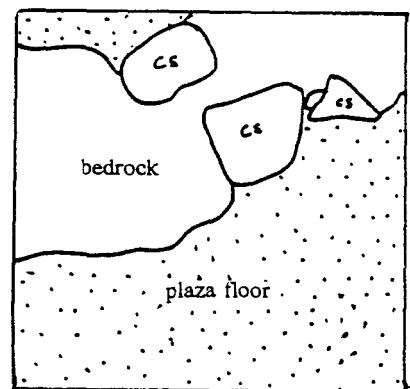


Figure 15: Plaza Unit 2
Plan

possible that overflow was directed further to the east into the seasonal creek running along the southern edge of the acropolis (Awe 1992:64).

In addition to the reservoir, there appears to be a dam of some sort to the southeast, although the date of its construction is also unknown at the present time (J. Awe, personal communication, 1995). If it can be established that the reservoir and dam were constructed during the period in which the Figueroa Group was occupied, many interesting conclusions regarding water management can be made. It is important to note that today the Figueroa Group is situated in a prime location overlooking considerable amounts of agricultural land in all directions. If this was also the case during the Late Classic period, the residents of Figueroa would have been in an excellent position to control some portions of the food supply at Cahal Pech, possibly that going directly to the residents in the site core. Although all interpretations presented above are based on preliminary excavations, it is hoped that future investigations at the Figueroa Group will clarify the position of the site in water management at Cahal Pech.

Acknowledgments

We would like to thank Dr. Jaime J. Awe, the Director of the B.V.A.R. Project, for giving us the opportunity to strike out on our own and for his continuous support and advice throughout our excavations. None of this would have been possible without the cooperation and active interest of Mr. Ramon Figueroa of San Ignacio Town, who graciously allowed us to work on his property. Thanks also to the Department of Archaeology in Belmopan for their continued cooperation regarding our research goals. Excavations at Figueroa could not have been undertaken without the unflagging support of numerous people, particularly Carmen Arendt, whose support and hard work were very appreciated, as well as the way she provided us with our daily entertainment quota. In this respect, tremendous gratitude and heartfelt thanks also go to Terry Powis for helping us so much; for spending numerous hours at the site and advising us when we needed it. Thanks also to our local crewmen, Ali Awe and Albert Bradley, whose energy never failed to inspire us, as well as David Cheetham, Barry Lapp, Jim Mower and Linden Kasub, who provided both mental and physical support. For illustrations of the vessel from Burial 3a, gratitude is directed to Yvonne Broeder. Finally, special thanks go to Rhan-Ju Song, who not only helped us excavate, but also provided invaluable friendship, laughter, and support over the last three years.

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Excavations on the Main Causeway at Baking Pot: A Brief Note

by

David T. Cheetham

Baking Pot: Previous Investigations

The first archaeological investigations of Baking Pot were undertaken in 1924 by the Carnegie Institution of Washington under the direction of Oliver Ricketson (1931). Ricketson's work consisted largely of excavation of Structure G, located within plaza III of Group I (see Figure 1 for location). Although recovering numerous burials, his efforts were largely limited to exposing Late Classic aspects of Group I, the chronology of which was not ascertained through test, or plaza excavations. Despite these shortcomings, Ricketson did produce a map of Group I (Ricketson 1931:Plate 1) which formed the basis of a site map compiled some thirty years later by William Bullard (Bullard and Willey 1965:302).

As part of Gordon Willey's Belize Valley Settlement Pattern Survey (Willey et al. 1965) the site core of Baking Pot received some attention, primarily for the purpose of ascertaining chronological data (but see Bullard and Willey 1965:306-308 for description of outlying mound excavations). At this time, plaza 1 of Group I was test pitted to sterile levels (Bullard and Willey 1965:305-306), resulting in a chronological sequence spanning the Barton Creek through Spanish Lookout phases (600 B.C.-A.D. 900), the earliest levels of which were typified through the presence of ceramics of the Chicanel Sphere, including the Late Preclassic hallmark, Sierra Red. Since this time, however, refined ceramic analysis, and C14 dates, have refined the period for this early ceramic phase to approximately 350-300 B.C. (see Gifford 1976). The principle point to be emphasized herein is that, aside from some intrusive Postclassic period activity that may have occurred after wholesale abandonment, the chronology of the site core of Baking Pot is limited to the period spanning 350 B.C.-A.D. 900.

During a pleasant summer afternoon in June 1989 both myself and James Conlon had the opportunity to scrutinize portions of the surface of the site core, noting the presence of Middle Preclassic ceramics in what appeared to be a midden context slightly south of the mid-point of Structure H (Group I, see Figure 1). Dr. Jaime Awe has also related the observance of Middle Preclassic ceramics to the author on several occasions. Although not isolated by archaeological excavation, the presence of this pottery indicates that initial occupation at Baking Pot could have occurred sometime during the late-Middle Preclassic period (850-350 B.C.).

It should also be noted that the cursory investigations of Bullard and Willey were preceded by the salvage work undertaken by A.H. Anderson - then archaeological commissioner of Belize - who undertook a brief sojourn to Group II to halt the quarrying of stone from the principle structure (A) which was being mined for the construction of a nearby road (Bullard and Willey 1965:304). The only other investigations undertaken within this group occurred in 1961 under the direction of William Bullard (Bullard 1963; Bullard and Ricketson 1965), whose efforts focused upon Structure A (see Figure 1 for location). Excavations were structured such that early cultural levels

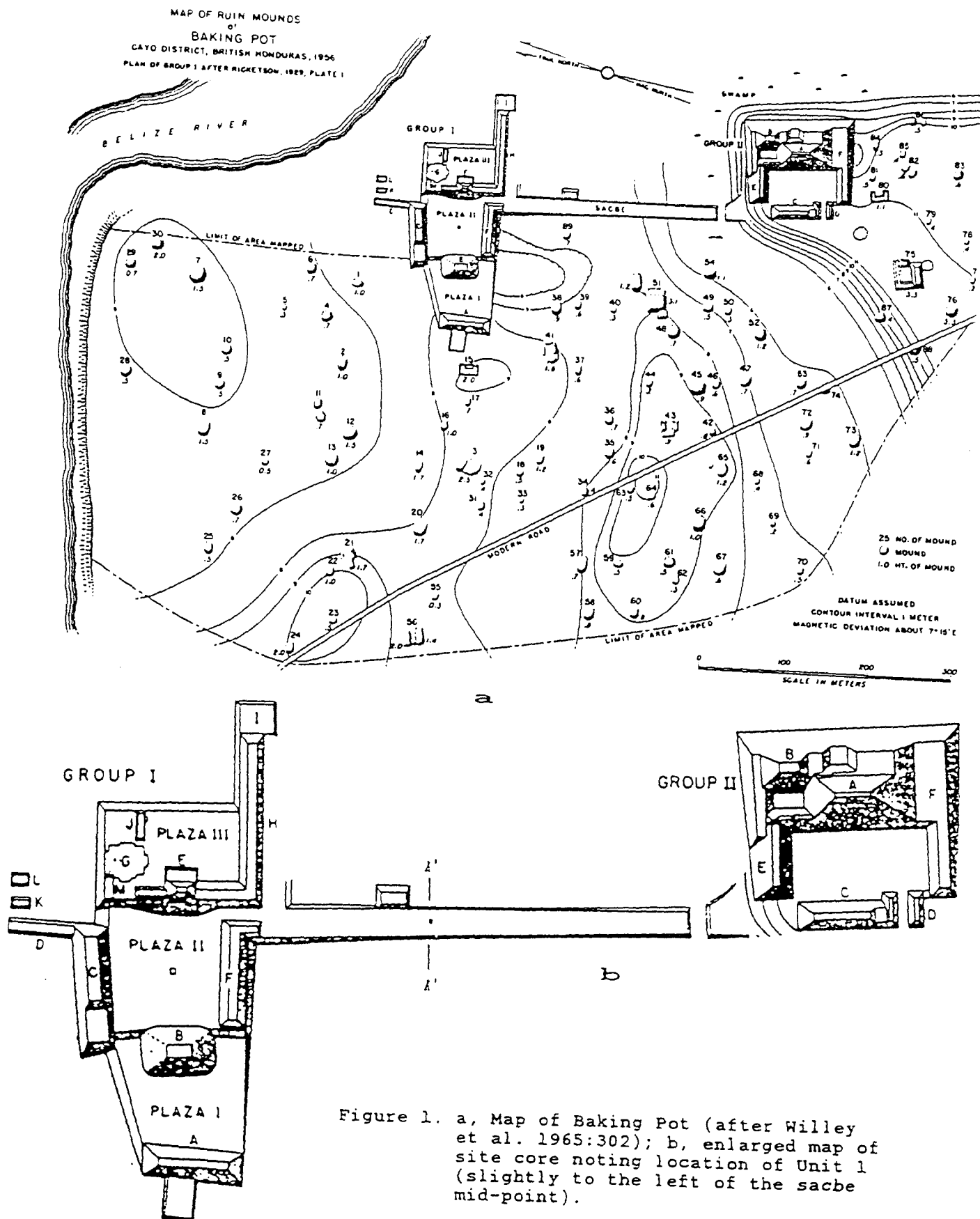


Figure 1. a, Map of Baking Pot (after Willey et al. 1965:302); b, enlarged map of site core noting location of Unit 1 (slightly to the left of the sacbe mid-point).

were not encountered, and thus, data consisted largely of Late Classic pyramidal levels including burial and architectural data. In addition, Structure D of Group II was excavated and defined as a Late Classic ballcourt. In short, unlike Group I, Group II has not, to date, had any excavations which aimed at ascertaining the breadth of its chronological sequence. It stands, therefore, that the chronology of the site hinges mainly upon the limited stratigraphic excavations undertaken by Bullard and Willey (1965) and the more recent cursory reconnaissance by Dr. Jaime Awe, James Conlon and the author.

The Main Causeway: Previous Comments and 1994 Investigations

Although Ricketson (1931:3) notes the presence of both Group I and Group II, he made no reference to the causeway which joins them, perhaps because of forest cover. The first mention of the 280 meter long sacbe occurred when the site map was enlarged as part of Bullard and Willey's (1965) reconnaissance. They describe the sacbe as:

"...connecting Groups I and II... a raised roadway 15 meter wide with a level surface. There are no parapets at the sides. Tests at intervals... disclosed evidence of a plaster surfacing except at the extreme southern end where it climbs the slope to Group II. Here, the surfacing was a pavement of stone slabs. Below Group II the sacbe crosses an old river channel... this section of the sacbe is built up with a stone fill; elsewhere the fill is simply the native alluvial clay. At the present time there is a gap in the sacbe where it crosses the old channel. Whether this gap existed during the ancient occupation is uncertain; if it did so a bridge must have occurred at this point" (Bullard and Willey 1965:301).

The 1994 investigations were initiated primarily to ascertain the chronological and related functional aspects of the sacbe. Reconnaissance of other Belize Valley sacbeob (Braswell 1993; Cheetham 1994; Cheetham et al. 1993; Cheetham et al., this volume; Keller 1993) indicate their occurrence at several larger centers within the valley. At present, however, there is no chronological data accompanying these investigations, the exception being the Martinez Sacbe (Cahal Pech), the initial construction of which is dated, through ceramic analysis, to the Late Formative period (Cheetham et al., this volume). At Xunantunich, Braswell (1993:78, Figure 10) describes Sacbe 1 as consisting of parapets with a walking surface 6.80 m wide. Sacbe 1 is suspected to date to the Late Classic period based upon construction methods and associated architecture. Keller (1993:92-93) comments that another sacbe at Xunantunich (terminating at Str.A-21) "may have served as an entrance avenue for intersite interactions, possibly ending in a clear ceremonial terminus..." The latter speculation has been definitively attributed to the intrasite Martinez Sacbe at Cahal Pech where some of the largest monumental architecture in the periphery of Cahal Pech, an elaborate crypt burial, and an early carved stela indicate a non-residential, ceremonial terminus (Cheetham 1994; see also, Chase and Chase 1987, & Jaeger 1987 for description of terminal sacbe salvage and interpretation at Caracol).

The sacbe at Baking Pot, on the other hand, is somewhat different in so far as the architecture which it links consists of multi-functional buildings including pyramidal, range, platform and ballcourt type structures, in essence, two large groups of mounds. The situation resembles, albeit on a smaller scale, that of the upland center of El Pilar where the undated 950 m long and 30 m wide Bryan & Murphy Sacbe links the site proper with Pilar Poniente to the west (Ford and Wernecke 1994; Wernecke 1994). Thus, in addition to ceremonial linkage, it is likely that sacbe construction was functioned to physically link or incorporate areas of settlement, principally those of elites. The politics of such linkage would serve as a constant reminder of political incorporation. This, however, should not be confused with subjugation as the aftermath of warfare, but rather, intra-polity competition between elites over resource/production and/or economic control. For the warfare to be the impetus we would expect very limited territorial polities on the order of the chiefdom level.

Unit 1

In order to test the above theoretical position in relation to chronology, a 2X1 m excavation (Unit 1) was initiated 100 m south of Group I (see Figure 1a & b for location). Stratigraphy indicates a one-phase construction consisting of native alluvial clay as fill (Figure 2). Ceramics within this fill consisted exclusively of Late Classic types including those of the Belize ceramic Group (see Gifford 1976), indicating a construction date falling within the Spanish Lookout phase (A.D. 680-880). In addition, a highly weathered and fragmented Postclassic vessel leg was recovered from the humus level (Augustine Red, see Gifford 1965:Figure 248a for type illustration). Excavations were carried to a depth of 1.55 m, which corresponded to the approximate height of the adjacent terrain. With the exception of the division formed between the humus and alluvial clay, no additional stratigraphic levels were encountered.

Unlike Bullard and Willey's (1965:301) tests which "disclosed evidence of a plaster surfacing," no such evidence was encountered within Unit 1. It remains possible that plaster could have deteriorated, or, the area which Bullard investigated may have been nearer the creek at the base of Group II and required more substantial construction materials to withstand water erosion or bridge construction. However, Bullard left no data to substantiate his observations. Gordon Willey (personal communication, 1994) indicates that Bullard's efforts on the sacbe may have been done during the ROM excavation in 1961. If this is the case, then no record may exist. It is possible, therefore, that the sacbe surface consisted mainly of native alluvial clay with no plaster covering. More extensive testing of the sacbe is required to explore this possibility.

In addition to excavation, the sacbe was examined for orientation, height and width. Because there are no parapets flanking its sides, width remains a problematic determination without excavation across the full width of the sacbe. Nevertheless, it is likely that the width is in the vicinity of 15 meters as reported by Bullard and Willey (see above). In addition, width appears to be constant along its full length. Conversely, height varies in accordance to adjacent topography (alongside Unit 1 it measures 1.5 meters). Finally, the magnetic orientation of the sacbe was determined to be 10-12 degrees west of north as sighted along the west side.

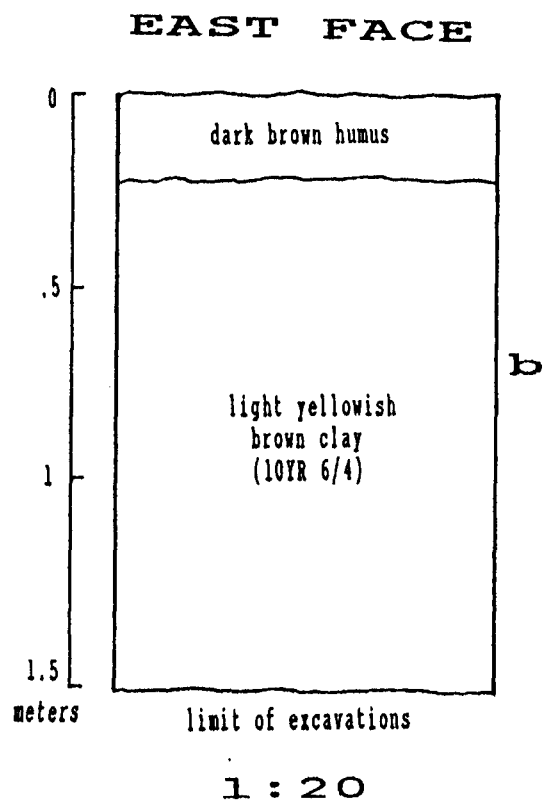
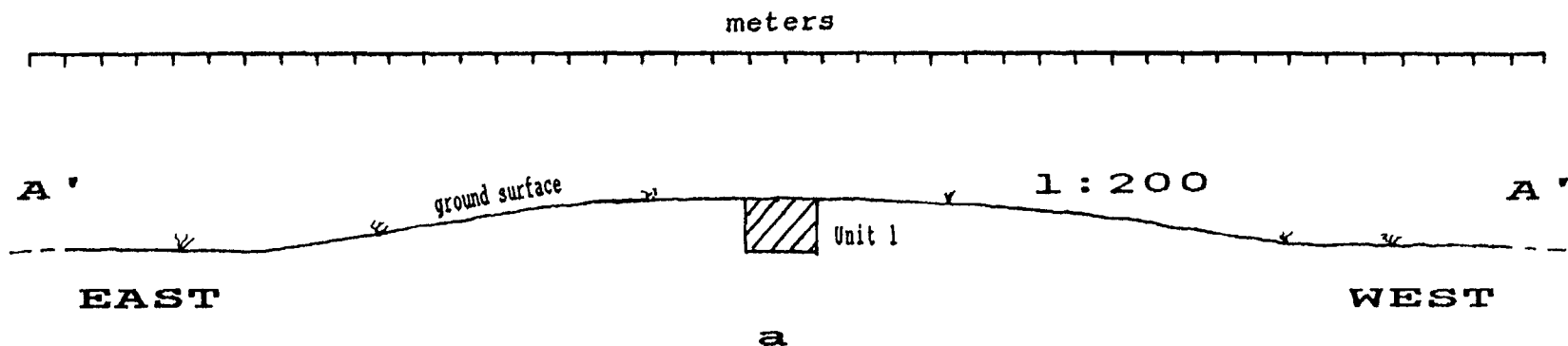


Figure 2. a, East-west X-section of sacbe noting location of Unit 1 (see Figure 1 for location along sacbe); b, east-face profile of Unit 1.

Summary and Conclusions

Whereas Group I exhibits an open, accessible configuration, the enclosed, non-accessible nature of the small plaza fronting Structure B of Group II (see Figure 1) suggests that the ruling personage(s) of Baking Pot may have occupied this area at one time. A similar interpretation has been forwarded for the small, fully enclosed plazas (D & E) at Cahal Pech (Awe et al. 1991) which are Late Classic in date (Awe and Campbell 1988:33-38). Although no excavations have been conducted within this small plaza at Baking Pot, Bullard and Bullard (1965:10) note that the adjoining temple Structure A dates to the early part of the Late Classic Spanish Lookout phase (A.D. 680-880), thus a Late Classic date for the Structure B plaza is highly likely.

It is indeed interesting that the construction of the sacbe dates to this time period. Because it is not principally functioning to link a ceremonial terminus without residential architecture, it is suggested that it may represent the incorporation of one segment of the Baking Pot site, Group I, into another - the "joining" perhaps initiated by the personage(s) or elite lineage within Group II. As noted above, the construction and visual impact of the sacbe would act to reinforce the basis of power wielded by such elite.

Finally, perhaps the most important aspect of the Baking Pot sacbe\group configuration is that sacbeob maintained functions beyond that of ceremonial routing to important ritual nodes. While the latter may be characterized by terminal ceremonial architecture with very little or no residential component, the Late Classic Baking Pot sacbe demonstrates, at the very least, that sacbeob also served an intra-site sociopolitical role in the unification and consolidation of the site core.

Acknowledgments

I would like to thank Jim Stafford, Jim Mower and Joann Sugihara for assisting in the excavation. In addition, Gordon Willey proved helpful in trying to determine the whereabouts of Bullard's sacbe data. Finally, Jaime Awe's assistance and encouragement was critical as always. He also peeled the skin off my back following one long day at Baking Pot!

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Archaeological Investigation of an Architectural Communicative Template of the Ancient Maya

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Introduction

The Bedran Group plazuela, located in the southwestern periphery of Baking Pot (Figure 1), has been the focus of archaeological investigation for the past three field seasons. The Bedran Group (Figure 2) is the "heart of a neighborhood cluster" (Culbert 1974:67) and is typical of the third type of corporate group as defined by Hayden and Cannon (1982:146) (Figure 3). Investigations at this group have concentrated on intragroup dynamics and, more specifically, the reconstruction of events unique to the eastern mound (Conlon 1993; Powis 1993; Conlon et al. 1994).

During the 1994 season, the eastern mound (Mound 2) was similarly a focus of investigations at Bedran (Figures 4 and 5). However, research focused more intensely on the archaeological investigation of the North Ancillary Platform of Mound 2. The investigation was prompted by the hypothesis that "winged" eastern structures of the Maya lowlands were an architectural mode that operated as a communicative template of social standing and authority (J. Awe, personal communication, 1994; see also Kurjack 1974:8; Ashmore 1992:173; Freidel 1981:190; Falkenhausen 1985:127; Laporte 1993:299). The concept that various modes of architecture had communicative properties shares a theoretical basis with the observation that strictly controlled patterns of meaningful consequence are demonstrated in the apparent regularity of spatial planning in regional contexts (see Ashmore 1988:160; Garber et al. 1993:17). The purpose of excavating the North Ancillary Platform was to explore both the architectural and the artifactual elements of this platform and, to assess its potential role, or function, within the architectural complex.

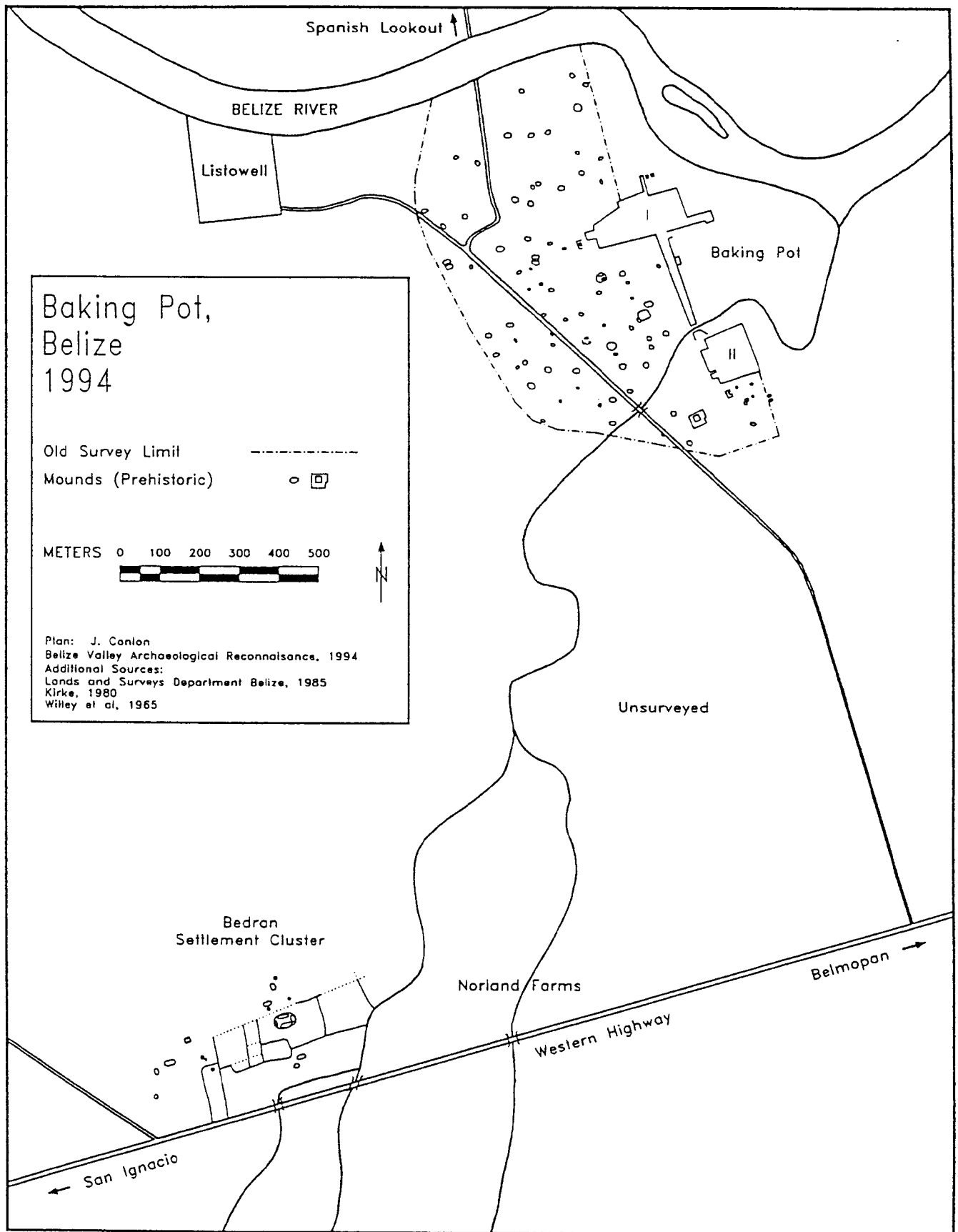


Figure 1: Baking Pot and the Bedran Settlement Cluster, Belize.

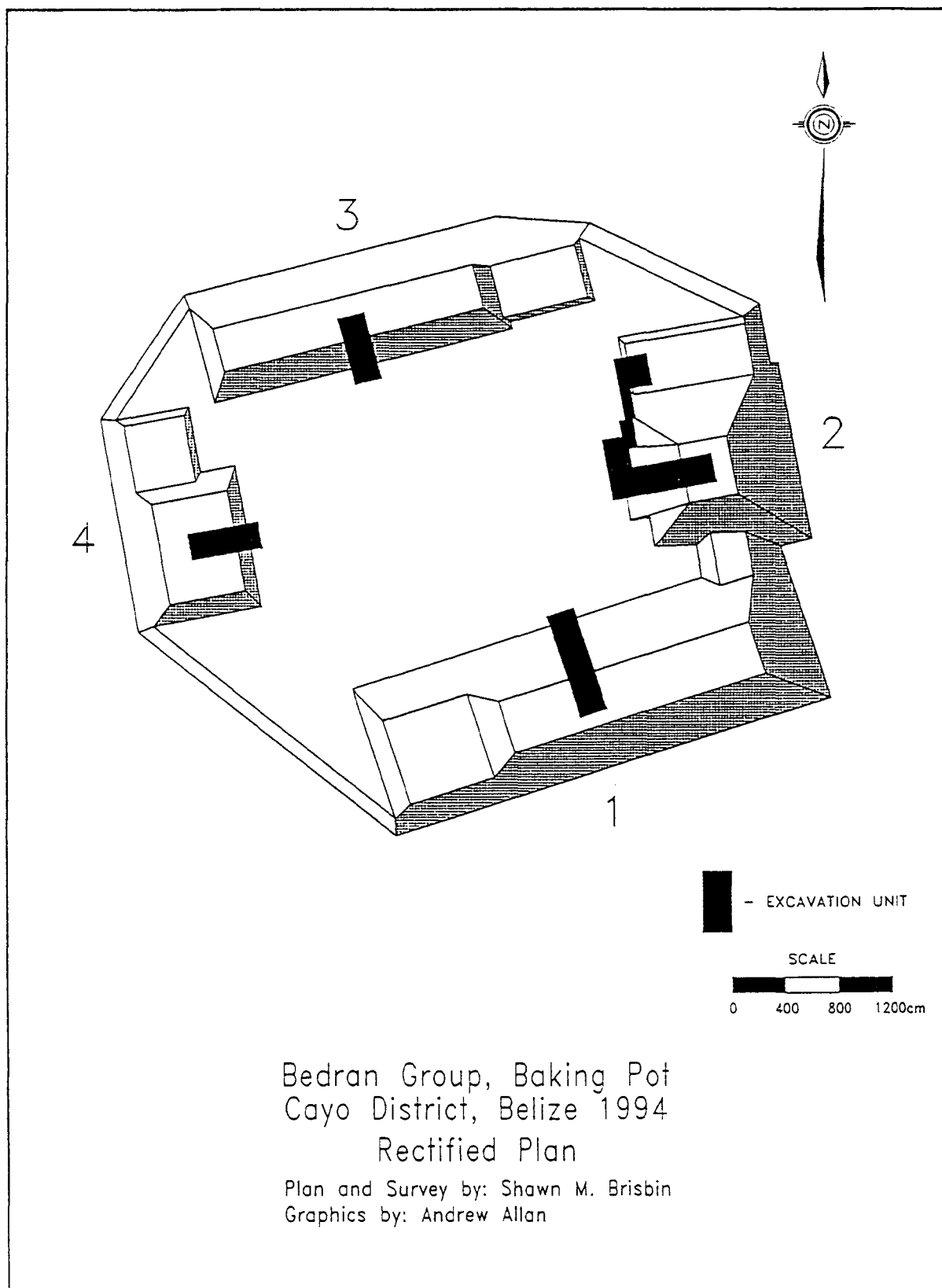


Figure 2: The Bedran Group plazuela, Baking Pot, Belize.

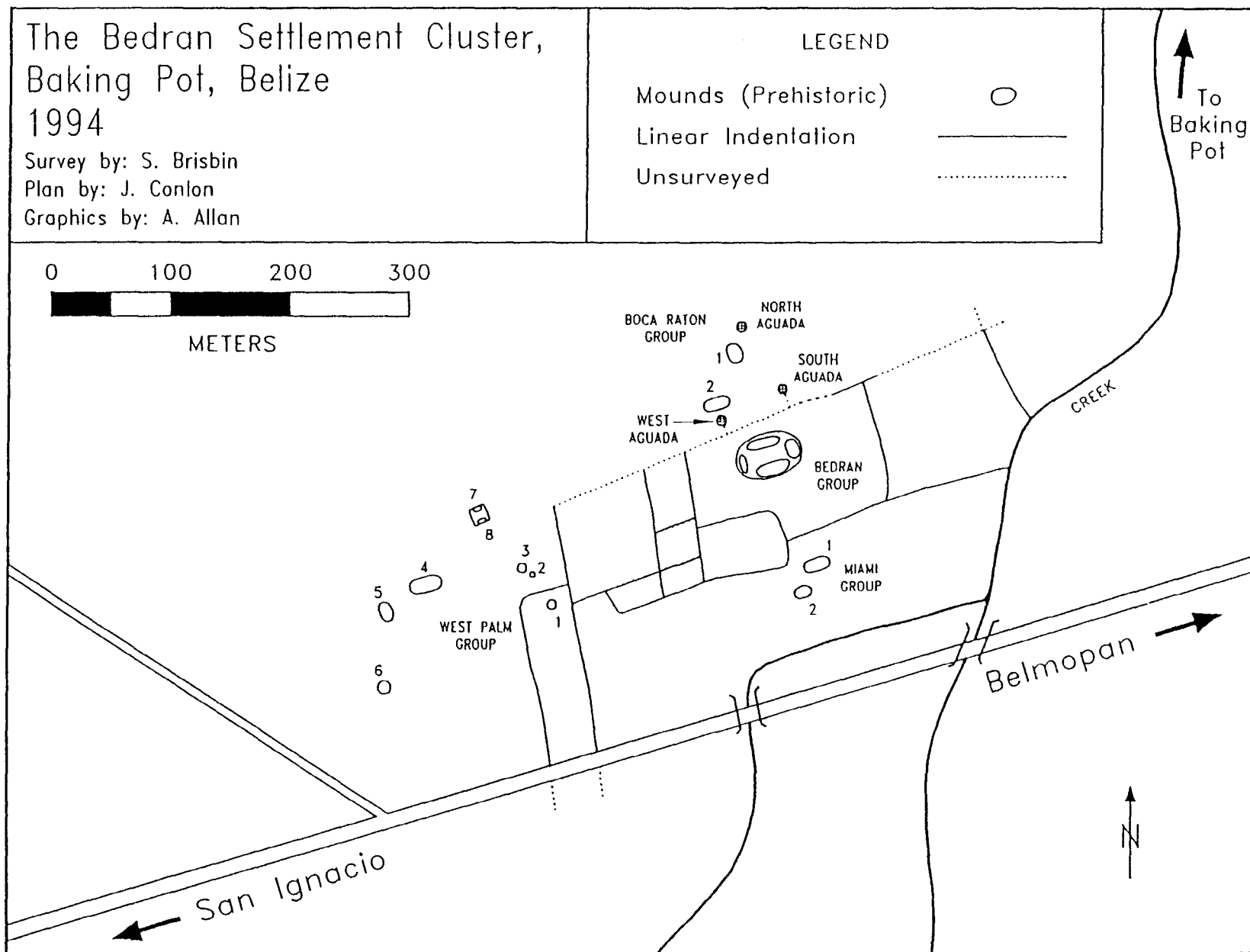






Figure 3: The Bedran Settlement Cluster, 1994, Baking Pot, Belize.

PLAN OF MOUND 2, BEDRAN GROUP BAKING POT, BELIZE, 1994

PLAN BY: TERRY G. POWIS, JAMES M. CONLON
& KERRI K. FINLAYSON

GRAPHICS BY: ANDREW ALLAN

LEGEND	
	CUT STONE
	CUT STONE (CALCITIC)
	BURNT PLATFORM
	SHERD CLUSTER

SCALE
0 80 160 240 320cm

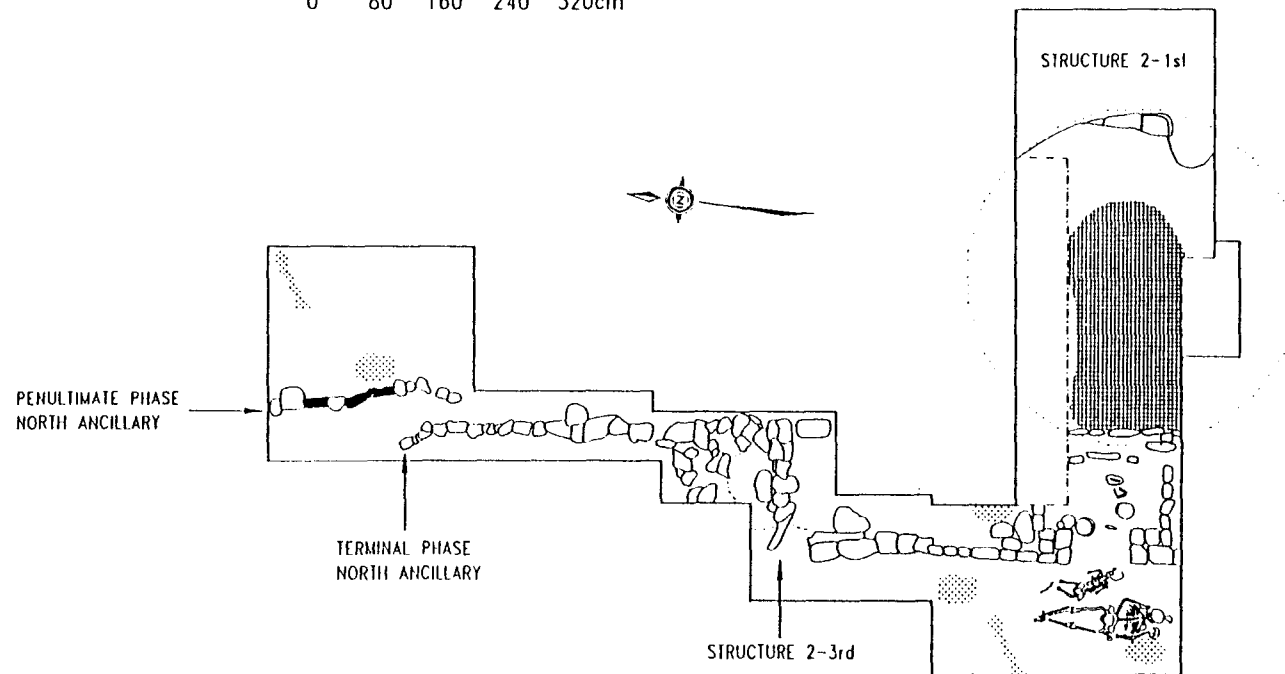


Figure 4: Plan of Mound 2, the Bedran Group, Baking Pot.

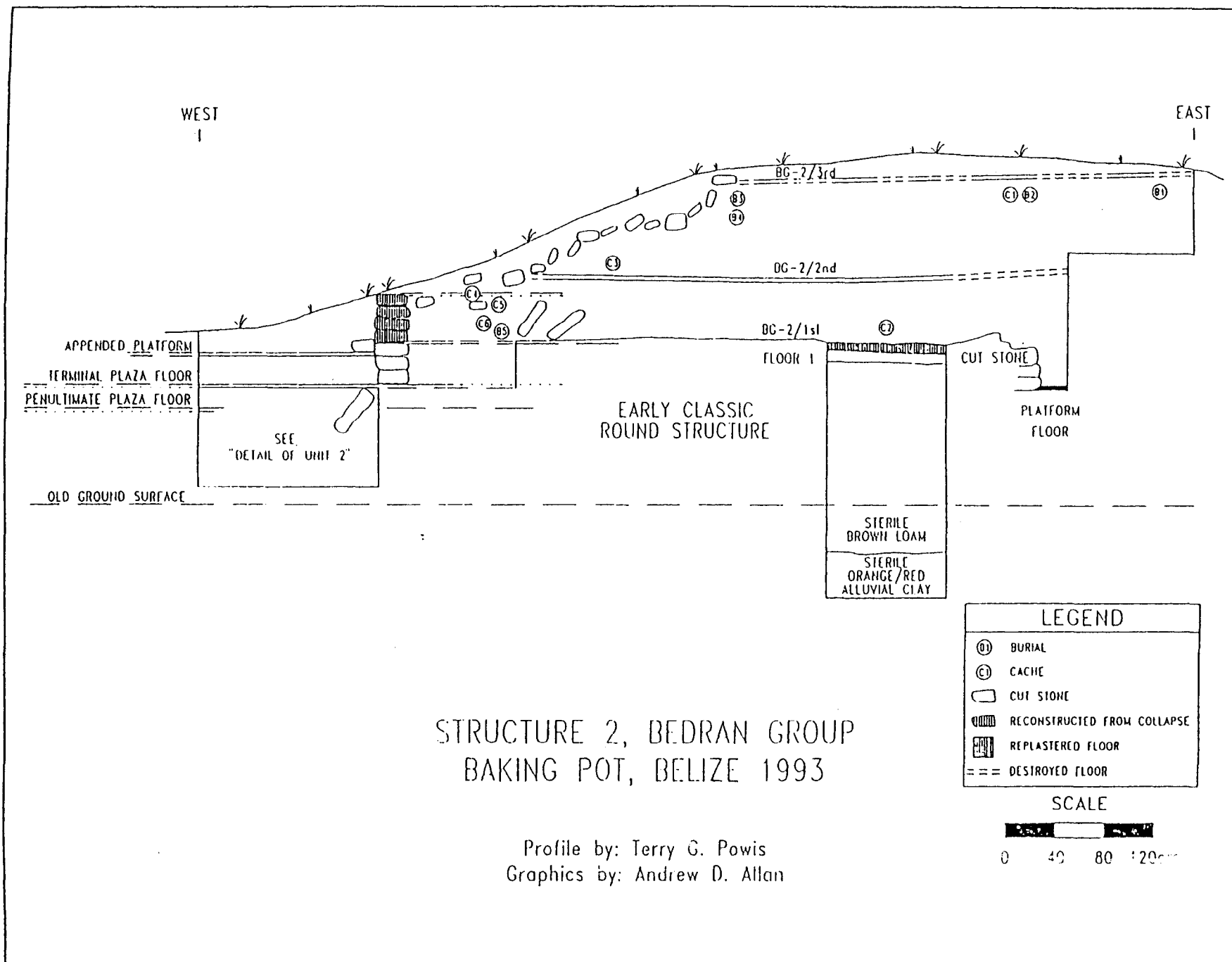


Figure 5: Profile of Mound 2, the Bedran Group, Baking Pot.

Results

In 1994, the excavation strategy was twofold: first, to horizontally expose the terminal phase architecture of Structure 2-3rd by following it northward to where it connected to the North Ancillary Platform; and second, to commence vertical operations into the platform to ascertain the chronological development of the construction sequence.

Caches (Table 1a), as in previous years (Table 1b), were the predominate ritual deposit encountered. No human remains were recovered during the 1994 field season. Cache 19 was typical of the deposits found during the 1992 and 1993 investigations into Mound 2 (see Powis 1993). This cache included a badly eroded, partial vessel of the Belize Red type (Gifford 1976:255). Cache 20 was recovered adjacent to Cache 19 and the two caches, though designated separately in the course of our excavations, may be components of a single event in this locale (Figure 6). Cache 20 consisted of two inverted "finger" bowls similar to the vessel found abutting the terminal platform in Cache 17 (see Conlon et al. 1994: Table 2) and those recovered from the stela cache at the Zopilote Group at Cahal Pech (Cheetham et al. 1994:172).

Cache 21 has contextual vagaries that require discussion. Although the partial vessel was recovered on top of the terminal plaza surface, its original placement is suspect. The northern facade of the terminal basal platform of Structure 2-3rd seems to have been displaced by 10 centimeters or more in most areas. Cache 21 has two possible original placements because the terminal plaza floor apparently runs under the terminal basal platform. It is not clear whether this particular cache deposit was originally placed internally of Structure 2-3rd, such as Caches 7 and 15 (Figure 7), or, external to the terminal basal platform. The confusion warrants discussion for it has bearing on assigning the cache to either a termination deposit, at the time of abandonment, or, a dedicatory building cache, akin to Caches 7 and 15. In this instance both possibilities have been included (Table 1a). However, the recovery of this cache on top of the terminal plaza floor may suggest more strongly that this partial vessel was laid external to the building platform and, therefore, should be considered more representative of a termination deposit at time of abandonment of the Bedran Group.

Caches 22 and 23 are almost identical in both placement and composition to Caches 7 and 15. These types of caches, which also include partial vessels, typically commemorate the dedicatory construction rituals that occur at the beginning, middle (i.e. Cache 2 of Mound 2 and Cache 1 of Mound 1), and the end of construction phases. These caches included a wide variety of ceramics from utilitarian olla fragments to portions of beautiful polychrome vessels.

Cache 24 poses similar problems to that of Cache 21. The terminal phase architectural collapse lends an air of inconclusiveness surrounding its original placement by the ancient Maya, whether internal or external to Structure 2-3rd. The bifaces (Figures 8, 9, and 10) were unearthed where the corner of the terminal basal platform of Structure 2-3rd meets the terminal platform of the North Ancillary Platform. Since these bifaces were not located on the terminal plaza platform, and were intermingled with the architectural collapse, we have deduced that these elements must have been contained within the terminal basal platform of Structure 2-3rd. Therefore, this ritual deposit should be considered dedicatory in nature.

No.	Location	Type	Contents	Notes	Period (A.D.)
19	In appended platform	Dedicatory	Belize Red and polychrome partial vessels	-	800-850
20	In appended platform	Dedicatory	2 miniature vessels, red slip interior	Vessels 1 & 2 were inverted	800-850
21	On the Terminal floor	Termination? Dedicatory?	Partial vessel Platon Punctate	-	850-900? 700-750?
22 (S.C. #6)	Collapse of Structure 2-3rd	Dedicatory?	Mainly Platon, Roaring Creek and Belize Red plus a few pieces of polychrome	Over 200 sherds (at least 2 Ollas, & 1 Martin's incised tapering vase) Deposited same time as cache #23	700-750?
23	Directly under Cache #22	Dedicatory?	Partial polychrome hieroglyphic vessel and chert knotted biface set inside of complete rim of Cayo Unslipped	The vessel and biface were located inside the Olla. Found 10cm underneath cache #22. Same event as cache #22	700-750?
24	Southwest of Cache #23	Dedicatory?	3 chert bifaces	-	700-750?
S.C. #1 (cache 1)	NE part of North Ancillary Platform	Dedicatory	Dolphin Hd. Rd., Garbutt Creek Rd., Belize Red, 2 complete ring bases of Roaring Creek Red, + 3 briquettes of Cayo Unslipped	-	750-800
S.C. #2 (cache 2)	Middle-western half of North Ancillary Platform	Dedicatory	Belize Red, Alexanders Unslipped, & Dolphin Hd. Red	Over 20 sherds	750-800

Table 1a: Cache summary, Mound 2 and North Ancillary Platform, Bedran Group, 1994.

No.	Location	Type	Contents	Notes	Period (A.D.)
1	Str.2/3rd; sub-platform; south of Burial 2	Dedicatory	Teotihuacan hollow oven foot tripod vase with glyph band (PSS)	Deposited with Burial 2. Same glyphs as V4 of B2	700-750
2	Str.2/2nd; primary axis	Dedicatory (partial vessel)	Aguacate Orange: Privaccion Variety	Similar to Cache 1 of Mound 1	600-700
3	Str.2/3rd; primary axis; sub-stairs	Non-Dedicatory	8 Spanish Lookout phase vessels and 48 eccentrics	Placed with terminal central stair construction	750-800
4	Str.2/3rd; primary axis; sub-stairs	Non-Dedicatory	3 chert bifaces	Deposited same time as Cache 5	750-800
5	Str.2/3rd; primary axis; sub-stairs	Non-Dedicatory	1 chert biface within partial vessel	Same event as Cache 4	750-800
6	Str.2/3rd; primary axis; sub-stairs	Non-Dedicatory	1 McRae Impressed vessel	Associated with Burial 5?	750-800
7	Str.2/3rd; terminal basal platform	Dedicatory (Sherd Cluster #1)	Sherds from McRae Impressed; Platan Punctate-Incised; Dolphin Head Red; biface; mano	Commemorating completion; directly above Cache 15	700-750
8	Plaza; above appended platform	Termination (Sherd Cluster #2)	1 partial vessel; 1 eccentric; numerous Spanish Lookout sherds	Termination ritual at time of abandonment	850-900
9	In appended platform	Dedicatory (partial vessel)	McRae Impressed (inverted)	Last event before completing construction	800-850
10	In appended platform	Dedicatory (partial vessel)	Highly eroded (red slip?); (inverted)	Same as Cache 9	800-850
11	In appended platform	Dedicatory (Sherd Cluster #3)	Mainly Spanish Lookout; some Tiger Run	Over 1,000 sherds	800-850
12	In appended platform	Dedicatory (Sherd Cluster #4)	Same as Cache 11	-	800-850
13	In Shrine Inset; under Shrine Platform	Dedicatory	6 vessels; chert biface; mano	Vessel 1 & 2 inverted bowls; Vessels 3-6 lip-to-lip	700-750
14	In appended platform	Dedicatory (partial vessel)	Partial Red-on-Cream vase	Partial similar to V1 in B11	800-850
15	Str.2/3rd; terminal basal platform	Dedicatory (Sherd Cluster #5)	Numerous Polychrome sherds; partial glyphs; Jaguar motif	Commemorating commencement of construction; directly below Cache 7	700-750
16	In appended platform; primary axis	Dedicatory	Effigy censor	First to be laid with Cache 17	800-850
17	In appended platform; North of Cache 16	Dedicatory	Miniature Dolphin Head Red	-	800-850
18	Plaza; below TPF; between B9 and B11	Dedicatory (partial vessel)	Platan Punctate-Incised; obsidian blade; 1 marine shells (Family Muricidae); 2 marine shells (Family Cardidae)	Contemporaneous with B9, B11 and B12	750-800

Table 1b: Cache summary, Mound 2, the Bedran Group, 1992 and 1993.

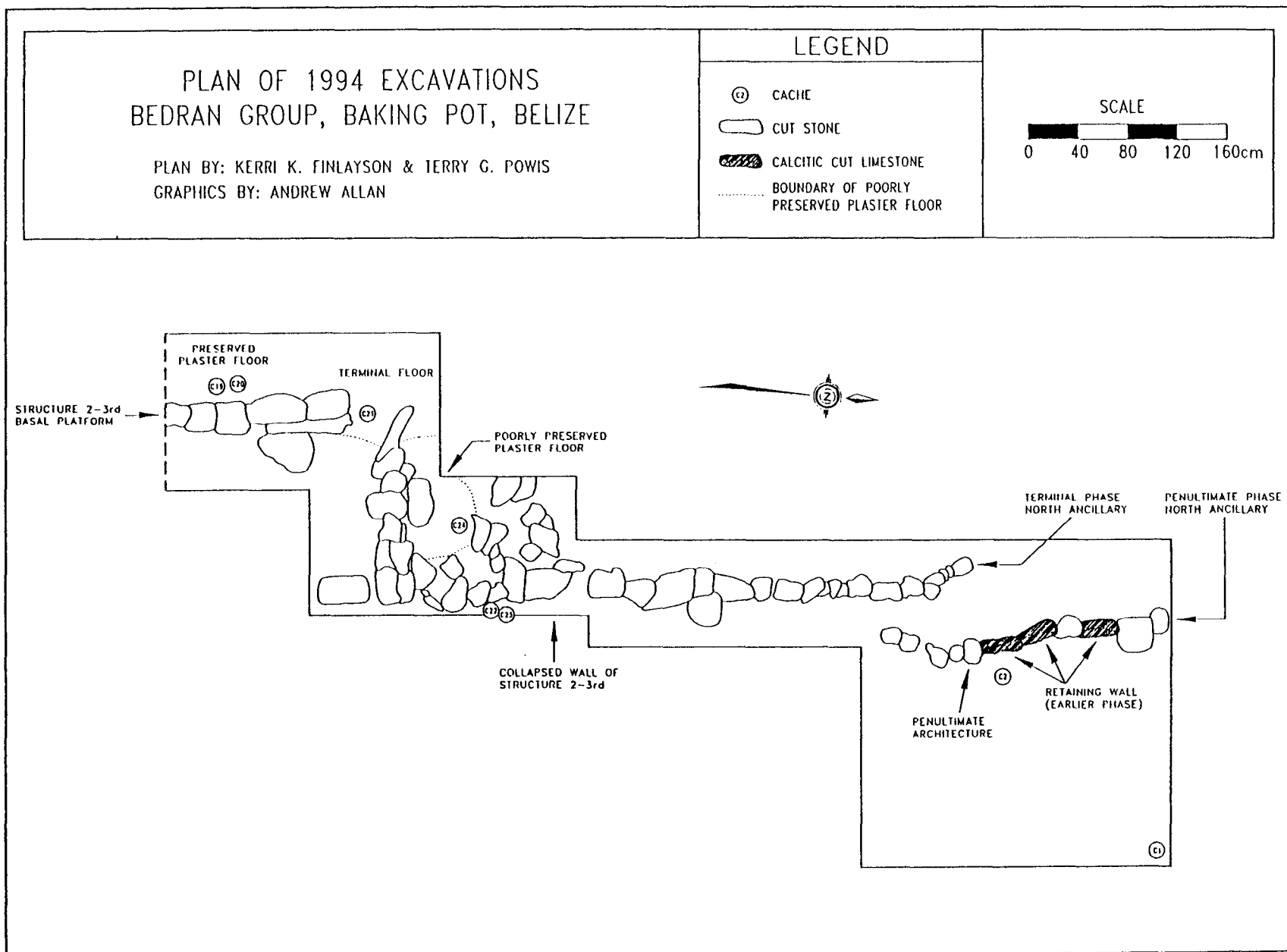


Figure 6: The 1994 excavations of the North Ancillary Platform, Mound 2, Bedran

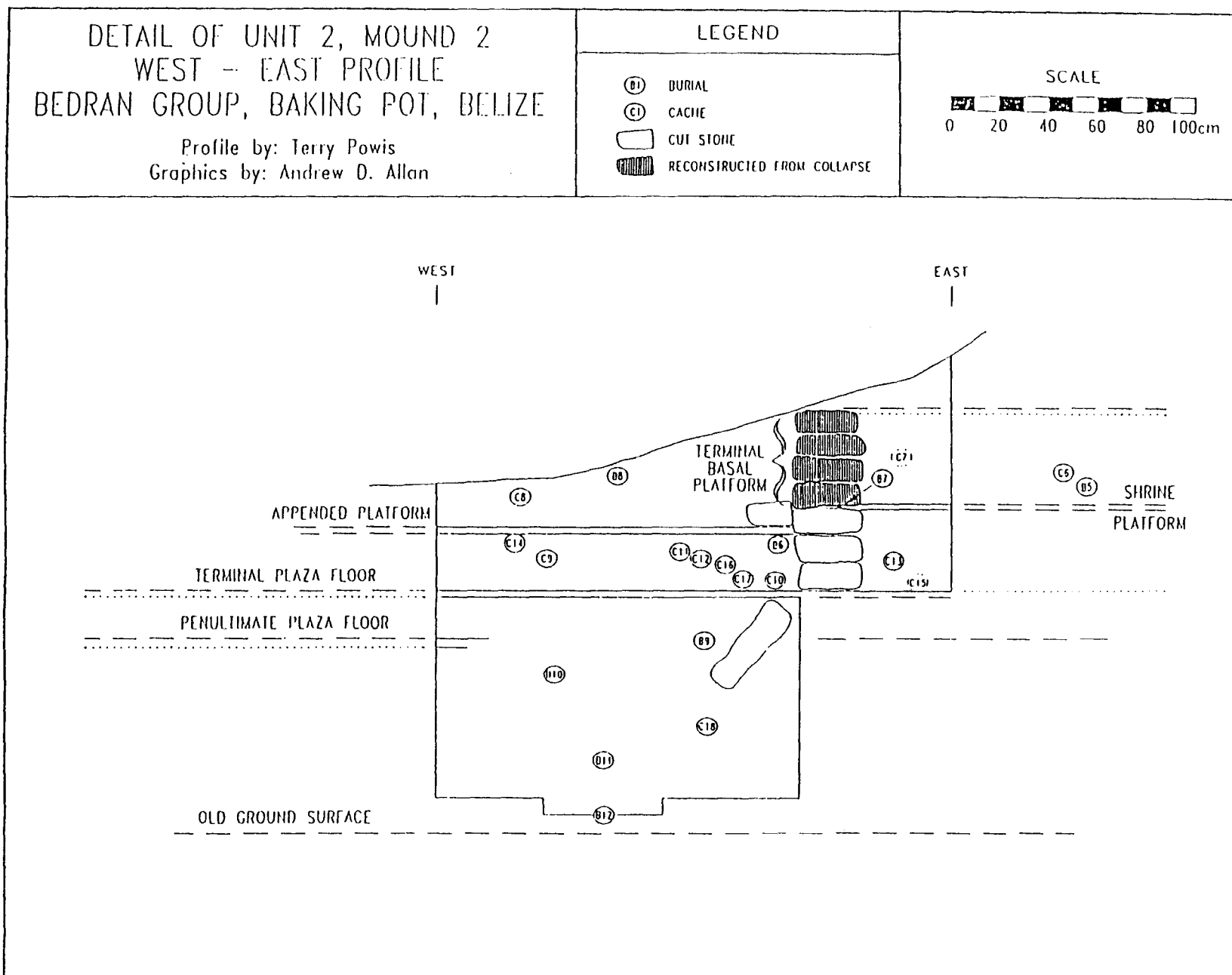


Figure 7: Profile of Mound 2, the Bedran Group (detail).

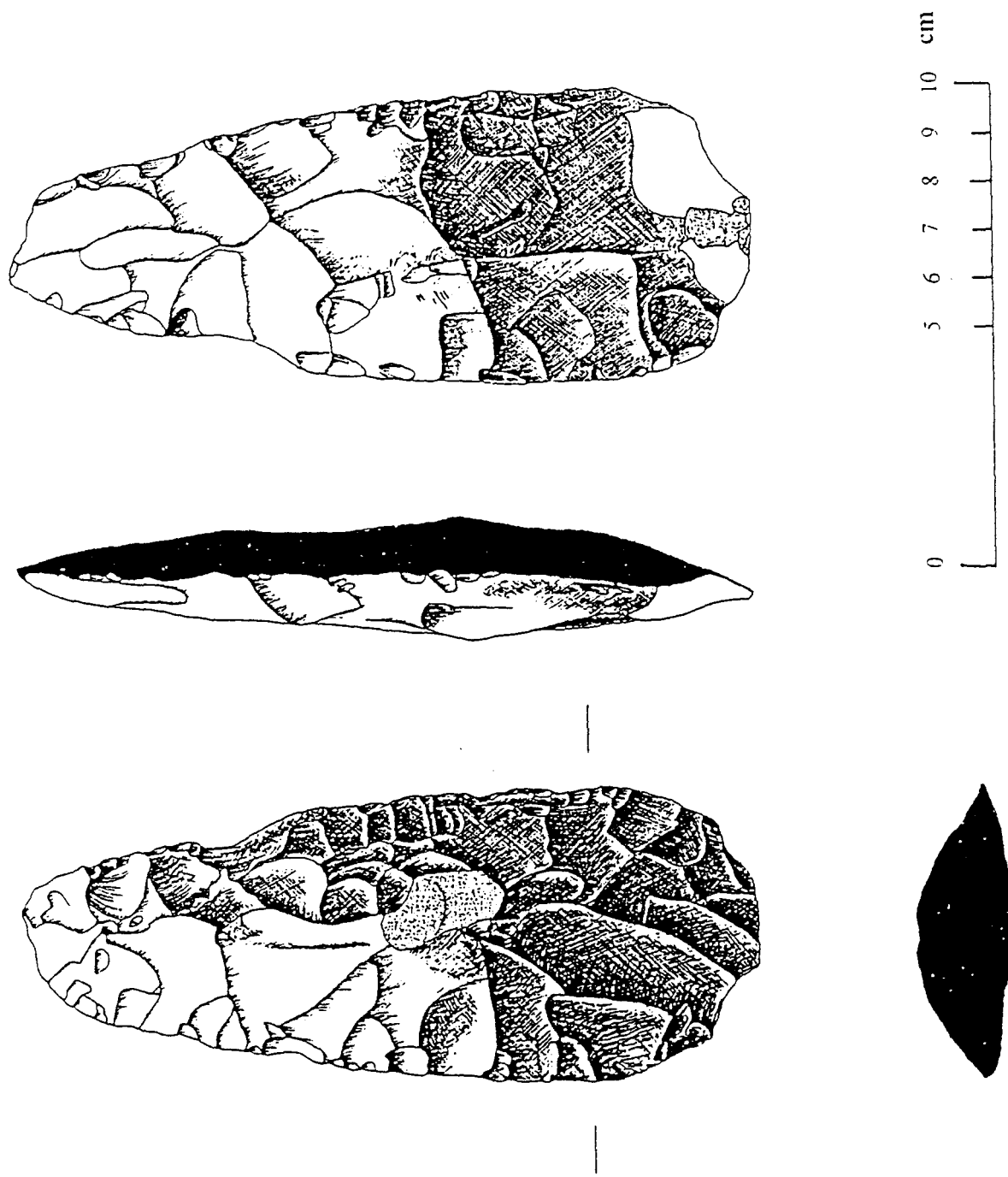


Figure 8. Biface 1, Cache 24, Mound 2, the Bedran Group.

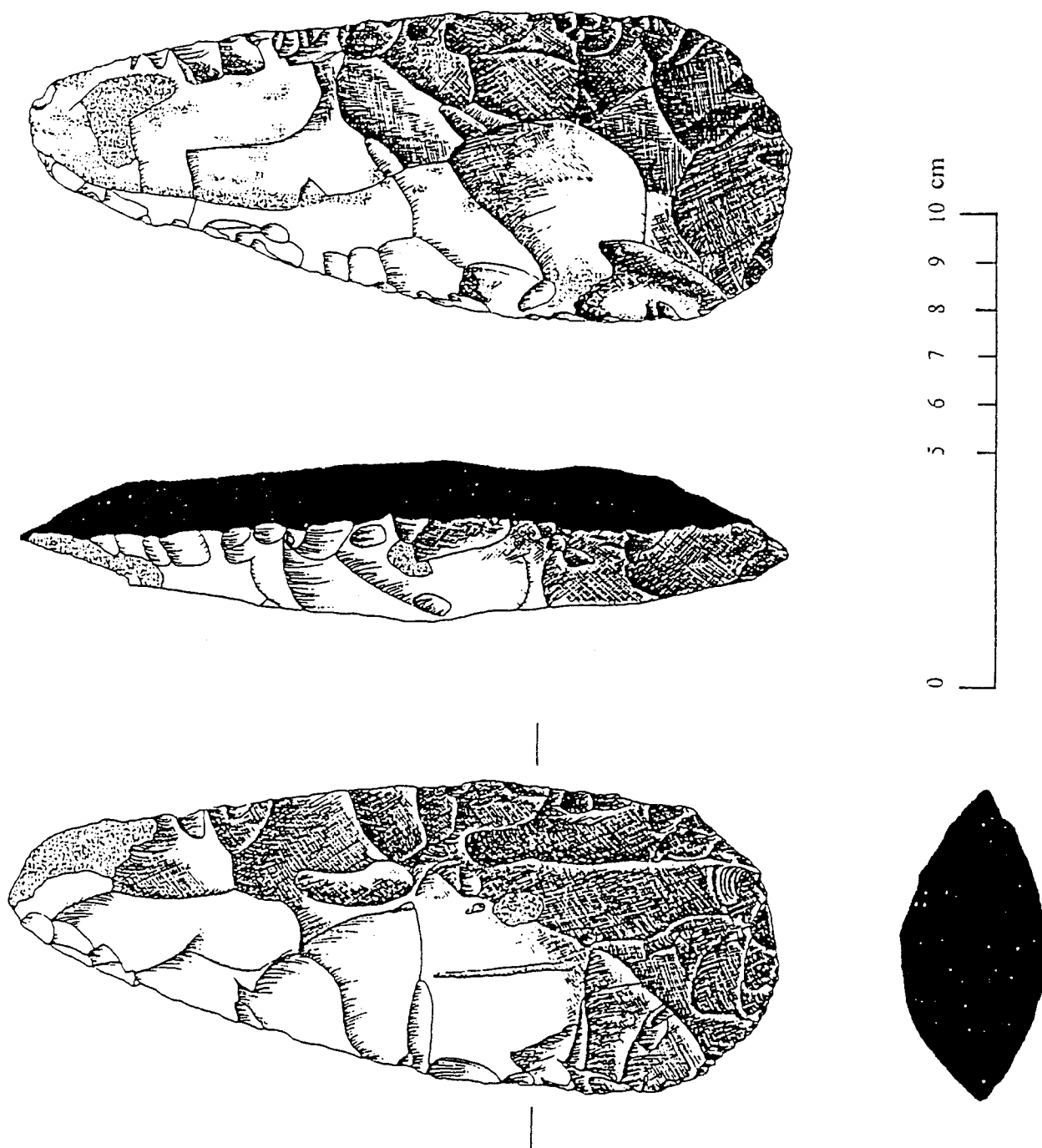


Figure 9: Biface 2, Cache 24, Mound 2, the Bedran Group.

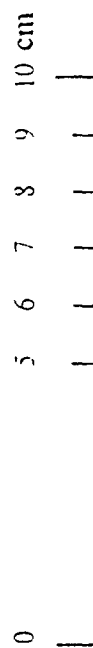
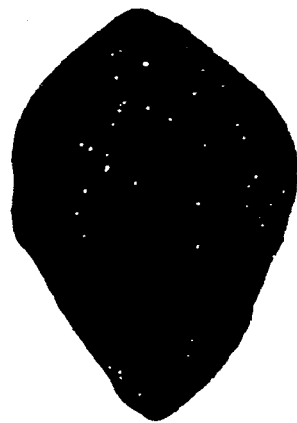
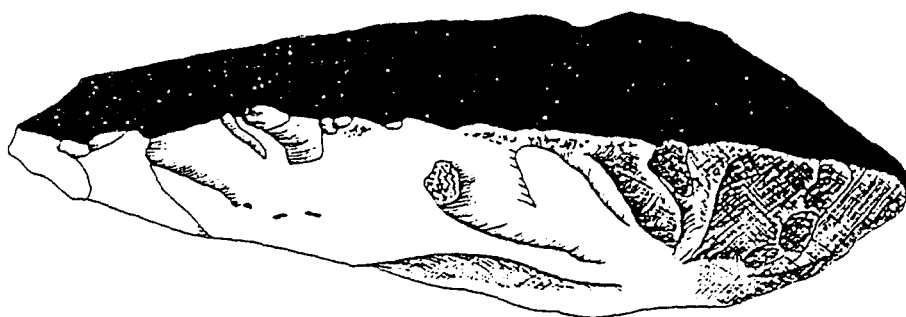
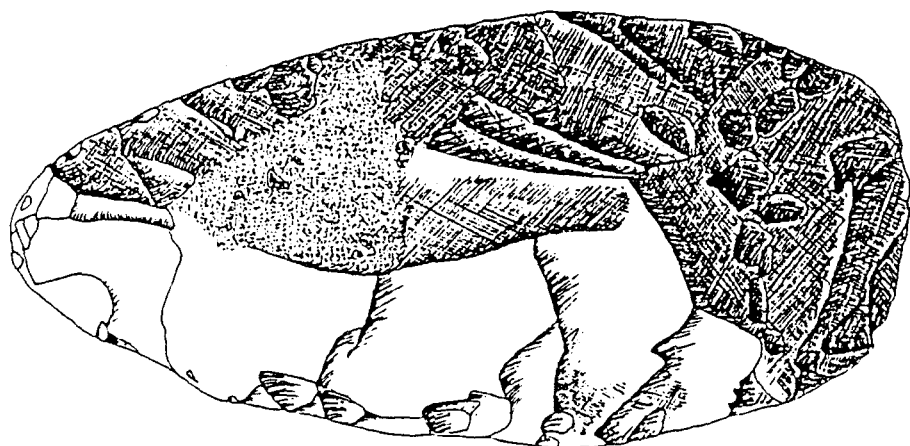


Figure 10: Biface 3, Cache 24, Mound 2, the Bedran Group.

Finally, as horizontal excavation proceeded along the western facade of Mound 2, and the North Ancillary Platform was well defined, vertical operations were commenced. In comparison to the quantity and quality of ritual deposits encountered in Mound 2, the excavation results were rather disparate. The North Ancillary Platform was comprised of two Late Classic construction phases (ca. A.D. 750 and A.D. 800) (Figure 11). Ceramic evidence recovered from the construction was exclusively Spanish Lookout phase material. The construction fill was similar to the other Late Classic construction at the Bedran Group in the utilization of clay with small rubble inclusions. Neither the terminal nor penultimate phase platform surfaces appeared to have been plastered, similar to the tamped clay surfaces of Mounds 3 and 4 latter construction phases (Conlon 1993:193-197). Two sherd cluster type caches, Caches 1 and 2 of the North Ancillary Platform, were the only significant deposits of note recovered.

Assessment

The caching (Cache 24) of several bifacial choppers (Cache 24) is significant for the fact that the Bedran Group is set within an ancient ditched field agricultural system (Figure 12). These "choppers" were probably used primarily for "land clearing", not so much for tree chopping but, more typically, clearing of the type that involved earth moving as indicated by use wear (see Willey et al. 1965:426). The caching of utilitarian lithics is similar to the ritualistic deposition of grinding stones which probably accompanied ceremonies associated with agriculture (Awe 1994:24). This may explain the apparently incongruous practice of depositing such utilitarian items in more typically "elite" focus locales such as Mound 2 (see Powis 1993:218). These bifacial choppers, while not as "delicate" as the laurel leaf points that were found in caches of the primary axis of Mound 2, were certainly items that held considerable importance and esteem to a group whose economy was so intimately linked with agricultural productivity (Conlon et al. 1994:254).

In terms of the sherd clusters recovered from the North Ancillary Platform (Caches 1 and 2), they represent both the removal of significant items that could have been reinvested to forge earthly "social allegiances" (Befu 1977; but see also Hirth 1992:23), and also the dedicatory ritual surrounding the inauguration of the building (Awe 1994:5). This inauguration ceremony likely operationalized the buildings function. These types of deposits are generally considered to represent "offerings to supernatural earth spirits who were being petitioned to guard the occupants of buildings from evil" (Awe 1994:5; also see Garber 1989:47-50). In light of the evidence, we would suggest that the practice of smashing objects at the Bedran Group not only commemorated the construction of a building, but also consecrated it for any potential future role the structure may have been employed in. Such future roles involved, perhaps, ceremonies that may have been specifically associated with a particular structure. In other words, the ritual smashing of objects during the construction of the North Ancillary Platform was a one time event that not only dedicated the building at the time of the vessel smashing ceremony, but also acted as an eternal petition of spirits to permit its function as a focus for ritual activity. These activities may have involved ceremonies revolving around both cosmology and agriculture. In the specific case of the North Ancillary Platform

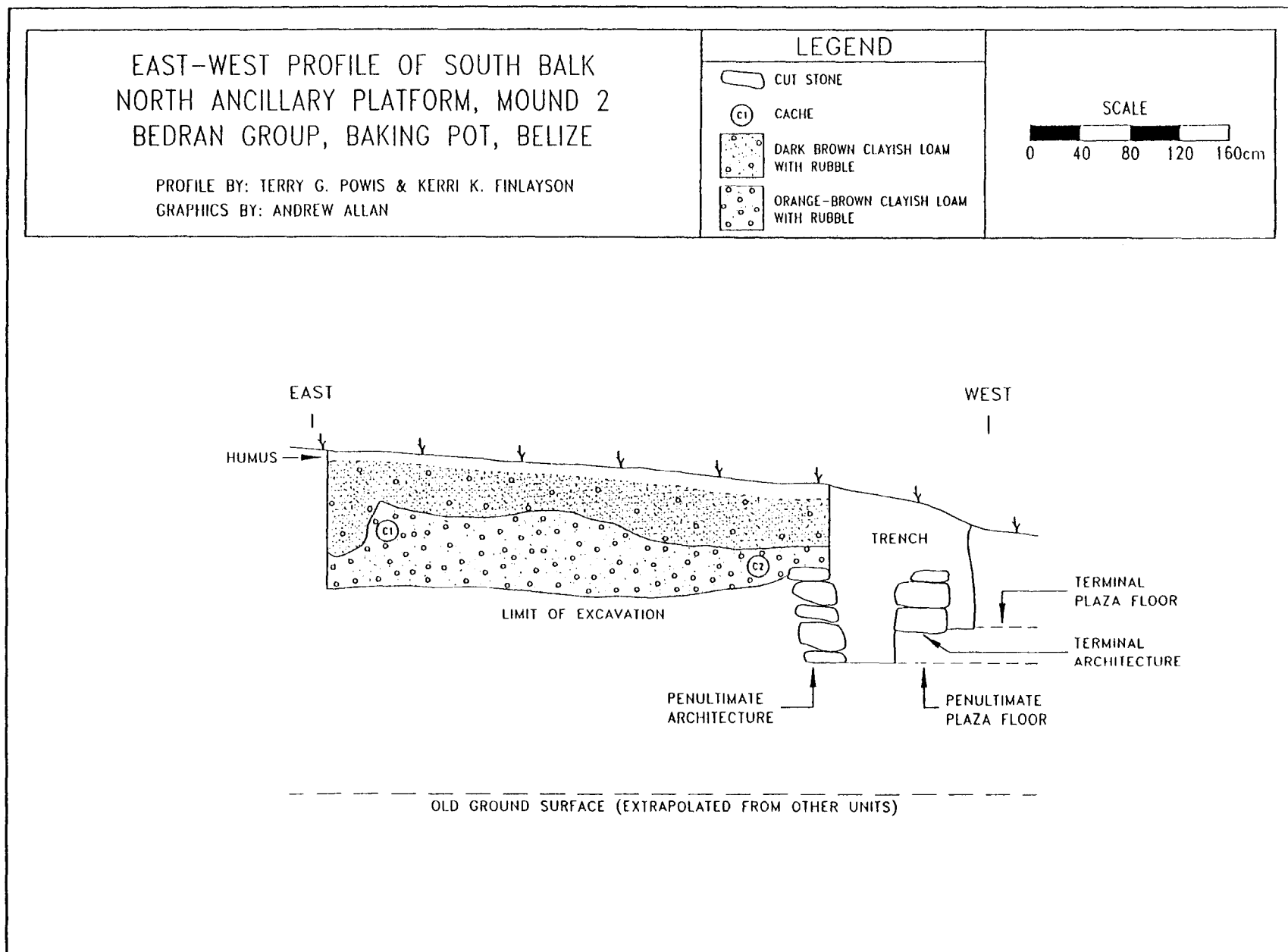


Figure 11: Profile of North Ancillary Platform, Mound 2, the Bedran Group, Baking Pot.

Ditched Field System Relative Elevations, The Bedran Settlement Cluster Baking Pot, Belize 1994

Plan: James M. Conlon
Survey: Shawn Brisbin

0 100 200 Meters



Magnetic

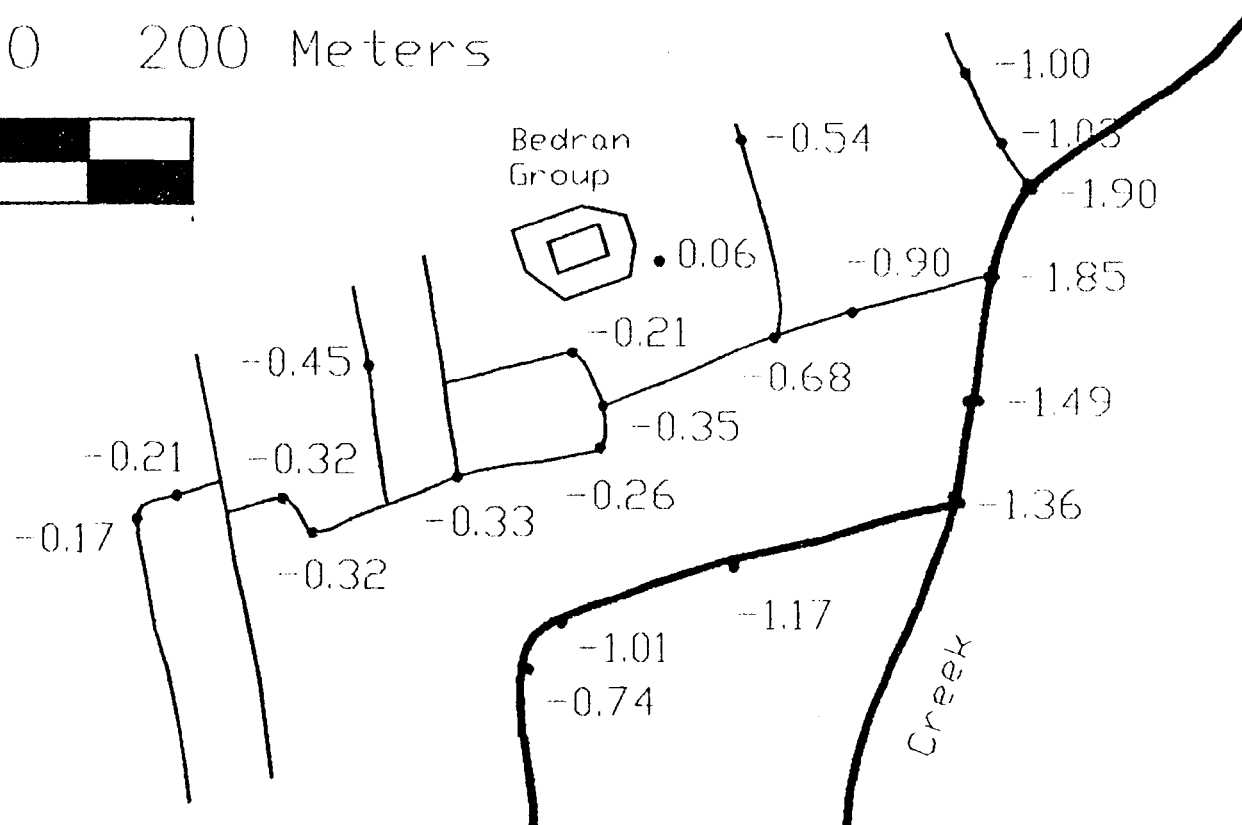


Figure 12: Relative elevations of the ditched field system at the Bedran Settlement Cluster.

the ritual focus potentially could have included the ritual observances revolving around the summer solstice.

The most peculiar aspect of the sherd cluster type caches is the inclusion of partial vessels. Parts of vessels, ranging from one to three quarters complete, has several implications which must be discussed further. One interpretation suggests the possibility that the elements comprising sherd clusters were simply refuse collected from in, and around, the immediate settlement for use as fill in construction. This could account for the localized occurrence of sherds in a tight conglomeration. However, sherd clusters are differentiated from the ubiquitous occurrence of scattered sherds more typically distributed relatively homogeneously throughout construction fill, itself generally considered the result of refuse reclaimed for disposal. Unfortunately, this scenario of refuse reclamation and disposal does not effectively explain why whole vessels that may have broken through normal wear and tear, or accidental breakage, and, which were subsequently discarded by households, do not appear in these sherd clusters. In fact, unlike our experience with the Bedran sherd clusters, broken vessels recovered from middens external to architecture generally can be demonstrated to be completely reconstructed more frequently than in the case of the Bedran sherd clusters. Thus, in the case of including partial vessels within sherd clusters, the evidence would suggest purposeful removal of portions of vessels either before deposition, or, after deposition and prior to encapsulation within the construction phases the sherd cluster type caches commemorate.

The particular function of the missing ceramic links of partial vessels is purely speculative, however, two scenarios can be envisioned. One use of the missing sherds could entail their retainment for their important shamanistic qualities employed in either the protection of person or household. Another function of retained sherds could also have been for use as temper in the manufacture of new vessels. The significance of reusing a sanctified object in the manufacture of new vessels validates the production process and is similar to the consecration of architecture and its concomitant function via the caching of important items. The reuse of old or "dead" sherds in the manufacture of new vessels is another manifestation of ancient Maya symbolism revolving around the cyclical continuity of death and rebirth. In any event, the inclusion of sherd clusters in the sanctification of the North Ancillary Platform indicates this architectural feature was likely a focus of ritual significance throughout its existence, though, potentially more restricted in focus and thus secondary to the intense focus of dedication and reaffirmation evident in the diversity and elaborateness of the ritual deposits recovered from the main building of Mound 2.

Conclusion

The Bedran Group's primary focus on intensive agricultural productivity by A.D. 700 coincides with the small scale construction of the E-Group morphological replication displayed on the eastern edge of the plazuela. Because similar architectural styles have typically been associated with agricultural ritual (Aimers 1994:4) the relatively late development of the ditched field system at the Bedran Settlement Cluster may partly explain this coeval E-Group replication. Also, the E-Group architectural convention is more often considered to be located in the central precinct of major centers and is generally associated with ballcourts (Laporte and Fialko 1990:52). Since groups such as

the Bedran plazuela are not known to possess such architectural complexes as ballcourts (Garber et al. 1993:17) the E-Group morphology is particularly significant for integrative reasons. Its inclusion at the Bedran Group suggests it had similar communicative properties typically more closely associated with important figures residing within the central precincts of major centers. The integrative function emphasizes not only social ties but also economic and political interrelationships.

The growth of the Bedran Group and the eventual inclusion of E-Group type morphology at a group lacking an associated ballcourt feature is similar to the employment of elite status signatures, such as exotica and elaborate interment, to define status inclusivity and represent the late emergence of ruling elite control over the expanse of their community's territory (cf. Lincoln 1985:75; Chase et al. 1990:501; see also Sanders 1992:280). The development demonstrated at the Bedran Group "can best be viewed as a long process of in situ population growth" (Potter 1985:142) whereby plazuela groups, possibly representative of the consolidation of centralized control, did not come into vogue until the Late Classic at Baking Pot (cf. Willey et al 1965:293). The social integrative function represented at the Bedran Group may also be an indication that territorial control was not in the hands of "local kin-based groups" alone (Chase and Chase 1992:309; also see Haviland 1981:117; and Tourtellot et al. 1992:80). The replication of a more typically core associated architectural convention at the Bedran Group, much like the ballcourt feature at the Ontario Group east of Blackman Eddy, indicates access by a direct link to significant status differentiators and inclusion within a hierarchically superordinate social stratum. The ruling elite of Baking Pot not only placed their stamp of approval on the Bedran Group lineage leaders but also confirmed their entrenchment in the administrative bureaucracy. By conferring upon the Bedran Group inhabitants certain privileges, especially with respect to the replication of socially significant architectural conventions, the Bedran lineage head also was able to employ more elaborate ceremonies as well as acquire equally impressive material wealth. The ramifications of replicative patterning by periphery dwellers of core architectural conventions as templates that communicated social, political and economic inclusion within the upper stratum of society requires further assessment by Mayanists. This assessment should be undertaken over a widespread spectrum from individual structural manifestations to intra and interregional comparisons.

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Estimates of Population and Agrarian Potential for the Ditched Field Irrigation System at Baking Pot, Belize

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Introduction

The purpose of this presentation is to examine the significance of the ditched field system at the Bedran Settlement Cluster in the analysis of ancient Maya community organization. The ditched fields in the zone of the Bedran Settlement Cluster demonstrate a regular lattice arrangement that was first reported by Kirke (1980) who proposed the "linear indentations" he had surveyed were the remnants of an ancient drainage system. Similar lattice configurations have been identified at Pulltrouser Swamp, Albion Island, Lamanai, Cuello, Cerros (Collier 1982) and Rio Azul (Culbert et al. 1990). Investigations and analysis of these features has focused upon determining their natural or cultural origin, regional distribution, the period of their inception, and in varying aspects, the reason for their inception. Reasons considered include population pressure, risk minimization (Wilk 1985:54), yield optimization (Freidel and Scarborough 1982; Harrison 1990:110), and finally, to one extent or another, the centralized or decentralized (e.g. Mathewson 1984) control of these systems. This paper shall focus upon the examination of the inception, form, and function of the ditched field system together with the excavation results from the last three years at the Bedran Settlement Cluster. The Bedran Settlement Cluster developmental sequence shall be briefly discussed in order to examine its significance for analyzing community intrarelationships at Baking Pot.

Baking Pot and Bedran

The ancient Maya site of Baking Pot is located in the Cayo District of Western Belize, roughly equidistant between the major centers of Cahal Pech in the west and Blackman Eddy to the east. Several archaeological research projects have visited Baking Pot over the last 70 years. However, by todays standards, the site remains relatively unexplored (Bullard and Bullard 1965:7; Conlon 1993: 173).

The Belize Valley Archaeological Reconnaissance Project (BVAR) has been investigating ancient Maya community organization in the upper Belize Valley for the last seven years. The investigative strategy employed by BVAR investigators includes

varying scales of a group focus approach to investigate intrasite variability. In order to assess the corporate structure and integrative interrelationships at the Bedran Settlement Cluster excavation was undertaken.

The Bedran Group is a plazuela located approximately 2 kilometers southwest of Group II of Baking Pot. The plazuela is similar in configuration to group-focus-patio plans (Ashmore 1981), Plaza Plan II at Tikal (Becker 1983:169) and East-Structure Focus-Groups at Caracol (Chase and Chase 1987:55). The surface configuration of the Bedran Group represents "a recognizable degree of residential coherency," a critical defining criteria of corporate group identity within any community (Hayden and Cannon 1982:134-135). The total of 21 mounds also includes 4 mounds immediately north of the survey boundary and five other very low mounds 100 meters east of the plazuela. The five mounds to the east were only discovered late in the 1994 field season and have not been included in the most recent plan of the settlement cluster. The four mounds to the north of the Bedran Settlement Cluster survey limit are included in the estimates of population and agrarian potential because of their close proximity to the surveyed area. The Bedran Settlement Cluster survey limits were arbitrarily determined by the enclosure formed by the present day fenceline. This plot measures approximately 16 hectares in area. Visual reconnaissance was undertaken over a wider area of approximately 100 hectares in order to supplement the surveyed database.

Initial settlement around A.D. 500 consisted of a 1.5 meter high circular platform on the east of a small patio and a 15 cm high platform on the south. By A.D. 600, Structure 1-3rd on the south had reached a comparable height to that of Structure 2-2nd on the east, and Structure 2-2nd had been modified to a more typical Classic period square plan. Structure 3-1st on the north was added with the construction of the first plazuela platform. Sometime shortly after AD 700 Structure 4-1st was added to the west end of the plazuela. Also around this time, the small ballast that was used in most of the early construction phases was replaced in favor of dense alluvial clay. The Spanish Lookout phase is also the first period in which evidence for settlement outside of the Bedran Group plazuela has been recorded. It is not until this time period, the Spanish Lookout phase (A.D. 700-900), that Structure 2-3rd became an important repository for burials and caches. By the end of the 9th century A.D. the group was abandoned. No evidence of Postclassic occupation has been found.

We would like to focus attention upon Structure 2 on the eastern side of the plazuela, a favored location for shrines in the Maya lowlands. There were 12 burials and 24 caches recovered from this locale and some warrant special mention here. Some of the more significant finds include Cache 3, a large concentration of 48 chert and obsidian eccentrics as well as several Spanish Lookout phase vessels. Similar eccentric caches have been found in Group II at Baking Pot. Cache 16 was an effigy censer fragment located directly in front of the inset shrine feature. Similar effigy censers from Santa Rita Corozal of Northern Belize are frequently found within high status groups (D.Chase 1992:123). The recovery of Burial 7 (ca. A.D. 800), a skull of a mature adult, directly on top of the inset shrine, and covered by the bowl of Cache 6, is similar to other Burials from the core of major centers (see Becker 1993:55) and indicates, like the effigy censer, that the inset shrine of Structure 2-2nd and 2-3rd at the Bedran Group was potentially an important locale for the worshiping of the visages of ancestors and gods alike. Finally, the recovery of Vessel 5 of Burial 2 also indicates a high status individual was interred

here. Cacao vessels with similar texts have been found in tombs of high status individuals within site cores, such as at Rio Azul (Hall et al. 1990).

We cannot possibly present all of the excavation data from the Bedran Group here, but needless to say, the finds in Str 2-3rd elicited questions concerning the status of the individuals that once inhabited the Bedran Group. The ancestor worship evidenced at the Bedran Group could possibly be explained as a manifestation of the Little Tradition, which the refined and standardized Great Tradition of the core evolved from (Leventhal and Gossen 1993). However, the Bedran Group inhabitants seem to be mimicking the Great Tradition. An example of Great Tradition mimicry includes not only architectural manifestations, but also the effigy censer, cacao vessel and the eccentrics of Cache 3:

"...when eccentrics are considered alongside other elite-oriented aspects... the situation corresponds well with a peripheral elite defining and solidifying its position in the socio-political hierarchy through the adoption of the site core's most effective material culture expressions" (Iannone and Conlon 1993:77).

The inclusion of portions of the lower arm of Burial 9 with Burial 11, and the bloodletting paraphernalia of Cache 18 that separates these two coeval burials, may be one of the best indicators that inhabitants of the Bedran Group were not performing simplistic, Little Tradition, ancestor worship rituals, but fully participating in more typically core associated behavior such as human sacrifice. The accompaniment of sacrificial victims is more indicative of site center tomb interment behavior (Haviland 1981:105). The Bedran Groups burial and cache assemblages demonstrate a highly capable manipulation of the elite spectrum Great Tradition behavior. The ability to conduct ritualistic human sacrifice may be the strongest indicator of the Bedran Groups authority and entrenchment within the upper echelon of ancient Maya society. The assignment of the Bedran Group inhabitants of the Late Classic period to the upper echelon of ancient Maya society has implications for deducing the organizational parameters necessary to construct and maintain the ditched field system at the Bedran Settlement Cluster.

The Ditched Field System

The ditched field system was first documented by Kirke (1980) in the late 1970's. The survey area was somewhat smaller than the Bedran Settlement Cluster limits we surveyed but Kirke (1980) produced a plan of a larger area based upon aerial photographs in his possession. Because the ditches indicated on the aerial photographs have not been surveyed they have not been included in the tabulation of agrarian potential. I refer to the system as ditched rather than canal, channelized, drained or raised. Preferably channel should be reserved for large bodies of water such as river channels or, for example, the English Channel. As with "channel," the term canal should be reserved for the next smaller or narrower linear depression which could have held water such as those identified in radar imaging (Pope and Dahlin 1989). Both drained and ditched fields are roughly equivalent in width and are smaller again than canals. The difference between drained and ditched comes down to not a question of size but of function. The ditches at

Bedran most certainly performed a drainage function, however, as shall be demonstrated shortly, since drainage was not their only capability it would be misleading to label them as simply drained. They should also not be referred to as raised fields, for, unlike the raised field systems of wetland habitats (Pope and Dahlin 1989:87), where seasonal inundation of waterways requires mounding of fields, no such mounding is required, nor evidenced, at the Bedran Settlement Cluster. In this sense, non-mounded plots of drained fields are distinguished from raised fields which also provided a drainage function. Kirke (1980) hypothesized the ditches likely were drained via the natural drainage of the plain from south to north towards the Belize River.

Elevations taken along the ditches indicate the system drained from south to north and west to east (Figure 1). The system may also have relied upon gravity to feed the system, much the same as the modern *tablon* system of highland Guatemala are (Mathewson 1984:93). Evidence the ditches served more than a simple drainage function is supported by two criteria. The angle the east-west ditch at the eastern end of the survey intersects the natural creek suggests it functioned more effectively as an outlet rather than intake ditch, unlike its north-south neighbor which was situated more advantageously to funnel water into its channel more efficiently. Furthermore, the system likely had a complex circulatory feeder system as evidenced by the "control valve" to the south of the Bedran Group. The gradual increase in elevation at this point meant that water could be retained relatively easily by blocking the east-west outlet ditch at this juncture. Water could be redirected back through the system to keep it at a constant level in the ditches. The inclusion of reservoirs along the ditches permits an even greater quantity of water to be contained within the system for release in future, drier, conditions. (These ditches emanate from the reservoirs near Boca Raton but have not been surveyed as yet and are not shown in this plan). The use of canal water on the agricultural plots, and the mucking out of ditches, may have enabled the ancient Maya to produce two crops per year and even possibly circumvent the need to lay fallow the fields that swidden farming requires (Mathewson 1984:95; Harrison 1990:110; Fedick and Ford 1990:22). Thus, the ditched field system of the Bedran Settlement Cluster was a fully functioning irrigation system, not simply a drainage system, and should be referred to as ditched rather than drained since some systems sole function was drainage rather than managing a continual supply of water. The ditched field system at the Bedran Settlement Cluster would have enabled the continuous and reliable production of agricultural products throughout most of a year, year after year.

Population and Agrarian Estimates

We have followed closely Spencer et al. (1994) who most recently applied estimates of population and agrarian potential to a similar field system in the Barinas State of Venezuela that likely operated in a coeval time period as the Bedran fields (c. AD 550-1100). Data from several of the sites in their study, B12, B26 and B97 are included in the Tables mainly as a quick reference.

We should first point out the settlement density figures of the La Tigra sites of Venezuela, B26 and 97, are extrapolated from B12 (Table 1), whose settlement is circumscribed by a large embankment, possibly built for defensive purposes. The nucleation of settlement within this

Ditched Field System Relative Elevations, The Bedran Settlement Cluster Baking Pot, Belize 1994

Plan: James M. Conlon
Survey: Shawn Brisbin

0 100 200 Meters



Magnetic

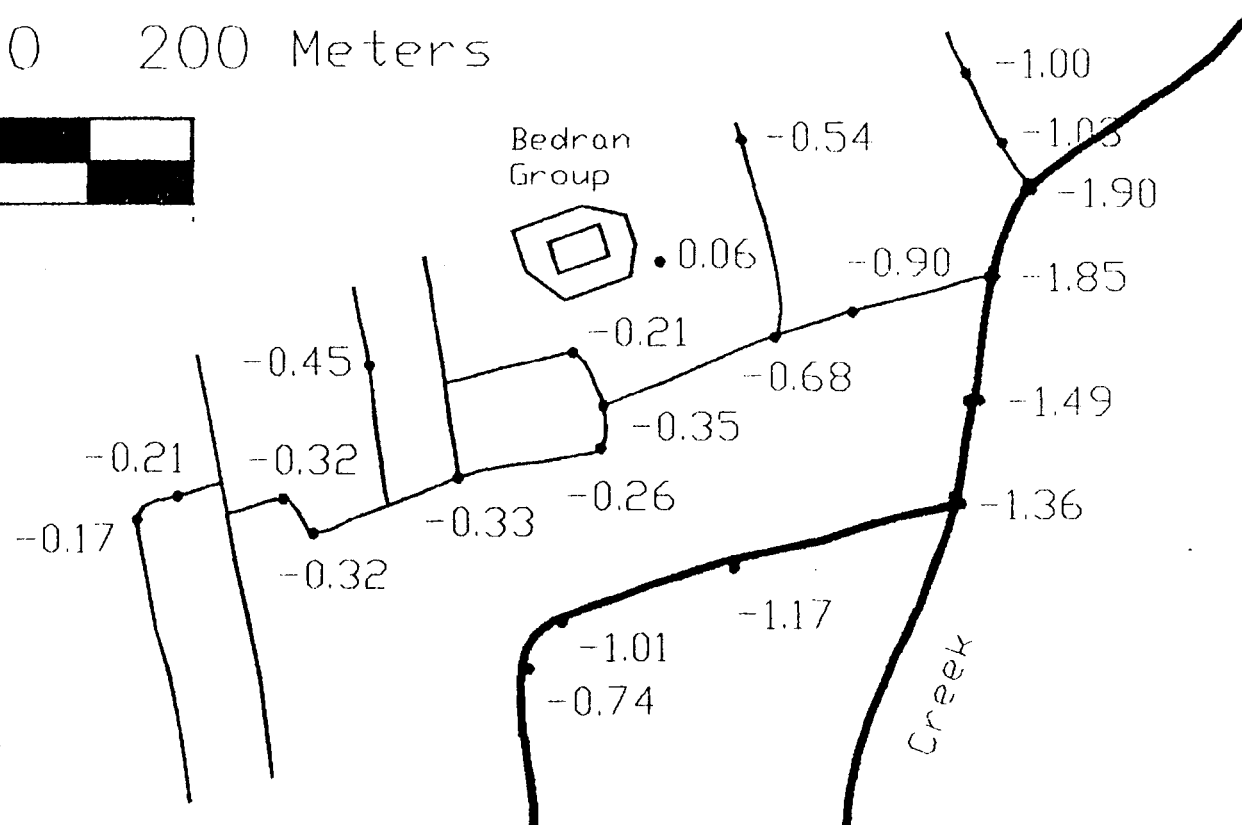


Figure 1: Relative elevations of the ditched field system at the Bedran Settlement Cluster.

Table 1: Site Size and Population Estimates of Selected Sites from the Cayo District, Belize, C.A. and the Barinas State, Venezuela, S.A.

Site	Mounds	Population (Mounds X 5)	Area (hectares)	Mound Density (\hectare)	Population (\hectare)
Bedran	21	105	16	1.3	6.5
Baking Pot	208	1,040	125	1.7	8.5
B12	134	670	33	4.1	20.3
B26	12*	60	3	4.0	20.0
B97	24*	120	6	4.0	20.0

Notes: * -extrapolated from B12 data at La Tigra, Barinas, Venezuela.

-Comparative settlement density from Xunantunich, Belize = 10-12 structures\ha (Yaeger 1993:115).

embankment may explain the apparent 2 to 3 times greater mound density at La Tigra than at sites in the Belize Valley. We should also point out the error in the Xunantunich data. Xunantunich is approximately 20km west of Baking Pot and displays an estimated range of 100 to 120 mounds for the roughly 70ha surveyed in 1992. The density is closer to 1.4 to 1.7 mounds per hectare, similar to the 1994 Baking Pot results. The differential densities between Bedran and greater Baking Pot may represent a decrease in mound density as one moves out from the core of Baking Pot, or, perhaps the Bedran Settlement Cluster density is related to the way in which the territory was utilized. A check on the mound density of the immediate core of Baking Pot using the 1950's survey data produces a density of around 3.8 mounds per hectare. This approximates the B12 site from Venezuela more closely and may be representative of an urban population that may not have been able to cultivate enough land for their sustenance requirements in their immediate environs. We have used an estimated 5 people per household to maintain comparability with the recent Spencer et al. analysis of 1994. Thus, population estimates result from assuming each mound represents a household, where each household is comprised of an average of five people. For our purposes, each mound at the Bedran Settlement Cluster, and Baking Pot, is considered in the population and agrarian estimates. No adjustment has been made to account for the non-domestic function or non-contemporaneity of mound occupation. In this way, the estimates generated here represent maximum potential population, crop yields, and sustenance requirements.

Assuming each mound is a household, and each household had a farmer, and possibly 2 farmers if an eldest son had not yet left the nest, estimates of cultivable land were calculated using modern ethnographic evidence from Oaxaca (Spencer et al. 1994:134 re Kirkby 1973) where one farmer typically cultivates 2ha per season in swidden type farming. Therefore, multiplying Mounds, or households, by A: 1 farmer, and B: 2 farmers, estimates for potential Cultivable land are generated (Table 2). These areal estimates are further multiplied by two production potential factors. The Roosevelt Production potential is based upon modern ethnographic data from Venezuela for milpa yields of 1,800 kg of maize per hectare (Spencer et al. 1994:135). Although intercropping of such items as corn, beans, manioc, cotton, and cacao is highly likely, based on modern observation (Mathewson 1984; Pohl 1985:39) and excavation data from La Tigra (Spencer et al. 1994), maize alone is used in our estimates for maize is most commonly employed in similar exercises. The Kirkby Production potential is a reduction to 63% of the modern Roosevelt production capability and is based upon evidence of proportionally smaller prehistoric maize cobs. Single cropping is assumed in all instances, even the Bedran case where the ditched fields may offer a double cropping opportunity. The absolute numbers generated here are not so important to fixate upon, they are more necessary for the next stage of estimation presented in Table 3, where potential cultivable land and estimated yield is subjected to comparison with estimates of sustenance requirements of the same population.

Please note the error in category headings concerning Population (Table 3). In all instances of the Kirkby and Roosevelt population categories, "Population" actually represents Mounds, not people. That is, as provided in the example of the Notes to this table, a single crop from the Bedran Settlement Cluster could support 43 to 138 households, or, 2 to 7 times the 21 mounds actually surveyed in the zone.

Table 2: Land, Labour and Maize-Productivity Estimates

Site	Mounds	Cultivable Land A (hectares)	Cultivable Land B (hectares)	Kirkby Production A	Kirkby Production B	Roosevelt Production A	Roosevelt Production B
Bedran	21	42	76	47,628	95,256	75,600	151,200
Baking Pot	208	416	832	471,744	943,488	748,800	1,497,600
B12	134	268	536	303,912	607,824	482,400	964,800
B26	12*	24	48	27,216	54,432	43,200	86,400
B97	24*	48	96	54,432	43,200	86,400	172,800

Notes: A - One farmer\mound X 2ha\farmer (Kirkby 1973:Table 10; Spence et al. 1994:134)

B - Two farmers\mound X 2ha\farmer

* - Extrapolated from B12 data at La Tigra, Barinas, Venezuela

Kirkby Production = 63% of Roosevelt; 1,134kg\ha and 1,800kg\ha respectively

Swidden single cropping assumed (Bedran ditched field double cropping potential unestimated)

Table 3: Estimated Population Based Upon Sustenance Requirements
of 1,100 kg\household\year (Coe and Diehl 1980:78; Flannery 1976; Parsons 1976;
Spence et al. 1994:135)

Site	Mounds	Population (Mounds X 5)	Kirkby Population A	Kirkby Population B	Roosevelt Population A	Roosevelt Population B
Bedran	21	105	43	87	69	138
Baking Pot	208	1,040	429	858	681	1,362
B12	134	670	276	552	438	876
B26*	12	60	24	48	39	78
B97*	24	120	49	98	78	156

Notes: * - estimated at 20.3 households\hectare

A - Table 2\1,100 kg\year

B - Table 2\1,100 kg\year

e.g., A potential single crop cultivated from the 16 hectares at Bedran could support
from 43 to 138 households, or, 2 to 7 times the 21 mounds actually surveyed.

Reconnaissance over a 100 hectare area has indicated the ditched field system at Bedran extended over another 48 ha, for a total of approximately 64 ha. This 64 ha ditched field system approaches the estimated maximum potential of cultivable land at 76 ha based upon the estimated labor supply. Since the only mounds within this 64 ha area appear to be concentrated in the Bedran Settlement Cluster one could assume the entirety of the system was the sole responsibility of the inhabitants of this settlement cluster. In this case, labor estimates match closely the observed extent of the ditched field system and may be evidence that the systems construction and maintenance was the sole responsibility of the Bedran Settlement Cluster inhabitants. This possibility will be discussed shortly.

With two farmers per household at Bedran's 21 mounds there exists the potential to produce enough surplus comestibles to meet the sustenance requirements of the 89 mounds, or households, in the immediate environs of the core of Baking Pot as surveyed in the 1950's (e.g., see Kirkby B = 87 households). Thus, at full Kirkby capacity of two farmers per household, the Bedran community could have produced enough maize in their fields for the urban population residing nearest the Baking Pot core. The 1.2 mounds per hectare of the southeastern zone of Baking Pot surveyed in 1994 is almost equal to Bedran's mound density of 1.3. The apparent lack of ditched fields in this southeastern zone may suggest these inhabitants acquired their foodstuffs through their own swidden cultivation of nearby hillsides. Thus, the inhabitants of the southeastern zone may have been producing crops for their own consumption. People that may have been in need of acquiring additional foodstuffs to supplement their own garden plots were ones residing in the immediate core zone. There appears to have been more than enough land and labor to produce sufficient food for the entire population of greater Baking Pot. Even at La Tigra, Venezuela, where mound density is relatively high, there is no apparent stress by the population on agricultural productivity (Spencer et al. 1994: 139). A similar lack of population overload is documented for Cerros in northern Belize (Freidel and Scarborough 1982:133). The inability to implicate population pressure as a prime motivator for intensification of agriculture at Baking Pot indicates other reasons must be considered for the construction of ancient water works such as the ditched fields of Bedran. Freidel and Scarborough (1982:131) suggest Cerros enjoyed a degree of subsistence autonomy because of the surplus production of agricultural goods. This circumstance shall be considered further later on.

One final table to present concerns the "how" of the building of the ditched fields at Bedran. The various assumptions concerning rate of excavation are noted on the table (Table 4). The estimates suggest the ditched field system of Bedran could have been constructed solely by the Bedran inhabitants. It may have taken as little as 8 years for digging the 16 ha segment, if 4 years were spent digging the ditches and another 4 years for clearing vegetation. An estimated maximum total of 32 years for completing the entirety of the 64 hectares system is not unreasonable. These figures should not be considered as necessarily representative of a labor "intensive" program. A roughly similar labor expenditure could be incurred in the clearing of land for the continually shifting swidden technique that does not include the benefits of double cropping. Once the ditched fields were constructed and in operation they may have produced two crops per year, every year, with little or no fallow required. Therefore, in terms of return on labor investment, construction and

Table:4 Time and Labour Investment Estimates for Initial Excavation of Ditched Filed System at the Bedran Settlement Cluster, Baking Pot, Belize

	One Farmer per Household (21) 18,200 total hours*	Two Farmers per Household (42) 18,200 total hours*	One Farmer per Household (21) 36,400 total hours**	Two Farmers per Household (42) 36,400 total hours**
Hours	867	433	1,733	867
Days	124	62	248	124
Percentage	34	17	68	34

Notes: * - modern excavation of 1 cubic meter unit takes one person 7 hours to complete (2,600 X 7 = 18,200)

** - 2 X's modern excavation total (arbitrary hardship factor)

Hours - Total Hours\Number of Farmers

Days - Hours\7 hours (estimated portion of day spent excavating ditches)

Percentage - Days\365 (estimated portion of year to dig the ditched field system at the Bedran Settlement Cluster)

maintenance of a ditched field system may be comparatively less labor intensive than swidden type cultivation. The benefits of a ditched field system requires community organization in working towards a common goal of surplus agricultural production over a long period of time.

Finally, sherds from a single test excavation into a shallow ditch in 1994 recovered solely Spanish Lookout phase ceramics, A.D. 700-900. This is contemporaneous with the transition to utilizing solely alluvial clay for construction fill at the Bedran Group. This clay could not be heaped onto fields for it was not suitable for crops. The numerous chert flakes found throughout the ditch test excavation likely represents the knapping of stone tools in the field while constructing and maintaining the ditches.

Discussion

One probable function of the ditches at Bedran could have included producing surplus foodstuffs for the consumption of those inhabiting the high density urban zone nearer the Baking Pot site core. Whether this was exacted as tribute by the ruling elite of Baking Pot, and redistributed by them as at Nohmul (Harrison 1990:110), or simply a service driven by mutual agreement (cf. Freidel and Scarborough 1982:149), is debatable. A second mode of production could have included the growing of commercial crops specifically for elite consumption and distribution. These crops could have included cacao, cotton, and copal. Whether these goods were core property or Bedran's choice economic pursuit remains debatable. What is evident at Bedran is, once the ditched field system was in place, the inhabitants here were capable of producing more than they needed for their own consumptive purposes.

There is no doubt the inhabitants of the small nucleated community of Bedran would have been able to implement and maintain the ditched field system without a centralized authority (cf. Siemens 1980 and Mathewson 1984). But this does not discount or preclude the impetus for establishing ditched field technology in response to directives from a higher authority. The late emergence of Structure 2-3rd as a receptacle for elaborate burials and caches at Bedran may be accredited to more than simply economic prosperity alone; the primary elite of Baking Pot may have sanctioned the elite behavioral practices evidenced in the Late Classic at the Bedran Group.

Evidence from Bedran, like Cerros in northern Belize (Freidel and Scarborough 1982:153) and La Tigra in Venezuela (Spencer et al. 1994), indicate that carrying capacities were not significantly stressed. Investing in intensive agricultural techniques in the pursuit of surplus production is ultimately useless unless it is known in advance that there is a stable, secure, sustainable market for ones surplus goods. Could the Bedran Settlement Clusters subsistence autonomy have translated to political autonomy?

Hayden and Cannon (1982: 147) have suggested that larger corporate groups, such as the Bedran Settlement Cluster represents, might be weak, or fractious, owing to the relative autonomy of individual families within the settlement cluster. The evidence from the Bedran Group contradicts this assumption, demonstrating that the potential for settlement cluster "weakness" was overcome by the interaction, and possibly integration, of the Bedran Group ruling lineage with the core elite of Baking Pot. Through this interrelationship the Bedran lineage leaders displayed their ability to access and display manifestations of paramount power, intensifying and bolstering their own "right to rule,"

circumventing individualistic autonomy within their realm. The advantages to settlement cluster cohesiveness outweighed any disadvantages that contractual obligations with the core elite might entail.

The burgeoning of the Bedran Group is indicated by the employment of elite architectural signatures and the late emergence of ruling elite control over their territories (cf. Lincoln 1985:75; Chase et al. 1990:501; see also Sanders 1992:280). The integrative function of elite ritual practices may also be indication that territorial control was not in the hands of "local kin based groups" (Chase and Chase 1992:309; see also Haviland 1981:117; Tourtellot et al. 1992:80). The ruling elite of Baking Pot may have placed their stamp of approval on the Bedran Group elite by conferring upon them certain privileges with respect to the ceremonial toolkit of the primary elite segment of the social spectrum (see Conlon et al. 1995, this volume).

The balance between site core control and peripheral corporate group autonomy may have been "maintained through close and loose kinship ties" (see Awe et al 1991: 29), ties which may have played a role in establishing the Bedran Group in the locale it inhabited. Thus, the corporateness demonstrated around A.D. 600, which consolidated the Bedran Group inhabitants, may have been the result of a core elite social-political contractual arrangement. A second corporate intensification occurred around A.D. 700, for the purpose of economic exploitation, when the ditched fields were inceptioned. Monitoring agricultural production for community redistribution and consumption was the main function of the Bedran elite in the Late Classic (A.D. 700-900) (cf. Scarborough and Robertson 1986: 174).

The main beneficiaries may have been all levels of ancient Maya elite society. Surplus foodstuffs could have been used to support occupational specialists, such as ceramic, lithic, or stone sculpture craft specialists, intelligentsia such as astrologers, scribes, and engineers, and even warriors. Furthermore, elite control of the periphery provides more definitive territorial claims and may have acted to lessen conflict concerning claims to land both within and between major communities. Even though many benefits accrued to the elite in this organizational scheme all segments of ancient Maya society must have been able to see the benefits of stability and relative prosperity. There must have been mutual benefits for all segments of society so that while some acquire wealth and status, others enjoy stability of and even a potentially increased standard of living (Pendergast 1992:78). The concept of an oppressed peasantry, at least in the Early Classic, may be incorrect (Culbert 1974). The concept of the existence of a prosperous peasantry must be considered partly responsible for the Classic period Maya florescence.

The precise interrelationship between primary and secondary elite within the community of Baking Pot is still not entirely clear. It may be more beneficial to continue identifying interactive, integrative, and incorporative relationships rather than becoming preoccupied with identifying separate or distinctive social strata. However, in as much as the Late Classic period Bedran Group inhabitants demonstrate a high degree of interaction with the upper echelon of ancient Maya society it would be unrealistic not to consider that they were secondary elite and possibly held some degree of autonomy based not only on mutual interdependence of economic need with the primary elite, but also the necessity to make the day to day decisions in their small territory without having to consult superiors. Ultimately, the ability of these secondary elite to organize and

coordinate commoners in economic exploitation of resources is truly a strong measure of Classic period success. By the same token, dissemination of elite power to the periphery may also have been potentially disruptive. By no means were the duties of secondary elite, who likely acted to collect taxes, supplies, and labor services for the upper classes "unenviable" (Culbert 1974:67). On the contrary, the evidence for "an economy of abundance for the working classes" discounts the traditional perspective of a downtrodden peasantry, and may explain why intraelite conflict may have been more intense than conflict between the lowest and uppermost levels of ancient Maya society. The dissemination and divestiture of power to an expanding peripheral dwelling elite may have provided for political intrigue of Shakespearean proportions among the elite rank and file in the Late Classic period.

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The Final Frontier: Settlement Survey at the Ancient Maya Site of Baking Pot

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Introduction

In 1992 the BVAR Project commenced investigations in the periphery of Baking Pot at the Bedran Settlement Cluster (Conlon 1993a and b and Powis 1993) (Figure 1). The initial intent was to begin preliminary testing of ancient Maya settlement before full scale operations began in earnest the following year (Conlon 1993c:173). However, two conditions arose which altered the projected timetable. The first condition affecting scheduling of investigations at Baking Pot related to the completion of investigations at Cahal Pech. The acquisition of substantial funds for investigating Formative Period occupation at Cahal Pech resulted in an extension of operations at this site into 1995. The necessary resources were thus not able to be allocated to an intensive exploration of Baking Pot in 1993. This was not an unfortunate situation because the second condition which delayed the implementation of full scale investigations at Baking Pot pertained to results of the 1992 field season at the Bedran Settlement Cluster. Survey and excavation at Bedran revealed a significant corpus of data in the limited testing program. The delay in commencing full scale operations at Baking Pot enabled the undertaking of a subsequent excavation season in 1993 to more fully explore the archaeological record of the Bedran Group (Conlon et al. 1994). Finally, in 1994, while small scale excavation procedures were undertaken at the Bedran Group (see Conlon et al., this volume), the anticipated large scale survey of Baking Pot was commenced. This report presents results of the 1994 survey and includes preliminary observations based on these results.

20th Century Baking Pot

The ancient Maya site of Baking Pot takes its name from the abandoned village which once flourished nearby. During the early part of this century many villagers labored in the sugar cane fields which encompassed most of the site of Baking Pot (Señor Adib Bejos, personal communication). In the early 1950's the inhabitants of the village of Baking Pot dispersed and settled elsewhere to make way for the new Central Farm agricultural station which administrates operations on the government land that most of the central precinct of Baking Pot occupies. Other industry in the area during the first half of this century included a saw mill which processed the mahogany once logged on lands now owned by Señor Abdala Bedran (Mr. Frances Norris, personal communication). Today the majority of the area is utilized as pasture for grazing livestock with intermittent patches of small agricultural plots.

Previous Survey Operations

The first excavations at Baking Pot were undertaken by Ricketson (1931) and concentrated in the northern "core" of Baking Pot known as Group I. In the 1950's settlement was completed

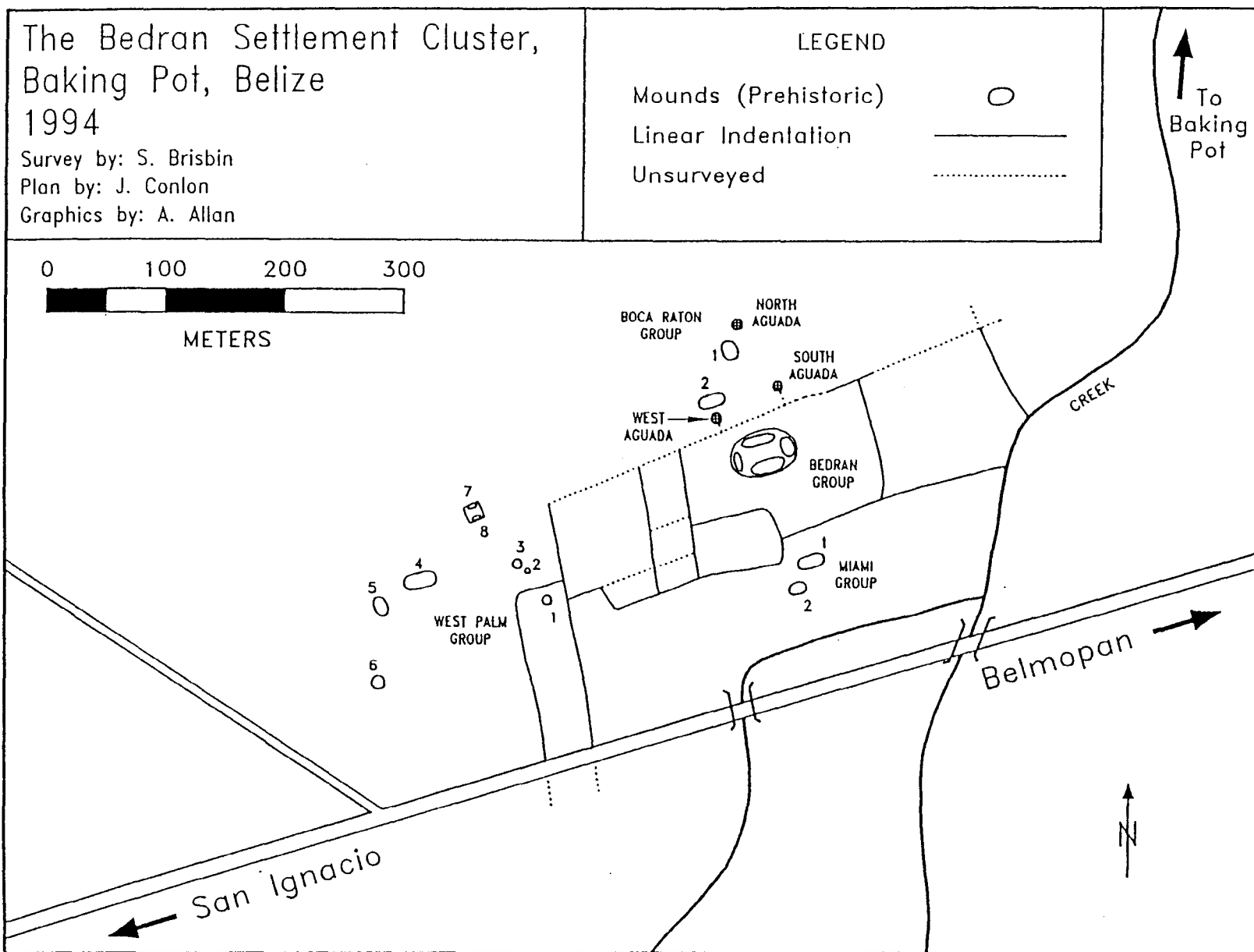


Figure 1: The Bedran Settlement Cluster and ditched field system.

with the core survey at the southern limit of monumental architecture known as Group II (Willey et al. 1965:302, Figure 177), incorporating Group I of Ricketsons' survey (Figure 2). Also included in the 1950's survey was settlement in the immediate periphery of this major center encompassing an area just over 0.5 square kilometers. The settlement survey incorporated 89 mounds in the plan. In the late 1970's Kirke produced a tape and compass plan of linear indentation features southwest of Baking Pot (Figure 3). Finally, the Bedran Group survey conducted in 1992 (Conlon 1993a:185) was extended to include support settlement surrounding the plazuela group set amongst the indentations and incorporated into the Willey et al. (1965) survey (Figure 4).

Survey Goals

Goals for the 1994 survey were of a preliminary nature. Ideally, the compilation of a substantial survey database would assist in the formulation of a research strategy concerning the study of intrasite organizational variability (Conlon 1993:206 and Conlon and Powis, n.d.). Determining site size was the first logical step to facilitate this process. Major centers in the Belize Valley have been demonstrated to occur regularly at approximately every 10 kilometers (Garber 1992:17) (Figure 5). Excluding geographical variables of a valley setting, and the affects this may have on settlement distribution (cf. Willey 1981; Conlon and Powis, 1994), this regularity would suggest a hypothetically operative areal extent of major site settlement to encompass almost 100 square kilometers (Conlon et al. 1994:253 and Conlon and Powis 1994). In order to investigate settlement variability at Baking Pot it would be requisite to survey as much of the potential extent of support settlement in order to determine not only the morphological components of the hierarchical settlement continuum but, also, the degree of settlement uniformity (homogeneity) versus the possibility of more heterogeneous settlement. The indication of significant nucleated settlement over two kilometers from the core of Baking Pot (Conlon et al. 1994:253), as well as at Cahal Pech (Iannone 1993 and 1994), suggests that site settlement in the Belize Valley is much more diverse then can be accounted for by simplistic dichotomous models of social organization (cf. Goldsmith 1993:25 and 27). Ultimately, the compilation of an extensive synchronous survey database will enable the formulation of an excavation strategy concerned with compiling a significant database for intrasite comparative purposes.

Variables needing further definition, as part of the preliminary survey, included determining suitable limits of site size for conducting survey, and concomitantly, the average time this area would require to be surveyed. The hypothesized 100k zone of major site settlement in the upper Belize Valley represented a starting point for determining site size, but, in the end, was simply a guideline for defining zones of interest for investigation. A number of variables, physical and cultural, were taken into consideration when determining survey limits. The western limit of survey was arbitrarily set at around three kilometers in the west where the modern town of Esperanza essentially marks the beginning of the greater San Ignacio area. The modern development and residential population beyond this boundary means ascertaining survey data which accurately reflects the ancient cultural landscape would be difficult. However, future reconnaissance beyond this limit could prove beneficial for comparative purposes as investigations progress. If survey was to extend to the hypothesized 5 kilometer eastern limit of Baking Pot settlement then Barton Creek, roughly 5.4 kilometers to the

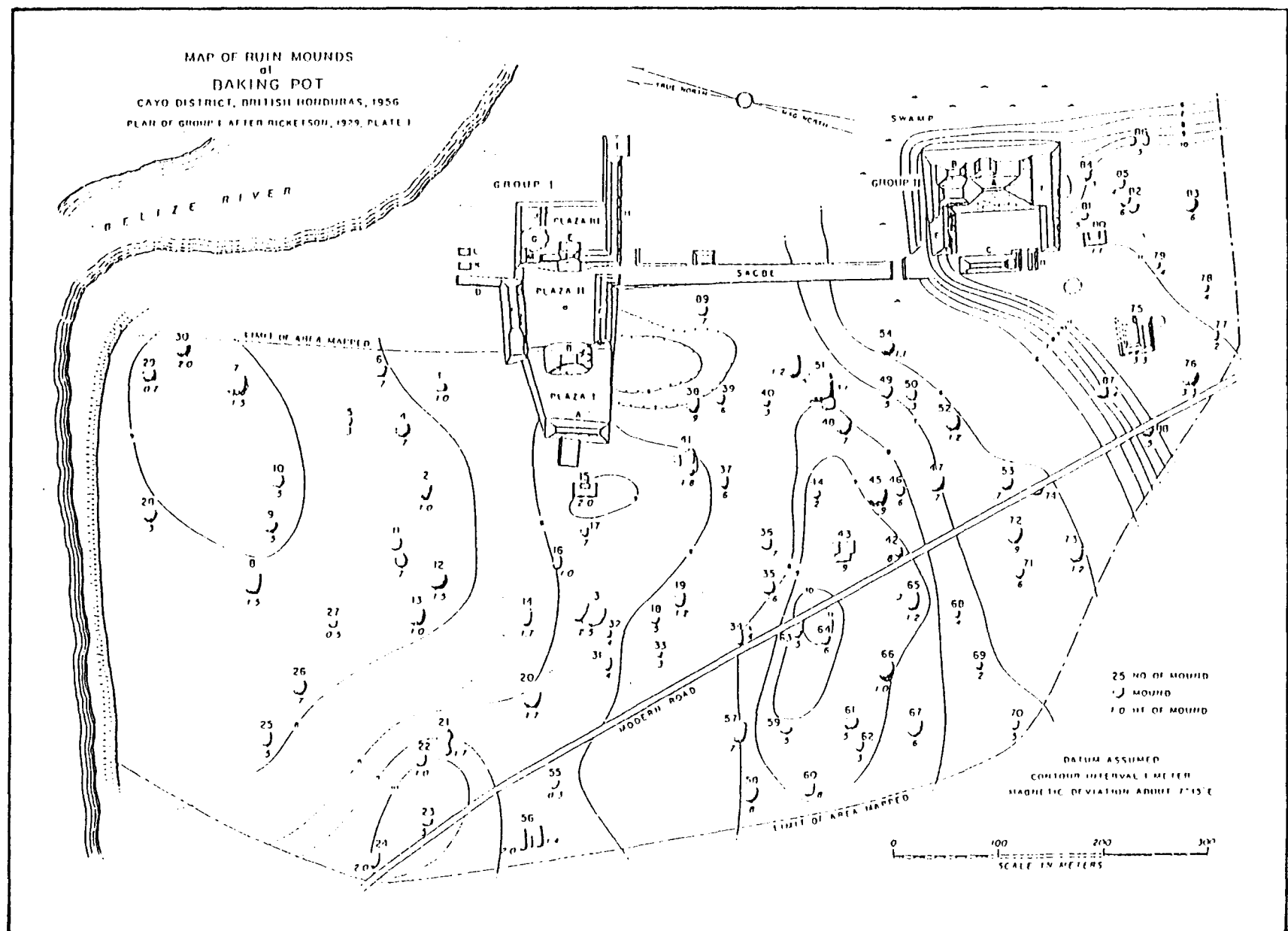


Figure 2: Baking Pot surveyed as of the 1950's (after Willey et al. 1965:302, Figure 177).

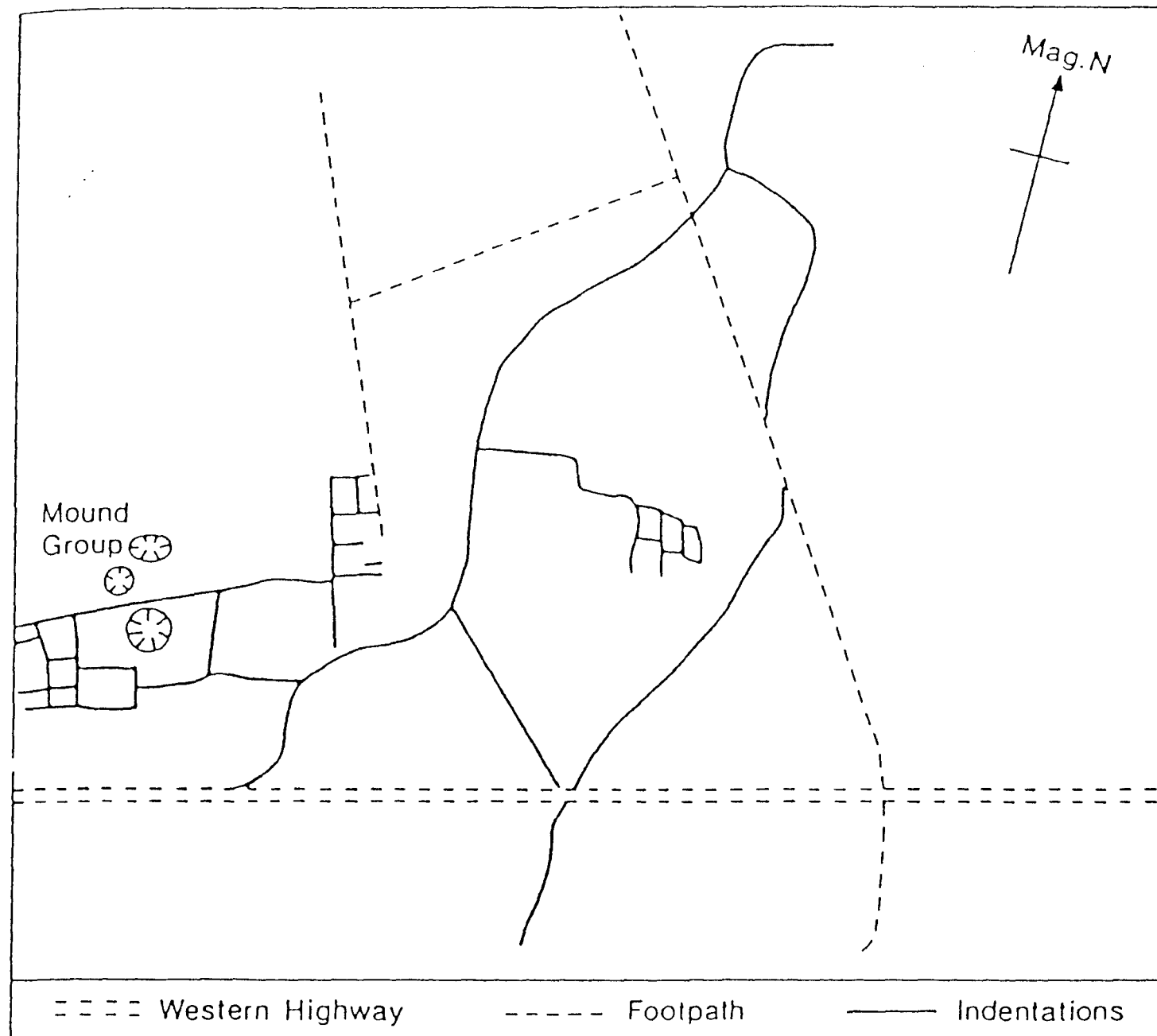


Figure 3: Linear indentation tape and compass plan (after Kirke 1980:280).

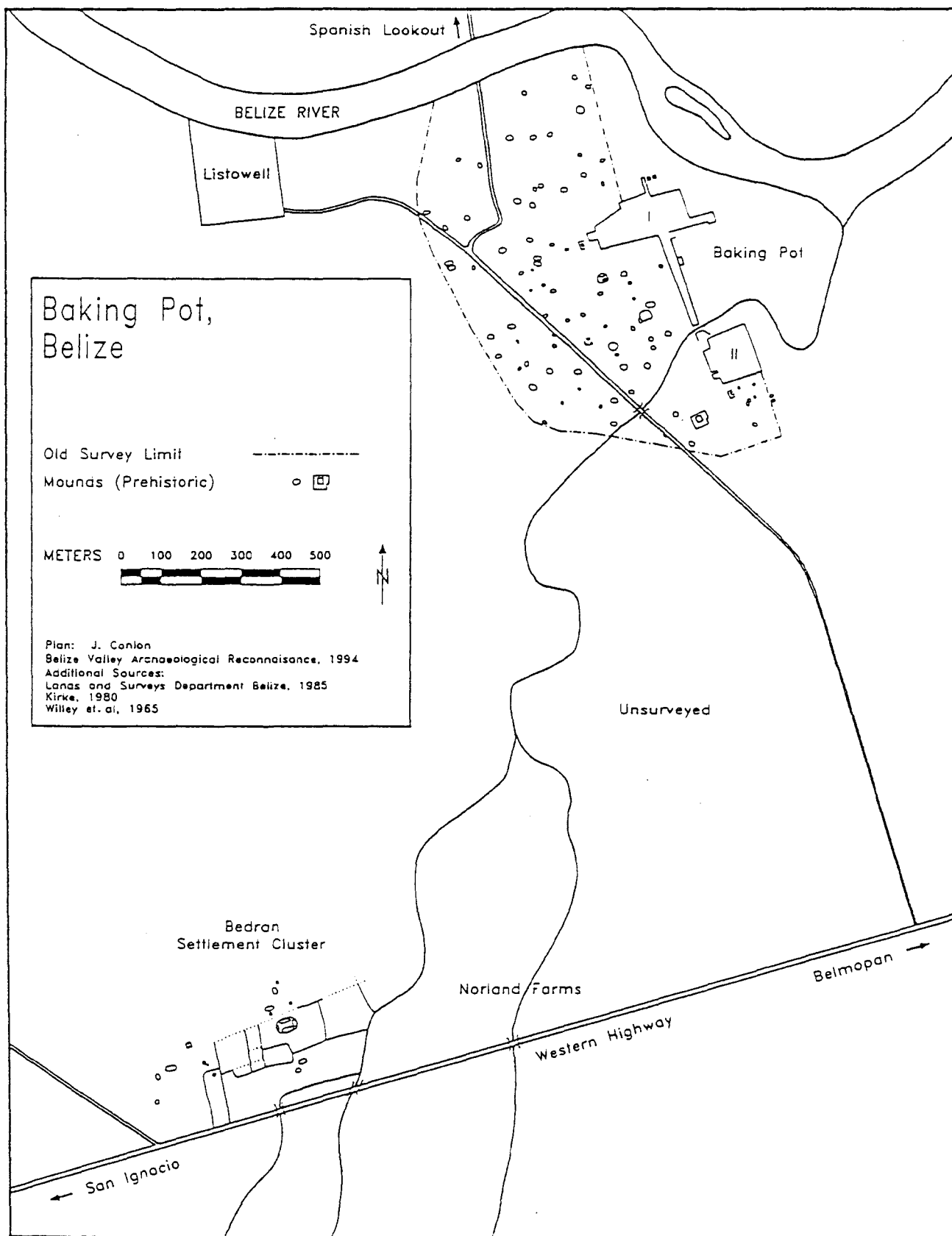


Figure 4: Survey of Baking Pot as of 1993.

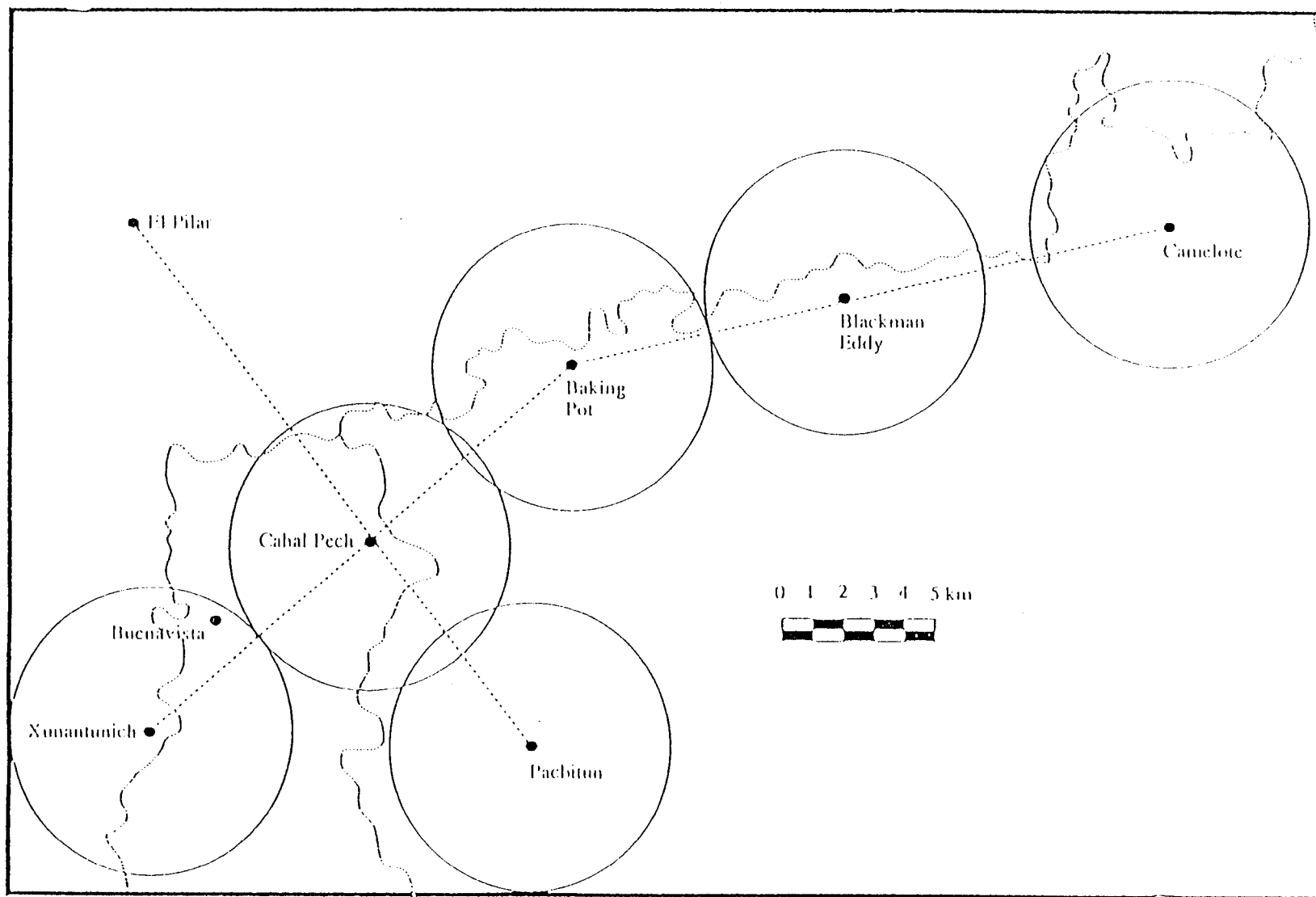


Figure 5: Example of major center 10k zone (after Garber et al. 1992, Figure 6).

east of Baking Pot, provides a suitable boundary limit. This eastern limit incorporates the minor center of Floral Park (Figures 6 and 7). At roughly 5.4 kilometers from the major center of Blackman Eddy, Floral Park occupies an intermediary position, on the cusp of a hypothetical community boundary, between Baking Pot and Blackman Eddy (Garber et al 1993:19). The northern limits of survey were defined by the Belize River and the southern limits by the base of the foothills of the Maya Mountains. Reports of substantial settlement on the first ridge of the foothills south-southeast of the Bedran Settlement Cluster (Senor Abdala Bedran, personal communication) suggests that this arbitrary southern boundary of survey may have to be extended in the future.

Based on these proposed survey limits the operative areal extent of our survey would ideally incorporate an eight kilometer long strip varying from two to three kilometers wide (Figure 8). Full coverage survey of this approximately 24 square kilometers would provide a substantial database with which to study settlement variability at the site level. Determining the speed of survey was thus paramount to coordinating a survey timetable at Baking Pot in order to gauge the progress necessary to complete the hypothesized extent of its sustaining settlement. Fortunately, this area is mostly pasture or plowed fields with very little secondary growth (*wamil*), or great variability in relief. With these variables considered the first season of extensive survey was ready to commence.

Method

The first order of business was fixing reference points employing a Global Positioning System. Several control points were fixed along true north immediately west of Group II. Twelve mounds surveyed by previous investigators, including the main connecting sacbe, ballcourt, and Mound F of Group II, were incorporated into this survey. This procedure enabled the confident orientation of this modern survey with those executed over the last 70 years. This exercise enabled the 1994 survey to concentrate upon expanding the settlement survey rather than spend an inordinate amount of time resurveying previously mapped settlement.

Global positioning determined the elevation base point to be 44 meters above sea level (masl). Since two global positioning references of 44 masl and roughly 100 meters apart were shown to differ by 1.25 meters in elevation by transit, all elevations were shot relative to a 0 reference point to await adjustment after future confirmation of absolute masl through cross referencing other available data sources. Contour interval survey of topographical features was not intensively undertaken owing partly to the relatively minor fluctuations in relief (approximately 10 meters overall). Also, the time involved in acquiring this data is not often warranted in light of the limited utility of the end result (Guderjan 1994:6). However, with respect to contours, significant points were shot incorporating tops and bottoms of ridges at various arbitrary points in order to provide a rudimentary representation of topography.

Survey was conducted using a theodolite (manufactured by Lietz). Stations were taped near Group II at Baking Pot to ensure reliable correlation with old survey data. Further out from the core of Baking Pot stadia readings were relied upon for determining distances. Large physical obstacles that could not be shot through, or cut through quickly, were traversed around. Thus, there is no distinguishable primary east-west or north-south transect. Traverses were kept as close to 180

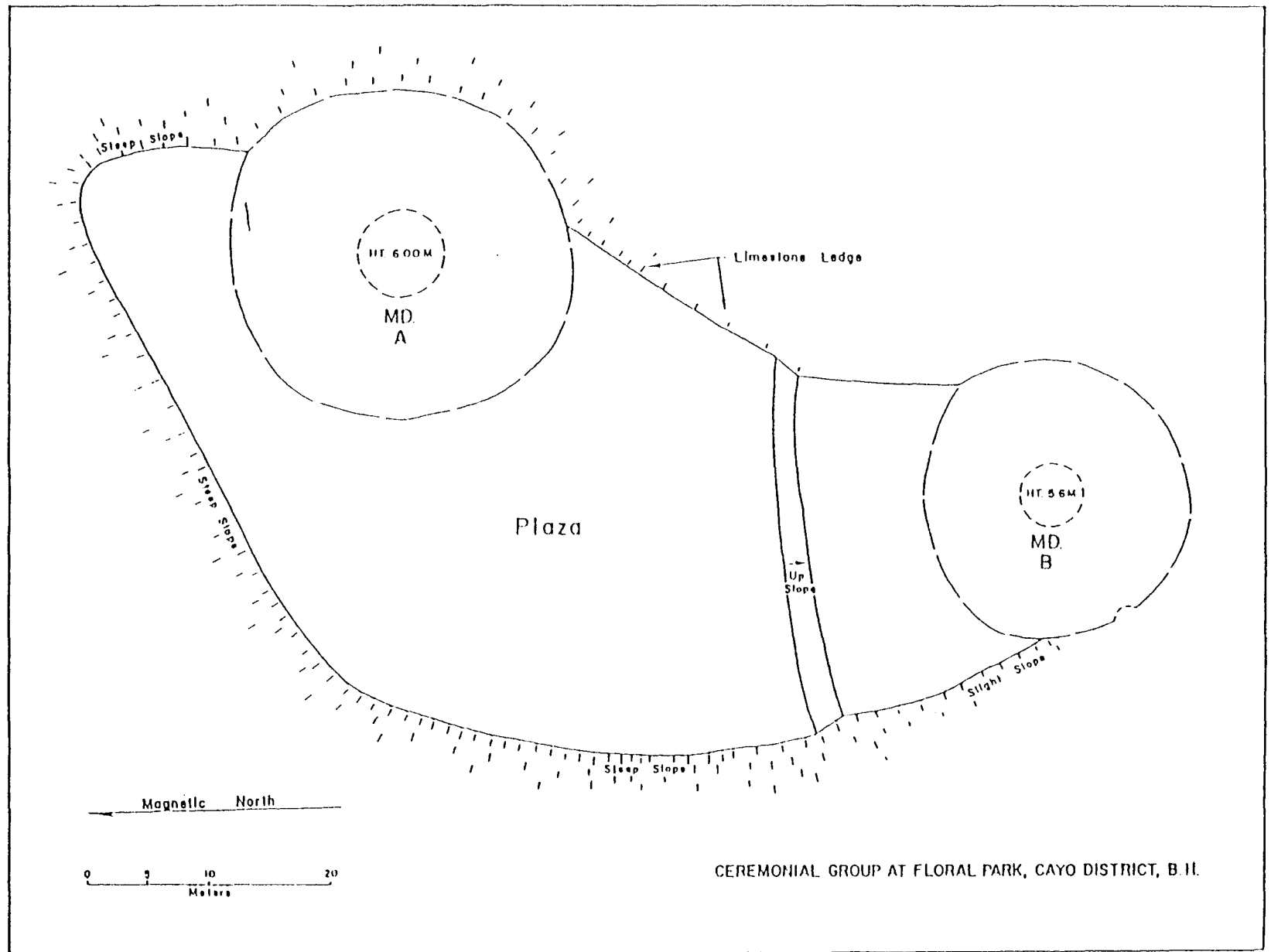


Figure 6: Floral Park plan as of the 1950's (after Willey et al. 1965:312, Figure 179).

Floral Park, Belize, Central America 1994

Survey: J. Conlon, H. Strand and K. Josey
Plan: J. Conlon

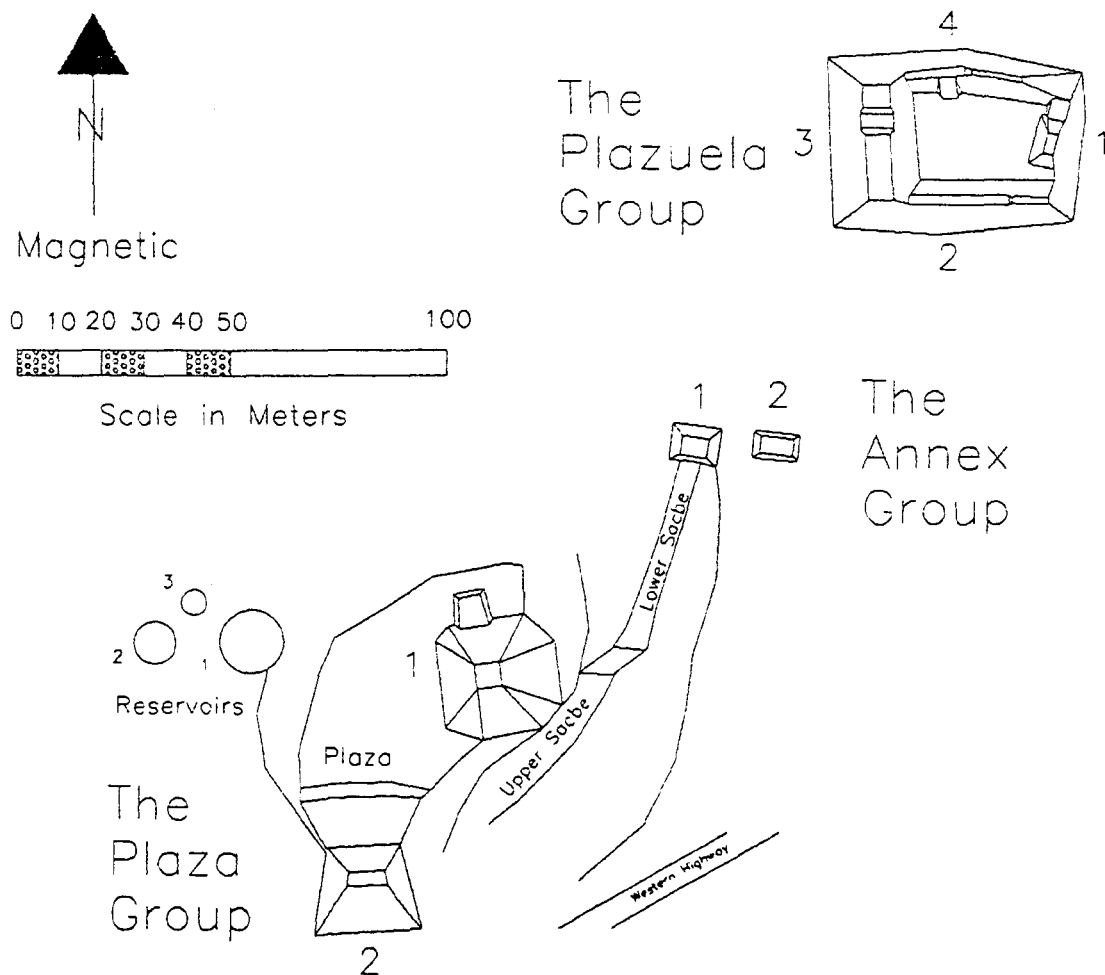


Figure 7: Survey of Floral Park as of 1994.

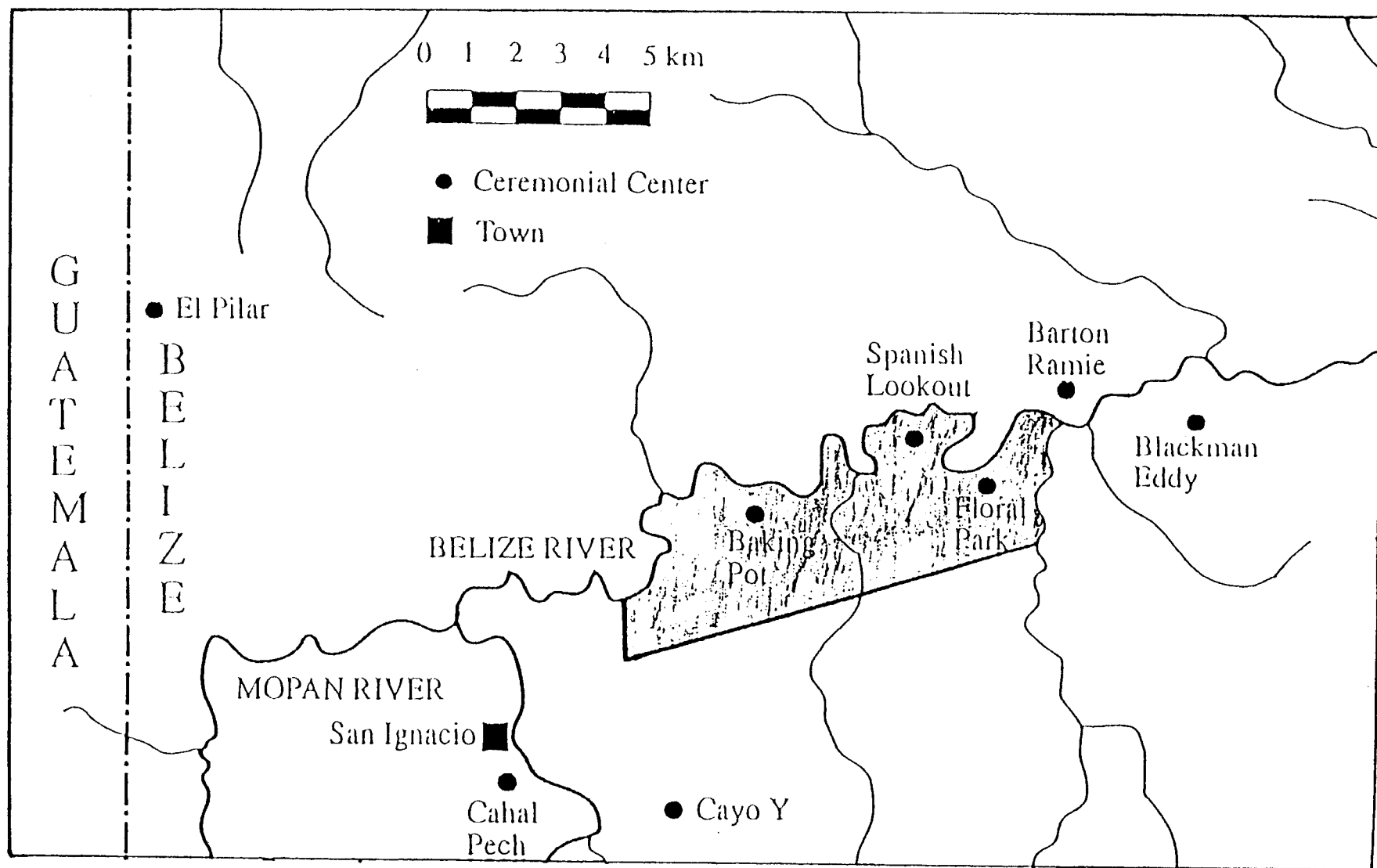


Figure 8: Proposed limits of the Baking Pot Survey Program.

degrees as possible, with 90 and 45 degree turning points employed where necessary. Numerous nested closure areas comprised larger closure areas until eventually a one square kilometer area of survey was encompassed southeast of Group II.

The modern dirt road leading to the Spanish Lookout ferry was employed as the arbitrary western extent of survey for the 1994 season. Since mound density is apparently higher nearer the Belize River (Willey et al. 1965:24 and 571) survey focused upon moving from the river southwards in order to capture the proposed areas of higher mound density. The survey did not reach the Western Highway in the south but, to the extent that it did come near the highway, there was little in the way of visible mounding. Survey was halted in the east by time constraints and the presence of modern experimental rice fields which have effectively obliterated most evidence of prehistoric mounding in this area.

Survey Results

Survey concentrated upon recording settlement to the east of Group II (Figure 9). Mound density was found to be less uniform than demonstrated by Willey et al. (1965:302, Figure 177). Generally, settlement uniformity fluctuated according to subtleties in relief as well as with increased distance from the site core. The Willey et al. (1965:573) survey demonstrated a mound density of "somewhat over" 100 structures per square kilometer. This figure (98 structures/square kilometer) is confirmed in the "small strip of primary agricultural land along the river" [north side] (Warnecke 1994:4). Survey at Baking Pot in 1994 expanded the known mound count for the area to 208 (not all shown in the raw survey plot of Figure 9). Based on the total area surveyed (approximately 1.6 square kilometers) the new mound density for Baking Pot is closer to 130 structures per kilometer squared, similar to that of Xunantunich (Yaeger 1992:115). In light of the similarity to the Xunantunich survey results the difference between the Willey et al. (1965) and BVAR results should not be considered incongruent. The difference may be accounted for by the smaller survey area completed in the 1950's. One factor to consider in subsequent seasons relates to mound density. The 130 structures per square kilometer figure could drop once the sparse mounding in the reconnoitered area immediately south of the 1994 survey limits is included. If mound density stabilizes further out from the site core of Baking Pot then perhaps this survey may help to distinguish its core or epicenter limits.

Mounding occurred more regularly in areas of higher relief than in bottomlands that may be more susceptible to collecting and retaining water. These areas of higher relief have been created by a large channel, or meander, cut by a previous path of the Belize River which extend further south at one time, most likely previous to ancient Maya mound building based on the occurrence of mounds within this channel. The northern portion of this old river channel still contains a small creek fed by a stream from the west which passes just south of the Atalaya Group. This creek connects with another creek that runs around the northern base of Group II and eventually empties into the Belize River. The southern to easterly section of this old river channel does not seem to support any kind of stream or creek, at least not during the recent survey period (June and July). However, it may have been integrated with Garbutt Creek to the east which runs past the main mound of the North Caracol Farm Settlement Cluster. This settlement may be a neighbor to Spanish Lookout or even an extension of it.

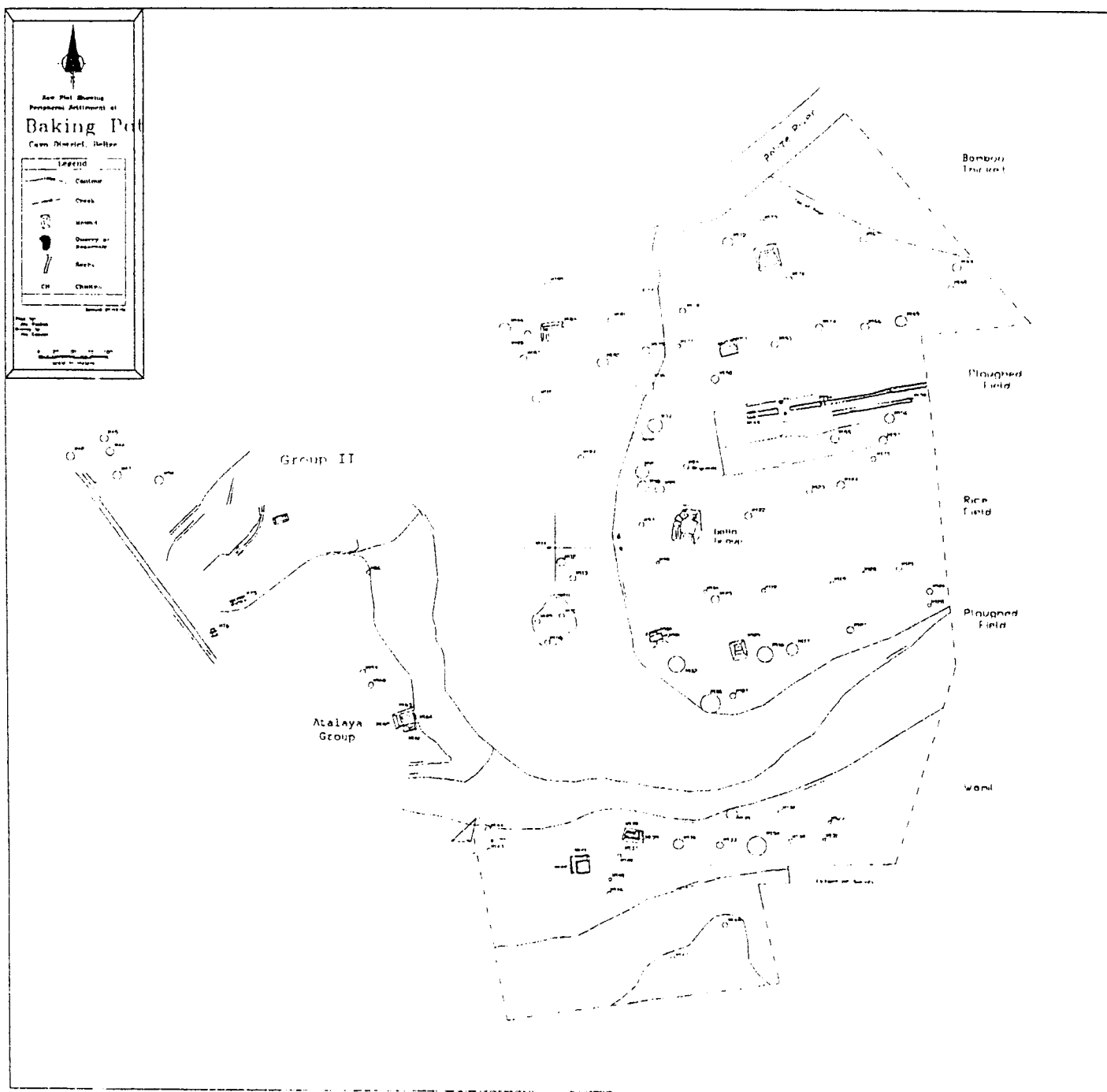


Figure 9: Results of the 1994 survey of the southeast zone of Baking Pot (raw plot).

Total survey time in 1994 was around one month. In this month over 700 transit shots were taken in a survey area of roughly one square kilometer. The 24 square kilometer area designated for survey would take an estimated 24 months, or, four years in sessions of six month field seasons. Other factors limited survey area coverage, particularly, the higher mound density encountered nearer the core. Reconnaissance has demonstrated a significant drop in mound density over a kilometer from the core and survey could progress more rapidly with more traversing between settlement clusters. Also, field survey entailed, on average, only five hours per day. The remainder of the day was used to plot the mornings survey data so that corrections could be made the next day before continuing on to the next survey area. This practice also enabled the production of a nearly complete map upon closing shop for the season. The continuation of a concurrent mapping program would be beneficial, especially if one surveyor could work a full day in the field with a second cartographer plotting the daily returns. Survey could move twice as fast, taking only 12 months to complete survey, while still incorporating the advantages of up to the minute plotted survey data.

Within the one square kilometer surveyed in 1994 several substantial mound groups were identified. The concentration of circumscribed settlement clusters upon ridges at Cahal Pech made it readily apparent which mounds constituted individual settlement clusters (Conlon 1992:87). At Baking Pot, the ability to discern nucleated settlement clusters, especially within a one kilometer radius of the central precinct, is much more difficult owing to the lack of the extreme range of relief such as is present at Cahal Pech. However, some preliminary observations are warranted here.

One group does display the characteristic focus of settlement that could constitute qualification as a settlement cluster. The Gallo Group is situated roughly in the middle of an area of higher relief and is surrounded by various smaller patio groups and singular mounds (Figure 10). The mounds located on the ridge south of this group do not consist of a large plazuela group such as the Gallo Group. The large patio group that does exist on this ridge suggests it may have been a possible focus of habitation on this ridge while the larger patio group possibly may have been affiliated with, or subordinate to, the larger Gallo Group. The Atalaya Group, south of Group II, may also have had a role in the territory here, however, this is where settlement cluster delineation ambiguity at Baking Pot prevails. At this close proximity to the core of Baking Pot discerning support settlement clusters and their group foci is difficult.

The Atalaya Group is close enough to Group II of Baking Pot that it may represent an extension of the core. It appears as though a small sacbe (not shown) from Mound 76 may have led to this group. Mound 76's close proximity to Group II, and connection by the Colon Sacbe through the Group II ballcourt, suggests it, and by association the Atalaya Group, are potentially interrelated more with the core than the periphery. Sacbeob at Cahal Pech represent a "functional continuity with the site core" that integrated and enfranchised elite power (Cheetham et al. 194:175). Integration, elite or otherwise, would hypothetically be represented by sacbeob at all sites.

However, the occurrence of sacbeob which begin and end in the periphery of Baking Pot proves anomalous to the "core-periphery" integrative hypothesis. Even further puzzling is the apparent commonality of the mounds connected by a sacbe east of the Gallo Group. These mound

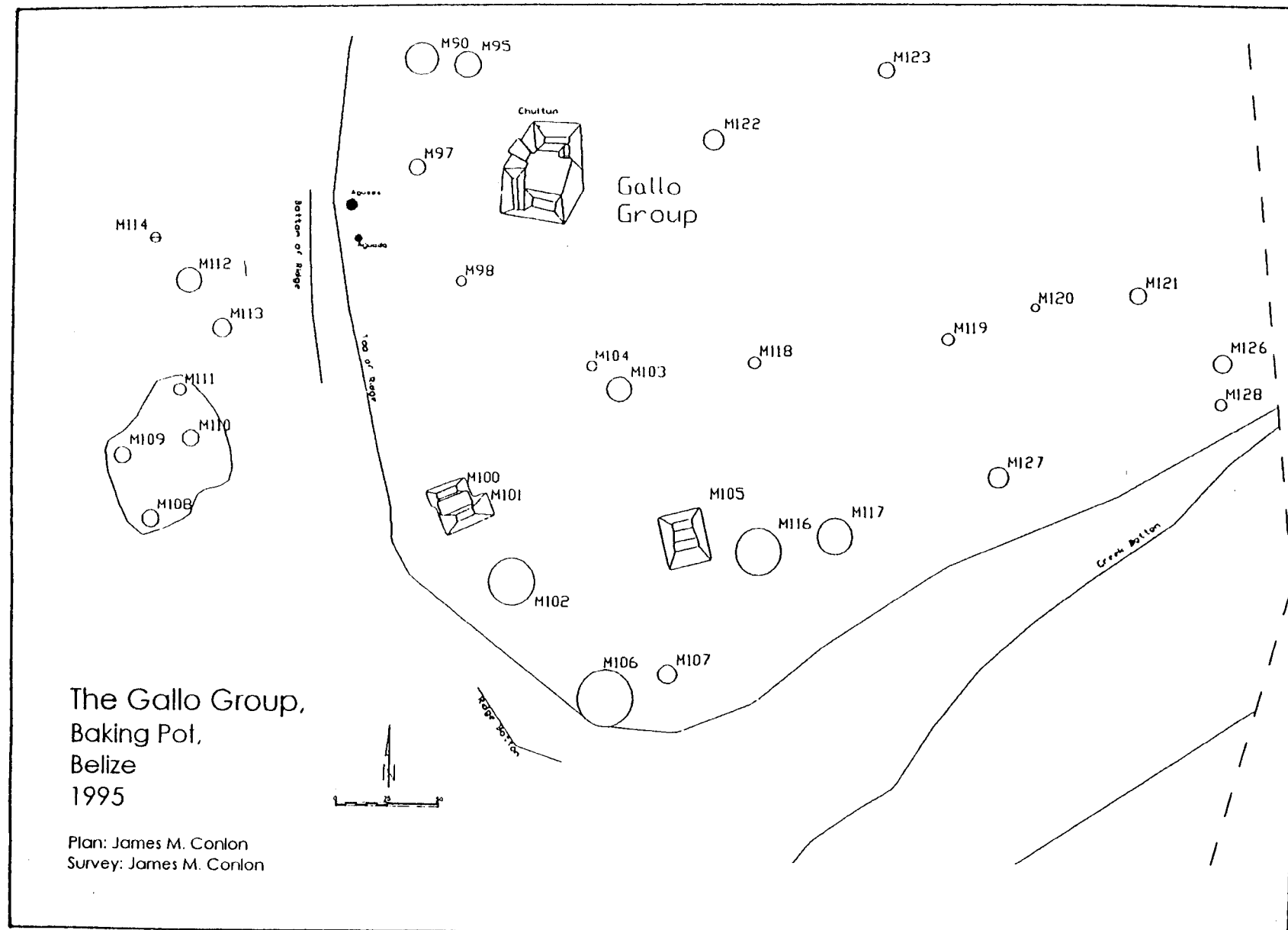


Figure 10: The Gallo Group, Baking Pot, Belize (raw plot).

termini (Mounds 154-South and 158) need to be excavated to determine what significance their physical connection by sacbe indicates. Finally, what does the sacbe that originates near the aforementioned mounds, and may have run to North Caracol Farm (unsurveyed, see following Reconnaissance Results section) indicate? It apparently was not linked to the Baking Pot core. Perhaps it operated as the Martinez Sacbe at Cahal Pech (Cheetham et al. 1993:153). This sacbe, which integrates Mounds 1 and 2 with Mound 3 of the Zopilote Group, has not yet been demonstrated to physically link with the core of Cahal Pech. Could this physical connection in the periphery represent an integrative power signifying a territorial claim within the boundaries of Baking Pot? Or, does it represent a semi-autonomous settlement which suggests Baking Pot core territorial claims were limited in areal extent? These questions concerning the function of sacbeob require further investigation through expanding the survey and excavation databases of sacbeob and their associated mound-termini.

To sum up, the complexity of settlement at Baking Pot must be analyzed through excavation. Differences and similarities in deposition of cultural materials must be compared between groups with similar **and** different morphological characteristics. The resultant data will eventually demonstrate, one way or another, what the various roles of these groups in different zones of the site may have comprised or entailed. As we know from the extensive excavations at Cahal Pech, various groups displayed variable characteristics at various locales at the site. Comparative analysis of the various componential assemblages of individual groups, obtained only through extensive and intensive excavation over a prolonged period of time, would similarly prove beneficial to exploring community interrelationships at Baking Pot.

Reconnaissance Results

Reconnaissance to the west of Baking Pot has been limited but some observations are worthy of note here. Mounds of variable sizes and complexity have been identified in the pasture immediately west of the modern dirt road leading to the ferry. The adjacent plowed field has not been reconnoitered nor has most of the land which intercedes between here and the Bedran Settlement Cluster. In the panorama from this vantage point though, there appears to be little significant mounding. This area remains to be surveyed in order to expand our knowledge of ancient settlement in this 3 square kilometer zone to the west of Baking Pot.

The southern limits of our survey did not reach the western highway, let alone the proposed limit of the base foothills just to the south of the road. Much like the western section of Baking Pot, there does not appear to be any mounds of substantial height. However, observation indicates several spatially distinct limestone rock clusters in one plowed field immediately south of the western highway at the junction of the road which leads to the ferry for Spanish Lookout. These rock clusters, or "mound scatters" (see Cheetham et al. 1993:147), displayed no visible mounding, possibly from having been ploughed. In any event, they likely represent typical prehistoric occupation in this area and possibly form a hidden mound settlement component. Hidden mounds are discussed in greater detail further below.

As previously mentioned, modern rice fields bordering the eastern limits of the 1994 survey have severely hampered the identification of ancient mounding which may have existed in this area. These rice fields are bordered by Garbutt Creek on the east, on

the other side of which is a substantial settlement cluster. This settlement cluster, discovered late in the season, is situated some 1.6 kilometers from the Baking Pot core upon lands owned by Minister Dito Jaun of San Ignacio. Minister Juan graciously granted us permission to reconnoiter these lands in 1994. The land had recently been ploughed in preparation for planting and comprise a cleared zone of roughly one half of a square kilometer in area. Settlement on these lands is comprised of a principle mound estimated at close to 10 meters in height and surmounted by several low platforms. Other visible settlement revealed several substantial plazuela and patio groups. In the course of preparation for planting in late July, limestone that had been turned up by the initial ploughing was collected by farmers who lease this land so that during subsequent ploughing and seeding these rocks would not damage their equipment. Unfortunately, this has resulted in the loss of the terminal architecture phase of construction and could hamper future survey and excavation in this zone. This settlement cluster has been designated the North Caracol Farm Settlement Cluster. This settlement clusters proximity to both Baking Pot and Spanish Lookout poses questions concerning its inclusion in the Baking Pot and regional settlement hierarchy as hinted at earlier in this paper.

Hidden Mounds

At Cahal Pech, bulldozing by land developers revealed "three plaster floors below featureless, flat land, indicating non-mound, or 'hidden structure' occupation" at the Cas Pek Group (Cheetham et al. 1993:139). In so far that this feature was not apparent on the modern ground surface it truly was an invisible "mound." Other instances arise where mounds are simply undetectable owing to their minimal height or vegetation cover. I believe this distinction to be significant for those conducting settlement survey who may run across instances where surface features are difficult to classify. Thus, Structure 9 at Cas Pek is truly an invisible mound, or occupation feature. Mounds that have a differential surface height, but are questionable cultural manifestations owing to their very low height, amorphous shape, or even significant distortion due to vegetation cover, are more aptly described as "hidden" mounds. These hidden mounds can be further distinguished from "non-mound" features (see Yaeger 1992:114) such as artifact scatters, quarries, middens and chultunes.

As Yaeger (1992:113) notes, vegetation can affect the visibility of "archaeological features." This has occurred at the Bedran Settlement Cluster where five low mounds were identified 100 meters east of the plazuela group in 1994. Although the settlement cluster is located in pasture land with low vegetational cover these mounds were eventually located owing to the exceptionally low vegetational cover this past year (see also Yaeger 1992:118 re pasture vegetation and obscurity). Similarly, if some fields in the southeast of Baking Pot and the north of Cahal Pech had not been plowed to reveal lithic and ceramic scatters then some very low mounds with little differential height between their living platform and the modern ground surface would have likely gone undetected. Unlike these hidden mounds discussed, invisible mounds are more likely to be detected only through fortuitous circumstances of an intrusive nature.

The three hidden mounds observed south of the western highway in a roughly 5,000 square meter plot may be indication of a relatively high density of hidden mounds in this area. The apparent pattern of settlement at Baking Pot indicates hidden mounds may be more likely chanced upon with increased distance from the site core. The closest

invisible mound to the core was Mound 120, encountered near the rice fields. This mound was only revealed through ploughing. Though this was the closest to the core of Baking Pot that ploughing was undertaken their frequency of occurrence is still to be considered at a greater distance from the core. It is indeterminable at this time what effect invisible mounds may have on settlement density data at Baking Pot. More extensive examination of ploughed fields at all distances from the Baking Pot site center would aid in better understanding what impact invisible mounds would have on the settlement survey. However, as indicated previously, many low mound features may have been permanently lost owing to modern land clearing practices. The smallest of ancient occupations may remain an invisible settlement component for eternity unless more thorough exploration employing a variety of detection techniques is pursued.

In conjunction with settlement density is the question concerning the temporal assignation of hidden and invisible mounds. At Cas Pek, Structure 9 displayed occupation from the Late Preclassic until the Late Classic. This has been taken to represent "great temporal diversity within the entire settlement system" (Cheetham et al. 1993:150). While this may be so at Cahal Pech the evidence from Baking Pot is less conclusive. In all instances where ground level invisible mounds and hidden mounds were encountered at Baking Pot, and in the ploughed fields near the Melhado Group in the northern zone of Cahal Pech (Willey and Bullard 1956), all indications were of a solely Spanish Lookout phase construction (c. A.D. 700-900). Only one mound (Mound 120 at Baking Pot) demonstrated a Postclassic component. Even though excavations have not been undertaken in these hidden and invisible mounds, their low height and subsurface manifestation suggests these constructions never had a chance to develop substantial height through sequential development over the period of a long term, successive, multi-generational inhabitancy. Coupled with the ceramic evidence from their surfaces, the diminished height suggests it is difficult to contend that the majority of hidden mounds had any sort of antiquity earlier than Late Classic and the repercussions for studying settlement dynamics may be limited to just prior the waning of the Classic period Maya in the Belize Valley.

Future Survey Goals

Immediate goals for 1995 include establishing an absolute elevation, incorporating the North Caracol Farm Settlement Cluster into the survey database, and expanding the survey west to the Bedran Settlement Cluster. Time permitting, secondary goals include: extending the survey south to the foothills, reconnoitering reported ridge settlement south of Running W Ranch, as well as the area east beyond North Caracol Farm towards Spanish Lookout. Finally, as the 1994 results indicate, it may not be possible to complete "full coverage survey" of the entire 24 square kilometer area. There may arise the necessity to concentrate survey on a smaller two to three kilometer radius nearer the core of Baking Pot, and then leap frog to larger groups of mounds with significant morphological characteristics, such as increased relative size and complexity, that may signify their focus of settlement clusters. Later on, when these groups are revisited for more intensive investigation, there can be a more comprehensive survey of settlement in the intervening zones that may be glossed over.

Conclusion

Baking Pot closely follows El Pilar (Ford and Warnecke 1994) as the last major ancient Mayan center in the upper Belize Valley to undergo the intensive investigation that has characterized the various research projects in this region over the last two decades. The commencement of the full scale settlement survey project at Baking Pot heralds the acquisition of another significant database for both intrasite and intersite comparative purposes. As survey objectives are progressively met, and the excavation program implemented, Mayanists will have access to what will likely comprise one of the most intensively explored areas with which to consider regional organizational dynamics. Thus, Baking Pot, the final frontier in the upper Belize Valley, holds one more piece of the puzzle which will lead to a broader perspective of settlement structure and a more comprehensive regional synthesis of intersite settlement structure.

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